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Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves

PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.

116 S. Michigan Ave., Chicago

H. D. FARGO, PRESIDENT AND TREASURER.
G. M. ALLEN, MGR., COPY DEPT.

S. R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 1

CHICAGO, SATURDAY, JANUARY 6, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

Here we are, fairly launched into the New Year! Encouraging signs are present that 1923 should be a good year of healthy growth in the telephone industry.

During the last twelve months the leading industries of the country experienced such a steady improvement in conditions that now some of the more prudent business observers are sounding notes of warning against going ahead too fast. They declare that a general business revival is here, but, with the lessons of the war boom in their minds, men like Babson and Forbes are urging that the onward speed be held at a reasonable rate so the country does not have to undergo another period of deflation.

* * * *

Like most utilities, the telephone is not subject to the same fluctuations that influence general business. To a greater extent than other utilities, however, the telephone maintains a stable flow of business regardless of good or dull times, while, of course, it reflects a business boom by increased traffic and a larger demand for service.

The sound common sense of the principle of giving telephone companies reasonable rates is not only recognized now in theory by all state commissions, but most of them are putting the principle into actual practice, so that the operating telephone companies are assured of an adequate income.

Readers of TELEPHONY'S department of commissions' activities will perceive that any company rendering good service, and

CURRENT OPINIONS AND COMMENTS

submitting the necessary proof, is pretty sure to secure a fair rate.

* * * *

With supporting revenues in sight there should be, therefore, a large amount of construction work done in the telephone field this year to take care of the demands for more service.

Conditions promise to facilitate a period of building, for money is easier, the general public outlook is more cheerful and—what is equally important—the situation within the telephone industry itself is favorable to going ahead with a confidence that constructive development will be permanently rewarded.

* * * *

The relations between the two groups in the telephone industry today, more than ever before, favor the co-operation of both in the work of giving the public adequate service. Many Independent companies have waited in their building plans because they were uncertain what the future might hold for them.

The steps towards better co-operation in the business should clear up this phase of the situation, and lead to the building of more lines and the purchase of more equipment that have long been needed in many localities.

Many plants require new switchboards, additional telephones and much other apparatus to handle waiting orders for service, and 1923 will see much of this delayed construction provided for. Good service, and adequate service, are necessary to ob-

tain better rates, and adequate equipment is also necessary to insure the grade of service that will induce the rate commissions to authorize the revenue that means success to the operator.

* * * *

One of our advertisers has made an estimate that at the close of 1922 there were 16,018,310 telephones in service on the continent of North America, of which 14,662,316 are in the United States. This is a trifle more than 63½ per cent of all the telephones in the world.

Other countries will steadily add to the number of their telephones—getting much of their equipment from American factories—but the vision of no man can picture a time when the United States will not lead all other countries in the magnitude of its telephone development.

* * * *

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There are many telephone companies that can apply for additional revenue with a good grace, and they should embrace the opportunity to thus fortify their position while general business conditions are favorable.

* * * *

Samuel M. Vauclain, president of the

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* * * *

Samuel M. Vauclain, president of the

Baldwin Locomotive Works, is recognized as one of the big men of America. Not only is he a business leader of eminence, but he has won a wide reputation as a patriotic American of high ideals and rare judgment.

He made an address at Rochester, N. Y., recently that deserved wider publicity than it received. Utility men especially should be interested in publishing broadly his remarks, for they ably supported the principle that service companies deserve higher rates than they usually receive.

Mr. Vauclain was discussing the subject of "Salesmanship," and he emphasized the importance of transportation and communication to all business prosperity. The railroads, he said, were going down hill because of political interference.

"Don't worry about freight rates," he said. "What we want from the railroads is service. We want our goods brought to our doors in three days if possible. We don't want them delayed on the road for three weeks, nor to have the shipment unable to be started through lack of cars or locomotives. We know that the railroads must be prosperous if they are to give good service, and we know that the better service the higher must be the price."

* * * *

Then he applied the same argument to telephone service, and urged all salesmen to use the telephone more, as a vital agent in securing business and keeping the commercial machine working smoothly.

"Use the telephone freely," said he, "and

don't complain about the telephone companies' charges. What you want from the telephone companies is service, and good service cannot be rendered unless the telephone companies are prosperous."

Mr. Vauclain plainly showed his belief that to quibble over telephone rates is picayune business, considering how essential telephone service is to a community. He intimated that every city could well afford to pay double its telephone rates in order to insure first-class service.

This resolute defense of the telephone by a leader of Samuel Vauclain's standing was peculiarly significant in Rochester where the local service company has been made the victim of an unfair campaign by its enemies. It is gratifying to record that this fight has subsided.

Telephone Service Satisfactory?

Letter Sent by President A. E. Berry of Chesapeake & Potomac Telephone Co. to Its 100,000 Maryland Subscribers Asked: "Is Your Telephone Service Entirely Satisfactory?"—Story Published through Courtesy of The Transmitter

By J. O. Martin

If you ask the average user of any service to tell you if it is not in every way satisfactory, the chances are about even that you will hear at least a mild complaint, with perhaps a suggestion for improvement. Multiply this one user by 100,000, and the possibility for criticism, gentle or otherwise, is almost unlimited. This is what Mr. Berry did in a letter to each of our 106,000 Maryland subscribers.

Bear in mind that he did not ask for praise or commendation, but for criticism if the service was not entirely satisfactory. And it is extremely gratifying to note that almost one-third of the letters received in reply commended the company and its service.

The letter, which is reproduced on the opposite page, was mailed out during the last week in October and the first two weeks in November. The first lot mailed contained 40,000 letters. These were followed at short intervals by the remaining number.

The response was immediate. On the day following the first mailing, 246 answers were received. Now, it is well known that bad news travels faster than good, and, therefore, one might suppose that practically all of the first day's crop would contain complaints, but it did not. At least 25 per cent of them said the service was good, and many commended the company for taking this means of ascertaining the attitude of its subscribers. Letters continue to come in in reply,

and even at this writing—a month from the date of the first mailing—a few replies are being received daily.

A special force was organized to handle and classify this great mass of correspondence, and it might surprise those who read this story to note that each subscriber who wrote us was sent a personally dictated reply. Not only that, but about 98 per cent of all letters received were answered the same day. And every complaint was immediately investigated and the subscriber told what would be done about it.

A complete record was kept of each complaint; the name of the central office serving the subscriber; the subscriber's name; the nature of the complaint; the date the letter was referred to the department affected; and so on.

This did not close the matter. All cases that were referred to a department for attention were followed up until the necessary work was done. For instance, if a subscriber wrote that he had no complaint to make of the service, but that he had had his telephone set for some time and would appreciate a new one, the case was not considered closed until a new telephone had been installed and the subscriber satisfied.

In some cases more than one communication was necessary. If a subscriber wrote to the effect that the service was not good—and some of them did—but did not state on what he based his opinion, a courteous letter was sent by return

mail, thanking him for his letter and asking for particulars. In many of these cases the particulars were produced. Another letter was then sent telling him what would be done to improve the condition.

Letters Classified.

In classifying the letters received, they were put first into one of two groups—commendatory or complaint. And the rule was that unless a letter was an unqualified commendation, it was classed as a complaint. Consider the following:

"Your telephone service is fine, but I did not receive a new directory the last time they were distributed."

That letter was classified as a complaint; the little "but" did the trick.

The letters which found themselves listed as complaints were further classified; i. e., they were divided into groups marked "Plant," "Traffic" and "Commercial."

Into the "Plant" group went all letters about maintenance and construction, such as inability to locate trouble on a line or to remove a pole promptly.

Into the "Traffic" group went those letters having to do with operating—references to slow answers, wrong numbers and matters of a similar nature.

"Commercial" took what was left—all communications relative to collections, applications, rates, bills, etc. To Commercial's lot also fell all communications concerning public relations and company policy.

Since the operators come in contact with the public users of the service thousands of times a day and the public is more interested in their work than in any other phase of the business, it is to be expected that the most of the letters received would concern traffic.

There were 968 criticisms of the work of the traffic department. Of these, 65 said the service was generally poor; 111 complained of slow answers; 71 referred to delayed connections; 107 complained of "busy" or "don't answer" reports; 62 said they had to repeat the number to the operator; 114 referred to cut-offs; 96 said they were called in error; 142 mentioned a failure to receive an incoming call; 32 complained of party line interference; and 31 inferred that the long distance service was not all that it should be.

These were the major things mentioned. The list contained a few others more or less scattered in nature.

Of the Plant's 318 cases, 197 referred to some difficulty with the equipment or mentioned some difficulty which would lead us to believe the equipment was at fault. These were investigated immediately. In 35 of these cases, no trouble was found; in 40 cases the difficulty was caused by the subscriber's improper use of the telephone.

In the remaining 122 cases the trouble was as follows: telephone instruments, 67; inside wiring, 6; private branch exchange switchboards, 5; cable, 5; terminals, 12; line or drop wire, 20; central office multiple, 3; projectors, 4.

In addition to these reports of trouble, there were 46 references to some previous difficulty; perhaps something that had occurred at some time in the past and had been remedied.

There were also 37 cases listed as miscellaneous. These referred principally to a desired rearrangement of wiring, or perhaps removal of a bell box to another location, or something of a similar nature.

To Plant also went 38 cases of delayed installations. These included delayed move orders, new stations, changes in class of service, etc.

Of the 189 cases turned over to Commercial for attention, 46 had some reference to billing; 43 involved the question of rates; 25 referred to errors in listings or omissions of listings from the directory; 8 were in reference to collec-

tions; 25 complained that they had not received the latest telephone directory; and 33 referred to miscellaneous matters.

There is the whole story, if it is just analysis you want; but for further details, let us take a few of the letters and pick out a paragraph here and there. Because bouquets are always more pleasant to write about than brick-bats, we will take the commendatory bunch first.

The operator comes in for her share of glory. One subscriber referred to her as "the little lady down at Liberty." Another speaks of "a notable

And this, from a prominent banker: "We have invariably been shown the most uniform courtesy by all the members of your corporation with whom we have had business transactions."

"Perfectly Satisfactory"

Many of the letters were brief. "The telephone service is perfectly satisfactory" was all that one letter contained. "Very satisfactory" was noted on the

THE NATIONAL UNION BANK OF MARYLAND
AT BALTIMORE



CAPITAL \$2,000,000
SURPLUS \$1,000,000
UNDIVIDED PROFITS \$200,000

October 31, 1922.

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY
106 EAST LEXINGTON STREET
BALTIMORE MD.

A. E. BERRY
PRESIDENT

November 3, 1922.

National Union Bank of Maryland,
E. Payette street,
Baltimore, Md.

Gentlemen:

This company's aim is to give an entirely satisfactory telephone service. By satisfactory service we mean that the individual user shall be satisfied.

Telephone service embraces a variety of operations; the installation of telephones and changes in location, telephone operating, maintenance of the central office equipment, outside plant and telephone apparatus, accurate and up-to-date directory listings, billing, collecting and numerous other things that must be done to give service that will be complete and satisfactory.

Notwithstanding our aim to give perfect service, we realize that at times difficulties will arise. Usually these are quickly remedied, but there is always a possibility that some defect may develop which, in spite of our efforts, is not detected immediately.

I am anxious to ascertain if our service is satisfactory to you. If it is not, I would appreciate it if you would advise me at once so that the difficulty may be remedied.

Very truly yours,
A. E. Berry
President.

Mr. A. E. Berry, President
THE CHES. & POT. TELEPHONE CO.,
106 E. Lexington Street
Baltimore, Maryland.

Dear Sir:

Replying to your letter of October 27th, it is a pleasure to state that the service of your Company is entirely satisfactory to this bank. Indeed, we have invariably been shown the most uniform courtesy by all of the members of your corporation with whom we have had business transactions.

Very truly yours,

[Signature]
President

One of the Replies to President Berry's Letter.

bottom of Mr. Berry's letter and returned by an educational institution. Noted at the bottom of another was this: "We have no complaint." Still another observed, "Satisfactory. Interest appreciated."

One writer praises the service and adds, "I would not be human if I did not have some sort of complaint against a public service corporation." He then set forth the wish that the company would see that he gets a new telephone directory.

Occasionally a telephone employe is mentioned by name. Says a Bel Air subscriber: "You are particularly to be congratulated upon having such an efficient official as Mr. Daneker, whose main object in life seems to be to establish and maintain pleasant relations between the patrons and the company."

And look at this! "I wish to say that the splendid co-operation I receive from Mr. Andrew Ellinghaus on all matters pertaining to telephone service in the city of Baltimore precludes any possibility of complaint."

So much for the bouquets. Now, let us take a look at the brick-bats.

What President Berry Said in His Letter to Subscribers.

degree of cheerfulness on the part of the operators."

A Baltimore nurse writes: "I have found the operators invariably courteous and obliging. Nowhere have I found better service than in Baltimore."

A woman subscriber in Baltimore says: "I especially appreciate the kindness and courtesies of the operators." And a business man in Federalsburg notes: "You have elegant operators here, very obliging and quick attention to calls," while a Mt. Airy subscriber calls the operators in that town "as fine a lot of exchange girls as the company has."

Some of the letter writers took occasion to compliment the entire organization. For instance: "Your organization is indeed an asset to our community and deserves all encouragement possible."

JOS. BRENNER & COMPANY
 SCRAP IRON, METALS AND RUBBER
 OFFICE AND YARD W. CHURCH ST.
 HAGERSTOWN, MD.
 November 9th, 1922.

The Chesapeake and Potomac Telephone Co.,
 108 East Lexington Street,
 Baltimore, Md.

Gentlemen:-

Your circular letter of 9th at hand, and will say at this time, that we are quite satisfied with the telephone service we are getting.

As we are particularly heavy subscribers and transact a great deal of business by telephone, including long distance calls, we doubly appreciate the excellent service we have been enjoying, and trust same will continue.

We remain, very truly yours,

B.1
 JOS. BRENNER & COMPANY
Jos. Brenner

OFFICE OF
 DR EDWARD E. LAMKIN

VIENNA MARYLAND November 21st 1922.

A. E. Berry, President,
 Chesapeake & Potomac Tel. Co.,
 Baltimore, Md.

Sir:-

In reply to your letter of November 3rd relative to the service rendered by your company, it is now, and has been during my twelve years as a telephone subscriber, with great pleasure that I think of, and refer to my host of unknown friends--the telephone folks.

I know perhaps less than 4 individuals connected with the service, by sight and name, yet from District Manager, through Cashier, to lineman, through exchanges and to the newest day or night operator, I am their friend and I feel that all of them are my friends.

Indeed, it is not an exaggeration to say, anyone connected with the telephone company can get more from me than the average journeyman through life, and I AND I get the very best from them, though we have never met. It is because we treat each other fine.

Sincerely,
Edward E. Lamkin

The Baltimore News
 AND
The Baltimore American
 November 9, 1922.

Mr. A. E. Berry, Pres.
 C. & P. Telephone Co.
 108 E. Lexington St.
 Baltimore, Md.

Dear Sir:

Replying to your circular letter of November 3rd, I will say that I am very much pleased with the service rendered me by your company in the installation of a telephone in my new residence at Linthicum Heights, Maryland.

Yours very truly,
G. M. Henderson
 Manager Classified Advertising.

Ka/Jh

THE UNION NATIONAL BANK
 CAPITAL \$100,000.00
 UNDIVIDED PROFITS \$85,000.00
 WESTMINSTER, MD.

November 8, 1922.

A. E. Berry, President.
 Chesapeake & Potomac Telephone Company
 108 E. Lexington St.
 Baltimore, Maryland.

Dear Sir:

This will acknowledge yours of the 3rd in which you are anxious to ascertain if your service is satisfactory to us.

In reply would advise that your service here as far as we are concerned is very courteous and efficient in every way and we have no complaint whatever to make.

Yours truly,
J. H. Brantzy
 Cashier.

JPW/M.

The Chesapeake & Potomac Telephone Company,
 108 East Lexington Street,
 Baltimore, Md.

Gentlemen:-

In reply to your favor of November 3rd, I have no complaint whatever to make in regards to my telephone service.

I can only speak in the highest terms of the efficient service rendered by your company.

Yours respectfully,
E. J. Pollock
 Asst. Transmitter.

United States Senate,
 COMMITTEE ON FINANCE.

New Bern, N. C., Nov. 15, 1922.

Mr. A. E. Berry,
 President,
 Chesapeake & Potomac Telephone Co.,
 108 East Lexington Street,
 Baltimore, Maryland.

My dear Mr. Berry:

I am in receipt of your letter of the 3rd instant asking me whether the service rendered by the Chesapeake & Potomac Telephone Company is reasonably satisfactory.

In reply, speaking generally, I am pleased to say that the service has been satisfactory. Now and then the telephone at my house has not functioned satisfactorily, but upon complaint, the trouble has been promptly rectified.

Very truly yours,
W. W. Lanahan

1-3

W W LANAHAN & CO
 BANKERS
 CALVERT BUILDING

BALTIMORE November 17th, 1922.

Mr. A. E. Berry, President,
 The Chesapeake and Potomac Telephone Co.
 108 East Lexington Street,
 Baltimore, Maryland.

Dear Sir:

Referring to your circular letter of the 9th instant, we beg to advise you that our telephone service of late has been entirely satisfactory.

We appreciate your efforts to constantly improve your service and we shall avail ourselves of your invitation to report to you should anything arise which we feel you can remedy.

Yours very truly,
W. W. Lanahan

Some of the Letters in Which Subscribers of the Chesapeake & Potomac Telephone Co. Spoke "A Few Kind Words" Concerning Their Telephone Service and the "Telephone Folks."

A man who lives on a farm, and has rural line service, wants to know if something cannot be done about the "busy" condition. He says too many people use the telephone for gossip.

"Service has been generally poor lately," writes a subscriber, and adds that if the company will send somebody to see him about it, he will be glad to go into details—"in the interest of better service."

Another writes concerning station trouble which the plant folks seemed unable to locate. "I am not complaining," he says, "but it seems to me that somebody ought to be able to find it."

Here is a seeker after information: "I have had your service in my home for more than ten years and have no complaint to make, but would like to know why it is necessary to change my number so often."

Some writers are frank, to say the least. Says one: "Your service has changed for the worse." And another: "Your service is the worst in the world."

Really, we think the gentleman exaggerates a bit.

Let us now take a look at some of the replies that were sent by the company to the writers of these letters, both good and bad.

Here, for instance, is a letter from a man who says the service is poor and who hopes that something more than soft words will be resorted to in giving him the kind of service he thinks he ought to have. He also intimates that the rates are too high.

"I am very sorry," wrote Mr. Berry, "to learn that the telephone service at your residence has been so unsatisfactory.

"I am sincere in my statement that we want you to have good and dependable telephone service and I can assure you that very careful attention will be given the matter with a view to bringing your service up to a point where it will meet with your approval.

Cost of Telephone Service

"In connection with the matter of war-time rates, which you mention, I thought you would be interested in a statement which we have recently prepared, based on the cost of telephone service, with other services and basic commodities. The information as to the increase in the cost of the commodities mentioned are obtained from data of the National Industrial Conference Board. The result is as follows:

Items.	Per cent over 1914	
	1920	1922
Shelter (house rents).....	58	65
Clothing	166	53
Fuel	66	81
Sundries	85	72
Food	119	40
Telephone service in Maryland.	23	23

"I want you to feel that we are not setting up these figures in a combative spirit, but they come from an authentic source and indicate very clearly that the increase in the cost of telephone service

has been far below the increase in these other commodities.

"You might also be interested in knowing that at the present time we are earning in Maryland less than 6 per cent on the fair value of our property and I think you will agree that this is by no means unreasonable."

Of course, this does not close the case as far as the telephone company is concerned. The matter was turned over to the traffic department as soon as the letter was received and every effort is being made to see that the gentleman gets "service that satisfies."

What shall we say to a subscriber who says that the service generally is good but that people on his line sometimes listen in and otherwise interfere?

This is, in part, what Mr. Berry wrote: "With respect to the difficulties you experience at times, due to a great many people taking their receivers down while you are talking, this is one of the problems of party-line service.

"As you realize, it is not possible for us to determine just what subscribers do this. I shall be very glad to bring to the attention of the subscribers on your line that such instances detract from the quality of service rendered and suggest that they discontinue the practice. We are hopeful that this may bring you some improvement in the matter to which you refer."

All Errors Corrected

As in the previous case, Traffic has this matter in hand and is giving this line every attention.

Now we come to a complaint of an error in the telephone directory.

In his reply, Mr. Berry expressed regret that the error occurred and assured the subscriber that it would be corrected in the directory just going to press. He further explained that in spite of all precautions the telephone company can take, errors will occasionally creep in, but we are doing our best to avoid them.

Needless to say, the error complained of was immediately corrected on the records going to the printer for the new directory.

Here is a letter from a man who compliments the service highly but says that in nearly all bills and communications received from the telephone company, his name is spelled with an "O" instead of an "A." The letter sent in reply thanked him for his kind words of the service, expressed regret for the misspelling of his name and assured him that steps would be taken immediately to make certain that the spelling of his name is correct on our records.

A subscriber wrote that he desired the telephone disconnected, as it was too much trouble every month to be fussing with the telephone company about payment for calls that he did not make.

"From your letter," wrote Mr. Berry, "I get the impression that while you

really desire service you wish the telephone disconnected because you are charged with calls you have not made. It is not our policy to ask the subscriber to pay for any service which he has not received. Unfortunately, due to errors, calls may occasionally be charged to the wrong telephone.

"This we are always glad to adjust, and I assure you we wish to have you pay only for the messages which have actually been sent from your telephone. I will have one of our representatives call to see you to discuss the matter further."

This letter was followed up with a personal interview and the subscriber was satisfied.

A business man of Baltimore suggested that the company give consideration to the matter of furnishing information promptly on the charges for long distance calls, claiming that sometimes it requires nearly an hour to obtain this information.

Here is the reason and the remedy, taken from Mr. Berry's letter.

"I am very sorry to learn that you have been inconvenienced through inability to obtain the charges on long distance messages. In cases where the subscriber wishes to be advised of charges on long distance messages, we request that he notify us of his wish at the time when the call is placed with the long distance operator.

"The reason for making such a request is because the operator who takes the details of the call is not the same one who later puts up the connection. Consequently, after your long distance call is finished, if you again inquire of 'Long Distance' the rate on the call which you just finished, it is necessary for her to locate the record.

"Where a request for such charges is made at the time the call is filed, a notation is made on the record so that upon conclusion of the call the operator will call you. If you have been making your request for the charges at the time of filing the call, there is no reason why you should have any difficulty in getting these charges, although you can readily understand an oversight might occur occasionally."

To a subscriber who wrote that his telephone number was such that the operators apparently had difficulty in understanding it, Mr. Berry suggested that if the subscriber felt that the condition was sufficient to warrant changing to a new number, the telephone company would be glad to arrange for it immediately.

Prompt Answers

Here is a letter from a man who says he has complained to nearly everybody in the company and that he is unable to get satisfaction. He does not, however, state the nature of his trouble.

"I am very sorry," wrote Mr. Berry, "to learn that your telephone service has

not been satisfactory. In sending my original letter, I was hopeful that you would let us have specifically the features of the service which have not been satisfactory. This sort of information is necessary to enable us to attack the problem and give it the attention it needs.

"I am taking the liberty of having one of our representatives get in touch with you to inquire as to the specific difficulty encountered, and I assure you that the matter will have our attention"

* * *

Every letter received, regardless of its tone, was given a carefully thought-out and personally-dictated reply. In some

assorting, reviewing and sending replies to some 1,700 letters received in response; to say nothing of the task of investigating some 1,200 complaints.

* * *

Our president questioned over 100,000 subscribers about the service we are furnishing them. There is, of course, a certain degree of satisfaction because of the fact that only a small percentage of the total 106,000 subscribers availed themselves of the invitation to criticize the service. This is gratifying, but it should not lull us into a feeling of contentment.

By the time this article appears in print the subscribers in Virginia and West Vir-

The main lead of five crossarms to the east, including cable in Waynesfield within 100 feet of the office, went down for one mile and there were also about 70 poles down on this lead between Waynesfield and Holden. A five-arm lead one mile north of Waynesfield also went down.

Waynesfield was without long distance connections until 10 a. m., December 31. The company's estimated damage loss due to the storm is between \$8,000 and \$9,000, according to Superintendent Fred W. Bechdolt.

Arranging for the Minnesota Convention at St. Paul.

The annual convention of the Minnesota Telephone Association will be held January 23 to 25 at the Ryan Hotel, St. Paul, Minn.

The program will be one that is selected by the members of the association. Secretary J. C. Crowley, Jr., has sent a postal card to each operating company in the state listing these topics:

Plant construction, plant maintenance, preventative maintenance, station and plant protection from lightning and high voltage, telephone radio, inductive interference, construction on highways, traffic, advertising, collection methods, public liability insurance, and accident prevention.

The subjects receiving the largest number of votes will be presented by individuals who are thoroughly familiar with them.

The committee in charge of the entertainment consists of Jay Houghtaling, E. R. Smith, S. G. Harris, W. C. Caldwell, and C. W. Snyder.

Fire! Fire! Telephone and Good Roads Aid Farmers.

Dallas county, Tex., has made it possible for its rural districts to obtain fire protection assistance from the fire department in Dallas through the construction of modern hard-surfaced highways. A contract executed recently between the Dallas city commission and the county commissioners provides for fire protection to farmers on all paved roads within a radius of 15 miles of Dallas. When a farmhouse or barn along a paved road catches fire, all the farmer has to do is to telephone the Dallas department and it will respond at 40 to 50 miles an hour with a chemical engine or a steamer as occasion may warrant.

Dallas county is one of the first in the country to make such an arrangement. Several fires have already been extinguished with small loss. A general reduction in fire insurance rates in the smaller towns and farming districts has been the result. The service will be made more extensive when the big road building program now under way in Dallas county is finished. Farmers affected by the arrangement are reported to be delighted with the protection afforded.

PLANT DEPARTMENT.		TRAFFIC DEPARTMENT.	
Previous trouble	46	General poor service	65
Delayed installation*	38	Slow answers	111
Miscellaneous	37	Have to repeat number	62
Due to subscribers	40	Slow answers to recalls	18
No plant trouble found	35	Delayed connection	71
Plant trouble found	122	Wrong and double connection	78
Instrument—manual	66	Cut off	114
Public pay station	1	Disputed busy report	55
Inside wiring	6	Disputed "Don't Answer" report	52
P. B. X. switchboard	5	Delayed report	6
Underground cable	1	Improper rings	17
Aerial cable	4	Called in error	96
Terminals	12	Bell rung	8
Line and drop wire	20	Failure to receive incoming call	142
C. O. multiple	3	Operator discourteous or impertinent	10
C. O. protector and fuse	3	Party line interference	32
Station protector	1	Poor long distance service	31
Total Plant	318	Total Traffic	968
COMMERCIAL DEPARTMENT		(including Miscellaneous).	
Rates	43	Billing	46
Exchange	20	Local message charges	14
Local service areas	13	No bill received	2
Service connection charge	4	Error on addressograph	9
Difference between Baltimore and Washington rates	2	Delay in refunding over-payment	1
Installation charge	1	Error on toll statement	1
Guarantee on semi-public service	3	No knowledge of toll message	5
Collection	8	Timing of toll messages	7
Failure to receive bill	1	Disputes telegram	2
Treatment after payment	2	Request for explanation	5
Failure to cancel stock agreement and refund payment	1	Miscellaneous	33
Wants service without paying final bill	1	Disconnected in error	2
Disconnected on account of non-payment of previous final bill	1	Desires extension on coin box	1
Disputes restoral charge	2	Method of serving community	6
Directory	59	Change in telephone number	4
Non-delivery	25	Failure to acknowledge letter	2
Errors in listing	18	Information practice	5
Omission of listing	7	Disconnection treatment	1
Criticism of type	1	Charged during interruption of service	6
Criticism of binding	1	Magneto service	5
Criticism of arrangement	7	Donation to community fund	1
*Covers all classes—new, regrades, no facilities, etc.		Total Commercial and Miscellaneous	
†Ten of these were on long distance calls; the remainder local.		189	
SUMMARY.			
Traffic		968	
Plant		318	
Commercial and miscellaneous		189	
Grand total		1,475	
(Complaints in 1,122 letters.)			

Analysis of Complaints Contained in Letters from Maryland Subscribers of Chesapeake & Potomac Telephone Co. (1,122 Letters Received to November 18, Inclusive.)

cases this reply went into intimate detail. Every effort was made to show the subscriber the telephone company is really interested in giving every individual subscriber the kind of telephone service the subscriber thinks is right.

A rather nice thing about the whole affair is that the letters were promptly answered and the complaints were promptly attended to. And proper steps were taken to see that the cause for complaints would be, as far as possible, removed.

What a task this was—getting out over 100,000 letters in a short space of time;

ginia will have received a similar letter, as it is the plan to extend the invitation to all subscribers in the Chesapeake & Potomac territory.

Sleet Storm in Ohio Causes Many Poles to Go Down.

A sleet storm December 27 and 28 took down between 400 and 500 poles of the Auglaize Telephone Co., Waynesfield, Ohio. The company's main lead of five crossarms between Waynesfield and Unipolis went down for one mile in one break and there were seven other breaks of from four to 20 poles.

Public Relations Begin at Home

Some Things in the Telephone Business Which Disturb to Some Extent Relations with Public—and the Remedies—Paper Presented at the Syracuse District Meeting of the Up-State Telephone Association of New York

By John P. Boylan

Vice-President and General Manager, Rochester Telephone Corp., Rochester, N. Y.

Our conception of public relations, a few years back, confined this activity to the advertising section of the commercial department. As time went on its message permeated through every department and found a welcome and ready application to the most minute detail of our business. Its progress augurs well for the future of our industry and our efforts to come into closer relationship with the public, to bridge misunderstandings; in a word, to bring about a complete reversal of public opinion of a decade ago is the aim and objective.

Let me touch briefly on some of the things in our business which, of necessity, disturb to some extent our relations with the public.

In the city of Rochester it is necessary to deny the service of hundreds of subscribers every month. While such action on the part of the company is necessary and unavoidable, yet it is bound to roil the waters of the stream of our public relations. Can you conceive how it is possible to shut off the service of a subscriber and have him like it; or, while he is in an unfriendly state of mind, to appease his wrath, by bringing to his attention, through the medium of an advertisement, the fact that the total wire mileage of the Rochester Telephone Corp. is of a length sufficient to reach from Rochester to the moon and back again; or to have him visualize that if all of the telephone instruments in use in Rochester were placed side by side, they would reach from Rochester's Four Corners to Webster, N. Y.

There is a time and place for all advertisements as well as things. How are we, therefore, to present our case to the subscriber in a manner to make him realize the justice of our position?

The fundamentals of public relations are intended to preclude the possibility of a misunderstanding with any of our subscribers, by giving him in many ways and through various channels an intimate knowledge of our affairs—of the size and scope of our business, and the many problems with which we are confronted from day to day.

Applying the fundamental to the matter of "Deny Service" routine, don't you think that a better understanding with our subscriber would obtain if his attention was directed to the fact that, in Rochester for example, our weekly expense ran over \$75,000; that our only source of revenue is from our subscribers, whose bills

are due and payable, and that if payment is not forthcoming when due, we are forced to borrow money from the bank at 6 per cent to meet our obligations; that our subscribers, when applying for service, agree to pay their bills when due; and that when certain of them violate this agreement, either intentionally or otherwise, the company, in justice to the subscribers who remit promptly, has

Are You Ready for the Test?

This road looked all right on the surface when first built. But it was soon discovered that proper foundations had not been laid and that the macadam was not halfway strong enough. So, when the strain came, the bogus nature of the job was revealed.

Somehow, as I rode over this pitiable, make-believe highway, I couldn't but compare it with some business concerns and with some employes. They look all right for a while, but when subjected to a trying test, their foundations are lacking, they prove to have been superficial, unsound, untrustworthy.—B. C. Forbes.

no alternative but to deny service after proper notice has been given?

And speaking of the notice which many companies send out in advance of service denial, would it not be less irritating to the subscriber, if some of the facts just mentioned were incorporated in the notice, rather than a peremptory form letter to the effect that if the bill is not paid on a certain date the service will be suspended; and could we not very properly inform the subscriber that his failure to pay his bill when due, put us to unnecessary expense, and ask for his co-operation when future bills are rendered?

What has been said about "deny service" applies also to other activities of the company. If an applicant for service, when informed that it would require two weeks to install his telephone, was also given the reason therefor—that 600 orders were pending and that the force was installing approximately 60 telephones a day—he would be less apt to criticize what at a first glance appeared to be an unnecessary delay.

We all know that many subscribers will not report long waits for the operator to answer their signals; neither will they advise us of poor supervision, cut-offs, etc.,

for the reason that they don't want to get the operator into trouble, or because they believe that the operator would resent it and take it out on them in the future. If these subscribers could only know that in the majority of troubles just mentioned, the cause is due to some mechanical defect, and their failure to report such trouble permits the poor service to continue indefinitely, their attitude on this point would be changed.

If we could broadcast the fact to every subscriber in Rochester that one-third of a million calls are answered daily, and have them realize that even if one thousand calls went astray—which, of course, is not the case—it would indicate a very low percentage of error, less than one-third of one per cent—and knowing and appreciating this fact—think you that our subscribers, rather than assuming a critical attitude, would not marvel at the stupendous task so well performed? With the subscriber in this frame of mind, it naturally follows that our comparatively few shortcomings will not militate against us.

It will be evident, therefore, that public knowledge of every angle of our business has a direct bearing on the effectiveness of proper public relations.

We all realize that if it were possible for every subscriber to take a trip through one of our central offices, it would go a long way in solving our public relations problem. The psychology of this is apparent to all of us, but in this busy day and age it is difficult of accomplishment for many reasons.

Nothing daunted, certain officials of the New York Telephone Co. decided that if it was not convenient for the public to come to the exchange, they would take the exchange to the public. A portable panel of the largest switchboard manufactured, fully equipped and manned with operators, assisted by others representing subscribers, render a 30-minute demonstration, which is most instructive and intensely interesting. It is an inspiration, and to my mind, will do more in the interest of public relations than anything which has preceded it.

Our most intimate contact with the public is through our employes. Hundreds of thousands of times every day our employes and the public meet, not always face-to-face—more often only voice-to-voice, if one may use such an expression.

The public impression of a company is the one it receives from its employes.

Many a person has a high regard for the Pullman company because a porter was thoughtful and accommodating; and many a man thinks the street railway company in his town does not amount to much because some conductor was needlessly snappy and brusque.

You say that people ought to know that companies mean to do the right thing, regardless of what some individual employe may do, or omit to do. The answer is very plain: To the average person, *the employe is the company*. Very, very few persons in any community ever get much beyond a superficial contact with the rank and file of our employes. To them, those employes are the company.

If those employes impress them well, the company is held in high regard; if otherwise—well, you know the answer. Another thing—poor impressions are more lasting than good ones. People expect good impressions, take them as a matter of course—and forget them; but they remember, and dwell upon, and talk about the bad ones.

Our business is an intimate and vital part of the community. We are daily performing great tasks for the community. We are the means of locating lost articles, reconciling enemies and uniting loved ones; consummating business deals, great and small; and spreading the tidings of calamity and disaster, and bringing relief. All of this is done as a matter of daily routine by us. It is so accepted by the public.

Is that public grateful for our services? We hope it sometimes is. Does it express its gratitude? Not very often. Why? Partly because it has ceased to wonder at the things we do, and expects them as a matter of course. It is only occasionally that a subscriber will stop long enough to commend us for some unusual happening in which we have had a part.

That is the diagnosis. Now what is the remedy? Part of it is educational. We should continue to try to educate our users to know something of the intricacy of the plant which serves them, to see things in such a light that instead of complaining vehemently when things go wrong, they will wonder how we get them right so often.

We must first teach all employes that *they are the company* to those with whom they come in contact; that the company does not act without reason, even though many employes may not know the reason. Further, employes should not attempt explanations of matters with which they are not familiar. Incorrect or faulty explanations will come back to haunt them, and the company, too. Every employe cannot know all about the business, but every employe can learn a reasonable explanation for that which may be beyond his ken.

Human nature is the same the world over. No one likes to profess ignorance

on a subject when his opinion is sought, and this is particularly true when applied to the telephone man. I have two types of employes in mind—the one who to the best of his knowledge attempts to enlighten an inquiring subscriber, and the other who takes a shot in the air and hopes to get away with it, rather than confess his lack of knowledge. I am going to tell two stories—and I personally vouch for the truth of them—to illustrate my point.

A right-of-way employe of a telephone company in New York state was accosted on the street by a friend of his:

"Say, Jim, every once in a while my telephone rings in the middle of the night.

Build Upon Sound Character.

I unhesitatingly put the emphasis first of all upon the importance of sound character—that innate and acquired disposition "to do the right thing, at the right time, in the right way," for no other reason than that one prefers to do and trust the right at all costs and under all circumstances.

There is practically no hope of building a successful life on the foundation of a faulty character. Yet, I believe, of course, that a fault of character can be eradicated.—John G. Shedd, president, Marshall Field & Co.

After I bark my shins getting downstairs to answer the call, I find that some other telephone is wanted, and it's hard for me to get back to sleep again. Now, you are connected with the telephone company, and I want you to tell me what steps I ought to take to remedy this trouble."

Jim meditated a moment and then answered: "Bark your shins, eh? Can't get back to sleep? I'll tell you the answer, Mr. Harris. What you want is an extension telephone on a table by your bed. Then when your bell rings you don't ever have to get out of bed."

And Jim actually secured a contract and sold this subscriber an extension telephone. The case was considered closed.

The other type of employe was a lineman who worked for a telephone company in a western city. His great ambition was to be a trouble-shooter; and this ambition was one day realized when a sleet storm put hundreds of lines out of order and the linemen were pressed into service in this emergency.

Pat Rooney was among the linemen chosen and he started down a street assigned to him to put up a number of drop lines which had broken down. After repairing his first drop line, Pat walked proudly into the office where the telephone was located. He opened the bell box, looked over the apparatus very knowingly, and blew into the transmitter as "experts" are wont to do.

"Your telephone's all right now, sur," he

remarked to the subscriber, who had been watching his every move.

"Just wait a minute," shouted the subscriber who had taken down the telephone receiver. "What is this scraping noise on the line? Listen for yourself."

Pat took the receiver, listened very intently for a few moments and, handing it back, replied: "Don't bother your head about that noise, me good man. It's only sparrows picking on the wire."

"But it is much louder at times than it is now," persisted the subscriber.

"Well, them's pigeons," argued Pat, without batting an eyelid. "Sure, sur, ye ought to be thankful you ain't out West, where the eagles—" But the subscriber had fled into the next office.

I do not know whether the president of the New York Telephone Co. has heard either of these stories, but it is evident that he has given the subject of the employes' contact—both directly and indirectly—with the public, considerable thought; and he has realized, as others have, what a power for good this contact, intelligently directed, would be.

Some months ago he sent a letter to every employe in the organization, with the request that if any subscriber made a complaint of the service, or requested information on any subject, to fill out a slip, designed for the purpose—a number of which the employe should always have available—and to be sure that it was forwarded to the proper department for attention.

In addition to all the things our employes may do in an effort to give efficient service and maintain a satisfactory and contented patronage, we should be ever careful to impress upon them the things they should not do.

We should caution our operators against premature disconnects. We should insist upon our line gangs keeping the wires clear when working on a pole lead. We should admonish our cable men to have no interruption in the service when working on a cable. We should see to it that our rack men and switchboard men exercise every possible precaution which their duties require, so that no connections will be broken; and we should expect our commercial department to make no promises that cannot be fulfilled.

Unless we maintain a persistent supervision of these matters, our constructive efforts will come to naught. Every blunder which an employe makes, inadvertently though it may be, undermines the public relations structure which we are trying so hard to build up. Eternal vigilance in relation to these matters is the price of good telephone service.

The subject of this paper is "Public Relations (like charity) Begin at Home," and the thought I have tried to leave with you is not to overlook the most important medium for promoting cordial public relations—our employes.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

Oh, friends of our heart in the by-gone days,
In the towns we loved of old,
Let's take the track which heads us back,
Once more ere our tales are told.

Let us wander today to the far away,
Back to times that used to be,
And the while you spend with an old-time friend
Will be spent in good company.

We'll change things around and make the old town
As it was in the long ago,
We'll banish things new and all the folks but a few,
The ones that we used to know.

We'll recall, one by one, the things which were done
In those days now far down the years,
Old friends we will meet as we tread the old street,
And old voices will ring in our ears.

Let us spend in this way, one real glorious day
Mid scenes we all loved of old,
And with us you'll agree that worse things could be;
Old friends are better than gold.

It is never hard to interest elderly people by talking about their old home town. Especially is this true if they are no longer residents of it. If they have moved far away and attained more or less years on their string, they are quite sure to be pleased to recall with an old-time cronym the old days in the little burg where they were born.

To the old days when neither poles, wires, cement walks, automobiles, oil sta-

ness during the lapse of years, and the old punishments no longer rankle and hurt.

They only recall the joys. Perhaps that is the way we will feel after we have sold our interests in the telephone field and got our million dollars safely salted away where moth and rust will not corrupt nor oil stock salesmen be able to get at it. We may be sure we will begin to forget somewhat about the disagreeable parts of it, or what we think now are not so good and remember only the good times we used to have as we circulated about the country with our friendly patrons, or our social chats with the board of directors—about our yearly deficits.

We may remember with a truly kindly feeling that the old-time conventions were not such bad things after all; especially if you have been in the telephone business for many years and can remember the time when it started. When with the real pioneers of the game, you can recall together your experiences of the days when you first set your poles up Main Street. How grand the people felt to know that at last their town was bearing the trade marks of prosperity and civic advancement in that row of poles down its main thoroughfare.

That the day would come when these beautiful poles and wires should be considered a menace, undesirable, and the mark of a backwoods burg, was never in your thoughts—but such is the case. One by one the authorities of small towns are waking up and ordering both the telephone and electric light poles and wires off their main streets.

As a fire hazard alone, they are justified in relegating them to the alleys, or

better yet, underground where they belong and will ultimately be as a matter of economical prosecution of the business in these days of cheap cable and efficient protection at points of distribution. The



You Can Recall Together Your Experience of the Days When You First Set Your Poles Up Main Street.

telephone companies should beat the cities to it and dig in for their own good.

The old way of serving patrons was all too wasteful over modern methods in the telephone field, the same as it was in the butcher business. You old men can all remember the glorious Saturday afternoons in the old days when your holiday was not complete unless you visited the old slaughter house away back in the woods or down the creek.

The old time butcher had as equipment in his killing place, or slaughter house, often nothing but a pulley hung to a limb by which he could pull up the carcass of the animal to skin after he had knocked it on the head with his axe. Sometimes he expressed opulence by erecting a rough shed to keep the wolves away from the meat when he desired to let it hang over night.

After skinning the carcass and splitting it open, he gave away the heart, liver, and other such useless and no account parts of the interior, to you boys to take home to use, if you were poor, according to the standard of poverty as was then recognized.

The rest he took to his shop up on Main Street and sold for 5 to 12 cents a pound, according to whether parts were choice or otherwise. A good T bone steak came high in those days and many a boarding house keeper was frequently set back 25 or 30 cents for enough decent meat to feed the bunch of boarders on a Sunday.

We laugh at the wastefulness of these old-time unsophisticated butchers who didn't know their business any better than to throw away a source of good



Those Were the Good Old Days, Sure Enough, But Now They Are Gone Forever. The World Is Moving Along.

tions and electric lights were known, they ramble back and live again as boys or girls the old times, play the old pranks, and recall all the old pleasant doings. The ones, which were distasteful at the time, have lost their terror or unpleasant-



The engineering and production facilities of Automatic Electric Company are at the disposal of all those who desire to render the most modern, satisfactory service at the lowest possible cost. Write the Sales Department for first hand information. No obligation.



Building the World's Most Efficient Telephone Equipment

THE manufacture of successful telephone apparatus cannot be accomplished by the mere bringing together of men, tools and materials. It is an art that requires highly organized facilities backed by intensive research and long practical experience.

Automatic Electric Company began the production of automatic telephone equipment more than thirty years ago. The experience in engineering, manufacture and operation accumulated during these many years is reflected in the Strowger Automatic telephone system of today which has demonstrated its ability to meet every requirement of service in a most satisfactory and efficient way!

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS.

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd.
London.

Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



revenue in passing out the heart and other choice morsels for nothing, or throwing them away.

But how much better were you Mr. Telephone Man when you started in business? Of course, you never gave service for less than you ought to nor threw away the odds and ends of choice revenue, like free service, to people who were not even subscribers to the service.

You did not even match the old-time butcher, for he tried at least to give the odds and ends to needy people, whereas you often gave to any one who wanted to use the telephone. In throwing out inducements for people to use telephones, did not you render it unnecessary for them to have a telephone at all when they could use their neighbor's telephone for service to several towns round about free?

When the old-time butcher gave away odds and ends to people, he rendered it unnecessary for some people to buy any meat. He was a philanthropist unknowingly but you were worse because you did not even make any distinction between those who should and could pay and those who were not supposed to be able. Your bread line, too, was different because no one went hungry when they could not use the telephone, but they often did when no cows were slaughtered for their steaks alone.

Those were the good old days sure enough, but now they are gone forever, we hope, in about every community. There are some companies left I know who still hand out free service where there ought to be a toll charge, but in most cases the tolls for this business are collected and help to pay expenses as they should. There is no reason why the steak-eaters should be made to pay it all.

If you have not sold out but still are in business, you might as well get ready to put a large share of your city lines under the ground. Plan it in such a way that you may have a term of years to do it in and not be compelled to push a two or three-year program through in one season when your town wakes up to white-ways, paving and a Main Street free of wires and poles. You have got to do it or go out of business. The world moves along, even if we don't feel any jar.

APHORISM: The last steer in the herd feels the whip the hardest.

Michigan State Company to Retire \$4,000,000 Preferred Stock.

Directors of the Michigan State Telephone Co., at a meeting in Detroit December 17, voted to redeem and retire on February 1, 1923, the company's entire issue of preferred stock amounting to \$4,000,000, comprising 40,000 shares of \$100 par value.

The company announced that the holders of this stock on surrendering the certificates indorsed in blank, at the office of the Union Trust Co., Detroit, on or before February 1, 1923, will be entitled to re-

NOW.

By Frank H. Williams.

Now is the time to ask all the young men, who at night hang around in front of your office waiting for their "lady friends," to step inside and wait where it is warm and comfortable instead of freezing to death outside.

In some cases the fact that young men congregate in and about the telephone office, when waiting for "dates," is really objectionable because it gives rise to gossip that the telephone girls come out and allow themselves to be picked up by men they don't know and all that sort of thing.

By asking the young men to come inside and wait, the company would be putting the whole thing on a perfectly respectable, entirely irreproachable basis and at the same time would be pleasing the girls and making a hit with the young men, all of which would be of distinct help in increasing the company's prestige for being a live wire proposition.

Now is the time to stop giving the names and addresses of hidden telephone numbers attached to advertisements in the newspapers, etc. Quite often it is the case that when a newspaper advertiser attaches only a telephone number for signature, it is because he doesn't want his name and address known. So it is an injustice for the telephone company to give away the advertiser's secret, just because some unknown person calls up and asks for the information.

Of course, in cases where the inquirer can show unmistakably that the information should be imparted to him, there is no reason why this shouldn't be done, but in the general run of cases it is poor policy to give out information of this sort about numbers.

Now is the time to stop giving out the time of the day. The business of the telephone company is to put subscribers in immediate connection with each other and anything that interferes in the slightest degree with that business should be eliminated. It does slow up the service to stop for the purpose of giving out the

time of day to every person who inquires about it. So why not cut it out?

Now is the time to go after more private branch exchange business—and one of the best ways of going after such business is by getting up a chart showing the amount of business which was being handled over trunk lines by various concerns of the city before installing private branch exchanges. Such charts would be used in visualizing to prospects the fact that they are just at the point where a private branch exchange is just about absolutely necessary.

Now is the time to get some publicity in the local newspapers showing the telephone-using public just how their interests are conserved in spite of storm and sleet and snow and ice by the telephone company's efficient corps of repairmen. Most newspapers would welcome any information along such a line, particularly if it was accompanied by snappy and interesting pictures, and the newspapers would gladly give such information to the public in news stories which would cost the telephone company nothing.

Such news stories would, of course, help to increase the company's prestige for being always on the job and so would be a splendid thing for the company from every possible angle.

Now is the time to "pep up" the office force by staging some sort of a party for them because at this time of the year the weather is depressing and everyone feels out of sorts and a party is one of the best ways in the world of renewing enthusiasm among the workers and getting them to handle the routine with the usual snap and enthusiasm.

Now is the time for personal checking up and balancing and seeing whether or not you—yourself—are doing everything you possibly can to make your company step right ahead. And if you aren't doing all that you could do, now is the time for turning over a new leaf and starting in to do your utmost all the time.

ceive \$100.50 a share, this representing the par value of the shares with all dividends accumulated on the stock to February 1.

Under the action taken by the company's directors, every share of the preferred stock will be considered to have been retired on February 1, 1923, and any holders of preferred stock after the beginning of that date will not be recognized as having any further rights in the property or earnings of the company or any right to vote as stockholders of the company.

The amount of preferred stock authorized and outstanding was increased from

\$2,285,000 to \$4,000,000 in October, 1913, at which time the amount of common stock authorized and outstanding also was increased from \$3,500,000 to \$6,000,000. The preferred stock is 6 per cent cumulative as to dividends and has equal voting rights with the common stock. Under the terms of its issuance, the company is privileged to call it for redemption and retirement on February 1 of any year at par with accrued dividends.

Retirement of the preferred stock will leave the Michigan State company with \$6,000,000 of outstanding capital stock all of one class.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

"We do not bill rental accounts—just a postal card reminder," says Ed Schade, general manager of the Johnstown Telephone Co., Johnstown, Pa., in sending us a sample postal card he uses. The card reads in bold face type:

"January 1, 1923

"Your quarterly telephone rent is due. Pay now! Save the penalty, avoid the crowds and thereby live up to your contract."

Then it continues, the first three words of each paragraph being in bold face type:

"In this community a large number of families derive a portion of their income from dividends of this company; it is essentially a thrifty and progressive community in which disturbers and agitators find little sympathy.

For the loyalty which the patrons have extended this company and made possible our tremendous success, we are deeply conscious and sincerely grateful. Our efforts would have been in vain without this support, and it is with pleasure that we voice an expression of whole-hearted appreciation on behalf of our more than one thousand stockholders.

It shall always be our ambition to merit your confidence and good will to the end that this organization may ever continue to serve you to the advancement of our mutual interests.

We sincerely wish you a most prosperous New Year.

JOHNSTOWN TELEPHONE COMPANY."

Early last month officials of the Peninsular Telephone Co., Tampa, Fla., were hosts to the officers of the Chamber of Commerce, the Kiwanis Club and city officials of Sarasota, Fla., during which the matter of telephone service was discussed.

W. U. Lathrop, district superintendent of the company, was the first of the company's officials called upon by Toastmaster A. B. Edwards, president of the Sarasota County Chamber of Commerce. He spoke of the desire of the company to give Sarasota telephone service the equal of any furnished to a place of similar size.

President W. G. Brorien, of the company, after picturing the development which is about to take place along the shores of the Gulf of Mexico, said that the purpose of the meeting was to put before the subscribers and ascertain their desires as to the installation of automatic service. It would be necessary, he stated, to make a slightly higher charge, estimated at \$1 a month, making a business telephone cost \$4.50 and residence \$3.50.

A. B. Steuart, general auditor, and

C. D. Brorien, secretary, were other speakers for the company. After an expression of approval of the company's plans by Dr. Joe Halton, the question of the new service at an increased cost was put to a rising vote, and it was found that it was unanimously favored by those present.

A resolution of thanks for the consideration shown by the officials of the Peninsular Telephone Co. to their subscribers and for the splendid dinner which had been enjoyed was also unanimously adopted by a rising vote.

Out on the Pacific Coast, subscribers of the Puget Sound Telephone Co., of Everett, Wash., received a white post-card with these words printed in green ink:

"The season's greetings.

Throughout the days of the year, over busy wires your voices mingle with ours. To your calls our hearts and hands respond with devoted attention. And though the miles lie between, this network of wires has woven our daily task intimately into the fabric of your lives.

So we are remembering that at this season our task plays its part in the sum total of your holiday joy. For as Christmas comes once more, there are folks, far and near, who love the sound of your spoken voice. If to them you would send a cheery wish for their Christmas Day, may we hope that to us you will award the joy of putting wings on your words and added cheer in a Christmas for you and yours.

THE SWITCHBOARD OPERATORS OF THE
PUGET SOUND TELEPHONE COMPANY."
December, 1922.

The public relations committee of the South Dakota Telephone Association, of which M. E. Guinter, of Sioux Falls, is chairman, has sent out a letter to members and non-members, bearing the head, "Our State Association."

There is so much of interest to telephone men generally that part of the letter is reprinted here. It says:

"Our association plays an important part in the telephone industry of this state. Its committees are active, and becoming more active daily as the changing conditions demand. Still there are many managers who have refused, refrained or neglected to associate their companies with the state association.

Has it ever occurred to you, Mr. Non-Member Manager, that there are fundamental reasons for the existence of a state telephone association? If you agree with us regarding this fact, the question is: 'Why have you not done your part to-

wards helping the state association to measure up to the standard set by the fundamental reasons for its existence?'

The association has been organized with the sole object to aid the telephone industry in this state; to have certain committees which are capable of performing the functions demanded of them in their various capacities, composed of men who are competent to give advice upon any subject relating to accounting, operation and maintenance of telephone systems; to represent the telephone interests of the state before any legislative body, commissions, governmental officers or regulatory bodies; to assist in the preparation of rate cases or any other matter coming up before a regulatory body; to furnish legal advice or legal assistance, if necessary, to defend members in lawsuits, if in the opinion of the executive committee an adverse decision would reflect upon the telephone industry of the state.

Don't you think, Mr. Non-Member Manager, that the reasons enumerated comprise a pretty sound argument in favor of associating your company as a member of the state association? Don't you think that the time may come when you may need assistance in one or more of the matters referred to, in order that you may successfully perform the task of furnishing efficient and standardized telephone service to your patrons and the public?

Membership in the state association results in closer relationship between telephone companies, more uniformity in service and practices, which is particularly essential under the trying conditions through which the industry is passing, and your assistance will enable the telephone industry to give a standard of service equal to or superior to that furnished by any other public utility, the best service possible at the lowest rates.

The officers, the directors and committees of the association act without compensation. The various activities of the officers, directors and committees of the state association surely has its effect on the telephone industry of the state, because it associates an array of talent, experience and opinion, which results in a benefit to the telephone industry.

The managers of member companies, who, through their efforts and support, were instrumental in holding the association together in the past few years, are entitled to a great deal of credit. Now that the association is in a position to handle any matter that may come up through the executive committee or other committees, it would seem that every company should endeavor to become members of the state telephone association."

Attention is directed to the annual con-

vention to be held in the city of Huron, Wednesday, Thursday and Friday, January 17, 18 and 19, 1923. Non-members are especially invited to attend this convention, because the committee in charge is doing everything possible to make it profitable, beneficial and sociable to all who attend.

Members of the association are asked to drop a card to their neighbor non-member companies urging them to attend the convention, and members and non-members are urged to make every reasonable effort to be at the convention.

Again a telephone girl has proved a heroine, this time by rousing a sleeping village in time to prevent the looting of the local bank. Leona Haefler, 19-year-old night operator at Hanover, a small hamlet about 30 miles northwest of Minneapolis, Minn., advised at 2 a. m., December 20, that bandits were attempting to blow the bank safe, called almost the entire population to arms in time to prevent the loss of a single dollar.

As the lights began to flash, first in one home and then in another, the bandit look-out became alarmed and sounded a warning to his confederates.

They hastened to the local telephone exchange and cut the cables but not in time. Before they could get back to their work half the town was hot on their heels. Leaving their tools, the robbers ran to their car and fled out of town.

"I hope they fix those cables right away," was Miss Haefler's only comment as she smiled at admiring neighbors after the smoke of battle had cleared away.

"I am going to tell you a little about our last year's work—that is, the year of 1922 which ended on December 20," writes Manta J. Elder, chief operator, Kansas Telephone Co., Ottawa, Kans. "The traffic department does feel a little proud of its record for the year, and I believe we are justified in so feeling.

"First, our toll operators have completed 90.7 per cent of all 'out' business for the year. This is a record for us as we have no yearly record over 85.9 per cent, completed in 1921. We feel that our toll operators and supervisors deserve credit for the excellent work they have done the past year. The new year finds us swinging right ahead with an average of about 91.0 per cent each day so far. We are already talking of a 91 or 92 per cent for 1923.

Our local department has also made a good record this past year. To date we have received 49 service complaints against 85 in 1921. In 1920 we had a record of 102 service complaints, so you see we are improving some.

The quality of the reports has changed also; for instance, in 1920 we had 41 reports of slow answers and recalls; in 1921 we had eight such reports, and in 1922 only six. In many instances service

complaints are traced to faulty equipment, and the operator is really not at fault.

In the past four years there have been nine reports of the operator being impudent to the subscriber, the very worst report we can have. Four of these were in 1918; 1920, two reports; in 1921, four such reports, and none in 1922.

Impudence is, of course, not tolerated, but we have had operators reported for impudence when they had done nothing worse than politely request the use of a party line when the time limit had expired.

Our average period of service is 28 months—22 months is our lowest average for the year. A report is made every three months. On January 1, 1921, our average was 14 months, and on January 1, 1922, it was 23 months. This average includes the chief operator's service.

The difference in the percentage of completed business on long distance and the amount of service complaints shows that the efficient force is the experienced force; also that it takes many months to train an operator to the highest degree of efficiency—something the public never takes into consideration.

We are very fortunate this new year in retaining many of our old operators. Out of a force of 28, not including the chief operator, we are beginning the year with 17 operators whose average service is 33 months. They are classed as follows: One evening chief operator, two toll supervisors, one local supervisor, five toll operators, one information operator and seven local operators.

The chief operator's record of service is 16 years, 9 months and 15 days, January 1, 1923. Out of a force of 29 traffic employes we are able to retain 18 employes.

Is not this a pretty good record? The other eleven are doing excellent work for new operators. Consequently we are starting the new year full speed ahead and hoping we will make even a better record for 1923 than ever before.

We have much to thank our company for also this past year. Our offices and rest room have been redecorated. We have been presented with comfortable new chairs for the switchboard and information desk, new records for Christmas for our rest room phonograph, and many other conveniences and comforts."

It's the usual order of affairs to pause before starting the work of a new year, take stock of our shortcomings and use this analysis as a means for improvement.

But Miss Elder goes about it in a businesslike manner. She completes the analysis by taking account of assets as well as liabilities. Thus, the Kansas company operators know they have done well in the past and can do better in the future.

The new Emerson telephone exchange just completed for the Tri-State Telephone & Telegraph Co., St. Paul, is conceded by many telephone men who have seen it to be one of the most artistic small residential exchanges in the Northwest, if not the entire country. The building, including equipment and outside plant, represents an investment approximating \$400,000 and is the second to be constructed by the Tri-State company in St. Paul within the year.

The new Emerson exchange, as illustrated herewith, is located at Palace street and Fairview avenue, in the southwestern portion of the city, a section as yet but little developed. Telephone company engineers, however, have estimated that the exchange will be called upon to serve at least 10,000 subscribers within the next 15 or 20 years. The equipment is all automatic and a major part of the outside construction has been placed underground.

The building is of the library type, the outside walls of buff brick with a red tile roof. The surrounding grounds have been beautifully landscaped, making a setting in keeping with whatever that part of the city may develop as a residential center.



Rather Nifty, Isn't It? It's the New Emerson Exchange of the Tri-State Telephone & Telegraph Co. in One of St. Paul's Residence Districts.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Cuts Charges for Telephone Service in Minnesota Hotels.

An investigation of several months' duration came to an end on December 28 when the Minnesota Railroad & Warehouse Commission reduced the message charge for service in Class Two hotels in St. Paul, Minneapolis and Duluth, from ten to five cents each and the monthly rental per station for room telephones from 75 to 60 cents. Class Two hotels are those which do not have an operator devoting her time exclusively to the switchboard.

Of the ten-cent charge now made on each message, five cents goes to the hotel as commission. Under the new ruling, the commission is not to exceed one cent.

All hotels charging other than the new rate provided for Class Two are required by the order to maintain in the lobby or other public place conveniently available to guests and to the public, a public booth or booths. At these booths the local public pay station rate of five cents will be charged and each booth will have a notice to this effect posted in it.

Class One hotels—those having one or more persons employed exclusively as switchboard operators—may accept the schedule provided for Class Two, upon written notice to the telephone company.

Prior to the order entered by the United States District Court on April 1, 1921, the message rate was five cents, one-half of which was paid by the telephone company to the hotels as commission. The commissions were fixed in a number of instances by contracts upon a 50 per cent basis and the commission of the hotels was automatically increased when the rate was increased.

On toll messages the hotels receive 20 per cent commission, but it is not to exceed ten cents on any one message, and then only on such messages as pass entirely over the lines of the Tri-State Telephone & Telegraph Co. (for St. Paul hotels) or the Northwestern Bell Telephone Co. (for Minneapolis and Duluth hotels).

The authorized message rate for public pay stations in hotels is five cents, of which the hotel receives one cent as commission.

The matter of operating expense borne by the hotel was given much consideration by the commission. As many as nine operators are employed by one hotel, and the proper distribution of the expense of maintaining P. B. X. boards presented some difficulty.

The service rendered a patron in han-

dling an outside call through the P. B. X. is greater than that rendered in handling a call from a public pay station booth connected directly with central, and the expense of handling is likewise greater. The hotel also acts as auditor and collector for the telephone company.

However, in addition to handling public telephone messages, the P. B. X. operators also handle interior hotel service, such as bell boy calls and other accommodations for the guest, which are of a nature private to the hotel and not chargeable to the operation of a public telephone system.

The investigation brought out that several of the larger hotels showed earnings received through commissions which—if not charged with the expense of the operation of the P. B. X. switchboards—would pay for the entire interior operation of the telephone installation. But none of the hotels—if charged with the expense of operating the P. B. X. boards—would earn sufficient to pay for the operation of the exchange.

The hotels introduced testimony tending to show that strictly hotel service was only about one-fourth of the total volume of traffic passing through the P. B. X. boards.

It was shown that in Class One hotels the telephone company receives a considerable portion of its revenues from message and toll rates; while in Class Two hotels the rental revenues are proportionately great.

While the hotel should be reimbursed for the expense of acting as agent for the telephone company in rendering public service and the expense should be included in the rate, it was held that the hotel could not be allowed a profit upon such service.

The evidence disclosed payment of \$50 a month to one of the Class One hotels, to be applied toward the payment of an operator at the P. B. X. board. This was held to be discriminatory and in the nature of a rebate to the hotel and the commission said that it should be discontinued.

After looking at the matter from all angles, the commission decided that charges of 10 cents per message and 75 cents per station per month were unreasonable. The new rates become effective January 15.

Objectors Sanction Rate Increase—Commission Grants It.

The Farmers' Telephone Co. of Lee County was given authority by the Illinois Commerce Commission to increase its

rates to 75 cents and \$1.00 a month. The order was entered on December 6 and applies to the company's exchanges at Amboy, Ashton, Franklin Grove, Sublette and Lee Center.

After the hearing, at which there were several objections made to the increase—Mr. Blowers, who represented a group of the objectors, was elected a director of the company and was by that fact placed in a position to investigate the financial condition of the company.

He stated to the investigator for the commission that he had gone over the accounts and was satisfied that the requested rates of \$9 and \$12 per year would not be sufficient. He was certain that the former objectors would be pleased to have these rates fixed for rural service where the subscriber owns the line.

Final Hearing and Arguments on Rates in Los Angeles, Calif.

The hearing before the California Railroad Commission on the rates of the Southern California Telephone Co. for service in Los Angeles, closed on December 19 with an argument by City Attorney Stevens, who declared the city was entitled to a reduction of rates because of inadequate service.

He contended that reduced rates should be effective until July, at least, when the company might, if it could show good service, ask to have the rates restored.

Three witnesses called by the commission preceded the argument. They were J. H. Corcoran, general traffic manager, who declared the service was "commendably high grade, considering conditions"; Leo Keller, a consulting engineer, who said he had got nine calls on which he considered the service worthless out of a total of 100; Miss Blaze, chief operator at the Pico exchange, one of the most congested offices, who declared the service was "creditable."

Mr. Keller was formerly connected with the Home Telephone Co., nucleus of the present company. He assigned the failures of service to the upsetting of the system by the improvements under way.

Further explanation of the difficult conditions, the inevitable outgrowth of the city's unprecedented increase in population within the past decade, under which the local telephone service has been maintained and expanded, were given at the hearing by N. R. Powley, commercial superintendent of the system.

The history of the company's activities since 1911, as recited by Mr. Powley, fur-

nished not only a comprehensive outline of the growth of Los Angeles during the same period, but projected a vision of development the realization of which is expected within the next 20 years.

In 1911, Mr. Powley stated, the telephone company made an estimate of future service demands extending to the close of the present year. This estimate has worked out with exactitude until less than three months ago. In October last an unexpected upward swing of the curve of estimate had to be made, to include the sudden influx of people into the city.

Dr. H. G. Brainerd, for the physicians and surgeons, and Frank L. Ray, attorney for the lawyers' group, were witnesses in the matter of a protest against excessive rates charged and poor service given by the telephone company to users of an intercommunicating trunk line system installed in various office buildings of the downtown section.

Supreme Court Rules Against Illinois Bell on Peoria Rates.

A decision rendered against the Illinois Bell Telephone Co. on December 21 by the Illinois Supreme Court continues the present rates for service in Peoria and vicinity. The supreme court held that the company could not increase its rates without first laying its case before the Illinois Commerce Commission. The ruling is the result of an appeal from the decision of a lower court against the company.

On November 1, 1921, the company proposed to put into immediate effect an increase of 30 per cent in rates. The city secured a temporary restraining order from the circuit court, which was later made permanent.

A month previous to the effort to raise rates in Peoria, the circuit court had ruled favorably for the company. The court enjoined the Illinois Commerce Commission from interfering and held the company within its rights. The commission appealed to the appellate court of the third district and the decision was reversed. The company then took the case to the supreme court, which upheld the appellate court.

Indiana Bell Equipment and Organization Discussed at Hearing.

Inquiry and testimony concerning the part Bell telephone interests have had in developing telephone instruments and advancing telephone service occupied a considerable part of the time last week at the hearing which the Indiana Public Service Commission is conducting in connection with the Indiana Bell Telephone Co.'s petition for higher rates. The hearing was resumed this week.

The Bell pays to the American Telephone & Telegraph Co., its parent company, 4½ per cent of its gross receipts, and the company avers that the payment is for rental of instrument sets, which

include transmitters, receivers and induction coils, and for general services. Bell witnesses have testified much concerning alleged superiority of Bell instrument sets over those of Independent companies, and concerning how the A. T. & T. general staff has developed the business.

After a long line of questioning of George Thompson, who for 48 years has been developing instrument sets for the A. T. & T., Frank Faris, an attorney for the commission, asked Mr. Thompson:

"Do you want to go on record as saying that no Independent transmitter is as efficient as the Bell transmitter?"

"The best of the Independents," Mr. Thompson said, "compared with the best of the Bell transmitters, show the Bell transmitters to be just a shade better."

"Would the layman telephone user be able to detect the difference?" inquired Faris.

"I don't think the layman could," he replied, "but it is desired to have as efficient a transmitter as possible."

Later Mr. Thompson testified: "Many of the Independent types (speaking of instruments) were good operating types."

Regarding comparisons of Independent receivers with the Bell receiver, he testified that one Independent receiver runs "very close to the Bell receiver."

Mr. Faris asked him: "Would you not say it is possible to get good service out of Independent instruments?"

Mr. Thompson replied: "In a great many cases, yes, and in some cases, no."

Mr. Faris drew from Mr. Thompson that some of the Bell improved parts were not put into use until after similar improved parts had been put into use by Independent companies, and Will H. Thompson, attorney for the company, drew from the witness that in other instances the Bell had preceded Independents in making improvements available.

Mr. Faris was attempting to show that the A. T. & T. collects from its Indiana subsidiary money for certain specific instruments and services availed by the subsidiary to be more efficient and available sooner to its patrons than to patrons of Independent companies, but that Independent companies without the so-called super-service of the A. T. & T. give as good telephone service and provide their patrons with modern service and appliances as soon as the Bell does.

Many of Mr. Thompson's replies were of a technical nature, and he made numerous explanations of instruments and pictures used as exhibits. As to the comparative merits of instruments, he said, for example:

"I have compared the Bell transmitter with many Independent transmitters and I can say that it is as good or better."

"I do not find any features in Independent transmitters which would improve upon the Bell No. 323." This num-

ber is the latest type of Bell transmitter.

"I do not think any quite as efficient as our latest type Bell 323 transmitter."

As to priority of certain improvements in transmitters and receivers, he admitted on cross-examination by Mr. Faris that in some cases the Independents score first. For example, he said the cup method of suspension and concealed binding posts of receivers of Independents ante-dated Bell receivers containing these features.

Services provided by the A. T. & T. to the Indiana Bell are of the greatest value to patrons of the Indiana Bell because they result in more efficient telephone facilities and lower operating costs, according to B. G. Halstead, engineer for the Indiana Bell company, who testified at the hearing.

Mr. Halstead told the commission that quadded cables used by the Indiana company were developed by the A. T. & T., and that the cables do work that would require property costing \$22,523 more than their cost if the quadded cable were not available as a result of A. T. & T. services. This was one example of the savings he averred were effected as a result of the connection between the two organizations.

The engineer testified that Independent lines in Indiana do not have the facilities to make considerable use of the so-called phantom circuits which the Bell employs at a saving in operation cost. He attributed its development also to the A. T. & T. He said that some phantom circuits had been attempted by the Indianapolis Telephone Co., which was bought by the Bell, but that the circuits had to be improved before they gave service that measured up to Bell standards.

Mr. Halstead testified that the Indiana Bell company makes extensive use of the repeaters in order to provide adequate reproduction of voices conversing at long distances. He said that, for example, in a long distance conversation between Bloomington and Goshen repeaters would be brought into the circuit at Logansport and possibly at Indianapolis. The repeater also was set up as a peculiarly Bell product. He said that to effect the same result without a repeater, it would be necessary to use much larger and more expensive wire. This, it was pointed out, would require greater capital, and, consequently, greater return through rates.

The Bell's toll lines in Indiana, he testified, are, with the few exceptions of those acquired from the Indianapolis Telephone Co., in first-class condition. He stated that within the next few years the company would have to make at considerable expense several underground connections for long distance lines.

The fundamental plan which the Indiana company follows in developing telephone service in a community also was offered as a product of the Indiana Bell-

Order Now--And Be Prepared For Winter Storms



Line Wire Sleeve Before Twisting



Line Wire Sleeve After Twisting

The strength and transmission efficiency of **your** lines are largely dependent on the strength of the splices. The best guarantee for satisfactory service you can have is

RELIABLE SLEEVES

(for Perfect Splicing)

Reliable Sleeves are made and inspected to comply with the standard specifications of the largest telephone and telegraph companies.

Every sleeve that is shipped from our factory is guaranteed to pass inspection under these most exacting specifications.

Reliable Copper Sleeves have ample length, and strength to assure splices as strong as the line itself, and moreover make a low resistance splice.

Reliable Double Tube Copper Sleeves

(A. T. & T. Standard)

The "Rust Resisting Qualities" of RELIABLE Tinned Steel Sleeves far surpass any others, because of perfected methods of manufacture, which insure a "heavy" and "uniform coating" of tin.

A TEST WILL PROVE IT!



Underground Cable Sleeve

Reliable Single Tube Split Tinned Copper Cable Sleeves are just the thing for splicing underground cables. The heavy copper makes a strong splice; the tinning and open slot enable the cable man to make a perfect soldered joint. The taper enables him to insulate the splice, as well as the joint itself is insulated.

Reliable
Electric Company

3145 Carroll Avenue

CHICAGO, U. S. A.

A. T. & T. relationship. The plans are so accurate, he testified, and so scientifically made that those made by A. T. & T. experts for Indianapolis in 1906 and 1913 did not have to be changed in any material part as time passed. To do this, he testified, great knowledge and understanding of a lot of subjects was necessary.

He testified that it is the policy of the Indiana Bell company not to urge connecting companies to use Bell instruments. He said it is the policy of the company to reset and to stub poles as long as possible to avoid expense attached to replacement with new poles. He said as many poles were stubbed as were reset.

Mr. Faris attempted to draw from the witness that the A. T. & T. sent out detailed bulletins prepared at considerable expense which would deal with relatively unimportant subjects, and that this was practically a waste of telephone users' money. He brought out that one bulletin contained plans and specifications for stubbing poles, and tried to draw from the witness that any ordinary telephone company pole man could do a first-class job of stubbing without having expensively prepared rules and regulations for doing the same.

Mr. Faris worked along a similar line, dealing with instructions for the manufacture of thimble guy rods and the manufacture of lead covered cables. He tried to show that it was of no material use to field men to receive expensively prepared copies of such specifications intended for manufacturers.

When those who are to become directors of the Indiana Bell Telephone Co. buy a qualifying share of stock, they sign an agreement giving the American Telephone & Telegraph Co. an option to buy it back at par "at any time within one year" after ceasing to be directors, and they file a copy of the agreement with the Indiana Bell "forthwith."

This was shown in an exhibit filed with the commission at the request of Frederick VanNuys, of counsel for the state, in seeking to show that the directors of the Indiana Bell are not "bona-fide" within the requirements of the law of the state, and are acting for the American Telephone & Telegraph Co., holder of Indiana Bell stock, and not as stockholder directors in their own right.

The provisions of the agreement indicate, Mr. Van Nuys said, that the A. T. & T. does not desire minority stockholders in the Indiana Bell, for the option the directors sign when they buy a qualifying share also provides that it shall be binding on executors, administrators and assigns.

Mr. Van Nuys also sought to show that the directors of the Indiana Bell, particularly Indiana directors, who must constitute a majority of the board under the state law, do not control the policies of

the Indiana Bell, but formally confirm policies submitted to them in the form of prepared resolutions at the dictation of the A. T. & T.

Facts about the option agreement and work of the directors were brought out in an examination by Mr. Van Nuys of Frank D. Stalnaker and Elmer W. Stout, of Indianapolis, and George G. Hall, of Evansville, all directors.

Each of these directors has one share of stock, known as a qualifying share. The A. T. & T. owns all of the stock of the Indiana Bell except a few shares used to qualify directors.

In the answers the three directors made to Mr. Van Nuys' questions, it was brought out that the board, as a rule, adopted resolutions submitted by C. H. Rottger, president of the Indiana Bell, without extensive investigation.

W. H. Thompson, attorney for the Indiana Bell, objected at the start of Mr. Van Nuys' examination of the director witnesses when Mr. Van Nuys asked Mr. Stalnaker what were the circumstances of his acquisition of a share of stock and becoming a director. After discussion of whether the inquiry was material, Commissioner Edgar Blessing ruled that it was.

Mr. Thompson said the regulatory powers of the commission do not extend to management, and it was immaterial to find out, for example, what the directors knew about the 4½ per cent contract under which the Indiana Bell pays annually 4½ per cent of its gross receipts to the A. T. & T. for lease of instrument sets and for services of the general staff. It was material, he said, to find out whether the services provided under the contract could be obtained for less. He said stock ownership of Indiana Bell stock by the A. T. & T. had been approved by order of the commission some time ago.

Replying to Mr. Van Nuys' question as to the circumstances of his purchase of a share of Indiana Bell stock, Mr. Stalnaker said he was notified he "was to be or had been chosen as a director."

Replying to other questions, he said the directors met four or five times a year, and the sessions usually lasted an hour or an hour and a half. He said the board did not have an executive committee.

Minnesota Commission Grants Bell Increase in Duluth.

With slight variation, the Minnesota Railroad & Warehouse Commission authorized the increased rates proposed by the Northwestern Bell Telephone Co. for service in Duluth. The order—which was entered December 26 and became effective January 1—was dissented to by Commissioner O. P. B. Jacobson.

The figures presented at the hearing by the commission's engineer were used by the commission in determining the rates. The value new of the Duluth exchange

plant was fixed at \$4,287,516, its condition per cent, 89, and the fair value of the property devoted to public use as of June 30, 1922, \$3,817,537.

The average per station operating expense for 1921 was found to be \$32.60, and for the year 1922—based upon figures for the first six months—\$31.88. This decrease in operating expense was in the face of average increased costs in materials and supplies and the commission was of the opinion that it probably resulted from greater efficiency developed as the operating departments recovered from the upheaval in the organization during the war period.

Duluth has an operating expense per station which is high when compared with most other cities of a similar class. The city presented evidence showing the following comparison: Minneapolis, \$39.20; Duluth, \$32.41; St. Cloud, \$22.40; Virginia, \$19.20; and LaCrosse, \$18.13.

"These figures," the commission stated, "illustrate the unreliability of comparisons of different exchanges. In Minneapolis there is a book cost investment of \$168.39 per station; Duluth, \$158.24; St. Cloud, \$99.57; Virginia, \$87.44; and LaCrosse, \$69.29."

A comparison of 70 Class A companies of the United States with the Northwestern Bell showed an average operating expense of \$20 per station for the 70 companies and \$16.48 for the Northwestern Bell.

An explanation of the higher investment and operating cost in Duluth was found in the peculiar geographical shape of that city. It is 29 miles in length and two miles in width, necessitating six separate exchanges as compared with two at La Crosse.

The net return—based on figures for the first half of the year—for 1922 was found to be 2.55 per cent. The total revenues were \$823,691, operating expenses and deductions \$726,502, and net earnings \$97,189. This was an increase of about \$8,000 over 1921, which was due to decrease in operating expenses.

In the commission's order of April 29, 1922, it was stated that the rates in effect at that time produced a net return upon the company's property in Minnesota of 5.85 per cent. The commission was of the opinion that the downward trend of labor and material costs at that time would continue and that the same rates would bring the company to a higher return.

It is now stated by the commission, "In view of the subsequent developments, we possibly were a little optimistic. The trend of material costs for the second six months of 1922 has been somewhat higher than the first six months, while labor continues on about an even trend."

Under the proposed schedule it was estimated that the return would be 6.79 per cent upon the fair value of the property.

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DIAL CONTROL

The proposed rural rate was rejected by the commission "because of the present depressed condition of the agricultural industry." A rate 50 cents lower was substituted and a rate 25 cents lower than that proposed for business extensions was allowed.

The old and new rates are:

	Old rates.	New rates.
Business:		
One-party	\$ 7.00	\$ 8.00
Two-party	5.50	6.50
Incoming line	4.20	4.75
Residence:		
One-party	2.50	3.50
Two-party	2.00	2.75
Four-party	2.00	2.75
Rural	2.00	2.20
Service stations		1.00
Private branch exchange:		
Two-way trunks	10.50	12.00
Incoming trunks	5.25	6.00
Extension (with or without bell):		
Business	1.00	1.25
Residence, wall set.....		.75
Residence, desk set.....		1.00

The four-party residence rate is applicable only in four-party rate areas, which are outside the base rate area.

The rate for business joint user service is to be \$2.50 a month.

For extension stations located outside the building in which the main station is located but on the subscriber's continuous premises, the mileage charge will be 60 cents per month for each one-quarter mile or fraction thereof, computed on the air line distance between the building in which the main station is located and the extension station.

Special rates which have been in effect for main station service in public libraries, offices of Y. M. C. A. or Y. W. C. A. secretaries at association buildings, rooms occupied by charitable societies, hospitals—excepting private hospitals—engaged exclusively in charitable work, are to be canceled and superseded by the regular business rate.

In granting the 40 per cent increase in one-party residence service the commission pointed out that the rates in Duluth have been unusually low as compared with the residence rates in other towns and cities of the state. The monthly residence rate in Duluth has been \$2.50, as compared with \$2.75 at Rochester and Winona, and \$3.75 in Minneapolis and St. Paul.

Commissioner Jacobson dissents on the ground that he considers that the company's earnings as a whole within the state should be considered, including toll and exchange earnings. He states that he believes if such an inquiry were made it would be found that the company was earning an adequate return on the fair value of its property within the state.

He also points out that he did not sign the majority order of April 29, 1922, in which the commission stated that the rates in effect at that time should not be increased in view of reduction in costs and possible future economies in operation.

Missouri Company Given Time Extension on Order for Repairs.

The Missouri Public Service Commission entered a supplementary order on December 19 granting the Columbia Telephone Co., of Columbia, an extension of four months in which to complete the repairs to the rural line portion of the exchange and make additions to the switchboard, as required in the order of September 26.

The company advised the commission that the non-receipt of material for outside construction and additions to the switchboard had delayed the completion of the work. The effective date of the original order was accordingly changed from January 1 to May 1.

Nebraska Radicals Propose Abolition of State Commission.

Nebraska political leaders are serving notice on the telephone companies of Nebraska, formally and informally, that there is going to be a lot doing at the legislature which convenes early this month for a three months' session. One of the company executives was waited on by a lawyer the other day and told that the legislative program of the radicals embraced the abolition of the state railway commission and the return to municipal control of rates and service of the telephone companies.

Apparently the lawyer, who trains with the radicals, supposed this would greatly alarm the telephone companies, as the general impression has been that because the companies were allowed to increase rates during the flush times they are hungered and athirst for a continuance of this sort of control. As a matter of fact, the telephone companies have been held down to an average of 25 per cent increase, while commodity prices have soared above 200 per cent, and the average increase over 1914 is still above 60 per cent.

The lawyer was greatly surprised to learn from this executive that nothing would please the companies better than to have the commission's hand removed from them and the old situation of municipal control restored. He was still more surprised to be informed that unhappily the legislature could not abolish the state railway commission, since it was created by the state constitution and is given by that document full control over rates and service. It may starve it by refusing proper appropriations, but that is as far as it can go.

Representative Theo. M. Osterman, democratic floor leader, says regulation is a failure and proposes to stimulate county ownership. In an interview given to the Lincoln papers he says, among other things:

"An important question in regard to the regulation of our public utilities has been most forcefully brought to the notice of the people through the action of the

Northwestern Bell Telephone Co. in appealing to the federal court in order to override or delay an order of the railway commission. This is more surprising because for many years the telephone company has insisted that the railway commission was the proper tribunal to decide the matter of rates, whenever its regulation by local municipalities was being discussed. Yet we now find it refusing to accept the jurisdiction and findings of its own selected tribunal when the regulation does not happen to be to its exact liking.

"I am in favor of legislation defining proper jurisdiction in similar cases, which I believe can be constitutionally enacted. For one thing I believe the present county ownership telephone law, passed in 1913, should be amended by incorporating in it a requirement for compulsory physical connection of all telephone systems as provided by the new constitution of Nebraska.

"When regulation fails, we must preserve and protect the rights of communities to enter into actual competition with any utility by establishing their own plants or systems. There should be no such thing as a natural monopoly in private hands without this right of the people or a community to protect themselves. When such a monopoly exists, the established concern will eventually abuse its privileges by just such action as that taken by the Northwestern Bell."

Nebraska Commission Equalizes Lincoln Company's Toll Rates.

The Lincoln Telephone & Telegraph Co. has been given an increase in its long distance rates to correspond with the recent increase given by the Nebraska State Railway Commission to the Northwestern Bell. The commission, however, takes from the Lincoln company the differential it has hitherto enjoyed over Bell rates on hauls for less than 40 miles.

Under 40 miles most of the station-to-station rates will be decreased five cents, while the person-to-person charge will remain the same. The company had asked that the old short-haul rates be left as they were and that it be allowed to substitute the rates for greater distance that had been awarded to the bell. Traffic studies indicate that the gross toll rate increase would probably be 7.6 per cent if the application made by it were granted in full. As it is the revenues will be increased about 2 per cent.

The commission pats the Lincoln company on the back several times in the course of a rather voluminous set of findings. It is the good child and the Bell the naughty one in the Nebraska telephone field. The commission says that while it must deny the request as to short distance rates, because these would constitute exceptions to the general standard rates heretofore approved, it will not deny to



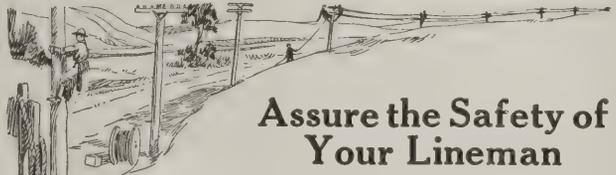
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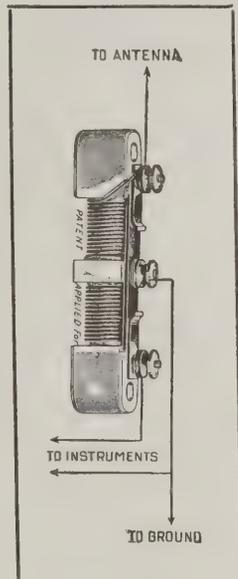
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the company the increased revenues even though its own financial showing is excellent in character. It says on this score:

"For the past year or more the commission has consistently urged upon public utilities under its jurisdiction, and particularly the two large telephone companies operating in the state, the working out of economies in operation advantageous both to the utility and to the public. The Northwestern Bell company has not reduced its expenditures up to the present moment in Nebraska when measured by the results on each subscriber.

"The Lincoln company all through the unsettled period has exercised economies resulting favorably to the rate-payer. Between 1914 and 1922 the increases granted to the Lincoln company, which include the growth of toll business as well as change of rate, amounted to 30 per cent. Those granted to the Northwestern and its predecessor amount to 41 per cent, without the additions recently permitted by the federal court.

"The net revenue of the Lincoln company has, however, been more favorable in spite of this handicap. It has, by methods of management, succeeded in retaining a higher net without disadvantage to its property. It has done so by keeping increases in operating expenses during the unsettled period down to 41 per cent, whereas during the same period the expenses of the contemporary have increased 59 per cent.

"To say now that the Lincoln company shall be, against its will, required to reduce its rates here and there to offset the modest increase which will result from the adjustment of toll scales would be to penalize it for having earnestly endeavored to do that which the commission has been suggesting, and to pay a premium on policies of management which pass additional burdens on the rate-payer rather than seek economies as an alternative.

"If our order authorizing toll rate readjustments is not accompanied by the requirement to make incidental rate adjustments, it can fairly be said that it is, in a measure, a reward for high business prudence. The commission will, however, keep in close touch with the situation. Its conclusions here set forth are in the light of existing conditions and may be readjusted if conditions change."

The Lincoln company had objected to any corresponding reductions in exchange rates, alleging that the amount of the toll increases are quite conjectural and that the economies recently inaugurated are still so experimental as to make it impracticable to say that they may be a permanent success, and the commission agrees to this.

The Lincoln company did not receive any increase when the Bell in the northern half of the state got its last 10 per cent increase. It has, however, made a better net showing. During the last five years it has paid out as interest on bonds and

dividends on stock amounts ranging from 5.6 per cent to 6.2 per cent of the combined obligations. To do so at times it drew on the surplus; at other times it had a small surplus remaining. The net results in the five-year period were to add \$29,700 to the surplus.

The commission says the Lincoln company has a distinct advantage over the Bell in that it is still paying but 5 per cent on its bonds and 5 per cent on a considerable block of preferred stock. It has been able to pay 7 per cent on its common stock without depleting its surplus and still the average rate paid to security owners has been below 7 per cent on the entire capital obligations.

The commission says that it will approve for all other toll companies operating in the state the same schedule of toll rates upon application and upon making the showing required.

Ohio Commission Fixes Valuation Lower Than Company's.

In connection with the application of the United Telephone Co., of Bellefontaine, Ohio, for increased rates, the Ohio Public Utilities Commission announced on December 21 that it had fixed the present value of the company's property at \$685,302. Commission engineers made the appraisal.

The company operates in 21 towns in the vicinity of Bellefontaine and had valued its properties at \$858,770.

No ruling has yet been rendered by the commission on the petition for higher rates.

Hearing on Valuation of Ohio Bell and Ohio State Properties.

On December 20 the Ohio Public Utilities Commission heard a detailed explanation of the valuation of the property of the Ohio Bell Telephone Co. in Dayton made by W. F. Sloan, appraisal engineer of Chicago, at the company's invitation.

Mr. Sloan's valuation made as of August 31, 1922, fixes the reproduction value of both the Bell and Ohio State plants at \$7,117,940 and the present value at \$6,306,954. No allowance is made for cost of unifying the service.

The company's own valuation, made by its appraisal engineer, G. B. Williams, as of March 31, 1922, was \$7,065,745 for reproduction and \$6,498,627 present value.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

December 18: Complaints filed by A. Groves, of Palo Alto, J. B. Casa and Mrs. C. F. Alsing, of San Francisco, charging Pacific Telephone & Telegraph Co. with failure to install telephone service.

December 19: Final hearing held on rates of Southern California Telephone Co. in Los Angeles.

December 20: Petition filed by Santa Barbara Telephone Co., of Santa Barbara, for authority to issue and sell \$60,000 of its first mortgage, 5 per cent, 30-year

sinking fund, gold bonds, at a price to yield not less than 87½ per cent of par; proceeds to be used to reimburse treasury for the cost of additions and betterments and for general corporate purposes.

ILLINOIS.

December 14: Citation order issued to Mendon Telephone Co., of Mendon, C. A. Chittenden, its general manager, and to the Telephone Exchange of Loraine and T. D. Harr, its manager, to appear on January 18 and show why direct communication cannot be established between the exchanges of the two companies.

December 14: Order entered dismissing the complaint of the board of education of East St. Louis against the Northwestern Bell Telephone Co.

December 14: Versailles Telephone Co. given a certificate of convenience and necessity to operate a telephone system in the town of Versailles and vicinity.

December 14: Sullivan Home Telephone Co., of Sullivan, authorized to issue and sell \$10,000 aggregate principal amount of its first mortgage 6 per cent gold bonds.

December 14: Vermilion County Telephone Co., of Danville, given permission to issue and sell \$210,000 aggregate principal amount of its first mortgage 6 per cent gold bonds.

December 14: Washington Home Telephone Co., of Washington, given authority to execute and deliver its first mortgage or deed of trust, dated July 1, 1922, to Clarence W. Hoyl, of Peoria, as trustee; also to issue and sell \$25,000 aggregate principal amount of its first mortgage 6 per cent gold bonds.

December 14: Permission given Sangamon County Telephone Co., of Pawnee, to issue and sell or to renew \$14,000 aggregate principal amount of its promissory notes, bearing interest not to exceed 7 per cent.

December 14: Abingdon Home Telephone Co., of Abingdon, permitted to execute its first mortgage or deed of trust, dated July 1, 1922, to Orion Latimer, of Abingdon, as trustee; also to issue and sell \$40,000 aggregate principal amount of its first mortgage 6 per cent gold bonds.

December 14: Peoples Telephone Co., of Chillicothe, given authority to execute its first mortgage or deed of trust, dated July 1, 1922, to C. B. Zinser, of Chillicothe, as trustee; also to issue and sell \$25,000 aggregate principal amount of its first mortgage 6 per cent gold bonds.

December 14: Order entered permanently annulling and canceling rate schedule IPUC 1 of Commercial Telephone & Telegraph Co., of Olney, for service in Avis-ton, Beckemeyer, Carlyle, and other towns; authorized to file rate schedule ICC 3 containing rates specified in order for service in the cities mentioned, effective January 1.

December 14: Farmers Telephone Co. of Lee County given permission to file new schedule of rates for service in Amboy, Ashton, Franklin Grove, Sublette, Center, and vicinities, effective January 1.

December 14: Application of Plymouth Farmers Switchboard Co. proposing an advance in rates for service in Plymouth, dismissed without prejudice.

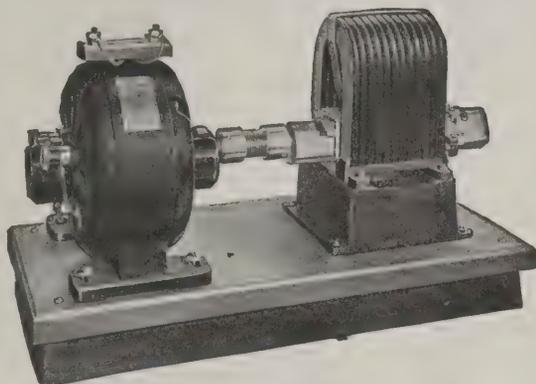
December 14: Order entered suspending until April 13, 1923, proposed increase in rates for toll service of Illinois Bell Telephone Co.

December 14: Order entered suspending until April 13, 1923, proposed increase in rates of Young Telephone Co. for service in Glasgow; set for hearing February 7.

December 14: Proposed increase in rates of Farmers & Merchants Telephone Co. of Moultrie County, suspended until April 13, 1923.

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December 14: Order entered rejecting rate schedule ICC 1, first revised sheet 1, of the Secor Telephone Co., as it is not a public utility and the commission has no jurisdiction.

December 15: Pearl City Independent Telephone Co. authorized to purchase all of the property of the Pearl City Mutual Telephone Co., for \$2,000 in cash.

January 3: Hearing held at Springfield on the application of the Jasper County Mutual Telephone Co., of Newton, for authority to advance rates for service in Newton, Bogota, Pugh and other towns mentioned in schedule ICC No. 1 filed by the company.

January 3: Hearing held at Springfield on supplemental application of Jasper County Mutual Telephone Co., of Newton, for permission to issue capital stock to the amount of \$37,000.

January 4: Hearing held at Springfield on complaint of Henry Bierbaum as to discontinuance of telephone service by Sangamon County Telephone Co. to complainant at Pawnee.

January 4: Hearing held at Springfield on petition of Illinois Bell Telephone Co. for increased rates for service in Centralia, Cenrtal City, Womac and vicinity.

KANSAS.

December 15: Application filed by United Telephone Co., of Abilene, for permission to increase its rates at Belleville.

LOUISIANA.

January 11: Hearing to be held in Baton Rouge in the matter of rates of the Cumberland Telephone & Telegraph Co.

MINNESOTA.

December 26: Northwestern Bell Telephone Co. granted schedule of increased rates for Duluth.

December 28: Order entered reducing message charge of Northwestern Bell Telephone Co. for service in Class Two hotels in Minneapolis and Duluth from ten to five cents each, and monthly rental for room telephones from 75 cents to 60 cents. Other hotels ordered to install public pay booths.

December 28: Order entered reducing message charge of Tri-State Telephone & Telegraph Co. for service in Class Two hotels in St. Paul from ten to five cents each, and monthly rental for room telephones from 75 cents to 60 cents. Other hotels ordered to install public pay booths.

December 29: Blue Earth Valley Telephone Co., of Blue Earth, authorized to increase its charge for rural switching

service to 40 cents per month per station; also to establish a minimum circuit charge of \$2.00.

MISSOURI.

December 18: Frankford Telephone Exchange given permission to continue using increased rates previously granted for service in Frankford.

December 18: Authority given Kansas City Telephone Co. to continue using rates previously allowed for service in Independence.

December 18: Kansas City Telephone Co. authorized to continue rate schedule previously granted for service in the Fairmount exchange area.

December 18: Permission granted the Kinloch Telephone System to reestablish its advanced rate schedule in St. Louis and vicinity.

December 18: Mutual Telephone Co. authorized to continue using increased rates previously allowed for service in Greenfield.

December 18: Sedalia Home Telephone Co., of Sedalia, allowed to continue its advanced rate schedule.

December 19: Authority given Linneus Rural Telephone Co. to continue the schedule of advanced rates formerly allowed for service at Linneus.

December 19: Thayer & Alton Telephone Co. given permission to continue using increased rates in Thayer.

December 19: Columbia Telephone Co., of Columbia, granted extension of four months in which to carry out certain provisions of order of September 26, 1922.

December 21: Effective date of rate schedule P. S. C. Mo. 3 of Mt. Vernon Telephone Co., of Mt. Vernon, for service in Sarcoxie, resuspended to June 29, 1923.

NEBRASKA.

December 20: Application of the Wilcox Telephone Co. for rate readjustment dismissed of record.

December 26: Complaint filed by F. Brand against Lincoln Telephone & Telegraph Co., alleging that closing of the Strang exchange and attachment of lines to adjoining exchanges has resulted in unsatisfactory service.

December 26: Application of the Lincoln Telephone & Telegraph Co. for discontinuance of Denton exchange dismissed of record.

December 27: Application of the Citizens Telephone Co., of Minatare, for increase of rates dismissed, it appearing that the company has gone out of existence.

December 27: In the matter of the application of the Lincoln Telephone & Telegraph Co. for the discontinuance of certain county rights on service from York exchange for York county and also one for similar action with respect to county rights given Polk exchange; dismissed of record for want of prosecution.

December 28: Application of the Hamilton County Farmers' Telephone Association for continuance of existing schedule of rates found to be reasonable and granted.

December 28: Application of the Monroe Independent Telephone Co. for permission to continue indefinitely the continuance of the existing schedule of rates, found reasonable and granted.

December 29: Application filed by the Wilcox Telephone Co. for permission to increase its dividend rate from 8 per cent to 10 per cent per annum.

December 30: In the matter of the application of the Lincoln Telephone & Telegraph Co. for continuation of present toll rates up to 40 miles and to substitute for longer distances the Bell schedule to go into effect January 1; denied as to the first request and granted as to the second.

NORTH DAKOTA.

December 6: Investigation instituted by commission of the so-called "other line" charge. The following companies were cited: Tioga Farmers Telephone Co., of Tioga; Tri-County Telephone Co., of Niagara; Wildrose Mutual Telephone Co., of Wildrose; Farmers Mutual Telephone Co.; Williams County Mutual Telephone Co., of Ray; and Northwestern Bell Telephone Co.

December 21: New schedule of rates filed by Overland Telephone Co. for service in Westfield.

December 21: Application of Palermo Village Telephone, of Palermo, for increased switching rates approved.

December 22: Complaint of H. M. Hanson and others against the Kathryn-Kidville Telephone Co., of Kathryn, and the North Dakota Telephone Co. dismissed.

December 23: Complaint of O. T. Olson and others against the North Dakota Telephone Co. and the Hastings Rural Telephone Co. dismissed.

OHIO.

December 20: Hearing held on valuation reports of Ohio Bell Telephone Co. on its property in Dayton.

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12 BWG BB Galvanized Iron.....	.109"	476 "	170 "	88%	68%
12 B&S Copperweld081"	520 "	96 "	100%	100%

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CURRENT OPINIONS AND COMMENTS

"Where is the capital of the United States?" asks a

writer in the Wall Street Journal, which sounds like a question to the geography class, but it isn't. The answer given is: "Largely in tax-exempt bonds?"—and it is a painfully true answer as well as a witty one.

Money—that is, capital—needed by business, by public service corporations, by all industrial concerns with a chance to grow, continues to flow into state, municipal, school district, good roads' projects, and other government enterprises where the investor can escape a tax on his income, and to just that extent reviving business is hampered and retarded.

The resolution in Congress to restrict the issuance of tax-free securities, although strongly endorsed by President Harding and Secretary Mellon, seems to have struck a snag.

* * * *

The utility interests of the country should explode sufficient propaganda dynamite to free the passage and permit the measure to get out into the open so it will have a chance for its life.

Big capitalists will not help, but the rank and file of tax-payers, the army of business men, have the votes and the political influence to compel favorable action. They should make some organized effort that would help every industry needing money and lighten their own tax burdens.

* * * *

There isn't so much "bunk" in the idea of coöperation in business—the golden rule, "live and let live"—as some hard-

boiled captains of industry have some times tried to argue after all. Seymour L. Cromwell, president of the New York Stock Exchange, was discussing Wall street methods recently, and said some interesting things about competition.

His idea is that we are entering a new era of business in which we shall get a new concept of democracy—not the democracy meant by the political demagogue, but a democracy which means "the utmost opportunity for every unit in society."

* * * *

"The Sherman law has compelled groups to compete where competition was not only unnecessary but definitely harmful to the public interests," said President Cromwell. "We all believe in competition, but competition means that each competitor shall set a pace for the others.

"Competition which means that anyone shall not run as fast as he can, or that there shall be an utterly useless duplication of effort, is the greatest handicap under which American business is struggling today. Had business been allowed to develop, it would have retained competition, for business cannot get along without it."

* * * *

Most interesting is the reply Mr. Cromwell made to the question as to how big business is discovering the new vision of democracy in industry.

He answered: "Primarily in the discovery of one business principle which was almost utterly concealed before the war. That principle is that *business cannot suc-*

ceed through inflicting injury upon a competitor.

"You may compete for all you are worth against a man who is competing for all he is worth; and the more he competes, the faster you will be compelled to go but once put him out of the running and you slacken your own pace. Before the war it was a common practice in American business to put hindrances, if possible, in the way of competitors; but the organizations which followed this practice soon found themselves becoming stagnant.

"Stagnation cannot bring prosperity. Monopolies growing out of such practices must soon die. The up-to-date manufacturers and the up-to-date business men now know that their own best interests lie in encouraging instead of killing competition."

* * * *

It is interesting to note how responsibility tames down the average radical and slows up his program. On the political stump the radical thinker proposes all sorts of "reforms" but the nearer he approaches the actual practice of his preaching, the more his fury abates. He realizes it is harder to practice than preach.

* * * *

R. B. Howell, the new senator from Nebraska, has been a strong advocate of public ownership of utilities. He was expected, therefore, to immediately begin work for government ownership of the railroads, but since his election he isn't quite so hot on the subject.

He admits now that the government is not ready to take over the roads and that

such an attempt would be a failure at this time. Instead, he suggests that only one line be tried at first, so if the scheme does not work out the others need not be disturbed.

The Nebraska senator has strong convictions against monopoly of any kind, however, and proposes to fight the Esch-Cummins transportation act affecting common carriers.

* * * *

Slowly but surely the idea is penetrating the newspaper editorial "dome" that public service companies usually get more kicks than are coming to them, and receive

fewer compliments than they are justly entitled to. Listen to the Columbus (Ohio) Daily News as it bluntly says:

"We are carried by the railroads a hundred times and deposited on time on the dot at our destination, and we forget to 'urge.' Then something happens and a train is late and we miss a date. Immediately we begin to 'urge' the railway commission to cut off some sucker's head. The same is true with the telephone, electric light and all other public utilities.

"While we are getting 100 per cent service, we keep our mouths shut. Comes a breakdown and we want the newspapers to

lambaste someone. We are great little 'urgers' at times."

* * * *

That is the sort of publicity which is helpful to a company rendering any kind of public service, for the citizen who reads it will be a little less likely to rage furiously the next time he has to wait for a telephone connection or a street car, swearing that the company should be put out of business.

The cultivation of the right understanding of utility problems by the press will hasten the day when the service companies will get a square deal from the public.

Gaining the Public's Friendship

Fundamentals of Developing Close Personal Touch Between Subscriber and Company—Public Must Be Educated, Company and Employees Perform Their Part—Paper Read at Syracuse Meeting, New York Up-State Association

Prepared by C. A. Spaulding
Division Commercial Manager
New York Telephone Co., Buffalo, N. Y.

Read by G. G. Harris
Attorney and Director
Wayne Telephone Co., Newark, N. Y.

The country and the times have progressed so that the old time bartering and the old time methods of buying and selling have become obsolete. Fifty years ago, people were not in a hurry. Speed as we know it today was unheard of. We had no telephones, no electric street railways, no automobiles, and what was called an express train would make us smile today. Correspondence was mainly carried on in longhand.

In the days when people walked or drove horses or moved in horse-drawn street cars, men and women had "more time" than they have now. They had time to purchase leisurely. Salesmanship had not become an art and competition in business, as we know it today, was decidedly not developed. There was no commerce between the states of the Union on a wide scale, because there were no quick communication and transportation. Neither were there large trusts or combinations in business.

It is conceivable that there must have been an old-fashioned courtesy and stilted manner of selling and transacting business. Public relations was not a crying need, at least as a slogan, because business was not large and small businesses are easily understood. But as quicker forms of communication and transportation were devised, commerce changed. It stretched out, broadened. Consolidation took place. Great combinations came into being.

It was not easy to understand big business and the close personal touch between the buying public and the owner of a business or store, was lost. People became suspicious of qualities and prices, when

they had to deal with clerks instead of owners. They were taught to hate monopolies and trusts and combinations. The good were not separated from the bad, and speedily the necessity for public relations was recognized.

Today public relations is necessary to all merchants and to all corporations, and good public relations means more than selling a good, honest article at a fair price. It means selling something that can be purchased elsewhere in such a manner that the purchaser will return to the place of his original purchase, when he requires more goods, because he likes the people he bought from as well as the goods he purchased.

Confidence and friendship and support follow good public relations. It came to pass that railroads, telephone companies, the largest lines of business, recognized that none is too big or too powerful to ignore the necessity of cultivating the friendliness and the good-will of the public. No longer was money from the public in itself enough. It was necessary to acquire money and friendship.

ABILITY WILL FIND A WAY.

Ability is never stifled in its expression. In the most unfavorable conditions of employment it will find a way of making a mark. Where encouragement is given in industry, it makes it easier for the man who is different to come to the fore.—General W. W. Atterbury, vice-president, Pennsylvania Railroad Co.

It is easy to comprehend why this is so. The lawmakers were busy, the politicians were busy, the demagogue was busy, the soap box orator was busy. The people had become so feverishly busy because they had quick communication and quick transportation, that they were letting other people think for them. A man cried: "The telephone company is robbing you." They heard in passing. It did not occur to them that the man was expressing his opinion and not a fact. They believed, and when they believed, they hated. The legislators were quick to perceive this, and to be popular they attacked, sure of applause and votes.

Let us from now on confine ourselves to our own business. While we were constructing the plant, developing, learning the business, there seemed to be no time for public relations. As I look back upon my first year in the business, 1895, I understand now why we were not popular. At that time I could not.

There were a good many Independent telephone men and women before a single Independent telephone company was formed. Probably they did not mean to be so. They were thoughtless. In those days we had no telephone service, as we know it now, and very little of that broader service, that courteous service from the heart, which we have developed so rapidly in recent years. You may guess accurately what I mean.

Competition fanned fires of dissatisfaction into conflagrations of active hate. Some Bell exchanges were all but swept off the map. In this part of the state we did pretty well because by the grace of

God there was quite early developed some of the spirit of obligation to the public which we now have.

Nevertheless, our New York state companies were not popular, nor were we understood by the public. During the days of development and competition, while we were approaching the present high standards of plant construction and maintenance and operating service, we seemed to have our hands pretty well filled—but we were overlooking one of our great problems, to some extent at least.

We had to learn that, with the field to ourselves, with a good plant, a good development and a good service, we were in serious trouble constantly because we had not attracted the complete confidence of the public. Without that confidence, subscribers would not believe our rates fair, nor our service good. They questioned our integrity. It was popular to attack the system. Government ownership threatened, complaints were lodged with the public service commission on many subjects. The attitude of the public made operation expensive, and many of our people, instead of running the business smoothly, were handicapped by the necessity of defending the company in many ways.

Great progress has been made toward improved public relations, and this fact is now reflected in the friendly attitude of many of our customers toward us, particularly in the smaller communities. We have merely scratched the surface, however, in the larger places and we may well afford, nay, we must stop, to analyze this problem and keep it constantly before us.

Shall we define favorable public relations? It is very easy. The Golden Rule! That's all. "Do unto others as you would have others do unto you." In dealing with the public, first and always put yourself in the subscriber's place, *change places with him*. Treat him as you would want to be treated if you were the subscriber *and he the telephone man*.

It is easy to write, easy to say, but to my mind this is a profound truth—you can not foster right public relations until you have conquered yourself. You can not do this wonderful job until you have grown mentally, spiritually, philosophically and telephonically. You must achieve character, love your fellow-man and have a keen desire to serve him. You must absorb patience and eliminate self-congratulation. You must love your business. If you can not do what you like, like what you do. What most big men seek is greater power. A few still bigger seek to serve. Success is not a bequest; it is a conquest.

Let us begin from the bottom. There are some fundamental rules:

1. The employe must want every subscriber as a friend for himself and the company.

2. We can not start the public campaign

WHAT YOUR WORK DOES.

We do not understand how any one can ever succeed while regarding work as an ordeal. If you do not like your work and cling to it, it would seem you were practicing an unconscious treachery towards yourself and your fellow man. The moment you don't like your work, that work becomes shameful; and where there is shame, there is degradation. And if you degrade yourself by doing something you intensely dislike, any success that may come from it must be a mockery.

By your work you should bring happiness and thought and information to the world. You should increase the love of one for another; destroy the primitive prejudices of one person against another who happens to live in a different place. Real work benefits your neighbor as much as yourself.—D. W. Griffith.

until we all in every exchange and in every department make our own internal relations right.

3. We must all have a very general knowledge of the big things in our business, what the company is trying to accomplish, and how, as well as being experts in our own particular work in the system.

4. Public relations is the problem, not of the commercial people alone, but of every operator, of every plant man, of every single employe.

5. The employe who has not a *positive concern* for every feature of the subscriber's service, falls short in the specifications we feel he must fill.

Let us remember that we are in a peculiar business. A subscriber when using our goods works in the dark, and is a part manufacturer of the service, but unfortunately an unskilled workman; and in using our goods he is actuated by a desire to transfer his thoughts to another—a most personal and intimate function.

He can not see our machinery in operation, and when a man wants to transfer a thought nowadays, he wants to do it without delay. He can not see our effort to serve, when he is using the service. These are reasons why we, in the business, must make a greater effort to serve than is necessary in a business where the goods to be used are in plain sight, can be inspected, handled and compared.

And we are so big! It is hard to understand big and complex things—and people are suspicious of things they do not understand. We can not expect the subscriber to understand all about our business. The most we can expect to do is to make him understand the important parts, and to so impress him with our earnestness and our own personal service to him, that he will take the rest for granted.

So, referring to rule No. 1, if we can make a friend of him by our knowledge, our good nature, our service and our courtesy, he will judge the company by us and be its friend. Life is not so short that there is not plenty of time for courtesy, good nature, knowledge and service.

As to rule No. 2, it must be apparent what I mean. We must all be on terms of friendship and co-operation with our fellow workers. If there be jealousy of departments, jealousy among employes, harsh criticism, a lack of harmony, how can we win the public? We must be what we claim we are, members of a big family, full of charity toward one another, willing to overlook, and forgive what may seem to be a lack of consideration from others, full of pride in the progress and successes of all telephone workers, willing to give credit to others, and willing to accept good advice from any good telephone man or woman.

Sometimes, men say things which sound differently than they mean them. Sometimes, the manner of expression carries a wrong impression. We must understand the motive, and if the motive be good, overlook faults of expression and manner. How I detest a man who nourishes and preserves a grudge! Item. Always treat the telephone operator as one of your family. Help her intelligently, and as you would like to be treated if you were an operator.

Rule No. 3. We can not work with authority unless we know. Make way for the man who knows. Education must be constant. An honest mistake can be overlooked; ignorance on essentials is almost a prison offense in the telephone business.

Rule No. 4. Good public relations is founded, first, on good quality of service from the switchboards. We have that. After that, it can be fostered by the attitude of all employes. What an opportunity the repairman has when on the subscriber's premises! What a wonderful opportunity the commercial people have!

They are in face-to-face contact with the subscriber. He is in trouble. You can help. He wants information. You can give it. You can say, "What do you want?" (if you don't get caught at it) or, you can say, "Good morning. How can I serve you?" You can look disinterested, or bored, or you can look cordial, friendly and interested.

Have you ever reflected on your own feelings when you *are* interested in a subscriber's mission, and *when* you have cleared his troubles away? He thanks you, perhaps shakes hands with you, and goes about his business. Are you not glad and satisfied with yourself, because you have satisfied a man who, by paying telephone bills, helps to pay your salary? Of course you are.

There is happiness in giving a helpful service. Make every subscriber feel "What a fine man or woman that is in the telephone office." You have made a friend

for yourself and for the company. You have promoted good public relations. You must feel what you say. It must come from the heart.

The operator must say her words from the heart. The plant man must say what he has to say from the heart; the commercial people must talk from the heart in all sincerity and earnestness; and when we all talk from the heart, we shall win our friends, the customers.

Each employe has to lay out his own public relations job. There can be no set phrases or sentences. Interest in the business and in the subscriber—concern for him if you will—will indicate what you have to do and how to do it. A public telephone collector can make friends or enemies for the company by the expression of his face or the way he says, "good morning."

I have convinced myself that the great majority of people want to be friendly with us, if we will give them the chance. Most people are all right. Human nature is good, almost always. But people will not like you unless they know you.

Public relations of the right kind can be accomplished by the telephone people going to the public and saying, "How do you do." It never can be accomplished if the public feel, when they come to us, they are coming to strangers. Most of all, it falls upon management and the commercial people to know their subscribers.

Suppose a new concern comes to town: A telephone is installed. Is that the end? Mr. Manager, you know better. Go to the owner of that concern, when you do not want something of him, and introduce yourself. Ask what you can do for him, if everything about the telephone is all right. Invite him to call upon you for help if anything goes wrong, urge him to visit the central office, make him feel at home and make him know the telephone people.

Will he be your friend and the company's? He will, and probably some time he can show his friendship.

Rule No. 5 deals with concern for a subscriber. A simple illustration will suffice. Suppose he tells you he has not a telephone directory. That is a big thing to him. It isn't so very interesting to you, is it? But it happens to be the biggest current thing in his telephone life, and you must treat it that way. You *must be concerned* about it, and let him know and feel you are.

Interest in his trouble and quick action, will earn his appreciation. Get the book to him at once. It is a good public relations work. He will say that you and the company are on the job. A careless, disinterested air and slow action, may sour that man permanently. And so, with anything the subscriber brings to the attention of any one.

Now, all these things and many more are necessary for proper public relations. Telephone satisfaction means more than

SERVICE PLUS

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

An old, colored, Pullman porter, who had done his bit for humanity, died recently. He contributed to his fellowmen a service which will exist long after he is forgotten, a service which cannot be limited to a certain group or number of people, as any person who takes a train ride will be benefited by his contribution to humanity.

For many years he carried the baggage of thousands of travelers, always warning them to beware of the sharp corners of the vestibules. Frequently, however, these sharp corners were the cause of painful bruises as passengers were thrown against them by the lurchings of the train.

Because of his concern about this, an idea dawned in his mind which eventually caused those sharp corners to be replaced by round ones. A simple idea, we say. True enough, yet it remained for this old porter to remedy a difficulty which had been bothering travelers for many years.

Doubtless, the old porter will soon be forgotten, but the result of his idea will make traveling easier for us as long as there are trains to ride in.

As operators, we have countless opportunities daily for giving service. If we conscientiously perform our work, we shall give—as the old porter did—*Service Plus*.

satisfaction with the quality of switchboard service. It means satisfaction in dealing with the people in the telephone business—and when there is telephone satisfaction, there is friendliness. No corporation is so big and powerful that it can get along without the friendship of the people it serves. Unfriendly people will enact harmful laws, will attack rates, will prevent the smooth running of a business, and make the expenses greater. They make the job less happy and attractive.

I shall go further. We in the telephone business do not want employes who can not see the necessity of splendid public relations, or who will not do their full share in helping to attain them; but we do promote and encourage those employes who understand and do their share. They become leaders and bigger men and women, and happier.

There is a very high degree of understanding of the public relations problem in the western division, and the results accomplished here in the last few years have been splendid.

Your goal is: *Not one single unfriendly subscriber*. And until the goal is reached, the campaign will be with us.

Plans for Centralized European Telephone System

The French Ministry of Posts, Telegraphs, and Telephones plans to hold a conference in Paris within the next few months, at which the administrators of the telephone systems in all countries of western Europe and the Mediterranean borders will be present.

The idea, according to the London Times, is that of a long distance telephone system, furnishing direct communication to 13 countries—England, Belgium, Hol-

land, France Switzerland, Italy, Spain, Portugal, Morocco, Algeria, Tunis, Tripoli, and Egypt—to be centralized in France.

Nearly all of these countries have telephonic communication of some kind with each other, but the facilities are very limited and are not developed as part of any general plan. England, of course, has a system of submarine telephone cables linking with France, Belgium, and Holland, and many of the other countries have direct lines between their own capitals and those of their neighbors.

Apparently, the French plan would provide a system of trunk lines between the principal cities of all the countries of southern and western Europe and those of northern Africa, the system being controlled and operated from a central office in France. After preliminary investigation and agreement on a working plan, the matter will probably be presented to the International Conference on Electrical Communications, which is expected to be held in Paris next year.

Illinois Bell Plans \$100,000,000 Expenditures in Next Five Years.

An expansion program carrying an expenditure of \$100,000,000 in the next five years will be carried out by the Illinois Bell Telephone Co., according to a New Year's announcement by W. R. Abbott, president of the company.

In the last year the company has spent \$18,000,000 for new construction, Mr. Abbott said. The president also referred to the phenomenal growth in telephony by pointing out that 50,000 new telephones were installed in Illinois, with 32,000 of these in Chicago. The city of Chicago is now being served by 637,500 telephones.

Telegraph and Telephone Circuits

Phantom Telephone and Combined Telegraph and Telephone Circuits Worked at Radio Frequencies—Simultaneous Transmission of Telegraph Signals and Speech—Paper Presented Before Institution of Electrical Engineers, England

By J. G. Hill

The problem of utilizing telegraph and telephone circuits to transmit two or more simultaneous electrical communications over one circuit without interference between them, has from an early date occupied the attention of those interested in telegraphy and telephony.

During the past few years a considerable development of some of the methods employed has taken place with far-reaching results; and the object of this paper is to review the present position of the subject so far as the simultaneous transmission of telegraph signals and speech, at normal frequencies, and of phantom telephone working at such frequencies are concerned.

In view of the very wide range of the problems involved it will be possible to deal only very briefly with them. The methods most generally employed to provide extra channels of telegraph or telephone communication may be classified under the following heads:

(1) The impedance or retardation method of combined telegraphy and telephony over the same wire or wires.

(2) The equipotential method of providing simultaneous channels of telegraphic and telephonic communication over the same wires, and the application of this method to the balancing of telephonic relayed circuits.

The impedance method of simultaneous telegraph and telephone working applied to single-wire working was first introduced by F. Van Rysselberghe, a Belgian

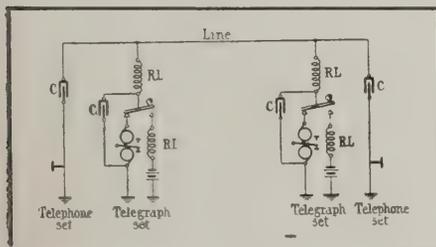


Fig. 1. The Van Rysselberghe System of Simultaneous Telephony and Telegraphy.

telegraph engineer, in 1882. Combined working is rendered possible by the different impedance of inductance coils and condensers respectively to high and low-frequency currents. The action depends upon the fundamental difference of telegraph Morse signals and telephone speech currents.

The voltages and currents produced in a telephone circuit by the voice are assumed to vary in a simple harmonic manner. The voice covers a wide range of

frequencies varying, say, between 100 and 2,500 periods per second; the mean frequency for purposes of calculation is taken at 800 periods per second.

In the Morse code the signals consist of "dots" and "dashes." In hand signaling at the normal rate of 30 words per minute, a dot has a duration of 1/12th second and this will be used as a basis of comparison.

If an electric condenser of sufficient capacity (say 5 *mf.*) is placed in series with a telephone receiver in an ordinary telephone circuit, the attenuation of speech currents due to the condenser is so small as to be only just perceptible to the ear. The impedance of the condenser to very low-frequency currents is, however, very high.

On the other hand if a suitable inductive impedance be placed in the line lead of a telegraph set the speed of telegraph signaling is slowed down, but it is still possible to signal at hand speed on the telegraph circuit.

In addition to these direct actions in the telegraph and telephone circuit, and other direct actions which will be shortly described, the action of each circuit on the other requires consideration. The reduction in the rate of rise of the telegraph signals reduces the normal tendency of those signals to cause disturbance in the telephone apparatus via the condenser, in view of the simple fact that the disturbing signals vary in intensity in proportion to the rapidity of the rate of change of voltage at the terminals of the condenser.

The retarding device in the telegraph circuit, however, has a very high impedance to telephone speaking currents at the mean frequency of speech, and this high impedance acts beneficially as regards the transmission loss due to the telegraph apparatus acting as a shunt to speech currents. The disturbing effect of speech currents on ordinary Morse telegraphic apparatus is absolutely negligible.

The working of the Van Rysselberghe system depends fundamentally on the actions described. A high inductive impedance, *RL*, is placed in the path of the telegraph apparatus and a condenser, *C*, in the path of the telephone apparatus, the two sets of apparatus being joined in parallel and connected to the line as indicated in Fig. 1 in which both ends of the circuit are shown. A single-current circuit is shown for simplicity, but double-current working is generally used.

The foregoing description shows in a general way that combined telegraph and telephone working on the same wire is possible, but it is of interest to study more closely the effect of the inductive impedance and the condenser in order to find out to what extent (if any) the re-

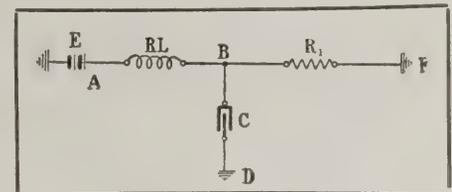


Fig. 2. Simple Circuit Having Inductive Impedance and Capacity.

tarded telegraph signals cause disturbance in the telephone set, and, further, how far the retardation affects the telegraph signals themselves as regards both shortening them and slowing down the rate of signalling. These matters will now be investigated.

In commercial combined telegraph and telephone circuits the apparatus arrangements are complex, as may be seen by inspection of the diagrams here given, and in addition the electrical action is materially complicated by the fact that the permeability of the iron cores and the effective resistances of the telegraph apparatus in circuit change materially with different current strengths.

For these reasons experiment is usually preferred to calculation in determining the best values of the inductance and capacity required. The fundamental theoretical effect of the devices introduced to control the rate of rise of the current may, however, be studied with advantage from the mathematical point of view in the relatively simple circuit shown in Fig. 2.

Let E = a constant applied voltage at A .
 v = the voltage at the terminals of the condenser at the time t .

R = the resistance of the retardation coil.

L = the inductance in henries of the retardation coil.

R_1 = the unvarying resistance of a long line supposed to be non-inductive.

C = the capacity of the condenser in farads.

t = the time in seconds after the application of the voltage E to the circuit.

Then the equation connecting the voltage v with the time during the transient period

when the E.M.F. is rising from zero to its steady value E , is

$$\frac{d^2v}{dt^2} + \left(\frac{R}{L} + \frac{1}{CR_1}\right) \frac{dv}{dt} + \left(\frac{R}{CLR_1} + \frac{1}{CL}\right)v = \frac{E}{CL} \dots (1)$$

The corresponding equation for the value of v at any instant t after the application of E , is

$$v = \frac{ER_1}{R + R_1} \left[\left(\frac{1}{2} - \frac{\alpha}{2\beta} \right) e^{(-\alpha + \beta)t} + \left(\frac{\alpha}{2\beta} - \frac{1}{2} \right) e^{(-\alpha - \beta)t} + 1 \right] \dots (2)$$

$$\alpha = \frac{1}{2} \left(\frac{R}{L} + \frac{1}{CR_1} \right)$$

$$\text{and } \beta = \frac{1}{2} \sqrt{\left[\left(\frac{R}{L} - \frac{1}{CR_1} \right)^2 - \frac{4}{LC} \right]} \dots (3)$$

If $R/L = 1/CR_1$ and $R = R_1$, the equation for v may be written

$$v = \frac{1}{2} E [1 - \sqrt{2} e^{-t/cR} \sin(t/CR + \frac{1}{2}\pi)] \dots (4)$$

In any case if β is imaginary, the equation assumes a form similar to (4).

Examination of these equations shows that the rate of rise of the voltage is logarithmic, and that by arranging suitable values of R, L, C and R_1 the rate of rise of the voltage may be either advanced or retarded. If RL represents a relay at the receiving end of a line and C a condenser shunted by R_1 at the same point, we have the well-known arrangement of the shunted condenser as may be seen from Fig. 2.

Fig. 3 gives an oscillogram of the normal rise of current in an unshunted Wheatstone telegraph receiver, and Fig. 4 shows the more rapid rate of rise obtained by adding the shunted condenser to the same apparatus, the adjustment being made to produce a signal as nearly square (flat-topped) as possible.

On the other hand, in order to produce the retardation which is desired in a combined telegraph and telephone circuit, the following values which have been actually

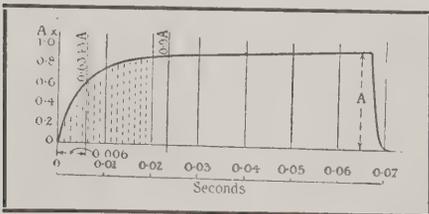


Fig. 3. Oscillogram of Normal Rise of Current in Unshunted Wheatstone Telegraph Receiver.

used may be taken as an example: $R = 50$ ohms; $L = 20$ henrys; and $C = 5$ microfarads.

If the value of the line resistance R_1 be 500 ohms, the rate of rise is now greatly retarded as compared with Fig. 3. The variation of the voltage at the condenser

terminals with time is shown in Fig. 5. It is evident from these examples that the values of R, L and C must be carefully chosen. It is further evident from the general equation (2) that in order to produce the least voltage at any instant, t, E must be as small as the satisfactory working of the telegraph circuit will permit.

It should also be noticed that although the value of R should be small in order to give a small time-constant yet the amount of v becomes less as R becomes greater, but of course the greater R may be unfavorable to the telegraph circuit.

Although the more complex apparatus arrangement shown in Fig. 1 causes the effects just described to be modified, experiment clearly demonstrates the fact that relatively large values of L and C give good results. It will now, however, be shown that it is not practicable by an arrangement such as that shown in Fig. 2 to eliminate entirely the disturbing effect of ordinary Morse signals in the telephone

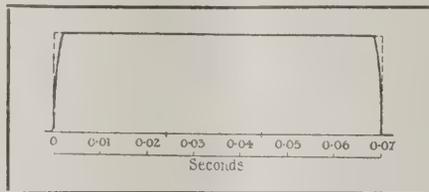


Fig. 4. Oscillogram of Current Rise When Shunted Condenser Is Added to Apparatus Used in Fig. 3.

circuit, due to the rate of change of voltage at the terminals of the condenser.

An examination of Fig. 5 shows that in the first 1/100 second after the application of the E.M.F., the volts have risen to 18 per cent of their final value, notwithstanding the heavy retardation, and such a rapid change of voltage would, with the voltages used in the ordinary Morse system, give rise to a click in the telephone receiver.

If this is compared with the rapid rise of an ordinary Morse signal, however, it is at once seen that the retardation which has just been examined has slowed down the signal considerably. Fig. 3 shows a record of a normal signal passed through a Wheatstone receiver at a speed of 18 words per minute. In this case, in the first 1/100 second the current has risen to about 0.75 of its full value, which is a much more rapid change than the case previously dealt with.

In order to see the effect of this changing current on the telephone apparatus, it should be noted that the telephone receiver has a marked sensitivity in the neighborhood of 800 to 1,000 periods per second.

If the maximum current passing through the Wheatstone receiver is 10 mA there is a rate of change of over 2 mA in the first 1/800 second (see Fig. 3) and it is known that a current of this magnitude will produce a pronounced click in a telephone receiver. The current attains 9/10ths of its maximum value after one-

third of the full duration of the signal has elapsed. In the absence of combined telegraph and telephone working it is frequently necessary to increase the rate of rise of signals instead of retarding them, and the means of doing this have been dealt with.

It may be remarked that the retarding device RL in Fig. 1 does not protect the telephone superimposed apparatus in the same circuit from the disturbing effects of telegraph induction from contiguous uncomposited telegraph circuits.

Inductive disturbances from such circuits pass partly through the telephone apparatus owing to the fact that the retarding inductance is in the path of the telegraph apparatus only. On this account heavy induction from uncomposited contiguous telegraph circuits may affect the composited circuit. The remedy is to place retarding devices in the circuits which give rise to the disturbance.

Electric waves travel on unloaded aerial copper wires of small resistance with a speed approaching that of light, while in heavily-loaded underground circuits the speed may be reduced to 8,000 miles per second. The rate of telegraph working is largely influenced, however, by the electrical sensitivity of the apparatus employed, as well as its mechanical inertia, so that in practice the rate of working depends on the combined apparatus and line.

From another point of view it also depends on the technical nature of the serv-

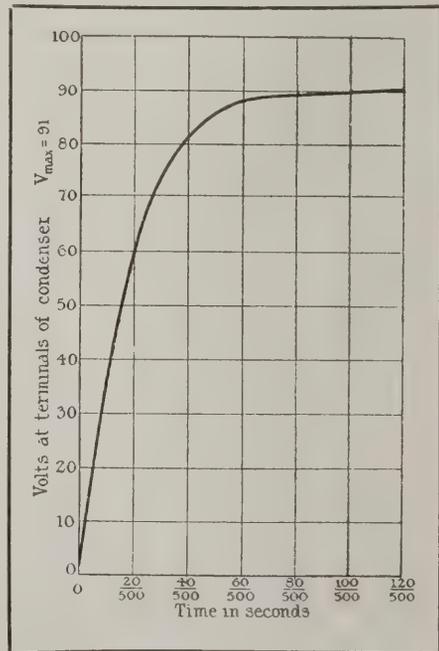


Fig. 5. Variation of Voltage at Condenser Terminals with the Time.

ice utilized. For example, in simplex working a higher all-round speed per channel is possible than in duplex working, and, again, a higher speed is obtainable per channel in duplex working than in quadruplex working. Further, it does not follow that the actual speed of trans-

mitting signals will give a proportionately economical result, for the question of the operator's time in preparing the message for transmission at the sending end and in preparing it for delivery at the receiving end enters into the matter, some sys-

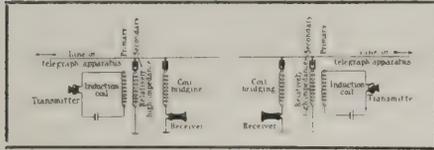


Fig. 6. One of Many Variations of the Van Rysselberghe Method.

tems involving more time for this than others.

For the purpose of the present problem, however, the rate of rise of each signal is of immediate importance. As an example, consider an aerial-line Morse Wheatstone circuit. It would be possible under the most favorable conditions to obtain a speed of 600 words per minute from this system, but it is preferred to work at a speed which can generally be maintained with ease under unfavorable conditions, and 200 words per minute is frequently found to be convenient; this is equivalent to 80 dots per second, so that a signal would last only 1/80th second.

Referring to Fig. 5, it will be seen that the voltage rises to only about one-third of its maximum value in that time and it would be impracticable to add a heavy retardation in such a circuit. In practice, with the amount of retardation necessary to reduce the noise in the telephone sufficiently for satisfactory working, and bearing in mind the necessity for keeping the voltage of the telegraph circuit as low as possible for the same reason, experiment shows that 60 words per minute on an overhead line working duplex can be obtained only under the most favorable conditions.

It should be mentioned in this connection that if too much inductance is used in the retarding device, the telegraph signals may stick and be sluggish. In order to provide a working margin of safety the Van Rysselberghe system is in fact, generally worked only at hand speed. If this is assumed, electrical filters may be used to cut off the currents of higher disturbing frequencies.

It may be pointed out that the introduction of the retarding device is further likely to cause difficulty in balancing telegraph duplex circuits, owing to the necessity of balancing in the compensation circuit of the duplex, the effects of the retardation added to the line. In order to minimize this difficulty it is found in practice that if the windings of the retardation coil are joined up so as to oppose each other, balancing is much easier, while the telephone circuit may still be worked. The best position for the retardation coil in duplex circuits is in the lead common to the line and compensation circuit.

In addition to the rate of rise of the

current, telegraph signals have a periodicity, the wave form being generally of a complicated nature. A Morse signal has a low periodicity, and advantage may be taken of this fact so to tune anti-inductive apparatus as to eliminate or reduce inductive disturbance within a given band of frequencies, when the frequency of the disturbance is sufficiently high.

The foregoing facts show the limitations of the system of combined telegraphy and telephony just dealt with.

The ordinary magneto generator, which is of low frequency—about 17 periods per second—is liable to interfere with the telegraph apparatus, and for this reason telephone signaling at a higher frequency is desirable. The best frequency is one which is high enough to avoid interference with the telegraph apparatus, and at the same time is efficient for actuating the sensitive type of relay used.

The frequency which is found to be high enough for these purposes should not be exceeded, owing to the fact that high-frequency currents cause inductive disturbance to other circuits; actually, a frequency near 150 periods per second is found to be suitable. As a general rule, some form of interrupter or buzzer is used to generate the calling current on all types of composited circuits. Sometimes an interrupted direct current, actuated on the principle of the electric call bell, is passed through the speaking induction coil in order to convert the signals into an alternating current.

The receiving device may be a loud form of telephone receiver with a horn, or a vibrating relay tuned to the sending frequency, which brings a calling signal into operation.

An arrangement developed by the Western Electric Co. is as follows: The generator is of the vibrating-bar type, the natural frequency of which is 140 periods per second. The relay designed to receive the signals consists of a bar tuned to the same frequency, and actuated by the received currents, which pass through bobbins wound on pole pieces on each side of the reed. A light contact spring rests normally on the reed and makes contact with it. When the reed vibrates, the contact is broken intermittently and this can be made to release a relay connected in a local circuit.

The receiving apparatus must be so designed that it will not respond to the telegraph signals.

A relatively poor circuit, unsuited for working on the long-distance system, is usually obtained. This is due to several causes. A telegraph line wire may be iron and will, moreover, always be subject to a certain amount of disturbance. Generally the conductor will not be of a high-grade telephone type. If such a circuit is extended, complications arise, and transformers, involving further transmission loss, become necessary.

This system works most successfully on relatively short circuits which do not require to be extended. If, however, the device is installed on a high-grade copper conductor, the speaking range may be considerably increased.

Since Van Rysselberghe's system numerous inventors have exercised their ingenuity in producing the same result by different means. As well-known examples in this country may be cited the Phonopore circuit, patented by C. L. Langdon-Davies (British patent No. 10,990 of 1884), and the Turchi-Bruné system (British patents Nos. 7,585 and 22,388 of 1903).

To give an idea of one of the many variations on the Van Rysselberghe method, Fig. 6 has been prepared. This shows an arrangement in which a bridging coil is placed in series with the receiver. When used in local circuits with a powerful transmitter it is capable of giving excellent results in circuits of suitable length.

This apparatus suppresses noise by sacrificing transmission efficiency in the receiving circuit, but if the receiver be made insensitive to the extent that it cuts down the volume of speech to the same degree as 20 miles of standard cable—which usually suffices to reduce load noise to tolerable limits—there is still a possibility of utilizing the arrangement on many circuits, seeing that the commercial limit of speech is not reached in a quiet room until a total of 46 miles of standard cable is in circuit. It is, of course, desirable to keep far within that limit, and the margin available often permits this to be done on local circuits which do not require to be extended, when used in conjunction with a powerful transmitter.

It should be noticed that "side tone" which painfully affects the ear when loud-speaking telephones are used in standard sets, is practically reduced to negligible proportions owing to the circuit arrangement in this and similar cases.

The Fullerphone occupies a prominent place in the literature of the subject.

Fig. 7 shows an arrangement used in

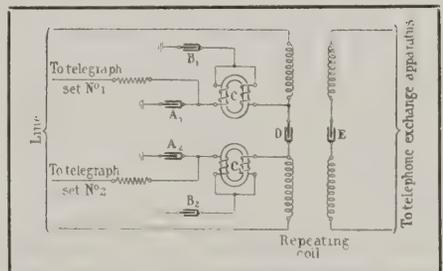


Fig. 7.—Two Duplex Circuits Formed from the Two Wires of a Double Wire Circuit.

England and elsewhere for utilizing the two wires of a double-wire circuit to form two duplex circuits. This arrangement is known as composited working. In this country (England) the arrangement is sometimes used to superpose telephone

call wires worked by telegraph, upon junction circuits worked on the common battery system (see Fig. 7), or, alternatively, one wire is used as a telegraph call wire, and the other for automatic signaling on the junction circuit.

In such a case each set of apparatus bridged on the telephone circuit involves a transmission loss, which is usually not less than one mile of standard cable, and may possibly exceed this figure. The loss is increased when similar circuits are extended to one another; it should, therefore, be ascertained, before doing this, whether the circuits have the necessary transmission margin.

It may be mentioned that simplexed and composited sets have been used in this country for many years. (A simplexed circuit is a telegraph circuit worked in parallel over the two wires of a telephone circuit.) As an example I find that as far back as 1908, 200 circuits on the simplexed system were in use in this country.

At the same time a large number of circuits were in use for local telephone circuit working on a method devised by W. J. Medlyn which has largely been used in

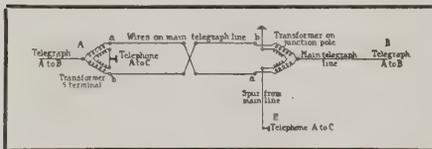


Fig. 8. Theoretical Diagram of Simplexed Circuit for Local Telephone Circuit Working.

this country for this purpose. The theoretical diagram is shown in Fig. 8 and the explanation is as follows:

If on a short section of a pole route carrying a long main-line telegraph circuit, we have also a local single-wire circuit which it is desired to convert to telephone working, such a circuit may be converted to double-wire working with little cost in the main-line section by utilizing in that length a long-distance telegraph circuit to form the second wire of the local pair.

The local single-wire circuit and the telegraph circuit are crossed at intervals to give immunity from inductive disturbance due to contiguous telegraph circuits, and transformers are connected as shown. The section between the transformers is the double-wire telephone circuit. Telegraph signals pass in parallel over the double-wire telephone circuit thus formed, entering and leaving the double-wire section at the center point of the transformers. By this method the continuity of the telegraph circuit is not interrupted.

The working of such a telephone loop is not disturbed by a superposed telegraph circuit if the A and B wires are of the same material and gauge. In the case shown, the telephone circuit after leaving the main line is run on a single wire which is connected to the transformers as shown. The possibility of using the single wire depends on local conditions.

The well-known equipotential method of superposing is of great importance and utility and of very wide application. Fig. 10 furnishes an example of the system. The earliest patent specification in this

$\frac{1}{2}R$, and this furnishes a criterion for the comparison of transmission efficiency. As a general rule the capacity and inductance have not the proportion shown.

As is well known, the circuit inductance

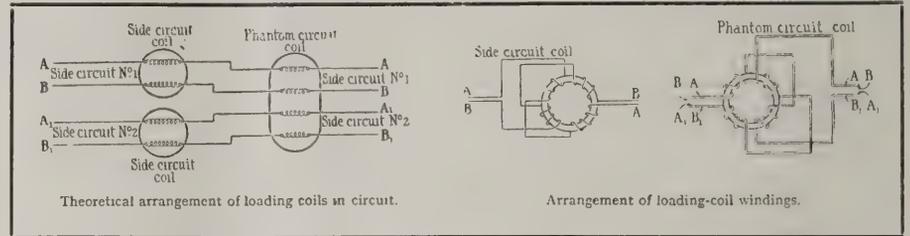


Fig. 9. Arrangement of Coils in Loaded Side and Phantom Circuits.

country covering this form of superposing is that of F. Jacob (British patent No. 231 of 1882).

The relative transmission efficiency of side and phantom circuits in aerial lines depends essentially on the arrangement of the wires on the poles. Every circuit has, of course, four electrical constants, namely, resistance, leakance, capacity, and inductance. Effective, uniformly distributed values at alternating-current voice frequencies are here assumed.

The relative transmission efficiency of both side and phantom circuits is inversely proportional to the real part β of the complex attenuation constant $\beta + ja$ and may be found from the following well-known formula:

$$\beta + ja = \sqrt{[(R + j\omega L)(G + j\omega C)]} \dots (5)$$

where β = real part of attenuation constant,

- a = wave-length constant,
- R = effective resistance per unit length,
- L = effective inductance per unit length,
- G = effective leakance per unit length, and
- C = effective capacity per unit length.

The transmission efficiency is also affected by the impedance of the circuit. In the case of an electrically long line the quantity Z_0 is usually known as the characteristic impedance; and

$$Z_0 = \sqrt{\left(\frac{R + j\omega L}{G + j\omega C}\right)} \dots (6)$$

The minimum attenuation constant in unloaded circuits is theoretically attained when we have the relation

$$LG = CR \dots (7)$$

In phantom circuits, where two wires are joined in parallel the resistance is generally half that of the side circuit, and the leakance double that of the side circuit. If, therefore, C is also doubled and L halved as compared with the side circuit, equation (7) is satisfied and we have the conditions for minimum attenuation for both side and phantom circuit.

Now R and G are generally fixed for any combination of side and phantom circuits, and have the relative values given. Whether the minimum attenuation constant is in question or not, we have equal transmission efficiency, if, when the side-circuit constants are C, G, L, R , the phantom-circuit constants are $2C, 2G, \frac{1}{2}L,$

and capacity vary according to a logarithmic function of the distance apart of the wires. The nearer together the wires of the side circuit are, and in the case of the phantom circuits the nearer together the side circuits—which constitute the limbs of the phantom circuit—the greater the capacity and the less the inductance, and vice versa.

As a general rule the transmission efficiency of a circuit is improved by separating the wires more widely, because the normal capacity of a circuit as compared with its inductance is in excess from the point of view of the capacity and inductance required to produce the minimum attenuation constant.

The separation of the wires tends to bring both the capacity and inductance nearer to the proportion that satisfies the minimum attenuation constant. There is, however, an accompanying disadvantage here, because unless a circuit is perfectly balanced the separation of the wires increases inductive disturbance from sources of disturbance outside the superposed four-wire system.

The relative transmission efficiency of

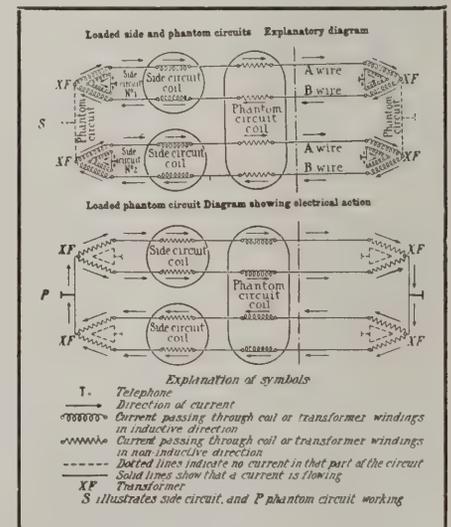


Fig. 10. Theoretical Electrical Action in Loaded Side and Phantom Circuits.

two common arrangements will now be examined. If the four conductors of a phantom-circuit combination are arranged on the pole-arms so as to form a square as seen end-on, two wires being arranged

on one arm and the other two immediately below on another arm, the side circuits being the diagonal of the square, it can be shown theoretically that the relative values of capacity and inductance of side and phantom circuits are such that the capacity of the phantom circuit is greater than twice the capacity of the side circuit, and that the inductance of the phantom circuit is somewhat less than half that of the side circuit.

It follows that the transmission efficiency of the phantom circuit is a little less than that of the side circuit.

The arrangement described is that which has hitherto been adopted in this country, the anti-inductive arrangement consisting in transposing the position of each wire on the pole arms so that a complete revolution takes place between every four poles.

An alternative anti-inductive method to that described, still retaining the square formation on the four pole arms, is to run the wires straight for a given length—say half a mile—and then cross them at regular and equal intervals of half a mile.

The transmission efficiency of the two anti-inductive methods described, both being in square formation, is nearly equal. Experiments in this country showed a difference of 2 per cent in the attenuation constant, being less to that extent in the case of the wires run straight.

The two side circuits being formed of adjacent wires from left to right in each case and supposed to be crossed at equal intervals, it can be shown that the inductance L of the phantom circuit is greater than one-half that of the side circuit, and that the capacity C of the phantom circuit is less than twice the capacity of the side circuit. As a consequence the phantom circuit has a lower attenuation than that of the side circuit, and this is verified in practice.

TABLE 1.

Capacity formulae for aerial lines from "Telephonic Transmission of Superimposed Circuits," by Kazukiyo Ogawa, Researches of the Electrotechnical Laboratory, Department of Communications, Tokyo, Japan, July, 1919.

Wires arranged in square formation.

Side circuit—

$$C = \frac{1}{4 \log (d/r)}$$

Phantom circuit—

$$C = \frac{1}{2 \log (d/2r)}$$

Inductance formulæ—

$$C = 4 \log (d/r) + \mu$$

$$L = 2 \log (d/2r) + \mu/2$$

r is the radius of a conductor, d is the distance between the wires of the side circuit, and μ is the permeability of the conductor, assumed to be constant.

Wires in a straight line on the same arm at equal distances, the wires composing the

side circuit in each case being crossed with each other at regular intervals.

Side circuit—

$$C = \frac{1}{4 \log (d/r)}$$

Phantom circuit—

$$C = \frac{1}{2 \log (d/r) \log (3d/r)}$$

Inductance formulæ—

$$L = 4 \log (d/r) + \mu$$

$$L = 2 \log (3.46d/r) + \mu/2$$

The first patent for air space type of cable with multiple twin circuits was that of Dieselhorst and A. W. Martin (British patent, 12,526 of 1903).

In these cables the relative transmission efficiency of side circuits and phantom circuits, respectively, follows the general rule, and depends on the relative values of their inductance and capacity.

Owing, however, to the fact that the wires making up the side and phantom circuits in cables are closely packed together, the capacity is relatively much larger, and the inductance much smaller than in the case of aerial wires, for the reason already given, and consequently the transmission efficiency of such unloaded circuits is much less than those of the same conductor weight in aerial lines [see Formula (5)]. As a rule the capacity of telephone circuits in cables containing a large number of wires is predicted from experiment, since it is largely affected by a factor depending on the form and dimensions of the cable.

Telephone air-space paper cables for phantom working are usually made up on the "multiple twin" formation—i. e., two telephone pairs are twisted together to form a phantom pair—and the relative capacity of side and phantom circuits may vary largely. The lay of the conductors is varied in the usual way. Experiment on recent cables shows, however, that the capacity of a phantom circuit has usually a mean value approximately 50 per cent in excess of that of the side circuit.

The natural inductance in telephone cables containing small-gauge conductors is so small as to be nearly negligible and will be left out of consideration. Artificial inductance is, of course, generally added to underground circuits which form part of the trunk or long distance system, and the problems of circuit balance presented by these loaded circuits will be dealt with further on.

On account of the relatively small capacity of the phantom circuit in such cables as compared with the capacity of the side circuits, the phantom circuit is of a higher transmission efficiency than the side circuit, so that by superposing we actually obtain an additional circuit which is more efficient than the circuit on which it is superposed.

It should be noted that it is possible to carry the principle of phantoming further, and to obtain a second phantom metallic

circuit by combining two four-wire cores and twisting them together in the same way as the two side circuits are twisted in order to form an ordinary phantom circuit.

Eight wires would evidently be necessary for such a circuit, and the principle may theoretically be continued, using 16 wires, 32 wires, etc., for successive phantom circuits until the number of combinations is exhausted. In practice, however, phantom circuits are limited to four-wire combinations at present.

It is possible under favorable circuit conditions to combine the loaded phantom circuit, as shown in Fig. 10, with the composited arrangement shown in Fig. 7. For this purpose the telegraph sets arranged as in Fig. 7 may be added to the ends of the two side circuits in Fig. 10.

In order to secure a balanced arrangement it would be necessary for all the telegraph sets to have the same impedance at the same end of the line. Such a circuit would be subject to the limitations pointed out in connection with the phantom circuit and the composited circuits. It is believed that an equivalent arrangement is worked in America, but it has not been used in Europe to the author's knowledge.

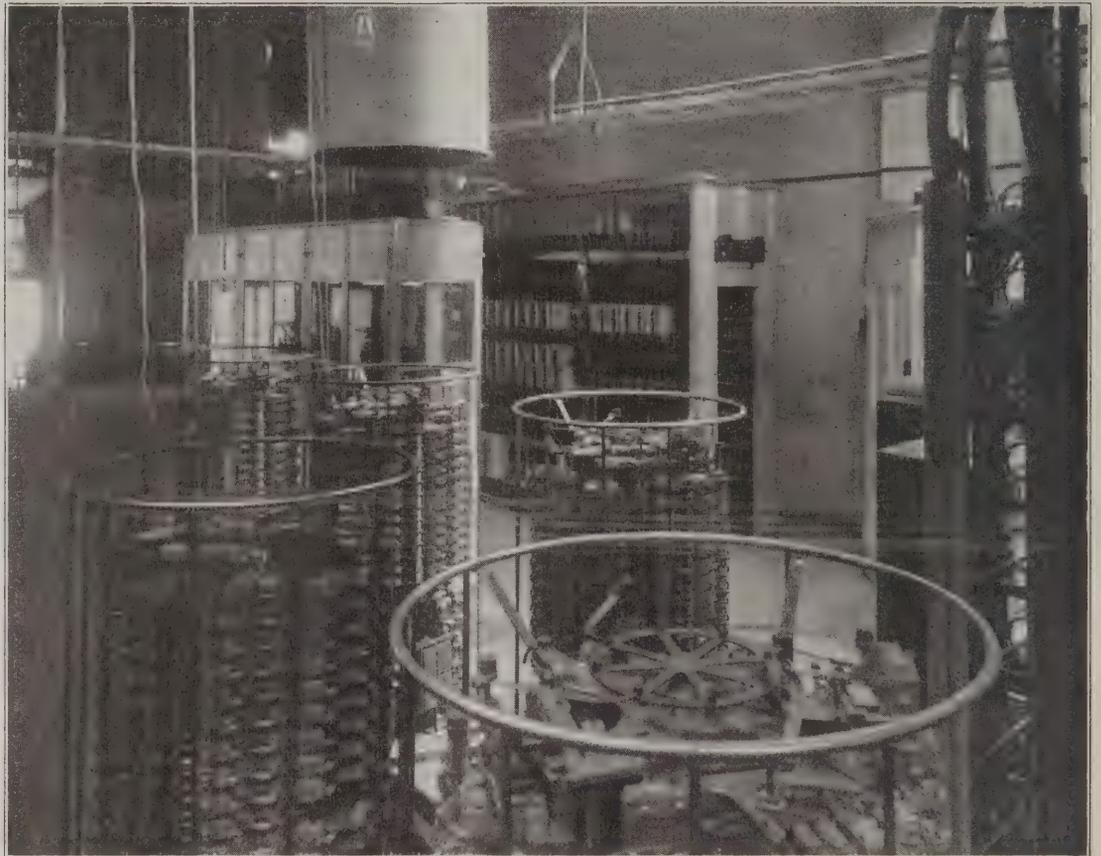
Transformer apparatus in phantom circuits absorbs a certain amount of energy and the effect on telephonic transmission requires consideration. Moreover, the usual signaling frequency is about 1,000 periods per minute, or approximately 17 per second, whereas the mean frequency of speech is taken at 800 periods per second.

The design of a transformer of small dimensions to meet both these requirements is difficult, and for that reason there is an advantage in utilizing a frequency within the range of frequencies for which the transformer has been designed. A transformer designed and sold by the Western Electric Co. and known as "type 4006A" is, however, available for this purpose. At a frequency of 133 periods per second, it is found to be very efficient for signaling, and it is specially efficient at telephonic voice frequencies.

The Post Office specification which requires an output of 80 per cent of the input energy at a frequency f such that $2\pi f = 5,000$, and of 55 per cent at a frequency f such that $2\pi f = 100$, is met by this apparatus; it also fulfills the stringent condition imposed for differential action when currents are sent through the windings in opposite directions.

The transmission loss (core loss) observed in comparative speech tests does not exceed the loss which takes place when speaking through one mile of the standard cable.

It may be mentioned that the method of winding to secure the differential action is one devised by the Post Office. Other manufacturers also make efficient transformers. (*To be concluded.*)



The Richmond Home Telephone Company began the use of Strowger Automatic equipment in 1907. All of the original installation is still in service, and, with the several additions made at various later dates, is rendering a grade of service that is completely satisfactory.



Strowger Equipment is Always Modern

The switchroom illustrated on the opposite page is that of one of the several automatic offices operated by the Richmond Home Telephone Company at Richmond, Indiana, where old and new Strowger Automatic switches are operating together in complete unity, giving modern dependable service at a profit.

Many cases such as this are on record where equipment already in service fifteen or more years is linked with additions of the latest type and the whole operated for many years almost as satisfactorily and economically as installations that are entirely new.

Telephone operating men who are contemplating replacing their central office equipment are invited to investigate this and the many other attractive features of the Strowger Automatic system.

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Toll Service and Ticket Detail

Accurate and Complete Recording Has a Prominent Part in Good Toll Service—Saves Operator Time, Circuit Time, Annoyance to Patron and Real Money for the Company—Paper Read at Syracuse Meeting of Up-State Association

By R. C. Speier

Manager, Operators' Training Department, Rochester Telephone Corp., Rochester, N. Y.

In order that a call may have a good start, it is essential that recording operators realize the responsibility which rests upon their entering the necessary details on the ticket. The service that the subscriber will receive depends, to a great extent, upon the manner in which the call is accepted. If courtesy, intelligence and interest are displayed by the recorder when she accepts the call, it will be started right—and a good beginning generally assures a good ending.

It is very necessary and important that operators be accurate in recording the details of calls in order that complaints may be avoided and circuit time saved.

Consider the result of the inaccurate recording of a toll call.

If special instructions are given to a recorder and she fails to make a notation of them, the operator who works on that ticket may give out information which the calling subscriber expressly desired to withhold, thereby causing a complaint. The omission of special instructions may also result in the operator not being able to complete a call which she, in all probability, could have completed had the special instructions been recorded on the ticket.

Accuracy of filing time is very important. If an incorrect filing time is recorded, a call which should be given precedence may be delayed, and a subscriber may in that way be deprived of the use of a circuit which is justly his.

An incorrect calling number holds up the ticket and delays reports, thereby causing complaints and dissatisfaction. These wrong numbers are particularly due to the recording of the wrong exchange and the omission of the letter on a party line.

The obtaining of the calling party's name is necessary because it is a means of identifying the call at the calling station. Very often it is the means of saving circuit

time or preventing the calling party canceling a call because the person who placed it cannot be located.

In regard to the recording of the correct code for the called place, it is necessary that great care be used. If there is no code for the place called, the entire name should be written; also care should be taken to ascertain the state and, if

letters in codes, particularly *A* being taken for *O* and *M* for *W*.

The called number, if given, should be carefully recorded. Subscribers should be encouraged to call by number because it saves the time that otherwise would be used in referring to the directory, and in larger offices this relieves the directory position of traffic.

The called party's name, initials and the firm name, if given, should be carefully checked, to avoid difficulty which may arise at the distant point from an incorrect but a similar name.

When routing directions are placed on a ticket, it is of the utmost importance that the code be written very carefully to avoid the wrong routing of the call, thereby causing delay and incorrect use of toll circuits.

The passed time should be noted as soon as the call is passed. Occasionally it is observed that the starting time is earlier than the passed time. Sometimes subscribers, who have been given their tickets to check, have noticed this condition and later have not hesitated to mention the fact when complaining of excess overtime, etc.

Recorders and line operators should be advised of the necessity of placing their operating numbers in the correct spaces and to cross their numbers off when they complete, as far as they are able, the work on a call. The operator's number on a ticket is the only means of identifying the operator who did the work on the call. Operators are occasionally blamed for poor service for which they are not responsible, because they fail to cross off their numbers.

In making entries on the back of the ticket it is very important for the proper completion of the call to have all codes and reports properly made and correctly timed and to be entered in the order in which they occur. Reports which cannot be exactly expressed by code should be written on the back of the ticket in full.

In conclusion, the ticket is an order for service. It is just as necessary for us to get the correct details of the call and note them intelligently and correctly as we would expect our order would be taken and noted, were we ordering a bill of goods from a merchant. We would expect that the order clerk would need to know the size, length, color and quality of the article desired and, once having

DATE		OUT		NOTE IF COLLECT	
SPEC. INST.	1	NO		M	K
FILING TIME	2 M	TRUNK		POSITION	
PLACE	Calling 3	FROM		STATE	
TEL. NO.	4				
PERSON	5	TO		STATE	
PLACE	Called 6				
TEL. NO.	7				
PERSON	8				
FIRM OR ADDRESS					
REPORT AS BUSINESS OF					
RECEIVED		M		MINUTES	
RECORDED				THIS LINE	
PASSED	9	M		OTHER LINE	
OPERATOR	10			MESSENGER	
CHARGE QUOTED				TELEGRAM	

Filing in the Ticket Accurately and With All Obtainable Information Makes for Good Service.

necessary, the county of the called place—if there is another city or town in another state or county of the same name as that of the city or town given. This thereby prevents a call being completed to the wrong destination, to the annoyance of the subscriber and the expense of the company. Mistakes of reaching the wrong destination are often caused by illegible

accepted our order, to fill it without further question.

Our patrons expect as much from us as they do from their merchants. They do not object to giving the order for service, but they certainly do object to recalls to verify details which should have been properly recorded at the time the call was accepted.

Therefore, complaints and circuit time can be saved and revenue increased by accurate recording of the details of a call and noting of the reports given in the proper order.

Interstate Utilities Co. to Spend \$100,000 in Inland Empire.

Improvements in the telephone system of the Interstate Utilities Co. of \$100,000, including substantial improvements in the lines of communication in a score of Inland Empire towns, were announced recently by John F. Davies, vice-president and general manager.

The company operates the telephone system of the panhandle of Idaho, and also exchanges in eastern Washington and western Montana. The executive offices of the company are in Spokane.

The budget of improvements of the telephone plant for 1923 includes marked improvements in the telephone system at Libby and Troy, Mont; Bonners Ferry, Sandpoint, Spirit Lake, Priest River, Rathdrum, Plummer, St. Maries, Kellogg, Wallace and Mullan, Idaho, and at Newport, Ione and Tekoa, Wash. The most important feature of the work is the proposed construction of a \$35,000 central office building at Coeur d'Alene, including switching equipment of the latest type and design.

The plans also provide for an enlarged switchboard for the telephone exchange at Libby, Mont. At Troy, Mont., considerable outside construction will be required immediately to meet the requirements of lumbering operations.

A new toll line will be constructed along the recently completed portion of the North and South highway between Sandpoint and Bonners Ferry at a cost of \$15,000. This will give three long distance circuits between Sandpoint and Bonners Ferry instead of one.

Metallic circuits will also be constructed during this year from Sandpoint to the Clarks Fork exchange, and between Sandpoint and Rathdrum to serve Athol, Granite, Cocolalla and other small towns. A new toll line will be constructed early in the spring between Tekoa and Plummer to give Tekoa direct connection with the Interstate Utilities system.

Subscribers of the Interstate Utilities Co. at Burke, in the Coeur d'Alene mining district, are served out of the central office of the telephone company at Wallace and the subscribers at Wardner are served out of the office at Kellogg. The budget for 1923 calls for the expenditure

of \$7,000 in cable construction to improve this service. An expenditure of \$5,000 in additional outside facilities for St. Maries and the surrounding territory also is provided.

A new switchboard will be placed in the exchange at Newport.

Important Questions Up for Discussion at Oregon Convention.

At the annual meeting of the Oregon Local Telephone Association, which was scheduled for Friday and Saturday of this week in Portland, the principal questions on the program for discussion were:

Right of way upon state highways— which, the association states, seems to have been practically nullified by the present highway commission;

A proposed change in the utility law whereby the quality of service rendered

The Index for Volume 83 of TELEPHONY.

The index for volume 83 of "Telephony," which was completed with the issue of December 30, is now ready for distribution among those who keep complete files.

In this index are listed all the important articles which have appeared between July 1 and December 30. It will be supplied free of charge to those making application.

shall be a factor in rate fixing, rather than valuation alone.

The matter of electrical interference by induction from power lines, and the rights of interested parties therein.

So that as many as possible might be present when these matters were considered, the association arranged to have them brought up on Saturday.

Many Things Gained by Attending South Dakota Meeting.

Arrangements have been practically completed for the annual convention of the South Dakota Telephone Association, to be held in Huron on January 17, 18 and 19, at the Marvin-Hughitt Hotel.

Some new and practical ideas on topics of current importance will be presented by men experienced in telephone work, as well as by representatives of the state railroad commission and the tax commission.

The special feature of the convention will be the plant school, in which the matter of inductive interference will be thoroughly discussed, together with other matters pertinent to successfully maintaining and operating telephone plants. Regarding this, President J. A. Steninger, of the association, reminds the members that the matter of inductive interference will come to them all sooner or later, as the development of high power transmission lines in South Dakota is yet in its infancy.

Convention rates have been secured from

the Marvin-Hughitt and the Royal hotels. Reservations should be made early, as the committee in charge of the convention program are looking for an attendance larger than ever before.

The association wants all of its members to be present and invites non-members to come along, too, and learn for themselves the benefits to be derived from the association's activities.

Hoover Seeks Radio Control to End Nightly Bedlam.

Control must be established over the bedlam filling the air from 21,000 radio transmitting stations, Secretary Hoover told the House merchant marine committee January 2 at hearings on the Kellogg-White federal radio control bill. Representatives of amateurs and various others interested in wireless communication also were heard by the committee.

The bill provides that the Commerce Department shall have supervision over all radio communication, assigning wave lengths, approving apparatus, licensing operators and otherwise supervising wireless communication to bring order out of the present chaos of jazz bands, sermons, crop reports, sporting services, concerts and what not running simultaneously on the same wave lengths.

Vigorous protest was entered by the war and navy departments against a provision of the bill which stipulates that whenever government apparatus is used for other than government business it shall come under supervision of the Commerce Department.

The navy operators, it was said, would have to obtain license from the Commerce Department if the section was retained. Secretary Hoover told the committee he would confer with Secretary Denby in an effort to reach an accord on that feature, but he insisted that the navy should not be permitted unlimited privileges to the discomfiture of other users of wireless.

Cumberland Bell to Spend Two Million in Tennessee.

The building program for the extension and betterment of service by the Cumberland Telephone & Telegraph Co., which contemplates the expenditure of \$2,000,000 for 1923 in Tennessee under the terms of an order issued by the Tennessee Railroad and Public Utilities Commission.

It will mean the building of conduits and additional office equipment in the central and branch exchanges in Nashville to the amount of \$300,000, and expenditures in Memphis of \$535,000, and expenditure of \$285,000 in Chattanooga and \$65,000 for Knoxville, while the proposed work on small exchanges in the state during the year will take up \$175,000 of the amount. The company also estimates that \$500,000 will be required in placing 22,000 new substations.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

Greeting.

In ancient times, as run the rhymes,
When snow was on the ground,
They gathered all in the banquet hall
From many miles around.

In the firelight all eyes shone bright
As they quaffed the home-made ale,
Or joined their host on massive roast
And told a merry tale.

Each honored guest must stand the test
And join in song or story,
At the host's request they did their best
And flunked, or garnered glory.

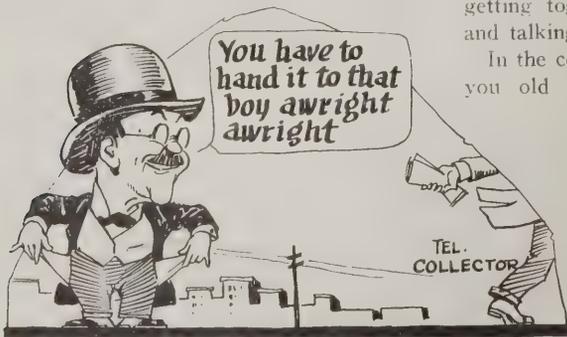
Let's summon all with a friendly call
To gather this new year,
In memory's hall and let each recall
Some thoughts of old time cheer.

'Twould be our request, as an honored guest,
That you should take the chair,
And call each name to start the game
To banish all dull care.

Each cheerful face is in its place
Our hearts are all aglow,
We'll dig up things from memory's springs
Which happened long ago.

We extend the call to one and all
To join in this bright new year,
And we can truly say, this winter day,
Remembering you has brought cheer.

That was about the only way to get the news of the day and opinions of the people in the olden times when newspapers, telephones and radio were undreamed of mediums of spreading information. So they had all the people gather in the big banquet hall and there assimilate news, booze and indigestion simultaneously. In other words, it was an old-time convention.



You Get the Other Fellow's Idea of How to Make Collections and Leave the Patron Smiling Though Broke.

Many telephone associations hold their conventions in the winter time from now on. While the complexion of conventions has changed considerably by reason of activities of a certain person entirely outside telephone circles, yet they have changed for the better and have lost nothing of

their most profitable features. The renewal of friendships already made and the forming of new ones, coupled with the mass of valuable information acquired, have ever been and always will be the real sought-after features of conventions in any line of endeavor.

You go to conventions primarily with these things in your mind: You have a pleasant anticipation of greeting old friends and, perhaps, of meeting people of whom you have heard but never met, and then you propose to slide down the hall and look over the exhibits to see what is new. After that you listen to speeches and, perhaps, you make the best one.

You get a new angle of observation on many of the questions which perplex you in every-day practice. You get the other fellow's idea of how best to make collections and still leave the patron smiling, though broke.

You find out what the other fellow has done about meeting the transportation problem of his repair and building crews. You learn about what can be done about your poles along the public highway where new road projects are forward. You get a chance to look over new wrinkles in the matter of station protection from lightning and commercial currents and, perhaps, can listen to a paper on just why and how some protectors protect and where others fall down. You get to know a lot about every-day problems just from getting together in the lobby or hallway and talking shop with the rest of the boys.

In the conventions now about to be held, you old timers will have to accelerate your step if you are to keep up with the procession, for you will find much talk in the air pertaining to this new-fangled stuff called radio.

Glib young sprouts will swamp you with discourses on various kinds of hook-ups, girds, couplers, variometers, detectors, amplifiers and a host of other new things; you will have to get a few old cronies back in some baggage room if you wish to discourse on the old-time questions of grounded lines, full metallic, dry batteries, ground rods, battery savers and such long-forgotten questions which occupied the time of old-time conventions.

One of the things which never does go out of date, or fail of interest, however, is the question of service. Service is the last thing to be allowed to go into the background. Whether it is service to the



So They Had All the People Gather in the Big Banquet Hall and Assimilate News, Booze and Indigestion.

patron, service of an arrester, pole line, dry battery, automobile, adding machine or telephone association, it matters not. Service is the final arbiter of the fate of all.

When the old-fashioned cut nail met up with the wire nail, its use ceased almost over night because the wire nail gave better service, cost less to make and did not require an expert carpenter to drive it without splitting the board nine times out of ten. On the other hand, the meek and lowly carpet tack which was just as old as the wrought nail is still occupying the center of the stage at all house-cleaning affairs, because it gave and is still giving adequate service, and there seems no necessity to improve on it in its present form.

The pin and the pants button are both samples of what they were for generations back; yet how few of us would think of going to a convention lacking some of these most useful adjuncts to modern civilization.

While we must and do progress, we cannot go beyond perfection, even if we can approach it, which is hard. The great object of telephone conventions is to serve you, and you should add your little mite of information, gained by your experiences in your home-town, to the general mass.

The reason for this is that without all the component parts nothing attains 100 per cent. You are one of the parts which help to make up the whole, and if you or your store of hard-gleaned knowledge, are missing from the make-up of the gathering, just so much will the whole lack of attaining that muchly-desired 100 per cent.

You are, in a way, part of the gas which

helps to make the machine go. I do not mean this in a joking way which would be supposed to reflect on your oratorical powers but as a means of illustration. If you are not to be considered in the gas-light column, you can play the part of some of the rest of the things so necessary to make up a perfect functioning machine.

You need not be afraid you will be considered a back number because 9/10ths of the others in attendance will be on a

par with you in scope of experiences. The radio bugs are not so deep as they might like to have you think they are.

They are only on a line with what you liked to have other people think you were when you first began to install telephones, while the amazed and interested family stood around to watch you. How you tried to carry it all off as old stuff when, as a matter of fact, you knew but little more than the ones who thought you must

be an electrical wizard to be able to connect up batteries and start the thing to working so they could talk. You remember that, don't you?

These conventions are held for you and not primarily so some manufacturer can make a few sales. If you don't attend them, you are missing out on some of the best experiences of a telephone career.

APHORISM: Few fish jump into the boat.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Settlement Gives Bell Temporary Increase in Tennessee.

Settlement of the Cumberland Telephone & Telegraph Co. rate case, which has been before the Tennessee Railroad & Public Utilities Commission for more than a year, was reached on December 28—the company being granted a small increase in rates, affecting 47 Tennessee cities.

The order is effective for the period between January 1 and date of final determination, final hearing being set for March 5. It was made following argument of counsel for protestants opposing the proposed schedule or any schedule of higher rates.

The increase is approximately one-fifth of the amount asked for in the original application, and is an advance of 5.7 per cent over the old rates.

The order granting the increase was made temporary, pending the supplying of information from time to time by the company to the commission, upon which a rate base and permanent exchange rates may be fixed in the state.

Settlement of the case was reached after company officials had filed a compromise schedule of rates and had agreed to expend \$2,000,000 during 1923 in improving the service and meeting the demands of its subscribers. The commission members, Chairman Julian Campbell, H. H. Hannah and W. H. Beasley, were unanimous in deciding the case.

The increase will affect patrons in the four larger cities of Tennessee to a greater extent than the smaller ones. An additional charge of 50 cents for business telephones and 25 cents for residence telephones will be made against subscribers in Nashville, Chattanooga, Memphis and Knoxville. In the smaller cities the rate increase will be in proportion to the number of telephones in use and the length and number of lines in operation.

Under terms of the compromise, the company agreed to refund to the commission, all costs that the commission has incurred in connection with the case; to withdraw all litigation against the com-

mission; to pay expenses of the "steering committee" of protestants and to cut down by the end of 1923, unfilled applications for telephone service not less than 75 per cent.

The settlement of the case was first suggested by F. H. Reid, vice-president of the company, who spent several days in Nashville consulting expert engineers of the commission.

It was shown by figures set out in the amended application that the Cumberland Bell will receive a total increase in revenue of about \$383,000 a year in place of \$975,000 as originally asked for. The company, under terms of the order, is required to file with the commission monthly reports—beginning February 1—showing definitely and fully how it is complying with the order with respect to the extensions and amount of revenue which is taken in.

This is the first substantial relief the company has received in 10 years, with the exception of a temporary increase granted during the war, which was subsequently revoked. The rates in effect up to January 1 were the same as the rates in 1921.

Immediately after the ruling, Chairman J. D. G. Morton of the "steering" committee—representing telephone subscribers throughout the state—announced that the committee was prepared to resist the increase and would fight to the end. A similar statement was made by Walter Armstrong, city attorney of Memphis.

Approves Merger of Illinois Bell and Kinloch Companies.

The merger of the Kinloch Telephone Co. of St. Clair County and the Illinois Bell Telephone Co. was given the approval of the Illinois Commerce Commission on January 5.

The order was issued with the provision that there shall be no increase in rates for at least a year.

Frank L. Smith, chairman of the commission, issued a statement relative to the order. Chairman Smith said

the consolidation was authorized to get for the people of the district the benefits of a unified service.

"Experience has proved that duplication of utility service is inefficient, annoying, wasteful and the quality and quantity of service considered, much more expensive than a single service," said Mr. Smith. "Therefore, the commission believed that it would be to the best advantage of all concerned to permit the consolidation and that under the consolidation the communities served will, in the end, be given a much better service than they could ever hope to get with a duplicated service."

California Company Authorized to Issue \$200,000 Stock.

The Associated Telephone Co., of Long Beach, was authorized by the California Railroad Commission on December 28 to sell \$200,000 par value of its common capital stock for the purpose of financing the cost of extensions, additions and betterments to its properties. According to the order, 100 shares may be sold at \$90 a share to fill the oversubscription of a previous stock issue. The remaining 1,900 shares are to be sold at not less than \$100 a share with a selling cost not to exceed 5 per cent.

California Company to Issue Bonds to Reimburse Treasury.

The Santa Barbara Telephone Co., of Santa Barbara, has been authorized by the California Railroad Commission to sell \$60,000 of its first mortgage, 5 per cent, 30-year, sinking fund, gold bonds. The order was issued January 4.

The bonds are to be sold for cash at not less than 87½ per cent of their face value and accrued interest, and the proceeds are to be used to reimburse the treasury for earnings used for capital purposes.

Indiana Investigation Takes Up Financing and Operating.

Evidence intended to show that the American Telephone & Telegraph Co. provides necessary financial backing for

the Indiana Bell Telephone Co. was introduced by the company at the hearing on affairs of the Indiana Bell before the Indiana Public Service Commission Saturday, January 6.

After a short session, devoted exclusively to the testimony of Fred C. Dickson, vice-president of the Union Trust Co., the hearing was adjourned until this week.

W. H. Thompson, attorney for the telephone company, presented the financial situation of the company to Mr. Dickson before beginning examination. Mr. Thompson said the Indiana Bell has capital of \$15,000,000, a funded debt of \$11,000,000 and a short term note debt of \$4,000,000. Practically all of the debt is due the A. T. & T. Co., he said.

"Under those circumstances," Mr. Thompson asked the witness, "would it be possible for the Indiana Bell to float its securities without the aid of the American Telephone & Telegraph Co.?"

"Not very easily," Mr. Dickson replied.

Mr. Thompson then reviewed further financial relations of the two companies, including an \$11,000,000 loan to the Indiana Bell by the A. T. & T. at 7 per cent on notes. He then asked the witness if, assuming such a sum could be borrowed in Indiana, it could have been borrowed on more favorable terms by the Indiana Bell.

"It could not have been borrowed as cheaply on those terms," said Mr. Dickson.

Mr. Dickson submitted other testimony in regard to financial matters at the request of attorneys for the commission.

Provisions made by the Indiana Bell Telephone Co. to care for its employes through pensions and workingmen's benefit plans were brought out at one of the hearings last week, through the testimony of Thomas R. Keyes, general auditor of the Indiana Bell Telephone Co. Mr. Keyes was a witness for the company and the bulk of his testimony concerned the assistance given to the Indiana Bell by the American Telephone & Telegraph Co. in auditing and finance.

"The service received from the American Telephone & Telegraph Co. with regard to plans for the benefit of employes is of great value to the Indiana Bell Telephone Co.," Mr. Keyes said. "The plans in many respects give the employes better return than the provisions of the compensation act."

Mr. Thompson asked him to give a specific example.

"We recently had an accidental death in Indiana when the beneficiary would have received \$3,960 under the act, but actually received \$720 more," Mr. Keyes replied.

Mr. Keyes declared that under the plan adopted by the Bell any employe of the company could go to some other part of the United States and work for the

American Telephone & Telegraph Co. without losing credit for continuous service. He said that the pensions received by employes were based upon 1 per cent of the average salary for ten years, multiplied by the number of years of service.

"Of course, all these payments you speak of revert back to the fact that the subscribers pay for it. There is no other source of funds. Is that so?" asked Commissioner John W. McCardle.

Mr. Keyes replied that the subscribers paid for the workingmen's benefit plans.

"State to the commission whether such plans do not make for great contentment among the employes and improve the service of the company," said Mr. Thompson.

"In my opinion they are of very great

They Like "Telephony."

From letters recently received by TELEPHONY we quote the following expressions:

"It is next to impossible to be a good telephone manager without TELEPHONY, and sometimes we could use more than one issue."—C. L. Patee, District Manager, Union Telephone Co., Owosso, Mich.

"TELEPHONY is a good paper for anyone in the telephone business. I have read it for almost 20 years. It is as good for Bell telephone employes as for Independents. Find enclosed my check for renewal for another year."—Chas. C. Black, Area Manager, Northwestern Bell Telephone Co., Stuart, Iowa.

value to the company and to the employes," Mr. Keyes answered.

He declared that the employes' benefit fund was provided for in the contract between the American Telephone & Telegraph Co. and the Indiana Bell Telephone Co., which requires the Indiana company to pay 4½ per cent of its gross revenue to the parent company in return for service and materials. He added that the plan would not be possible except for the guarantee of financial aid made by the parent company.

Since April 1, 1920, the Indiana Bell Telephone Co. has paid out a little more than \$6,000 in pensions to employes, Mr. Keyes said. Since the adoption of the compensation plan by the company early in 1920, approximately \$29,000 has been paid out for accident benefits, and approximately \$18,000 for expenses resulting from accidents, Mr. Keyes declared.

"The American Telephone & Telegraph Co. stands back of us when it becomes prohibitive to maintain the pensions. That is where I consider the service comes in," Mr. Keyes said.

"If you save money by not contracting commercial insurance, the benefit eventually accrues to the American company,

doesn't it?" asked Frank B. Farris, attorney for the commission, in cross-examination.

Mr. Keyes replied that the arrangement was good business, since it protected the Indiana Bell Telephone Co. He was asked to point out what other services the American Telephone & Telegraph Co. provided the auditing department of the Indiana Bell Telephone Co.

The services, he said, were practically continuous, and involved taxation, stock returns and a number of other things. Within the last two years the parent company had rendered valuable service by developing a new system of accounting and a system of checking and filing. The accounting system, he said, resulted in an annual saving of \$12,135.

Further testimony concerning the relative economy and efficiency of improved types of telephone switchboards was given during the week to the commission. A. J. Allen, of New York, traffic engineer of the American Telephone & Telegraph Co., appeared Wednesday as a witness for the Indiana Bell Telephone Co.

Munson D. Atwater, of Bloomington, Ind., previously had testified before the commission that the Indiana Bell Telephone Co. could improve its service and save money by the use of the La Crosse type of switchboard. Mr. Atwater was a witness for the commission. Tuesday, Byron S. Bailey, of New York, witness for the telephone company, submitted a report to the commission in which he showed that the annual costs of the Bell company would be increased by the use of the La Crosse board, and that the service provided by it was no more efficient.

Practically the whole of Mr. Allen's testimony Wednesday was virtually a substantiation of the report made by Mr. Bailey.

He testified that the calling rate at La Crosse had not been increased by the use of the new board, but that what had been cited by Mr. Atwater as an increase of from 10,000 to 15,000 calls a month was actually the result of an automatic method of counting in use at La Crosse. Surveys at La Crosse, he said, showed that the rate had remained practically the same since the installation of the new board.

He declared that with the La Crosse board one operator working under ideal conditions could complete 2,300 calls a day, while with boards used by the Indiana Bell Telephone Co. at Muncie and at Indianapolis the same operator could complete 1,600 calls a day.

"Would you be justified in letting off one-third of your operators after the installation of a La Crosse board?" asked Frank B. Farris, attorney for the commission, during the cross-examination of Mr. Allen.

"That assumption is practically right," Mr. Allen replied.

Mr. Allen testified that he had made traffic surveys of telephone companies in many cities and that in places where both automatic and manual switchboards were used, the telephone users showed preference for the automatic.

He declared that the calling rate a line in Indianapolis was 7.2 calls a day, and that if the rate should increase, any advantage in the decrease of operators under the La Crosse system would be offset in Indianapolis.

Michigan Commission Gives Approval to Dowagiac Merger.

The Michigan Public Utilities Commission has given its approval to the merger of the Bell and the Home Telephone Co. exchanges at Dowagiac, Mich., and throughout Cass County—the new company to be known as the Dowagiac Telephone Co. The order was entered December 27.

It is planned to establish the same rural rates as are now charged by the Michigan State Telephone Co. in the territory which will be served by the new company.

New Switching Rates and Minimum Circuit Charge Allowed.

An order issued December 29 by the Minnesota Railroad & Warehouse Commission gave the Blue Earth Valley Telephone Co., of Blue Earth, permission to place in effect on January 1 a rural switching charge of 40 cents per month per station, subject to a discount of five cents if paid on or before the 15th of the month in which the service is rendered. A minimum charge of \$2.00 per circuit was also authorized.

The company had requested authority to establish a minimum charge of \$2.80 per circuit, but the commission decreased this to the basis of five parties per circuit.

The Blue Earth Valley company operates local exchanges at Blue Earth, Wells, Winnebago, Elmore, Guckeen and Huntley. From these exchanges it serves approximately 1,838 local and rural owned stations and from the first four exchanges it serves 1,199 rural switching stations.

Eight Companies Authorized to Continue Higher Rates.

Orders were entered by the Missouri Public Service Commission on December 18 permitting six exchanges to continue operations under increased rate schedules previously granted. Two similar orders were entered on the 19th.

The companies affected by the orders of December 18 are: Frankford Telephone Exchange for service in Frankford; Kansas City Telephone Co., for service in Independence and the Fairmount exchange area; Kinloch Telephone System, for service in St. Louis and vicinity; Mutual Telephone Co., for its exchange at Greenfield; and Sedalia Home Telephone Co., for service in Sedalia.

On December 19 the Linneus Rural Telephone Co. was authorized to continue its increased rates at Linneus, and the Thayer & Alton Telephone Co. to continue the rates at Thayer.

Monroe (Neb.) Company to Continue Present Rates Indefinitely.

Permission has been granted by the Nebraska State Railway Commission to the Monroe Independent Telephone Co. to continue indefinitely charging the present schedule of rates.

The company was given first relief in August of 1921, in the form of temporary rates, and it was figured these would increase revenues \$7,000. Because of local conditions, that portion of the increase made contingent on the making of certain improvements was not put into effect.

In February, 1922, the rates were made effective for the remainder of the year. The company had lost subscribers, some

Thanks, Mr. Wire Chief!

"I certainly appreciate your kindness in keeping TELEPHONY coming to me," writes Erwin Garder, wire chief of the Badger Telephone Co. at Oconomowoc, Wis., in a letter remitting for his subscription. "TELEPHONY is a great journal for telephone men and is getting better all the time."

through local irritation and others due to business depression. Based on the ten months' showing of this year, the company will get about \$57,000 revenue, which is less than the commission's estimate of expenditures, plus a fair return, said was necessary.

However, the election of the company to forego certain increases and to postpone improvements, which would have added considerable to annual operating expenses, has resulted in substantial economies in operation, as compared to the estimate.

After paying interest on the small amount of note obligations outstanding, the company has earned a net income available for dividends of 6.8 per cent on the outstanding stock, all of which had been authorized by the commission after careful studies of the property, but with no physical valuation in recent years.

At the rate the company has earned for the first ten months of 1922, the commission says, it will have earned \$9,000 in the year for interest and dividends. The property is being well taken care of, as evidenced by the amount spent in maintenance, and there has been added, chiefly at Genoa, \$7,000 in improvements. Traffic expenses do not exceed 35 cents per month per station, which indicates economy born of necessity. Commercial expenses, while relatively higher, are substantially less than found originally as not excessive.

Such an emergency exists, the commis-

sion found, as warranted the continuation of the rates, as no reason was found for not approving the application.

Nebraska Supreme Court on Guy Wire Anchoring.

In a case just decided by the Nebraska Supreme Court, it is held that where a company secures telephone poles, which it has a right to place in the streets, with guy wires, it is required to use reasonable care to so erect and maintain the wires as not to endanger public travel or the safety of individuals, having in view the probable use of the highway by the public. It added:

"Where an ordinance requires telephone poles to be placed within or adjacent to the curb line of the street, the fact that the curb line and property line of an alley are the same, and that to place the poles adjacent to the curb line would cause crossarms, ordinarily used on telephone poles, to extend over private property, is no justification for the company to set its poles out in the paving 2½ feet from the curb line, for the company may either construct its crossarms to extend from one side of the pole only, or procure from private owners the right or permission for the overhang of crossarms over their property.

"The testimony of experts on electric pole and wire construction—that the poles and wires in the instant case were erected according to the method generally approved by electrical engineers—does not conclude the question of whether or not the placing of the guy wires in the alley, at the place and under the conditions in question, was a dangerous obstruction to public travel, negligently maintained, that being a matter within the range of common knowledge.

"Where a company anchored an uncovered guy wire, which supported a terminal pole carrying five wires, out in the paving of a 20-foot alley, and 2½ feet from the outer edge of such paving, held that the question of whether or not the company was negligent in so doing is for the jury."

Authorizes Continuance of Existing Rates Because of Efficiency.

The Nebraska State Railway Commission declines to penalize economy and efficiency, and has, therefore, entered up an order continuing for another year the existing rate schedules of the Hamilton County Farmers' Telephone Association. This company operates nine exchanges in that county, and serves 2,800 subscribers. It was originally organized by farmers, who extended their operations into practically all of the towns of the county, and is distinguished from most other companies in that it pays no dividends. The company, however, is not entirely philanthropic. It rebates 25 cents a month

to those stockholders who furnish certain other equipment.

When the commission fixed the present rates in April, 1920, it had in mind securing a minimum return of \$2,000 a year that the company should earn in addition to the standard stockholder rebate, which is not sufficient in itself to be classed as an adequate return. This the company is privileged to use as it pleases.

During the current year the company earned a surplus of \$3,700 above expenses. There was some talk of cutting the rates, but the board of directors advised the commission that they did not believe this should be done as the maintenance requirements of the commission were not meeting all conditions necessary to good service, and that there was not enough money going into the maintenance and depreciation funds. The commission agreed with this conclusion.

In granting a further extension of rates the commission says that the net returns would ordinarily indicate that a cut of ten cents a month in exchange rentals was called for, but that the record of the company discloses a sincere and intelligent effort to keep down costs, and it would follow that to order a reduction at this time would be to penalize economy and discourage efficiency. It, therefore, accepts the judgment of the board of directors, and allows the rates to stand, subject to the usual condition that if circumstances develop of a character to warrant any change, the commission will retain power to make whatever new rates the situation calls for.

The company did business during most of the war time period at old rates, and the average rate increase, as the schedule now stands, is but 17½ per cent above the 1914 figures.

Unified Service In Xenia, Ohio— Increased Rates Upheld.

The physical merger between the Ohio Bell Telephone Co. and the Springfield-Xenia Telephone Co. in Xenia and Greene County, Ohio, was accomplished on December 28.

Two days previous, the state supreme court upheld the increased rates of the Ohio Bell in Xenia. The Ohio Public Utilities Commission had rejected the higher schedule proposed, but an appeal brought by the company resulted in a reversal of the commission's ruling.

There are now more than 4,000 subscribers in Greene County reached by the Bell company—3,000 of whom are reached out of the Xenia exchange and 1,000 out of the other exchanges in the county.

Ohio Supreme Court Upholds Increase Granted by Commission.

Increased telephone rates granted the Lima Telephone & Telegraph Co., of Lima, in November, 1921, by the Ohio

Public Utilities Commission, were sustained December 30 by the Ohio Supreme Court.

An appeal protesting the decision of the utilities body was filed by the city, but the court upheld the commission's decision.

The increases granted are in effect at present.

Oregon Commission Says Bell Violates Anti-Trust Law.

A letter was sent under date of December 23 by the Oregon Public Service Commission to the commissions of other states, with the purpose of enlisting their cooperation in securing the enforcement of the Clayton anti-trust law against the American Telephone & Telegraph Co., the Pacific Telephone & Telegraph Co., and the Western Electric Co.

The Oregon commission has taken up the matter with the Interstate Commerce Commission and may bring it before the United States attorney general.

The letter gives a resumé of the research work done by the commission in seeking to bring the Bell companies under the operation of the law.

A. T. & T. Not to Be a Party to South Carolina Rate Case.

The American Telephone & Telegraph Co. is not to be made a party to the Southern Bell rate case in South Carolina. This ruling was made on December 27 by Judge H. A. M. Smith of the United States District Court at Charleston, when he held that it was only necessary for the Southern Bell to prove its assertion that the state statute and rates are unreasonable.

The legal action between the company and the South Carolina Railroad Commission is a result of the act of legislature which sought to materially reduce the increased rates placed in effect by the Bell early in 1921. The law gave the commission power to enforce it; hence, the commission was named as defendant in the company's suit.

A temporary injunction was granted by the federal court against the immediate enforcement of the statute, the company giving bond to protect its subscribers.

The motion asking that the A. T. & T. be made a party to the case in the federal court was brought by the South Carolina Telephone Subscribers' Association, which is contesting the rate advance.

Rehearing Held on Utah Rates— Taken Under Advisement.

Increased rates for the Mountain States Telephone & Telegraph Co. in Utah, which have been pending in some stage or other for more than three years, were again taken under advisement by the Utah Public Utilities Commission, following the hearing in Salt Lake City, December 22.

The rehearing of the case on the protest of Murray City and others was completed and the case submitted after brief argu-

ments made by the complainants and the company.

Ray M. Morris, general commercial engineer for the company, was the final witness called in the case and was on the witness stand the entire day. His testimony covered practically the entire field of the telephone service.

Counsel for the company stressed particularly that the discrimination would be reinstated by reverting to the old flat rate system from the present toll rates installed under the recent order of the commission. It was pointed out that to rescind these tolls would be to again place Salt Lake users in the position of having to pay toll charges for calling to the exchanges of Murray, Holliday and Midvale but that these exchanges would have no tolls to pay for calling to parties on the Salt Lake exchange.

The company took the position that the evidence introduced at the rehearing being largely repetition of the testimony introduced in the original case and that case having been decided upon its merits by the commission, there was no reason why the commission should greatly concern itself with the matter.

The complainants, on the other hand, stressed particularly the company's financial reports to the Interstate Commerce Commission for 1919, 1920 and 1921, which, they contended, showed the company was not only making a dividend of 7 per cent on the capital stock but had also set aside large sums of money as surplus and for meeting extra charges. They contended the report showed the company was not in such dire financial straits as had been represented in the original case which resulted in the company being allowed certain increases.

Pacific Bell Rate Hearings in Washington to Start Next Week.

It is expected that the Washington Department of Public Works will begin taking testimony next week on rates of the Pacific Telephone & Telegraph Co. in Seattle, Tacoma and Spokane.

A three-day hearing was held December 19 to 21 on valuations of telephone plants in the state, and it has been agreed that additional testimony may be introduced at the first rate hearing.

The plans for rate hearings provide that the Pacific Bell shall make its showing in each of the three cities. Then, when the commission engineers and city experts have had an opportunity to study the evidence and prepare their case in opposition, they will put in their testimony.

Wisconsin Company Granted Increased Rate Schedule.

The rate increase proposed by the Eastern Wisconsin Telephone Co., of Chilton, for service in Marytown, was authorized

Here it is!

Note the date of this article announcing the P & H Guaranteed Penetration process of butt-treating cedar poles - perfected by Page & Hill Co.

SEPTEMBER 25, 1920

TELEPHONY

SEPTEMBER 25, 1920

A Revolutionary New Butt-Treatment

Page & Hill Company, of Minneapolis, Develop An Absolutely Guaranteed Penetration Process. This New Butt-Treatment Impregnates The Treated Area Of Every Pole With A Standard Preservative To A Uniform Depth Of One-Half Inch - Effecting An Economy On Replacement Costs Of About Four Poles Per Mile.

By
ALBERT EDWARD RICHTER

ANOTHER worker of magic is now established alongside the telephone, the typewriter, the dictating machine and other magical inventions.

The butt-treatment of poles, previously accomplished through more or less established methods, has been splined through more uniform and satisfactory results, has been recently revolutionized by a new mechanically-controlled absolutely uniform penetration process.

This latest improvement in modern butt-treatment methods is of primary interest to every buyer of the wooden pole.

It is the practical realization of the ideal toward which progressive pole users and manufacturers have long been striving to obtain.

Practical!

To the point where the pole manufacturer guarantees—without qualifications—that the sawwood of each and every pole treated shall be fully impregnated with a standard preservative to a uniform depth of at least one-half inch in every portion of the pole surface in that area between the plane designated as the height of treatment in a plane one and one-half feet below the standard ground line, unless the impregnation will be to the full depth of the sawwood throughout this area.

This guarantee, without qualifications, is a radical departure from accepted methods and standards of practice.

Close section of a treated pole butt treated by the P & H Guaranteed Penetration Process. Shows full inch penetration.

Close section of a standard pole butt treated by the P & H Guaranteed Penetration Process. Shows less than one-half inch penetration.

The manufacturer absolutely guarantees to treat without cost—and to the complete satisfaction of at least every buyer perfect protection on a full crop of poles treated.

Starting as it may seem, the guarantee places the entire burden of the responsibility for a 100 per cent performance upon the manufacturer.

Page & Hill Develop New Butt-Treatment

The term work which has put co-ordinated speed and unfed drive into the best known methods of pole treatment in the past is fully exemplified by the Page & Hill Company, of Minneapolis, who have developed, applied and now guarantee this new penetration process.

From the beginning of their business career, nineteen years ago, Page & Hill have made the subject of pole treatment one of continuous study and investigation. Factors in the method of treatment for commercial purposes. Still more important, it has always been their earnest endeavor to not only produce one of the very best results under the best known methods of treatment but also develop improvements to produce a process affording an absolute protection.

This new method, which in itself is magical, is the result of years of continued endeavor and concerted action. It has passed beyond the laboratory and experimental stage. It has withstood every test to the complete satisfaction of the largest and most critical pole buyers. It is revolutionary!

Uniform Penetration Absolutely Guaranteed

Concentration and penetration. These, admittedly, are the Alpha and the Omega, the very heart and soul of economy and efficiency in the butt-treatment of poles.

Concentration of the preservative throughout the area treated to the point of saturation with a large volume of preservative.

Penetration to an absolutely guaranteed uniform depth of at least one-half inch throughout the ground-line area, in a plane one and one-half feet below the standard ground line.

The pole from which this plug is removed will be tightly driven in.

What is this new treatment? Is it practical? How does it work? The result of treatment of this new process may be summed up in few words:

The sawwood of each and every pole shall be fully impregnated with the preservative to a depth of one-half inch in every portion of the pole in that area between the plane designated as the height of treatment in a plane one and one-half feet below the standard ground line, unless the impregnation will be to the full depth of the sawwood throughout this area.

The results shall be determined by making frequent tests with an accurate gauge, removing thereby a plug taken from this area at a point one foot below the standard ground line. The hole from which this plug is removed will be sealed with creosote, after which a crooked plug will be tightly driven in.

the First Public Announcement of the Only Guaranteed Penetration Process, —the "P & H"

PAGE & HILL CO. was the first to brand their poles - the first to develop a process of butt-treatment that insured a one half inch penetration of the preservative throughout the ground-line area of the pole - the first to issue a written guarantee specifying a definite depth of butt-treatment.

The "P & H" is the original Guaranteed Penetration Process - and is still the best. We guarantee, in writing, a half inch uniform penetration of the preservative throughout the ground-line area.

We produce and sell treated and untreated Northern White and Western Red Cedar Poles - we can give you any form of butt-treatment. We make prompt shipments because of the strategic location of our yards throughout the North Central and Western States.

Write for illustrated booklet of facts on the butt-treatment of cedar poles.

Copyrighted 1922 by Page & Hill Company

PAGE AND HILL CO.

MINNEAPOLIS, MINN.

MAIN YARDS AND BUTT-TREATING PLANTS - ST. PAUL, MINNESOTA (Minnesota Transfer)

New York, N. Y. 50 Church St.
Chicago, Ill., 19 So. LaSalle St.

Kansas City, Mo. 717 Bryant Bldg.
Omaha, Neb., 513 Electric Bldg.

Houston, Texas, 1111 Carter Bldg.
Dallas, Texas, 311 Sumpter Bldg.

Buffalo, N. Y. 950 Ellicott Sq. Bldg.
Louisville, Ky. 1416 Starks Bldg.

by the Wisconsin Railroad Commission on December 30 and went into effect January 1. It appeared that even with the increase the revenue for 1923 would not be adequate to care for the estimated expenses.

The new rates entitle the Marytown subscribers to free service with the subscribers of the Johnsbury exchange. The latter has between 175 and 200 patrons, exclusive of those connected at Marytown.

Damage caused by the sleet storms early last year necessitated rebuilding in the vicinity of Marytown. The company did not wish to restore the grounded circuits on account of service conditions; instead it offered to build a full metallic circuit to the exchange chosen by the majority of subscribers. Johnsbury was chosen and the circuit was built from Marytown to Johnsbury.

The company's records show an investment of \$1,502 for the Marytown exchange—or about \$52 per station. The statement for 1922 showed expenses of \$13.25 per telephone, excluding depreciation, which was not out of line with those of other small exchanges. The estimated requirements amounted to an average rate of \$20.65 per telephone.

The old and new schedules are:

	Old rate.	New rate.
Business	\$1.25	\$1.50
Residence	1.00	1.25
Rural	1.00	1.25

New Toll Schedule Given Company to Avoid Discrimination.

That there may be no discrimination between the exchanges of the Marion & Northern Telephone Co., of Marion, the Wisconsin Railroad Commission on December 30 gave the company authority to place a new toll schedule in effect January 1. In some instances the rates are increased and in others they are decreased.

An advance of 25 per cent in the station-to-station rate, a report charge of 25 per cent of the station-to-station call, and overtime charges and other regulations of the standard schedules of the Wisconsin Telephone Co. were authorized at the same time.

Madison, Wis., Company to Issue \$20,000 Capital Stock.

Authority to issue \$20,000 of its capital stock was given the Commonwealth Telephone Co., of Madison, by the Wisconsin Railroad Commission. The order was entered December 30, becoming effective as soon as it is recorded on the books of the company. The issue is divided into 200 shares of the par value of \$100 each.

The purpose of the issue is to secure funds with which to reimburse the treasury for expenditures heretofore made for additions, extensions and improvements to its property and plant.

Summary of Commission Rulings and Schedule of Hearings.

ALABAMA.

January 2: Hearing on application of the Roanoke Telephone Co., of Roanoke, for authority to discontinue certain lines, continued from this date to February 5.

CALIFORNIA.

December 27: Authority given Associated Telephone Co., of Long Beach, to sell \$200,000 par value of its common capital stock to finance extensions and betterments to its properties.

December 27: Application filed by Daidio, Tognini & Chezzi Telephone Co. for permission to sell to J. R. Fort its business and property in the town of Cayucos, at an agreed price of \$1,000.

December 28: Petition filed by William Cromlie, owner of a telephone system in Kings County, with its principal office in Corcoran, for authority to transfer the business to the Corcoran Telephone Exchange, of which he is president. With the exception of three qualifying shares, the petitioner will hold all stock of the corporation, amounting to \$25,000 par value. The reason given for the proposed transfer is to separate public utility business from applicant's private business and to make it easier to procure funds for development work.

January 2: Application for increased rates filed by Morgan Hill Telephone Co., in order that it may be in a position to give all night service. The commission is asked to appraise the property and establish fair rates.

January 4: Authority given Santa Barbara Telephone Co., of Santa Barbara, to issue and sell at not less than 87½ per cent of their face value and accrued interest \$60,000 of its first mortgage, 5 per cent, 30-year, sinking fund, gold bonds.

ILLINOIS.

January 5: Approval given to the merger of the Kinloch Telephone Co. of St. Clair County with the Illinois Bell Telephone Co., provided that there be no increase in rates for at least a year.

January 9: Hearing held at Chicago on citation to the Illinois Bell Telephone Co. to show why rates for service in Chicago and adjacent territory should not be reduced.

January 9: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in the counties of Cook (except Chicago), DuPage, Grundy, Kane, Kendall, Lake, McHenry, and Will should not be reduced.

MICHIGAN.

December 27: Approval given to merger of exchanges of Michigan State Telephone Co. and Home Telephone Co. at Dowagiac and throughout Cass County.

KANSAS.

January 3: Application of Emporia Telephone Co. to reduce rates on rural lines from \$1 a month to 75 cents a month, approved. The rural lines are owned by the subscribers and the company merely rents the instruments. The reduction is said to apply to about 1,000 farm telephones.

MISSOURI.

December 22: Southwestern Bell Telephone Co. authorized to continue existing rates at its St. Louis exchange for the temporary period ending April 1.

December 22: Order entered permitting DeKalb County Telephone Co., of Maysville, to continue using rates granted October 18, 1920, for its exchanges at Maysville, Fairport, Amity and other towns mentioned.

NEBRASKA.

January 4: Application by Platte Valley Telephone Co. for interpretation of rule regarding amount to be charged for inside moves when workmen must be sent from other towns.

January 4: In the matter of the application of the Beaver City Telephone Co. for fixing switching rate at Edison exchange; request reasonable and granted.

January 11: Hearing at Cozad of application of Cozad Mutual Telephone Co. for an increase in rates.

January 5: Complaint filed by the Bank of Phillips against Hamilton County Farmers Telephone Association because of elimination of flat rate from Phillips to Grand Island.

January 6: Application of the Lincoln Telephone & Telegraph Co. for permission to issue \$500,000 of common stock; found to be reasonable and granted upon condition that detailed reports of proceeds of sale and expenditures be made whenever the amount of the latter reaches 10 per cent; stock to be sold for cash or its equivalent at par.

NORTH DAKOTA.

December 23: Petition filed by Grafton Rural Telephone Co., of Grafton, for decrease in switching rates of the Northwestern Bell Telephone Co.

December 27: Authority granted Danzig Telephone Exchange, of Danzig, to shorten hours of service from December to April, there being only one protest to the petition.

December 28: The service station switching charges of the Park River Telephone Co., of Park River, being under investigation, a rate of \$4.80 per year per station has been ordered.

OHIO.

February 13: Hearing on application of Ohio Bell Telephone Co. for authority to unify the service in Massillon, continued to this date.

TENNESSEE.

December 28: Cumberland Telephone & Telegraph Co. granted temporary rate increase pending final determination of case. Final hearing set for March 5.

UTAH.

December 22: Rehearing held at Salt Lake City on new rate schedule granted the Mountain States Telephone & Telegraph Co. last July for service in various Utah cities. Matter taken under advisement.

WASHINGTON.

January 15: Hearings on rates of Pacific Telephone & Telegraph Co. for service in Seattle, Tacoma, and Spokane, scheduled to begin this week.

WISCONSIN.

December 30: Commonwealth Telephone Co., of Madison, authorized to issue \$20,000 of its capital stock, divided into 200 shares of the par value of \$100 each. The issue is for the purpose of securing funds to reimburse the treasury for expenditures heretofore made for extensions and improvements.

December 30: Rate increase granted Eastern Wisconsin Telephone Co., of Chilton, for service in Marytown; effective January 1.

December 30: Permission granted the Rock Falls & Meridian Telephone Co., of Rock Falls, to issue \$760 par value of its capital stock, consisting of 19 shares of the par value of \$40 each, in exchange for certain telephone property described in the application.

December 30: Marion & Northern Telephone Co., of Marion, given permission to establish new toll rates between its various exchanges.

A Satisfied *and* Enthusiastic Public *and* a Prosperous Operating Company

Are the Certain Results of a Combination of

Automanual Equipment *and* Good Management

The Automanual Exchange of the Wapakoneta Telephone Company, Wapakoneta, Ohio, is one illustration of the truth of this assertion.



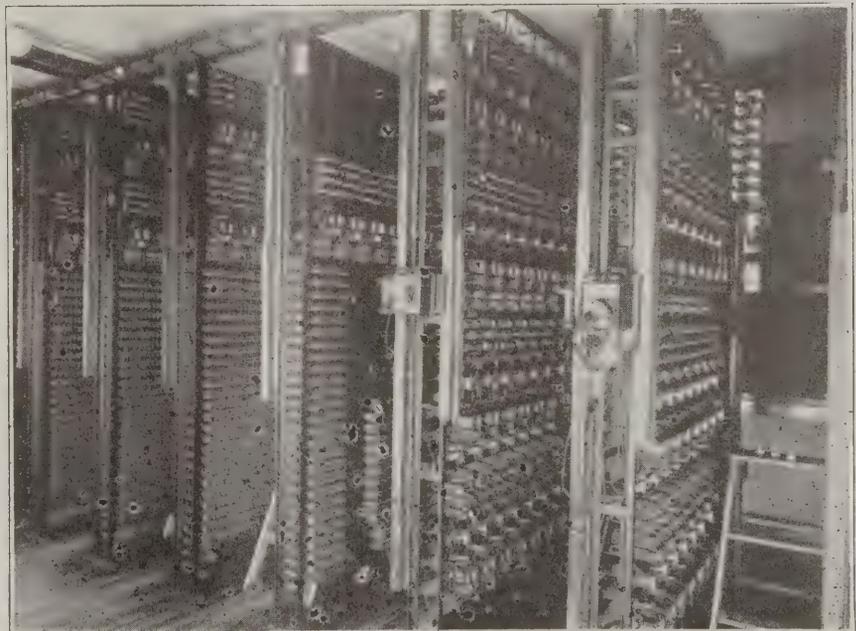
THESE 2 Automanual Operators take care of the busy hour traffic for 1,800 stations in the Wapakoneta, Ohio, exchange where the **Automanual service provides 2½ seconds answering time, reduces errors to less than 1% and includes automatic ringing, secret service, instantaneous disconnect and immediate recall.**

Except during the busy hours, **1 AUTOMANUAL OPERATOR** switches the local traffic for the 1,800 stations.

At night **1 OPERATOR, ALONE, WORKING AT AN AUTOMANUAL TOLL BOARD,** handles the entire traffic—both local and toll.

THIS shows the **AUTOMANUAL SWITCHING EQUIPMENT** which makes possible such **EXCELLENT SERVICE** at Wapakoneta as to create **AN IDEAL RELATIONSHIP BETWEEN THE PUBLIC AND THE OPERATING TELEPHONE COMPANY.**

What **AUTOMANUAL** has done for Wapakoneta, it will do for you; let us explain it.



**AUTOMANUAL REMOTE CONTROLLED and DIAL CONTROLLED
MACHINE SWITCHING SYSTEMS**

The North Electric Manufacturing Company, Galion, Ohio

Personal and Biographical Notes

Paul M. Lincoln has been made director of the school of electrical engineering at Cornell University, to succeed Professor Alexander Gray, deceased.

Mr. Lincoln brings to his new position a practical engineering experience of nearly 30 years, wide connections in the engineering world, and an abundance of tact, sound judgment, optimism, and human sympathy, by which he has made and held a vast number of friends.

He was born in Norwood, Mich., spent his boyhood and high school days in Painsville, Ohio, and studied for a year at the Western Reserve University in Cleveland. He became convinced that his leaning was not toward a classical education, so he entered the Ohio State University in 1889 and received his M. E. in E. E. degree in June, 1892.

His first work after graduation was with the Short Electric Co., of Cleveland. Later, he went to Pittsburgh, Pa., to take up work for the Westinghouse Electric & Mfg. Co. After about two years with that concern, he became connected with the Niagara Falls Power Co., of Niagara Falls, N. Y., as its electrical superintendent.

Returning to the Westinghouse company in 1902, he remained until 1919, when he joined the forces of the Lincoln Electric Co., which his older brother had organized. He continued with this company until November 1, when he took up his duties as director of the engineering school at Cornell.

Mr. Lincoln has for many years taken an active interest in the affairs of the American Institute of Electrical Engineers. For five consecutive years—1909 to 1914—he served as chairman of the sections committee, and was president of the institute in 1914-1915.

W. G. Bickelhaupt, of Aberdeen, S. D., has been elected president of the Dakota Central Telephone Co. to fill the vacancy caused by the death of J. L. W. Zietlow. With the assumption of his new duties as executive officer, Mr. Bickelhaupt relinquishes the office of secretary-treasurer, which he has held since the organization of the Western Dakota Telephone Co., the predecessor of the Dakota Central. B. C. Lamont succeeds him as secretary and E. E. Ingham as treasurer.

Mr. Bickelhaupt was also one of the organizers and directors of the Dakota Central Lines, which was taken over by the present company in 1904.

Joining forces with Mr. Zietlow in 1898 to give South Dakota an extensive Independent telephone service, Mr. Bickelhaupt gave his earnest cooperation to the building of the system that is now one

of the largest Independent companies in the country.

Mr. Bickelhaupt was born in Cambria, Wis., in 1865. He assumed heavy business responsibilities at the age of 19, when his father died and left him the management of a grain business. For several years his activities were along this line, including operations in South Dakota and Washington.

His more than 20 years' experience as



W. G. Bickelhaupt, of Aberdeen, S. D., for Many Years Secretary-Treasurer of the Dakota Central Telephone Co., Is Its New President.

partner in developing a broad telephone service has given Mr. Bickelhaupt an especial fitness to carry on the policies of the Dakota Central Telephone Co. and its continued progress under his guidance is assured.

He is a member of the Aberdeen Commercial Club, York and Scottish Rite Masons, Mystic Shrine, Modern Woodmen and United Workmen.

A. S. Little, after two years as manager of the Northwestern Bell Telephone Co. at Dubuque, Iowa, has been placed in charge of the company's affairs at Des Moines, the change becoming effective December 15. He has been connected with the Bell system for four years.

Mr. Little was born in Elmira, N. Y., graduated from high school in Candor, N. Y., attended the University of Buffalo for one year, and graduated in 1915 from the Ohio State University as a pharmaceutical chemist.

During his regime as manager of the

Dubuque office, Mr. Little took a prominent part in the civic and social activities of the city and made many friends. He is well known as a clubman, an athlete and a musician. He played the coronet in the community band, acted as an official in a great number of football games, and managed two local football teams with much credit.

Mr. Little is a member of the Rotary Club, Chamber of Commerce and Junior Chamber of Commerce.

L. M. Holliday, assistant to President Belt of the Northwestern Bell at Omaha, Neb., has been promoted to the position of general commercial agent of the Omaha exchange. **Matthew Pond**, local manager at Lyons, Neb., has been made area manager at Fremont. **M. W. Ricker**, division traffic supervisor, has been made district traffic chief at Waterloo, Iowa.

T. B. Baird, formerly district manager of the Cumberland Telephone & Telegraph Co. at New Orleans, La., has been transferred to the district managership of the Southern Bell Telephone & Telegraph Co., at Birmingham, Ala.

J. C. Hay has been named as district manager of the Cumberland Telephone & Telegraph Co., with headquarters in New Orleans, La. He has been commercial supervisor of the company for some time and now succeeds T. B. Baird, who was transferred to Birmingham, Ala.

Mr. Hay began his career in the telephone industry 25 years ago, serving as operator, lineman, foreman, manager, district manager, special agent, and commercial supervisor.

He has been a resident of New Orleans for nine years and is prominently identified with the commercial activities of the city. He is a director of the Rotary Club and a member of several other civic organizations.

W. R. Driver, Jr., was named as vice-president in charge of general operations at a recent meeting of the directors of the New England Telephone & Telegraph Co. Mr. Driver was vice-president and general manager, but owing to the growth of the company it was found necessary to divide the duties of supervision.

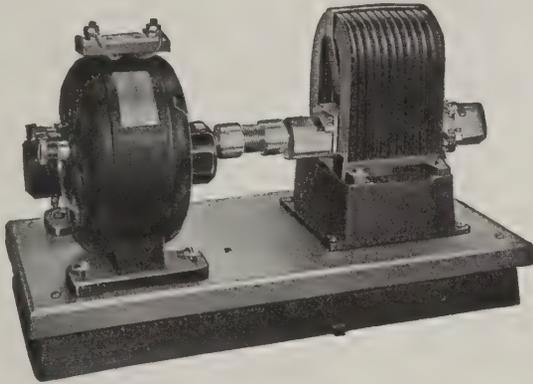
In addition to having general charge of operation. Mr. Driver takes over the general direction of relations with sub-license companies. The change became effective December 1.

George K. Dresser, formerly general superintendent of plant, has been made general manager of the New England Telephone & Telegraph Co., in line with the decision at the recent directors' meeting to divide the burden of management.

Good Ringing Service

Have you got it in your exchange? There is only one really dependable way, and that is by installing a

HOLTZER-CABOT MAGNETO-RINGING MOTOR-GENERATOR



Write us about your ringing troubles. We are glad to offer you real service and advice before you buy. Our motor-generator will give you the service after you have bought.

THE HOLTZER-CABOT ELECTRIC COMPANY
 Boston Philadelphia Detroit New York
 Chicago Minneapolis Baltimore Cleveland

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Blake Insulated Staples
 Unequalled for telephone and bell wiring. The fibre insulation prevents troublesome short circuits and grounds.
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 4 Sizes Pat. Nov., 1900
 Write for Samples
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Bonitas for Strength



Send for a Sample of Bonita Aerial Cable Rings and see wherein they get their rigidity.

CAMERON APPLIANCE CO.
 EVERETT, MASS.

How the flux feeds out

Self-Fluxing Solder

—saves one operation in soldering

CLINGING by tooth and nail to a pole in a forty-mile wind, a lineman is grateful for a solder that does away with the fluxing operation, with its troublesome pots and cans of acid. And that is one of the reasons for the widening use for telephone work of—



It's self fluxing. The flux is right in the solder. It's contained in pockets in the hollow wire of genuine tin-and-lead solder, and when heat is applied, it flows out on the job just before the solder melts.

Yes, this self-fluxing solder saves time and trouble for the lineman, but that is only one of its advantages. It does better work—the automatic application of the right amount of the right kind of flux at the right time gives a hold-fast bond every time.

It's cheaper, too. There is no waste of flux, solder or time.

Get a sample—free

Send the coupon—see the advantages of self-fluxing solder. Sold in one pound cartons and on one, five, and ten pound spools.

Chicago Solder Co., 4211 Wrightwood Ave., Chicago

Direct Factory Representatives
 The Faucette-Huston Co., Chattanooga, Tenn.
 Louis J. Ziesel Co., 216 Market Street, San Francisco



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 4211 Wrightwood Ave., Chicago.
 Gentlemen: Please send me a free sample of Kester Acid-Core Wire Solder.

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Company

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Our Supply House Is.....

Mr. Dresser assumed his new responsibilities December 1, relieving W. R. Driver of the immediate direction of operations so that he might be able to attend to the more general affairs of the company.

J. A. Sullivan, for several years district manager of the Cumberland Telephone & Telegraph Co., with headquarters at Frankfort, Ky., has been named as general manager of the Fayette Home Telephone Co., of Fayette, Ky. He succeeds M. S. Taylor, who resigned.

Mr. Sullivan has been in the telephone business 33 years, has had headquarters at Frankfort continuously for 20 years, and is widely known in Frankfort and Lexington. About 25 years ago he was manager of the Lexington exchange of the Bell company.

H. E. McAfee, of Denver, Colo., general commercial manager of the Mountain States Telephone & Telegraph Co., has been made assistant vice-president in charge of operations. He will supervise traffic and plant work throughout the company's territory.

Obituary.

Mrs. Mabel Hubbard Bell, widow of Alexander Graham Bell, inventor of the telephone, died January 3 at the residence of her daughter, Mrs. Daniel Fairchild, at Chevy Chase, Md., near Washington. Mrs. Bell never recovered from the shock of her husband's death last August.

Mrs. Bell is survived by two daughters, Mrs. Elsie May Grosvenor, wife of Dr. Gilbert Grosvenor, president of the National Geographic Society, and Mrs. Marian Hubbard Fairchild, wife of Dr. David Fairchild, an official of a scientific branch of the Department of Agriculture.

Mrs. Bell was born in Cambridge, Mass., November 25, 1859, the daughter of Gardiner Green Hubbard. Her pedigree was aristocratic, and she traced her ancestry to King Edward I. When three years old she suffered from a severe attack of scarlet fever which left her completely deaf. Through the persistent efforts of her mother she was able when

six years old to use speech and read the lips so well that she could understand what was said to her by her friends and was understood by them.

The romance between the distinguished inventor of the telephone and Miss Hubbard was due to her affliction. In November, 1874, she went to a private training school in Boston, maintained by Alexander Graham Bell, to have her voice benefited by his method of voice culture. Mr. Bell met Miss Hubbard frequently at the home of her parents and fell in love with her.

Out of their romance, it was said, grew Mr. Bell's inspiration to invent the telephone. His hope that he might find a means of enabling her to hear led to experiments in the realm of phonetics, and this resulted in Mr. Bell's great discovery and invention.

The experiments were financed largely by her father, who became the organizer and first president of the Bell Telephone Co. After the invention was recognized by the world, Mr. Bell and Miss Hubbard were married. They made their home in Washington in the winter of 1878-9.

Out of Mrs. Bell's loss of hearing grew other notable advances in the scientific world. It was Mr. Hubbard, her father, who demonstrated the futility of the contention that deaf children could be taught only by the use of sign language. He arranged a demonstration in lip reading and speech by his little daughter for the benefit of a legislative committee of Massachusetts. The legislators were so impressed by her ability to speak and understand what was said, though deaf, that a charter was granted for the now well-known Clarke School at Northampton, Mass.

All this is related in a little book that Mrs. Bell wrote for presentation to the members who attended the meeting in Washington of the National Education Association: "The Story of the Rise of Oral Method in America as Told in the Writings of the Late Honorable Gardiner Green Hubbard." Today every deaf child

in America can be taught to speak and read the lips.

Mrs. Bell has contributed articles to periodicals and has written several plays. She traveled around the world with Dr. Bell and temporarily dwelt in many strange lands.

Mrs. Bell's faith in her husband's genius was boundless. She encouraged all his efforts, and contributed large sums to defray the cost of his experiments in many and varied fields.

Dr. Bell often said that had it not been for the insistence of Miss Hubbard, the now famous tests of his electric-speaking telephone at the Centennial in 1876 might never have taken place. It was those tests made by scientists that aroused the world to the greatness of the invention.

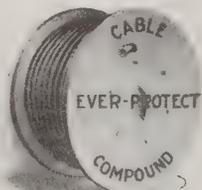
How he happened to attend the exhibition is told by H. N. Casson in "The History of the Telephone." He had no intention of going, but one Friday afternoon in June, 1876, he went to the depot to say good-bye to Mabel Hubbard—then his sweetheart—who was taking the train for the Centennial.

She had supposed that he was going and was keenly disappointed when she learned that he was not. She was very fond of him—and, perhaps, too, it was one of those "womanly intuitions," that told her he should go.

When the train was pulling out and she saw him standing on the platform she was so overcome that she wept. The young man impulsively ran after the moving train and sprang aboard, with never a thought about ticket or other prosaic matters.

This unplanned trip to Philadelphia proved to be one of the most fortunate acts in Bell's life. The judges were to inspect certain exhibits on a Sunday afternoon and Mr. Hubbard, after much trouble, secured their promise to give a few minutes to the Bell telephone.

The dramatic story of his recognition is common property but this instance of Mrs. Bell's influence and how he got started on the road to fame is not so widely known.



It's Rightly Named "Ever-Protect"

This cable compound is for underground cable without use of conduit. Through its use, corrosion and deterioration of cable sheath by chemical action are eliminated.

Prevents depredation by rats—dampness due to defective cable sheath and defective wiping of joints. It's flexible. It's lasting.

Write for important data—today.

NATIONAL CABLE COMPOUND CO.

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which will be
pleasing.**

Telephony

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S. R. EDWARDS, EDITOR AND SECRETARY.

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H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

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There is a right and a wrong way to do everything, and it makes all the difference in the world which way is adopted. Success and smiles follow the one; trouble and frowns result from the other.

We all have disagreeable things to do in business—disconnect the telephones of delinquent subscribers, satisfy grumpy customers, handle diplomatically the complaints that may exist mainly in the minds of the kickers, try to collect uncollectible accounts, and other similar unpleasant tasks.

The real measure of success is how we get away with these jobs that are disagreeable. There is food for much thought along this line in a suggestion made by General Manager J. P. Boylan of the Rochester Telephone Corp. in the address he made before the Up-State Telephone Association of New York, which could be elaborated with profit by all telephone men.

* * * *

The point of contact between the company and the subscriber is often—if not usually—one of these disagreeable moments when either the subscriber is complaining or when the company is trying to obtain its rights. Either the subscriber is kicking on the service or the company is handling a slow payer or trying to placate a dissatisfied patron.

If cases like these can be handled so as to improve the company's public relations, so far as that particular subscriber is concerned, that would be clever, efficient management, indeed.

CURRENT OPINIONS AND COMMENTS

As Mr. Boylan points out, it is not impossible. In fact, these very contacts, unpleasant though they can easily be made, present opportunities of exceptional value in building up good will for the company.

When service is to be discontinued for lack of payment, instead of firing a curt, peremptory letter to the subscriber, warning him that if he doesn't pay up by a certain date his telephone will be silenced, the company can tell him the same thing in a way which will make him understand the company's position, make the desired collection and spread the gospel that a utility company deserves more consideration than it ordinarily gets.

* * * *

It gives the company an opportunity to lay before the telephone user information that will help its public relations and lead to a better understanding with its patrons. The average citizen knows and thinks little about such matters, but if pains are taken to advise him why it is necessary his bill should be paid on time, or why he has to wait to have a telephone installed, the effect will be beneficial.

Few "kickers" will remain "kickers" when care is taken to convince them that the company is doing its best to give them service under difficulties. Give them the facts. The vaudeville rule, "Tell 'em nothing," doesn't hold good in public service work any more.

* * * *

Nothing has been more effective in stopping, or reducing, complaints about tele-

phone service than giving publicity as to the number of

calls exchange operators handle daily. Mr. Average Man never stopped to think of it, but when he is told of the many thousands of calls that load the wires, he is amazed, and he honestly wonders how "Central" gets along and makes so few mistakes. Thereafter he isn't so quick on the complaint trigger because he knows something of the difficulties.

It is good publicity. It is the right way to answer—or forestall—criticism, and proves again the great importance of giving the telephone public the facts.

* * * *

If telephone companies would plan to have the local newspapers from time to time print news stories about what their operators are doing in the way of handling the service, the number of calls, the time of day when the peak load arrives, the diminishing number of service complaints, the reasons therefor, and other similar information to enlighten the public, they would find it most helpful publicity.

It would interest the telephone users, and influence them to be more considerate; it would, in short, tend to create good will.

For instance, take the letter published in last week's issue in which the chief operator of the Kansas Telephone Co., at Ottawa, Kans., recited some service figures. Forty-one reports of slow answers and recalls in 1920, only eight in 1921, and six in 1922. Nine reports in four years, of alleged cases of discourtesy to subscribers—four in 1918, two in 1920, three in 1921

and none in 1922. Small details, maybe, but of real value as showing how the company watches things and endeavors to perfect service conditions.

That is the sort of information to get into the local papers, and there is no doubt the telephone users of Ottawa would be interested in reading about it. Probably the local manager has already given it to the press. If he hasn't, he is overlooking an opportunity.

It isn't always the big news, the financial statements, that catch the eye of the average reader and stick in his memory. It is the sidelights, the small, intimate details, that are easily understood.

* * * *

TELEPHONY received a letter recently

from the "Societa Italiana Telefoni Privati," of Milano. Although not versed in the Italian language, we figured it out that the name meant in English "Italian Private Telephone Society," as distinguished from the government-owned system which has prevailed in that country.

The letter called attention to the decision of the new Italian government to sell its telephone system, and stated that the society is intending to buy the equipment and furnish service, making an initial payment of 100 million lire.

* * * *

Commenting on the end of government ownership in Italy, the Chicago Journal of Commerce says editorially:

"In one country, at least, business, the

government and the people are in accord in condemning state socialism, in encouraging private enterprise and in reverting to the age old, sound principles of business. In Italy railways, telephones, telegraphs and other utilities are to be returned to private ownership, but neither business, the government nor the people propose to wait until that is done to effect economies.

Bureaucracy is being terminated. Business men are being put in charge of government utilities, waste is being eliminated and administration simplified. Unity and sanity are the outstanding characteristics of business and government in Italy today. Thus fortified, Italy is now in a stronger position than France, despite statistical evidence to the contrary."

New York City Talks To England

Long Speeches Sent Over 70 Miles of Cable and Open Wire From New York City and Then By Radio to Southgate, England, 3,400 Miles, Easily Understood By Marconi and Other Engineers and Scientists

The Atlantic ocean has been spanned by wireless telephone! Officials of the American Telegraph & Telephone Co. in New York City sent messages and made speeches by wireless telephone Sunday night, January 14, to Southgate, England, where Guglielmo Marconi, inventor of the radio, and many others listened and cabled back that the words with few exceptions were distinctly heard.

Scattering words and phrases have been wirelessed across the ocean before, but thousands of words were shot over the distance of 3,400 miles Sunday night and heard apparently with the distinctness of messages over the wire between stations a mile or two apart.

The deluge of words crossed the ocean so steadily and easily that the group of auditors on the other side began to complain that it was something of a bore. One cable message demanded more "color" in the messages being sent to the other side. Another cable message from the listeners in England said that they were tired of the American accent and asked to hear the voice of a Britisher. A search was made for a night janitor at the American Telegraph & Telephone building at 195 Broadway, but he had left.

After talking steadily from 9 o'clock to 11 o'clock the voices of the officials of the company began to grow tired, and they stopped to take a rest before resuming. Every few minutes word came by cable from the listeners in England telling how well the messages were heard, in spite of the fact that they sometimes had difficulties with the American accent.

Years may elapse, it was said, before

the wireless telephone will be adapted for commercial transatlantic or transpacific use. "We are in the middle of our experiments, not at the end of them," said General J. J. Carty.

The messages sent out Sunday night may have been heard, it was said, at stations in Europe, South America, California and the Pacific, although this is not likely. The apparatus which concentrates the message in a few wave lengths makes it difficult for ordinary receiving sets to pick it up. Special receiving sets were used in England.

No messages were telephoned back from England because there has not been time to ship send apparatus and set it up there. This will be done soon, making possible conversations by transoceanic radiophone.

The first message was sent by President H. B. Thayer of the American Telephone & Telegraph Co., at exactly 9 o'clock. Eleven minutes later a cable message was received confirming the fact that the message had been received. Vice-president J. J. Carty followed President Thayer with a brief message.

At 10:10 o'clock the following cable message from Marconi was received:

"President Thayer and General Carty,
A. T. & T. Co.

I have just listened to your radio telephonic message which I have heard distinctly and congratulate you and all those connected with the research which has led to this achievement.

G. MARCONI.

Even Intonations Are Recognized.

One of the first messages in reply from the other side came from Major T. J.

Purves, chief engineer of the British Post-office, who cabled at 9:35:

I have listened with great interest and pleasure to the far-flung voices of Mr. Thayer and Mr. Carty. Of Mr. Thayer's message, I recognized every word. I missed a little of Mr. Carty, but recognized his well-known intonations. Send best respects and warmest good wishes to our friends of the A. T. & T. Co.

PURVES.

A few minutes later a cable from the group at Southgate said:

"Audience wants local color."

Another message a few minutes later said:

"Some listeners have trouble with the American language."

Those Who Heard Speeches.

The following list was made public in New York of those who listened at the English station:

Captain Brandy of the British Air Ministry, Sir E. Murray, Major T. J. Purves, R. A. Dalzel, F. J. Brown, E. H. Shaughnessy and Mr. Linton of the British Postoffice, Dr. W. H. Eccles and A. A. C. Swinton of the British Institution of Electrical Engineers, S. J. Goddard of the Western Union Telegraph Co., Captain Miles of the United States Embassy, Sir A. Shirley Bonn of the Associated Chambers of Commerce, G. Marconi and Godfrey Isaacs of Marconi's Wireless Telegraph, Ltd., representatives of British scientific publications, Chief European Engineer Frank Gill of International Western Electric Co.

In the first message sent, President Thayer spoke as follows:

This is Mr. Thayer of the American Telephone & Telegraph Co. speaking from 195 Broadway, New York City, through the Rocky Point station of the Radio Corporation of America.

The radio apparatus and system used in this test is made possible by coöperation between the American Telephone & Telegraph Co. and the Radio Corporation of America and is the result of research and experimental work in the laboratories of the American Telephone & Telegraph Co. and in the laboratories of the Radio Corporation of America and its associated companies.

In 1915 the American Telephone & Telegraph Co. transmitted a message across the Atlantic by radio telephone from Arlington, Va., to the Eiffel Tower in Paris, where it was heard and understood by our own engineers and by others. During 1915 we also sent a telephone message from Arlington part way across the Pacific ocean to the Hawaiian Islands, where it was heard and understood by our own engineers and by officers of the United States Navy.

Since then great improvements have been made in the art not only of radio but of telephony and of radio telephony. In the experiments which we are now conducting we are making use of these improvements.

Beyond a small group listening for this message in England, I do not know whose ears this message may reach. To all who hear it, I wish health and prosperity. Will you who are now hearing it inform me that you have heard it and tell me how clearly it comes to you?

In a later message, President Thayer introduced an allusion to the "rebellion" of 150 years ago, saying that rebelliousness was something of a Yankee characteristic, and he continued:

"There would have been no rebellion or cause for rebellion if there had been the facilities for communication then that are here now. I hope that this new method of communication, when it becomes commercial, will be another bond between us and the mother country, as many of us whose ancestors come from England still consider it."

Improvement in the Science.

At the conclusion of his message, Mr. Thayer issued the following statement on the subject:

We talked across the Atlantic in 1915, and we also sent a telephone message across the Pacific to the Hawaiian Islands. Both of these messages were heard and understood at their destinations.

Since then, the radio art, the art of telephony, and that of radio telephony have been greatly improved. Our experiments with radio telephony have been continuous and have been going on for years. For these latest tests we have had the use of the station of the Radio Corporation of America at Rocky Point, Long Island.

It is now generally recognized that the chief utility of radio telephony is to be looked for in situations where wires cannot be used. These experiments are part of our effort to determine to what extent the radio telephone may ultimately be employed in talking across great bodies of water where talking through telephone wires is not feasible. We are making steady progress, but there is much more to be done before we can speak definitely

about establishing practical commercial radio telephone service across the Atlantic.

The tests we are now conducting are adding a great deal to the knowledge of the art. Some very important data have been obtained from the work of the American engineers sent to England and of those here. The tests have been very rigorously conducted, and for weeks our scientific staff has been sending signals of many kinds under a great variety of conditions. Selected words with no context as a guide to their meaning have been repeated thousands of times. The quality of transmission at all times and under all circumstances and the functioning of the special receiving apparatus set up in England, as well as that in America, have been observed with extreme scientific care.

Tonight our experiments had reached the stage where we wished to try complete sentences, and we sent out the messages that were received so successfully. This was done as part of our experimental procedure, and in England a number of additional observers were on hand when the messages were received. The results of the experiment as reported by cables just received were very gratifying.

Technical Phases Described.

The following explanation of some of the technical phases of the achievement was made:

"One of the developments which has been in progress since the telephone company's demonstration of transoceanic radio telephony in 1915 has to do with the perfection of high powered vacuum tubes. The tubes used in the present tests are characterized by a large external anode which is cooled by water. By virtue of water cooling, each tube can readily handle as much as ten kilowatts of power.

In the present installation, which is located at the large Rocky Point station of the Radio Corporation of America, the final stage of amplification comprises a small group of these tubes operating in parallel. The output of 100 kilowatts is delivered to the antenna and, due to a new system of radio transmission employed, is as effective as 300 kilowatts would be in the systems commonly used.

In the systems commonly in use about two-thirds of the energy goes into waves other than those which comprise the message, these waves being needed by many of the receiving sets in use for detection of the message. The new system suppresses the waves which do not comprise the message and reception is accomplished by generating locally at the receiving set a small high-frequency current which corresponds in frequency to the suppressed waves. In the present tests, this frequency is 55,500 and corresponds to a wave length of 5,400 meters.

The present system differs from the usual radio transmitting systems in another important respect. The usual type of transmitter sends out, in addition to the group of waves which does not comprise the message, two groups each of which does carry the message.

In the new apparatus only one of these groups is radiated. This makes possible

the sending of twice as many messages at the same time without interference. This feature is particularly important at long wave lengths. The present system was perfected in connection with the so-called carrier telephony which is now in use in this country on certain long distance telephone lines.

Speak From 195 Broadway.

Mr. Thayer and the others who spoke to England Sunday night used a telephone located in the offices of the American Telephone & Telegraph Co. at 195 Broadway, New York City. This telephone instrument was connected to the radio equipment at Rocky Point by a telephone circuit about 70 miles long, half of it being underground cable and half open wire, and containing telephone repeaters and equalizers of a type similar to those used on long distance telephone lines.

The distance from Rocky Point to New Southgate, England, is about 3,400 miles. Prior to the tests of Sunday evening other tests were made to measure the transparency of the atmosphere to radio messages over such great distances. Measurements were also made on the strength which the signals received in New Southgate must have in order to be clearly heard above the noise of static and interference from other radio stations.

For the purpose of these tests large numbers of disconnected, single words were transmitted. The use of disconnected words constitutes an unusually severe trial of any telephone system. In ordinary conversation the continuity supplied by the thought is a great aid to the understanding of each word. It is intended to continue these measurements over a sufficiently long period of time to supply the most reliable data.

The measurements thus far made serve to indicate that transmission at night is better than during the day. The strength of signals received during the night may be hundreds and even thousands of times stronger than those received during the day. However, it has been found possible to transmit telephone messages satisfactorily during daylight, provided interference is not too great."

Not So Good on Land.

The improved long distance wireless telephone is not likely to play any great part in transcontinental telephoning or other long distance telephoning by land, it was said, because of the fact that the wireless waves travel badly over land as compared to water.

One of the phases for future development is that of daytime operation. The sun kills radio transmission over great distances, but the A. T. & T. engineers hope to produce instruments which will keep radio communication open around the world 24 hours a day.

Another advantage of the wire is privacy, as against the publicity of wireless telephoning, which, under Sunday night's

conditions, is literally "telling the world." No method has been discovered to prevent the interception of wireless telephone messages, although the great wave length and the suppression of unessential waves by the new apparatus makes the message impossible for the ordinary station to capture.

The fact that the first half-century of telephoning has nearly drawn to a close was emphasized Sunday night in the speech of General J. J. Carty to the British audience. He said:

"Alexander Graham Bell, the inventor of the telephone, was born March 3, 1847,

in Edinburgh, Scotland. He went to Canada in 1870, and the next year he removed to Boston. While at Boston, in the summer of 1875, he invented a telephone which faintly transmitted parts of words and even entire words.

It is related by Thomas A. Watson, Bell's assistant, that it was on March 10, 1876, over a line extending between two rooms in a building at Boston, that the first complete sentence was ever spoken and heard through the electrical telephone. It was spoken by Prof. Bell and heard by Watson, who recorded it in his notebook at the time. It consisted of these words:

'Mr. Watson, come here; I want you.'

The experiments which we are now making represent some of the advances which have been made in the first half century of the telephone art, which is now drawing to a close. They belong to the golden age of communications which has achieved the extension of the spoken word throughout both space and time.

But this golden age has not yet ended, and when we contemplate the possibilities of the future, we discover that it has only just begun. It is to the future that we must now turn our minds and direct our endeavors."

Pennsylvania's Best Convention

Annual Meeting of the Pennsylvania State Telephone and Traffic Association at Harrisburg Last Week Demonstrated That That State's Telephone Men Are Very Much Alive to the Requirements of Their Business

The third annual convention of the Pennsylvania State Telephone and Traffic Association—which was held January 11, 12 and 13 in the Penn-Harris Hotel in Harrisburg—emphasized the fact that Pennsylvania telephone folk take a deep interest in their association and in each other. They went to Harrisburg some 300 strong and were very much alive to telephonic affairs—both current and future.

Socially, as well, they proved that they like each other and don't have to go outside of their own field of endeavor to enjoy themselves.

A very good exhibit of the latest in telephone equipment was "put on" by the manufacturers and many favorable comments were passed on the improvements that have been made.

The operators' conference, under the leadership of W. S. Vivian of the department of public relations, Automatic Electric Co., developed many good papers and discussions. The good results of the conference will be evidenced in the work in the operating rooms of exchanges all over the state.

President H. E. Bradley, of the association, opened the convention with an address of welcome in which, after greeting the delegates and expressing the satisfaction it gave the officers to have so many telephone men take an interest in the association's activities, he outlined what has been done during the year just closed and what is the work of the immediate future.

It was pointed out by President Bradley that if the association is to continue to exist and to be of real benefit to the member companies and to the industry in general, each member must do his part—that there must be no let-up of that progressive spirit which has brought them to their present place in the telephone field.

W. S. Vivian, manager of the department of public relations of the Automatic Electric Co., Chicago, was then introduced. He spoke on "The Purpose of the Operators' Conference," explaining just how it would make their work more efficient and telling the many benefits to be derived from their becoming acquainted with each other.

Professor N. C. Miller, head of the department of engineering extension of the

followed by a general discussion of the subjects which should be incorporated in such a course.

The session closed with the election of a new board of directors and the appointment of committees.

The directors are: H. E. Bradley, Harrisburg; E. M. Prisk, of Hazelton; J. F. Stockwell, Philadelphia; C. L. Baer, Harrisburg; C. A. Carl, Lancaster; G. B. Rudy, York; E. D. Schade, Johnstown; J. H. Wright, Meadville; K. B. Schotte, Kittanning; J. Z. Miller, Erie; and W. S. Paca, Oil City.

The personnel of the resolutions committee included: E. M. Prisk, E. D. Schade, C. A. Carl, A. O. Black, of Butler, and W. S. Paca.

The principal address at the Friday session was delivered by Fred B. MacKinnon, president of the United States Independent Telephone Association. Developing the topic, "The Two Groups in the Telephone Industry," Mr. MacKinnon pointed out the relations between the Independent companies and the Bell.

In a plea for the smaller companies, Mr. MacKinnon declared that they "should be praised for the service they perform and not penalized."

"The Importance of Accounting to Public Service Companies," was the subject of a talk by G. S. Call, chief of the bureau of accounts and statistics of the Pennsylvania Public Service Commission.

"Twenty years ago," said Mr. Call, "public service companies, especially the small ones, kept their accounts on the back of old envelopes and on check stubs. An accountant was then considered a bookkeeper out of a job and was only called in to assist when the executives of the company suspected the cashier of dipping a little too freely into the cash drawer.

"Bookkeeping then brought out a fine specimen of penmanship but little else.



President H. E. Bradley is Now in His 21st Year in Association Work in Pennsylvania.

Pennsylvania State College, discussed the value of "Employee Training" and brought out the fact that the college is preparing to start a correspondence course of study for telephone employes. It is designed to give them the equivalent of a high school education. Professor Miller's address was

The marvelous growth of accountancy has been aided greatly by the income tax law and the efforts of the public service commission to fix uniform rates for smaller companies.

"Accurate accounts are necessary to find out the financial condition of a company and to find its financial progress in order that justifiable rates may be levied that will not be excessive and yet bring a fair return to the people that have their money invested in the industry."

Walter Spofford, of Harrisburg, telephone engineer of the Pennsylvania commission, spoke on the progress that has been made in the art of telephony and stressed the fundamentals to be observed in connection with the conduct of the telephone business.

He called the attention of the telephone men to the fact that there are now some 15 millions of telephones in use in the United States, compared with two telephones 50 years ago, and that in Pennsylvania one million instruments are now in use. He cautioned them, however, that there are many problems now to be faced and many to come up in the future.

James J. Lewis, Philadelphia district, manager of the Utilities Mutual Insurance Co., spoke on the safety of the employes of the telephone industry.

"About 98 per cent of all accidents," said Mr. Lewis, "are caused by inefficiency—either of a human being or a machine. The Bell company found that a majority of the accidents of its construction force were caused by axes. By substituting a saw for the axe 40 per cent of the accidents were avoided."

Ralph Bloomsburg, safety engineer of the company, took up the talk of Mr. Lewis and stated that during the period that the United States was actually engaged in the world war, 126,000 fatal accidents occurred in this country taking a bigger toll of life than the war. The days lost by workmen in 1919 through accidents were equivalent to three days for each man, woman and child in the United States.

"Every accident," said Mr. Bloomsburg, "contains two factors, a human being and an object. The man must appreciate the danger and be taught how to avoid it and the object must be made safe. Safety is the one great common meeting point of labor and capital."

At the closing session on Saturday morning, H. E. Bradley was reelected president of the association, and thus began his 21st year of association work in Pennsylvania.

The other officers elected for the ensuing year are: Vice-president of the eastern division, C. A. Carl, of Lancaster; vice-president of the western division, K. B. Schotte, of Kittanning; secretary-treasurer, C. L. Baer, of Harrisburg.

Members of the executive committee are: H. E. Bradley, C. A. Carl, K. B.

A Lesson from a Smile.

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Ia.

I see from my window a boy making a snow man. The body is as big and round as the boy has been able to make it.

What kind of a face will he fashion? I wait curiously to see. He is smiling as he chisels the snow man's features with a stick. Now he is standing back to view the result of his work. Behold a jolly looking snow man with a big, broad smile.

The boy's face is round and happy, like the snow man's. As I look at the boy my wish for him is, that time, environment, experience and events will not chisel out that smile.

And so I learn a lesson from a small, happy boy who made a big, happy looking snow man.

Chisel a cheerful line on the faces of people whenever you can.

Schotte, E. M. Prisk, and J. H. Wright.

Resolutions were passed at the last session on the deaths of James C. Kelsey and T. J. Shufflin.

The operators had quite an important part in the convention, too. Besides being the subject of discussion during most of the first session, they held a conference of their own and listened to some very interesting and beneficial talks.

Miss Florence Ringling, of Erie, assistant chief operator of the Mutual Telephone Co., presented a paper on "Operators' Problems and Qualifications," that brought home several important facts and was well received.

"The Tributary Office," was discussed by Miss Marion Lacey, of Erie, chief toll operator of the Mutual company, and there were several other talks worthy of merit.

W. S. Vivian, of Chicago, had charge of the operators' sessions, which drew an attendance of about 100.

That the social side was not neglected was demonstrated by the fact that a jolly, good time was had at the banquet Friday night. The Pioneer association's initiation ceremonies furnished the big feature of the entertainment and went over big.

There is now a systematic ritual for the initiation, which requires about 15 actors and from 30 to 45 minutes to complete. The work is done in costume, and while there is just as much fun as ever, it also has its serious side. It is planned to make this a feature of all state conventions.

At the Pioneers' meeting Mr. Bradley was deposed as its president through the efforts of Mr. MacKinnon and Mr. Bloemeyer, of the Automatic Electric Co., Chicago, and Mrs. Bradley was unani-

mously elected in his stead. However, she very kindly delegated Mr. Bradley to act in her place for the balance of her term of office.

Another feature of Friday evening was the "community singing" in which every member was obliged to join under the direction of D. J. Morgan, of Wilkes-Barre. This was followed by a radio concert and dance.

Tickets were distributed Thursday for that evening's performances at the various theaters.

Looking at it from all angles, the meeting was one from which much good may be expected to develop. At least, the telephone men and the operators went away with a determination to make the service in Pennsylvania the best in the United States—and, therefore, in the world—and to bring every telephone person in the state into the association.

Utility Problems Misconception of Function of Regulation.

H. L. Cook, who has just retired from the Nebraska State Railway Commission after two years of service, in the course of a statement to the public giving some observations on regulation, says that the public utility problems, insofar as they relate to public control, are largely due to the general misconception of the whole purpose and function of regulation. He said in part:

"They assume that the regulators are the sole representatives of the people and that regulation means holding down rates. The fact is that regulation means increasing rates when they need to be increased and decreasing them when it is necessary to decrease them. So far as being the representatives of the people, that is true, but it must be remembered that the utilities are a part of the people.

"Millions of people own the utilities. The people, therefore, are not properly represented when only one side of the function of regulation is performed. Regulation, in my mind, is simply a secondary means of helping utility companies to meet the demands upon them for adequate service.

"The bringing about of an enlightened and sympathetic feeling by the public toward the utility is one of the problems of the utilities at the present time. The other is the problem of financing the requirements of the utilities in order to meet the demands that the public is making and will make upon them for their services.

"For the solution of these two important problems, the coöperation of the regulatory bodies and the operators of the public utilities is absolutely necessary. When the state assumed the right to regulate utilities, it took upon itself the obligation to safeguard them in their rights to earn a fair return on their property; otherwise, adequate service for the public becomes impossible."

Telegraph and Telephone Circuits

Phantom Telephone and Combined Telegraph and Telephone Circuits Worked at Radio Frequencies—Simultaneous Transmission—Concluding Installment of Paper Presented Before the Institution of Electrical Engineers, England

By J. G. Hill

It is assumed that the principles of loading are understood. When the phantom circuit is loaded, a separate and extra coil is usually required for it at every loading point (see Figs. 9 and 10). It will be seen that the phantom-circuit coil is so arranged that a current sent round each side-circuit coil in an inductive direction passes round the two halves of the phantom-circuit coil in opposite directions, so that no inductance is produced in the coil.

On the contrary, currents flowing in the phantom-circuit coils in an inductive direction pass through the windings of the side-circuit coils in a non-inductive direction. The theoretical electrical action in the loaded side and phantom circuits is shown in Fig. 10 and it is thought that the diagrams will be found self-explanatory.

The formula for the attenuation of a side and phantom circuit when ωL is great in proportion to R and ωC great in proportion to G , which is the general case, is

$$\beta = \frac{R + \left(\frac{R_1}{L_1} + \frac{G}{C} \right) L}{2} \sqrt{\left(\frac{C}{L} \right)} \dots (9)$$

where R_1/L_1 is the effective resistance of the coil, divided by its inductance.

Within practical working limits, this ratio can be made constant for a side-circuit coil and for a phantom-circuit coil respectively, the two series of coils (side and phantom), however, being independent and separate; the ratio of the circuit leakage G to the capacity C at a fixed frequency for different values of C is also constant. The other symbols have been already defined.

Assuming R_1/L_1 and G/C to be the same for the side and phantom circuits, the same value of β is obtained for both

than that of the side circuit, so that the arrangement just described does not hold good.

In practice, the relative efficiency of transmission of the side and phantom circuits is largely determined by commercial conditions as well as electrical possibilities, the main considerations being as follows:

It is economical to space loading coils as widely apart as possible in order to obtain a given average inductance per mile, but it can be shown that the wider the spacing, the more the higher frequencies which enter into the composition of speech are cut off, and beyond a certain cut-off point telephonic speech becomes indistinct and impossible.

Owing to the indeterminate nature of the frequencies entering into speech it is necessary to make experiments to determine the widest permissible spacing. The rule hitherto obtaining as a result of experiment in Great Britain is as follows:

$$CDL = 25 \dots \dots \dots (10)$$

where C is the capacity of the cable circuit in microfarads per mile, D is the distance in miles separating the coils and L is the inductance of the loading coil in millihenrys.

This rule applies to circuits of length, say, not exceeding 350 miles. Beyond that point the upper frequencies are too much attenuated and other phenomena become evident, making it necessary to reduce the inductance without altering C or D in formula (10). Again, in practice it is economical to have only one set of manholes to accommodate both side and phantom loading coils.

The most economical arrangement for the two side circuits generally leads to the greatest total economy of the four-wire

half that of the side circuit up to the limit permissible by the spacing rule, and this procedure gives a phantom circuit having a lower attenuation constant and, therefore, a higher transmission efficiency, than the side circuit, usually to the extent of 15 to 25 per cent. (owing to the relatively smaller capacity of the phantom circuit and its higher degree of loading).

For a given transmission equivalent—say S miles of standard cable—between two given fixed points, such for example as a transmission equivalent of 15 miles of standard cable between London and Leicester, it is possible to find the cheapest possible combination of loading coil and cable (including side circuits and phantom circuits) which will produce the required transmission efficiency. This is obtained from the formula

$$P = \frac{A}{C} \left(x_1 + 2 + \frac{1}{x_2} \right) + \frac{BVC}{x_2 + 1} \dots (11)$$

where

P = the combined cost of one mile of cable pair and its loading,

$A = RP_1$ where R is the resistance of one mile of a known and selected conductor pair and P_1 its cost,

$B = \sqrt{(x/R)P_2}$ where $x = Lm/L$. Lm is the maximum loading of the conductor, of resistance R , and L is the loading which when combined with R gives the required attenuation constant β . P_2 is the cost per mile of providing L and includes coils and manholes.

$C = R(x+2+1/x) = R_2(x_2+2+1/x_2)$. Here $x_2 = Lm^2/L_2$, which is the maximum loading Lm^2 for R_2 divided by an inductance L_2 , which inductance, when associated with R_2 in a cable pair gives the required β . R_2 and L_2 are the unknown values which may be derived from x_2 .

It will be evident from the preceding description that the circuit arrangement of a loaded phantom circuit is complex. In order to balance such a circuit perfectly the potential in the A and B wires of the side circuits (which are joined in parallel, see Fig. 10) must be equal for all the frequencies of the voice and, unless the impedances of the A and B lines (in magnitude and phase) are equal at all points equidistant from the sending end, the want of electrical balance will result in over-hearing if the permissible limits of unbalance are exceeded.

Now the loading of the circuits augments the difficulties which may have ex-

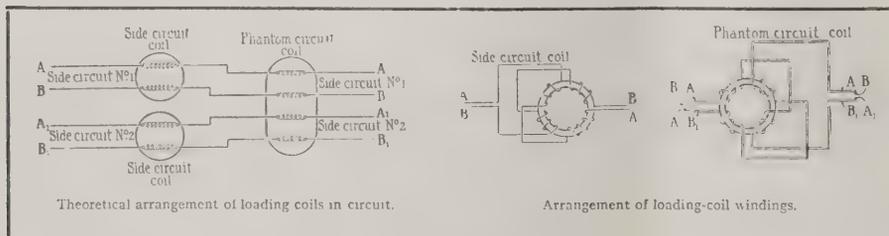


Fig. 9. Arrangement of Coils in Loaded Side and Phantom Circuits.

circuits, if the side circuit has double the inductance of the phantom circuit, and if the side circuit has one-half the capacity of the phantom circuit. As shown in the preceding paragraphs, however, the capacity of the phantom circuit in underground cables is only about 50 per cent greater

combination, and the position of the manholes is, therefore, made to suit the side circuits; this means that there is no choice of spacing for the phantom coils.

The only thing that can be done for the phantom circuit is to increase its inductance above the hypothetical value of one-

isted in the unloaded pairs, principally because the circuits have thereby become more efficient carriers of energy, and also due to the shortened wave length—and this applies both to the circuit in which the

and phantom-loaded circuits in the same four-wire core (or four wires making up the phantom circuit). Special steps are, therefore, taken to equalize the capacity of the wires in each four-wire group during the process of laying. This is a recognized necessity in all countries where loaded phantom cable circuits are used.

The steps taken result in reducing the cross-talk between the side circuits, as well as making it possible to use the phantom circuits. It may be noted that the necessity for balancing arose primarily owing to overhearing between loaded side and phantom circuits. It was formerly common practice to work unbalanced and loaded cable pairs in cables which did not contain phantom circuits.

As a matter of interest it may be placed on record that the first loaded phantom-circuit experiments in this country were carried out, and the possibility of this type of loading demonstrated, between Liverpool and Manchester in 1908.

As specially designed loading coils were not available for the phantom circuit coils, telephone transformer coils were used as a substitute, the equal windings of a separate transformer being used for each of the two side circuits which made up the phantom circuit, i. e. an arrangement equivalent to two separate phantom coils for the phantom circuit at the same geographical point, instead of one in the Western Electric Co.'s design. In 1912 it was further demonstrated in this country that phantom circuits in the type of cable then available when using the best available loading coils, were subject to marked overhearing between the side and phantom circuits; but the difficulties were quickly overcome.

Owing to the introduction of two-wire telephone relay working, a degree of accuracy of capacity balance is now required which was not considered necessary for loaded phantom circuits without relays. The main reason is that the telephone relay augments the speech current in the circuit, and where there are several relays the attenuated current arriving at any given relay station may be augmented to approximately the same amplitude as that originally sent from the office of origin, whereas in a long loaded circuit without relays the current is attenuated progressively and continuously in accordance with the compound interest law.

As a consequence, the mean disturbing voltage in the circuit is much higher in the case of the relayed than the unrelayed two-wire circuit. Contiguous relay circuits have also a greater transmission efficiency, and transmit disturbances with greater intensity than in the case of unrelayed circuits.

It is well known that in some cases there is at present an advantage in utilizing four wires for one telephone underground loaded and relayed circuit, two wires being used for the sending circuit

and two for the receiving circuit. This is largely because such an arrangement makes it possible to utilize a much higher degree of relay amplification and to use smaller gauge conductors than in the two-wire relay circuit, or, alternatively, to obtain a louder speech volume with the same type of conductor than is possible with the two-wire system (see British patent No. 29,165 of 1913 by A. S. J. Van Kesteren).

It is not difficult to foresee that the greater amplification of speech energy results in greater inductive disturbance in contiguous circuits. In such cases, four-wire circuits are not usually phantomated at present, but cross-talk in adjacent side circuits may nevertheless arise, particularly at the sending end of the cable and at relay stations, notwithstanding the best possible balancing of capacity.

As a consequence it becomes necessary to separate the sending circuits from the receiving circuits. It should be noted that the received currents although they may be of great amplitude are often materially less than the sent currents.

In view of the importance of the problem of balancing of capacity in underground cables, a considerable amount of attention has been devoted to it in this country. The necessary conditions for producing the required capacity balance have been fully worked out, theoretically and practically.

The following general remarks may be of interest:

As already mentioned, the form of cable utilized for loaded, phantomated and relayed underground circuits is of the M. T. type and it is usually made up of conductors weighing 20 lbs. or 40 lbs. per mile per wire. The number of wires varies with the service requirements up to 308 pairs per cable. Each four-wire core in a cable is balanced in short lengths, because if the lengths taken were too long, the electrical balance of the constants would not be the same for different frequencies. The complete unit taken for independent balancing is a loading-coil section.

The maximum length of a section hitherto adopted in this country is 2.6 miles, but present practice favors 1.6 miles and 1.125 miles. Each loading-coil section is subdivided into lengths if one-tenth of a mile, and these are usually tested separately, and combined with other similar lengths to produce the best result in the loading-coil section.

It can be shown that the impedance of a sufficiently short length of cable measured from one end of the cable with the distant end open, depends essentially on the capacity and leakance of the length under test, while with the circuit closed, only the resistance and inductance enter into the measurement. These facts form the basis of the procedure.

The leakance, taking into account the high insulation now obtainable, and the in-

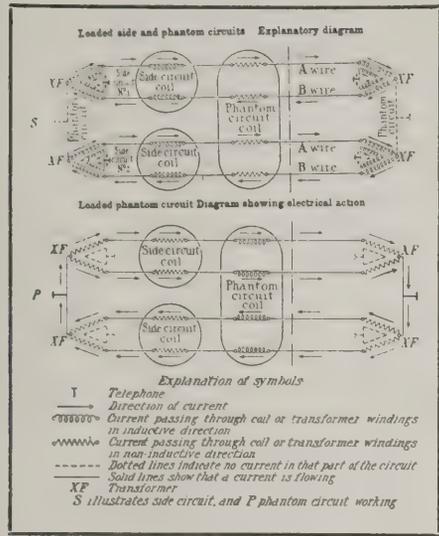


Fig. 10. Theoretical Electrical Action in Loaded Side and Phantom Circuits.

over-hearing arises and contiguous circuits which transmit the augmented disturbance more efficiently than before.

Alternatively we may say that if the circuits are long enough, the mean voltage in a loaded circuit with the same applied E.M.F. is greater than in an unloaded one, and any want of equality in the constants of the A and B lines will result in a greater difference of potential between them, resulting in greater overhearing between the side and phantom circuits, and in cross-talk between the side circuits.

In order to secure a perfect balance, the resistance, capacity, inductance and leakage of the four wires of a phantom circuit must be theoretically equal. It is possible to a large extent to control the equality of the conductor resistance of the cable in the factory. The inductance and effective resistance of the loading coils in a coil-loaded cable can also be very closely balanced. In the loading coils used by the Post Office a variation of not more than 0.25 per cent between the inductance of the two halves of the same loading coil and not more than 0.1 ohm between the direct-current resistance of the two halves of the same coil is guaranteed. A variation of not more than 2 per cent in the inductance of different coils is required and is possible.

The leakance of the cable can also be efficiently controlled in manufacture, supplemented by care in laying the cable, and it does not cause appreciable difficulty. The electrostatic capacity of each wire in a four-wire core of the cable cannot, however, be sufficiently equalized in an economical manner in the factory to produce phantom circuits which do not give rise to serious overhearing between side

ductance of short unloaded lengths of cable, are relatively unimportant as factors in causing overhearing in the type of cable considered. An insulation of 10,000 megohms per mile per wire in air-space paper cable is now obtainable when measured by direct current, but the effective leakage at 800 periods per second corresponds to only about 1 megohm per mile, wire to wire. The inductance per mile per pair is 1 mH.

The capacity system of a four-wire core may be represented by 10 capacities between different wires and between wires and earth, and it can be shown that from six capacity measurements the necessary combinations to avoid overhearing and cross-talk can be deduced (see Fig. 11). These measurements are made by means of a double bridge specially designed for use on the road.

Apparatus is also designed for the rapid measurement of the degree of equality of the resistance of the conductors. Special steps, however, are required in the factory to reduce the out-of-balance of resistance as far as possible, and this is considered much preferable to compensation on the road by crossing. The reduction of road balancing of resistance to a minimum is, therefore, aimed at. Incidentally it may be mentioned that it is highly important that the cable constants, including capacity, should be made as uniform as possible in the factory, in view of the exacting requirements of modern developments and the difficulty in replacing non-uniform cables when faulty.

The amount of out-of-balance of capacity and resistance which can be permitted depend essentially on the relation between these quantities and the corresponding amount of cross-talk and overhearing resulting from them; tests of these quantities are therefore necessary. The cross-talk meter is used for this purpose. This instrument, designed by the Western Electric Co. and manufactured in this country by the Cambridge & Paul Instrument Co., is a distortionless artificial cable, the readings being expressed in terms of millionths of the current entering the cross-talk meter, instead of the more usual arrangement of reading in miles of standard cable. It is, however, easy to convert from the one set of readings to the other.

The instrument is arranged to have a constant sending-end impedance of approximately 666 ohms, no matter what equivalent attenuation length is in circuit; this impedance is generally not the same as the section of cable under test, and this complicates to some extent the interpretation of the results.

The comparative overhearing test is made by means of telephones of standard type, by speaking on the circuit giving rise to the interruption (say a side circuit) which is closed by a resistance equal to the characteristic impedance, and listening on

the disturbed circuit (say a phantom).

The degree of intensity of the sound is observed in the receiver and the telephones are then switched over to the cross-talk meter, which is altered until a sound of the same intensity is heard in the receiver as before. The number of millionths recorded on the dial of the cross-talk meter then indicates the magnitude of the overhearing.

The relation between the capacity measurements and the observed cross-talk is such that if the following values are not exceeded the result is usually satisfactory (see Fig. 11) :

$$\begin{aligned} 2(p+q) + u &= 110 \mu\mu F \\ 2(r+s) + v &= 110 \text{ " } \\ (p-q) &= 80 \text{ " } \\ u &= 200 \text{ " } \\ v &= 200 \text{ " } \end{aligned}$$

This, however, assumes a uniform distribution of capacity unbalance. In abnormal cases these figures may not correspond closely enough to the mean overhearing and cross-talk observed in normal cases. The overhearing and cross-talk must, however, at present always be taken as the ultimate criteria, inasmuch as they indicate the necessary commercial requirements.

As regards resistance unbalance, there is no fixed rule, but experience shows that the difference in resistance of the *a* and *b* wires expressed as a percentage of the loop resistance does not usually exceed a mean value of 0.05. The question of capacity balancing has received considerable attention in America and Germany.

Siemens and Halske, Berlin, have patented a process for balancing capacity

iron boxes or in loading-coil pots. It is claimed that the device is very successful.

Professor F. Breisig has treated mathematically the problem of overhearing and cross-talk in phantom circuits. He arrives at the conclusion that the overhearing in short lengths of uniform cable such as loading-coil sections with the receiving end insulated, is essentially due to capacity unbalance, and that speech tests may accurately determine its magnitude if a suitably designed artificial cable is used.

Details of such an artificial cable are given. The main feature of the artificial cable is that it is constructed of condensers so as to vary in impedance with frequency in the same way as the actual cable under test, and that its impedance is different from its two ends so as to be the same as that of the circuits under test. One end, for example, may be made the same as the phantom circuit, and the other the same as the side circuit.

When continuously loaded cables require balancing, the process is much more complex than in the case of coil-loaded cables, owing to the fact that the inductance added by the iron wire also requires balancing. This subject is at present receiving study in the British post office.

The difficulty which we are about to consider arises from the circuit arrangement which it has been found advantageous to adopt for telephonic relay working in both side and phantom circuits. It should be explained that when relays were first used in telephone circuits at intermediate points, the relayed voice current was applied to the circuit in bridge, through the differential windings of a transformer, one-half of the windings being connected to the "up" line and the other half to the "down" line. Under these conditions if the "up" and "down" lines are not of equal impedance the electrical action in the relay windings is not differential and the amplifier is actuated, and sends a further current to line.

As a result of this continued action and reaction, the amplifier may give out a loud note. This difficulty may to some extent be minimized by reducing the sensitiveness of the relay, but the amplification of speech is not then so great as it would otherwise be, or, alternatively, if the sensitiveness is not reduced the arrangement is unstable. Further, if the out-of-balance currents sent into the relay are not sufficient to cause howling, they may interfere with the clearness of the amplified speech. If more than one relay is introduced into a circuit the difficulties are increased.

In order to overcome these difficulties, double-relay working was introduced, i. e. the "up" and "down" lines were divided and a separate relay allotted to each, the line in each case being balanced by an artificial network.

In order that the voice currents through

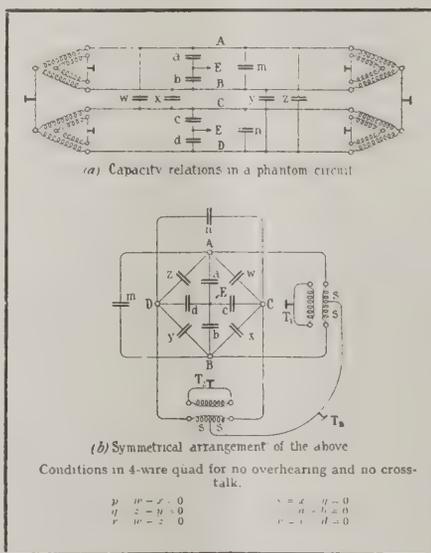


Fig. 11. Relations Between Capacity and Cross-talk.

in cables by the addition of small condensers to the cable conductors at suitable distances (British patent No. 147,013). The condensers employed are made of rolled paper, inserted and sealed in glass tubes, and joined in the cables at loading points. They may be enclosed in separate

the differential windings of the transformer may be equal, a complex problem requires solution. It will be remembered that the voice includes a large range of tones of different frequencies, varying from, say, 100 to more than 2,000 periods per second. All these tones are simultaneously impressed on the circuit, and the artificial networks which balance the up and the down lines must be constructed to produce differential action through the transformer windings with all these frequencies simultaneously operating.

Now, the characteristic impedance of the line is generally different for every frequency. The characteristic impedance of a uniform unloaded line is given by formula (6). In the case of a uniformly series-loaded line with the terminal loading coils spaced at a distance of one-half a loading-coil section from the ends of the line, the characteristic impedance Z_{01} is given by the following formula:

$$Z_{01} = Z_0 \sqrt{\frac{2Z_0 \sinh \theta + Za (\cosh \theta + 1)}{2Z_0 \sinh \theta + Za (\cosh \theta - 1)}} \quad (12)$$

where θ is the line angle between two loading coils, Z_0 is the characteristic impedance of the unloaded line, and Za the impedance of the loading coil.

In both cases, calculation from these formulæ shows that the characteristic impedance changes with frequency in a smooth, regular way. Notwithstanding the complexity of the physical problem involved in balancing the multiple frequencies of the voice in unloaded or loaded lines, a comparatively simple balancing network can be designed which involves capacity, inductance, and resistance, and which effectively balances the differential transformer and circuit previously referred to if the conditions of formulæ (6) and (12) are fulfilled.

The net work is constructed to balance the circuit for a range of frequencies between 300 and 2,000 periods per second. Filters are necessary to cut out frequencies outside the range for which the circuit is balanced. The result of the application of these devices is that the repeaters used in double-wire working are stable and give good articulation of speech. Detailed examples of the design of balancing networks have been given.

In the case of unloaded, uniform cable lines the line impedance which requires balancing may be taken to be that calculated from formula (6). This involves constructing a network for the given circuit through the range of frequencies first specified. The calculated impedance in this case usually approximates with sufficient accuracy to the measured impedance of that circuit, through the same range of frequencies dealt with. If, however, the circuit is series-loaded the values calculated may differ appreciably from the measured impedances.

Fig. 12 shows a calculated impedance curve of a loaded circuit in dotted lines,

and the result of the measured impedance over the same frequency range is given in solid lines. The difference is due to the want of uniformity of the circuit constants. Formula (12) is based on the supposed uniform distribution of the capacity, leakage and resistance throughout the cir-

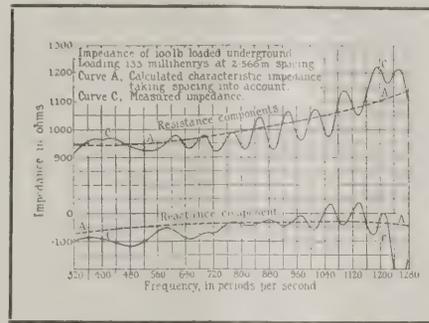


Fig. 12. Variation of Impedance with Frequency.

cuit, and also supposes equal inductance and equal spacing of the loading coils.

Where these conditions are departed from, notably as regards uniformity of spacing and variation in inductance and capacity, reflection takes place at points of non-uniformity, and the effect varies with frequency. The result of these variations is shown in Fig. 12. Previous to the introduction of relay working, this phenomenon had comparatively little importance, and it may be mentioned that the circuit which is here taken as an example and illustrated in Fig. 12 was designed for pre-relay conditions, but such a circuit is not sufficiently uniform to give the results required in highly efficient relay working.

It now becomes necessary to specify limits to the permissible variation of (a) the spacing distance of the loading coils, (b) the inductance of any coil from the mean value of inductance per coil, (c) the capacity of any loading-coil section from the mean value of capacity per section.

Experiment shows that leakage and resistance do not cause appreciable difficulty as regards present requirements of network impedance balances. The requirements as regards inductance in this country are that the inductance of any coil must not vary from the mean inductance of each coil by more than 2 per cent. Further, the loading coils must be spaced at intervals which do not vary more than 2 per cent. from the mean spacing distance.

As regards capacity, a restriction of the amount of non-uniformity permissible has not yet been fixed in this country, but experiments made in Great Britain point to the necessity of some limitation, of the same order of accuracy as in the case of the inductance.

Recent extensive experiments made in Germany on the influence of inequalities in the construction of coil-loaded telephone cables on their characteristic impedance by K. W. Wagner and K. Küpfmüller point to the fact that the induc-

tance per section should not vary more than 2 per cent from the mean inductance per section, and that the electrostatic capacity per section should not vary more than 1½ per cent from the mean capacity per section.

When the limitations of capacity, inductance and spacing here outlined are observed, the variations from the calculated curves—such for example as shown by Fig. 12—are materially reduced, the amplitude of the sinuous curve being reduced to negligible proportions.

Before concluding it should be stated that it has not been overlooked that a system of high-frequency telegraphy and telephony has recently been developed in America, largely due to the labors of Major-General G. O. Squier, and also the Western Electric Co., in co-operation with the American Telephone & Telegraph Co. High-frequency circuits are at present regarded, moreover, as supplementing, but not supplanting, methods described.

The study of superposed circuits, used in the widest sense, is one of increasing importance. It is not one for the application of cut-and-dried rules. The problems dealt with are so complex as to require special study of each case in all its aspects. The progress which has been made in recent years has resulted in the replacing, to some extent, of heavy gauge overhead wires of limited electrical stability and carrying capacity, by small loaded and relayed underground circuits of uniform stability and efficiency.

It must not be hastily assumed, however, that the reduction in cost is at all proportionate to the decrease in the weight of copper per mile. The cost of loading such cables is considerable, and to this must be added the cost of providing and maintaining relay stations, with the necessary equipment and staff.

It may be stated as a broad proposition that a loaded circuit of a given transmission efficiency may be provided by a relatively large quantity of copper and a relatively small quantity of loading coils, or, conversely, within known limits, by less copper and more loading coils.

Similarly with relay stations; the more of these we provide, the less the amount of copper and coils which it is necessary to put into the loaded circuits for a given overall transmission efficiency, and vice versa; but there is a point beyond which it is cheaper to provide loaded conductors than relay stations. The ultimate object is to find that combination which for a given number of years gives the required overall efficiency at the most economical cost.

The design and calculation of such a system involves engineering problems of great complexity, as may be seen from the details given in the paper. The ultimate result, however, should be a system of greater efficiency and stability than any provided in the past.

Financial Statements and Reports

Annual Report Shows Lincoln, Neb., Company in Sound Financial Condition, Large Number of Investors Has Improved Its Standing in Community—The St. James, Minn., Company Is Growing—Reports of Other Companies

Frank H. Woods was re-elected president of the Lincoln Telephone & Telegraph Co. of Lincoln, Neb., at the annual meeting of stockholders held January 9. His son, Thomas C. Woods, attorney for the company, was elected vice-president in place of L. E. Hurtz, former general manager who is now engaged in the creamery business. Other officers are: S. H. Burnham, vice-president; C. P. Russell, secretary-treasurer; R. E. Mattison, general manager; W. L. Lemon, auditor; W. E. Bell, commercial superintendent; M. T. Caster, plant superintendent, and R. S. Brewster, traffic superintendent.

The excellent services of R. E. Mattison, general manager, were recognized by his being made a member of the board of directors. George E. Codington, manager at Auburn, was also added to the board. Other members are Commodore N. Beaver, Chris Klem, George J. Woods, Mark W. Woods, Charles Stuart, Charles Mayer, J. M. Bell, Frank H. Woods, L. E. Hurtz, S. H. Burnham and Joseph Grainger.

R. E. Mattison, general manager, in his report to the stockholders, said the business depression seems to be at an end in that section, and that he looks for an increase in business this year. The company's experience had been that telephone traffic always follows general business conditions, but never is affected to the same degree by the swinging of the pendulum. The industry has passed from stages of rapid development, competitive struggle and consolidation to the present period of unified, well-developed, universal service, regulated and supervised by the state.

The company, he said, is in a sound financial condition, with no bills payable and no short-time loans out. The construction budget for 1922 amounted to \$622,000. Reserves for depreciation and surplus now reach 22 per cent of the value of the plant. The larger part is invested in plant upon which the public pays no interest, it being held as a guaranty of the integrity of the stockholders' dollar and the permanency of the subscribers' service.

The company's revenues during the year were: Exchange, \$1,698,386, an increase of \$30,000, and tolls, \$684,000, an increase of \$4,000. The total was an increase of 1.43 per cent. In spite of the 1,476 increase in the number of stations, the net return of the company was increased \$107,000 for the year.

Operative expenses decreased from \$751,000 to \$675,000, and maintenance from \$449,000 to \$436,000, while taxes in-

creased \$10,000, and are now \$163,000. The company had \$610,000 left for depreciation reserve and surplus. Stations in service now number 67,481, as compared with: 1916, 52,205; 1917, 55,633; 1918, 57,236; 1919, 61,562; 1920, 65,384; 1921, 66,005.

The company has total assets of \$10,768,709, made up of: Physical property, \$9,313,071; investments, \$199,135; material and supplies, \$343,772; cash and deposits, \$599,321; current receivables, \$313,410. The liabilities are: Capital stock, \$6,784,113; funded debt, bonds due 1946, \$1,500,000; current payables, \$357,411; reserve for depreciation, \$1,755,258; other reserves, \$82,417; surplus, \$289,510.

The common stock of the company went to an 8 per cent basis on January 1, and the preferred stock was also given an added per cent, to 6 per cent. The company's construction and building program for this year is fully financed and no additional securities are being offered for subscription. This contemplates the expenditure of \$654,000, which will result in net additions to plant of \$366,000.

The company has had no increases in rates since July, 1919, except in the case of five small exchanges recently purchased and rebuilt, the level of whose rates have been brought to standard. On January 1 the company obtained a revision of toll rates that will increase revenues 2 per cent.

"Your officers believe," said Mr. Mattison, "that our company operates on a lower schedule of rates than any other Class A company in the United States. It is not to be expected that telephone rates can be reduced following the slight reductions in the cost of telephone materials and supplies that have taken place. These items form only a small percentage of the cost of construction. Their principal influence is reflected in the cost of construction.

"We did not make war profits. Service was furnished at cost during the war period, the same as at present. Our wage scale was below normal during the war, and has merely been raised to a fair rate. Our employes did not receive the percentage of advance that was paid in many other industries, and we cannot in fairness at this time expect to reduce them."

The company is now earning 6 per cent on its plant value for depreciation purposes. The average cost of capital to the company during the past year was 6.54 per cent. The company is just now paying its 56th consecutive dividend.

The common stock of the company is held by 1,924 persons, of whom 724 are women, located principally in the territory served. The shares are so widely distributed that it would require the combined stock of 161 of the largest stockholders to constitute a majority. The largest stockholder owns less than 2 per cent of the issue.

This wide distribution of stock, Mr. Mattison said, and the fact that the company is owned by so many small investors, have been elements of great strength. It has increased the standing of the corporation in both the field of investors and with the public, since it is in truth a big democratic organization owned by a large number of persons and is operated under state supervision. There are 266 employes holding \$144,600 worth of stock.

During 1922 the employes' benefit fund expended \$16,711 in accident, sick disability and death benefits. There were 129 cases of disability handled. The total number of accidents was 191, as compared with 113 in 1921, but the loss of time was reduced from 1,487 days in 1921 to 826 in 1922.

During the year the company modified its plan of organization. The three functional district managers in each of four districts have been replaced by one district manager in each of five districts. This has reduced the supervisory expense and has met with general approval, Mr. Mattison says. During the year Thomas C. Woods was added to the executive staff as attorney.

Mr. Mattison appended to his report a table which shows the percentage of the total investment represented by each classification of property as follows:

Class of Property.	Per cent to total value.
Exchange pole lines	19.13
Aerial cable	8.59
Exchange aerial wire	11.39
Underground conduit	2.27
Underground cable	3.13
Toll pole lines	11.24
Toll aerial wire	11.28
Land	0.91
Buildings	5.46
Central office equipment	12.42
Station equipment	14.03
Other plant	0.15
	100.00

The following table shows how each dollar received for telephone service is expended:

Salaries and wages	\$0.525
Material .....	.155

Interest and investment .....	.160
Taxes .....	.060
Interest on bonds .....	.035
Transportation .....	.020
Directories .....	.010
Miscellaneous .....	.010
Lease on plant and instruments.....	.010
Insurance .....	.005
Uncollectible accounts .....	.005
Surplus reserve .....	.005
Total	\$1.00

St. James, Minn., Company Reports on Operations for 1922.

The eighteenth annual report of the St. James Telephone Co., of St. James, Minn., shows gross operating revenues of \$20,409 and net revenues of \$4,838 for the year ended December 31.

Dividends amounting to practically \$4,000 were paid during the year, and notes payable were reduced by \$2,500.

The balance sheet contains the following figures:

Assets.	
Cost of plant and equipment.....	\$63,503
Cash on hand	2,038
Due from subscribers	1,743
Accounts receivable	17
Material and supplies	377
	\$67,678
Liabilities.	
Capital stock issued	\$49,475
Notes payable	4,000
Other accrued liabilities unpaid....	612
Depreciation reserve	8,164
Service charges paid in advance ...	50
Profit and loss account	5,377
	\$67,678

The income account follows:

Total operating revenues	\$20,409
Total operating expenses	15,571
Net operating revenues	\$ 4,838
Taxes	908
Operating income, gross	\$ 3,930
Interest deductions	466
Net income	\$ 3,464
Dividends declared and paid.....	3,958
Debit balance transferred to profit and loss account	\$ 494

The St. James company serves a total of 959 subscribers—546 local and 413 rural. It has 243 miles of pole line and two and one-half miles of cable.

Statement Shows Keystone Financial Improvement Continuing.

Higher gross earnings and lower operating expenses during December gave the Keystone Telephone Co., of Philadelphia, Pa., higher net earnings than for December, 1921. The balance available for dividends, surplus and reserve also showed an increase—to the extent of approximately \$16,000.

The comparative figures for the year likewise reflect an improving condition, last year's balance being about \$67,000 more than for the previous year. While

the gross earnings were a trifle lower in 1922 than in 1921, the net earnings were \$92,600 higher. Operating expenses dropped \$128,000 below those for 1921.

The following figures compare conditions for the two years:

	For Month Ended December 31, 1922.	Year Previous.
Gross earnings	\$ 168,833	\$ 164,277
Operating expenses and taxes	78,692	89,613
Net earnings	\$ 90,141	\$ 74,664
Less interest charges.....	\$ 42,442	\$ 42,766
Balance available for dividends, surplus and reserve	\$ 47,699	\$ 31,898
	For 12 Months Ended December 31, 1922.	Year Previous.
Gross earnings	\$1,703,274	\$1,739,043
Operating expenses and taxes	977,681	1,106,106
Net earnings	\$ 725,593	\$ 632,937
Less interest charges.....	\$ 501,235	\$ 475,809
Balance available for dividends, surplus and reserve	\$ 224,358	\$ 157,128

Northwestern Bell Reports Increased Revenues for 11 Months.

The Northwestern Bell Telephone Co. has filed with the Nebraska State Railway Commission its statement of business for the first 11 months of 1922. This covers the states of Nebraska, Iowa, Minnesota and the Dakotas.

It shows the company has assets of \$98,979,000, an increase of \$2,000,000 during the year. The revenues totaled \$20,707,000, an increase of \$1,088,000. Three-tenths of the total represents exchange revenues and three-tenths toll. Total expenses for the same period were \$16,810,000, a decrease of \$63,987. The chief saving was in operators' expenses, which decreased \$407,148, or .38 per cent. The total expenses decreased 4.39 per cent.

During the eleven months of 1922 the company earned 6.31 per cent on its investment, as compared with 4.02 per cent last year. During November the return was 8.52 per cent.

The net earnings for the 11 months are \$4,742,000, of which \$2,305,000 went for interest, leaving a balance of \$2,437,000 for dividends, which at the average rate will be \$1,896,000 for the period, leaving undivided profits of \$540,000, which is about normal.

The company operates in those states 490,461 stations of its own, and connects with 923,211, a total of 1,413,672. During the 11 months the company gained in stations 13,470, but lost 1,908 connections, leaving a net gain of 11,562.

For Nebraska an entirely different showing is made. There, with a net gain in gross revenues of \$82,000, the company

reports a loss of \$60,586 on net revenues. Part of this is due to a decrease in toll revenues, but the larger part to an increase of \$131,610 in the depreciation reserve, due almost entirely to the installation of machine switching in Omaha. Maintenance also increased \$97,545; commercial expenses, \$6,584; general expenses, \$8,623, while a big saving was made in the wages of operators, \$247,750.

The assets of the company in Nebraska are \$18,400,000, an increase for 11 months of \$294,000. The total revenues for that period were \$4,311,000, of which two-thirds was exchange and one-third toll. Expenses for the period were \$3,751,000, an increase of \$54,149, or 1.46 per cent. This shows expenses in the Nebraska district increased, while in the whole territory they decreased.

The net earnings for dividend purposes are \$619,985. The company says it has earned, in the 11 months, but 3.68 per cent, as compared with 4.02 per cent for the same period in 1921.

Nebraska Convention Next Month at Lincoln.

President Bruce Brown of the Nebraska Telephone Association has issued a call for the annual convention to be held at the Lincoln Hotel in Lincoln on February 20, 21 and 22.

Mr. Brown is very anxious to secure the attendance of representatives of as many of the smaller telephone companies of the state as possible. The directors have held a number of district meetings during the year for the purpose of enlisting the interest of the smaller organizations in the work and have had unusual success.

President Brown says that at the state convention some very important business of special interest to the smaller companies will be considered, and he believes it would pay all of them to instruct their managers to attend at the expense of the companies.

The program is now being arranged

Dates Announced for Convention of Kansas Association.

The dates decided upon for the annual convention of the Kansas Independent Telephone Association are March 6, 7 and 8. It will be held in Ottawa at the Nelson Hotel.

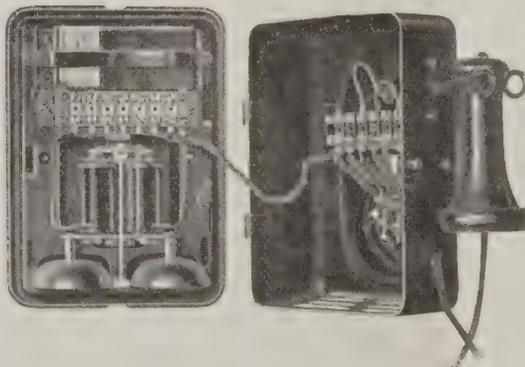
Secretary L. M. Kraege announces that the program which is being prepared covers several matters of importance and topics of general interest to telephone managers, officers, directors, wire chiefs and other telephone folk. Special attention is being given to the school for operators, which will be one of the best ever held.

It is Mr. Kraege's purpose—in announcing the dates at this time—to have as many of the association members as possible make definite plans to attend and to invite neighbor telephone people who are not members.



The Interior of the Desk Stand Base is neat and clean, and all terminals are accessible.

Loosen one screw, and the entire hook and spring assembly may be lifted for inspection or adjustment.



The Wall Telephone assembly is neat and compact and every part and every terminal easily accessible.



Perfected Interior Construction

Some Inside Facts About the New Type 21 Telephones

Those who have had the opportunity of examining Automatic Electric Company's new Type 21 wall and desk telephones are unanimous in declaring that their interior mechanical design marks a distinct advance in the science of telephone construction.

The simplicity and accessibility of the parts, their sturdiness of construction and assembly are a revelation to all who see them. At the same time they are complete in every detail.

Some of the important mechanical features of the Type 21 Wall and Desk instruments are illustrated on the opposite page. We can illustrate but a few of them, but there are others equally valuable and pleasing.

We suggest you write for fully descriptive literature or, better still, for samples. Remember also that these telephones are for automatic or manual use, and may be furnished with or without dials, or with dial blanks for present manual and future automatic operation.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd.
London.

Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
Paris.

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



What Is Your Company Doing?

Chats About Company Doings

By Stanley R. Edwards.

In the December 24, 1922, issue of the Erie Dispatch-Herald, Erie, Pa., considerably over a half a page with display heads was given to articles telling about a "quarter century" of telephone service furnished by the Mutual Telephone Co.

Photographs of General Manager John Z. Miller, who installed the first exchange in 1897 and has been continuously with the company since; former Mayor

decision went to Bell, four justices voting in his favor against three for Drawbaugh. Two others were absent from the bench.

"More than 25 years ago I talked over a wireless telephone which carried for three miles," "J. Z." reminisced. "It was in old Dan's little shop."

Drawbaugh also invented a water turbine to develop power, but it was used only for operating an organ in an old Harrisburg church. He was a genius, Mr. Miller said, but he lacked the initia-

phones in Delaware and 1,113 telephones out in the county with manual boards at Cheshire, Radnor, Kilbourne and Lewis Center.

When the Delaware exchange was placed in operation the Bell had about 150 subscribers with a single telephone at Warrensburg. Warrensburg wanted an exchange and made overtures to both companies. The Bell's terms were considered out of the question, so the offer of the Citizens' company of a guarantee of 50 subscribers was immediately taken up and Warrensburg became the first extension of the Independent company outside of the Delaware city limits.

The lines were made metallic in 1900 and in 1902 a common battery switchboard with a capacity of 1,200 lines was installed. The company's capital stock was increased to \$100,000 at this time.

During these years the Citizens' Telephone Co. was spreading out into the county and establishing sub-exchanges. Its business within the city was expanding, thus giving the Bell company a real fight for existence. Late in 1909 overtures between the two companies began, looking toward the purchasing of the Bell interests by the local Independents. In 1910 the deal was consummated and the Citizens' company bought the Bell for approximately \$8,000 after the Bell directors offered to sell at \$10,000, a figure set by the state utilities commission after an appraisal of the property.

About this time the ultimate capacity of the switchboard was increased to 1,800 lines. In 1919 the Delaware exchange was moved into a handsome new building and the system cut over to automatic operation.

The capital stock was increased to \$250,000, as compared with \$20,000 at the beginning in 1897. There are now 42 employees on the company's payroll. The annual income is \$92,000, as compared with less than \$10,000 in 1900. The total value of the property, including the central exchange in Delaware and the sub-exchanges, is \$292,000.

W. M. Heseltine is today the only director of the company who was one of the members of the first board in 1897 and he was the third president of the company.

The local newspaper devoted front page space with two-column heads to the story of the company's inception and growth and the celebration marking its 25th anniversary.

Miss Jessie Moore, chief operator of the Albia Home Telephone Co., Albia, Iowa, who started with the company at the same time as did the late Ernest J. Renz, for-

THE ERIE DISPATCH-HERALD, SUNDAY, DECEMBER 31, 1922 PAGE THREE

Erie 200,000 by 1930 4 Out of 5 Use the Mutual

Twenty-Five Years of Public Service

A QUARTER of a century ago the Mutual Telephone Company came into existence to meet a public need. It started with a single switchboard of 400 line capacity.

SINCE that time, there has been a consistent growth. Not one month in all those years showed a decrease in the number of Mutual Telephones in service. On the other hand, the increase was so marked that now more than "Four out of five use the Mutual" and the number of telephones has been increased to 15,000.

WE are proud of this record and proud of Erie—glad that we have become an integral part of it. Our greatest ambition is to grow with Erie and to give it continued service.

The Mutual Telephone Company

Half Page Advertisement Which Shows How Telephone Company's Growth Is Linked With That of the City.

Wm. Hardwick, the company's first president; W. J. Sands, first treasurer; and seven of the other organizers of the company, were published.

Another interesting part of the story was a reproduction under the heading, "These are names you'll recognize," of the first directory list of subscribers.

The article told of the steps taken in 1896 and 1897 to organize the company as set forth in the official minutes in the records of the company.

In speaking of General Manager Miller the article says that when he graduated from Lehigh University in 1891 his thesis concerned an original telephone transmitter which he had perfected. Before his college days "J. Z." worked with the genius, Daniel Drawbaugh, held by many to have been the inventor of the telephone.

Drawbaugh's shop was at Eberley's Mills, near Harrisburg, and it was there he produced a "talking machine" in 1873. Bell announced his discovery in 1876 and a bitter controversy was carried into the supreme court of the United States.

Drawbaugh produced witnesses who had used his apparatus in 1876, and finally the

tive to push his inventions to the fore. He produced a buckle making machine and more wonderful, a lock that opened to the sound of a human voice when it pronounced the keynote syllables. It was too delicate for commercial use, but has been demonstrated frequently in laboratory work since.

Accordingly, it was in such an atmosphere that "J. Z." studied before he went to Erie. The story of the progress of the company under his management, as related, made an exceptionally interesting story.

January 1 the Citizens Telephone Co., of Delaware, Ohio, celebrated the 100th consecutive payment of quarterly dividends and the completion of 25 years of service marked by rapid and long strides in progress and development. Honoring the occasion, the stockholders were called together at the company's building to celebrate at a reception arranged by the directors.

The 25 years have seen the company develop from a grounded return system in 1897 with a switchboard having a maximum capacity of 300 lines, to an automatic common battery exchange of 2,191 tele-

mer manager, at Christmas time made an appeal to the operators for continued loyalty to the standards of service built up by Mr. Renz.

The operators, many of whom have several years' service records, are very loyal and consequently the patrons do not know of the great gap caused by the death of Mr. Renz last month. Mr. Renz was rarely absent from duty and his sudden death was a great shock to the operating force.

In her letter to the operators, Miss Moore said in part:

"The greatest monument to Mr. Renz' memory will be to keep up the good service that has been established by his years of labor. It cannot be done by one operator, or by the chief operator. Each individual operator, as she takes her place at the switchboard, must keep in mind the instructions from one who gave the best of his life to give good service to the public.

Although the public may not seem to appreciate our service at times, we are here to do our best. Remember, *courtesy* was the one great thing always in the mind of Mr. Renz when meeting the public. Let us each one keep fresh in our memory the one desire of our late loyal manager—good service.

Each operator knows what it means to follow the rules that mean good service. It is not necessary for me to give you the rules, but just say to you, 'let us meet the public with a smile in our voices.' It is not always easy to keep smiling when some cross subscriber does not understand the conditions, but a smile in our voices will help to hold his confidence."

With the heading more than one inch in height, "A New Year's Resolution," the Mountain States Telephone & Telegraph Co., using a full page newspaper advertisement, showed a scroll and a pen within a hand, the top of the scroll captioned "1923," and then:

"I know that the profits of my business depend upon the prompt turnover of my stock.

I know the time I lose in negotiations, in sales, in delivery, routine and in the general movement of my goods represents an actual waste of dollars. The time I lose is as valuable as the time I use.

I know that I must do all my business in the quickest possible time.

I know the telephone is the quickest and most satisfactory medium available to me.

Therefore, I Resolve

To use the telephone more at home and abroad.

To close dealers o'er the telephone that otherwise might require a personal visit or time wasting exchange of letters.

To keep my long distance telephone costs down by using the station-to-station rates whenever possible; because anyone

who answers my long distance calls can usually handle the matter or promptly summon another who can."

Signed—————

To make this resolution profitable and helpful, we pledge our utmost effort.

THE MOUNTAIN STATES TELEPHONE
& TELEGRAPH Co."

Out in California telephone companies are having trouble due to "radio bugs" anchoring their antennae to telephone poles. District Manager Earl S. Morrow, of the Pacific Telephone & Telegraph Co. at Santa Ana, recently had the following readable item in the local newspaper under the heading, "Phone Systems Disrupted by Radio Wires":

"Radio bugs, are you hitching your wire equipment to Mr. Earl S. Morrow's telephone poles?

"It's no joke, he says, because it plays heck with his telephone system. Listen to him explain the matter in your own language:

'Mr. Radio Bug, this is Mr. Morrow, district manager of the Pacific Telephone and Telegraph Co.:

'The encroachment of radio antennae on telephone poles is causing more grief than the radio fan supposes, and the telephone people would appreciate the exercise of a little restraint on the part of the enthusiastic amateur antennae installer.

'A grieved telephone lineman has expressed the thought somewhat pithily in his statement to the effect that his work has always been hard enough without the added duty of cutting away a group of antennae every time he has to ascend a pole. While he might ascend a pole without much trouble, being able to see these attachments, his descent is made hazardous because, not being able to see what is below him, his feet may run afoul of an unexpected wire and a bad fall result.

'The same lineman points out that the attachment of wires other than those properly installed on poles by the company to give its patrons service, is a possible cause of service interruption and a hazard to himself and others.

'Antennae falling on pedestrians or across telephone and electric light and power wires will cause a lot of trouble, and the telephone company has been forced to take the stand that attachments of this nature to their poles institute a serious menace and requests the coöperation of radio enthusiasts in doing away with this hazard.'"

Wire Chief Frank West and Manager F. Trautwein of the Morrison Telephone Co., Morrison, Ill., are now at work on a plan whereby the company will be able to give greatly improved service in the near future, should a fire develop in the rural communities. ¶

The plan is one requiring a vast amount of detail work, but once completed is ex-

pected to prove wonderfully serviceable. Approximately 800 telephones are concerned. When the plan is in operation all that will be necessary for any farmer having a fire is to call "Central," give the number of his telephone, and the operator will do the rest.

Upon learning the number of the party calling, the operator will refer to a book in which all telephones of subscribers in the neighborhood are listed. This results in notice being sent to from 20 to 30 other persons without further effort on the part of the subscriber.

The new system will prove advantageous in that the lack of information of the neighborhood from which the alarm is turned in will not have a deleterious effect in summoning help. The various moves made each spring will not change the workings of the system, either, for the calling will all be done by number and not by name.

In the city of Morrison, upon an alarm being turned into the office, each operator has a certain number of the firemen whom she is to call. If four girls are working, each would take one-fourth of the number; if three, one-third, and so on. Of course, under normal conditions, a night alarm means that there is only one operator who must take the responsibility.

Kentucky utilities for the past year or two have worked hard for public sympathy and good will, and especially that of the press. Of late the utilities have done a considerable amount of advertising, along good will lines and in efforts to secure local investors in their securities, which results in better backing by the public.

Lately some coöperative advertising, on the "Public Servant," and "Obedient Servant," has appeared in the press, in which the Louisville Home Telephone Co., Louisville Railway Co. and Louisville Gas & Electric Co. have coöperated.

The national commission of the Associated Advertising Clubs of the World, at a recent meeting in Chicago, admitted to membership the Public Utilities Advertising Association. Members of the association include advertising men of the electric light and power, manufactured gas, telephone and electric railway industries, representatives of the various state committees on public utility information and representatives of the national associations of various branches of utility industry.

The object of the Public Utilities Advertising Association is to promote the use of, and make better, the advertising of the utilities of the country. The Public Utilities Advertising Association will go to the annual convention of the Associated Advertising Clubs of the World at Atlantic City in June with a complete program of its own and will also participate in the general sessions of the convention.

Program for Annual Convention of Minnesota Association.

The program for the 14th annual convention of the Minnesota Telephone Association—which will be held January 23, 24 and 25 at the Ryan Hotel, in St. Paul—has been completed.

Secretary J. C. Crowley, Jr., announces that the morning of the first day will be given over to registration, payment of dues, and distribution of badges—all of which will take place on the second floor. The exhibits will be displayed on the same floor and will be open for inspection beginning with Tuesday morning.

All sessions will be held in the Marquette room on the balcony.

The program proper follows:

TUESDAY, JANUARY 23, 2:00 P. M.

President's Address, by Jay Greaves, Glencoe, president of McLeod County Telephone Co.

"Public Liability Insurance," by Walter L. Clark.

"Radio—Some Present Aspects of Radio Communication and Some of Its Possibilities," by C. M. Jansky, professor of electrical engineering, University of Minnesota.

Appointment of committees and other business.

WEDNESDAY, JANUARY 24, 10:00 A. M.

"Collection Methods and Policies," by D. W. Gretorex, of Blue Earth, vice-president and general manager, Blue Earth Valley Telephone Co.

"Coöperation Between the State Highway Department and the Telephone Companies," by C. M. Babcock, state highway commissioner.

"Station and Plant Protection," by George W. Rodormer, Reliable Electric Co., Chicago.

WEDNESDAY, 2:00 P. M.

Business session—reports of finance and auditing committees.

Election of directors.

First aid demonstration by C. Snyder, T. Terusse, A. Johnson, L. D. Lancaster, J. Beckstrom, C. Jacquinet, H. A. Sandt,

A. L. Scott, J. Fordham, W. Henry, C. Kachelhoffer, and W. H. Watts.

WEDNESDAY, 6:30 P. M.

Banquet and entertainment.

THURSDAY, 10:00 A. M.

Report of inductive interference committee, by D. M. Neill, of Red Wing.

"Inductive Interference," by Norman Kingsley.

Reports of committees and other business.

Indiana Public Utility Men to Meet Next Week.

The third annual meeting of the Indiana Public Utilities Association, comprising the telephone, traction, electric, gas and water utilities of the state, will be held in Indianapolis on Thursday, January 25. Forenoon and afternoon business sessions are on the program with a luncheon meeting and a banquet as features.

Governor Warren T. McCray will address the luncheon meeting. Mayor Lew Shank of Indianapolis, is expected to give the address of welcome. Charles L. Henry, the pioneer interurban man, who is president of the association, will preside at all sessions, including the banquet in the evening.

Edward N. Hurley, of Chicago, former chairman of the Federal Trade Commission, and chairman of the United States shipping board during the war, is to deliver the chief address at the banquet. His subject will be: "The Obligation of the Public to Utilities."

As in past years, the public will be invited to attend the meetings. City and state officials, and members of the general assembly will be invited to attend and hear the discussions of the various phases of the utility business.

Bell Pioneer Telephone Men Hold Meeting in Denver, Colo.

The Telephone Pioneers of America, Chapter 8, held a meeting and banquet in Denver, Colo., on January 8, at which there were present 56 members who have

been in the Bell service for more than 20 years.

Benjamin S. Read, president of the Mountain States Telephone & Telegraph Co., was the principal speaker of the evening, taking as his subject, "Looking Forward." He said that within the next 10 years the Mountain States company will build a \$1,500,000 building; that in it there will be equipment worth more than \$4,500,000; and that automatic equipment will play its part.

Mr. Read also said that within a few years telephone communication will be unhampered by storms, because all wires between stations will be underground. The cable, he said, will be so perfected as to make the underground system the cheapest.

E. M. Burgess, vice-president of the company, presented some reminiscences in "Looking Backward." He told of his first work with the company in 1880, as a switchboard operator at a salary of \$20 a month, and how he had watched the company grow from a total of 500 telephones to more than 60,000.

The following officers were elected: A. S. Peters, president; C. A. Wiswall, vice-president; W. H. Bellard, secretary; and W. D. Wynkoff, treasurer.

Plan to Standardize Radio Is Agreed Upon by 40 Societies.

A broad program of radio standardization was agreed upon at a meeting in New York, January 12, of representatives of 40 radio trade associations and national engineering and scientific societies. The meeting was held at the Engineer Societies Building.

Resolutions were adopted providing:

1. That standards for radio apparatus and service should be formulated.

2. That a broadly representative national committee of radio standardization should be formed under the leadership of the Institute of Electrical Engineers, under the procedure of the American Engineering Standards Committee.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Northwestern Bell's Nebraska Case Before Federal Judge.

Argument was heard January 9 by Judge Munger, in federal court, on the motion of the Nebraska State Railway Commission for the dismissal of the injunction filed by the Northwestern Bell Telephone Co., to restrain the enforcement of the order of November 4, issued by that body, and which, among other things, reduced exchange rentals 10 per cent.

The commission maintained that the

company could not go into a court of equity until it had exhausted its remedy at law, and that the provision of the statutes, which permits any common carrier that is aggrieved by reason of a commission order going directly into the state supreme court, provides this remedy.

The company contended that inasmuch as the state supreme court is restricted by the constitution to exercise only judicial powers and cannot act legislatively, as is necessary in rate making, it had the right

to choose whatever court is pleased to determine judicially the question of whether the commission's order results in confiscation of property.

For the commission it was pointed out that in ordering a physical connection demanded some years ago by the Hooper Telephone Co., the state supreme court, while disclaiming the power to legislate, actually did legislate. It was also shown that in the Omaha street railway case the supreme court had practically fixed the



Telephone Company Executives *Should Investigate* New French Telephone Battery

The consistent experience of careful telephone executives has proved the hard cash value of French Telephone Batteries in every kind of telephone work in all parts of the country. They know that French Telephone Batteries have full-rated strength, long life under heavy operating conditions, and negligible losses when idle. Now, French experts have developed improvements which go beyond previous achievements.

The *new* French Telephone Battery sets a higher standard of uniformity, of long life. You can always count on it for consistent dependable service. Executives who insist on a full dollar's worth of value for every dollar invested in batteries will find standardization on French Batteries a policy which will give better results for less money.

FRENCH BATTERY AND CARBON COMPANY
MADISON, WISCONSIN

Chicago

Dallas

Atlanta

New York

Denver

Minneapolis

Kansas City

French TELEPHONE BATTERIES

rates by telling the commission that the company was entitled to an increase and suggesting what would be a proper rate.

Judge Munger said that it was a close legal question and that he would take time to decide it. He said that the courts have been appealed to so often in recent years by public service corporations, which claimed to be held down to rates that are inadequate, that they had come very close to the point of rate making in order to preserve the carriers from serious financial inquiry.

The federal circuit court of appeals, however, has very emphatically said that the sole question for a trial court to determine is whether a rate is confiscatory or not and that they must not seek to legislate by saying what is an adequate rate.

The Northwestern Bell company has until February 4 to appeal to the supreme court if its case is thrown out of the federal court. As pending the determination of such an appeal, the rates fixed by the commission become effective, it contends that this inflicts an irreparable financial injury.

City Cuts Reduced Rate Schedule Offered by Bell Company.

Instead of the rate reductions of 50 cents a month on business stations and 25 cents on residence stations in Fort Smith, Ark., proposed some time ago by the Southwestern Bell Telephone Co., the city on January 4 substituted a schedule making reductions of \$1 and 35 cents respectively for these classes.

At first it was believed by Mayor Bourland that the council would accept the schedule offered by the company, but after a conference between the mayor and the city commissioners more drastic decreases were made.

The base rates which the company had been using since January 1, 1921, were \$7 for business and \$3.25 for residence telephones. It was stated at the conference that there are about 3,800 residence and 1,000 business stations in Fort Smith.

Santa Paula, Calif., Company to Issue \$7,000 in Bonds.

Authority to issue \$7,000 face value of its 5 per cent bonds was granted the Santa Paula Home Telephone Co., of Santa Paula, by the California Railroad Commission on January 9.

The bonds are to be sold for not less than 85 per cent of their face value plus accrued interest, and the proceeds are to be applied toward part payment of indebtedness incurred for construction.

Indiana Commission Told About Western Electric Contract.

The relations existing among the American Telephone & Telegraph Co., the Western Electric Co. and the 26 Bell companies in the United States, known as "associated companies," were brought out extensively

in the course of the testimony of Edward V. Cox, assistant vice-president and supply auditor of the A. T. & T. Co., before the Indiana Public Service Commission in the Indiana Bell Telephone Co. consolidated rate case, in Indianapolis, which was adjourned January 8 to be resumed probably February 5.

Mr. Cox was put on the stand by the Indiana Bell to show that the standard supply contract between the Indiana Bell and the Western Electric Co. is advantageous to the Indiana Bell. He admitted there was no competitive bidding under this arrangement, but he submitted that the Western Electric Co. supplies telephone apparatus and lead-covered cable made by it and supplies other equipment as a purchasing agent at lower than open market prices.

The public service commission is going into the standard supply contract and other relationships to ascertain whether under such conditions the Indiana Bell fares as well as it might. Among the inter-relationships and the effects of them brought out are the following:

The American Telephone & Telegraph Co. owns 98 per cent of the stock of the Indiana Bell and owns more than a majority of the stock of the Western Electric.

The Indiana Bell, controlled by the A. T. & T. Co., entered into a standard supply contract with the Western Electric, controlled by the A. T. & T. Two corporate children of the A. T. & T. entered into a contract with each other, presumably at the dictation of the parent A. T. & T.

C. G. Dubois, president of the Western Electric, formerly was controller of the A. T. & T. President Thayer of the A. T. & T. formerly was president of the Western Electric.

The A. T. & T. laboratories in New York City are in a Western Electric building, and Western Electric men conduct experiments in the laboratory under direction of the engineers of the A. T. & T. general staff. The A. T. & T. pays the bills of the Western Electric for laboratory work.

The Western Electric makes transmitters, receivers and induction coils for the A. T. & T., and the latter leases them to associated companies (Bell subsidiaries). On the use of these instruments is based partly the arrangements by which the subsidiaries, including the Indiana Bell, pay annually $4\frac{1}{2}$ per cent of gross revenues to the A. T. & T. The remainder of the basis of payments is for services of the A. T. & T. general staff.

The Western Electric also makes other telephone apparatus and lead-covered cable which it sells to the subsidiaries of the A. T. & T. under what is known as the standard supply contract. Under this contract it also buys materials and equipment for the subsidiaries and receives a percentage for service.

The cost plus plan is used for articles

manufactured by the Western Electric and sold to the Bell subsidiaries; for example, lead-covered cable. The cost of manufacturing it is determined and 8 per cent is added to the price charged the Bell subsidiaries. Mr. Cox exhibited a chart about five feet long, presenting the method of computing about 200 elements in the cost of making lead-covered cable.

The Indiana Bell and other subsidiaries of the A. T. & T. buy under the contract largely what are known as specified materials, which Mr. Cox said are generally better than the open market or commercial materials.

"You say there are 26 associated companies," said Mr. VanNuys. "How many go outside (of the Western Electric) in the purchase of apparatus than the Western Electric markets?"

"Practically none," said Mr. Cox, who added that there are some exceptions where the Bell companies buy Independents and go outside to buy apparatus for the former Independent exchanges to fit the equipment.

"And still the section is put in the contract in regard to the right to buy outside as one of the valuable conditions?" Mr. VanNuys asked.

"It is," said Mr. Cox.

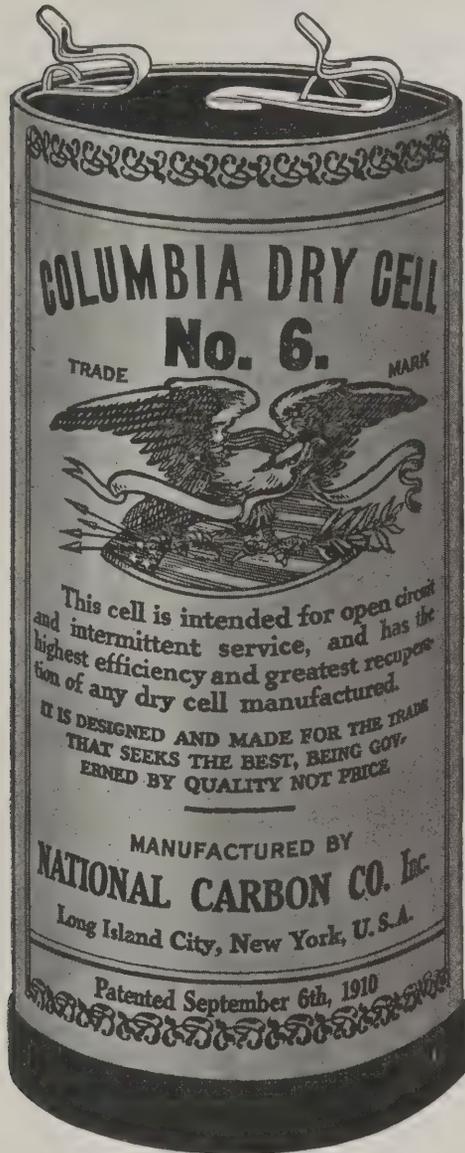
Mr. VanNuy's point was that the section in practical effect has no value inasmuch as the policies of the Bell subsidiaries are controlled by the A. T. & T., owner of the stock of the subsidiaries, and it is to the advantage of the A. T. & T., as owner of Western Electric stock, to maintain a policy of having the Bell subsidiaries purchase from the Western Electric.

Mr. Cox thought one of the advantages of the Western Electric was inspection, in purchasing work. He said there were "experts in every line," who could obtain in advance what market prices were likely to be and with this knowledge available, he said the Western Electric could buy more cheaply, especially since it buys in large quantities.

He said furniture, formerly one of the articles the associated companies bought in the open market, would be supplied through the Western Electric for it recently had made an arrangement with a company that has warehouses in various parts of the country.

From the standard supply contract with the Indiana Bell, it appeared that the Western Electric buys paper and adds 2 per cent to make the price charged to the Indiana Bell. Mr. Cox said the saving to the Indiana Bell was five times the 2 per cent.

Mr. VanNuys asked him if he knew about the paper and printing establishments of Indiana and their prices. The witness said he did not. Mr. VanNuys then asked him how he knew the contract was advantageous. The witness said he based his remark on experiences he had had in other sections of the country.



The exacting demand made upon telephone batteries is twofold. First, they must work faithfully while the receiver is off the hook; second, they must cease their activities the instant the receiver is hung up, in order to last a sufficiently long period. Columbia Gray Label Batteries combine these two requisites to the utmost degree and therefore cost less per month of service. Fahnstock Spring Clip Binding Posts at no extra charge.

NATIONAL CARBON COMPANY, INC.
Long Island City, N. Y.

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Columbia Telephone Batteries

“less cost per month of service”

The witness said the Missouri Bell for nine months had gone outside to buy instead of buying of the Western Electric, and then went back to the Western Electric, having lost an estimated amount of \$8,000. Mr. VanNuys developed that what Mr. Cox said about the Missouri Bell virtually was all hearsay.

Mr. Cox testified to the contents of a number of exhibits that were introduced in evidence at the hearing.

In sum, his testimony was that the Indiana Bell gets telephone apparatus and lead-covered cable cheaper from the Western Electric Co. as a result of what is known as the "standard supply contract" than it could get it from competing or Independent manufacturers.

Some of the exhibits went to the extent of seeking to demonstrate that the Western Electric Co., with a system of warehouses scattered throughout the country, performs valuable service in coming to the quick relief of Bell companies by providing emergency supplies quickly after a storm or other disaster that interrupts telephone service.

He testified about a number of Independent telephone companies the A. T. & T. or Bell interests had bought. He said the prices these companies had paid as Independents were compared with prices they would have paid to the Western Electric under the standard supply contract, and the showing was that the Western Electric prices were less than the prices actually paid by those companies when they were Independents.

Mr. Cox said it was his duty as supply contract auditor to see that the Western Electric was living up to its contracts with the associated companies, including the Indiana Bell. Lead cable, he said, was bought of the Western Electric on a cost plus basis, meaning the cost of manufacture, plus 8 per cent.

Before the standard supply contract was made between associated companies and the Western Electric, he said, the associated companies had been buying practically all of their equipment from the Western Electric. Formerly, he said, the Indiana Bell and other associated companies had a purchasing staff and owned their own warehouses. He said it was found desirable to do away with the central warehouse for each associated company and let the Western Electric warehouses store the supplies. This, he said, prevented duplication and was a more economical arrangement.

Excluding the business done with the associated companies, Mr. Cox said the Western Electric Co. does about 20 per cent of the telephone equipment business the country over and about 40 per cent of the lead cable business.

In one exhibit he showed the prices paid for a list of 31 articles on the open market in 1919 to the Western Electric and prices charged by two Independent manufacturers. Counting the Western Electric

prices at 100, he said one competing manufacturer's prices were 98 and another 99.

The Western Electric prices to associated companies are less than Western Electric prices on the open market, according to comparisons submitted.

This and other testimony along the same line was designed to show that the Indiana Bell has not been paying exorbitant prices to the Western Electric. The commission is going into the "standard supply contract" arrangement because the contract, it is asserted, was not made at arm's length, the Indiana Bell and Western Electric both being controlled by the American Telephone & Telegraph Co.

Only One Company in Gibson County, Ind., Now.

The Princeton Telephone Co. has taken over the Oakland City and Indiana Bell telephone properties in Gibson county, Ind. A new rate schedule for the combined service will be made following a hearing January 19, at Princeton, before Carl Wilde, director of service of the Indiana public service commission.

The exchanges of Princeton, Oakland City, Ft. Branch and Patoka are now controlled by the Princeton Telephone Co. The Bell long distance station in Princeton will be transferred to the main office. Authorization for acquiring the properties was made by the Interstate Commerce Commission.

The value of the Oakland City company was placed at \$15,981 and the Indiana Bell properties at \$54,914. The Princeton company will effect its purchase of these properties by exchange of its own stock with the stockholders of the other companies.

The purchase of the two companies by a competitive company is to eliminate duplication of service in the territory where the three companies have operated. The plan was found by the commission to be of advantage to the public. Fred R. Parrett, general manager and treasurer of the consolidated company, said that for the present there would be practically no change in the respective forces now working.

Why Kansas Company Reduced Rural Line Rates.

Considerable newspaper publicity was given the Emporia Telephone Co. when it recently made a voluntary application to the Kansas Public Utilities Commission for permission to reduce certain rates for rural telephone service. As applications by telephone companies for permission to reduce their rates are such rare occurrences, this one naturally attracted considerable attention.

In his application, W. W. Finney, manager of the Emporia company, stated that the farmer is producing crops for which he is receiving practically pre-war prices, but that he is still obliged to pay peak prices for everything that he purchases; that the average return of farmers served

by the Emporia company last year was only \$185 per family.

For this reason, Mr. Finney stated, he wished to do what he could to help the farmer out of his present financial difficulty and add his bit toward helping the farmers in his vicinity back on their feet financially—a very commendable thing for Mr. Finney to do and one in which every telephone man in Kansas would join, if their rates and plant conditions were the same as those of the Emporia Telephone Co.

Telephone companies all over the state have been and are doing everything possible to furnish the farmers adequate telephone service at the lowest possible cost, according to L. M. Kraege, secretary of the Kansas Independent Telephone Association, and while telephone rates for service are always computed on a cash basis of payment, telephone companies very often carry their rural subscribers over periods of crop failures without charging interest or in any way embarrassing the farmer by over-urging payments. Many times in doing this, the telephone men themselves are compelled to go to their banks and solicit loans upon which they must pay interest to procure ready money for meeting the expenses of furnishing service to the rural subscriber.

Two facts are worthy of note in the case of the Emporia Telephone Co.:

First, that the lines, over which this service is furnished to rural subscribers, are owned and maintained by the farmers and extend to the city limits; that the telephone instruments are the only equipment furnished these subscribers by the Emporia Telephone Co.; that a rate of \$1 per month for this class of service had for some time been charged and Mr. Finney believed that here was an opportunity to assist the distressed farmers by making the reduction at this time from \$1 to 75 cents per month.

The second fact to be noticed is that this reduction is understood to be only temporary, to meet the exigencies of this year, and that Mr. Finney hopes to have the old rates restored as soon as the financial conditions of the farmers improve sufficiently to warrant their going back to the old rate of \$1 per month.

This reduction of 25 cents per month does not apply to that class of rural service where rural subscribers are furnished service over equipment entirely owned and maintained by the Emporia Telephone Co. Hence, it would appear that the service affected is a form of rural switching service and is in no wise a general reduction on all forms of rural service.

U. S. Supreme Court to Decide Validity of Bell Injunction.

While a third temporary injunction—properly signed by three federal judges—was issued last month restraining the Louisiana Public Service Commission from

NORTH MACHINE SWITCHING SYSTEMS

Just as the truck winch is the latest thing in plant equipment, just so is the machine switching apparatus in central office equipment. Operating companies which

Give
Quick
Accurate
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with this apparatus have no difficulties with finances or public relations.

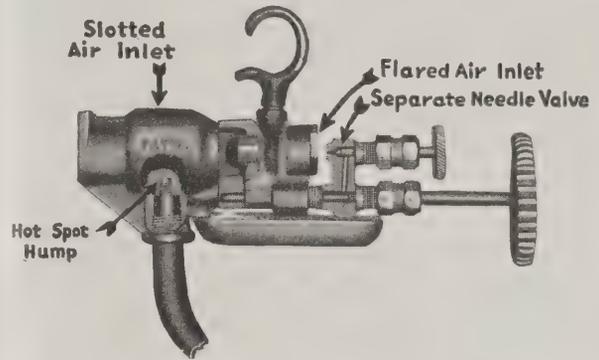
This modern equipment is worthy of investigation if you want to provide your central office for the growing needs of the future.

**WE HAVE A SYSTEM THAT WILL
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**THE NORTH ELECTRIC
MANUFACTURING COMPANY**
GALION, OHIO

ZERO WEATHER HAS NO TERRORS for the Turner "MASTER" Torch



Its "Hot-Spot-Hump" in the Burner-tube (patented) insures complete vaporization of the fuel (kerosene or gasoline) no matter how low the mercury has dropped or how stiff the icy gale.

Scientific mixture of the maximum percentage of *oxygen* with the gas is effected by the Flared Air Inlet (patented).

Other patented features include:

**Safety Valve and Air
Release**
**Separate Needle Valve
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District Representatives

Rice-Hitt Co., 709 Mission St., San Francisco, Calif.
Rice-Hitt Co., 1427 L. C. Smith Bldg. Seattle, Wash.
Rice-Hitt Co., 417 Hibernian Bldg., Los Angeles, Calif.
A. H. Deveney & Co., 4th National Bank Bldg., Atlanta, Ga.

enforcing reduced rates in the Louisiana territory of the Cumberland Telephone & Telegraph Co., the validity of the first injunction will be decided by the United States Supreme Court after the hearing on April 9.

The first injunction was issued by Federal Judge Foster and dismissed by an order of three federal judges.

The second injunction was declared invalid by the supreme court because it had been signed by only one judge.

Better Service Brings Higher Rates in Mansfield, Ohio.

A rate increase has been granted the Mansfield Telephone Co., of Mansfield, by the Ohio Public Utilities Commission because of improved service. The order was entered January 4, becoming effective at once.

The new schedule increases business and residence rates, on both one and two-party lines, 50 cents a month. Four-party business and residence and rural business stations are increased 25 cents a month.

West Virginia Town Demands Probe of Telephone Service.

Request for an immediate and searching investigation by the West Virginia Public Service Commission of the service rendered in Huntington by the Chesapeake & Potomac Telephone Co. was made in a letter sent December 30 by Mayor F. S. Chapman.

The letter registered formal complaint that the company had failed to install telephones—both business and residence—within a reasonable time after requests had been made and in many cases had not rendered prompt and efficient service with equipment already installed.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

January 10: Application filed by Southwestern Bell Telephone Co. for authority to acquire the property of the Kinloch Long Distance Telephone Co. and the Kinloch Telephone System, both of St. Louis, Mo.; also to acquire the Sedalia Home Telephone Co., of Sedalia, Mo.

ALABAMA.

January 5: Southern Bell Telephone & Telegraph Co. ordered to improve service and equipment at Sylacauga.

CALIFORNIA.

January 5: Authority given H. P. Harralson to construct a telephone line from Dimuba to General Grant National Park; application of Reedley Telephone Co., of Reedley, to extend its line to the national park, denied.

January 9: Santa Paula Home Telephone Co., of Santa Paula, authorized to issue \$7,000 face value of its 5 per cent bonds, to be sold for not less than 85 per cent of their face value plus accrued interest; proceeds to be used in part payment of indebtedness incurred for construction.

ILLINOIS.

January 16: Hearing held at Springfield on application of Central Telephone

& Telegraph Co. to increase rates for service in Paxton.

January 17: Hearing held at Springfield on application of Illinois Bell Telephone Co. for approval of sale of a telephone system extending from certain points on the Illinois-Wisconsin line to a point in Kenosha, Wis., for the sum of \$6,940.

January 17: Hearing held at Springfield on the joint petition of W. F. Murdock and others, copartners operating as the Murdock Mutual Telephone Co., and the Murdock Mutual Telephone Co., approving sale by the former and purchase by the latter of the telephone property in the village of Murdock and vicinity; also for authority to the Murdock Mutual Telephone Co. to issue capital stock to the amount of \$1,500, and for a certificate of convenience and necessity to operate the acquired property.

January 18: Hearing held at Springfield on citation to Mendon Telephone Co. and the Telephone Exchange of Loraine, in the matter of failure of the Mendon company to connect certain toll circuits from the Loraine exchange to the Mendon Telephone Co.'s switchboard at Mendon.

January 18: Hearing held at Springfield on the proposed rate advance for service by the Byron Telephone Co. in Byron and Stillman Valley.

January 18: Hearing held at Springfield on petition of LaHarpe Telephone Co. to increase rates in LaHarpe.

January 18: Hearing held at Springfield on supplemental petition of Farmers Fountain Telephone Co., of Columbia, for authority to issue \$84,000 of its capital stock.

MISSOURI.

January 11: Effective February 1, Dawn Telephone Co., of Dawn, authorized to continue present rate schedule now on file.

January 11: Elmer Telephone Co. granted permission to continue using the present rates now in effect at Elmer and Clifford.

January 11: In the matter of the complaint of the Community Telephone Co. against the Moss Telephone Co.; it appearing that the Community company does not intend to prosecute, complaint dismissed.

January 12: Permission given Salisbury Home Telephone Co. and Chariton County Telephone Co. to continue the existing toll rates for service between Salisbury, Keytesville and other points.

January 12: Shelbina Telephone Co. authorized to continue present schedule for service in Shelbina.

NEBRASKA.

January 8: Protest filed by residents and business men of Endicott against proposal of Lincoln Telephone & Telegraph Co. to close exchange because of inability to make expenses, and serve the subscribers from Steele City and Fairbury, averring business importance of town justifies continuance and that great inconvenience will result.

January 8: Complaint filed by L. Snyder, of Alexandria, against Lincoln Telephone & Telegraph Co., alleging that company acted "unethical" in charging him for the full 30 minutes it took to complete a three-minute conversation with town of Bartlett.

January 8: Application of the Pawnee Telephone Co. for increase in business rates allowed in part; management expenses restricted to \$200 a month and bad collection percentage to 1.5 per cent.

January 9: In the matter of the application of the Cuming County Independent Telephone Co. for permission to issue

\$1,500 additional stock; it appearing that the company has assets of \$103,400 against which only \$56,363 of stock has been issued and that the money represented by the increased stock has been invested in additions and betterments, found that the additional capital is reasonably required for corporate purposes and permission granted.

January 10: Complaint filed by the Page Power Co. against the Page Telephone Co., alleging unwarranted use of its property in bracketing and crossarming, and a demand that the telephone company be required to rebuild its lines to avoid interference.

January 10: Complaint filed by Mark Murray against Park Valley Telephone Co. that it has announced its intention of changing into a mutual and has notified subscribers that unless they take stock in the company they will be denied any service.

January 10: Complaint filed by East Emerson Telephone Co. against Northwestern Bell, alleging refusal to give toll service unless toll charges are guaranteed.

January 11: Hearing at Cozad of application of the Cozad Mutual Telephone Co. for an increase in rates; testimony adduced and cause taken under advisement.

January 12: Application filed by the Scotia Telephone Co. for permission to publish joint-user rate.

January 12: Application filed by the Wehn Telephone Co. for permission to publish joint-user rate.

January 12: Application filed by the Platte Valley Telephone Co. for permission to publish a joint-user rate.

NEW YORK.

January 17: Hearing held at Albany on citation issued to Township Telephone Co., of Chaumont, to show cause for failure to complete and correct its 1921 report.

OHIO.

January 4: Rate increase, effective at once, granted the Mansfield Telephone Co. for service in Mansfield.

WISCONSIN.

January 6: Application filed by the Ryan Farmers Telephone Co., of Kewaunee, for authority to issue \$4,800 of its capital stock for the purpose of securing funds with which to pay for additions and extensions to its property and plant.

January 9: Complaint filed by F. E. Tree and others of South Wayne against the C. M. & St. P. Ry. Co. praying for an order requiring the railway company to install telephone service in its depot at South Wayne.

January 9: Notice filed by the Reedsburg Telephone Co., of Reedsburg, of intention to extend its telephone lines in the town of Excelsior.

January 9: Authority given Manitowoc & Northern Telephone Co. to issue and sell \$1,050 of its capital stock, funds to be used to pay for improvements to plant and property.

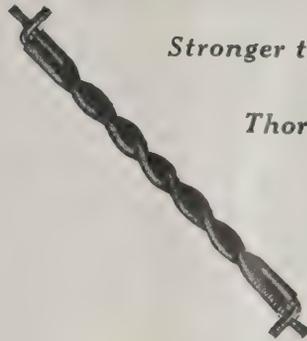
January 16: Hearing held at Madison on the proposed extension of the Fond du Lac Rural Telephone Co. in the town of Eden. T-1073.

January 19: Hearing held at Madison on the application of the Farmers Mutual Telephone Co., of Baraboo, for authority to increase its rates. U-2811.

January 23: Hearing at Madison on the application of the Siren Telephone Co., of Siren, for authority to increase its rates. U-2810.

January 25: Hearing at Madison on the application of the Freeman Telephone Co., of Mount Sterling, for authority to increase its rates. U-2813.

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Thoroughly inspected

*The most widely used
sleeve in the United
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If you were buying a house, you would probably inspect it from basement to attic, pass judgment on its foundations and its ability to withstand the tests of time.

If you were to do likewise when buying sleeves—the “houses” for transmission line connections, you would find that National Sleeves have a “foundation” that is most durable—of best grade pure copper and that when twisted they form practically a welded joint—one that is absolutely air tight—stronger than wire itself and exceptionally high in conductivity.

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Mansbridge Type Condensers are Self-Sealing and cannot be internally short-circuited. If one is broken down by a lightning or high-tension discharge, or by mechanical damage, it automatically and instantaneously seals up, this being the unique and characteristic property of the metallized paper.

You can drive a pin right through a Mansbridge Condenser and the capacity and insulation will still be O. K.! Sounds impossible, but it's solid fact!

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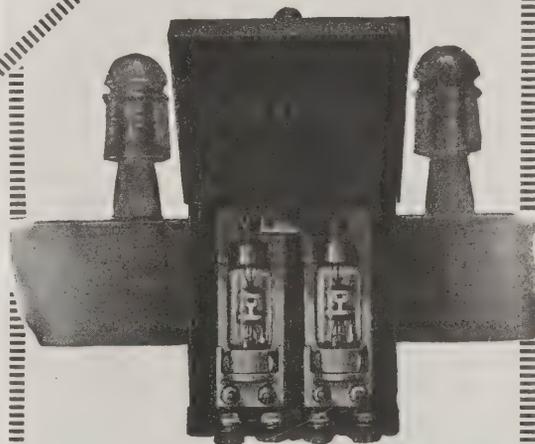
Mansbridge Condensers are More Reliable, Lighter, Smaller and no more Costly than those of the old fashioned solid foil type.

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Insist upon having MANSBRIDGE CONDENSERS.

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Telephone men — particular in safeguarding their property — express preference for

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because with them they can have uninterrupted service, intact equipment, positive protection against static, lightning, crosses, and grounds.

Write for details.

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Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and Incorporations.

CORCORAN, CALIF.—The Corcoran Telephone Co. has been organized with a capital stock of \$25,000, of which \$300 has been subscribed.

MURDOCK, ILL.—The Murdock Mutual Telephone Co. has been organized with a capital of \$1,500. The incorporators are R. Y. McIntire, W. F. Murdock, E. W. Camrack, N. C. McKinney, J. F. Helm and R. B. Helm. Chadwick & Chadwick, attorneys at Tuscola, are the correspondents.

SEATON, ILL.—Mary E. Logan, F. L. Logan and J. L. Trowley have organized the Logan Telephone Co. with a capital of \$10,000. Graham & Werts, of Aledo, are the correspondents.

BLUE RIVER, IND.—With a capital of \$1,250, the Westland Telephone Co. has been incorporated to do business in Blue River township, Hancock county. The directors are C. V. Hardin, C. B. Lacy, F. C. Landrus, Otto Wyant and J. C. Hamilton.

SPENCER, IOWA—A certificate of incorporation has been issued to the Summit Center Telephone Co., with its principal place of business in Summit township—postoffice address, Spencer. The authorized capital is \$600.

Those elected to hold office until the first annual meeting are: G. H. Schoeneman, president; W. G. Heikens, secretary; and Frank Mett, treasurer. The directors are: A. Mett, I. G. Heikens, S. Klampe, L. Nattress and Mr. Schoeneman.

YARMOUTH, IOWA—The Farmers Mutual Telephone Co. has been organized to do business in Des Moines county and vicinity. The capital stock is \$10,000.

ATWOOD, KANS.—An organization called the Rawlins County Farmers Coöperative Telephone Co. has been formed and an application for a charter has been filed. The officers are: Chas. Rodenbeck, of Ludell, president; H. A. Jennings, of Herndon, vice-president; A. J. Haller, treasurer; and Joe Golt, of Herndon, secretary. The directors include the officers and James Height, of McDonald; J. N. Peterson, Atwood; and M. H. Bird, Atwood.

CLEMENTSON, MINN.—The Rapid River Coöperative Telephone Co. has been organized to build and operate a telephone line from Clementson south along the Rapid river. It is planned to have the line in operation during the coming spring.

Officers elected are: President, F. C. Seymour; vice-president, C. P. Eidem; secretary, J. Williamson; treasurer, E. Lund. J. Hovdahl has been chosen director.

ASHEVILLE, N. C.—Organization of a telephone company with the purpose of furnishing service to residents of the Avery's Creek section has been completed. Officers are: M. J. West, president and general manager; and John B. Rumbough, secretary-treasurer.

PITTSBURG, OKLA.—The Citizens Coöperative Telephone Co. has been authorized to operate an exchange at Pittsburg.

SALEM, S. D.—The Shinimel Telephone Co. has been incorporated by Harvey

Shinimel, George Ellenbrecht, and Sam Shinimel, all of Salem.

SAN ANTONIO, TEXAS—J. E. Jarrett, G. Walker, N. M. Washer and L. B. Jones have incorporated the Blanco Road Telephone Co. with \$1,000 capital stock.

NEWPORT, VA.—Articles of incorporation have been filed by the Blacksburg-Newport Telephone Co. The maximum capital is given as \$5,000 and the minimum as \$500. The incorporators are L. O. Price, of Blacksburg, president; A. L. Farrier, Newport, secretary; J. C. Givens, Newport; J. H. Luster, V. C. Austin, and C. P. Logan, all of Blacksburg; and L. L. Miller, of Newport.

ROCHESTER, WASH.—A new company, the Peoples Utility Co., has been formed from the Peoples Coöperative Telephone Co. The capital stock of the new company is \$100,000 and the stockholders in the old company will receive twice the value of their stock in shares of the new company.

The following officers and directors were elected: President, T. I. Dodge; vice-president, A. J. Gesiell; treasurer, C. N. Mills; directors, Samuel Jones, H. W. Paul, T. I. Dodge, C. J. Norris and A. J. Gasiell.

EVANSVILLE, W. VA.—The Preston Telephone Co. has been organized by C. S. White, A. C. Sinclair, of Newburg; Oran Hamilton, J. C. Shroyer, and F. M. Cornwell of Thornton.

COUDERAY, WIS.—A charter has been granted to the Couderay Telephone Co., which was organized with a capital stock of \$25,000. The officers are H. F. Mann, president; L. E. Vosburg, vice-president; and Mrs. H. A. Mann, secretary-treasurer.

Construction.

BUSHNELL, ILL.—The Farmers Telephone Co. is planning to place all wires underground in lead cables. This includes all rural lines running into Bushnell.

LOUISVILLE, KY.—Improvements and additions to the Shawnee exchange of the Home Telephone Co. will be made at a cost of approximately \$20,000. A permit has been secured for the new addition, which will be a two-story brick structure. Work will be started within a short time.

ASHEVILLE, N. C.—The work of laying underground a 600-pair cable extending from the central office has been started by the Asheville Telephone & Telegraph Co. In certain sections poles will be placed, and additional facilities are planned for the immediate future to provide for handling at least 1,000 new subscribers. The company has a number of applications for service now on file.

TIFFIN, OHIO.—The Tiffin Consolidated Telephone Co. will place the wires in the city underground, starting the work in the business district.

ALTOONA, PA.—The Bell Telephone Co. of Pennsylvania has announced that it will erect a new steel, concrete and brick building, not less than six stories high, to be completed next summer. The approximate cost is given as \$1,000,000.

HARRISBURG, PA.—A central office and exchange building will be erected by the Bell Telephone Co. of Pennsylvania, it was announced recently. It is designed

to house practically all of the local branches of the company in Harrisburg.

SIoux FALLS, S. D.—The Northwestern Bell Telephone Co. has built a new toll circuit from Sioux Falls to Crooks.

FRIENDSHIP, TENN.—A new switchboard has been installed by the Friendship Telephone Co. As a part of the program of H. T. Earnheart, who recently purchased the company, new poles, lines and other equipment have been put in and he plans to make the exchange one of the best in that section of the state.

GREENVILLE, TEX.—A construction program involving an expenditure of about \$75,000 in the plant department has been started by the Greenville Telephone Co. The improvements include the installation of a network of cables to all parts of the city and will practically eliminate the overhead wires. A new exchange building is also contemplated, to be erected this year.

SAN ANTONIO, TEX.—Initial work in the \$2,000,000 improvement program of the Southwestern Bell Telephone Co. in this city was launched recently. A new exchange is planned to relieve present congestion and to take care of the waiting list of applications.

SONORA, TEX.—The construction of a metallic line between Sonora and Rocksprings is progressing rapidly. The project will cost about \$15,000.

SPOKANE, WASH.—Approximately \$229,170 is being expended upon improvements or construction work by the Pacific Telephone & Telegraph Co. and the Home Telephone & Telegraph Co. in Spokane and vicinity, both on work about to be undertaken and that which is nearing completion.

BECKLEY, W. VA.—The Chesapeake & Potomac Telephone Co. placed its new automatic common battery telephone system in operation recently.

HUNTINGTON, W. VA.—Switchboard equipment costing more than \$200,000 was placed in service a few weeks ago by the Chesapeake & Potomac Telephone Co. The latest addition to the central office consists of a complete unit of switchboard and associate equipment. It was necessary to remodel the main building and the garage office building in order to house the new equipment.

CASCO, WIS.—A new exchange will be erected by the Casco-Brussels Telephone Co. on the site of the one destroyed by fire recently.

GREEN BAY, WIS.—Work has been started on a \$50,000 addition to the Wisconsin Telephone Co.'s exchange which, it is estimated, will take care of needed extensions in service until 1930.

MEDFORD, WIS.—A new building, which will contain modern equipment, is to be constructed by the Midway Telephone Co.

MONROE, WIS.—A two-story building, to be erected by the United Telephone Co., will be used for a warehouse and garage.

WABENO, WIS.—Extensive improvements are being made on the toll lines of the Carter & Wabeno Telephone Co.

Financial.

LOUISVILLE, KY.—On January 2 the Louisville Home Telephone Co. paid a dividend of \$1.75 a share. It has also

BRACH VACUUM ARRESTERS



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When the best protection costs no more, why not have it? BRACH arresters insure: non-grounding of lines, cables, clear transmission, balance of potential between pairs, and full protection against power crosses or lightning. There are no carbons to clean and no maintenance bills.

You can readily afford BRACH Vacuum Arresters at our present low prices. Type 440, shown above, complete with porcelain base, fuses and mountings, sells at \$1.50 each.

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The handles for Oshkosh Tools are made of *hand hewn lumber*. This means that they are absolutely straight-grained. We get fewer handles from a given quantity of lumber than we would otherwise, but the handles are better.

Just one of the reasons why Oshkosh Tools are *better* in every particular. Get them from your nearest jobber.

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OSHKOSH

Construction Tools



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TRADE MARK REG. U.S. PAT. OFF.

GIVES GREATER SAFETY AND
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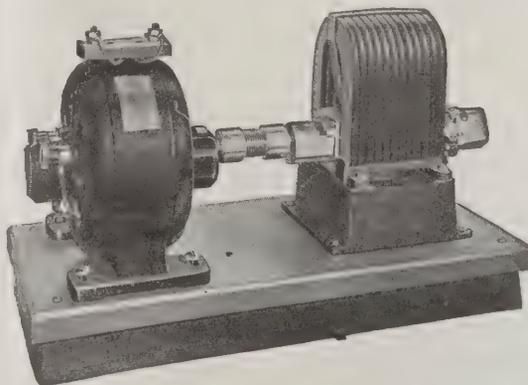
*Line Wire-Twisted
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Data On Request.*

COPPER CLAD STEEL COMPANY

NEW YORK SALES OFFICE: 30 CHURCH STREET, NEW YORK
CHICAGO SALES OFFICE: 129 S. JEFFERSON ST., CHICAGO
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Generators vs. Batteries

Is your ringing service dependable and constant?



The Holtzer-Cabot Electric Company's Magneto-Ringing Motor-Generator does its work under any and all conditions, without variation. It **never fails**. No battery exhaustion; no renewals; no contact adjustments—but constant service.

THE HOLTZER-CABOT ELECTRIC COMPANY

Boston Philadelphia Detroit New York
Chicago Minneapolis Baltimore Cleveland

been voted to distribute a stock dividend of 20 per cent.

COOKEVILLE, TENN.—Application has been filed with the secretary of state by the Gainesboro Telephone Co. for authority to increase its capital stock from \$249,000 to \$400,000.

Elections.

CLANTON, ALA.—At the annual meeting of the Peoples Telephone Co. the following officers were elected: President, J. D. Collins; vice-president, M. D. Foshbee; secretary-treasurer, J. N. Dennis. The board of directors comprises: J. M. Robinson, M. Parrish, W. Littlejohn, J. Z. Mims and W. J. Morris.

The company is a mutual concern composed of about 1,200 residents of Chilton County.

VIOLA, ILL.—The following officers and directors were elected at the annual meeting of the Viola Mutual Telephone Association: W. Stancliff, president; W. McAn, vice-president and general manager; L. L. Park, secretary-treasurer; R. H. Spicer, J. S. Pinkerton, C. G. Peterson, F. Bollman and C. W. Liebendorfer, directors.

WESTPOINT, IND.—L. J. Clement has been elected president of the Westpoint Telephone Co. for the year 1923. Other officers chosen are: M. B. Ford, secretary-treasurer; D. G. Cheesman, manager. Serving on the board of directors are: G. C. Wolford, G. W. Burton, T. M. Irwin, J. E. Clarkson, G. W. Brown and S. R. Stover.

BIRMINGHAM, IOWA.—The stockholders of the Mutual Telephone Co. have elected the following directors for the coming

year: J. McDonald, E. Laughlin, W. P. Meek, D. A. Miller, W. R. Boon, C. C. Johnston, G. Baldwin and H. Jackson. The directors elected the following as officers: D. A. Miller, president; J. Woodrow, vice-president; W. Blown, secretary; and C. H. Graham, treasurer.

CORNING, IOWA.—The following officers were elected for the coming year at the recent annual meeting of the Farmers Mutual Telephone Co.: Ed Hogan, president; Bert James, vice-president; N. M. Wetzel, secretary; and Abe Edwards, treasurer. The directors are: C. H. Lund, Andrew Nelson, Theo. Barker, O. C. Brokaw and E. L. Humbert.

ROCKPORT, MAINE.—At the recent annual meeting of the Rockport Mutual Telephone Co. two directors were elected for the ensuing term. They are F. Hughes, to succeed himself, and Dr. O. M. Chamberlain to take the place of F. Kimball, retiring.

The reports showed the company to be in good financial condition, and credit for this status was given to Fred McBeath, treasurer and general manager.

ABERDEEN, S. D.—W. G. Bickelhaupt has been elected president of the Dakota Central Telephone Co., to succeed J. L. W. Zietlow, deceased. E. E. Ingham, who has been assistant auditor for the company, takes Mr. Bickelhaupt's position as treasurer, while B. C. Lamont will be the new secretary. The other officers of the company are C. N. Herreid, vice-president, and J. F. Zietlow, general superintendent.

Miscellaneous.

HUNTINGTON BEACH, CALIF.—E. H.

Cookingham, of Spokane, Wash., has purchased the plant of the Huntington Beach Telephone Co.

HUME, ILL.—F. K. Page, administrator of the estate of G. W. Hughes, has disposed of the Hume and Brocton exchanges of the Hume Telephone Co. to H. B. Crandall, of Springfield.

JEFFERSONTOWN, KY.—The Fern Creek Home Telephone Co. has filed amended articles of incorporation, fixing its liability limit not to exceed the capital.

BRYAN, OHIO.—The Williams County Telephone Co. has taken over the Citizens Telephone Co., of West Unity, and the companies are now operated under one management.

PUKWANA, S. D.—A deal has been consummated whereby J. Verschoor, of Kimball, becomes the owner of the Stransky Telephone Co. The Stransky company serves over 400 subscribers. Mr. Verschoor also owns the Kimball telephone lines and has had much experience in the business.

KERENS, TEXAS.—J. W. Whatley has bought the lines and equipment of the Kerens Independent Telephone Co. He plans on making extensive improvements at an early date.

ORANGE GROVE, TEX.—The Orange Grove Telephone Co. has been sold by L. E. F. Townsend to Ed. Havemann, of Casa Blanca.

SPokane, WASH.—The Interstate Utilities Co. has purchased the exchanges at Tekoa, Wash., and Plummer, Idaho. Improvements will be made to both plants as rapidly as possible.

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Telephony

THE AMERICAN TELEPHONE JOURNAL

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CURRENT OPINIONS AND COMMENTS

Although we seldom stop to realize it, so young is the telephone that its 50th birthday will not be celebrated until 1926. Great has been its development, however, and just how great is emphasized by the fact that a few days ago New York talked across a distance of 3,400 miles to an English audience for nearly two hours, and transmitted long messages—speeches, really—that were heard distinctly and clearly understood.

This is some progress from that eventful day in March, 1876, when Professor Bell spoke over a wire and was heard by his colleague in an adjoining room of the same building. That first telephone message traveled about 100 feet. When President Thayer and General Carty talked to England the other evening, their voices were flung 3,400 miles over land and sea, only 70 miles of which was by wire.

Wonderful as is this achievement, the public have grown so accustomed to miracles being performed by science that the feat has attracted comparatively little attention from people generally, but to the thoughtful it is full of significance.

* * * *

Probably the greatest boon that the human race could receive would be immunity from war. If the world were assured of universal and perpetual peace, the race would be free to go ahead with the work of civilization without fear of interruption by war which destroys that work. With war abolished the peoples of the earth could go to work and utilize

in constructive directions all the energy that is now worse than wasted.

Better communication between the inhabitants of this planet will do more to put war on the shelf than any other one human agency. The telephone, the telegraph, the post, the press—anything that helps to make people better acquainted with each other—tends towards peace and friendship and general good will.

* * * *

When James L. Cowles, of Connecticut, died he was given credit for establishing the parcel post system, and those who knew him best highly praised his benevolent motives. One obituary sketch said: "All his activities were guided by the dream of a world eventually brought to complete peace and friendship *through unlimited communication among its inhabitants.*"

That serves to emphasize the belief that, as communication facilities multiply, a better understanding will develop and grow among people, and reduce the risk of jealousy, suspicion and ill feeling that lead to actual warfare or class differences.

As a means of strengthening friendly relationships among people, the parcel post, of course, does not compare with the telephone which establishes a much more intimate association.

* * * *

President Thayer touched on this point, while he was talking to England, when he expressed the opinion that there would have been no war with Great Britain in

1776, had there been as good communication between the two countries as there is today. He meant, doubtless, that quicker, more complete communications between them would surely have created a better understanding that would have prevented the clash which became the American Revolution.

Of course, all true Americans are glad that war was fought, for it gave birth to our country, but at this day and age of the world the feeling is universal that peace is desired most of all, and that free communication among all the nations will do much to bring it to pass.

* * * *

The New York experiment brought out the fact that the wireless telephone transmits messages far more efficiently at night than during the day, as the absence of sunlight adds infinitely to the strength of the signals.

It was also demonstrated that the wireless waves travel over the water with much greater facility than over the land. For that reason, it is stated that the long distance wireless telephone is not expected to play an important part in transcontinental service, at least not according to present engineering theory.

* * * *

Press comments on the 3,400-mile telephone communications call attention to the lack of privacy in the wireless service, and contend that for that reason it will not interfere with the wire telephone business. On that point the New York Times says editorially:

"In that peculiarity, as well as in the greater difficulties for the radio telephone of traversing land areas, is due, presumably, the confident predictions of the experts that the newer methods will supplement, but not replace, or even seriously interfere with the telephoning that is done with the help of wires.

"Certainly the older telephony has not put an end to the still older telegraphy, and the chances are that between wired and wireless telephony there will be co-operation rather than competition."

The story of the experiment again shows how far in advance of the whole world the United States has forged ahead in the development of the telephone art. Messages were spoken from this side of the Atlantic to England, but the acknowledgments came back by the telegraph cable, as they had no sending apparatus. This

equipment will be shipped over there and set up in a short time so that the spoken messages can be exchanged.

Attention is called to this situation in no critical spirit, for British telephone leaders have always been frank to admit that conditions in America have been much more favorable to the improvement and refinement of the art.

* * * *

Professional humorists sometimes have strange ideas as to what is funny. They have been utilizing, more or less successfully, the incident of the angry telephone subscriber who tore his telephone off the wall, carried it to town and slammed it through the glass door of the exchange building as an indication that he didn't approve of the service.

The newspaper paragraphers have used considerable space joking about the sub-

ject. Of course, they humorously commend the irate subscriber, for the easiest way to get a "josh" out of the episode was to poke fun at telephone service and pretend the telephone is a nuisance.

If some reader of the newspaper, representing an item in its columns, had heaved a copy of the paper (wrapped around a brick) through the editorial window, it wouldn't have seemed funny at all. The police magistrate who heard the telephone case didn't think so either, for he fined the angry subscriber \$25 and costs.

Press humorists who make the telephone the subject of ridicule show they are hard up for material for their columns, as the public is realizing more every day how indispensable telephone service is. Of course, the humorists are "only fooling," but it is silly business for all that. They will realize it some day.

Future of Long Distance in Europe

Recent Developments in Telephony Which Have Caused Alterations in Practice in Long Distance Communication and The Future—Part of President's Inaugural Address Before the British Institution of Electrical Engineers

By Frank Gill, O. S. B.

European Chief Engineer, International Western Electric Co.

If we consider primitive man, his first and immediate need is for food, then shelter and defense, then tools and clothes; but directly he has arrived at the state in which his own and his immediate neighbors' wants have been supplied, so far as their own exertions can supply them, the need for communication arises, and that even before the need for transportation.

There is, however, no need to insist on any priority as between these two arts; they are so intimately connected that we may, without any violence to meaning, define communication as transportation of intelligence; without communication man cannot know where to obtain such of his requirements as he himself is unable to satisfy; without it there is no use in his producing more than he requires for himself, since in its absence, he cannot know whence arises a demand for his spare produce.

While all this is true of primitive man, it has applied much more intensely since machinery came to the aid of production in the complicated system of trade which now serves the world. That which 50 years ago was regarded as a luxury to be enjoyed only by the few, is now a necessity to the many. Today no nation stands alone or is sufficient for itself; more and more the interdependence of nations is being recognized; and more and more is it realized that no nation can be prosperous

or afflicted without a result being felt by other nations.

It is easy to illustrate this community of nations by taking the clothes we wear, the food we eat, but all this is well known to you; it is sufficient to say that to bring together the products of all the world to your doors is the work of communication and transportation, and that the efficiency of both is vital. Other things being equal, the nation best equipped with the means of production, communication and transportation will enjoy a great advantage in the race for commercial supremacy, and perhaps also in the search after national well-being.

It follows, therefore, that a great responsibility is laid on those to whom is entrusted the means of communication, or who control those means, whether government department, public company, or other agency, and particularly so because it is at last generally recognized that competition is not an aid to efficiency in this business. In return, therefore, for the grant of facilities to carry on its work, each grantee authority must ultimately recognize its duty to the public, and if it realizes this, dare not adopt either the selfish attitude of attempting to make as much profit as possible, nor the passive attitude of merely supplying the service demanded by the public.

To discharge its duty it must diligently

and actively search out new means and facilities and also set about educating the public in regard to their need for communication. The authority is the custodian of the knowledge; it must teach the public what the public did not at first realize—that efficient communication is the life blood of commerce and of national and international understanding and amity—and without effective communication there would appear to be little chance of success for such projects as the League of Nations.

It is by this campaign of education that the well developed industries of the world have been stimulated, not by merely diligently serving the public demands. The railways have themselves created demands for traffic; the press has done the same; so has every great and successful industry, and so must the telephone industry if it is not to fail in the performance of its duty.

The fact that so much of the means of electrical communication in Europe is under government ownership, and under the present prevailing custom removed from it the stimulus of profit earning, makes it quite possible that governments may instruct their telephone and telegraph departments that they do their duty when they diligently supply the public demands for service, and perhaps such a course is the more probable when the many other

calls for expenditure experienced by governments today are considered.

But here a deliberate choice must be made. Is communication and even better communication a necessity or not? If it is, then the passive attitude of merely satisfying public demands must be abandoned and an aggressive attitude take its place.

It is not by a passive attitude that the great development in telephones has been built up in the United States, Canada, Denmark, Sweden and Norway, but rather by a resolute, purposeful and well directed campaign of education of the public and of existing users. In the United States particularly, there has for years been an educational campaign of a very high order, coupled with the construction of plant in advance, without which it is, of course, worse than useless to create demand.

All this seems self-evident and trite, but two questions will test very quickly whether in fact this matter is quite so

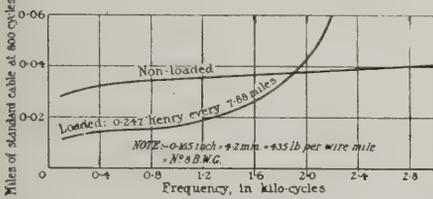


Fig. 1. Attenuation Frequency Characteristic of One Mile of 0.165 Inch Open Wire Line. Dry Weather Conditions Assumed.

self-evident and obvious as it appears. These questions are:

- (1) Has telephony, during the 46 years it has been available, been of as much use to Europe as it might have been?
- (2) Have the organizations, government and otherwise, been permitted to do what they have wished to do?

The answer to both questions is most decidedly—No.

It will be noticed that it was assumed, for the moment, that a government department should not earn any more money than necessary to be self-supporting, but it seems also wrong to reason that a government department should not earn something more than just enough merely to pay its way; it is undoubtedly healthy for the *esprit de corps* of any organization, that its personnel should know that their organization is an efficient one, in which they can take a justifiable pride—and one of the ways of testing the efficiency of public concerns is to associate service with returns.

With a staff comprising many persons, it is unhealthy that the idea should prevail that profit earning is of no account. There is, however, more than the question of the effect on the staff, important though that be. Without a surplus of income over expenses, there is no margin for unforeseen contingencies which must constantly arise in such a flexible business; service trials and research are likely to be adversely acted upon and capital will be raised with greater difficulty.

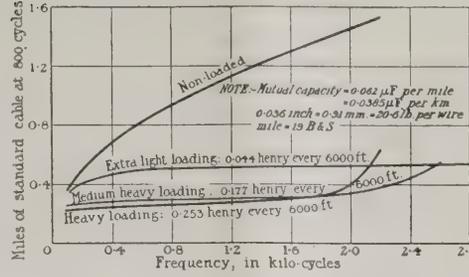


Fig. 2. Attenuation Frequency Characteristic of One Mile of 0.036 Inch Cable Circuit.

Further, there seems no reason why a government should not include in the rentals a sum plainly intended to be a contribution towards revenue; it is difficult to see any reason why it is permissible, for the purpose of raising revenue, to tax, say, food, but not telephones, or why it is proper to make a considerable surplus on postage, but not on telephones.

It would seem that the correct course is for a government, if it operates the telephones of a nation, to raise from them something towards the national revenue and pay such a return on the capital invested in the business as to make certain its ability to raise whatever money may be required to extend the business.

Let us now pass on to consider some of the alterations in practice caused by recent developments in telephony as they affect long distance or through communication.

Loading.

By the term "loading" is meant the deliberate addition of inductance to the circuit for the purpose of increasing the distance over which satisfactory speech is feasible.

Such inductance may be in the form of evenly distributed inductance, effected by wrapping the copper conductor with magnetic material, such as fine iron wire, or, and more commonly, it may be in the form of lumped inductions obtained by inserting in series in the circuit at intervals, coils having the required inductance and a minimum resistance. It was in 1887 that Oliver Heaviside pointed out that the addition of inductance by either of these methods (inductance being then thought

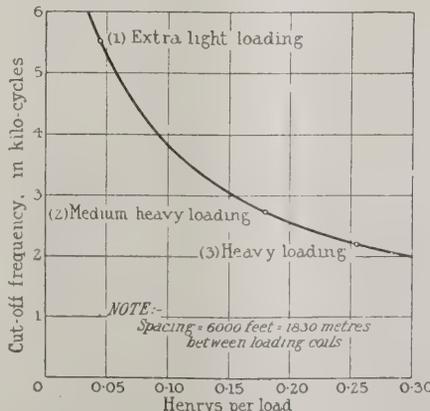


Fig. 3. Effect of Loading Upon Cut-Off Frequency.

harmful), would be beneficial to the transmission of speech.

Fig. 1 shows the loss for one mile of circuit at various frequencies in respect of open-wire circuits weighing 435 pounds per mile (4.2 mm. diam.) both for non-loaded and for circuits loaded with 0.247 henries every 8 miles (12.9 kilometres); the computations are made for the steady state—that is, when the temporary effect of transients has passed off.

From these curves we may see that the effect of loading has been threefold:

- (1). The attenuation has decreased, taking 800 cycles for example, from 0.035 to 0.016 mile of standard cable, a reduction in loss—that is an improvement in volume of speech, of 54 per cent.
- (2). Between about 400 and 2,000 cycles the curve of loss has a greater slope for the loaded line, indicating that the various frequencies necessary to transmit satisfactory speech are less uniformly trans-

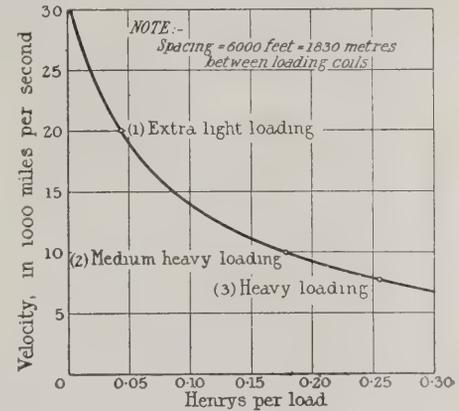


Fig. 4. Effect of Loading Upon Velocity of Propagation.

mitted, thus increasing the frequency distortion and so degrading somewhat the quality which was of a very high order on the non-load line.

- (3). At about 2,000 cycles, the attenuation of the loaded line undergoes a decided increase, termed the cut-off, so that high frequencies are extinguished.

In addition to these three efforts, the speed of the circuit has fallen from 180,000 miles per second for the unloaded line to 55,000 miles per second for the loaded line.

Fig. 2 shows the results of loading a circuit weighing 20.3 pounds per mile in drycore cable with three different types of coil, each at a spacing of 6,000 feet (1,829 metres). From this we notice four results:

- (1). The 800-cycle attenuation has fallen from 0.94 to 0.30 (taking the middle loaded curve as an example), a reduction of 68 per cent in the loss, a greater reduction than was obtained in the case of open wire.
- (2). Between 200 and 2,000 cycles the loaded curve is approximately horizontal, indicating that all frequencies between those limits are almost equally transmitted so that the frequency distortion, previously

With this type of repeater the circulating currents have to travel a long distance, which gives rise to great attenuation, before they can get back to their starting point for reamplification, and so a much greater gain can be taken from four-wire repeaters than from 21 or 22 types, before the singing condition is approached.

While the four-wire type can be employed on either open or cable circuits, the fact that it requires four wires makes it economically more suited to cable circuits, and since the gains obtainable are high (they can be made so high as to render the line loss zero between the terminals of the four-wire section, which cannot be achieved by any other type), it is economically possible to employ this type of circuit in cable for distances up to 1,000 miles, perhaps farther, and so it is pre-eminently suited for groups of long distance lines carrying heavy traffic.

Whichever repeaters are employed in any line, they must, of course, be located at the right position determined by engineering considerations alone and not by political ones. It might, for example, be correct for a line to run through Switzerland with no repeater on it at all in that country, or for a line to run through Limburg on which there would be a repeater in Holland, but no appreciable length of line in that state. In any such case the networks at the repeater in one country must conform to the lines situated in other countries.

The fact that telephone repeaters must be employed in tandem renders their requirements very severe. Fig. 5 illustrates the gains obtained from a repeater of the 22 type designed for a loaded cable circuit taken at random and connected to an artificial line. The control of the gain is by a potentiometer with fixed steps, the top curve showing the gains from the two repeaters in the two directions, east and west, for speech frequencies when the two potentiometers were set on the same step,

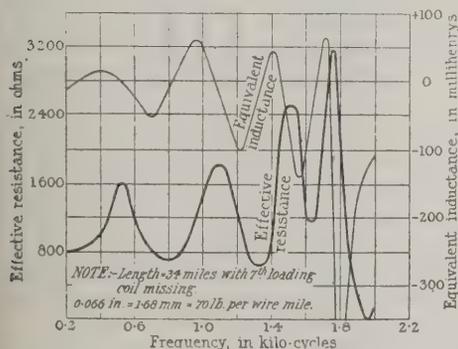


Fig. 8. Impedance Frequency Curve of 0.066 Inch Lightly-Loaded Cable Circuit.

the 9th. The gain shown in the curve is approximately 22 miles, a current amplification of 11 times.

Of course, it will be realized that this only shows what amplification the repeater can give; in practice one would not expect

such gains when connected to real lines. It will be seen how closely alike are the gains in each direction; that is, the speech currents are amplified in either direction with very nearly identical gains. When the potentiometers were set on the fifth step, the gains were reduced, but the curves of the gain in each direction were practically indistinguishable, and the same held good when a still lower gain was taken by putting the potentiometer on the first step.

It will be noticed that these results were obtained not by any careful and fractional adjustment, but merely by setting the two potentiometers on similar steps, and it will also be seen that the variation in gain produced by one step is approximately two standard miles.

The small inset diagram indicates the pieces of apparatus involved, all of which have to play their part in the gain at speech frequencies, viz., potentiometer, input transformer, vacuum tube, output transformer, filter and three winding transformers in each repeating unit. It will be realized that the gain given out by

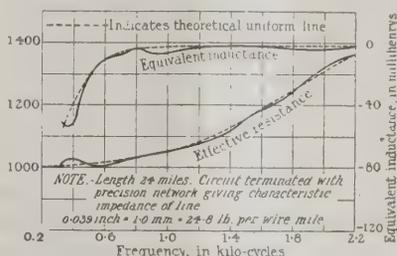


Fig. 9. Impedance Frequency Curve of 0.039 Inch Phantom Cable Circuit. Medium Heavily-Loaded Cable.

the repeater must, of course, be adjusted to and suitable for the type of line with which it is to be used; also that a repeater is not a universal article which can be attached to any line, regardless of its make-up.

When in actual service repeaters are associated with lines, several reactions occur which very largely modify previous practice. As before stated, the line is balanced by an impedance network which simulates the line, but in order to keep these networks practicable it is necessary that the lines shall be as free as possible from irregularities, otherwise the networks would be very expensive and perhaps impossible.

Fig. 6 shows impedance frequency curves for an open-wire line 41 km. (25.5 miles) long of copper wires having a diameter of 3 mm. (0.108 in.). This is an excellent example and so regular that there is no difficulty in providing a network which closely simulates the line, consequently satisfactory repeater gains can be obtained. The indicated results were found at the first trial and without any clearing up.

Fig. 7, however, shows similar curves for a line that was regarded as a first-

class one until tests were made on it prior to using a repeater. It is seen that its impedance curves are very irregular so that in its then state it was quite impossible to employ a repeater. Fig. 8 shows a cable circuit 34 miles (54.7 km.)

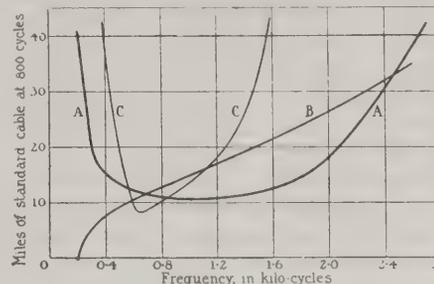


Fig. 10. Attenuation Frequency Characteristics of Long Open Wire Line.

long, from which, for some unknown reason, a loading coil 8 miles (12.9 km.) distant from the place of this test, had been removed.

The impedance frequency curves very plainly show how, by this removal, the line is thrown out of balance with the network, and one can thus see that the removal of a loading coil would at once render useless the line of which it forms a part. The removal of a loading coil is a noticeable matter, but the want of uniformity introduced by several portions of a line having different constants, such as non-uniformity caused by the haphazard joining up of line not constructed with a view to the rigid uniformity required for repeatered lines, acts in the same fashion.

Fig. 9 shows impedance frequency curves for a phantom loaded cable circuit 39 km. (24 miles) long. It will be remembered that a phantom circuit is one which is obtained by superimposing the phantom on two circuits each composed of two physical wires.

It is not an easy matter to obtain a low unbalance condition between the various capacities which make up such a circuit. In this figure are shown the curves for the line and for a theoretically uniform line; it will be seen that the actual line does closely approximate to the theoretically perfect line.

Let us now see what is the overall result in transmission when employing a long line in which copper and repeaters both contribute to the effective transmission of speech. What, in fact, is the transmission afforded over the whole system.

In Fig. 10 are shown frequency attenuation curves for a non-loaded, open, copper wire line 3,400 miles (5,472 km.) long. The curves reproduced are: A, actual measurements on the line when using repeaters of a type designed for and suited to the line; B, computations based on using imaginary repeaters giving uniform gains at all frequencies; C, actual measurements when using repeaters suitable for other types of line but unsuited to this one. The line included 12 repeaters in

tandem, and the results are somewhat remarkable.

They show, curve *A*, that the specially designed repeater in conjunction with the suitable line gives a fairly uniform overall loss, approximately 10 standard miles, between the frequencies of 400 and 1,800. On the other hand, curve *B* shows that the theoretical uniform-gain repeater, if used, would be very unsatisfactory, in that it would give a frequency gain characteristic of a very undesirable kind and one which would greatly increase the frequency distortion. Lastly, curve *C* shows that a repeater suited to the character of one line, if used with another line to which it is unsuited, may give overall transmission of a highly unsatisfactory nature.

Since it is not yet practicable to transmit all frequencies equally, it is evident that some sort of a compromise must be made, and if a line is composed of several sections on each of which a different compromise has been made, the final through result may be less satisfactory than need be, solely because of the fact that the compromises contain no unity of treatment.

When repeaters are in operation, they must maintain constant the gains to be given out or there will be serious effect on the speech. If we assume a four-wire circuit between Rotterdam and Milan, 500 miles (810 km.) long and having five repeaters in it, operating at gains of 23, 30, 30, 30 and 23 standard miles (S. M.) respectively, say an average of 27.2 each, we need only consider what will happen if the gains fall off, since the gains will originally have been set to be as high as safely allowable.

Assume, then, that the line without repeaters has a net equivalent of 148 S.M. from which we deduct the repeater gains, $5 \times 27.2 = 136$, leaving the net loss = 12 S.M. Now suppose the gain at each repeater station for any reason at all falls off by 2 per cent, this will represent 0.54 S.M. each or 2.7 S.M. for the five stations, and the net result will then be increased from 12 to 14.7 S.M., an increase of 23 per cent in the loss in the line.

Should the gain on each repeater fall by 7.5 per cent the total additional loss will be 10.1 S.M., and the final net loss will be increased from 12 to 22.1 S.M., an increase of 84.5 per cent. In this case the loss would be so great that probably the line would become unworkable.

I have chosen these examples to show the importance of uniformity of construction, uniformity of maintenance, and uniformity of operation; it will be seen afterwards what is their particular application. The examples are rather understated than exaggerated. It would have been quite reasonable to have taken a case with 20 repeater stations in tandem, and, furthermore, the gain given by a repeater would not in fact be one definite figure for all frequencies.

To My Friend, the Public Utility Man.

My hat is off to you, sir,
And the business you pursue;
It may not bring the loud applause
Or the luxuries for you;
It may not bring the "Thank you's"
Or a great amount of praise,
And perhaps it calls you early—
Keeps you working all your days.

You must delve away untiring
So your service will not stop.
You must tell why rates that now are low
Aren't scheduled to drop.
You must grow a little faster
Than the city where you dwell
And be ready to deliver
On demands one can't foretell.

While you fight the wind and lightning,
Fight the flood, the sleet, and fire!
As you're digging for the frozen pipes,
Repairing broken wire—
You are serving all your fellow men
In a most substantial way,
Through all the hours of day or night,
And you keep no holiday.

There's a heap of satisfaction
In a task that is well done;
If only folks appreciate
The service that's "A-one."
So I voice my admiration
At this season of good cheer,
And wish you health and happiness
Throughout the coming year.
JOHN N. CADBY,
Secretary, Wisconsin Utilities Association.
He who serves those who serve all.
Written Sunday, Dec. 17, 1922.
(We never rhyme during office hours.)

Fortunately, the design of repeaters has been carried far enough so that if correct design is employed and if certain regulations for operating routine and maintenance are followed, the gains can be held steadily, but among those routines are tests which determine when the useful life of an amplifying element, a vacuum tube, has ceased and the required constancy in gain can only be held if all repeater stations are operating to the same routine.

If the line is an aerial one and subject to considerable changes in temperature, the resistance alters and another source of variation in overall transmission equivalent is introduced. If these changes are serious, they can be compensated automatically; if not so serious, they can be dealt with by operative routine. The lesson is, however, the same in either case, and, for the best results, those persons operating the various repeater stations must be operating to the same routine, employing the same technique and under the one control.

Again, when breakdowns occur, important circuits cannot stand out of order, but must immediately be temporarily rerouted to restore the service. Such alteration may affect the balance between the network and line at the repeater station and this may have to be dealt with by altering the gain of one repeater (in which case alterations will probably be required

at all other repeater stations along the line), or by changing networks.

If it were possible to foresee all possible combinations and emergencies, it would doubtless be possible, though not economical, to establish routines covering all cases requiring attention, but obviously this is not possible and the only commercial solution lies in unity of control of the line from beginning to end.

It has been shown that the result of loading the circuit is reduced attenuation and somewhat impaired articulation in open-wire circuits, and reduced attenuation and better articulation in cable circuits. Now that the use of repeaters has become possible, additional energy can be put into the line as required and the attenuation can be reduced by that means.

It is therefore, no longer necessary to sacrifice the quality which can be obtained on open-wire circuits by loading them in order to reduce the attenuation; this reduction can be effected by repeaters. In cable circuits, however, it was shown that loading was necessary to reduce the frequency distortion.

Consequently, long, heavy, open-wire lines are not now loaded at all but are repeatered, resulting in improved articulation, and the increased speed of propagation avoids echo trouble which only became insistent because of the more powerful effects derived from repeaters. With cable circuits, on the other hand, loading still obtains; it cannot be abandoned since it is necessary for the reduction of frequency distortion, but the tendency is towards lighter loading so as to raise the speed of the circuit, thus reducing the echo trouble which, because of the reduced speed and the great electrical length of loaded cable circuits, demands most careful consideration. (To be continued.)

Illinois District Meeting to Demonstrate Cable Splicing.

The January district meeting of the Illinois Telephone Association will be held at the Association of Commerce headquarters at Monmouth, Ill., Tuesday, January 30, beginning at 9 a. m.

This district meeting will include not only the usual operators' traffic conference, but will also include a plant school for telephone men in which a practical demonstration of approved cable splicing methods will be given. No northern Illinois telephone executive or employe in an executive position can afford to miss this conference, and it is expected by the officers of the association that a very large number will be present.

The officers of the association will be prepared to report on pending and proposed legislation.

Information as to hotel accommodations can be secured from Fred A. Norris, general manager of the Monmouth Telephone Co., and a director of the Illinois Telephone Association.

South Dakota Holds Best Meeting

Seventh Annual Meeting of The South Dakota Telephone Association at Huron Last Week Developed Great Interest in Organization's Work—Increasing Activities Planned as Result of Past Year's Successful Work

Surpassing its former conventions, the South Dakota Telephone Association held its seventh annual meeting January 17, 18 and 19 at the Marvin-Hughitt Hotel in Huron, and created the highest enthusiasm that has yet been shown in the association's affairs. The remarks heard during and after the sessions proved that the members and visitors—there were over 100 present—derived many benefits from their attendance and gained information that was of real value.

It could scarcely have been otherwise, for great care had been exercised in making up a program that would be of benefit to every member. The papers and talks presented had to do with matters of general interest to all and offered some new ideas for the advancement of the companies and the industry.

The manufacturers cooperated to make their share of the convention a success and as a result the display of telephone equipment attracted the attention of the visitors and much interest was shown.

Officers elected to head the association for the ensuing year are: President, L. H. Snyder, of White Lake; vice-president, J. J. Bollinger, of Bridgewater; secretary-treasurer, Thos. J. Phalen, of Aberdeen.

The meeting was called to order at 10:15 a. m. on Wednesday, January 17, by President J. A. Steninger, of Parker.

The address of welcome was given by J. M. Moran, representing the mayor of Huron, to which C. E. Hall, of Omaha, Neb., tax commissioner of the Northwestern Bell Telephone Co., responded.

Secretary-Treasurer Thos. J. Phalen, of Aberdeen, superintendent of traffic of the Dakota Central Telephone Co., read the minutes of last year's convention at Mitchell, and presented his report of the association's activities during the year. A vote of thanks was tendered Mr. Phalen

is entitled to standardized, unified service, rendered in a capable and satisfactory manner.

He referred to the loss suffered by the association in the deaths of J. L. W.



Secretary-Treasurer Thos. J. Phalen, of Aberdeen, Received a Vote of Appreciation of His Work, and Another Year of the "Job."



President L. H. Snyder, of White Lake. Began Telephone Work in 1899 as a Lineman and Inside Wireman.

for the thoroughness of the report and the efficient manner in which it had been compiled.

President Steninger then delivered the president's annual address. He expressed himself as being "strong for" district meetings and recommended that the state be divided into distinct divisions so that there could be a regular program of meetings.

He urged that all classes of telephone people—directors, management, traffic, plant, and operating departments—familiarize themselves as much as possible with the branches of the industry other than their own, so that they may have a general knowledge of how service is rendered, and may talk intelligently to the patrons, as well as work together more efficiently and understandingly.

Mr. Steninger insisted that the public

Zietlow, of Aberdeen, and J. Wilson, of Groton.

The reports of the various committees acting during the year were presented. A. S. Kelly, of Omaha, Neb., made the report for the legislative committee; Thos. Phalen for the traffic committee; and M. E. Guinter, of Sioux Falls, district commercial manager of the Northwestern Bell, for the public relations committee.

The following convention committees were then appointed by the president:

Resolutions: C. E. Hall, of Omaha, chairman; A. N. Van Camp, of Highmore, and C. L. Adams.

Nominating: J. F. Zietlow, of Aberdeen, chairman; F. L. Wheeler, and H. M. Schumacker.

The meeting then adjourned, reconvening at 2 o'clock in the afternoon. That session was devoted to short talks relative to telephone conditions in the state. Those taking part in the discussions were: A. N. Van Camp; J. J. Bollinger, of Bridgewater; C. L. Adams, H. P. Mortenson and A. L. Berg.

The second day was a very busy one, being devoted principally to a plant school for the study of the workings of an exchange, its problems and difficulties. Sev-



Retiring President J. A. Steninger, of Parker, Still Serves the Association. He Is a Director.

The board of directors comprises: J. A. Steninger, of Parker, retiring president of the association; M. E. Guinter, Sioux Falls; A. L. Curtis, Castlewood; F. L. Wheeler, Scotland. The officers and directors constitute the executive board.

eral instructive and beneficial papers on construction, maintenance, and inductive interference were read.

A first aid demonstration that was very impressive was given under the direction of D. Dunham, of Omaha, Neb., who also made an address explanatory of the points brought out in the demonstration.

"Construction of Outside Plant," was the subject of an address by R. Y. Hyde, of Omaha, Neb., in which he handled in a most thorough style the matters which confront the company when undertaking outside work, telling how advance planning aids in pushing the work through at the proper time and in the proper manner.

The little points which perplex the management, as well as the general policies which make the going somewhat easier, were dealt with by George T. Gorham, of Omaha, Neb., in "Maintenance of Central Office and Subscribers' Equipment."

The afternoon session opened with the report of the nominating committee for officers for the ensuing year. This was adopted and the nominees declared elected by an unanimous vote.

The election of officers was followed by a talk by J. J. Murphy, of the South Dakota Railroad Commission, and one on "Maintenance of Outside Plant," by G. E. Beatty, of Sioux Falls.

W. G. Bickelhaupt, of Aberdeen, president of the Dakota Central Telephone, and chairman of the legislative committee, presented his report, and then spoke on "Past and Proposed Legislation." He pointed out that the way to avoid adverse legislation is to give the public good service—in fact, that the telephone user wants the best service there is to be had, and will pay the price for it.

The final day's program brought forth some interesting papers and discussions.

Verne C. Kennedy, of Sioux Falls, consulting engineer, speaking on "Inductive Interference," showed the necessity for great care to be taken when both power and communication wires are strung on the same poles.

The duties of the national association to the state associations were discussed by Chas. C. Deering, of Des Moines, Iowa, secretary-treasurer of the United States Independent Telephone Association. He explained that the national association is in a position to take up matters affecting the smaller as well as the larger companies; that it is in close touch with the Interstate Commerce Commission and Internal Revenue Department; and, therefore, that it can be of material service to state associations.

Developing the topic, "Legislative Matters," H. P. Hartwell, of Irene, outlined the effect of laws now on the statute books, together with remarks on some proposed legislation.

In the afternoon, round table discussions were in order and several matters relating to the telephone business as a

To the Marysville Operators

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa.*

Nine persons were given a pack to carry. As the contents of the pack were in great demand by the residents in the town of Prosperity Heights, at any hour of the day or night, this pack could never be closed.

Because of the continuous service which was required, these nine persons carried the pack in relays. When the demand for its contents was greatest, four of these people carried the pack, while a fifth kept watch to see that everyone who made a request was properly served. When the demand was not so great, three persons carried the pack while a fourth kept watch. During the night hours the pack was so light that it required only one person to carry it.

The residents of Prosperity Heights have come to depend thoroughly on the service of these nine persons. It would be a real tragedy if suddenly they were spirited away with their pack of precious contents.

Although we are not living in fairyland days, these nine persons are rendering *real* fairyland service. If a doctor is wanted, ask Central—and lo, he speaks. Ask for anyone—the butcher, the baker, the candlestick maker; quicker than the snap of a finger, he speaks. Could the fairies do any better?

Telephone service is real, honest-to-goodness service.

whole were taken up. The representatives of manufacturers and jobbers were also called upon individually to say a few words.

At the close of these remarks a resolution was introduced to appoint a committee to devise ways and means for arriving at a just and fair compensation for handling toll business between connecting exchange companies.

The new president, L. H. Snyder, outlined his policy for the coming year, and made the following appointments of committees to assist in carrying on the work of the association:

Legislative: W. G. Bickelhaupt; A. S. Kelly and J. K. Seckler, of Faulkton.

Traffic: J. J. Gibbs, Sioux Falls; T. J. Phalen and A. N. Van Camp.

Public Relations: M. E. Guintier; F. L. Wheeler, Scotland, and T. J. Phalen.

Taxation: C. E. Hall; W. G. Bickelhaupt and L. H. Snyder.

Auditing: J. J. Bollinger; F. L. Wheeler and T. H. McCullough, of Avon.

Resolutions: C. E. Hall; A. N. Van Camp and Ira S. Burdette, of Armour.

The report of the resolutions commit-

tee, presented by Chairman C. E. Hall, touched upon many important phases of the telephone business. Provisions were made for perfecting the service by holding operators' and plant schools. Resolutions were passed also upon the deaths of J. L. W. Zietlow and J. Wilson.

Short talks were then made by retiring President J. A. Steninger, Frank A. May, L. B. Wilson and L. M. Holliday, all of Omaha, Neb., after which the convention adjourned.

The banquet held on Friday evening gave the convention just the right finish. Practically every person attending the meetings stayed for the banquet and none expressed regret at having done so. It was a get-together affair, with entertainment, general singing and good eats.

Retiring President Steninger acted as toastmaster, and short talks were made by W. G. Bickelhaupt, C. C. Deering, H. P. Hartwell, T. H. Null, of Huron, and representatives of the Rotary, Kiwanis, Commercial and Lions clubs.

The consensus of opinion as expressed by groups in the halls at the time of breaking up was a "Coueism"—the South Dakota association never retrogresses and never shall; it keeps on growing in size and scope of activities, and it's going to get "better and better."

Washington Company Extending System—Buys Two Exchanges.

The Interstate Utilities Co., of Spokane, Wash., operating in Washington, Idaho and Montana, has extended its system by the purchase of exchanges and equipment at Tekoa, Wash., and Plummer, Idaho. The Tekoa exchange has 400 stations city and rural, and the Plummer 100.

The standard of the exchanges will be raised as rapidly as possible, according to a statement of Frank Davies, assistant superintendent. A two-wire line will be built from Tekoa to Plummer and at Plummer a connection will be made with the system of the Interstate Utilities Co. The line from Tekoa to Plummer will serve rural communities and lumber mills in the region between those places.

Purchase of the Tekoa exchange was made from E. H. Cookingham, of Spokane, who operated it for two years. The Plummer exchange was bought from T. J. Moran.

Rochester, Minn., Company Now Under Tri-State Name.

The name of the Rochester Telephone Co., Rochester, Minn., was changed to the Tri-State Telephone & Telegraph Co., effective January 1, in conformity with an order issued from the general offices of the Tri-State company in St. Paul and announced by R. F. Wilder, commercial superintendent.

The Rochester company was owned and operated by the Tri-State for some months prior to the time a decision was reached to change the name.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

The Work of the Kansas Public Utilities Commission.

Commissioner Jesse W. Greenleaf of the Kansas Public Utilities Commission, in a letter to TELEPHONY dated January 8, which was received January 19, presents data to show that the commission is disposing of cases coming before it promptly, and with a very fair treatment of telephone companies.

Commissioner Greenleaf writes:

"The present Public Utilities Commission of Kansas was organized at the close of the 1921 legislature, March 23, 1921.

Since that time the commission has definitely disposed of 219 telephone cases. This does not include cases in the process of settlement; cases in which temporary orders have been issued; and scores of telephone matters adjusted informally.

Of the above 219 cases, 116 were either strictly rate cases or were applications for authority to discontinue free service. In 48 cases the full increase applied for was authorized. In 46 cases partial increase applied for was authorized. In six cases increase was refused. In nine cases reductions were ordered. In seven cases the commission authorized the discontinuance of free service.

The commission has refused to allow what seemed to it to be exorbitant rates and charges in telephone service, but it has granted every application that seemed just and reasonable.

We think a study of these decisions will show a very fair treatment of telephone companies, whose subscribers have been going through very trying times financially, due primarily to the low prices of agricultural products. The commission has endeavored to work in a constructive way with all the telephone companies and has given all the help at its command in assisting small struggling companies to iron out their difficulties when they have applied to us for help in any way.

We have endeavored to dispose of every case promptly. It has been the policy of the commission to set every case for hearing as soon as an open date could be found on the calendar and proper notice could be given to the public of the hearing. At this time orders have been issued in every case that has been heard excepting a few in which there is a good cause for delay, understood and agreed to by the company.

The commission thinks the editorial comments appearing from time to time in TELEPHONY criticizing the Kansas commission has been unfair and due to the misapprehension of the true conditions and facts."

[EDITOR'S NOTE: In the interest of fairness, TELEPHONY cheerfully gives space to the foregoing letter from the Kansas Public Utilities commissioner, and affords the commission an opportunity to present its record.

TELEPHONY has criticized the manner in which that body handled many utility cases, and from time to time referred to the frequent instances in which the courts have come to the rescue of service companies and overruled the commission's orders.

No doubt, the fall in farm prices financially pinched telephone subscribers, but the fact remains that telephone service is the cheapest commodity the farmer buys, and that telephone companies deserve better rates in most cases.

If the commission adheres to a policy of handling rate cases promptly, it will be an advantage to all concerned.]

Southern Bell Ordered to Improve Service in Alabama Town.

An order requiring the Southern Bell Telephone & Telegraph Co. to furnish improved equipment and service at Sylacauga, was issued by the Alabama Public Service Commission on January 5. The order was entered upon petition by the city of Sylacauga, which was considered some time ago.

It was ordered that the day service be extended half an hour later at night to conform to the usual closing hour of drug stores in the city; that a sufficient number of operators be employed at all times to render adequate service during the day and to provide a competent operator in its office to answer the night bell and to render service to the public after office hours.

The company is required to report to the commission in writing within 30 days what steps it has taken to comply with the order.

Hearing Held on Rate Petition of Miami, Fla., Company.

A hearing which went in detail into the affairs of the South Atlantic Telephone & Telegraph Co., of Miami, Fla., was held before the Florida Railroad Commission in Miami, January 10. The company is asking higher rates, necessary to induce new capital to meet requirements of about \$500,000 per year for the next five years.

After the hearing Chairman R. H. Burr, of the commission, said that the matter would be taken under advisement. He declared that very conservative statements had been made by the company's witnesses—especially on the question of a proper investment return. At former hearings, Mr. Burr said, bankers and

other business men had testified that any business should have a net return of from 12 to 20 per cent.

He explained that he had made a careful survey of conditions and found that the company had been operating at a loss. He found no discrepancies of importance in the accounts, and arrived at practically the same estimate as the company for future requirements.

Mr. Greene was impressed by the efficiency with which the company's business had been conducted, declaring that nowhere had he found waste of any sort but that everything was in high grade condition. He praised the manner in which F. W. Webster, general manager, had conducted the affairs of the South Atlantic company.

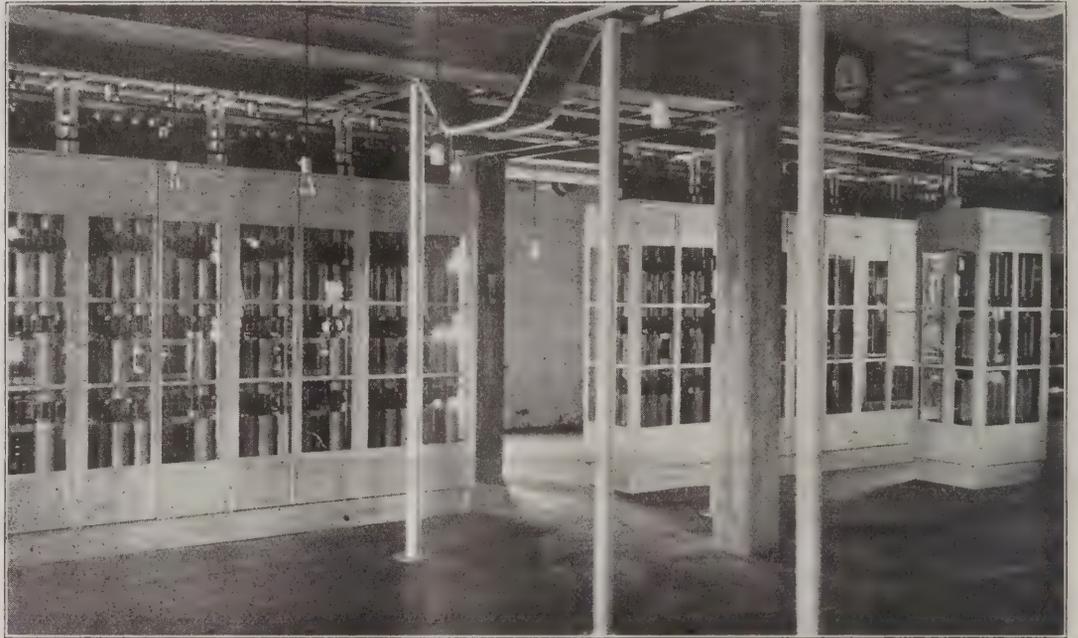
Frank B. Shutts, president of the company, was on the stand for a considerable time, and told how important it was that funds be secured to keep the growth of the company in line with the city's growth. He said further that the Southern Bell Telephone & Telegraph Co. had taken over all treasury stock at par and had bought all other stock, and that now—with the exception of a few shares—the Southern Bell owned the local company.

Several business men who are subscribers testified their willingness to stand the increase, and letters from subscribers and resolutions by civic organizations in agreement were introduced.

R. J. Gailbreath, auditor and secretary of the company, presented figures to show that a profit of 5.53 per cent had been earned in 1915; that there was a deficit in 1919; a net return of 2.25 per cent in 1921; and an 8 per cent loss has been suffered in 1922.

General Manager Webster gave a detailed account of the present equipment of the company and its estimated needs for the future. Referring to the Southern Bell, he said that that company had dealt with the South Atlantic in a strictly advisory capacity, leaving the management in the hands of the local organization, and that it had never attempted to override the judgment of Miami management.

Regarding the automatic service, Mr. Webster explained that while the item of operators' salaries was decreased, more men were required in the traffic department and at higher salaries than the girls. He also stated that of 183 replies to a letter sent out by Mr. Shutts, asking opinions and criticisms on the automatic, 170 praised it, three—through a misunderstanding—were dissatisfied, while the remaining 10 were experiencing some sort of trouble but liked the automatic system.



In the two-office automatic exchange at Long Beach, Cal., all of the party lines are served by one standard type of frequency connector. Many other exchanges, as well, ranging in size from a few hundred lines to several thousand, are finding this method simple, efficient and satisfactory in every way.



An Efficient Party Line Connector

THE frequency-selecting connector (the standard Strowger connector, equipped with a minor switch for harmonic selection of party line stations in Strowger exchanges) offers a number of advantages that all telephone men, especially those operating exchanges in small towns, should understand.

Following are some of the most important features offered by the use of this type of connector:

1. It increases the efficiency of the connector equipment by decreasing the number of connectors needed. Each 100 party line unit is equipped with one group of connectors instead of the two or four groups used in very large exchanges.
2. The same type of connector is used for individual lines, party lines and rural lines. This permits the use of a standard 100 line unit, and lines having different classes of service may, if desired, be combined in the same unit.
3. The frequency connector offers full selective (harmonic) ringing on lines having from one to ten stations.
4. Since segregation of various classes of service is not necessary, every unit may be used to its full capacity.
5. The service rendered by this equipment is in every way equal to that offered by large city automatic exchanges.
6. The use of the frequency connector means low first cost and low maintenance cost.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS.

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd.
London.

Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



Mr. Webster estimated that by the end of 1924 the present number of 7,803 stations would be increased to 10,228—with a gain of about 1,800 stations in 1923.

W. A. Jamieson, plant chief, gave detailed information regarding figures arrived at in the appraisal of the physical property of the company, saying that all wires and cables of the company had been measured; poles and crossarms examined and those deteriorated given proper depreciation, ranging from 5 to 18 per cent. Instruments were inspected, 100 in residents and 100 business telephones, and an average taken.

The total valuation, including the valuation as going concern, was given as \$1,823,596. The plant value, including Miami Beach and toll, but exclusive of intangible property, was given as \$1,634,131. Reproduction cost was listed at \$1,543,780; going concern value as \$153,674; material and supplies, \$27,808. These figures coincided with those given by the commission engineer.

Mr. Gailbreath also testified that a monthly depreciation of 5.47 per cent was applied to the reserve fund.

New Rate Schedule Ordered for Service in Bushnell, Ill.

The Illinois Commerce Commission has annulled the schedule of rates filed by the Mann Telephone Co., of Bushnell, and made the following schedule effective February 1:

Business, one party.....	\$2.50
Residence, one-party.....	1.75
Residence, two-party.....	1.50
Residence, four-party.....	1.17
Extension sets.....	.50

Louisiana Commission Rejects Compromise—Reduces Rates.

Just when it seemed that a compromise on the Louisiana rates could be effected between the Cumberland Bell Telephone & Telegraph Co. and the committee representing the various cities of the state, the Louisiana Public Service Commission entered an order rejecting the schedules proposed by both groups and establishing rates which wipe out from 50 to 100 per cent of the increases granted last May. The order was entered January 13, after a hearing lasting three days.

In addition to the slash in rates, the order also provides that the company refund to subscribers approximately \$440,000—the difference between the pre-war rate and the present rate for the period beginning May 13, 1922, the date the present rates became effective.

The increases granted last May amounted to approximately 20 per cent. The new order cuts this down to about 6 per cent, according to officials of the company.

On January 11 the Cumberland Bell submitted a schedule of reduced rates as a basis to end litigation that may prevent

extension of the service for years, but this was promptly rejected when Huey P. Long, chairman, declared the commission would stand for no compromise. The company, however, was permitted to proceed with the introduction of evidence in support of its claim that the rates in the proposed schedule were justifiable.

The announcement of the chairman came after City Attorney I. T. Kittredge, speaking for the traffic and commercial interests represented at the hearing, had asked for one more day's time in which to prepare and submit a counter proposal. Mr. Kittredge said a majority of the organizations represented were in favor of a compromise. The counter-proposal was submitted the following day.

The January 11 session of the commission was devoted largely to the schedule of lower rates proposed by the Cumberland Bell company and the effect on the 95 exchanges throughout the state. Reductions ranging from 25 cents to \$1 would total annually for the whole state approximately \$250,000. The present rates produce a revenue of something more than \$500,000 in excess of those in effect prior to the war, it was said. The reduction offered was almost 50 per cent of the increase.

Hunt Chipley, counsel for the company, asserted that the proposal was evidence of the company's desire to end litigation and to go ahead with the extensive program it has mapped out for New Orleans and Louisiana. These improvements provide for the expenditure of many millions of dollars in the next four years, he said.

The counter-proposal of the citizens' committee—which the commission also rejected—stated that if the company and populace were able to reach an amicable adjustment of the telephone rates throughout the state, all litigation both in the federal court and before the Louisiana Public Service Commission would cease.

It was also stated that both the committee and the telephone company should agree to make the rates decided upon retroactive to May 13, 1922, and that a reduction of 50 per cent from the new rates should apply to all telephones used in New Orleans, Lake Charles, Monroe, Alexandria, Baton Rouge and Shreveport.

Because of the interest shown in the matter by the telephone company attorneys and the straightforwardness of the committee in the counter-proposal, it was thought that an agreement might be reached which would end the squabble of such long standing over the telephone rates, but a period of litigation now seems imminent.

If the company accepts the order, the increase over the pre-war rates in New Orleans and Shreveport will be reduced 50 per cent.

All other towns in the state where Bell telephones are used would get reductions

ranging from 60 to 100 per cent of the increase.

The rates ordered by the commission, together with the rates which have been effective, are:

	Old rates.	New rates.
New Orleans—		
Business	\$10.00	\$9.00
Residence:		
One-party	5.00	4.50
Two-party	4.00	3.50
Shreveport—		
Business	6.25	5.65
Residence:		
One-party	3.00	2.50
Two-party	2.50	1.90
Alexandria and Baton Rouge—		
Business	5.60	4.95
Residence:		
One-party	3.00	2.70
Two-party	2.50	2.20
Lake Charles and Monroe—		
Business	5.60	4.95
Residence:		
One-party	2.80	2.45
Two-party	2.20	1.95
Crowley, Lafayette, New Iberia, and Bogalusa—		
Business	4.35	3.75
Residence:		
One-party	2.50	2.15
Two-party	2.20	1.90

The rates at the remaining exchanges go back to what they were before the war.

The case which was to have been called in the federal district court January 12, to decide whether or not the commission was right in ordering the rates reduced was continued by consent of both sides pending hearing before the commission.

Bell Asks That New York City Be Kept Out of Federal Suit.

The New York Telephone Co. filed a protest in the United States Supreme Court on January 15 seeking to prevent the city of New York from intervening as a friend of the court in the appeal of the New York Public Service Commission from an adverse decision in the lower federal courts on its orders prescribing telephone rates throughout the state.

"The attempt of the city to inject itself into this proceeding," the brief of the telephone company stated, "is an effort to obtain by indirection what has been denied to it already upon a direct application."

Protest was taken under advisement.

City of Duluth, Minn., Loses Motion for Appeal on Rates.

Telephone subscribers in Duluth, Minn., must pay the increased rates granted the Northwestern Bell Telephone Co. by the Minnesota Railroad & Warehouse Commission on December 28. Such was the decision of District Judge W. A. Cant on January 13, when he granted the motion of the Bell company asking that the city's appeal be dismissed.

F. E. Randall, of Omaha, Neb., attorney for the company, contended that the city had no authority to institute an ap-

peal, as it was not a party to the proceedings before the commission.

The city declared that the order in question was but a continuation of an earlier proceeding before the commission, in which the city of Duluth was made a party, and, second, that the case could be distinguished from the facts in the so-called Tri-State case.

Judge Cant, in his opinion, said he could not agree with either contention of the city. He thought it would be straining a point to grant that the latest order of the commission was a continuation of the former proceeding. As to the Tri-State case, the judge held that it stood as a bar to admitting the city as a party. He held that an appeal could only be made by the attorney general.

Nebraska Commission Rules on Financial Methods.

The Nebraska State Railway Commission, in an order just issued, says that it is reluctant to tell telephone companies how much salaries they must or must not pay officers, but that it thinks \$200 a month is all the manager of an exchange of 800 stations ought to ask for all that he might be called upon to do.

The order was one granting the Pawnee Telephone Co., of Pawnee City, a 50-cent monthly increase in its individual and two-party business rates, making them \$3 and \$2.75 net respectively. The company had asked for a dollar increase on each and a \$1.50 rate for business extensions, now a dollar.

Business men of the city had protested against any increase. They said that George E. Becker, manager, who is principal owner, was drawing too much money. The commission's investigation disclosed that Mr. Becker had been putting in a great deal of extra time for which he charged, in addition to \$150 a month.

The business men complained that the financial condition of the company was due to a too easy-going collection policy. The commission met this situation by a ruling allowing 1½ per cent for bad collections, and said that all in excess of that would be at the expense of the stockholders and not of the rate payers.

The company owns property of a valuation of \$68,000, and although it has paid only a 3 per cent dividend in three years, the commission finds it has been earning close to 7 per cent and putting the money into additions and betterments. These are figured at \$4,000. The added revenue will be around \$500 a year, which will be made a sufficient return. Mr. Becker said he should have \$1,300 a year more.

The commission was asked by the company to decide if it had the right to use earnings to retire stock so that the amount of outstanding securities would not be in excess of the value of the property. The commission said it could do this, but that this money must come from the net earnings and not from the rate-payer.

Nebraska Commission Authorizes Half-Million Stock Issue.

The Nebraska State Railway Commission has granted permission to the Lincoln Telephone & Telegraph Co. to issue \$500,000 additional common stock. At the present time the company has an authorized capital of \$11,000,000, of which \$3,500,000 is common, \$100,000 preferred and \$7,500,000 special preferred.

Of this amount there is issued and outstanding, \$2,823,032 of common stock, \$34,581 of preferred and \$3,926,000 of special preferred. With the \$1,500,000 of bonds, this makes total capital liabilities of \$8,284,113. The company's last annual report showed assets of \$10,263,400 and plant values of \$9,243,033. The commission finds that the margin is ample to permit the issue asked for.

The application has been pending for some months, being delayed from time to time at the request of the commission. It was taken up at this time only because the company had exhausted its previous authorized issue and is in need of money to reimburse the treasury for additions and betterments in place.

The company submitted a statement showing the net additions to its plant for the years, 1920, 1921 and eight months of 1922, of a total of \$1,423,405.19. The books of the company are kept according to the Interstate Commerce Commission's uniform accounting system and make careful separation between expenditures for operating expenses, replacements and additions to plant. The figures submitted by the company have been checked by the telephone accountant of the commission and found to be correct.

In 1920 the company was authorized to issue \$300,000 of bonds. This money was used for the sole purpose of defraying the cost of additions and betterments. Deducting this from the net additions of the two years and eight months and there remains \$1,123,000, or more than twice the amount asked for.

In closing the commission said:

"This commission has been so fortunate in recent years as to be able to place a very considerable portion of its securities in the form of its common stock in the territory which it serves. It has sold this stock at par and at a minimum of cost. The common stock has earned 7 per cent interest so that the financing of additions and betterments on this basis is at a comparatively moderate cost. The company is to be commended for its efforts to place its securities among its own patrons and in the territory served."

Oklahoma Commission Cuts Removal Charges.

Charges made by telephone companies operating in Oklahoma for removal of instruments were reduced approximately 15 per cent, by an order of the Oklahoma Corporation Commission issued January

8. A uniform rate of charges for such service was provided.

As an instance of the reduction, the new rate for removals in Oklahoma City is \$3, compared with the former rate of \$3.50.

The order prohibits making charges for changing numbers and for listing in classified business directories. It also provides that when five days' advance notice of desired removal is given by a subscriber and because of non-removal the subscribers received no telephone service for ten days, bills must be adjusted so that no charge is made for the period to which no service is given.

Stock Issue by Wisconsin Company to Pay for Extensions.

A new capital stock issue totaling \$1,050 was authorized for the Manitowoc & Northern Telephone Co. by the Wisconsin Railroad Commission's order of January 9. The issue is divided into 21 shares of the par value of \$50 each.

The stock is to be sold for cash only and the funds to be used for additions.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

January 15: Application filed by Northwestern Bell Telephone Co. for authority to acquire the property of Musson Brothers, in the vicinity of Atlantic, Iowa.

CALIFORNIA.

January 12: Permission requested by California Telephone & Light Co., operating telephone and telegraph systems in portions of Sonoma, Napa, Lake and Mendocino counties, to make a charge for messenger service not to exceed 25 cents.

January 13: Application filed by Inyo Coöperative Telephone Co., of Lone Pine, for a permit to sell its property and franchise privileges to the United States Government.

January 13: Complaint filed by the city of Huntington Beach against the Huntington Beach Telephone Co., the Pacific Telephone & Telegraph Co., and the United States Telephone & Telegraph Co., alleging that present equipment of the Huntington company is inadequate to handle the business and asking that improved equipment be installed and other improvements made.

FLORIDA.

January 10: Hearing held in Miami on application of South Atlantic Telephone & Telegraph Co., of Miami, for increased rates.

ILLINOIS.

December 14: Order entered permanently canceling rate schedule IPUC 2 of Monmouth Telephone Co. for service in Monmouth and vicinity, and ordering that schedule ICC 3 be filed; effective January 1.

January 3: Order entered dismissing complaint of the residents of Will County against the Illinois Bell Telephone Co. for inadequate service.

January 3: Approval given to sale by the Illinois Bell Telephone Co. to the Cerro Gordo Telephone Co., of Cerro Gordo, of a piece of exchange rural pole line and circuits in Oakley, for the sum of \$80.

January 3: Agreement dated November 1, 1922, between L. E. & W. Railroad Co.

and the Deer Creek Telephone Co., of Deer Creek, relating to installation and maintenance of an underground crossing at Goodfield; approved.

January 3: Approval given to supplemental agreement dated July 1, 1922, between Illinois Bell Telephone Co. and the Dixon Home Telephone Co., of Dixon, for the inclusion in the toll traffic agreement and toll line supplemental traffic agreement, approved May 3, 1921, of an iron metallic circuit between Dixon and Sterling, for the purpose of handling local traffic.

January 3: Approval given to intercorporate agreement dated September 1, 1922, between Illinois Bell Telephone Co. and Camp Point Telephone Co., of Camp Point, for the connection of the toll lines of the former to the switchboard of the latter, for the handling of toll messages.

January 3: Order entered permitting the Southwestern Bell Telephone Co. to purchase the Kinloch Long Distance Telephone Co., of St. Louis, Mo., and authorizing the Kinloch Telephone Co. to sell all assets, property and rights now owned by it and located in Illinois.

January 3: Order entered approving the rates set forth in schedule IPUC 2 of the Kinloch Long Distance Telephone Co. and the Kinloch Telephone Co. for cities named in the petition.

January 3: Order entered directing that toll circuit of the Automatic Home Telephone Co. extending from Pontiac to Cornell be placed in service and communication over it restored within three days from date of service of order; also ordered that Cornell Telephone Co. and the Automatic Home company enter into an agreement for the use of toll facilities and handling of toll calls between Cornell and Pontiac.

January 3: Rate schedule IPUC 2 of the Mann Telephone Co., for service in Bushnell, canceled; company directed to file schedule ICC 3, effective February 1.

January 3: Rehearing granted on petition of Blandinsville Switchboard Co., of Blandinsville, in the complaint relative to certain practices and charges in that city.

January 3: Supplemental agreement dated September 1, 1922, between Illinois Bell Telephone Co. and the Mann Telephone Co.—which is a modification of an intercorporate agreement approved December 14, 1920, for the exclusion from the toll traffic agreement of the exchange at Camp Point—approved.

January 3: Approval given to supplemental agreement dated October 2, 1922, between Illinois Bell Telephone Co., and the LaHarpe Telephone Co., of LaHarpe, for the exclusion from the toll traffic agreement and toll line supplemental traffic agreement, approved December 14, 1920, of a toll station at Scotsburg and a toll circuit from Scotsburg to a point where it connects with a LaHarpe-Bushnell circuit.

January 3: General order entered approving rules establishing standards of service for telephone utilities in Illinois, designated as General Order No. 107, said rules becoming effective January 15.

January 3: Following cases stricken from the docket, with leave to reinstate: Application of the Chicago Telephone Co. and the Interstate Independent Telephone & Telegraph Co. for an order consenting to and approving purchase by former and sale by latter, of certain property of latter; joint application of Central Union Telephone Co. for authority to buy certain property of the Interstate Independent Telephone & Telegraph Co., and to issue \$123,750 par value of notes, and of the Interstate Independent Telephone & Tele-

graph Co. for authority to sell said property and take, hold and receive \$165,000 par value of notes of Central Union Telephone Co.

January 3: Order entered permitting to remain in effect as legal rates for service in Cerro Gordo and LaPlace, rates set forth in schedule IPUC 3 of the Cerro Gordo Telephone Co., and as authorized in provisional order dated October 29, 1920.

January 3: Approval given to lease by C. M. & St. P. Railway Co. to the Illinois Bell Telephone Co. of certain premises in Rockford for a term of three years from November 1, 1922, at a rental of \$45 per year.

January 3: ICC rate schedule No. 2, effective February 1, filed by Home Telephone Co., of Arenzville.

January 23: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in Chicago and vicinity should not be reduced.

January 23: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in Illinois, outside of Chicago, should not be reduced.

January 24: Hearing held at Chicago on application of Farmers New Era Telephone Co. for rate increase in Hebron and Richmond.

January 24: Hearing held at Chicago on application of Illinois Local Telephone Co. for advanced rates in Lonovan and Iroquois.

INDIANA.

January 10: Hearing held on petition of Indiana Bell Telephone Co. to sell its Lewisville exchange to the Knightstown Telephone Co., of Knightstown; sale opposed by Lewisville subscribers; final order withheld pending further negotiations.

KANSAS.

January 8: Reduction of 25 cents a month ordered in the residence rates of the Kansas Telephone Co. for service in Ottawa, effective from January 1.

January 13: Order entered approving discount of 10 per cent in the rates of the Kansas Telephone Co. for service at Lawrence; effective only if bills are paid before the 10th of the month following that in which service is rendered.

LOUISIANA.

January 13: Order entered rejecting reduced rate schedules proposed by Cumberland Bell Telephone & Telegraph Co. and citizens' committee, and entering schedule lower than either of those proposed; effective in Bell exchanges throughout state.

MINNESOTA.

January 17: Harmony Telephone Exchange Co., of Harmony, permitted to increase its switching rate 15 cents a month, with a discount of 5 cents if paid by March 15 of each year; also authorized to make local rates payable in advance.

MISSOURI.

January 13: Approval given to sale by L. T. Heaton to C. R. Dickinson and C. C. Dickinson, of the Weaubleau Telephone Exchange, of Weaubleau.

January 15: Albany Telephone Co., of Albany, permitted to continue charging present rates.

January 15: Order entered requiring Platte County Telephone Co., of Platte City, to make certain improvements.

January 17: Permission given the Capital Telephone Co., of Jefferson City, to continue charging the present rates on file.

January 17: Tri-County Telephone Co. authorized to reestablish schedule of rates now in effect at Nelson.

January 17: Home Telephone Co., of Joplin, authorized to continue using present rates in effect at its Webb City exchange.

January 17: In the matter of complaint of the Hume Telephone Co. of Hume, against Pleasanton Telephone Co., of Pleasanton, Kans.; it appearing that agreement has been made between the companies, Pleasanton company granted certificate of authority to operate in Worland.

January 18: In the matter of complaint of the Foster Telephone Co., of Foster, against the Pleasanton Telephone Co., of Pleasanton, Kans.; it appearing that settlement had been made by the companies, approval given to the agreement.

January 18: Order entered resuspending effective date of rate schedule filed by Browning Telephone Co., of Browning, until July 28, 1923.

January 19: Johnson County Home Telephone Co., of Warrensburg, given authority to continue present rates at its Knobnoster exchange.

NEBRASKA.

January 15: Application filed by the Northwestern Bell Telephone Co. to close its exchange at Lakeside and substitute toll station service. The exchange was opened during the potash excitement in that section of the state, but after Germany got back into the market and forced the closing of the Nebraska plants, the exchange has been reduced to five subscribers, all of whom sign the petition.

January 16: Application filed by Indian Creek Telephone Co. of Red Cloud for validation of rates mistakenly made without authority from the commission.

January 17: In the matter of the application of the Platte Valley Telephone Co. for joint-user rates; ordered that company be authorized to charge \$1.50 a month at Scottsbluff exchange, and \$1 a month at exchanges at Morrill, Mitchell, Gering, Bayard and Minatare.

January 17: In the matter of the application of the Scotia Telephone Co. for permission to make joint-user rates; found that rate asked for is in excess of the standard, and denied, but rate fixed at \$1 a month, to include directory listing.

January 17: In the matter of the application of the Wehn Telephone Co. for permission to charge joint-user rate; ordered that a rate of \$1 a month be granted for exchanges at Broadwater, Lisco, Oshkosh and Lewellen.

January 18: Complaint filed by John S. Weiss, of Hamlet, against Palisade Telephone Co. alleging insufficient telephone service.

January 19: By unanimous action of the commission, H. G. Taylor was reelected chairman and John E. Curtiss secretary.

OHIO.

January 23: Hearing held on application of the Ohio Bell Telephone Co. for authority to unify the service at Westerville.

OKLAHOMA.

January 8: Order issued reducing charges for telephone removals, prohibiting charges for changing numbers and listing in classified directories, and establishing other rules; effective throughout state.

PENNSYLVANIA.

January 11: In the matter of complaint of Friends Cove Telephone Co. against Bedford County Telephone Co., of Bedford, alleging that switching rate of \$6 per year is unreasonable; held that the rate is justified.

WISCONSIN.

January 13: Permission granted Mount Vernon Telephone Co., of Mount Vernon, to place in effect the increased rate schedule allowed March 9, 1922.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

When memory takes me by the hand
And leads me through the haze,
Which glammers o'er that fairy land
Of half-forgotten yesterdays.

We wander back to that home cot
Once of such stupendous size,
Where on baking days I used to watch
My mother making pies.

How deftly did she roll the dough
With which to line each tin,
Or swiftly measure spicy stuff
And slice crisp greenings in.

Her dear old hands so seamed and worn,
Now long since back to dust,
How sure when they would wield the knife
To trace the patterns in the crust.

There always were a few scraps left
When the grown up pies were done,
From which turnovers could be made
Just right for little son.

'Tis many years since those old days,
Still I can shut my eyes,
And bring to mind that soulful scent;
The smell of mother's pies.

From out the oven piping hot,
With rich juices running o'er,
So crisp and brown, so thick and sweet
Their like I'll see no more.

In order that we should be able to properly appreciate mother's pies, if we could get them once again, we would have to have the same old healthy appetite we had when they were on tap. Our appetites have changed with added years and we might find our tastes changed somewhat. So in our business lives.

So many new things have entered in to change and affect the original viewpoint that we can scarce recognize one familiar landmark which we decided to be a fixture



The Patron Pays a Higher Price and Has Been Known to Sigh for the Good Old Days of Service.

when we first took up our duties along the lines of furnishing telephone service.

From an outstanding and novel bit of adventure, it has dwindled back and become a part of every-day business scenery as one of the standardized professions, no longer novel and looked upon as a source

of entertainment and wonder but merely now a matter of merchandising—to furnish a recognized necessity in a suitable manner at a profit. However, that may mean a good deal.

It may require considerable ability along specific lines and as much application as many other lines of merchandising, generally considered much more complicated and portentous. Successful merchandising of telephone service can not be carried on in many of the ways which are adapted and recognized as proper in other lines of merchandising.

In dry goods or general merchandise, hardware, sporting goods, haberdashery and many other lines, one can buy from the little country store near his rural home, from the peddler who goes about the country hawking his wares, from the small-town merchant, from the metropolitan stores, or by means of a mail-order catalog. In all these lines he can be served in a reasonably efficient, economical and satisfactory manner.

In the merchandising of telephone service, one must depend on only one source of supply—his nearest exchange. To the operator who answers his call from his home, store or office, must he go for everything in the line of telephone service. To and through the local exchange operator, he must express his wishes and get his returns—there is no other way.

Whether the patron lives in a crowded Harlem flat, in a big metropolitan hotel, or on a lonely ranch far from the busy towns, to the operator who answers his call must he go for all which he would receive in that line. The service cannot be sold by mail, cannot be stored up in quantity against a future withdrawal, cannot be bought in quantity, but must ever be doled out in small quantities to individual needs on the instant.

Like the air we breathe in a way is telephone service. Service is personal, necessary at all times, and only needful in small amounts. It must be good at all times and always ready for instant use. That is the natural need of telephone service. That is the satisfactory kind to render patrons.

That is the only kind which will keep users satisfied or telephone merchandisers feeling that they are filling the bill as it should be taken care of.

Questions of rates should be only secondary as matters of grave concern. If



Good Cooks Get Good Money These Days and the Efficient Cook Need Not Worry About Her Wages.

service can be given, rates can be made to take care of all the various necessary drains. On the principle that the efficient cook has little need to worry about her wages, the efficient telephone organization need not be primarily concerned about its ability to collect a proper charge, if it first renders proper service.

The producers of telephone service are in a class all by themselves in the public utility field. While the railroads carry millions of passengers a year and render on the whole satisfactory, yes, even remarkable service, the telephone renders service not only daily but hourly to many times the number of passengers carried by the railroads.

The service is more personal also in that the telephone user comes in direct contact with the servants of the corporation or association rendering the service more closely than they do with the servants or representatives of any other utility. The possibilities of interweaving the service into the daily fabric of their lives in infinitely greater than and different from any other utility catering to them.

The turning on of an electric lamp brings a service, but it is purely a mechanical one, in the minds of the user. It carries with it no imaginative picture of any personal or human agency.

With the telephone call, outside the automatic service, a call to Central brings the user into speech with the party from whom service, in the way of making connection, is expected and with the party wanted, when the connection is finally completed—all a personal experience. The mind visualizes some sort of a person as

the one to whom his request is made and, of course, with the party called.

It is a personal experience all through, for the majority of telephone calls in the world.

What I wish to get over is the fact that most of the telephone service in the rural regions and small towns in this country is still handled in a purely personal way by real human beings instead of machinery. As long as this is the case, just so long will telephone service be personal service. It will continue to be handled retail at first hand and will be handled more cheaply and satisfactorily by the smaller home-financed and managed companies than by large aggregations of capital directing huge and highly-specialized forces of employes.

Where the large companies have taken

over the little units of distribution far removed from headquarters, the subsequent experience has been usually that the patron pays a higher price and in some instances has been known to sigh for the good old days of service furnished by the Home company. Like the good old apple pies of mother's time, the lack was only realized when no longer attainable.

The big drawback in highly specialized and wholesale direction from distant points is that as each and every angle of service is worked out and the best method found, or supposed to be, that part of the service, is, so to speak, slipped into a rut where it is supposed to stay.

That circumstances may alter cases and geographical location change the aspect of any kind of service does not always enter

into the calculations of those giving the orders. The little unit is self-governing to a large extent and, like the family flivver, can turn around in its own length, whereas, the million-dollar train must stay on its appointed track for safety's sake.

Reversing a traffic order or an operating rule is a stupendous thing in all its ramifications with a big company, whereas with a little cross-roads exchange it means but little in the way of effort. Both can get into pretty deep ruts, however, and that is the main thing to guard against, not the worry of whether you can collect a remunerative rate if you give good service. The field is still yours. Cultivate it intelligently.

APHORISM: Many a rut imprisons a "nut."

Personal and Biographical Notes

H. C. Johnson, of Lawrenceville, Ill., has been named as manager of the Citizens Telephone Co. of Lawrence County, to succeed James Hardacre, resigned.

Mr. Johnson has had a wide experience in dealing with the public, having been county clerk, deputy sheriff, and postmaster of Lawrenceville—holding the latter position for eight years. About a year ago he became manager of the ice and cold storage plant, which position he will continue to hold in addition to his performing his duties as manager of the telephone company.

O. L. Fink, who has purchased and taken active management of the Clarendon Telephone Co., Clarendon, Texas, has a good knowledge of how to manage a telephone exchange.

For the past five years he has been engaged in the telephone business at Wellington, Texas. He was manager of the exchange at Willis Point for 10 years and was associated with his brother in the management of the Mexia exchange for a number of years.

T. L. Benedict, who was manager of the Clarendon Telephone Co., Clarendon, Texas, until January 1—when the partnership of Mr. Benedict, Dr. Win. Gray and W. H. Patrick sold the company to O. L. Fink, of Wellington—has retired from the telephone business and gone to Southern Texas for his health.

Mr. Benedict is one of the oldest telephone men in the United States, having been actively engaged in the business since 1881, and is one of the 25 oldest members of the Telephone Pioneers of America. He has been a faithful and efficient worker in Independent association affairs, as well as an active participant in aiding the progress of the telephonic art.

He took up the problems of toll work when they were the most difficult. In

1881, with a few other men, he purchased an abandoned telegraph line between Marshall and Jefferson, Texas, and made it over into a toll circuit.

Under his administration, the Clarendon exchange—which has extended over a



T. L. Benedict, Pioneer Texas Independent Telephone Man, Has Disposed of His Interests in Clarendon Telephone Co. and Retired.

period of 18 years—has been enlarged several times to take care of the growing list of subscribers and has built up a service of exceptional quality. The company moved into its present home—which is of the most modern type—two years ago.

The city of Clarendon has taken pride in leading other United States' exchanges in the number of telephones per capita. A few years ago it was one telephone to

every five persons; now it is one to every three—950 to a population of about 2,700.

Mr. Benedict has generously given the operating staff much of the credit for the good standing of the company in the community, but it has really been due to the unity existing between the management and the employes.

In addition to being an Independent Pioneer, Mr. Benedict is a Mason and a charter member of the Delta Chi fraternity of Cornell.

A. U. Mayfield, of Denver, Colo., editor of the "Monitor," the employes' publication of the Mountain States Telephone & Telegraph Co., has been elected president of the advertising bureau of the Denver Civic & Commercial Association.

Obituary.

Walter F. Brown, general traffic manager of the Mountain States Telephone & Telegraph Co., with headquarters at Denver, Colo., died on January 17 of double pneumonia, which had developed from a severe cold.

On Monday evening, January 8, Mr. Brown acted as toastmaster at the banquet of the Telephone Pioneers of America, at which time he had a slight cold— it proving serious a few days later.

He was born in New London, Conn., on March 28, 1873, and graduated from Yale in 1893. Starting at the bottom in the telephone industry, Mr. Brown rose step by step, learning all the details which constitute the working of a telephone business.

Well known to both Bell and Independent men, he was liked by all who knew him, and was held in high esteem for his knowledge of telephony. The Mountain States' organization suffers a great loss in his death for he had been a good worker and had done much to advance the company's interests.

Continually Improving Service Pays

How the Dan River Telephone Co., of Turbeville, Va., Increased Its Subscribers from 441 to 600 in a Year—Continuously Bettering the Service Made Satisfied Patrons and Brought the Company a Higher Rate Schedule

The Dan River Telephone Co. was organized May 21, 1903, at Turbeville, Va., with A. E. Wilkins as president and Dr. J. A. Owen as secretary and treasurer. They had one grounded line from Turbe-

ville to South Boston, which had eight Sumter telephones. This line was constructed and the telephones installed by Charles V. Brookes, the present secretary and treasurer of the company.



Left: Neatly Arranged Terminal Room.

At the time of this installation the company had 441 stations and with its new service the number of subscribers has increased to almost 600. The service is splendid,

rate of \$4.50 business, and \$3 for residence, as against the old rates of \$3 and \$2, be granted. This was granted and the companies were allowed to charge 50 cents a month additional for desk sets.

South Boston is a pretty little town and second largest loose-leaf tobacco market in the Piedmont belt, selling in 1920 32 million pounds of bright tobacco. The Imperial Tobacco Co. has one of the



Right: The Office of President and General Manager Rufus Owen.

On July 1, the Dan River Telephone Co. purchased the South Boston Telephone Co., which had 108 stations operating in the town of South Boston, and also the Cluster Springs Telephone Co., which was operating five rural stations.

The Dan River Telephone Co. was then reorganized with A. E. Wilkins as president, Charles V. Brookes, secretary and treasurer, and Rufus Owen as vice-president and general manager.

On March 27, 1907, the main office of the company was burned with a total loss excepting the board and main frame. This suspended the service until the following June, at which time it was resumed with 142 stations.

The company suffered the loss of President Wilkins in 1910. He was succeeded by Rufus Owen, who is still efficiently serving the company in the same capacity.

Having had a great growth since its organization, the directors decided to own their own building and on September 1, 1921,

averaging between two and three seconds on answering time. In fact, the service was so unusually good that the city council and the Young Men's Business Club signed a petition to the Virginia Corporation Commission asking that a

largest tobacco plants in America there, with others nearly as large. There are also cotton mills, wagon works and a large bottling plant. Paved streets and many beautiful homes make South Boston a desirable place to live in, and it might be mentioned that it rivals Portland, Ore., for pretty rose bushes.

E. J. Strickland, who has been plant wire chief since April, 1905, has developed one of the most modern and best equipped plants in the state.



This Modern Switchboard Is Part of the New Equipment Which Enabled the Dan River Company to Give Such Good Service That Its Rates Were Raised.

Small Mileage Increase in 1922, But Good Increase in Value.

There has been only a slight increase in the mileage of telephone lines operating within the state of South Dakota within the past year, according to the annual report of the state tax commission. The number of miles shown in the report of 1921 totaled 39,490.54 while the 1922 report shows a total of 39,694.48 miles.

However, there has been a considerable increase in the total valuation. In the 1921 report the total valuation of lines within and without corporate limits amounted to \$5,991,877, while the 1922 report values the lines within and without corporate limits, at \$6,081,453, an increase of \$89,576. The number of companies operating within the state in both years was approximately 666.

In the 1922 report the value of lines outside of the corporate limits of towns and cities amounted to \$3,007,448 and the value of those within corporate limits totaled \$3,074,005. The 1921 report shows those outside corporate limits valued at \$3,028,616 and those within at \$2,963,216.

From Factory and Salesroom

Conventions: Nebraska, Lincoln, February 20-22; Kansas, Ottawa, March 6-8;
Oklahoma, Oklahoma City, March 12-14; Texas, Dallas, March 20-23

Telephone Switchboard Plugs With "Long Wear" Features."

A telephone switchboard plug that has proved itself effective and is claiming the attention of telephone men in many countries is the "Automatic" plug designed and perfected by M. B. Richter and manufactured by Telefon Fabrik Automatic, Copenhagen, Denmark.

The noteworthy point about the automatic plug, and that which has won for it the favorable comment of telephone experts, is its solidity and mechanical strength. This is accomplished by the method of construction, which was carefully worked out by Mr. Richter. The feature of the method is that the insulation is pressed into the plug while the parts are held firmly in their proper positions.

For pressing the material to be insulated, the parts are assembled and enclosed in a mold. The operation takes place in a specially constructed air press, exerting a pressure of about 7,250 pounds to the square inch, which is continued until the mold is cool. The insulating material—consisting of one part only—is heated until it becomes plastic, and is then pressed through a tiny aperture into the interior of the plug. A distance piece is used to maintain the various conductors in their relative positions during the operation.

The result is that the conductors and insulating material are welded into one piece, possessing a stability closely approaching that of solid metal.

The profiling of the plug is done by means which insure precision—the tolerance worked to being 0.003 of a millimeter, which is equivalent to 0.0012 of an inch.

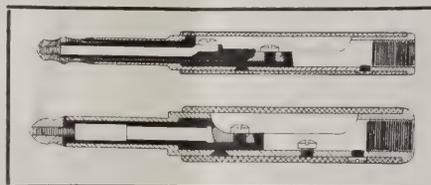
The effect of the method of insulation developed by Mr. Richter is to make the parts unable to change their predetermined positions—being, as it were, welded together in the insulating material and bringing about a permanent insulation.

The process has proved eminently successful, it is declared. Any kind of plug may be manufactured by this method, and Telefon Fabrik Automatic has made about 80 different types of two, three and four-conductor plugs. They are used in practically every European country and many of the other countries of the world.

The war and its aftermath prevented this company from bringing its product to the attention of the American countries, but it is now beginning to acquire

a name for itself among the engineers on this side of the globe.

The company has been established for over 30 years and has made plugs by the patented method for the last 10 years or



Cross-Sections of Plugs Manufactured by Denmark Company and Meeting With Favor.

so. This 10 years of specialization has developed, among the many other varieties of merit, the two and three-conductor telephone switchboard plugs, of which sections are shown in the illustration. An examination of a section of a real plug similar to the illustrated section shows the parts to be welded into a perfect unit—although it can be plainly seen that each part is carefully insulated and distinct from every other part.

In designing the construction of the automatic plug, it was the intention to do away with repairing in order that there might be no change in the form of the plug during its life, and this, it is stated by users, has been accomplished. And its life is not shortened by that fact—rather, it is lengthened.

The method developed by Mr. Richter is stated to secure a very accurate and solid construction, because of the close cohesion of the conductors preventing loosening, owing to the insulation being in one piece.

The Telefon Fabrik Automatic has supplied the new process plugs to the Copenhagen Telephone Co.'s exchanges on Seeland Denmark—accommodating more than 100,000 subscribers—for the last 10 years, and the company now uses that product exclusively. The engineer-in-chief of the Copenhagen system expresses complete satisfaction with the plugs.

A high compliment was paid the Telefon Fabrik Automatic by the Royal Administration of Swedish Telegraphs, when it transmitted to the company a statement received from Klas Weman, chief of the government factory at Nynashamn—who is also well known in the United States as a telephone expert, and whose statement the administration was pleased to make its own.

Mr. Weman reported that he had pur-

chased a large lot of the plugs for the administration, had submitted them to careful tests and given them considerable study. He found them to be of an exceptionally high grade type, particularly as regards insulation and mechanical construction. The simple and reliable method of manufacture, he stated, gave the finished plugs a solidity unattainable by other methods of construction.

The company is also in possession of acknowledgments of the governments of Switzerland and The Netherlands, reporting complete satisfaction with the plugs. They have also been tried out in England, good reports rendered, and repeat orders—the very best recommendation—issued.

Sample sections of the plugs will be sent to all interested telephone companies upon request to Telefon Fabrik Automatic, Amaliegade 7, Copenhagen, Denmark.

Leich Three-Position Multiple Magneto Board at Ligonier, Ind.

H. E. Inks of the Ligonier Telephone Co., Ligonier, Ind., gave his subscribers a rare Christmas gift by placing an order with the Leich Electric Co. for a three-position magneto multiple switchboard. The subscribers will get the benefit of the improved service very soon after the board is delivered, for no change will be necessary in any of the racks, and the board is completely assembled in the factory.

The installation will require only a few days and the cut-over will be made without interruption in service.

The new magneto multiple switchboard has an ultimate capacity of 600 lines, with present equipment for 430 lines. The jacks are fully multiplied in each four panels and the line signals restore from jack in any position when a call is answered. The call distribution is very good, as each operator is able to answer calls originating in any position, thus not allowing calls coming in on a busy position to be delayed. No doubt the subscribers will think theirs was the only call on the board so quickly will they hear the operator's "Number, please?"

Making Study of Bell and Independent Exchanges.

J. K. Johnston, telephone engineer, of Indianapolis, is making an examination of some 60 exchanges of the Indiana Bell Telephone Co. in Indiana and also a number of Independent exchanges in the Middle West. The study of the latter ex-

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changes is for the purpose of comparing the equipment and traffic with that of the Bell company.

The work is being done to supply information for the Indiana commission in connection with its investigation of the operations of the Indiana Bell company.

Data on Telephone Wire Compiled by Copper Clad Steel Co.

Of interest to all telephone managers and construction men are the technical data sheet and wire tables on Copperweld telephone wire, which have been prepared by the Copper Clad Steel Co., of Rankin, Pa.

The data compiled shows the relative values of different kinds, and gauges of wire—dealing with weight per mile, breaking strain, resistance, speech transmission characteristics and such other points as go toward keeping down the maintenance costs. The per mile weight data present an interesting comparison. It is stated that the quality of transmission over Copperweld wire is practically the same as that received over a solid copper wire and better than that obtained over galvanized wire, because of the smaller attenuation of the voice currents. A table of speech transmission equivalents is given to show the transmission qualities of Copperweld wire.

As an example of the strength and lasting qualities of Copperweld wire, it is cited that it can be taken down and restrung many times without injury or loss of conductivity. Sag and tension charts have been compiled by the company and may be obtained upon request.

The many good features of the No. 17 Copperweld twisted pair wire—which is a rubber covered drop wire—are also explained on the data sheet.

Copperweld ground rods are another product of interest to telephone men. They are recommended by the manufacturer for localities where galvanized ground rods or pipes rust away.

A word about the basic principle of Copperweld wire might be apropos. It is made by the molten welding process—which means that the pure copper exterior is permanently welded to the steel core. This process, it is claimed, prevents the wire from cracking or flaking when it is bent or twisted, and eliminates galvanic action.

The Copper Clad Steel Co., Rankin, Pa., will be pleased to furnish, to those requesting it, complete information regarding its products and the advantages of buying wire on a cost per mile basis.

Changes in the Western Electric Organization.

The Western Electric Co. has announced important organization changes which were effective January 15.

F. A. Ketcham has been appointed general manager of the supply department.

For the past four years Mr. Ketcham has been general sales manager.

G. E. Cullinan assumes the position of general sales manager. Mr. Cullinan entered the employ of the company upon his graduation from Williams College in 1901 and for several years was connected with the New York house. He went to St. Louis in 1907 and was manager there from 1909 to 1918, when he went to Chicago as central district manager.

L. M. Dunn, who for the past three years has been manager of the eastern district, which includes the New York and the New England territory, has been appointed general merchandise manager on the general manager's staff.

W. J. Drury has been made manager of the eastern district to fill the vacancy cre-



G. E. Cullinan, New General Sales Manager of the Western Electric, Has Served the Company in Many Capacities.

ated by Mr. Dunn's advancement. Mr. Drury has been sales manager of the New York house for the past three years, and is succeeded in that capacity by J. F. Davis, who has been sales manager of the Boston branch for the same period.

T. E. Burger has been made sales manager at Boston. Mr. Burger was for 13 years connected with the Los Angeles and San Francisco organizations, being sales manager of the former. More recently he has been on the staff of the Society for Electrical Development, going back to the Western Electric organization in 1922.

W. P. Hoagland has been appointed central district manager in charge of the Chicago and Minneapolis branch houses. For the past three years Mr. Hoagland has been sales manager at Chicago.

J. H. Gleason takes the position of Chicago sales manager. Mr. Gleason has been power apparatus sales manager at Chicago.

H. L. Grant, who for the past three years has been general appliance sales manager, located at New York, has been

appointed Erie district manager, a new grouping of the distributing houses at Cleveland, Pittsburgh, Detroit and Cincinnati. Mr. Grant's headquarters will be at Cleveland. A. M. Collins continues as manager of the Cleveland house.

It is interesting to note that all of these organization changes are promotions. This is in line with the Western Electric Co.'s consistent policy of advancing men who have made good in previous capacities.

Paragraphs.

THE STANDARD UNDERGROUND CABLE Co.'s Boston office, of which F. C. Cosby is manager, has been moved from the Delta Building to 609-612 Unity Building, 185 Devonshire street, Boston, Mass.

THE GENERAL INSULATE Co., Brooklyn, N. Y., the well-known moulders of Insulate and also of Hy-Heet parts for the radio and electrical trades, as well as for a score or more of the mechanical trades, reports for the year just passed that its volume of business has increased more than 100 per cent over 1921, 1922 being the second largest year in volume of sales and net results since the General Insulate Co. was established nearly 20 years ago.

In addition to the well-known products of Insulate (black shellac composition) and Hi-Heet (phenol composition) the company has shown for the first time at the radio show which has just closed in New York, an entirely new product—star insulate—a material that has great mechanical and dielectric strength, resiliency and can be moulded to almost any shape, either thick or thin, and any color, opaque or translucent.

WILLIAM J. HAGENAH, of the firm of Hagenah & Erickson, public utility engineers, Chicago, who, with a staff of engineers and accountants has been engaged on public utility investigation work in South America, has returned to the United States.

The work in question, which covered gas, tramway, telephone, and electric light and power properties, extended over a period of one year, and was undertaken for foreign banking interests.

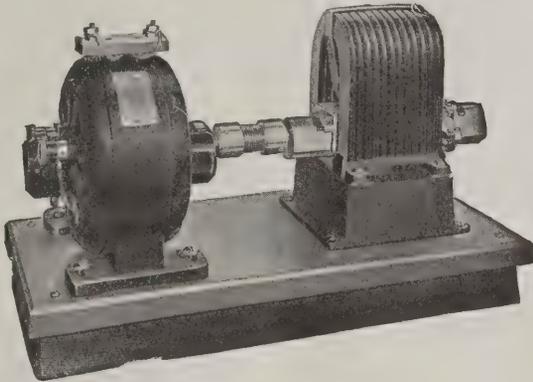
Get a Telephone in Japan? Pay Big Bonus.

Owing to lack of equipment, the government in Japan depending upon Japanese companies to supply it and refusing to import, a telephone is a luxury in Japan, only to be obtained by long waiting or the payment of exorbitant prices.

Brokers have established businesses all over the country to deal in telephones, buying those that customers no longer want, getting others from the government departments and selling them at high prices. A number of these brokers have been found guilty in the preliminary courts of bribing officials and charging subscribers large sums of money to have instruments installed.

Have You Uniform Ringing Current?

It's up to you to provide it in your exchange. The Holtzer-Cabot Magneto-Ringing Motor-Generator gives it 24 hours a day—and whenever needed. The machine operates from the lighting circuit, independent of any battery.



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THEY DO NOT RUST AWAY
 Ideal for all earth grounding

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Are you hesitating about trying a battery other than what you have been using just because you've always used that battery?

If you can save your company many hundreds of dollars by employing a telephone battery that costs less per cell and less per day's service, isn't it worth investigating?

Would it interest you to know that 1922 brought about a change among telephone companies whereby 15% of the industry "swung over" to VICTOR TELEPHONE CELLS? As one purchasing agent wrote:

"We must give the devil his dues. Frankly, we never thought you had such a remarkable product, but count on us as a steady user as long as you demonstrate such quality and low price combined."

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 What will be your battery economy in 1923?

Say it with

VICTOR TELEPHONE CELLS



The
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Write for Price List and complete information regarding trial barrel.

Record of Telephone Patents

1,438,758. December 12, 1922; filed February 24, 1919. MACHINE SWITCHING DEVICE; six claims; C. L. Goodrum, New York City; assigned to Western Electric Co. A step-by-step register device is responsive to impulses from a subscriber's impulse sending mechanism. A driving circuit for a power-driven selector switch is established at each step of the register device. Correct positioning of the switch is insured at any relative speed of operation of the step-by-step device.

1,438,841. December 12, 1922; filed September 6, 1919. TELEPHONE EXCHANGE SYSTEM; 13 claims; A. E. Lundell and E. H. Clark, New York City; assigned to Western Electric Co. Telephone lines terminate in groups of fixed contacts of an automatic switch, which is moved back and forth over the contacts of a group. Means, responsive to the electrical condition of intermediate contacts, determine whether the back-and-forth movement is to extend over one or a plurality of the groups.

1,438,938. December 19, 1922; filed March 29, 1920. TRANSMISSION SYSTEM; four claims; J. F. Baldwin, Jr., East Orange, N. Y.; assigned to Western Electric Co. A common housing for loading coils is described, in which two of the loading coils are separated from each other a distance less than the width of one of them. Means are placed between the two loading coils for substantially eliminating the electrostatic field therebetween.

1,438,994. December 19, 1922; filed July 24, 1919. ELECTRIC REGULATOR; 66 claims; R. D. Conway, Chatham, N. J.; assigned to Western Electric Co. This regulator comprising a solenoid, has means for automatically changing its calibration an amount dependent upon the intensity of the energizing force supplied to the solenoid. The means comprise impedance elements in series with the solenoid and movable contacts individual to the elements controlled by the solenoid.

1,438,945. December 19, 1922; filed July 24, 1919. ELECTRIC REGULATOR; 19 claims; R. D. Conway, Chatham, N. J.; assigned to Western Electric Co. In this solenoid, relays are individual to the resistance elements for controlling the elements, while an interrupter places the relays under the control of the solenoid.

1,438,946. December 19, 1922; filed December 8, 1919. ELECTRIC REGULATOR; 28 claims; R. D. Conway, Chatham, N. J.; assigned to Western Electric Co. In this system, a solenoid is responsive to a condition of a work circuit. Means responsive to the solenoid increase the value of a variable impedance, and other means decrease the value.

1,438,947. December 19, 1922; filed December 9, 1919. ELECTRIC REGULATOR; 18 claims; R. D. Conway, Chatham, N. J.; assigned to Western Electric Co. A variable resistance is provided for each of the work circuits and a solenoid, responsive to a condition of only one of the circuits, controls the amount of resistance in each of the work circuits.

1,438,953. December 19, 1922; filed July 12, 1919. LIGHTNING ARRESTER; eight claims; G. R. Folds, Evanston, Ill.; assigned to Cook Electric Co., Chicago. Line springs and a ground plate are placed in juxtaposition, the springs being severally adapted to be mechanically interconnected but electrically separated from the plate

Printed copies of patents may be secured by addressing the Commissioner of Patents, Washington, D. C., enclosing 10 cents for each copy.

by a pair of conducting blocks separated by a dielectric. Means for mechanically connecting and electrically separating each of the springs and plate, comprise a conducting plate with a serrated electric discharge edge. The conducting plate is adapted for interchangeable insertion with one of the conducting blocks that may be received between each of the springs and plate.

1,438,954. December 19, 1922; filed November 12, 1919. LIGHTNING ARRESTER; seven claims; G. R. Folds, Evanston, Ill.; assigned to Cook Electric Co., Chicago. An assembled integral unit electrically separating line and ground members includes conducting members separated by a dielectric. The conducting members are mechanically connected to each other through a dove-tail joint, the tenon and mortise of which are electrically separated by the dielectric. Other means are provided which form an electric discharge path between the conducting members.

1,438,959. December 19, 1922; filed August 29, 1904. AUTOMATIC TELEPHONE EXCHANGE SYSTEM; 19 claims; J. W. Lattig, Bethlehem, Pa., and C. L. Goodrum, New York City, N. Y.; assigned to Western Electric Co. Automatic switching apparatus normally at rest extends a connection from a calling to a called line. Talking current is supplied through only two relay windings to the substation of the calling subscriber. The same kind of current is also supplied through only two relay windings to the substation of the called subscriber, none of relays being individual to the called subscriber.

1,438,960. December 19, 1922; filed August 29, 1904. AUTOMATIC TELEPHONE EXCHANGE SYSTEM; 23 claims; J. W. Lattig, Bethlehem, Pa., and C. L. Goodrum, New York City, N. Y.; assigned to Western Electric Co. Electromagnetic call charging means are provided for the subscribers' lines and means, automatically operated by the completion of an inter-office connection, supply current to the inter-office trunk of two conductors only, to cause the operation of the charging means.

1,438,974. December 19, 1922; filed November 13, 1920. PIEZO-ELECTRICAL VOLTAGE INDICATOR; five claims; E. C. Wente, New York City, N. Y.; assigned to Western Electric Co. In this device for indicating the intensity of an electric current, a number of piezo-electric crystalline blades are rigidly supported at one end. A reflector is supported by the free ends of the blades, which are laterally supported.

1,438,976. December 19, 1922; filed June 8, 1918. ELECTRIC REGULATOR; 22 claims; P. I. Wold, East Orange, N. J.; assigned to Western Electric Co. The anode and cathode of a vacuum tube are connected in circuit with an electric machine, whereby the tube is supplied with space current from machine's supply leads. A connection from the leads to a control electrode varies the potential of the control electrode in response to changes in the current of the supply leads to control a condition of the machine.

1,438,987. December 19, 1922; filed September 30, 1919. HIGH-FREQUENCY TRANS-

LATING CIRCUITS; nine claims; L. Espenschied, Hollis, N. Y., and H. A. Affel, Brooklyn, N. Y.; assigned to American Telephone & Telegraph Co., New York City, N. Y. In this high frequency signaling system a translating device is combined with a plurality of circuits constituting respectively sources of carrier current and of signaling current. Each of the circuits has a filter associated therewith to prevent mutual reaction between the respective input circuits.

1,438,988. December 19, 1922; filed September 30, 1919. HIGH-FREQUENCY TRANSLATING CIRCUITS; seven claims; L. Espenschied, Hollis, N. Y., and H. A. Affel, Brooklyn, N. Y.; assigned to American Telephone & Telegraph Co., New York City, N. Y. An antenna of a magnetic translating device comprising a plurality of input circuits, each characterized by a source of current of a definite frequency, is combined with a filter adapted to transmit the frequency.

1,438,989. December 19, 1922; filed September 30, 1919. HIGH-FREQUENCY TRANSLATING CIRCUITS; seven claims; L. Espenschied, Hollis, N. Y., and H. A. Affel, Brooklyn, N. Y.; assigned to American Telephone & Telegraph Co. In this high-frequency signaling system is presented the combination of an antenna of an oscillatory arc circuit, a low-frequency input circuit characterized by a source of low-frequency variations and a filter adapted to transmit the variations, but not the oscillations set up by the arc.

1,439,036. December 19, 1922; filed July 10, 1920. VOLTAGE REGULATING CIRCUIT; seven claims; S. Suckoff, Chicago; assigned to Kellogg Switchboard & Supply Co. This voltage regulator comprises a sensitive circuit closer, a pair of relays comprising a double-wound relay and a shunting relay operatively associated therewith, the double-wound relay controlling the circuit of the shunting relay, a pair of bus bars, a storage battery connected across them, and means controlled by the relays in association with the circuit closer for maintaining the potential across the bus bars within certain limits.

1,439,071. December 19, 1922; filed March 20, 1915. SECRET SERVICE CORD CIRCUIT; 50 claims; H. D. Currier, Chicago; assigned to Kellogg Switchboard & Supply Co. Substation controlled means operatively disassociate the cord circuit from the subscriber's line, and operate a supervisory signal individual to the cord circuit to denote a recall.

1,439,117. December 19, 1922; filed August 16, 1915. TELEPHONE INSTRUMENT; eight claims; J. S. Newman, Cleveland, Ohio. In this telephone transmitter a pair of freely-suspended and independently-vibratory electrodes is connected to the diaphragm. The granular conducting material is placed between the electrodes, which are formed on complementary curved surfaces.

1,439,124. December 19, 1922; filed February 14, 1916. AUTOMATIC TELEPHONE SYSTEM; 95 claims; R. G. Richardson, Chicago; assigned to Automatic Electric Co. Link circuits each comprise a pair of talking conductors and a finder switch is provided for each link for connecting a calling line of a group thereto. A pair of normally-closed contact members in each of the finder switches is individual to each of the lines.

1,430,134. December 19, 1922; filed April 7, 1919. MODULATING METHOD AND SYSTEM; 12 claims; L. J. Sivian, East Orange, N. J.; assigned to Western Electric Co. A method is described for producing a wave modulated in amplitude in accordance with a lower frequency wave by an electron discharge device having an input circuit and an output circuit coupled thereto through an oscillatory circuit. It comprises changing the effective coupling between the oscillatory circuit and the input circuit in accordance with the wave of lower frequency for the purpose of varying the instantaneous value of the energy of the output circuit.

1,439,213. December 19, 1922; filed April 24, 1919. TELEPHONE EXCHANGE SYSTEM; 23 claims; S. B. Williams, Jr., Brooklyn, N. Y.; assigned to Western Electric Co. In this exchange system of calling and called subscribers' lines, another line for extending the calling line has associated with it means for selecting an impulse-controlling mechanism whereby certain of the counting relays are energized, and means directly responsive to the energization of the counting relays extend the calling subscriber's line to the subscriber's line.

1,439,427. December 19, 1922; filed July 19, 1917. AUTOMATIC TELEPHONE EXCHANGE; 23 claims; F. A. Lundquist, Chicago; assigned by mesne assignments to H. S. Conrad, trustee. In this trunking electric device, a wiper carrier is operated pneumatically to extend connections to idle trunk lines. A master device, operated electrically to a position always in alignment with an idle trunk, controls means for stopping the contact carried opposite the trunk when the contact carrier is operated.

1,439,723. December 26, 1922; filed September 17, 1918. NUMBERING SYSTEM FOR

AUTOMATIC TELEPHONE EXCHANGES; 12 claims; W. G. Blauvelt, New York City, N. Y.; assigned to American Telephone & Telegraph Co. A method of dialing in a mechanical switching system in which subscribers are designated by a combination of office names and numbers is described. It consists in assigning names to the offices of the system, each having a characteristic letter which is different for each office and dialing the letter of the office name which is suggestive thereof to establish a connection to a desired office. The digits of the number of the subscriber's designation are then dialed successively to establish a connection to a subscriber in the office.

1,439,729. December 26, 1922; filed September 7, 1922. TELEPHONE HAND SET; six claims; G. Deakin, Antwerp, Belgium; assigned to Western Electric Co. A calling dial is detachably mounted on the connection stem between the receiver and the transmitter. The operating circuit is closed at all times and kept closed through the dial when, and only when, the latter is attached to the stem.

1,439,735. December 26, 1922; filed October 20, 1920. TELEPHONE EXCHANGE SYSTEM; 40 claims; E. W. Hancock, New York City, N. Y.; assigned to Western Electric Co. In this machine switching system, automatic switches extend the telephone connections. Impulse means set a variably operable register, which control means for positioning a variably operative selective switch. Means rendered effective by the selective switch, while in its set position, determine the operation of a sender mechanism in accordance with such position, and means controlled by the sender mechanism selectively operate the automatic switches.

1,439,771. December 26, 1922; filed Feb-

ruary 27, 1920. SIGNAL CONTROLLING SYSTEM; 16 claims; C. A. Sprague, East Orange, N. J.; assigned to Western Electric Co. In this radio system, in which an indicator is operated in accordance with fluctuations in applied energy, the indicator is aided to release when the applied energy in decreasing reaches a predetermined value.

1,439,772. December 26, 1922; filed October 21, 1919. SIGNALING APPARATUS AND CIRCUITS; 11 claims; J. F. Toomey, New York City, N. Y.; assigned to American Telephone & Telegraph Co. A source of tone current at an intermediate point on a line is automatically associated with the other part of line than that with which an operator is associated.

1,439,785. December 26, 1922; filed April 20, 1922. TELEPHONE RECEIVER OF THE WATCH CASE TYPE; four claims; F. W. Andrew, Brooklyn, N. Y.; assigned to Eisemann Magneto Corp., Brooklyn, N. Y. This receiver comprises a non-magnetic shell or casing provided with a cap and diaphragm. The pole pieces of a permanent magnet within the casing have base portions arranged between the magnet and back of the casing. A pair of insulated screws or bolts passes through the magnet and the base portions of the pole pieces for securing these parts to the back wall of the casing, and serve as binding posts for the coils on the magnet.

1,440,038. December 26, 1922; filed November 3, 1919. SPRING CLAMP FOR TELEPHONE INDEXES; two claims; D. Umanoff, New York City, N. Y. This clamp of resilient material comprises two arms and a normally expanded connecting coil which is extended through a small aperture in the upper part of an index plate, the arms being adapted to clasp a telephone mouthpiece.

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1,440,048. December 26, 1922; filed May 13, 1921. TELEPHONE INDEX MOUNTING; two claims; H. R. Alborne, Stillwater, Minn. A straight back support is clamped between the mouthpiece and transmitter face plate. A number of index leaves are turnably hung on their upper edges to the upper edge of the support, whereby the leaves may be swung from the front to the back of the support.

1,440,078. December 26, 1922; filed February 16, 1921. TELEPHONE LOCK; nine claims; W. F. Hemstreet, Brooklyn, N. Y. Adjustable means secure unitary dial-locking means to an automatic telephone instrument to permit adjustment with reference to the dial.

1,440,110. December 26, 1922; filed April 4, 1918. TRUNK CIRCUITS; 20 claims; C. Sparks, Oak Park, Ill.; assigned to Kellogg Switchboard & Supply Co. This trunk circuit is provided with terminals, one being normally disconnected from the other of the terminals. Means are responsive to a connection to one of the terminals for connecting the terminals together, and for preventing the connection together when the connection is made to one of the terminals.

1,440,111. December 26, 1922; filed May 23, 1918. TELEPHONE SYSTEM; 22 claims; C. Sparks, Oak Park, Ill.; assigned to Kellogg Switchboard & Supply Co. A receiver is connected in a balanced bridge circuit so that when the operator's telephone is connected for use, the current flow through the operator's receiver is reduced when the operator's transmitter is actuated. Provision is made for rendering ineffective the operator's receiver when the operator's telephone is not connected for use.

1,440,112. December 26, 1922; filed July 1, 1918; TELEPHONE SYSTEM; 28 claims; C. Sparks, Oak Park, Ill.; assigned to Kellogg Switchboard & Supply Co. Automatic means connecting the operator's telephone to, and disconnecting it from, the cord circuit. Means controlled jointly by the calling and called subscribers disassociate the cord circuit from one only of the subscriber's lines.

1,440,113. December 26, 1922; filed August 5, 1918. TELEPHONE SYSTEM; 37

claims; C. Sparks, Oak Park, Ill.; assigned to Kellogg Switchboard & Supply Co. A subscriber's telephone line provided with multiple terminals has multiple line signals which are operated responsive to an actuation of a substation switch, at the same time as a busy potential is placed upon the multiple terminals. A signal is associated with the cord circuit, and means are controlled by a subsequent unitary actuation of the substation switch for intermittently operating it.

1,440,114. December 26, 1922; filed August 5, 1918. TELEPHONE SYSTEM; 18 claims; C. Sparks, Oak Park, Ill.; assigned to Kellogg Switchboard & Supply Co. In this telephone system, which includes common battery and local battery telephone lines, a universal cord circuit interconnects the lines. A relay controlled over one of the local battery lines when the subscriber signals for disconnection, connects interrupter means in circuit with a signal in the cord circuit, thereby opening and closing the circuit of the signal causing it to flash. A relay causes the signal to glow continuously when a common battery line signals for disconnection.

15,512. (Reissue 1,381,343; June 14, 1921.); December 26, 1922; filed March 25, 1922. TELEPHONE ATTACHMENT; six claims; L. J. Sampson, Worcester, Mass. This telephone attachment consists of a tubular coin receptacle clamped to the standard of a desk telephone.

1,440,365. January 2, 1923; filed July 31, 1916. TELEPHONE SYSTEM; 31 claims; R. W. Augustine, Chicago; assigned to Kellogg Switchboard & Supply Co. In this signaling system a plurality of switches are controlled by a central office operator for connecting the code ringing apparatus to a party telephone line to automatically code ring the substations thereon. Substation controlled means operatively disconnect the code ringing apparatus from the telephone line.

1,440,407. January 2, 1923; filed July 2, 1920. DETECTING CIRCUITS; six claims; H. S. Osborne, New York City, N. Y.; assigned to American Telephone & Telegraph Co. This receiving circuit comprises a detector with a polar relay in its output circuit and controlled thereby and circuit

connections between the detector and the polar relay including means for preventing the direct current component of a signaling pulse detected by the detector from affecting the polar relay.

1,440,752. January 2, 1923; filed September 9, 1919. TELEPHONE TEST SET; one claim; R. B. Stone, Nashville, Tenn. This casing for a portable telephone test set carrying a transmitter and receiver comprises a tube having one flat face. The tube is compressed together at one end and bent to carry the transmitter, and the receiver is mounted on the flat face at the other end, the tube serving as a container for electrical elements and apertured to receive leads.

1,441,270. January 9, 1923; filed September 26, 1919. TRANSMISSION SYSTEM; two claims; L. Espenschied, Hollis, N. Y.; assigned to American Telephone & Telegraph Co. A transmission line, upon which are superimposed alternating signaling currents and direct telegraph currents, is comprised of two line sections interconnected by a signaling circuit bridged across each of the line sections and including a translating device arranged to transmit only alternating signaling currents. A telegraph circuit interconnecting the line sections comprises a balanced four-wire circuit including relays each provided with two line windings. Windings of the relays are bridged across each of the line sections on each side of the bridged signaling circuit connection. Means are provided for preventing the signaling currents from being transmitted over the telegraph circuit.

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POSITION WANTED—Can give real phone service. Would buy an exchange at right price and some terms. Address 5193, care of TELEPHONY.

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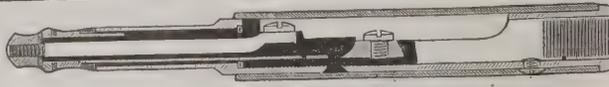
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Telephony

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CURRENT OPINIONS AND COMMENTS

The preliminary skirmish in the Chicago mayoralty

fight hasn't progressed very far, but even so events indicate that municipal ownership and operation of public utilities will be a prominent issue in the campaign. It is considered by many as a logical development of the drift towards radicalism observed at the election last November.

Judge William E. Dever, who has been agreed upon as the Democratic candidate for mayor, was a municipal ownership advocate when he was in the city council years ago, and is likely to prescribe some scheme for the city to take over the street car system and improve the service.

It was Judge Dever, by the way, who heard the famous Central Union telephone case and handed down a decision in 1917 in which he manifested little sympathy with so-called big business.

* * * *

It is always regrettable when utilities are made the football of politics, but mayoralty campaigns in big cities usually drag them into the fight. The radicals and the political demagogues embrace the opportunity to attack the service corporations and seek to stir up public clamor against them.

It is the old political trick of trying to win votes by fooling the people into believing that the public—meaning the politicians—should operate the street cars, the telephone plant and the gas works. The Hearst newspapers, of course, add to the hue and cry.

When the radicals made gains at the general election last fall it was predicted

they would revive their various reform programs as soon as they took office.

Not much headway has been made at Washington as yet, but the agitation in the cities is a part of the expected demonstration, and the political events in Chicago for the next six weeks will be watched with interest. So far there is no concerted attack on the telephone, gas and electric interests. The traction companies are the sole target at this time.

* * * *

The result of public ownership of telephone systems in foreign countries has not presented so brilliant a success as to encourage advocacy of the idea in the United States. The latest statistics show there are a little less than six million telephones operated by government systems in the world as against nearly 16 million operated by private companies.

The incontrovertible fact that the telephone service has expanded and improved immeasurably more wherever private enterprise runs the business is enough to demonstrate which of the two plans produces real efficiency.

In America private operation has enabled the telephone to reach the highest standard by far known in the world. This has been admitted by every representative of foreign government systems that has visited this country—and they have all been here to investigate—and all have also gone back with the conviction that the reason is plain.

The reason why European countries, for

instance, have lagged so far behind in telephone development

was pointed out by Mr. Gill in his address before the British Institution of Electrical Engineers, the first installment of which appeared in last week's issue. He asked: "Has telephony, during the 46 years it has been available, been of as much use to Europe as it might have been?"

His answer is a decided negative. He cites the characteristic passive attitude of the government in such matters, of doing only what will satisfy public demand, as the fundamental reason why the telephone has made such comparatively little headway over there.

* * * *

His suggestion that a government telephone system should be more than self-supporting, that it should earn actual profits, and aggressively strive for more business and better operating methods, has merit, but that idea is entirely contrary to the theory of the average American public ownership advocate.

His best argument to the voter is that public ownership will save him money. He never would dare to propose that the government system should make profits out of the public. And yet it is only the hope of profit and progress that insures efficiency. That is why private enterprise usually excels government management in industry.

* * * *

Based on the figures in the annual report of the Interstate Commerce Commission, the Railway Age estimates that government control of the railroads cost

the taxpayers of the country \$1,677,520,452. In the face of this showing it is no wonder that Senator Couzens, of Michigan, who while mayor of Detroit put the street cars under municipal control, is not so keen to take over the railways, although he says he sees no other course eventually to pursue.

* * * *

Senator Couzens was speaking in Philadelphia where he made his first formal address since he was appointed to the Senate.

"Personally, I should prefer that the government did not have to take over the railroads," said he, "but we have not found any effective solution and, therefore, it looks to me as though government ownership was the only solution. This does not necessarily mean government operation, because, if the railroads could properly expand and develop, and the government by regulation control the management, we might be able to get along without undue interference of politicians."

* * * *

In a recent letter an Ohio subscriber says: "I was much interested in what TELEPHONY lately had to say regarding

tax-exempt securities and the advantage of public utility men urging Congress to adopt the resolution that aims to prevent their continuance.

"What you say is very true, that the increasing volume of tax-free bonds issued by states and municipalities, school and road districts, absorbs the money that otherwise would be invested in utility enterprises and other business concerns. To that extent telephone, gas, electric power and other service corporations are interested in stopping the injustice of such securities escaping taxes.

"There is another angle to the situation, however, that is equally important, and I believe, more dangerous in its far-reaching effect. It is that the tax-free feature makes it altogether too easy for political bodies to sell such bonds and come into possession of huge sums to waste in various ways. This tends to a riot of extravagance, and results in enormous public debts on which the taxpayers must pay interest.

"Practically every state and city has swelled its bonded indebtedness in recent years to such an extent that people would stand amazed if they stopped to consider

the matter. One of our Ohio congressmen, Theodore E. Burton, pointed out this evil in the debate in the House, and said that alone was sufficient to prove the necessity of the adoption of the resolution.

"Every taxpayer should realize that the tax-free state and municipal bonds have given the politicians more money to spend than they have any real use for. The utilities feel the pinch of restricted capital now, but the taxpayers will have to foot the bills for many years to come."

* * * *

Utility men can get some comfort from the fact that the resolution to abolish tax-free bonds was adopted by the House of Representatives January 23 by a vote of 223 to 101, and now it goes to the Senate for action. The opposition will concentrate its efforts to shelve it there, and as a last resort will urge that final action be postponed until the next session.

President Harding and the Treasury department are earnestly advocating favorable action before March 4, and the utility interests should do what they can to help in this direction. So would all the taxpayers, if they were awake to their real interests.

Rate Cuts Ordered for Small Users

New York Commission, in State-Wide Investigation of New York Bell, Orders Up-State Reductions of \$500,000 and Increases in Greater New York of \$2,000,000 — Commission's Valuation \$150,000,000 Below Company's

On January 25, the New York Public Service Commission issued an order as a result of its state-wide investigation of the New York Telephone Co. The order becomes effective March 1. Large users of telephone service, whether individuals or business concerns, will pay increased tolls, while small users will be the beneficiaries of practically all the decreases.

The commission's report, made by Commissioner Charles G. Blakeslee, states the decision equalizes rates in the state so that any further adjustment may be statewide.

The reductions, according to the report, cut the present rate for one-party business lines by \$6 a year and one and two-party residence lines by \$3 a year.

Most of the increases affect subscribers in New York City, but according to a spokesman for the company, by far the greatest number of subscribers in that city are favored through the new rates. The reduction for one-party business and residence lines and two-party residence lines up-state approximates 6 per cent.

Reductions outside of Greater New York are approximately \$500,000. The in-

creased burden put upon Greater New York is \$2,000,000.

Despite the decreases, the company's annual income in the state is raised by \$1,500,000 by the decision, the report states.

"The state-wide case was instituted by the present commission on its own motion," the commission's statement issued with the report reads. "The New York city case was brought by the New York Telephone Co. on a petition to increase exchange rates \$16,000,000 in New York City.

"Today's order provides for a revision of all rate schedules in New York City; effects decreases for small users estimated at \$250,000; increases rates for large users amounting to about \$2,500,000; decreases flat rates in effect in Brooklyn by about \$75,000; increases the long haul inter-zone toll rates in Greater New York; equalizes disparities in existing rates to flat rate users in certain classes of service in residential boroughs, and makes a decrease in toll rates to suburban areas adjoining Greater New York with consequent elimination of the federal tax on such messages, estimated to be \$300,000.

"Message rates in New York City and in the balance of the state are put on a monthly basis of settlement, and rates and charges for private branch exchange equipment are revised.

"Revision of the rate schedules for exchange areas in the state, outside of New York City, is made, with decreases affecting business and residence service. Buffer zone toll rates similar to those put in effect in and around New York City, between various upstate cities and adjoining communities are directed.

"Since the fall of 1919, when the New York Telephone Co.'s property was returned by the federal government, frequent temporary changes in rate schedules have been made.

"In the fall of 1920 the company filed the petition in the New York City case, asking for the introduction of a schedule of increased rates in New York City. Some hearings were held by the former commission, and in March, 1921, that commission increased exchange rates in New York City by about \$12,000,000.

"The present commission in July, 1921,

made decreases in rates estimated to total \$6,000,000.

"The increases in Greater New York directed by today's order are estimated to net the company about \$2,000,000 on an annual basis, finally reducing the amount of increase over 1920 rates granted by the former commission by about \$4,000,000.

"With regard to the balance of the state outside of the city of New York, complaints from about 135 upstate municipalities were filed after the increase in the upstate territory in 1920. Today's decision finally settles the principal points at issue in these inquiries, and the order issued establishes a new and permanent basis for telephone charges.

"The commission holds that the New York Telephone company will not earn a fair return under present rates in New York City, and would earn more than 7 per cent on present rates in the territory embraced in the balance of the state.

"The opinion and order in this case establish a basis for rates so that future questions regarding the rates and practices of the New York Telephone Co. in the state of New York may be expeditiously and economically reviewed.

"On the rate structure and schedule set forth in the order, a general level of rates has been fixed which can be lowered as economies are effected or costs of labor and materials are reduced; or can be increased in the same manner if costs of construction and operation should increase.

"Future decreases or increases in rates can be applied to the entire schedule so as to result in a continued harmonious level of rates without individuals or communities being discriminated against.

Future Changes Considered in Schedule.

"The purchase of apparatus from the Western Electric Co. is approved, and also the arrangement with the Western Union Telegraph Co. in relation to sending telegrams by telephone.

"Depreciation reserves, as set up by the company, are deducted from the valuation of the property in arriving at a rate base, and the company's revenues and expenses for the past four years are examined and an estimate of the amounts deemed necessary for the future presented. The annual expense of depreciation for the future is reduced about \$2,000,000 per year.

"The company is directed to print all New York state directories, except the New York City, general suburban, Westchester district, Albany, Buffalo, East Aurora, Lockport and Syracuse, with a two-column page instead of the three column one now in use. All advertising matter contained within the body of the printed listing in the directory is ordered discontinued. A recommendation is made that only two issues of the directory be made in New York City, beginning in 1924.

"The wage scale of the New York Tele-

phone Co. is not commented on and the company's relief and pension fund system is commended.

"The necessity for rate revision affords the opportunity to correct inequalities which have been found to exist in the rate schedules and to bring about a better balance between charges and the value of the service in different localities in the state. Certain exchange rates have been reduced and others in New York City have been increased with the burden placed on the large user, carrying a decrease to the small user.

"Flat rates in the New York City territory have been brought into harmony with the cost and value of the service, flat rates in certain localities having been reduced and in others increased."

The company, with the new rates in effect, would be allowed a flat 7 per cent return on the value of its property used in the telephone service. The commission rejected the valuation placed on the property by the company's own experts, who claimed \$330,000,000 as the reproduction cost and an additional going value of \$65,000,000, which, with working capital, would have brought the total they had fixed as the proper base for rates, to more than \$400,000,000.

"Valuation," says the commission, "has been fixed at what is practically book cost, taking into consideration increased cost of new property added during and since the war period, and increased value of land and buildings."

The valuation made by experts acting for the state placed the property value at \$235,684,991, of which \$167,153,634 is in New York City and \$68,531,357 upstate, as of January 1, 1923.

In arriving at a proper rate base the commission fixed the working capital at \$7,312,500 in the city of New York and \$3,185,000 upstate, or a total of \$10,497,500, which, added to the property value, makes the base for the new rates in New York City \$174,466,134 and upstate \$71,716,357, a grand total of \$246,182,491. At 7 per cent, the return on this investment would be \$17,232,774.

Heavy Cut in Valuation.

The new appraisal is approximately \$150,000,000 below that contended for by the company. It is nearly \$50,000,000 below the figure fixed by the United States court in granting an injunction to prevent the temporary rates established in March last year from going into effect. The court reached the opinion that "no computation can reduce the basis for return much below \$300,000,000."

"With due regard for the statement of the court expressing an opinion on fair value, based on affidavits submitted in the injunction proceeding, we cannot allow a greater valuation than is hereinbefore set forth," says the commission in its report.

The ten zones into which the City of

New York at present is divided are continued. The cost to subscribers for calls not within the local calling area of 5 cents is continued, except for "longer hauls," where increases have been ordered commensurate with the service.

Increased Rates for Large Users.

The new rates amount to an increase of a little more than 6 per cent for large users in all the ten zones within the city. Decreases in residential rates of about the same percentage have been provided for in Zones 1, 2, 4 and 5. Included in this territory is all of Manhattan and Brooklyn and the southern half of the Bronx. In all the remaining city territory, largely suburban, residential subscribers will pay increased rates.

The amount of service rendered, generally speaking, will govern the future rates charged subscribers. On individual lines in the congested districts 75 calls a month are allowed in return for the rate charged. In the suburban territory, where the rate is lower, 66 messages within the local calling area are allowed. On two-party lines the number has been cut down to 57, but the rate is lower. In some zones party lines—especially four-party lines, with the low rates these commanded—have been discontinued. The service charge of \$1 a month has been restored.

According to the report of the commission, the revisions have been made downward, considering service, for nearly all classes of residential subscribers. Subscribers who use 140 messages or less a month will pay a lower rate, and the increases will fall mainly upon those who use the service in greatest volume.

The increases of rates in New York City will add approximately \$2,500,000 to the revenues of the company, while there will be a loss in revenue of approximately \$500,000 as the result of the reduction granted to small users.

In the up-state territory, where reductions have been more general, these, according to an estimate furnished by a spokesman for the company, will aggregate \$500,000 more, so that as a result of the new rates the company would stand to gain approximately \$1,500,000 net, some of it through new economies.

The latest ruling of the commission, it was stated in the report, would reduce by approximately \$4,000,000 the increases netting the company \$12,000,000 in round numbers, which were granted in March, 1921. This includes decreases approximating \$6,000,000 which were ordered in July, 1921.

Present Rates "Not Unreasonable."

The commission points out in its report that while the temporary rates recently established against which the company demurred had never gone into effect, the rates charged subscribers in the city were not for the period "unreasonable or excessive." Consequently the commission

discharged the bonds furnished by the company to insure the possible payment of refunds to subscribers.

According to the commission, the New York City rates have not netted the company 7 per cent on the property employed in its service within the city, while in the up-state territory the net earnings have been at a higher percentage.

In interurban rates up-state the toll charges in many instances have been cut in two. Reductions have been made, also, in tolls between zones in New York City and adjacent territory outside the city, so as to eliminate the federal tax which is applied when toll charges exceed 15 cents.

Regarding expenditures incurred by the company for publicity purposes aggregating \$228,392 during the first six months of last year, the report says:

"This commission is convinced that reasonable public announcement of changes in telephone equipment or in character of service, issuance of directories, and necessary instruction in the use of telephone mechanism, are necessary and proper charges for a public utility, but that advertising to justify rate increases or to defend the company's legal position in litigation is not justifiable, when paid out of revenue. Publicity expenses should be materially reduced in 1923."

In its report the commission advocates the creation of a new exchange area to include Inwood, Lawrence, Cedarhurst and Woodmere, adjacent to Greater New York.

In reporting on its valuation figures, the commission says:

"Working capital is placed at a figure

of \$6.50 per station. The results of the licensee contract, so far as the New York Telephone Co. is concerned, are approved, but payments to the A. T. & T. Co. for the future are put on a basis of \$2 per station, effecting a reduction in licensee payment to the A. T. & T. Co. of over \$900,000 a year."

"Subscribers who use 140 messages a month or less," says the commission in regard to New York City rates, "will pay a lower rate than at present, and the increases fall mainly upon those who use the service in greatest volume. The new schedule should aid rather than check development, and subscribers to business service, to whom the value of the service is greatest, will pay a more equitable proportion of the company's revenue requirements."

Minnesota More Active Than Ever

Annual Meeting in St. Paul Last Week—Association Members Realize the Increasing Responsibilities of Telephone Managers and Owners—Many Subjects Discussed in Way That Shows Minnesota Telephone Men on the Alert

The fourteenth annual convention of the Minnesota Telephone Association, held at the Ryan Hotel, St. Paul, January 23, 24 and 25, was considered by those who had attended many of the good meetings the association always holds, to have been one of the most successful of them all.

The program dealt with subjects that everyone was interested in, for it was of the members' own selection. The attendance was large and more than the usual interest was manifested in the convention proceedings—all of which augurs well for a continuance of the good work which the association has been doing.

These directors were elected at the Wednesday afternoon meeting: D. M. Neill, Red Wing; Thomas Vollom, Eskine; Jay Greaves, Glencoe; Herman Lueders, Norwood; Well S. Clay, Hutchinson; E. P. Wright, Alexandria; Irving Todd, Hastings; D. W. Gretorex, Blue Earth; C. M. Smallwood, Worthington; and P. M. Ferguson, Mankato.

The directors later organized by re-electing Jay Greaves, of Glencoe, president; E. P. Wright, of Alexandria, and D. W. Gretorex, of Blue Earth, vice-presidents; and J. C. Crowley, of St. Paul, secretary and treasurer.

It was about 2:15, Tuesday, January 23, when President Jay Greaves called the meeting to order and, dispensing with the usual welcoming addresses, delivered the president's annual address, saying among other things:

"At least once a year the careful business man takes an inventory of stock and reviews his business affairs for the purpose of determining how he stands with the world, what progress he has made, and whether the methods and policies of the



Jay Greaves, President of the McLeod County Telephone Co., Glencoe, Wis. Re-elected Head of the Association.

year just closed have justified themselves and deserve to be continued.

So I take it that we of the Minnesota Telephone Association at the beginning of this our 14th annual convention might do well to briefly pause and review the work of the year just passed and endeavor to determine what progress if any has been made and whether our methods and policies have justified themselves or not.

It seems to me that in order to justify its existence a telephone association must strive to accomplish two fundamental purposes:

First, it should seek to continually im-

prove the telephone business as such, and constantly bring it up to an ever higher standard of efficiency, service, and usefulness.

Second, it should seek to bring together and unite all the interests engaged in the business in such a way that they can stand and act together for their mutual protection and for the good of the industry as a whole.

Relative to these fundamental purposes it seems to me that the Minnesota Telephone Association has well justified its existence during the year just past.

One of the first duties that confronted your board of directors upon their organization, after the convention of a year ago, was the selection of a new secretary and treasurer, made necessary by the resignation of Mr. Kast who had faithfully served this association for many years. J. C. Crowley, Jr., of Superior, Wis., was chosen for this position. Most of you have, by this time, become well acquainted with Mr. Crowley and it is not my purpose to eulogize him at this time, but I would like to say in passing, and I feel sure your board of directors will agree with me, that Mr. Crowley deserves the full credit for whatever measure of success has been achieved by this association this year.

Another important change this year has been the removal of our business office from Minneapolis to St. Paul. The chief reason for making this change was in order to make it more convenient to the state capitol. Much of the association's business has to do with the railroad and warehouse commission and much time is saved to both the officers and members by this arrangement. We also find that dur-

The Annual Meeting of the Minnesota Telephone Association Was Featured by a Complimentary Dinner, Entertainment and Dance From the Exhibitors and Supply Dealers.



ing the legislative session it is of paramount importance to be near at hand.

As to the year's work, one of the new activities has been the holding of a series of district conferences throughout the state. In all 19 conferences were held and these were attended by more than 800 people. Secretary Crowley was in charge of every conference and he was ably assisted by members of the staffs of the Tri-State Telephone & Telegraph Co., in the southern part of the state, and the Northwestern Bell Telephone Co., in the northern part. Mr. Howatt of the Minnesota Railroad & Warehouse Commission and many others attended these conferences and rendered valuable assistance.

The success of these conferences has been such that your board of directors feel that they should be made a permanent part of the work each year. Not only do many attend these conferences who are unable to attend the state convention but they are more informal than the state meetings and give a wider field for individual discussion than is possible during a large convention. They also serve as an educational factor and a source of inspiration where it is most needed.

In the latter part of last July a meeting of great importance to the telephone industry was held in our state in St. Paul. This was a conference of executives of state telephone associations and was called by the officers of the United States Independent Telephone Association for the purpose of discussing the problems of common interest with special reference to the problem of inductive interference which was causing much concern to companies in other states as well as in our own.

The officers, executive committee, and several of the directors of this association attended this conference as well as executives from eight other state associations. The conference proved of the greatest value to those who attended and has served to pave the way for closer co-operation between the states in many important matters.

At our last annual convention the one subject that seemed to be of special interest to those in attendance, and one that aroused their fighting spirit, was that of inductive interference. The case of the Polk County Telephone Co. at Beltrami in its fight with the Minnesota Electrical Distributing Co. was placed before the convention. This was a case of a small rural telephone company with grounded lines being practically put out of business by a large power company, which refused to recognize or accept any responsibility whatever for the damage it had done.

It was unanimously decided to back the Polk County Telephone Co. and if necessary make a test case to determine the responsibility of power companies for damage to grounded telephone lines. A

committee was appointed to raise funds for this purpose.

This case in its possibly far-reaching effects is considered by many who are competent to judge as being one of the most important ever tried in northern Minnesota.

The side of the power company was represented by the best attorneys and most competent engineers that money could obtain. The telephone side was ably taken care of by Senator J. C. Carley assisted by C. B. Randall of the Tri-State company, and Mr. Prendegast of the Northwestern Bell company. The case was tried before Judge Watts at Crookston and more than a solid week was spent in taking testimony.

Although tried in April, the final pleadings were not made till some months later. As yet the decision has not been handed down, but is expected now at any time. It is understood that whatever the district court decision in this case may be, it will be carried on to the supreme court.

I believe the events of the past year, in which our Polk County case has played an important part, have served to a great extent to clear the atmosphere relative to the responsibility of power lines to the grounded telephone lines and, regardless of what the final court decision may be in this particular case, the conviction is crystalizing in the minds of all that from the standpoint of widespread use and availability, the grounded telephone line is standard and possesses certain fundamental property rights that must not be disregarded by power companies.

I believe that the conviction is growing that, if our present laws do not afford sufficient protection to this class of property, our law-making bodies will see to it that fair protection is afforded.

In the past few months several cases of inductive interference, where the grounded lines of small companies were involved, have been successfully arbitrated, through the efforts of Secretary Crowley, to the satisfaction of the telephone companies and with mutual good feeling on the part of the power companies.

It has been the purpose of the officers and directors of this association to mold an organization that would serve the individual interests of each member to the highest degree as well as to look after the larger matters that affect the business as a whole. A review of the files and records at the association's office cannot but impress one with the importance of the service that is being rendered.

It might not be amiss here to cite one instance where the alertness of the association through its secretary served to protect the interests of all.

Last spring a certain company in this state applied to the commission for a reduction in rates. Now a reduction in telephone rates is highly commendable when-

ever it can be made justly and in fairness to the invested capital, and this association would be the last to oppose it under such circumstances. On the other hand, any reduction of rates by a telephone company where it is not justified might create a false impression on the part of the public and might serve as a great source of annoyance to other companies by starting agitation for rate reductions.

In the case referred to an investigation by our secretary revealed the fact that a reduction of rates was in no way justified by the company's financial showing, but was an attempt by rural stockholders to profit by lower rates at the expense of larger non-resident stockholders. Getting in touch with these stockholders and advising them what steps to take, prevented this reduction from taking place.

All lines of business have their drawbacks and our own is no exception. No doubt we sometimes think that we have more than our share of trouble. This may be especially true right now when our law-making body is having its biennial orgy. However, after all is said, there is an element of stability in the telephone business that is found in few others. While we were denied the large profits enjoyed by many lines of business during the period of inflation, we have not been compelled to take the losses and reverses that many have during the period of depression.

In matters pertaining to legislation, I sometimes think that we have a far greater latent power for protecting our interests than we realize. I believe that the state auditor's report shows that more than 2,000 companies and individuals pay a telephone tax. If all those who are engaged in the business would pull together and do their part, if all would respond with their protests and influence when called upon to do so, then, I say that no legislature ever assembled would pass any legislation that was not fair and just to the telephone business.

This, to my mind, is our great problem and our great opportunity—to create in the mind of every individual who has any connection with the telephone industry an acute sense of responsibility for doing his part when called upon, no matter how small it may seem to be.

In closing I wish to repeat that I believe that this association has had the best year in its history, from the standpoint of the service that it has been able to render, and that this service with your co-operation can be still further extended during the coming year."

Walter L. Clark, of Marsh & McLennan, Minneapolis, followed Mr. Greaves with an address on "Public Liability Insurance."

"In this state," said Mr. Clark, "we have the compensation law, as do most states in the Union. The compensation laws, however, vary in different states. In

Minnesota the compensation law operates under what is known as an 'Independent State Bureau,' which means that the state includes in promulgating rates only the experience of business concerns within the state.

"We hear so often the expression that compensation rates under our compensation law are equal or the same rate is applicable for a certain class of business. In a sense this is not true, for the basic rate is the only equal rate for a given class of business.

The compensation rating plan as operated in this state is a combination of two sub-plans, which are known as the schedule plan or physical condition of a plant or factory, and the experience plan which is a result of losses paid in settlement for accidents.

The first plan mentioned—the schedule rating plan—affords credits to an assured for placing guards upon machinery throughout his plant with a view to preventing accidents to employees. The second plan, the experience, which reflects the losses or accident costs, also reflects the educational work, the impressing upon employees the necessity of eliminating carelessness during the course of their regular duties in their work.

Therefore, we have a credit to give the manufacturer who will guard his plant and a credit to give the manufacturer who

because the rating plan, unless thoroughly studied, is considerably complicated. In view of the plan being intricate, if I may suggest, I believe that business men should use particular care in selecting an agency to handle their compensation insurance.

The law imposes upon telephone companies the settlement for damages for personal injury accidents sustained by the public, including death, for which telephone companies may be responsible. A death claim is usually the cheapest to settle from a financial standpoint. Partial disability or total disability claims make up the expensive settlements and cause the trouble.

In settling claims, we have, first, the cost of investigating the demand for damages—interviewing different witnesses and so on. Many times, after investigation, a settlement cannot be effected and the case goes to court, which adds expense for attorneys and court costs.

If a judgment is obtained in one of our lower courts, sometimes the case is carried all the way up to the supreme court, involving more expense. If the telephone company loses the case, the final verdict of settlement must be paid.

A survey of the records shows that in effecting final damage settlements business institutions sometimes have found their surplus seriously impaired. Also, some business concerns have been forced into bankruptcy and companies have been obliged to call upon their stockholders for additional funds.

You have recently had your attention called to a lawsuit which was carried to the supreme court, which upheld a verdict of \$8,000 damages. This was the case of Ferdinand C. Wolter against the Armstrong Telephone Exchange Co., Martin County, Minn. A brief synopsis of the facts in the case is as follows:

Along a public highway in Martin County at the place of the accident, a telephone wire was strung obliquely across the road from a pole on one side to a pole about 120 feet distant on the other side. There was evidence that this wire had been slack and sagging for some months, but not so as to interfere with travel.

As the plaintiff was driving along the highway, sitting on a spring seat on the triple box of a farm wagon, in the early morning of August 26, 1919, this wire caught on the seat and threw the plaintiff to the ground, breaking his leg at the hip-joint in such a manner that he is permanently crippled.

This same wagon had been driven over the same portion of the road the evening before by a driver sitting on the same seat, without coming in contact with the wire. It appears undisputed that during the night, from some unknown cause, the wire had sagged five or six feet below its former position.

The court in this case held the telephone company to be negligent."



C. M. Smallwood, of Worthington, is the Only New Member of the Board of Directors of the Minnesota Association.

will interest himself to the extent of educating his employes in accident prevention. The two combined credits from each plan make a total credit, which is finally reflected into the rate of the individual plant. That is why we say that a manufacturer or business institution practically can make its own rate for compensation insurance.

I am purposely endeavoring to avoid going into the details of the rating system,

Mr. Clark then cited cases in different states where the companies had been found liable, mentioning Rhode Island, New York, Pennsylvania, Ohio and Indiana.

"No one can prophesy correctly," he went on, "what verdict a jury will award. Is not the telephone companies' judgment sound in protecting their institutions by buying public liability insurance at a small fixed cost, chargeable to operating expense—thereby guaranteeing its invested capital, established resources, and earned profits?"

"Surely an institution taking these precautions is relieved of criticism from its stockholders and worry from losses for damage claims for accidents sustained by the public in the usual course of the operation of the telephone business.

The pertinent coverage afforded under a public liability insurance policy is as follows:

1. To indemnify the telephone company against loss by reason of the liability imposed by law upon the company for damages on account of bodily injury, including death at any time resulting therefrom, accidentally suffered or alleged to have been suffered by any person or persons not employed by the assured.

2. To investigate all accidents reported by the telephone company.

3. To defend, in the name and on behalf of the telephone company, such suits, even though groundless, brought against the telephone company to recover damages on account of personal injury accidents.

4. To pay, irrespective of the limits of the insurance carried, all costs taxed against the telephone company in any legal proceeding defended by the insurance company, and interest accruing after entry of judgment.

5. To pay all expenses incurred by the telephone company for such immediate medical or surgical relief as is imperative at the time of the accident.

To carry public liability insurance will increase your operating expense, but this is a legitimate charge and while it will increase your operating expense, it will protect your investment and profits."

There was some discussion of Mr. Clark's paper, a number of questions being asked and answered.

President Greaves then introduced Professor C. M. Jansky, of the University of Minnesota, who read a most interesting paper on "Present Aspects of Radio Communication and Some of Its Possibilities." In his opinion, radio, while it has a long way to go, insofar as its development is concerned, never will affect the field of telephony.

"There are two fields to be adequately covered," said Professor Jansky. "The telephone already is doing a good job in one, and radio will be developed in its particular field and fill an important place in the commercial life of the nation."

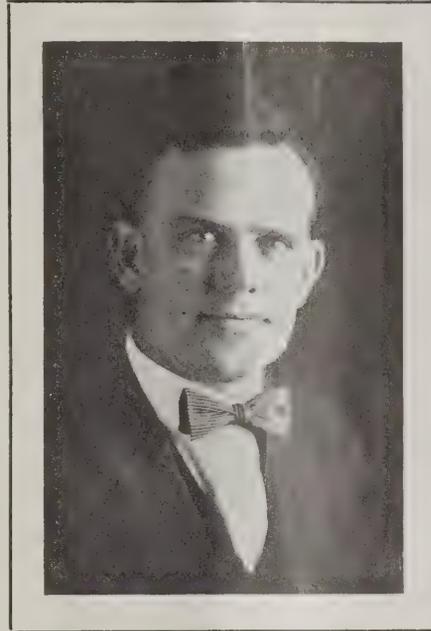
Charles C. Deering, of Des Moines, Iowa, secretary-treasurer of the United States Independent Telephone Association, was introduced by President Greaves and spoke briefly on association accomplishment. He advocated more co-operation

between the state and national organizations, showing how each has its particular field of effort.

A nominating committee was then announced by President Greaves as follows: P. M. Ferguson, B. Hazel, and Harry Kurz.

The committee on resolutions was named to consist of Levi Johnson, E. J. Colby, and D. M. Neill.

District Manager Phails, of the A. T. & T. Co., Long Lines Department, invited



Secretary-Treasurer J. C. Crowley Was Given a Vote of Appreciation of His Work and Pledged Earnest Support and Loyalty.

those present to visit Minneapolis to inspect the company's apparatus for wired wireless and witness a demonstration of it.

The session then adjourned.

Upon the convening of the Wednesday morning session, President Greaves announced the serious illness of D. W. Gretorex, of Blue Earth, who was to have discussed "Collection Methods and Policies." Mr. Gretorex had been very active in the association work and the announcement of his illness was received with great concern. On Saturday, January 27, two days after the convention adjourned, Mr. Gretorex passed away after an illness of only ten days' duration.

In place of Mr. Gretorex, P. M. Ferguson, of Mankato, led a discussion on the subject of "Collection Methods and Policies," which was participated in by C. M. Smallwood, of Worthington; Ed. Hanley, of Welcome; W. E. Leasman, of Madison; J. W. Heritage, of Amboy; G. L. Wilder, of Granite Falls, and others.

C. M. Babcock, state highway commissioner, was the next speaker, on the subject "Co-operation Between the State Highway Department and Telephone Companies." Mr. Babcock outlined the development of the 7,000 miles of Minnesota state highways, and presented the proposed

program for the further development and improvement.

He urged closed co-operation between the companies and the road workers in the moving of telephone poles, as the road workers and telephone companies have not always co-operated in this, he said.

He promised that the highway department will, in the future, make special effort to notify the companies well in advance when road work that will necessitate moving poles is to be done. He complimented the companies on their attitude in the past year, when press of work made it impossible to give them much advance notice of such work.

Upon motion of D. M. Neill, of Red Wing, the program of the Minnesota Highway Commission, with reference to the future development of the state highways, was unanimously endorsed.

George W. Rodormer, of Chicago, secretary and sales manager of the Reliable Electric Co., then read an interesting paper on "Station and Plant Protection." It was followed by considerable discussion, in which many points of interest were developed.

Adjournment was then taken for lunch.

The report of the finance and auditing committee for the year ending December 31, 1922, was submitted by Irving Todd immediately upon the convening of the Wednesday afternoon session. The report showed the finances of the association to be in good shape. Upon motion, the report was received, placed on file, and the committee thanked for its work.

President Greaves then called for the report of the nominating committee which recommended the re-election of all of the directors, with the exception of F. D. Lindquist, of Fulda, who has been inactive for the past year. In his place C. M. Smallwood, of Worthington, was named. Upon motions, properly seconded, the report was received and the secretary was instructed to cast the unanimous vote for the election of the directors for the year 1923. This was done and they were declared duly elected. The complete list of the directors has previously been given.

To open the discussion of legislative problems, President Greaves called upon C. B. Randall, of St. Paul. Mr. Randall directed particular attention to bills HF 17, HF 82, HF 171, HF 213, SF 109, HF 214, SF 108, and SF 142 as detrimental and affecting the telephone industry. He declared that every effort should be made to defeat such bills.

Secretary J. C. Crowley impressed upon those present the necessity of prompt action on their part, when advised by him of proposed detrimental legislation.

After some discussion of legislation, Thomas Vollum, of Erskine, moved that the legislature be requested to reduce the present system of taxation from 4 per cent on the gross earnings to 3 per cent on gross earnings.

J. A. Schoell, of Belleplaine, proposed an amendment that the question of taxation be referred to the resolutions committee and the board of directors for their consideration and recommendation.

The motion as amended was unanimously carried.

A demonstration of first aid, under the direction of W. H. Watt, first aid instructor of the Northwestern Bell Telephone Co., Minneapolis, was next presented. Mr. Watt was assisted by a number of demonstrators from the Northwestern Bell company, who, dressed in white uniforms, illustrated what should be done when an artery or vein is severed, a limb broken, or when a person has come in contact with a heavily charged electric wire.

The demonstration held the interest of the convention for more than an hour. Those assisting Mr. Watt included Chas. Snyder and Ted Terusse, repairmen; Art Johnson, automatic switchman; Ed. Lancaster, inspector of installations; John Beckstrom, wire chief; Charles Jackquinet, installer; Hal Sandt, draftsman; Archie Scott, facility man; John Fordham, installer; and "Bill" Henry and Clarence Kochelhoffer, repairmen.

The demonstration concluded the afternoon's program.

The Banquet.

Some 300 persons enjoyed the banquet, entertainment and dance, which were tendered to the association on Wednesday evening by manufacturers, jobbers, and other firms dealing in telephone equipment and supplies.

The entertainment program, under the direction of Miss Catherine Lee, of St. Paul, commenced immediately after the repast had been served. The entertainment consisted of a singing act, comedy songs, peacock dance, black-faced comedian act, a slight of hand diversion, several numbers of xylophone, and an operatic baritone number.

The presentation of the program occupied about an hour and was greatly enjoyed. The floor was then cleared and fully 100 couples enjoyed dancing until midnight.

The Concluding Session.

At the opening of the concluding session on Thursday morning, D. M. Neill, of Red Wing, presented the report of the inductive interference committee. He explained the status of the case now pending against the Minnesota Electrical Distributing Co. and reported that \$2,152 has been received from subscriptions to carry on the case.

Upon motion of E. P. Wright, the report was accepted and the same committee continued with instructions to act during 1923.

Levi Johnson then moved that the question of continuing and pressing the matter of the inductive interference case be referred to the board of directors for their consideration with power to act. Upon being put to a vote this motion was carried.

"Causes and Effects of Inductive Interference," was the subject of an interesting blackboard talk by N. W. Kingsley, of Minneapolis. This talk drew forth many questions which were answered by Mr. Kingsley.

Thomas J. Phalen, of Aberdeen, S. D., secretary of the South Dakota Telephone Association, was introduced by President Greaves, and outlined the work being done in South Dakota. He mentioned several laws in South Dakota that are of material benefit to the companies in that state.

The report of the resolutions committee was next presented. It included tributes to the late J. C. Kelsey, of Chicago, and J. L. W. Zietlow, of South Dakota, which were endorsed by the entire convention by rising and remaining silent for a period of one minute.

Other resolutions extended thanks and appreciation to the management of the Ryan Hotel and to the exhibitors and manufacturers for their splendid exhibits, the banquet, and the entertainment which they provided.

Secretary J. C. Crowley, Jr., was given the association's hearty appreciation of his efforts and pledged the earnest and loyal support of the members in his future activities for the welfare of the industry.

Another resolution read:

"Whereas, the telephone industry has grown to be of major importance in the commercial and social life of the people, and that this involves greater responsibility upon owners and managers,

Be It Resolved, that we urge upon all owners and managers the ever-increasing necessity of being continually on the alert to improve their equipment and methods of handling their business, to better their relations with the public, and to use their utmost endeavor to render to their patrons a more efficient and satisfactory service, and thus add to their own standing in public esteem."

All of the resolutions were unanimously adopted, after which the convention adjourned. The entire afternoon of Thursday, January 25, was given over to inspection of the exhibits.

Minimum Wage Bill Up in Nebraska Legislature.

A minimum wage for women bill is before the Nebraska legislature, and is receiving strong support from women's organizations. It applies to every industry and exempts only those in domestic work and on the farms.

Charles A. Randall, the newly-elected member of the state railway commissioner, appeared on behalf of the bill. His colleagues on the commission do not agree with him. They say that its adoption would mean that every telephone company which demanded it would have to be allowed to increase its rates.

Mr. Randall arraigned the telephone industry generally for the low wages he said

it paid to girls, and pronounced these starvation wages in many instances. He said it was impossible for some of them to live respectable lives and stay within their own resources, and said the telephone companies were at fault.

The commission, in the Northwestern Bell case, criticized that company for paying labor more than it was worth on the market. The bill is now on general file in the house, with a committee recommendation that it be passed.

The Nebraska Retailers' Association, which is made up of 12,000 stores, opposed it as un-American, and its representatives before the committee hearing argued that people have a right to start at the bottom and climb to the top. It is a question of supply and demand, they said, and the law would merely encourage idleness. Only a few girls are employed in these stores, and the bill is aimed principally at the telephone companies and packing houses.

League of Texas Cities Frames Bill to Regulate Utilities.

A bill for the regulation of public utilities has been prepared by a committee of the League of Texas Municipalities—which is composed of the mayors and attorneys of various cities in the state—and will be presented to the present session of the state legislature, it is stated.

The bill provides that the commission shall have power to regulate all interurban public utilities; that municipal governments shall have power to regulate local public utilities, but shall have the right to appeal to the commission to do such regulating; that the commission shall separate the interurban and the local business of companies engaged in both lines and then leave it to the municipal governments to regulate the local part of the business of such companies.

In the provision authorizing municipalities to call on the commission to regulate local utilities the bill would make the orders of the commission effective for only one year, the commission to have no jurisdiction after that time, but, in the absence of any action to the contrary, the order of the commission would continue binding upon the municipality as though it were its own act.

The provision for the commission to separate the gross earnings as to local and interurban business of utilities engaged in both lines would apply to telephones and electric railways.

Every public utility, local as well as interurban, would be required to pay into the state treasury one-half of 1 per cent of its gross income, such payment to constitute a "public utilities fund," out of which the expenses of administering this law would be paid. The bill would appropriate \$75,000 from the state treasury to start this fund.

Future of Long Distance in Europe

Recent Developments in Telephony Which Have Caused Alterations in Practice in Long Distance Communication—Part of the President's Inaugural Address Before the British Institution of Electrical Engineers—Concluded

By Frank Gill, O. S. B.

European Chief Engineer, International Western Electric Co.

In the search after increased capacity of telephone and telegraph circuits, there has recently been developed and put into commercial service the carrier system which has been added to the well-known methods of superimposing phantom telephone and compositing telegraph circuits. In this new method, carrier waves of different frequencies for each channel of communication are generated.

Carrier Circuits.

If the channels are to be used for telephony, such waves have a frequency above the audible limit; by means of band filters the desired range of frequency is permitted to pass into each channel but only frequencies within that range. Thus on a four-channel telephone carrier circuit the frequencies might range in four or eight separate bands with outside limits of 4,000 to 27,000 cycles per second.

Each carrier wave is modulated independently by the voice currents to be transmitted by that channel, and all the modulated carrier waves, or all of one of the side bands only, without the carrier waves, are transmitted over the line. Upon reaching the far end, the waves are filtered out, each into its proper channel according to the carrier frequency assigned to each channel, and are then demodulated leaving the voice current free to be farther transmitted over an ordinary circuit.

Because of the increased frequency of the carrier waves, greater attenuation occurs with them than with the voice waves and carrier current repeaters must be equipped more frequently than voice current repeaters. Also, for the same reason, carrier currents cannot be transmitted over ordinary loaded lines, which, it will be remembered, cut off at frequencies within the audible range. Hence if loaded carrier circuits are required, they must be specially treated.

Special treatment is also needed in the construction and maintenance of carrier lines and equipment, and, because the equipment is expensive, such lines must be of considerable length in order to be economical.

As an illustration of the advantages to be gained by using the latest development, the following may be quoted. On the New York-San Francisco line, the circuits are of open wire from Harrisburg to San Francisco, about 2,500 miles (4,050 km.) direct distance apart.

On four conductors on this route the

loads carried are: Two physical telephone circuits; one phantom telephone circuit; four earthed telegraph circuits; and a varying number of carrier telegraph circuits, ranging from 6 to 20.

Two of the sections on this route in detail are:

Between Chicago and Omaha, 450 miles (729 km.) direct distance apart, four open-wire conductors carry:

- 2 Physical telephone circuits
- 1 Phantom telephone circuit
- 4 Earthed telegraph circuits which can be worked either one way or two ways at will.
- 20 Two-way carrier telegraph circuits
- 27 Total circuits on four wires.

Between Chicago and Pittsburgh, 450 miles (729 km) apart, eight open-wire conductors carry:

- 4 Physical telephone circuits
- 4 Halves of phantom telephone circuits (equivalent to two circuits)
- 8 Earthed telegraph circuits which can be worked either one way or two ways at will
- 37 Two-way carrier telegraph circuits
- 51 Total circuits on eight wires.

From another route we take the following:

Between New York and Philadelphia, 90 miles (145 km.) apart, two conductors in cable carry, though not by carrier circuits:

- 1 Physical telephone circuit
- 30 Special signaling circuits
- 31 Total circuits on two wires.

From Chicago to Omaha, or from Chicago to Pittsburgh, the direct distances are about the same as from Paris to Berlin, from Paris to Marseilles, or from London to Milan. From New York to Philadelphia is about the same distance as between London and Birmingham.

At present there are in actual service in the United States the following miles of carrier route and channel:

	Miles of Route	Miles of Channel
Carrier telephone..	4,776	16,576
Carrier telegraph..	10,919	78,870
Total	15,695	95,446

Crosstalk.

Applications such as have been described demand a much higher degree of

refinement in order to avoid crosstalk, than those which have previously obtained in the construction and maintenance of long distance lines.

To obviate that evil, it is necessary that at every point throughout the entire length

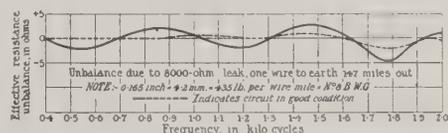


Fig. 11. Effective Resistance Unbalance Frequency Curve of 0.165 Inch Open Wire Non-Loaded Phantom Circuit.

telephone lines should have the two sides of the circuit equal in admittance to earth and equal in series impedance, and these must be equal over the range of voice frequencies. This is a very severe requirement, but very good approximations to the result required are being made.

Fig. 11 shows the effective resistance unbalances for a non-loaded open-wire 4.2 mm. (435 pounds per mile) phantom circuit in good condition, and also with an unbalanced leak between one wire and earth, 147 miles away from the point of test.

Unbalanced conditions may obviously arise by such defects as faulty joints, incorrect transpositions, faulty insulation, and apparatus faulty in design or maintenance. Further, crosstalk, as an effect of unbalance, is accentuated by repeaters, since too much energy delivered into a line may produce an intolerable amount of crosstalk.

Interference.

A matter which is assuming more and more importance is that which in the communication art is termed interference, meaning by that term the reactions which occur between weak current communication circuits and heavy current light power and traction circuits.

The effects of these reactions to the communication engineer may be serious and fall under the heads of: Noise, false signals, breakdown of the line, fire hazard, acoustic shock and electric shock.

Some consideration has already been given to the question of balancing the telephone circuits, and before looking at the same matter in regard to the power lines perhaps it may be useful to give an idea of the relative trouble caused by different frequencies.

Fig. 12 shows the relative interfering

effect of uniform currents at various single frequencies in a telephone receiver; the interfering effect is very unequal and the importance of the wave shape in power circuits will be inferred from this curve.

On the power side, residual and balanced components of the power circuit

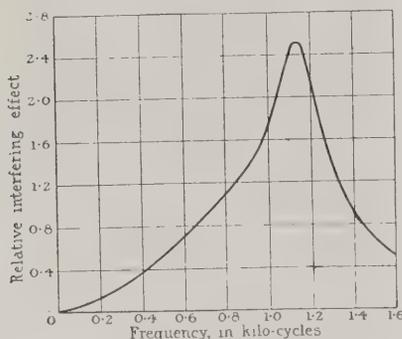


Fig. 12. Relative Interfering Effect of Single-Frequency Currents in a Telephone Receiver.

voltages and current may cause such trouble as to be beyond the ability of the communication engineer to cure. Every commercial three-phase system, for example, which has not been properly transposed, is an unbalanced system, and any change in the separation of wires or height from the ground will affect the balance to earth which generally is of more importance than balance of load between phases. This unbalance can be much reduced by transposing the power lines.

Again, even if well balanced during normal operations, power lines are invariably thrown badly out of balance by abnormal occurrences such as the opening or short-circuiting of the line; and sometimes the circuit and switching arrangements are such as needlessly cause unbalanced effects not perhaps noticed by the power engineer, but very troublesome, if not worse, to the communication engineer.

Now it must be recognized that these industries, involving the telegraph, telephone and railway signaling systems as representative of the light energy group, and the lighting, power, railway and tramway systems as representing the heavy energy group—are both of them necessary to the well-being of the world, and they must learn to live together harmoniously, and to avoid or mitigate the otherwise serious reactions between their respective circuits.

It must also be recognized that in grappling with this difficult problem, there cannot and ought not to be any claim by either side for priority of protection or preferential treatment. It is wrong for the heavy current interest to say, "Let the light current industry take care of itself," and it is equally wrong for the light current industry to say, "The heavy current business must be conducted in such a manner that we, with our existing arrangements, shall be undisturbed."

There is only one sensible solution: Let

the engineers of the two industries first get together, unfettered by any partisan tie, to seek the best methods of getting rid of the trouble; and after those best methods have been found, on the basis of the least total cost, then, and only then, let the question of settling the apportionment of cost as between the interests be taken up. The ordinary difficulties of a complex situation are frequently rendered more difficult of solution by an endeavor at the outset to fix responsibility for the interference.

Much has already been done by joint study to reduce interference and in some cases, such as those of electrolysis, it has been found economical to the heavy industry to avoid certain defects in construction which were first brought to light by the complaining light industry. But in all cases the lesson is always being pressed home that success is certain to come when each party makes a real endeavor to learn the other's problems and to appreciate the efforts made by him to solve them.

Heretofore a long distance telephone line was a relatively simple structure consisting merely of a pair of copper wires, either open or in cable. This could be maintained comparatively easily in good order by independent maintenance units situated along the length of the line. But with repeaters and loading, that simple structure has vanished, the plant is more complicated and the various parts are interdependent on each other. It is no longer possible to consider maintenance of each part solely as a sectional matter; what is done at one place may cause serious reactions at another, and the line as a whole must be considered.

We can now, therefore, obtain certain advantages in the construction of through lines, but only if we are willing to give the attention necessary to secure them. It is false to imagine that we can obtain the benefits of the present knowledge without taking the necessary steps to secure them. The benefits are:

Great increase in the distance over which communication can be given.

Great increase in the number of channels of communication, telephone and telegraph, which can be provided by one pair of wires.

Great increase in the number of circuits which can be placed in cable, numbers such that it would be impossible to find space for them if all circuits were to be open wires.

Greatly reduced annual cost of circuits and improvement in quality of speech.

Increased security of service by reason of circuits being in cable.

Increased speed of service by reason of greater number of circuits.

The principal points to which attention must be given to secure the above advantages are:

Definite decision as to the work each line is to do; that is, planning in advance.

Definite standards of performance to be required of the complete line.

Unity of treatment of all transmission

matters affecting the line over its full length.

Unity of treatment of all transmission matters affected by the connecting of the line to other lines, whether trunks or subscribers' lines.

Unity of maintenance control over complete length of the line.

Unity of control over repeater gains over the complete length of the line.

Unity of operating control over the whole length of the line.

Education of all sections of the telephone staff in transmission, maintenance and operating practices.

Without this education among all detail members of the staff, it is impossible to obtain the benefits now available. It is not sufficient for a few engineers in any administration to be familiar with these matters; they must be made part of the general knowledge of all, and this is particularly true of education in matters affecting transmission which must by some means or other, in the varying degree required, be made to permeate all classes of the staff who have to do with the transmission plant.

The telephone service has certain special features, in that:

(1). The unskilled public is an actual participant in a call, the matter is not merely handed over to a skilled operator although the skilled operator also participates.

(2). It is essentially a through service, i. e., the whole circuit embracing the calling and the called persons' instruments and the complete line connecting them are simultaneously in use for each call. Therefore, all parts of the circuit must be harmonious, although these parts may belong to and be operated by different owners.

(3). The operators at the various stages along the line have to cooperate with each other and differences in the operators' technique will decrease efficiency.

(4). It is a world service, for it is impossible to set any limits to the service which must extend as the degree of technical knowledge permits.

Frequently in industry one cannot obtain an absolute standard and recourse must be made to relative comparisons. It is so in telephony, and as I assume I may take it for granted, at any rate by those who have studied the matter, that the telephone systems of the United States are in advance of those operating in Europe, it is worth while to see wherein lie the differences (altogether apart from ownership) and particularly the differences in organization, and to obtain some idea of the telephone system in the United States, which now has nearly two-thirds of the telephones throughout the whole world.

In that country there are at present over 10,000 companies owning and operating over 14,000,000 telephone stations; that total number divides into two broad classes—those having some kind of connection with the Bell system and those which have not. Again, the first class divides into those known as Bell-owned, and others as

Bell-connecting with an Independent ownership.

We may tabulate the telephone statistics of the United States thus:

	July 31, 1922		
	No. of Companies	No. of Stations	Per Cent.
Bell-owned companies	26	9,223,770	65.0
Bell connecting companies (Independent ownership)	9,289	4,520,725	31.8
Total Bell system	9,315	13,744,495	96.8
Non-Bell-connecting companies.	879	452,597	3.2
Total	10,194	14,197,092	100.0

In his presidential address in 1905 Sir John Gavey referred to the growth of the Bell system as "absolutely startling." He said there had been an increase of 1,450,000 stations in seven years—an average of 207,000 per year. But since then the increase in the Bell-owned companies has been an average of 410,000 per annum, or twice the number which startled Gavey.

Taking the population of the United States at 109,000,000 it will be seen that there is now one telephone station to 7.7 persons, while in the year 1900 there was only one telephone station to 56 persons. Since the beginning of the 20th century while the population has increased by 45 per cent and the volume of general business (judged by the best data available) has increased by 100 per cent, in the same time the number of telephone stations has increased by over 900 per cent.

Again, if we judge progress by capital expenditure, we find that the investment of the Bell-owned companies which was \$180,700,000 in 1900 had increased by 267 per cent by 1911 and by 755 per cent by 1921, and then stood at a total of \$1,543,865,545—say £346,000,000.

As a method of trying to give an impression of the telephone service in the United States, it may be said that from his telephone in that country a subscriber can reach out over more than 4,000 miles and can call practically any of the 13,700,000 stations referred to situated in 70,000 cities, towns and villages, and the statistics show that the telephone communications in that country outnumber the postal communications by 50 per cent. It is agreed by those best qualified to judge that American industry on its present scale could not function without the telephone service as they know it there.

From these figures it will be seen that while there are many telephones which are not part of the Bell system, yet the great majority (97 per cent) are part of that organization of companies, and further it may be stated that with a few exceptions those companies which are not part of that system are on the average a collection of small concerns. In what follows

and generally in connection with the expression "telephony in the United States," the Bell system is referred to.

There are five outstanding features in the organization of the Bell system, and I think it may be said that these features are essential in any effective organization for telephony on any extended scale. The five features are:

1. Local operating organizations thus making for decentralization. These organizations, or companies, possess large measures of authority.

2. A central administrative direction and control over the local organizations.

3. A long distance organization constructing and operating the long lines by which the local organizations effect inter-communication.

4. Control of the manufacturing organization.

5. A central organization for scientific research, development of apparatus and technique of construction, maintenance and operation.

In Europe, generally speaking, and considering the nations separately, we find:

1. An organization having a central authority with no separate local authorities.

2. A series of administrative areas charged with the duty of maintaining the service under the central authority.

3. No one department charged with the duty of through business.

4. No control over manufacture.

When we consider Europe as a whole we find:

1. A number, about 40, self-contained local operating organizations each, in the majority of cases, conducting a local business and a through business within its area; also that part of the international through business which lies within its own borders.

2. No organization controlling or coordinating the various local operating organizations which yet have to function as a whole.

3. No means of keeping the separate organizations in touch with each other, and no systematic means of adjusting differences in matters of daily practices.

4. No organization of any kind which handles and cares for the through business as a whole.

5. No common agreement as to manufacture.

6. No common research, standard practice or technique of construction, maintenance and operation.

At the moment we are not concerned with the effect of this loose coupling upon the local business of each country, but little consideration is needed to appreciate its harmful effects upon the through business between countries, whether the length of line over which such business is conducted is great or small.

There are in Europe large centers of population within such distances of and in such commercial relationships to each

other that traffic would be forthcoming did adequate facilities but exist. There is no engineering difficulty so far as distance is concerned, in constructing and operating lines at commercial rates to give satisfactory speech from any part to any other part of Europe, but at present the through business is meager in quantity, slow and inefficient.

Under the present conditions, practically the only way in which the nations can cooperate in these matters is that when new lines are to be constructed between countries, there is cooperation and consultation between the representatives of the countries concerned and occasionally there are international conferences. But these do not, and cannot, produce a unified system; all that they can do at the best is spasmodically and partially to compromise on a few outstanding differences in practice, which between whiles grow up unchecked, and to leave unsettled such large questions as cannot be agreed.

The settling of arrangements, and particularly the financial arrangements, for the construction of additional direct lines between contiguous countries constitutes an operation difficult enough, but when it is sought to construct lines between non-contiguous countries, in which cases they have to traverse countries which are not interested in the traffic desired by the terminal countries, the difficulties in the way of getting anything done are great indeed, and much praise is due to the energy and enterprise of those men who have succeeded in achieving the service now in operation.

Yet there is every indication that, given facilities, there is traffic waiting to be handled between the cities of Europe as between the cities of the United States.

The opinion of some of those well qualified to judge is that the differences in language and customs do not, as they would at first sight appear to do, constitute a serious bar to international communication by telephony, and there are weighty reasons such as the present necessity of improving the relationship between nations, in addition to the normal commercial advantages which render it safe to forecast sufficient through business to warrant the setting up of a competent organization with the plant necessary to handle the traffic. But there is little likelihood of speedy and economical construction and operation of such lines as are necessary between, say, London and Stockholm, involving three or perhaps five intermediate non-interested countries; London and Christiania, involving perhaps six intermediate countries; or London and Petrograd, involving eight intermediate countries, and yet there is nothing fanciful in the idea of quick communication between such places.

The direct distance between Brussels and Athens, or Paris and Constantinople, is 1,300 miles—about the same distance

as between New York and Omaha, or between Chicago and Salt Lake City, between which places calls can, at any time, be made. The direct distance over land between London and Bagdad is about the same as between New York and San Francisco, over which line conversations take place daily, while the direct distance over land between London and Delhi is about the direct distance from Key West in Florida to New York, thence to San Francisco and thence to Los Angeles, in California, over which distance calls can be made regularly.

As a further encouragement, it may be said that the New York-Chicago cable now in course of construction, will have a gross transmission equivalent so great

annum, while such places as Boston, Cleveland and Pittsburgh each originate about 500,000 long distance calls per annum.

Fig. 13 is a map of Europe on which are shown a few of the long distance circuits in the United States which are in regular daily commercial operation. It would have been easy to show a great many more, but this is not necessary in order to bring home the simple fact that there exists in that country a long distance telephone service such as is not known in Europe. And yet there is no reason whatever why the service in Europe should not be extended in a somewhat similar fashion.

From the fact of its denser population and less distant cities, Europe enjoys ad-

must at its boundaries hand over the conduct of its business, in part, to someone else.

The through business must be handled as a complete unit if it is to be efficiently done; it cannot be done by independent units. The examples of recent improvements which I have referred to have been selected mainly because they illustrate the unity of treatment required by long lines.

The correct course, therefore, appears obvious, viz., to depute a body to do for all European nations that which no one nation can do for itself; this is not a new departure—it is already practiced by banks and railways in their clearing houses. No bank would now tolerate for a moment any attempt to effect for itself clearance of the various cheques presented to it daily, and, consequently, we find that the banks themselves have established their clearing house, which performs specialized functions for all banks, and thus expedites the work of all.

The corporate spheres assigned to any telephone authority may be determined by political, financial, legal or other considerations, and by reason of these spheres and considerations, the authority is entitled to receive revenues and is obligated to pay the taxes and bills arising out of or payable in respect of those spheres.

But these corporate spheres have, in reality, nothing whatever to do with the operating areas, which ought to be fixed solely with regard to obtaining the most efficient operating possible, and without any regard whatever to the corporate spheres. If the two differ, it is quite feasible for the operating authority to account as between any two or more corporate spheres without sacrificing any operating efficiency.

Once the fact has been grasped that there is no reason whatever for the corporate spheres of influence and the operating areas to be identical, and that each requires quite separate consideration for its determination, there will be no real difficulty in arranging operating areas for efficiency and apart from corporate spheres.

With sectional, non-unified control over the various portions of the through business, it is not possible to design, construct and operate through lines of communication in a manner capable of meeting the needs of the public. It has already been shown in what manner conditions in one part of the plant may react on conditions at another part, and how these parts may be distant from each other, so that in fact what is done in one country may render ineffective the efforts made in another country.

It ought not to be necessary to labor this point, but perhaps an analogy may help. The through business is as much a unity as is military operation. We have seen the advantage gained by unity of command in warfare and no one would



Fig. 13. Toll Lines of the United States Superposed Upon the Map of Europe for Purposes of Comparison.

that if a 435-lb. (4.2 mm.) open-wire circuit were constructed to that equivalent it might be 10,000 miles long, enough to connect Paris to the telephone system at Seattle in the northwestern part of the United States and leave enough to spare to take care of the cable across the Bering Strait. Of course, this illustration is an uncommercial one, but it serves to show that land distance is now no difficulty to telephony.

If we consider such business in the United States, we find that there are originated at New York over 4,000,000 long distance calls per annum, and it will be remembered that in the United States many calls are made over lines of considerable length belonging to the local companies, and do not go over the long distance lines.

Similarly we find that Chicago and Philadelphia each originate a number approaching 2,000,000 long distance calls per

advantages over the United States, and these should make for much greater development of the through business than she now has.

It is not putting the matter too strongly to say, that through telephony in Europe under the present conditions can never be worth the name of a service, and that the alternatives are either forever to be condemned to an ineffective, inefficient state of affairs, or to find some plan, other than the present one, for dealing with the through business.

Analyzing the conditions of through telephony in Europe as a whole, it is obvious that each nation, sovereign though it may be within its territory, is really, from the telephone point of view, merely conducting a local business over an area which is not very great. It is also clear that no one local authority can operate its own through business outside its own boundaries; although vitally interested, it

now advocate independent multi-commands such as were seen in 1914 and the early years of the war. If it were possible for the nations to agree on such unity of control for the purposes of war, it ought not to be beyond their powers to agree to a unity of control for the efficient working of the through telephone business.

It is not enough for the separate organizations to attempt to agree to a code of rules to which each shall subscribe—such an attempt would only be to court failure. The business is varying, flexible and very much a living thing; it demands intelligent and prompt treatment of its many variations; it requires control from central points carrying with it the power to instruct persons at great distance in the routines and duties they are to perform and such control can only be effected by a living authority always on duty.

Besides the engineering considerations which have been dealt with, there are weighty reasons connected with the matters of circuit layout, business policy, rates and operating, about which much might be said, showing the impossibility of giving an adequate through service without unity of control, but this is not the place to deal with them.

It is easier to analyze the conditions and to state the fundamental requirements for efficiency, than it is to propound a scheme for an effective organization. Yet some effort at a solution must be attempted even though it is unlikely that the first attempt will be successful. Any solution must find some method of satisfying the financial needs of the business as well as the technical requirements.

At present it is difficult enough for the various administrations to obtain from their governments the money required for the construction of such plant as is demanded by their own traffic, let alone for the fostering of traffic by the construction of lines not yet called for by public demand, and for the construction of lines between non-contiguous countries, which lines although demanded, are not required by the natives of the intermediate countries through which they pass. In fact, in spite of the reality that governments can borrow money at a cheaper rate than can public companies, it remains true that governments do find difficulty in raising the capital necessary for the legitimate demands of telephone development.

Suggestions for Operation.

The alternative suggestions which present themselves are:

1. To operate all the through business both within and between the various countries in Europe by a single long lines company working under licenses from the various governments, taking the calls from the local originating organizations, and being entirely responsible for them until turned over to the local receiving organization.

Governments would put the long lines company into a proper legal position, and

make it plain that the company had the goodwill and support of the country, and they would co-operate with the company in the handling of the traffic. It might also be found desirable to turn over to the company, either on purchase or rental, certain lines and equipment already in existence for handling through traffic.

The advantages of this course would be that unified control could be achieved at once. The service would be on an ordinary commercial basis and if the fees were correct, sufficient money could be raised to construct all lines and equipment called for.

2. The second alternative is, for the various governments to form what would in effect be a private company or commission of which the governments only would be the stockholders to do the work described in the first alternative and from each subscribing government the commission would derive its authority in that country.

The commission being supplied by funds, on some agreed plan of participation by each government, would be the sole judge of the plant to be constructed and operated, within the scope of the monies put at its disposal, and it would assume the ordinary responsibilities of a board of directors of a public company, carrying out all the necessary functions and periodically reporting results to those who supply the capital. It might be that all plants constructed in any country should belong to that country, and that the capital to be provided by that country should be its proper share depending upon the plant within its own borders.

In addition, the commission could hire facilities, where economical, from the local administrations in cases where it would not be economical for the commission to construct its own lines. Such lines could be hired on a permanent or temporary basis. In the first case, they would be paid for at a proper rate per year; in the second case, the local authority's lines might be made use of and the compensation to be paid by the through business commission might be a proper portion of the fee paid by the public.

This is the merest sketch of a scheme, but if it should find acceptance I am ready to put forward for consideration by the proper authorities a plan which I believe will be found to provide a basis on which the countries can be represented on equal terms and by which no unfair burden is placed on any country and I believe such a plan would result in better service and be self supporting.

3. The third alternative is frankly one of a temporizing nature, being intended only to cover a study of this difficult problem. It is that the various operating telephone authorities should form themselves into an association for the purpose of studying this and other matters. Such association might come about gradually if

necessary, and regular meetings might be fixed for the purpose of studying a pre-arranged program, which apart from the larger question as to how the through business should be operated, might include the fixing of standards of measurement, performance and methods to be recommended to all and to be enforceable on those who subscribe to the association.

If I may venture to make a definite suggestion, it is that the telephone authorities of Europe, including the United Kingdom, as telephone operating authorities rather than as government departments, should hold an early conference of all the telephone authorities—companies and municipalities as well as government departments—to study in detail this problem and endeavor to find a solution. I am convinced that unity of control over the through traffic must obtain in the end, but whether the through traffic is handled by one organization or by many, there are matters which urgently require agreement for the improvement of telephony as an efficient agent for service in Europe.

Almost entirely, what has been said is limited to through communication by telephony. This is not because there is nothing to be said regarding local service, but rather because it seemed better to try and focus attention on what at the moment is the greatest telephone problem in Europe, viz., How shall the through business be organized?

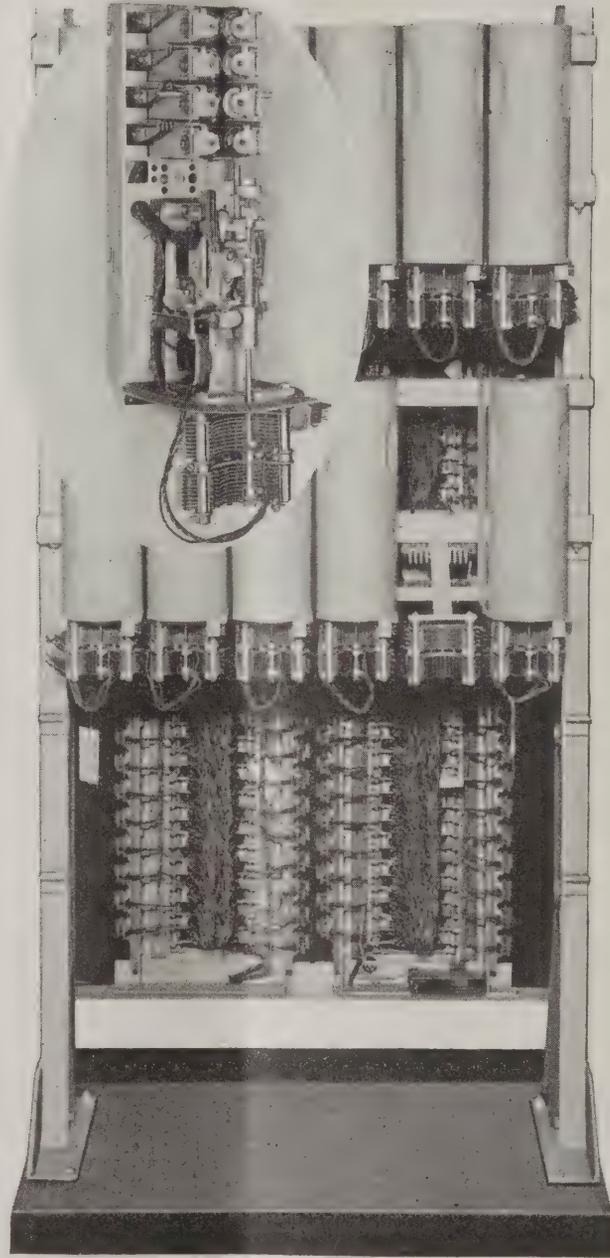
Fortunately, the solution of this problem has never yet been seriously undertaken, and the whole matter being quite open there are no standing decisions to be reconsidered. The engineering considerations make it plain that the communication which is possible both technically and commercially cannot be established under the present disconnected organization.

As with a progressing organism, the time has come when the organization must, if it is to remain efficient, change from unicellular to multicellular and the various cells must take up special functions rather than all functions; in that way only can the whole organization make progress.

Increasing Good Will Among Nations.

One way of increasing good-will among nations—especially necessary to be encouraged by all means possible at the present time—is by greater and ever greater inter-communication by all methods.

In the telephone we have the most perfect means of communication of which we know, immediate and perfect human speech with all its tones and inflections and the ability by interchange of conversation to remove misunderstandings. If only we will use it, not alone will it benefit the industry of the nation, but we shall be making a definite step towards reducing the international jealousies and fears and increasing the goodwill without which there cannot be peace on earth.



Modern "Cord Circuits"

The "Connector Switch" is the "cord circuit" of the Strowger Automatic switchboard. The ten connectors shown on the opposite page bear the same relation to the 100 line unit on which they are mounted, as do the cords, keys, plugs and relays to a manual "position"—and perform all of the functions of the operator besides.

But being entirely automatic they perform the work of testing, connecting, supervising and releasing in a much more rapid, accurate and efficient way. They do not draw salaries, go on strikes, or slow up or make mistakes during busy periods. They are uniformly and continuously quick and reliable.

You can give the most modern, dependable service at a lower cost with Strowger Automatic than with manual. Let us show you how and why. You need incur no obligation.

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What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

On the evening of January 1, the Kansas City Association of Telephone Employes, gave a New Year's "good fellowship" dance in Convention Hall.

One of the features of this entertainment was the use of a public address set (loud speaker) loaned by the Southwestern Bell Telephone Co., for amplifying the speaking, singing and dance music. The use of this set was very successful.

Ordinarily Convention Hall requires a large orchestra to furnish music for dancing, but with the loud speaker a small orchestra was used in one end of the hall, and the music amplified to such an

new song "Dream Dawn" dedicated to Mrs. Raymond Havens, was sung for the first time in public at this entertainment. "Annie Laurie" also was sung by Mr. and Mrs. Havens.

Mr. Havens is the president of the International Rotary Club and the association felt much honored by having him assist with the program for the evening.

Mayor Cromwell in his address showed that he appreciates the telephone's services and realizes the important relation of telephone employes to a city's progress, for he said among other things:

"Women and men of the telephone company: When Mr. Ritterhoff came to me and asked me to speak to you on this

address sets, people from 10 to 15 miles away are able to hear without the aid of receivers or other appliances of any kind, and as though they were present in this audience.

It looks to me as if this opens up another range of possibilities, fairly comparable with the wonders of radio. Mayors of the future, in making their campaigns, will not have to run around here and there to present the merits of their campaigns, but will only have to announce through the newspapers that at 8:00 o'clock they intend to talk—and everybody in town can stick their heads out of the window and listen.

Seriously speaking, the telephone com-



A View of the "Goodfellowship" Dance of the Kansas City Association of Telephone Employes.

extent that the dancers were unable to distinguish any difference in the volume in the farthest corners of the hall.

The amplifiers were also placed on the outside of the building and the speaking, singing and music could be heard for several blocks. Large crowds congregated at the various street intersections and listened to the program. The public was invited to the hall to listen to the demonstration of the loud speaker, no admission being charged; those who desired to dance were charged 55 cents per couple.

The following was the program of the evening:

8:30 to 9:00 p. m. Short introductory remarks by J. G. Crane, vice-president and general manager of the Kansas City Telephone Co.

Short explanatory talk on the loud speaker, by C. J. Larsen, building and equipment engineer, Kansas City Telephone Co.

Address—By Mayor Frank Cromwell.
Song Numbers—Rendered by Mr. and Mrs. Raymond Havens, accompanied by Powell Weaver, organist of the Grand Ave. Methodist Church. Mr. Weaver's

festive occasion, I told him I would be tickled to death to do so, for I have always thought of you telephone operators, and you linemen, and the rest of you telephone people, as among the workers of the greatest importance in Kansas City.

What would we do down at the city hall if this city did not have telephones taken care of by faithful telephone operators and linemen. It would take a string of messenger boys as long as from here to the Union Station to deliver the messages which are handled out of my office each morning—and then the work would not be done as quickly or as satisfactorily.

Did you ever stop to think about how all of the departments of the city depend upon good telephone service? Pretty nearly all of the fire alarms have to come through the boards handled by your girls, and all of the calls for police also come through the boards. These are just some of the reasons why I am glad to talk to you tonight through this loud speaker. I am told that under favorable conditions by speaking through one of the 'public

company should be heartily commended for the work it has done in advancing the electrical arts, and in making this inter-communication between individuals far and near possible.

Any contrivance or means which causes people to get together and discuss matters, thereby helping them to understand each other better, results in an exchange of intelligence that brings them closer to each other. When people get closer to each other, they understand each other better—and as they understand each other better, their difficulties fade away.

By the aid of the telephone, the radio, and the telegraph, distance has been annihilated, and the people of the earth are getting to understand each other as they never understood before. Probably this is the reason so many of us believe that the old world is better today than it has ever been.

Mr. Crane tells me that it is the Telephone Employes' Association that has put on this splendid entertainment and dance here tonight. Let me congratulate you on the fine success you have made. This is just another evidence of the fact that

associations like this are worth while; they too, are helping to bring people together, and helping them to understand each other."

At this stage of the program, W. S. Vivian, the congenial, smiling, "glad to meet you," telephone man from Chicago, gave a most interesting talk on "The Employes' Relations to the Public." Mr. Vivian is head of the department of public relations of the Automatic Electric Co.

During the late evening the Night-Hawk program of the Coon-Sanders Orchestra in the Grill Room of the Hotel Muehlebach as broadcast by the Kansas City Star, was picked up and sent out through the loud speakers. The music came through in an excellent manner.

The Home Telephone & Telegraph Co., Fort Wayne, Ind., makes use of its monthly statements to subscribers as a means of carrying to them any little message that it may have to convey.

Of course, the company tries to make these messages kindly and attractive and always something different. With the January bills this greeting was sent:

Season's Greetings.

At this beautiful season may we wish you an abundance of health, happiness and prosperity throughout the New Year.

May we take this occasion also to thank you for your past patronage.

May we assure you that we truly appreciate our responsibilities as a public servant and shall strive throughout the New Year to continue to merit your confidence by a sincere endeavor to measure up quite fully to those responsibilities. THE HOME TELEPHONE & TELEGRAPH CO. Frank E. Bohn, Secretary and General Manager.

Inserts are not sent with the bills every month for the company's officials have found that if they are sent occasionally they attract more attention and are more effective than when every statement is accompanied by an insert.

The Monmouth Telephone Co., Monmouth, Ill., of which Fred A. Norris is manager, recently conducted a series of tests of the service given by the operators.

The first test was for the average time required to answer all classes of calls, and a complete record for 1,000 calls was kept. Of this number, 126 were rural calls; 82 long distance; 86 information, and 706 were local calls.

The average time required to complete the calls coming in for rural was 41/10 seconds; for long distance 4¾ seconds; for information 29/10 seconds; and for local 2½ seconds. All of these were considerably less than the time allowed each operator to complete the connection.

During these 1,000 calls the shortest

time in answering was one-half second, while the longest was 17 seconds.

A wrong number test was the next made and revealed that during the eleven days the record was kept, there were 265 wrong number calls handled by the operators. These were traced down, and it was found that 45 of these were the operators' fault, while 220 were the fault of the subscribers in giving a transposition of numbers when calling.

A record of the number of calls handled on Saturday, December 23, was kept, and the totals were given out later. During the 24 hours a total of 21,769 calls were answered, the greatest load or peak coming between 9 and 10 a. m., when 2,047 calls were answered for an average of 341 1/6 calls per operator. The highest number of calls answered during any hour that day was 401, while the lowest was 306.

During the week, December 18 to 25, a total of 105,813 calls were handled by the operators. This is an average of 17,635.5 calls per day, or 2,204.5 calls per operator per day. On a nine-hour-a-day basis each operator handled 288 calls per hour.

Mr. Norris saw to it that the local newspapers were furnished with the data on these tests and given an explanation of how they were made and what the record of each operator handling 288 calls per hour means. For instance, one paper said in regard to the record:

"In order to do this, each operator must handle a little better than four calls per minute, which is a very good record. This pace could not be kept up by each operator for nine hours, as it would be too nerve-racking. The operators work steadily for about two hours and are then given a 15-minute rest. They then return and work until five hours have been put in altogether. Then they get four hours off and come back again and work four more hours. In this way the company maintains its record of efficiency."

A recent issue of the Pilot Light, the Kansas City Association of Telephone Employes' paper, contained an article written by Harry A. Miller, district traffic chief, of the Kansas City Telephone Co.

The article, entitled "The Invisible Employee," is a heart-to-heart talk to Mr. Business Man regarding the telephone operator and her work. As it has so many good things in it that other telephone managers might want to present to their own subscribers through their local newspapers or otherwise it is published in full here:

Mr. Business Man! Do you realize that included in the personnel of your organization is an employe, who, although you have never met her personally, is at your service hours after the rest of your force has split the whistle?

This employe answers your summons in less than ten seconds in 97 out of every 100 times you call her. And how impatient you sometimes get the other three times when her 15 seconds seem to you to be at least ten minutes! And how exasperated you are by her mistakes which appear to you to be an excuse for a lack of proper training or execution!

This person may be the most important cog in your business day, depending upon the nature of your work, and she performs her labors at the least expense to you of any one you have on your payroll.

I am referring in this article to the telephone operator, who, at your command, can connect you with any one of 100,000 people in a few seconds' notice.

Just visualize the part this girl plays in the daily business life of half of a million population, a city of 500,000. Could you imagine conducting your business without this young lady's assistance? With over a million calls handled each day by telephone operators, could you conceive how business would be paralyzed without this service?

Think of the thousands of trips downtown that are saved daily by the use of the telephone, and the immense volume of sales handled over telephone trunk lines.

Just what is your impression of the telephone operator, or have you ever given her a thought other than at a time when she gave you a wrong number?

The average telephone girl is about 20 years old, possessing at least a grammar school education, selected for the work after an investigation is made of her references, and providing she has passed the mental and physical requirements necessary to telephone work.

She is placed in a very well equipped school where the fundamental telephone work is taught, and is then sent to a central office where this training is continued under actual working conditions until she has proven her qualifications to answer calls on the switchboard.

During her apprenticeship her work is given special attention by a supervisor until she understands the work thoroughly. All operators are constantly under supervision but the new operators are given the greatest attention and assistance.

The student operator's hours are from 1 p. m. to 5 p. m. and from 6 p. m. to 10 p. m., with two 15-minute rest periods during the time she is on duty.

With the assignment of hours the student learns the first lesson of personal sacrifice she must make to follow the telephone profession. Think what this means to a young girl to give up six evenings a week to her work, at a time when the average girl is attending the theatre or dance several evenings a week!

As mentioned in a previous paragraph the telephone operator is under constant supervision. A supervisor is in charge of

RUT-MAKERS.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Recently, while I was riding on a local train, orders evidently were given the crew to pull the train in on a sidetrack. I have always wondered why sidetracks are always located in the most disagreeable and unsightly places. It seems to me that sidetracks should run along by the side of flowerbeds, streams, open country, or at least near some place where there is human habitation. Such is not the case; if it were, passengers could forget the long, tiresome waits and their hunger. But years of travel have broken me of looking for rosebeds along sidetracks.

So the other day, as I have mentioned, our train pulled in on a sidetrack. The breeze wafted an odor into the car which did not come from rosebeds. No, this odor came from hog pens.

However strange it may sound, I am glad of this one sidetrack experience, for I was in the act of conferring with Noah Webster for a definition of the word "rut." As my gaze traveled in the direction from which the odor came, I saw a rut-maker.

Webster defines ruts as furrows, grooves, streaks, cracks, incisions, slits. Now, I believe that if Noah could have been sidetracked near the pen of one of these rut-makers for 25 minutes, as I was, with no chance of escape, he would not have written that word-definition. Instead, he would have drawn a picture of a big, fat, satisfied hog rooting deeper into a rut which he had made for his big, fat carcass. Living in a rut—that was the ideal existence for Mr. Hog, I thought.

How many people there are today who, like Mr. Hog, are living in a rut! The positions they hold are simply containers for their avoirdupois. Mr. Hog eventually becomes of some value to humanity in a ham and bacon way; but these human rut-makers simply go from one hole into another when they die.

every nine operators. This young lady walks behind the operators, directing their work, giving them assistance, maintaining discipline, and paying special attention to a new operator who may be assigned to that division.

Possibly no other line of work exacts as strict discipline or exercises closer supervision over their employes than the operating department of a telephone company. This is necessitated by the nature of the work and the large number of employes in each office.

You have often read of gum-chewing, novel-reading telephone operators. A trip to a central office would convince you of the fallacy of such an impossible condition.

While on duty an operator must not have personal conversation with her neighbor operator or any subscriber. Her every action is covered by a set phrase, and the greatest offense she can commit is to be discourteous to a subscriber even by her tone of voice.

An observer listens in on every operator at least once a week, and the many items which cover the correct handling of a call are noted and the operator is graded on her work. These tests are kept much the same as school work and the girl is complimented or corrected according to the class of service she is giving her subscribers.

One of the big essentials of telephone

service is teamwork—that is, girls helping one another when the traffic is congested. We have no traffic cops to hold back an abnormal amount of simultaneous calls but try to overcome delays by perfect teamwork by the operators.

Your telephone operator generally works about two years before she is assigned day hours, depending entirely on the losses among the day force. In addition, she must work every other Sunday, for which she gets a day off during the week. She must often work on Christmas and other holidays and in all cases be punctual and regular in attendance.

Needless to say a great many girls do not continue with the work long enough to get day hours, as they feel the personal sacrifice is too great, which accounts for a higher turnover in force than is found in the average business. Nevertheless, your telephone operator likes her profession. There is a fascination to telephone work that holds most of them and makes them forget personal sacrifices.

Every effort is made to make the work as pleasant as possible. Restrooms are provided in all offices, and the chief recreation is dancing which the girls thoroughly enjoy after sitting at the switchboard for two hours at a time.

Your telephone girl is paid a salary on which she can be self-sustaining, and her

health and welfare are looked after by people employed for that work. Your operator has her trials, handling calls for all sorts of people, but she enjoys her work and has its interests at heart.

She is human and in the complications of a big telephone system sometimes makes mistakes. But kindness and consideration on your part, such as you exercise with your other employees, are more than appreciated by your telephone operator.

Further Announcements of Association Convention Dates.

Recent announcements of state associations as to annual convention dates add the following to the list:

Ohio Independent Telephone Association, Southern Hotel, Columbus, February 20, 21 and 22.

Wisconsin State Telephone Association, Wisconsin Hotel, Milwaukee, March 21, 22 and 23.

Iowa Independent Telephone Association, Fort Des Moines Hotel, Des Moines April 24, 25 and 26.

Statistics as to Subscriber Stations of Lincoln (Neb.) Company.

Commercial Superintendent W. E. Bell of the Lincoln (Neb.) Telephone & Telegraph Co., reports a total of telephone stations, excluding service stations, at the end of 1922, of 67,713, as compared with 66,198, the first of the year, a gain of 1515. During the month of December the gains and losses offset each other exactly.

The company now operates 121 exchanges. Of this number 66 showed increases ranging from one to 913 stations for the year, five showed neither gain nor loss, and 50 showed losses ranging from one to 49. The larger losses were at exchanges purchased in recent months where it had been necessary, after reconstruction, to increase rates or make service changes.

The largest exchange is in Lincoln, with 17,325 stations, and the smallest at Strang, with 27, where the exchange was recently discontinued and service given over party lines.

Bell to Spend \$6,000,000 in New Orleans in Next Five Years.

The Cumberland Telephone & Telegraph Co. will install new telephones in New Orleans, La., at the rate of 5,000 a year for the next five years, according to a statement of the new district manager, John C. Hay. This will give the city more than 65,000 stations.

The company expects to be particularly active in New Orleans during the next five years and the present plans call for an expenditure of approximately \$6,000,000 for enlarging and extending the system in that city. There are now seven exchanges in New Orleans.

Financial Statements and Reports

News about Companies as Shown in Reports Made at Their Annual Meetings—Financial Conditions Reflected in Balance Sheets—LaCrosse, Wis., Gives Wide Publicity to Its Comparative Balance Sheet for Past Two Years

Company Compares Figures for 1921 and 1922.

W. F. Goodrich, secretary-treasurer of the La Crosse Telephone Co., La Crosse, Wis., used one-half of a page in the La Crosse Tribune and Leader Press to present to the public the company's annual

Howell, Mich., explained at the annual meeting recently that extraordinary repairs necessitated by the storms had been quite an expensive item for the company and had kept the men from making other needed repairs.

The company's repair bill for the year

Galesburg Union Telephone Co. of Galesburg, Ill., show that the company has had a prosperous year, that January 1 of this year 6,639 telephones were in use in Galesburg.

It is reported that the company last year paid in taxes \$13,000 as against \$1,300 in taxes paid in 1914. Besides this the company collected for the government, \$7,000 in war taxes on toll messages.

The company has but recently finished putting its wires and cables on East Main street underground and expects to put its West Main street service underground during the present year. By doing the underground service before new pavements are laid the company is able to do this work much cheaper than afterwards.

The board of directors elected by the stockholders is composed of: N. M. Burgland, G. B. Churchill, D. B. Edwards, O. M. Burgess, C. E. Marsh, H. A. Parsons, W. E. Phillips, W. A. Robbins, Robert Robson and L. Weinberg.

The directors elected these officers for the ensuing year:

President, G. B. Churchill; vice-president, L. Weinberg; secretary and manager, Ralph Roadstrum; treasurer, W. E. Phillips; assistant treasurer, W. A. Robbins; and general manager, F. C. Woods.

F. P. HIXON, President.		G. H. GORDON, Vice President.		W. F. GOODRICH, Secretary and Treasurer.	
ANNUAL STATEMENT OF LA CROSSE TELEPHONE CO.					
Comparative Balance Sheet as of December 31, 1922, and of December 31, 1921, with comparative statement of income and expenses for the twelve months ended December 31, 1922, under accounts prescribed by the Interstate Commerce Commission.					
ASSETS		Dec. 31, 1922	Dec. 31, 1921	Year 1922	Year 1921
Fixed Capital Installed (Plant)	\$492,234.91	467,418.85	25,816.06	\$178,649.46	\$179,831.42
Less Reserve for Accrued Depreciation	281,862.52	25,978.16		18,308.66	19,263.37
Net Fixed Capital Installed	210,372.39	441,440.69		160,340.80	160,568.05
Construction Work in Progress	3,785.00	5,792.19		4,420.62	6,007.94
Investment Securities (Other Tel. Stocks)					
WORKING ASSETS:					
Cash	\$ 8,736.58	\$15,975.07		\$ 44,536.28	\$ 40,891.49
Employers' Working Funds	198.00	125.00		47,366.07	50,488.87
Due from Subscribers, Exchange	18	4,008.73		14,896.30	16,453.27
Due from Subscribers, Toll System	328.43	387.23		15,207.84	17,019.52
Misc. Accounts Receivable	2,842.86	13,186.62			
Materials and Supplies	31,704.18	12,832.13	46,465.29		
DEFERRED DEBIT ITEMS:					
Prepaid Insurance	\$ 819.68	\$ 869.16		\$ 78,072.85	\$ 71,149.68
Prepaid Interest Expense	1,331.94	1,192.29	2,563.59	1,564.48	963.25
Other Prepaids	816.89	7,771.53	5,643.59	3,811.72	3,860.00
Total Assets	\$499,435.53	\$431,231.07		\$201,770.14	\$196,120.73
LIABILITIES					
Common Stock Issued	\$ 50,000.00	\$ 50,000.00			
Preferred Stock Issued	20,000.00	20,000.00			
WORKING LIABILITIES:					
Notes and Bills Payable	12,500.00	2,500.00		\$ 250.00	\$ 200.00
Taxes, Interest and Miscellaneous	5,723.86	8,159.16		764.42	791.88
DEFERRED CREDIT ITEMS:					
Employee Compensation Reserve	7,017.92	2,642.11		\$ 250.00	\$ 200.00
Corporate Surplus Unappropriated	20,299.19	15,146.81		3,920.01	3,920.01
Other Surplus Reserved	10,299.54	10,299.54		79,941.21	79,941.21
Total Liabilities	\$499,435.53	\$431,231.07		\$ 66,753.68	\$ 61,323.13
INVENT OF EXCHANGE SERVICE					
Number of Telephones in Service December 31, 1921	5,225				
Gain for Twelve Months	122				
Number of Telephones in Service December 31, 1922	5,347				
Number of Telephones Owned by Subscribers for which No Toll Charge is made for connections	21				
Total Number of Telephones Connected to Exchange System December 31, 1922	5,368				
DIRECTORS					
F. P. HIXON, President					
G. H. GORDON, Vice President					
W. F. GOODRICH, Secretary and Treasurer					
J. M. STORKERSON, Superintendent					
W. F. GOODRICH, Manager					

Financial Statement of La Crosse, Wis., Company, Which Was Published in Half-page Newspaper Space.

statement of its affairs as of December 31, 1922, and a comparison of figures for 1921 and 1922.

The statement—which is here reproduced—showed the company to be in good shape and improving at a steady pace. The total operating revenues for 1922 were about \$6,000 greater than for 1921, while the expenses were about \$1,000 less.

The company had 8,255 telephones in service at the end of 1921, and 8,677 at the end of 1922—a gain of 422.

The management—comprising F. P. Hixon, president; G. H. Gordon, vice-president; Mr. Goodrich, and J. M. Storkerson, superintendent—is quite pleased with the growth of the company, which has been keeping in line with that of the city. The program for this year contemplates no let-up, but rather has been planned with a view to making greater progress than ever before.

Sleet Storms of Early Last Year Reflect in Annual Report.

The sleet storms of last February and March in various sections of the country are now reflecting in the annual reports.

President Fred Kuhn, of the Livingston County Mutual Telephone Co., of

was something in excess of \$7,000. However, the report showed a balance on hand January 1 of about \$4,000. The statement shows the following condition:

Revenues:	
Rentals collected	\$26,332
Commission on tolls	1,764
Miscellaneous	880
	\$28,976
Balance on hand Jan. 1, 1922.	4,431
Total	\$33,407
Expenses:	
Tax reserves for 1922	\$ 1,200
Depreciation reserve for 1922	1,140
Station equipment	115
General equipment	409
Plant and equipment purchased	644
Dividend paid for 1922	1,257
Repair work of wire plant	7,366
Repair of equipment	300
Other maintenance	369
Operators' salaries	7,974
Other traffic expense	728
General office salaries	3,025
Other general expense	5,093
Balance on hand Jan. 1, 1923.	3,787
Total	\$33,407

Company's Taxes Increased Ten Fold Since 1914.

Reports presented at the annual stockholders' and directors' meetings of the

Nebraska Company Reports Satisfactory Progress During 1922.

The report read at the annual meeting of the stockholders of the Blair Telephone Co., Blair, Neb., showed that the company has earned 7 per cent on its capitalization of \$48,000, although it has all been put back into the business.

Seventy miles of new wire have been strung the past year and 60 miles of the company's lines have been made metallic circuits. There has been a slight increase in the number of telephones in use during the year, the number now being 1,194. The indebtedness of the company has been reduced to around \$500.

A very satisfactory reduction was effected in the cost of operating the plant during the year.

1922 Was a Good Year for the Baldwin, Wis., Company.

With gross earnings of \$17,732, and expenditures of \$15,154, the Baldwin Telephone Exchange, of Baldwin, Wis., had a profit of \$2,578 for last year.

The company carries its plant and equipment on its books at a value of \$47,685; station equipment at \$3,982; and exchange

lines at \$7,885. It has a capital stock of \$48,575, and a depreciation reserve of about \$14,500. These, and the other figures on the balance sheet, indicate that the Baldwin company is prepared for expansion to meet the growth of the city and vicinity.

The balance sheet as of January 1 follows:

Plant and equipment...	\$47,685	
Securities	300	
Land and buildings...	325	
Central office equipment	106	
Station equipment	3,982	
Exchange lines	7,885	
General equipment	780	
Undistributed construction expenditures	75	
Cash	3,320	
Due from subscribers and agents	3,454	
Material and supplies..	1,019	
Capital stock	48,575	
Depreciation reserve ..	14,486	
Surplus	1,498	
Accounts payable	4,372	
	\$68,931	\$68,931
Earnings:		
Exchange revenue	\$16,672	
Toll revenue	974	
Miscellaneous Revenue	86	
		\$17,732
Expenditures:		
Repair of wire plant...\$	879	
Repair of equipment...	787	
Station removals and changes	9	
Depreciation of plant and equipment	5,000	
Other maintenance expenses	22	
Operators' wages	4,095	
Other traffic expenses..	513	
General office expenses.	1,314	
Other general expenses.	1,585	
Taxes	659	
Miscellaneous charges to income	291	
	\$15,154	
Profits	2,578	
		\$17,732

Some New Ideas Introduced at Nebraska District Meeting.

The third congressional district of the Nebraska Telephone Association held a meeting in Wisner recently. J. W. Richmond, district vice-president of the association and manager of the Cuming County Independent Telephone Co., acted as host.

Several good talks were made during the course of the meeting—one by Mr. Richmond, in which he outlined what has been accomplished in the district, what is yet to be done, and how the companies can best cooperate in carrying on the work.

The employees of the Cuming County company gave a switchboard demonstration and received some nice compliments from the delegates for the efficiency which they displayed.

The social side was taken care of in the evening, when there was an entertainment

A Pioneer Subscriber.

Under date of January 6, Carl Dyvig, owner and manager of the Inwood (Iowa) Telephone Co., writes:

"Enclosed please find my check to pay for TELEPHONY. I do not want to be without your paper now as 1923 will be my 20th anniversary in the telephone game and I have been a subscriber ever since I started in 1903.

"Much valuable information and help we have had from TELEPHONY, which has solved many a problem for us during these years. I well remember also Mr. Kelsey (recently deceased) when he was answering technical questions and when he was financial editor.

Many changes have taken place during this time, but it is a great pleasure to look back when the Independent pioneers were struggling along against big odds. Many have passed away, and others have taken their places. There is a complete change of scenery in the 20 years I have been in the game.

Wishing you all a good New Year, I remain

Yours very truly,
Carl Dyvig."

given at one of the theaters, followed by an at home in Mr. Richmond's residence. To both of these affairs the general public of Wisner and Beemer were invited—and that proved a happy thought, for there was manifest an increase in the good feeling toward telephone folk and a better understanding of their problems.

The feature of the entertainment was a three-reel telephone picture and a Harold Lloyd comedy.

Texas Association "Keeps Tab" on State Legislature.

The legislative committee of the Texas Independent Telephone Association is right on the job watching for developments in the state legislature of importance to telephone men in Texas.

A bulletin was sent out January 15, telling the association members about the bills that have been introduced and asking that when the appeal is made for their assistance they lend their full support in fighting against discriminating laws.

They are asked to protest against a public utility bill that has been introduced and which is drawn in such a manner as to place all telephone and telegraph companies under the jurisdiction of the railroad commission.

"We do not understand," states the committee, "why the telephone and telegraph business is singled out from all other utilities, but this bill only covers these industries and leaves all other utilities out. If we are to have a utility law in this state, it ought to include all utilities and be broad enough to protect the rights of such in-

dustries as well as the rights of the public."

Minimum wage bills have been introduced both in the house and in the senate. They have for their purpose the creation of a minimum wage commission and the establishing of a minimum wage for women and minors. The committee was unable to give much information on the proposed measure, but pointed out that disaster will come to many of the smaller Independent companies throughout the state if the minimum is placed too high.

A bill has also been introduced to amend the working men's compensation act. The committee points out that if this carries it will increase the maximum compensation to be paid under the law and this, in turn, will cause the insurance companies to raise the rates on liability insurance. "Any law of this kind," the bulletin states, "that tends to raise your insurance rates merely adds to the expense of doing business and cuts down your already insignificant profit."

It is expected that additional bills will be introduced—some that will tax intangible assets and one that will authorize the state to collect income tax.

The bulletin—which is signed by President R. B. Still and Secretary L. S. Gardner—closes with a reminder of the dates for the next annual convention, March 20-23, at the Adolphus Hotel in Dallas. It urges every Independent telephone manager and owner in Texas to make his plans now to attend the convention, which is going to be better than any the Texas association has ever held.

Want Central Office and Switchboard in Nebraska Towns.

A bill introduced in the Nebraska house provides "A telephone exchange central office and switchboard shall be maintained by one or more telephone companies in every incorporated city or village in the state." It does not, however, specify the procedure for compelling a company to build and equip a plant in any town which has none, or what company shall do so.

The real object of the bill is to prevent the Lincoln Telephone & Telegraph Co. from abandoning the exchange it operates at Endicott, Jefferson county. The exchange does not pay, but the citizens there have been trying to get the state railway commission to continue it in spite of that fact. The exchange was once locally-owned, and the Endicott people refuse to buy it back to save the exchange to the town. The company proposes to put the subscribers on party lines from adjoining towns.

The bill forbids the abandonment of any exchange or the removal of its central office unless consented to by 60 per cent of the patrons who have been served for six months or more in a petition to the railway commission and approved by that body.

Bell Patents Cited in Chicago Case

City Witnesses in Hearing to Adjust Chicago Rates of the Illinois Bell Telephone Co. Object to Continued Capitalization of Patent Costs—Make Comparison of Traffic Methods with Those in Vogue at LaCrosse, Wis.

Some new and interesting points are being developed by the city of Chicago in its efforts to secure a reduction of telephone rates charged by the Illinois Bell Telephone Co. The case is being heard by the Illinois Commerce Commission and the taking of testimony will be resumed on February 13. Since the proceedings opened, the city has been represented by Daniel A. Roberts, assistant corporation counsel, and the commission recently called as witnesses Henry Shafer and Wm. H. Crumb well known among Independent telephone men.

On January 23, Mr. Shafer, testified with regard to the patents owned by the A. T. & T. Co., the use of which by the Illinois Bell Telephone Co. had been testified to by representatives of the company as justification for a portion of the 4½ per cent payments by the Illinois Bell Telephone Co. to the A. T. & T.

Mr. Shafer introduced into the records the announced policy of the American Bell Telephone Co. and the A. T. & T. Co. in regard to their patents and licenses as expressed in their annual reports, and as to the patent cost account as shown in the annual balance sheets dating back to the organization of the American Bell Telephone Co., in 1880 to the present time. Quotations from the American Bell Telephone Co. reports to its stockholders showed in the year ending February, 1881, that "many applications are now being made for permanent licenses and we have begun to give such permanent contracts . . . in exchange for a substantial interest in the stock of the local companies. By pursuing this plan, the company will gradually acquire a large permanent interest in the telephone business throughout the country, so that you will not be dependent upon royalties for a revenue when the patents have expired."

The report for the year ending December, 1885, states that the license contracts are so shaped that the telephone companies throughout the country shall work together and be "held under such a general plan by the force of a government patent."

Numerous annual reports state that the electrical department as well as the patent division and other officers were devoting a great part of their time to matters pertaining to patent suits which witness contended were brought to gain and maintain a monopoly throughout the United States.

The annual reports also state that the amounts received for licenses given were credited to patent account, and from the balance sheets Mr. Shafer argued that up to the year 1900 there were credits to pat-

ent account amounting to over \$20,000,000, not figuring patent costs during years when license sales amounted to more than patent expense which would not show in the balance sheets. The annual report of 1899 showed a final profit to the American Bell Telephone Co. on patent account of over \$12,000,000.

It was shown that this \$12,000,000 patent account profit and a part of over \$30,000,000 accumulated reserves, general

SERVICE AND EFFICIENCY.

During the coming 20 years, business men of the type of Carnegie and Hill will again come to the fore. And the foundation of their industries will be SERVICE AND EFFICIENCY.—Roger W. Babson.

profit, and capital stock premiums in addition to the annual and extra dividends which had been paid each year, were paid out to the stockholders during the reorganization in 1900, when two shares of A. T. & T. Co. stock were given for each one share, of over \$25,000,000 of American Bell Telephone Co. stock.

Further testimony in the case showed that in 1902, after the patents under which the permanent licenses were given had expired, or had been declared invalid by the courts, the American Bell Telephone Co. "requested" the Chicago Telephone Co., which it controlled, to sign a new rental arrangement—the 4½ per cent contract—to take effect the previous January 1, and that since 1900 the rental payments to the A. T. & T. Co. by the Chicago exchange alone have far exceeded the total patent expense shown in the A. T. & T. Co. balance sheets up to 1907, after which patent cost was charged off through expense accounts.

It is the contention of the city of Chicago that as the patents upon which the original permanent licenses were based have long since expired or been declared void, and as all cost of the original patents and patents on improvements during the life of the original patents (up to the year 1900) has been paid for through permanent license sales with a profit of over \$12,000,000 to the American Telephone Co., and, further, that as all patent cost of the A. T. & T. Co. since the year 1900 has been more than reasonably recompensed by the Chicago exchange and other licensees and as no patent cost is now in capital account, that therefore the patents should not be considered as a reason for

making any part of the 4½ per cent charge against the operation of the Illinois Bell Telephone Co. in the Chicago telephone exchange.

On January 24 W. H. Crumb, as engineer for the city of Chicago, introduced exhibits showing the growth of the company and the development of its business from 1881 to date.

In order to show the financial prosperity which the company has enjoyed since its organization, he presented an exhibit showing the stockholders' investment in the company, as represented by capital stock issued year by year from 1882 when it was \$500,000, to the end of 1921 when it was \$50,000,000. He also showed that during practically all of that time the dividends, which had been paid by the company, had exceeded the capital stock investment by the stockholders. Also that since its organization the Illinois Bell Telephone Co. and its predecessor, the Chicago Telephone Co., had paid to the parent organization more than \$16,000,000 in royalties and for rental of telephones and general service.

Mr. Crumb called attention to the present rapidly increasing costs of adding telephone stations, which he testified was much greater than represented by the recent increased prices in labor and material, and charged the telephone company with extravagance in building up its construction account.

He testified that the cost of adding stations to the plant in the city of Chicago for the five-year period ending 1896 averaged \$426 per station, which for the next five-year period ending in 1901 was decreased to an average of \$165 per station. This was further decreased in the five-year period ending 1906 to an average of \$87 per station, and for the five-year period ending 1911 to an average of \$84 per station. Since that time it has increased so that for the five-year period ending 1916 the cost was an average of \$118 per station, and for the period ending 1921, it averaged \$198 per station.

The average investment in plant in Chicago was at its lowest point in 1911 when it was \$106 per station. This had gradually increased since that time until in 1921 it was \$130 per station. The average rate per station for telephone exchange service in the city of Chicago gradually decreased from 1897, when it was \$122 per station, to 1915 when it was \$36 per station. From 1916 to date, the average rate has steadily increased until in 1921 it was \$54 per station.

Mr. Crumb made an analysis of the

company's exchange service revenues and expenses from 1913 to 1921 in order to ascertain the necessity for this increase in the average rate. For the purpose of comparing pre-war revenues and expenses with those of the year 1921, he took the year 1915 as fairly representing normal pre-war conditions and compared the operations of that year, which he showed was the most prosperous year financially the company had had since its organization, with the operations of 1921.

He testified that the traffic expense in the city of Chicago had increased 130 per cent in 1921 as compared to 1915, whereas, all other operating expenses including depreciation and the 4½ per cent payment to the A. T. & T. Co. had increased only 25 per cent. He then proceeded to make an analysis of the increase of 130 per cent in traffic expense and found that during this period operators' wages had increased practically 100 per cent.

There are three factors, stated Mr. Crumb, which affect the traffic cost or traffic expense per station per month, namely, wages paid traffic employes, the calling rate which determines the volume of traffic, and the average amount of traffic that can be handled per traffic employe hour.

Traffic expense is practically directly proportional to the volume of traffic, and the volume of traffic is directly proportional to the average number of calls per station per day. The volume of traffic cannot be controlled by the telephone company, and it is its duty to secure its traffic employes as economically as may be in the open market and get competent, efficient help. It can and should, however, control to a very large extent the average number of calls that can be handled per traffic employe hour.

The company's peg counts for 1915 show

that there was an average of 70.3 calls handled per traffic employe hour, whereas, in 1921, the average number of calls handled per traffic employe hour was but 56.8 calls; that is, the operators in 1915 were handling 24 per cent more calls per traffic employe hour than in 1921.

This decrease in the efficiency of the traffic employes Mr. Crumb declared, is due purely to the equipment that the operators have with which to handle calls, which has not been improved to keep abreast with increased demands made upon it, to say nothing of being so improved as to handling the calls more economically now than in 1915. In 1915 there was an average of 5.11 calls per station per day, while in 1921 this had been reduced to an average of 4.21 calls per station per day.

The witness contended that had the telephone company been able to operate in 1921 with the same efficiency as in 1915, that is, had their equipment been such that they could have handled 70.3 calls per traffic employe hour instead of 56.8 calls, the reduction in the average number of calls per station per day amounting to 18 per cent in the volume of traffic would have permitted an 18 per cent reduction in traffic expense.

The total traffic expense for the year 1921 was \$11,189,000, so that if the company had been able to operate as efficiently in 1921 as in 1915, it could have saved 18 per cent of this amount, or over \$2,000,000. This, he testified, is a reflection upon the engineering ability of the general staff of the American Telephone & Telegraph Co. that it did not maintain the same efficiency of operation in Chicago in 1921 that it had had in 1915 and previous years.

The witness asserted that if the management of the Illinois Bell Telephone Co. had been in the hands of officials who, in addition to protecting their salaried posi-

tions had a large personal investment to protect and were unobstructed by the dictation of outside influences, there is no doubt that they would have exercised every effort in their power to have at least maintained the same standard of efficiency of operation subsequent to 1915.

Mr. Crumb told the commission that many Independent telephone companies, free to act upon their own volition, during this time had been able to so improve their operating conditions that they have handled larger volume per traffic employe hour in 1921 than was handled in 1915.

He then cited the results obtained in an improvement in the operating methods at LaCrosse, Wis., and showed that, whereas, Chicago was handling 56.8 calls per traffic employe hour, the LaCrosse exchange, due to improved switchboard methods was able to handle 210 calls per traffic employe hour.

In order to place this comparison on a uniform basis, it is necessary to consider the relative amount of work necessary to complete a call in LaCrosse and in Chicago. It is found that in Chicago each call averages 2¼ units, while in LaCrosse calls are practically all one unit calls so that to place the Chicago calls on the same basis with the LaCrosse calls, it is necessary to divide the 210 units in LaCrosse by 2¼ in order to determine the number of calls comparable to Chicago which are now being handled there.

This shows that LaCrosse is handling 93.3 calls, equal to those in Chicago, per traffic employe hour, whereas Chicago is handling but 56.8 calls per traffic employe hour; or, in other words, LaCrosse is now handling 64 per cent more traffic per traffic employe hour than Chicago.

The hearing was adjourned until February 13 when additional testimony on behalf of the city will be introduced.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Federal Court Denies Motion of Nebraska Commission.

Judge Munger of the federal court at Lincoln, Neb., has overruled the motion of the state railway commission to dismiss the Northwestern Bell Telephone Co.'s suit begun to test the justice of the commission's new schedule of rates which reduced exchange charges 10 per cent.

The court held that while the state law provided a method by which appeals from commission decisions may be taken direct to the state supreme court, in view of the fact that that tribunal had no legislative powers and could not finally decide rates, the company had the right

to choose the federal court for its forum.

The court appointed B. H. Dunham, an Omaha lawyer, as master in chancery. Mr. Dunham is directed to take testimony, report on the facts and his conclusions of law and to limit the taking of testimony until August 1 next.

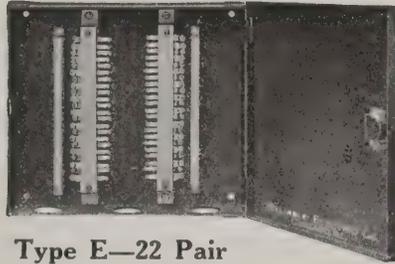
The commission has filed an answer to the petition of the Bell, in which it puts into issue the question of whether that company is efficiently and economically managed. The commission says, and stands ready to submit testimony in support, that the expenses of the company are excessive and extravagant.

It charges that the company pays salaries to officers, and pays also to labor,

wages that are higher than necessary to procure careful and efficient service; that it employes more help than necessary for the proper transaction of business, and that the 4½ per cent of its gross revenues that it pays to the American Telephone & Telegraph Co., for the furnishing of transmitters, and receivers, and engineering, and other skilled business counsel is far in excess of the value of the services rendered to it, and that the payment should be greatly reduced.

The commission also challenges the correctness of the statement made to the court that the gross revenues are insufficient, by declaring that a large amount of the toll business for which the

Steel Building Boxes for Telephone Distribution

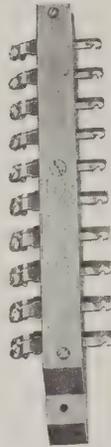


Type E—22 Pair

Cable Wires Soldered

Telephone Wires Under Binding Posts

Type E



Equipped with treated maple strips with tinned brass connectors driven through holes in maple.

Type L



Equipped with milled hard rubber strips, with brass connector bolted in place.

Type E Building Terminal

Capacity	Dimensions	Net Wt.
11 pairs	6 $\frac{1}{8}$ x 10 $\frac{1}{2}$ x 2 $\frac{1}{2}$	4 lbs.
16 "	6 $\frac{1}{8}$ x 13 x 2 $\frac{1}{2}$	5 "
22 "	11 $\frac{3}{4}$ x 10 $\frac{1}{4}$ x 2 $\frac{5}{8}$	7 $\frac{1}{4}$ "
26 "	11 $\frac{3}{4}$ x 14 $\frac{1}{4}$ x 2 $\frac{5}{8}$	9 $\frac{1}{4}$ "
30 "	11 $\frac{3}{4}$ x 14 $\frac{1}{4}$ x 2 $\frac{5}{8}$	10 "
52 "	11 $\frac{3}{4}$ x 20 $\frac{1}{4}$ x 2 $\frac{5}{8}$	13 $\frac{1}{4}$ "
100 "	11 $\frac{3}{4}$ x 40 $\frac{1}{2}$ x 3 $\frac{1}{8}$	25 "
125 "	12 $\frac{3}{4}$ x 48 $\frac{1}{2}$ x 4 $\frac{1}{8}$	30 "
200 "	13 $\frac{3}{4}$ x 81 x 4 $\frac{1}{8}$	50 "

Type L Building Terminal

Capacity	Dimensions	Net Wt.
11 pair:	11 $\frac{3}{4}$ x 10 $\frac{1}{4}$ x 2 $\frac{5}{8}$	7 $\frac{1}{4}$ lbs.
16 "	11 $\frac{3}{4}$ x 14 $\frac{1}{4}$ x 2 $\frac{5}{8}$	9 $\frac{1}{4}$ "
26 "	11 $\frac{3}{4}$ x 20 $\frac{1}{4}$ x 2 $\frac{5}{8}$	13 $\frac{1}{4}$ "

Use Type EC Building Terminals for cross-connecting building cables.

Permits full use of both inside and outside cables.

Locates trouble in or out.

Is exactly like the Type E, with jumper rings and space at top and bottom for running jumper wires.

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CHICAGO, U. S. A.

Northwestern has the necessary lines and equipment, and which should be transmitted by it is transferred at Omaha to the transcontinental lines of the A. T. & T. Co., which owns substantially all of the stock of the Northwestern, and controls its policies and business, and by reason of this action the revenues are not as much as they should be.

The commission declares that the 8 per cent return on the property devoted to public use demanded by the company is more than a reasonable return, and that it should not exceed 7 per cent. It challenges the accuracy of the statement that the property values of the company in 1922 were \$17,696,000, and avers they were not to exceed \$14,731,000.

It denies that the present fair value of the property is \$22,000,000, and asserts it is not to exceed \$18,000,000. It denies that the company earned but 3.62 per cent the last year, and that the new rates would earn but 2.75 per cent, as averred in the petition. The commission says that if the company were economically and fairly managed, the returns under the new rates would be 7 per cent, a sufficient and reasonable one.

The commission says that the property value of the Bell does not exceed its capital stock, and denies that the company keeps its accounts in conformity with the requirements of the Interstate Commerce Commission. It says that most of the allocations made therein relating to revenues and expenses are voluntarily determined by the Bell officials themselves.

It is further contended on behalf of the commission that its rates are not confiscatory, that they do not take property from the company without due process of law, but assert that they are lawful and valid, and if enforced would allow the Bell to earn a fair and reasonable return, that the increases granted in the order will equal if they do not exceed the reductions, and that the net result will not be to reduce the gross revenues.

Subscribers of Bell Exchange Oppose Sale to Independent.

The sale and transfer of the Lewisville telephone exchange by the Indiana Bell Telephone Co., to the Knightstown Telephone Co., of Knightstown, was opposed by Lewisville subscribers at a hearing on the petition to authorize the sale held January 10 before John McCardle, chairman of the Indiana Public Service Commission.

Commissioner McCardle held up a final order, pending further negotiations.

Opposition to the sale was based on two points. The Bell company alleged the Lewisville station was a losing one because of the distance from the central plant.

The Lewisville people showed the commission that it is farther from Lewisville to Knightstown, than from Newcastle to Lewisville, and yet it was made to ap-

pear the Knightstown company could operate the plant more economically.

The second point in the opposition to the sale was that the Knightstown company follows a policy of tacking on a toll charge, when under the present arrangement Lewisville subscribers have access to 1,400 instruments in the territory south of Lewisville, embracing 72 square miles at a nominal flat rate with the Raleigh exchange.

The subscribers have hope of reaching a satisfactory agreement, either with the Bell or the Knightstown company, or among themselves.

Patrons and Company Agree on Discount for Prompt Payment.

The Kansas Public Utilities Commission on January 13 authorized a 10 per cent discount in the rates of the Kansas Telephone Co., at Lawrence, effective on bills paid before the 10th of the month following that in which service is rendered.

The discount follows an injunction against a rate order of the commission nearly a year ago. The arrangement is the result of an understanding between the citizens of Lawrence and telephone officials.

Kansas and Missouri Companies Settle Dispute by Agreement.

After settlement of a controversy of three months' duration between a Kansas company and two Missouri companies, the Missouri Public Service Commission granted the Kansas company a certificate of convenience and necessity to operate in the town of Worland, Mo. The order was entered January 17, taking effect at once.

On October 9 the Hume Telephone Co., of Hume, Mo., complained that the Pleasanton Telephone Co., of Pleasanton, Kans., had for several years furnished service to subscribers in and around Worland, Mo., and during the past year or so had extended its lines and maintained stations without having obtained authority from the Missouri commission. A similar complaint was filed October 28, by the Foster Telephone Co., of Foster, Mo.

Intervening petition, signed by citizens of Worland, was filed. It asked that the Pleasanton company be allowed to continue to furnish service.

Hearings were held, testimony was taken, and after some discussion the attorneys for the companies got together and stipulated conditions agreeable to all. The Pleasanton company offered to make application at once for a certificate of convenience and necessity; and to file its rate schedule with the commission; it agreed not to extend its service farther south from the town of Worland than it was at that time and to take on no new subscribers south of the Kansas City Southern Depot.

The Pleasanton company agreed to

build a pole lead south by the most direct route from the point which it then reached to the Hume exchange, such additional pole lead to carry only the metallic circuits necessary for carrying the long distance toll service out of the Hume exchange, and the leads not to be used for any other purpose.

The Foster company is to connect its toll lines with the Pleasanton lead and long distance service is to be maintained from Foster through Worland to the Pleasanton exchange. The Foster company is to maintain a portion of the lines and the Pleasanton company the balance.

Mass Meeting in Owensboro, Ky., Favors Rate Increase.

Resolutions were unanimously adopted approving the contemplated raise in rates of the Owensboro Home Telephone & Telegraph Co., of Owensboro, Ky., at a mass meeting on January 16, and favored continuing the two telephone systems in Owensboro. It was pointed out that the Home company could get an increase by litigation, which would be quite an expense to the city and the company, and eventually this expense would revert to the subscribers.

The increases approved of are 50 cents on business stations and 25 cents on residence, making these rates the same as those of the Cumberland Bell—\$4.25 for business and \$2.50 for residence.

It was brought out at the meeting that if the two companies were combined it would involve the junking of one system or the other as the two are so dissimilar, and this would mean an investment of about \$900,000, with either \$500,000 worth of property owned by the Cumberland, or \$350,000 or \$400,000 of the Home, junked to make the merger.

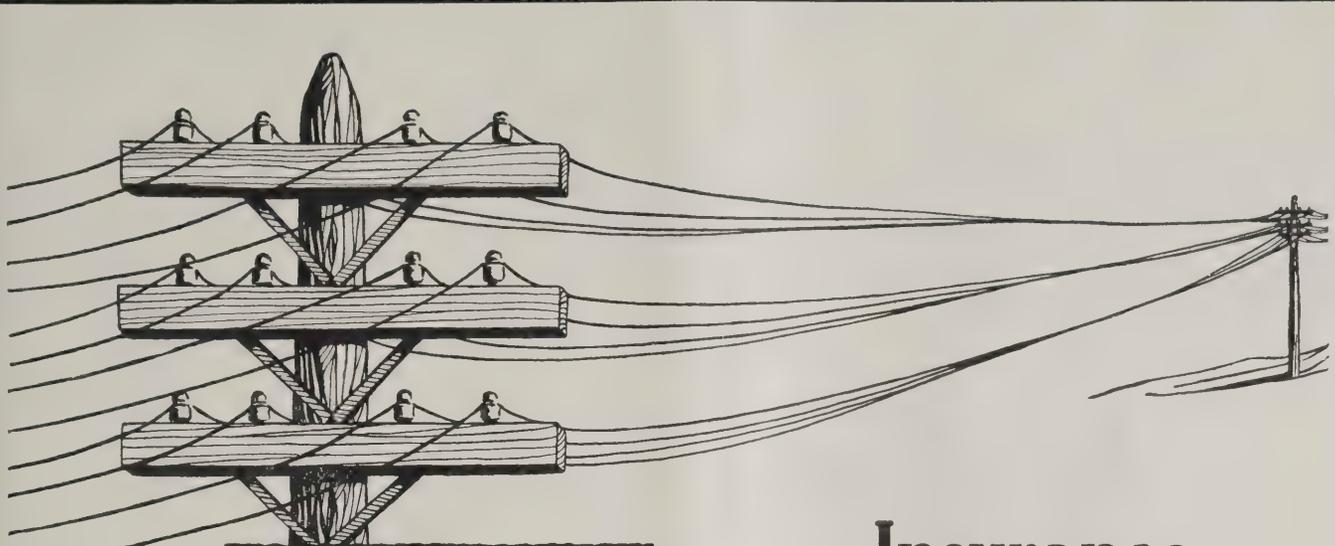
The Home company has 1,840 connections in Owensboro, 80 being rural. The Cumberland company has more than 2,600 connections in the city and county, there being about 1,700 telephones in the county, with eight county exchanges.

Cumberland Bell Decides to Accept Rate Cut in Louisiana.

The Cumberland Telephone & Telegraph Co. on January 15 accepted the order of the Louisiana Public Service Commission which reduced telephone rates throughout the state and directed the company to return to subscribers more than \$400,000 collected since May 13, 1922, on the present rates in excess of the rates ordered by the commission at that time.

The order of the commission while based on a compromise submitted to the commission by representatives of commercial organizations and cities from all parts of the state was more far-reaching in its scope.

In accepting the order the company in a letter to the public service commission says it feels it is being called on to accept



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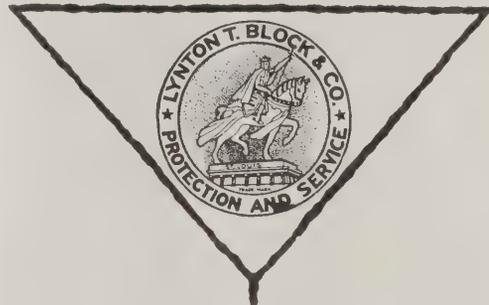
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cuts in its revenues that are extreme and will impair its earning power, but is doing so to gain and maintain the good will of the public.

The company agrees to begin work at the earliest time on its building program, which calls for the expenditure of many million dollars in the state in the next five years.

The letter of C. A. Stair, general manager of the company, to the commission stated that:

"While the company realizes the paramount necessity for adequate revenues to enable it to go ahead with its operations and meet the demands for service year by year, involving the investment in new capital of many millions of dollars during the years to come, it also recognizes the great importance of restoring those amicable relations which formerly existed between the company, the public it serves and the state authorities, and this latter condition has been the prompting influence in causing the company to accept the order.

"We feel that to have acted otherwise would have been to fail to recognize the spirit of co-operative fairness which was so manifest on the part of those representatives of the public who gave so much of their time in an earnest effort to bring about an adjustment of the case upon a basis believed by them to be equitable to both the public and the company.

"The company will now concentrate its efforts towards carrying out its program of extensions and additions to its plant and will provide as quickly as is practicable those added facilities which will enable it to furnish telephones and service to all who desire same and meet all demands for service in all of its exchanges throughout the state."

Mr. Stair pointed out that the company operating in Louisiana last year under the rates then in effect earned 7.25 per cent interest. Under the schedule of rates submitted by the company in compromise, the income for the year would have been at the rate of 5.94 per cent. The schedule of rates recommended by the citizens' committee would have produced an income of 5.25 per cent. Rates ordered by the commission will produce earnings of 4.6 per cent, Mr. Stair said.

"The company is indulging the hope," said Mr. Stair, "that in the near future the commission may recognize the company's just right to an improved condition in its net return on more than \$14,000,000 invested in Louisiana in rendering service to the people."

Citizens Company (Mich.) Places Value at \$7,696,215.

Reports of the appraisal of property of the Citizens Telephone Co. of Grand Rapids, Mich.,—in connection with the pending merger of that company with the Michigan State Telephone Co.—were filed with the Michigan Public Utilities Commission

on January 17 by the company's engineers.

The company places the value of its property—less depreciation and not including the Jackson, Battle Creek and Marshall exchanges—at \$7,696,215. The original cost of the property is estimated at \$5,950,660, and its actual reproduction value—without figuring depreciation—at \$9,068,695.

Switching Rate Increased, Local Rates Payable in Advance.

Authority was given the Harmony Telephone Exchange Co., of Harmony, by the Minnesota Railroad & Warehouse Commission to increase its rural switching charge from 25 cents to 40 cents a month, with a discount of 5 cents a month if paid on or before March 1 of each year. The company was also permitted to make the local net rates—which are \$2 for one-party business and \$1.25 for one-party residence—payable in advance. The order was entered January 17, to take effect February 1.

The Harmony company serves 159 town stations and 345 rural connecting company stations. The book value of the company January 1, 1922, was \$4,155—representing property within the town. After a sleet storm of last February it was necessary to rebuild the major portion of the plant—which entailed an expenditure in excess of \$5,000.

Bill for Commission to Fix Telephone Salaries Dropped.

The Nebraska house has indefinitely postponed the Beushausen bill which would have lodged with the state railway commission the power to fix the salaries of all officers and employes of telephone companies operating in the state.

The members were of the opinion that the commission now possesses all of the power necessary to compel companies to manage their affairs economically and efficiently.

General Renovation of Plant Ordered for Missouri Company.

An order issued January 15 by the Missouri Public Service Commission gave the Platte County Telephone Co., of Platte City, 45 days from January 25 in which to make certain improvements. The order is the result of a petition filed by a number of the company's subscribers.

A general going over and inspection of the entire plant are included in the provisions of the order. Worn out telephones on rural lines are to be replaced with new instruments; slack removed from rural lines; trees trimmed to eliminate interference with wires; wires placed on insulators to be fastened to poles; and poles which are leaning over and unsafe to be reset.

The section of switchboard on which rural service is given must be repaired

or rewired so that cross talk or trouble in ringing subscribers will be eliminated; wires in the arrester or frame room replaced by a short piece of cable; and such changes made in the operators' hours of duty or additional operators employed as will insure a dependable service, particularly in the morning hours.

When the work of renovation has been completed, the company shall notify the commission so that it may send an inspector to look over the plant.

Introduces Bill for Free County Service in Nebraska.

Senator Barr has introduced into the upper house of the Nebraska legislature, a bill which provides that telephone companies shall consider the county as a unit in giving service from their exchanges. Station-to-station calls and person-to-person calls shall not be considered as long distance, when the points of origin and destination are within the county, and no charge shall be made for them. In other words, all service within the county shall be free.

Under the proposed act all of the telephone companies in the county, so far as giving service is concerned, shall unite. No greater sum shall be charged for this additional service than is now charged for local exchange rates, and if a higher rate is desired applications must be made to the state railway commission, and 30 days' notice given.

Another section of the bill amends the existing law so as to base the distribution of toll earnings per message between companies pro rata, according to the number of units outside the county involved in delivery of the message.

Nebraska Governor for Drastic Cut in Commission Appropriation.

Saying that the state railway commission had busied itself increasing telephone rates since it lost its power to control railroad rates, Governor Bryan has recommended to the Nebraska legislature that it cut the appropriation for that body, for the biennium, from the \$158,000 it asked for, to \$85,000. Under a new budget law that has just gone into effect, it requires a three-fifths vote in each house to increase any estimate fixed by the governor in his recommendations.

The governor maintained this attitude in the face of declarations of the commissioners that its powers over railroad rates had been fully restored. He said this was all bosh, and that he knew better.

He said that every time a rate case came up at Washington or elsewhere, a commissioner, a lawyer and an expert, had to journey there at state expense. At the same time the representatives of farmers' organizations, secretaries of chambers of commerce and traffic man-

What Is This Higher Voltage Dry Cell They Talk About?

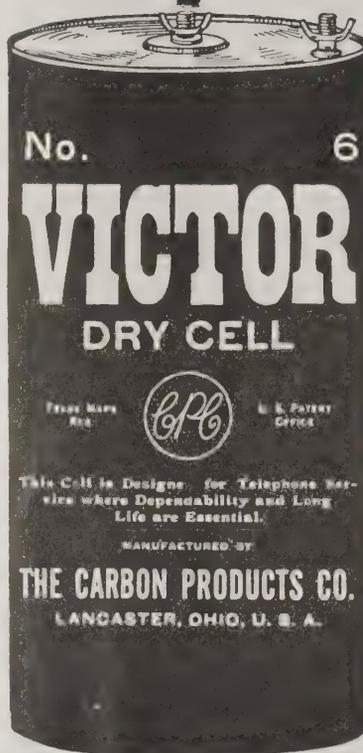
Telephone men have become so accustomed to thinking of dry cells in terms of $1\frac{1}{2}$ volts that the Victor "Higher Voltage" Telephone Cell has naturally occasioned considerable comment.

A lengthy discourse could be submitted on the subject of Ohm's law and the relation of volts, amperes and resistance, but the average telephone company is interested primarily in results, not theory, so let us give this simple truth regarding the behavior of the Higher Voltage cell on duty.

When the amperage of an ordinary $1\frac{1}{2}$ volt battery drops to a certain point it no longer functions. When the Victor's amperage has dropped to this same cut-off point it goes on functioning. The fact of the matter is that the voltage of the Victor is sufficiently high at the so-called cut-off point to force the current to overcome the resistance in the circuit, in the same manner as a water system of high pressure continues to pump the water from a tank whereas if the same amount of water in a similar tank had not the proper pressure back of it, one might think of the tank as being empty.

Consider this vital factor in the selection of your telephone batteries if you want long and faithful service.

And, remember Victors cost less per barrel than other high grade cells.



Victor Telephone Cells



The Carbon Products Company
LANCASTER, OHIO

agers for big shippers hurried there, all duplicating what the state was doing. He said he couldn't stop the others from doing this, but that he could stop junketing of the commission.

He was told by Chairman Taylor, that while it was true that the commission had allowed increases in rates for telephone companies in the past five years, it was not in a legal position to deny what the law and the courts would have given the companies if it had not done so.

Mr. Taylor pointed out that while the increases in the prices of all other commodities had increased in excess of 50 per cent, and are still above that figure, telephone companies had received no more than 25 or 30 per cent increases in revenues. Mr. Taylor added that the peak had passed, and the tendency would be downward in the future.

The governor refused to consider these facts. He was of the same opinion as when, as a private citizen, he addressed the state telephone association convention a year ago, at which time he was sharply called to account by Commissioner Browne for mis-statements of what the commission had done. The commissioners are wondering if he is playing even now.

New York Bell to Spend \$250,000-000 in Next Five Years.

H. F. Thurber, president of the New York Telephone Co., in a letter to the New York Public Service Commission recently, said that the company would spend approximately \$250,000,000 in the next five years for the purchase of telephone equipment and acquisition of land. The statement was made in reply to an inquiry by the commission as to the increasing number of deferred applications.

Mr. Thurber said that the gross expenditure for new plants in New York City last year was \$45,500,000 and estimated that expenditure in 1923 would be \$55,000,000. He said that 250,000 stations would be installed in 1923.

Four-Day Hearing Held on Ohio Bell Rates—Next One March 8.

On January 16 the city of Dayton, Ohio, resumed its presentation of evidence in its fight against the increased rates proposed by the Ohio Bell Telephone Co. After a four-day hearing in Columbus before the Ohio Public Utilities Commission, the case was continued to March 8—when the city will submit additional evidence.

The sessions beginning January 16 were taken up principally with the presentation of reports of engineers engaged by the city to investigate the affairs of the Ohio Bell in Dayton. It is expected that the company's relation with the American Telephone & Telegraph Co. will be challenged at the next hearing.

Delay in Installing Telephone Causes Suit in Tennessee.

The system of zoning applications for the installation of telephones used by the Cumberland Telephone & Telegraph Co., has been attacked in a suit filed by W. C. Cameron, of Memphis, Tenn., last month. It is sought to have a mandatory injunction issued through the chancery court and the statutory penalty collected for failure to install service—the penalty being \$10 a day.

The complainant recently moved into a house vacated by E. O. Bass. There were instruments in both houses—the one which Mr. Cameron had left and the one into which he moved. Applications for service were made and Mr. Bass received it, but Mr. Cameron was unable either to get the instrument moved from the place which he had left or to receive service over the instrument already in the house to which he moved.

It seems that the company has a rule not to make installations in the order that applications are made for the entire city, but to make the installations in the order that applications are made in certain zones established by the company. There were evidently many applications ahead of Mr. Cameron in the zone into which he moved, and few ahead of Mr. Bass in his new zone.

Pending the hearing, the Cumberland Bell has been enjoined from touching the wires at the new home of the complainant or the instrument itself, unless it wants to give service over the line.

Close Bell-Commission Case in Tennessee Circuit Court.

Upon an agreement reached out of court between the attorneys of both parties, the case of the Cumberland Telephone & Telegraph Co. against the Tennessee Railroad & Public Utilities Commission was dismissed from the circuit court. The order, which was issued January 15, was signed by Judges A. C. Denison, E. T. Sanford and J. W. Ross.

The dismissal followed the filing of the petition of the company, in which it was shown that an adjustment of rates had been made—the commission having approved a schedule which increased rates in some 45 exchanges.

The Bell is to pay the costs of the case.

Power Company Not Liable for Inductive Interference.

A power company whose line was constructed according to the best standards of modern engineering was held not liable for inductive interference of a telephone line which was not constructed according to such standards.

The power company lawfully maintained a high-powered transmission line on one side of a highway. The telephone line—constructed on the other side of the high-

way—was a single wire system, with a return circuit through the ground.

The fact that the telephone company was granted a franchise to maintain its line on the highway before the power company was granted its franchise, did not give the telephone company a superior right—in view of section 5612 of the Remington code of 1915, providing that no exclusive franchise to use a highway shall be granted. *Phillippay vs. Pacific Power & Light Co.*; Supreme Court of Washington, 207 Pacific, 957.

Switching Charge Absorbs Revenue—Rate Increase Granted.

The Shaw Telephone Co. was granted permission by the Wisconsin Railroad Commission, in an order of January 24, to increase its rural rate to subscribers receiving service from Eau Claire exchange of the Wisconsin Telephone Co. The new rate, effective February 1, is \$2.25 net per month. This rate may also be payable quarterly at the option of the company. The old rate was \$1.75 per month.

The switching rate and service charge paid to the Wisconsin Telephone Co. was found to absorb such a proportion of the monthly rental that the balance remaining was not sufficient to meet the cost of operating this division of the exchange. The switching charge for the Eau Claire service is \$9 per year, and in addition the company is charged \$4.50 per month for rental of circuit equipment outside of the exchange limits of Eau Claire. There are six lines connected to the Eau Claire exchange, and all are of metallic construction.

The operating expenses for the nine months ended December 31, 1921, amounted to \$4,826, exclusive of taxes and depreciation upon the property. The total revenues for the same period were \$4,833, so the company suffered an actual deficit of \$747, when the legal requirements for taxes and depreciation upon the property are figured. The property was valued at \$14,078 in the 1921 report to the commission.

The commission further ordered that when any subscriber contributes actual money toward the construction of any extension—the cost of which does not exceed the average cost of the company's lines, which is \$55 per station—the company shall make periodic allowance equal to the subscriber's rental, until the contribution is offset by the rental. Interest at 6 per cent shall be paid on the contribution.

Authority to Extend Service Given Company Chosen by Patron.

The Delmar Telephone Co. was granted permission by the Wisconsin Railroad Commission on January 23 to make an extension to serve T. T. Thompson.

The Thereson Telephone Co. objected to the extension by the Delmar company

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as the former company's line is in the highway in front of Mr. Thompson's house, while the line of the latter company is at a distance of 10 or 12 rods. Mr. Thompson especially desired the service of the Delmar Telephone Co., and said under no circumstances would he subscribe for the service of the Thereson Telephone Co., as it would be of no use to him.

Both companies are located in practically the same territory and are connected in to the exchange of the Wisconsin Telephone Co. at Stanley.

Petition Asks Service by Oostburg, Wis., Company—Allowed.

The Wisconsin Railroad Commission on January 24, authorized the Oostburg Telephone Co., of Oostburg, to make an extension in the town of Holland, to serve several persons who desired its service in preference to that of the Random Lake Telephone Co., of Random Lake, or the Cedar Grove Telephone Co., of Cedar Grove.

The latter companies are already installed in locations adjacent to the territory of the extension, but there are no lines in the highways leading to the premises of the petitioners, so there will be no duplication of lines by the extension. While it will be more expensive for the Oostburg company to put in this extension than it would be for the other companies, the convenience of the persons that the extension would serve requires the services of the Oostburg Telephone Co.

Authorized to Make Effective Increase Allowed Last Year.

On January 13, the Wisconsin Railroad Commission entered a supplementary order authorizing the Mount Vernon Telephone Co., of Mount Vernon, Wis., to place in effect the rates set forth in the order of the commission dated March 9, 1922.

The order of March 9, required the Mount Vernon company to make certain changes in its operating practices before placing in effect the rates allowed. These changes included the reduction of the number of subscribers per line and the rebuilding and maintaining of all stub lines.

The company notified the commission on December 11, 1922, that it had complied with the requirements of the order, and upon investigation, the commission found that sufficient compliance had been made to justify the authorization of the increase in rates.

Dismiss Complaint as Switching Service Found to Be Good.

The case of the Iowa & Lafayette Telephone Co. and others against the Argyle Telephone Co., of Argyle, was dismissed on January 24 by the Wisconsin Railroad Commission.

The complaint alleged that the switch-

ing rate charged by the Argyle Telephone Co. to roadway companies, as authorized by the commission on July 29, 1920, is unreasonable; and that the switching service furnished is not satisfactory.

The present rate is \$7.50 net per year. No evidence was introduced to show that this rate is in excess of the cost of the service; neither was anything introduced to show that that rate is out of line with rates generally charged for similar service.

Complaints regarding the service were all of a general nature. An inspection of the lines of the Argyle company showed that it is in good condition. The company owns the switchboard, equipment, and lines to the village limits, while the lines from the village limits to the subscribers' premises are owned by various roadway companies and in some cases the instruments and batteries are furnished by the subscribers. The switched lines were found to be in poor condition, and inferior to the Argyle company's lines. The main leads, a relatively large part of the contacts, and in many cases the house wiring, are in poor condition.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

January 19: Complaint of the town of Mill Valley and A. B. Ambler, alleging that Pacific Telephone & Telegraph Co. is discriminating against the town of Mill Valley in favor of the town of Corte Madera in "rates for long distance toll messages to and from the city of San Francisco; dismissed, it being found that no error had been committed by the company in measuring the air line distance between Mill Valley and San Francisco.

January 22: Application filed by Lakeport & Blue Lakes Telephone Association, operating a telephone system in Lake county, known as the Farmers Telephone, for permission to increase its rates in order to obtain funds to make needed improvements.

January 23: Inyo Coöperative Telephone Co. authorized to sell to the United States Department of Agriculture, Forest Service, the telephone system in Menache Meadows.

KANSAS.

December 18: Application of the Northeast Kansas Telephone Co., of Hiawatha, for permission to acquire all or a part of the capital stock of the Hiawatha Mutual Telephone Co., of Hiawatha; dismissed.

December 21: Application of the Kinloch Long Distance Telephone Co., of St. Louis, Mo., for permission to sell a certain long distance telephone line to the Kansas City Long Distance Telephone Co., the line in question extending from Pittsburg, Kans., east across the state line into Missouri; granted.

December 22: Application of the United Telephone Co. for permission to file an amended schedule of rates for common battery metallic circuit service at its exchange at Marysville; dismissed for the reason that the rates asked for by the company were higher than rates already established by the commission at a previous hearing. The United Telephone Co. has taken this matter into the district court.

December 23: Application of the Sherman County Telephone Co., of Goodland,

for authority to increase its rates for telephone service in Goodland; following rates allowed: \$1.50 per month if paid in advance, \$1.75 if paid at last of year.

December 26: Order entered making permanent the temporary rates authorized March 14, 1921, for service by the Cherryvale Telephone Co. in Cherryvale.

December 27: In the matter of the complaint of George B. Harper and others against the Shawnee Independent Telephone Co., of Silver Lake; a supplemental order issued allowing a rate of \$1.75 per month for rural metallic circuit party line service out of its exchanges at Rossville and Silver Lake; also ordered that the provision for flat rate service to Topeka be eliminated from the rate schedule heretofore allowed for service at Rossville.

January 4: Application of the Roxbury Telephone Co. for permission to sell its telephone plant and property at Roxbury to George Rasette; granted.

January 12: Application of the Kansas City Long Distance Telephone Co. for increase of rates for local exchange and rural telephone service at Lenexa; following schedule authorized: One-party business, \$2.75; one-party residence, \$1.50; rural eight-party or more, \$1.50. Subscribers to receive free service to Merriam, Shawnee and Overland Park.

January 17: Peck Mutual Telephone Co., of Peck, authorized to reduce its switching rate to \$16 a year.

LOUISIANA.

January 15: Acceptance of rate reduction filed by Cumberland Telephone & Telegraph Co.

MICHIGAN.

January 30: Hearing held at Lansing on merger of the Citizens Telephone Co., of Grand Rapids, and the Michigan State Telephone Co.

OHIO.

January 18: Protest filed by United Telephone Co., of Bellefontaine, to appraisal placed by commission upon company's property; the commission cut the company's appraisal figure about \$175,000.

January 20: Four-day hearing held in Columbus on petition of Ohio Bell Telephone Co. for increased rates in Dayton; continued to March 8.

January 23: Hearing held in Columbus on application of Ohio Bell Telephone Co. for authority to unify the service at Westerville.

OKLAHOMA.

February 6: Hearing to be held in Oklahoma City on petition of the Southwestern Bell Telephone Co. asking that the Seiling Telephone Co. be ordered to pay \$144 alleged to be due for service.

WISCONSIN.

January 23: Authority given Delmar Telephone Co.—over protest of Thereson Telephone Co.—to extend service to T. T. Thompson.

January 24: Oostburg Telephone Co., of Oostburg, granted permission to extend service to certain persons in the town of Holland.

January 24: Complaint of Iowa & Lafayette Telephone Co. and others alleging switching rate of Argyle Telephone Co., of Argyle, to be excessive and that service is unsatisfactory; dismissed, an investigation showing service to be good.

January 24: New rate schedule granted Horseshoe Telephone Co., which is connected to the Kewaunee exchange of the Wisconsin Telephone Co.

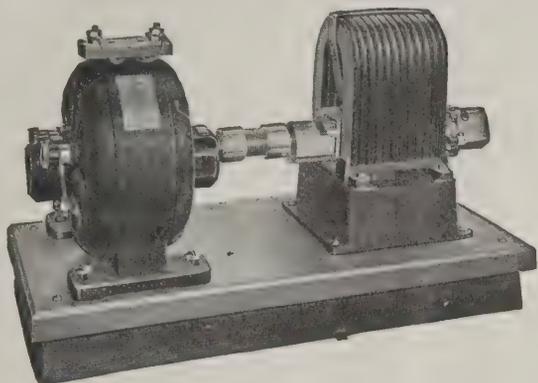
January 24: Shaw Telephone Co. given authority to increase its rural rate to subscribers receiving service from the Eau Claire exchange of the Wisconsin Telephone Co.

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AS the vigorous winds of March and April's steady showers approach, don't forget your order for Argus Lightning Arresters with porcelain covers.

We urge you to get your order in **now** so as to avoid delays in shipments when the spring construction rush comes—and to get the benefits of our special advance offer.

The Argus Arrester is **the** reliable form of protection to instruments and cables against damage by lightning and crosses with high tension circuits. The porcelain cover keeps out the dirt and dust.

Get complete details on the special offer—now.

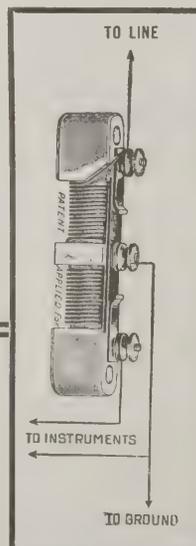
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New York City

ARGUS LIGHTNING ARRESTERS

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Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

Elections.

ALBANY, ILL.—The following officers were selected at the annual election of the Albany Telephone Co.: President, H. Senior; vice-president, M. S. Rosenkrans; and treasurer, C. Olds. On the new board of directors are: E. Coffey, A. J. Parker, L. Abbott, N. Rummel, H. J. Simpson, C. Rowland and J. Sharer.

ATWOOD, ILL.—The officers of the Atwood Mutual Telephone Co. for this year are: C. S. Gross, president; O. A. Beaty, vice-president; S. C. Rich, treasurer; and A. Bercher, secretary and manager. The directors are: F. A. Wharton, G. Quick, C. Harshbarger, and S. C. Rich.

BELVIDERE, ILL.—All directors of the Belvidere Telephone Co. were reelected at the recent stockholders' meeting. They are: J. R. Balliet, F. S. Rowan, G. Grummon, W. M. Marean, and G. T. Keator.

FISHER, ILL.—The directors of the Fisher Telephone Co. held their annual meeting recently and elected: O. Geirtz, president; O. L. Gilmore, vice-president; R. A. Sturgeon, secretary; and G. C. Williams, treasurer.

MURPHYSBORO, ILL.—At the annual meeting of the stockholders of the Murphysboro Telephone Co. the following directors were reelected for the ensuing year: A. B. Minton, Mrs. S. Logan, J. G. Hardy, Sr., W. C. Alexander, J. Goodall, H. C. Miller and W. L. Husband.

ROCHELLE, ILL.—The newly elected officers of the Rock River Telephone Co. are: G. W. Hamlin, president; W. J. Hoopes, vice-president; and A. B. Cheadle, secretary-treasurer. The board of directors consists of W. P. Landon, C. A. Beebee, W. King, H. Wales, A. Anderson, F. C. Craft, and the officers.

VICTORIA, ILL.—A. S. Rice is the new president of the Victoria Mutual Telephone Co.; H. F. McClure, vice-president; E. Peterson, A. Krans and J. Gordon, directors.

ELWOOD, IND.—The stockholders of the Leisure Telephone Co. recently met and elected the following directors: C. Hutch-

erson, M. Shay, J. Langston, B. H. Leisure, and S. Noble.

Among the improvements planned for this year is a new switchboard.

NEW PARIS, IND.—The officers recently elected by the directors of the New Paris Mutual Telephone Union are: President, C. Swartz; vice-president, M. A. Weaver; secretary, J. Peters; and treasurer, W. Cline. Elmer Whitehead is retained as manager. The officers and M. Fisher, F. Mishler and C. Lutz comprise the board of directors.

THORNTOWN, IND.—The annual election of the stockholders of the Thorntown Telephone Co. resulted in the following being chosen as directors: W. Masters, J. E. Boyer, and S. V. Titus. Mr. Titus was elected president of the company, and L. W. Beesley, secretary-treasurer. M. L. Clouser is the manager and Mr. Boyer the superintendent.

WABASH, IND.—N. G. Hunter was elected president of the Home Telephone at the recent meeting; W. H. Webber was elected vice-president; H. E. Wallace, secretary; and J. Hipskind, treasurer. W. H. Van Horn is the general manager. The officers are all directors of the company.

OSCEOLA, IOWA—The officers of the Clarke County Mutual Telephone Co. for this year are: President, R. N. McQuern; vice-president, J. J. Henderson; secretary and manager, O. R. Shaw; treasurer, F. J. Emary. The board of directors comprises: E. Paul, F. J. Emary, H. K. Fortney, J. B. Aringdale, J. H. Piper, C. H. Sampson, and A. F. Williams.

WEST LIBERTY, IOWA—The newly elected officers of the West Liberty Telephone Co are: A. L. Dice, president; C. Wolf, vice-president; B. Rowlen, secretary; F. Weber, treasurer; and H. Melick, manager.

BENTON RIDGE, OHIO—The Benton Ridge Mutual Telephone Co. has elected the following officers for 1923: President, G. Cramer; vice-president, M. H. Kirtland; secretary, Mrs. M. Whisler; treasurer, T. H. Clymer. The trustees are: M.

Jackson, H. Schoonover, J. McClish, H. V. Doty, and V. Clymer. P. A. Kemerer was chosen as representative to the general assembly.

OXFORD, OHIO—At the recent annual meeting of the stockholders of the Oxford Telephone Co. the following directors were elected: L. Bonham, J. W. Hutchisson, W. B. Meyer, W. C. McSherry, and E. E. Williams.

GAINESBORO, TENN.—The officers who will conduct the affairs of the Doe Creek Telephone Co. for the ensuing year are: R. A. Montgomery, president; L. Dennis, vice-president; G. B. Settle, secretary-treasurer; and G. L. Dudney, general manager. The directors are: C. Whitaker, J. F. Gaines and D. Loftis.

MOAB, UTAH—The Eastern San Juan Telephone Co. at its recent annual meeting elected the following officers: R. L. Wilkin, president; E. Zwicker, vice-president; and L. H. Doyle, secretary-treasurer. Additional members of the board of directors are B. Galloway and W. Wilkin.

DOUGLAS, WYO.—The officers of the Farmers Telephone Co.—which operates a line between Douglas and Careyhurst—are: O. F. Ferguson, president; and J. Pexton, secretary-treasurer. These men, together with F. W. Brown, O. Carlson, and J. E. Slichter, comprise the board of directors.

Miscellaneous.

DELPHOS, OHIO—The stockholders of the Marion Township Telephone Co. have voted to dissolve the company. The following officers were elected to take the necessary steps: F. C. Judkins, president; C. Fosnaught, vice-president; and S. Pel-tier, secretary-treasurer.

HELP WANTED

WANTED—Man able to splice and wipe joints and clear cable trouble. Experience in general outside plant construction necessary. Furnish references. State age and lowest salary first letter. Address Commercial Telo. Co., Warsaw, Ind.

"COPPERWELD" TELEPHONE WIRE

TRADE MARK REG. U.S. PAT. OFF.

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Where No. 10 hard-drawn copper or No. 12 BB Galvanized iron telephone wire would be used, a No. 12 Copperweld Telephone Wire may be properly selected. 70 lbs. excess weight of wire per mile is avoided.

	Diam.	Breaking Weight	Weight per Mile	Relative Factor of Safety	
				With 1/4" Ice and 8 lb. Wind Pressure	With 15 lb. Wind Pressure. No Ice.
10 B&S hard-drawn Copper.....	.102"	528 lb.	166 lb.	98%	80%
12 BWG BB Galvanized Iron.....	.109"	476 "	170 "	88%	68%
12 B&S Copperweld .....	.081"	520 "	96 "	100%	100%

Copperweld does not rust. It stays up under sleet loads and wind pressure when other wires would be wrecked.

COPPER CLAD STEEL COMPANY, Braddock P. O., Rankin, Pa.

NORTHERN CEDAR POLES WESTERN
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Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves

PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
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S. R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

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CURRENT OPINIONS AND COMMENTS

Generally speaking, regulation of public utilities by

state commissions is not supposed to include control of matters relating to management of the company. Every so often, however, an effort is made to interfere with some detail of management, indicating that when some men attain public office they imagine that their election has qualified them to run the other fellow's business. Nine times out of ten they are dead wrong.

An instance is furnished by the Beushausen bill introduced in the Nebraska legislature giving the state commission the right to fix the salaries of all officers and employes of telephone companies in the state.

This attempted usurpation of power was too bold for the members of the assembly, however, and the bill has been indefinitely postponed. The reason assigned was that the commission already has all the authority necessary to compel the telephone companies to manage their affairs economically and in the interest of the public.

* * * *

It is the sober judgment of many leading men both in and out of office that there is too much government interference now with the everyday affairs of life. Probably this comes from the tendency, whenever a problem arises, to rush in and get a law passed, or a government board appointed to investigate conditions and prescribe a remedy.

This form of paternalism goes along unchecked because Americans are too busy or too indifferent to object, until somebody

whose toes are trampled on gets sore and makes a protest. Not until then is the absurdity of the proposition recognized and people wake up to the fact that their affairs are being needlessly meddled with.

* * * *

Signs of a disposition of a regulatory body to interfere with the management of a utility corporation are found in the recent order of the New York Public Service Commission adjusting the rates of the New York Telephone Co. The commission criticized the company's expenditures for publicity in connection with the rate application, and said its payment out of revenue was not justified. The order suggested that publicity expenses should be materially reduced this year.

From the standpoint of the company it is just as important for it to use publicity to tell its patrons the facts about service, and create good will, as it is to use equipment to furnish that service. The company has to spend considerable money making reports to the commission and preparing for hearings before that body. Why should not the commission likewise order these expenses eliminated from the charges against revenue?

In these times, the business necessity of publicity is recognized by all. Even the federal government uses the taxpayers' money to advertise when it has surplus stocks to dispose of or bonds to sell.

* * * *

According to the utility laws of most states the jurisdiction of the commission

relates only to service and matters incidental thereto. Its

control is not managerial, and cannot be extended to include matters pertaining to the private affairs of the corporation.

The supervisory powers of the commission are not over the business management and policy of the company, but over those matters in which the public, as distinguished from the stockholders, are interested. Broadly speaking, commissions and courts have usually permitted officers of utility companies a free hand in the management, where this does not result in palpable unfairness to the public.

* * * *

The suggestion comes to this journal that telephone associations, in arranging for their annual conventions, should pay more attention to the convenience of the manufacturers and dealers who make exhibits at the meetings.

When the convention season is at its height, it often happens that several associations unintentionally fix their dates so close together that the manufacturers are forced to make a mad scramble to pack and ship their exhibits from one city to another—often far apart—or else they are obliged to select one convention to attend and give up exhibiting at another.

When the officers of state associations held their conference at St. Paul last summer, resolutions were adopted agreeing to take steps looking to greater coöperation with the manufacturers, but so far if anything has been done in that direction it has escaped notice.

Here is a practical way to begin—by

scheduling the more important state conventions so as to facilitate and aid the manufacturers in exhibiting at the different meetings without the difficulty that always marks a number of close or conflicting dates.

Primarily, telephone conventions are for the operating companies, their executives, managers, engineers and department heads. The importance of having representative exhibits at the meetings, however, is conceded by all.

They are a big feature of all successful conventions. The manufacturers wish to be on hand to display their equipment, and they spend considerable money every year in this way. It all adds materially to the interest of the telephone gatherings.

Both sides should arrange some means of consulting with each other so that the principal state meetings might be scheduled with a view to avoiding unnecessary trouble for the manufacturing interests.

The suggestion is submitted with the idea that a little coöperation and forethought would help both the telephone associations holding the conventions and the manufacturers making the exhibits.

* * * *

An interesting departure from the policy of consolidating competing telephone plants is reported from Owensboro, Ky., in a case which also shows that the telephone public will take a common sense view of things, and agree to pay adequate service rates, when the facts are laid before them.

Both the Home Telephone & Telegraph Co. and the Cumberland Bell operate at Owensboro. The Home company asked for an increase of 50 cents on business stations and 25 cents on residence telephones, to make the rates equal to those of the Bell.

There was some objection, and a mass meeting of citizens was held to consider

the matter. It was shown that the Home company was entitled to the increase, and that if the city fought the case, the expense incurred by both the city and the company would eventually come out of the pockets of the subscribers.

* * * *

In view of this statement, the citizens' meeting adopted resolutions approving the rate increase, and also favoring the continuing of the two systems. The reasons assigned for maintaining competition was that consolidation meant the "scrapping" of the equipment used by the company that would be absorbed.

The outcome of the rate controversy shows again the importance of telling the public the facts. It was a case of the utility company and the public getting together and reaching a harmonious agreement instead of rushing into expensive litigation costly to both sides.

Coöperation pays.

Inductive Interference Problems

Principles and Practices for Inductive Coordination of Supply and Signal Systems Given in Reports of Joint General Committee of N. E. L. A. and Bell System on Physical Relations Between Electrical Supply and Signal Systems

These principles and practices are intended to apply to all new installations, extensions and reconstructions and to the maintenance, operation and changes of all signal and supply systems where inductive co-ordination may be required now or later to prevent interference with the rendering or providing of supply or signal service.

Principles.

DUTY OF CO-ORDINATION: (a) In order to meet the reasonable service needs of the public, all supply and signal circuits with their associated apparatus should be located, constructed, operated and maintained in conformity with general co-ordinated methods which maintain due regard to the prevention of interference with rendering of either service.

These methods should include limiting the inductive influence of the supply circuits or the inductive susceptiveness of the signal circuits or the inductive coupling between circuits or a combination of these, in the most convenient and economical manner.

(b) Where general co-ordinated methods will be insufficient, such specific co-ordinated methods suited to the situation should be applied to the systems of either or both kinds as will most conveniently and economically prevent interference, the methods to be based on the knowledge of the art.

CO-OPERATION: In order that full benefit may be derived from these principles and in order to facilitate their proper applications, all utilities between whose facilities inductive co-ordination may now or later be necessary, should adequately co-operate along the following lines:

(a) Each utility should give to other utilities in the same general territory advance notice of any construction or change in construction or in operating conditions of its facilities concerned, or likely to be concerned, in situations of proximity.

(b) If it appears to any utility concerned that further consideration is necessary, the utilities should confer and co-operate to secure inductive co-ordination in accordance with the principles set forth herein.

(c) To assist in promoting conformity with these principles, an arrangement should be set up between all utilities whose facilities occupy the same general territory, providing for the interchange of pertinent data and information including that relative to proposed and existing construction and changes in operating conditions concerned or likely to be concerned in situations of proximity.

CHOICE BETWEEN SPECIFIC METHODS: When specific co-ordinated methods are necessary and there is a choice between specific methods, those which provide the best engineering solution should be adopted.

(a) The specific methods selected should be such as to meet the service requirements of both systems in the most convenient and economical manner without regard to whether they apply to supply systems or signal systems or both.

(b) In determining what specific methods are most convenient and economical in any situation for preventing interference, all factors for all facilities concerned should be taken into consideration including present factors and those which can be reasonably foreseen.

(c) In determining whether specific methods, where necessary, shall be wholly by separation or partly by methods based on less separation, the choice should be such as to secure the greatest present and future economy and convenience in the rendering of both services.

INDUCTIVE CO-ORDINATION FOR EXISTING CONSTRUCTION: (a) Utilities operating supply or signal circuits should exercise due diligence in applying co-ordinated methods, as occasion may rise, in accordance with these principles, to existing construction.

(b) When supply or signal circuits are generally reconstructed, or when associated, apparatus is re-arranged or added, or when any change is made in the arrangement or characteristics of circuits, the new or changed parts should be brought into conformity with these principles.

CO-ORDINATED LOCATIONS FOR LINES:

Utilization of the highways is essential to the economical and efficient extension, operation and maintenance of supply and signal facilities. To avoid unduly increasing the number or difficulty of situations of inductive or other exposure incident to the use of the same highway by two different kinds of facilities, all lines should, in general, be located as follows:

(a) General Location: (1) Where the conditions and character of the circuits permit, joint use of poles by signal and supply circuits is generally preferable to separate lines when justified by considerations of safety, economy and convenience, and presuming satisfactory agreement between the parties concerned as to terms and conditions.

(2) Where signal circuits and supply circuits on the same highway are not to occupy joint poles, or where either kind of circuit is alone on a highway, all signal circuits should be placed on one side of the highway and all supply circuits should be placed on the other side, so that, as far as practicable, one side of any section of a highway will be available as the signal side and one side as the supply side.

(3) Unnecessary crossings from side to side of the highway should be avoided.

(b) Detailed Location: (1) Local signal lines. Where to be located on the same highway with local supply lines, joint use is generally preferable to separate lines, except sometimes in rural districts and except where the character of circuits involved makes separate lines on opposite sides of the highway more desirable.

Where to be located on the same highway with transmission lines, separate lines on opposite sides of the highway are generally preferable unless a large number of service wire crossings would be involved, in which case, joint use or other arrangements may be preferable.

(2) Toll or through signal lines. Where to be located on the same highway with local supply lines or lower voltage transmission supply lines, separate lines on opposite sides of the highway are generally preferable, unless a large number of service wire crossings would be involved, in which case, joint use or other arrangements may be preferable.

Where proposed for location on the same highway or to follow the same general direction with higher voltage transmission supply lines, co-operative consideration should determine whether such locations should be used, and if so, what specific co-ordinated methods are necessary. Where to be located on the same highway with higher voltage transmission supply lines, separate lines on opposite sides of the highway are preferable.

(3) Local supply lines. Where to be located on the same highway with local signal lines, joint use is generally preferable to separate lines except sometimes in rural districts and except where the character of circuits involved makes separate

Letter Transmitting Third Progress Report.

New York, December 9, 1922.

Member Companies of N. E. L. A.

Associated Companies of Bell System:

We are sending you herewith a copy of the third report of our engineering subcommittee, consisting of M. R. Bump, R. F. Pack and Bancroft Gherardi, recommending detailed practices for the inductive coordination of supply and signal systems. These practices supplement, and are intended to be in accord with, the principles which were sent you with our second report dated May 15, 1922.

These practices point the way to the practical solution of problems of inductive coordination through cooperation of the respective utilities as called for in the principles. Your committee earnestly recommends the adoption and use of these practices in the full spirit of the principles. We wish to again point out as we did in our letter of May 15, 1922, that the headquarters' staffs are ready to advise the companies regarding any questions of interpretation or application which may arise in the field.

The subcommittee is continuing its study of this matter so that the practices may be supplemented from time to time as more material becomes available. With regard to the joint development work outlined in Section III of the "Recommended Plan" in the report of March 7, 1922, a joint subcommittee to carry on this study is now being organized and will begin its work at an early date.

The splendid spirit in which the previous reports have been received has been very gratifying and we feel sure that the present report is worthy of similar support.

O. D. YOUNG, Chairman,
General Electric Co., New York.

R. H. BALLARD,
Southern California Edison Co.

M. R. BUMP,
H. L. Doherty & Co., New York.

H. M. BYLLESBY,
Represented by R. F. Pack,
H. M. Byllesby & Co., Chicago.

J. J. CARTY,
A. T. & T. Co., New York.

BANCROFT GHERARDI,
A. T. & T. Co., New York.

E. K. HALL,
A. T. & T. Co., New York.

L. H. KINNARD,
The Bell Telephone Co. of Pennsylvania, Philadelphia, Pa.

MARTIN J. INSULL,
Middle West Utilities Co.

ROBERT LINDSAY,
Cleveland Electric Illuminating Co.,
Cleveland, Ohio.

BEN S. READ,
The Mountain States Telephone &
Telegraph Co., Denver, Colo.

PAUL SPENCER,
United Gas Improvement Co., Philadelphia, Pa.

GUY E. TRIPP,
Westinghouse Electric & Manufacturing Co., New York.

M. H. AYLESWORTH, Secretary,
National Electric Light Association,
New York.

lines on opposite sides of the highway more desirable.

Where to be located on the same highway with toll or through signal lines, separate lines on opposite sides of the highway are generally preferable, unless a large number of service wire crossings would be involved, in which case, joint use or other arrangements may be preferable.

(4) Transmission supply lines. Where to be located on the same highway with local signal lines or shorter toll or shorter trunk signal lines, separate lines on opposite sides of the highway are generally preferable unless a large number of service wire crossings would be involved, in which case, joint use or other arrangements may be preferable.

Where proposed for location on the same highway or to follow the same general direction with longer toll or through signal lines, co-operative consideration should determine whether such locations should be used and if so, what specific co-ordinated methods are necessary. Where to be located on the same highway with longer toll or through signal lines, separate lines on opposite sides of the highway are preferable.

(5) Avoidance of overbuilding. Overbuilding of one line by another should be avoided, where practicable. Where necessary for the two kinds of lines to occupy the same side of a highway, joint use is generally preferable to overbuilding.

(c) Other Rights of Way: The foregoing principles, although specifically mentioning highways, should also, when applicable, govern situations involving private rights of way near to each other or to highways.

DEFERRED GENERAL CO-ORDINATION: While signal or supply lines when alone should conform to general co-ordinated methods, such lines, pending the incoming or development of the other kinds of lines, may, if deemed economically advantageous, occupy locations or use types of facilities, construction and operating methods other than those conforming to general co-ordinated methods.

However, the location and character of such facilities should be altered when and as necessary to conform to these methods upon the incoming or development of another kind of facility conforming to general co-ordinated methods.

SPECIAL LOCATION AND TYPES: When co-ordination of supply and signal lines of particular types cannot be technically and economically established under the methods of co-ordination covered by these principles, special co-operative consideration should be given to determining what location and type of construction should be established for each line of such type.

Practices.

These recommended practices supplement, and are intended to be in accord with, the principles given in the foregoing. They are based on experience, and their

application, in connection with the principles on "Co-ordinated Location of Lines," will effectively promote the inductive co-ordination of supply and signal systems.

In the development of these detailed practices, it has been found advisable to proceed step by step along two well defined subdivisions, namely, practices based on qualitative considerations, and those based on quantitative values. The practices given herewith cover qualitative considerations and form a basis for the later adoption of definite quantitative values where they may properly apply.

It is recognized that in the growth and development of the respective utilities and as the development of the art progresses, other satisfactory methods will doubtless be devised. The fact that particular methods are specified herein does not preclude the use of other mutually satisfactory methods, nor their incorporation in these practices as they may be agreed upon.

In order that the above consideration may be carried out it is intended that the joint work on practices will be continued and that additional material will be issued from time to time as it becomes available.

In the preparation of these practices, certain factors were encountered which, due to lack of complete information, could not be as fully covered at this time as their importance in inductive co-ordination merits. Among these factors are included certain features of the protection of signal systems, the selectivity of signal apparatus, the transposing of supply circuits outside of inductive exposures and the question of single versus multiple grounding in supply systems.

In order that the full intent of the principles may be carried out, the practices hereinafter specified as "General Co-ordinated Methods" should be applied to all signal and supply systems, except as deviations may be made under the principle of "Deferred Co-ordination." In cases of inductive exposure, where these general co-ordinated methods are insufficient, such of the practices hereinafter specified as "Specific Co-ordinated Methods" should, in addition, be applied as will provide the best engineering solution.

Mutually Applicable Practices.

NOTICE AND CO-OPERATION: Utilities between whose facilities inductive co-ordination is, or later may become, necessary should each give to the other advance notice of any construction or changes in construction or operation of their respective facilities. The utilities should co-operate in determining and carrying out those methods which provide the best engineering solution in each case, and to this end there should be complete interchange of information.

LIMITATION OF INFLUENCE AND SUSCEPTIVENESS: In designing, specifying or otherwise determining the location, con-

struction and arrangement of supply or signal circuits or the quality, arrangement and suitability of materials or apparatus to be used in, or associated with, signal or supply circuits and in operating and maintaining lines and apparatus, all factors which would contribute to inductive influence or inductive susceptiveness during either normal or abnormal conditions should be limited insofar as is necessary and practicable.

CHANGES IN SYSTEMS OR METHODS: In changing systems or methods of operation, precaution should be taken to avoid increasing, and an effort made to decrease, if practicable, the influence or susceptiveness. Any abnormal condition which increases these factors should be promptly remedied. If the service requirements prevent a prompt remedy of such condition, effort should be made to reduce these effects by such other methods as are available.

OPERATING INSTRUCTIONS: Signal companies should adopt operating instructions, specifically outlining the procedure for notification of supply companies when inductive disturbances arise on toll circuits that appear to be incidental to abnormal power influence, and supply companies should adopt operating rules which outline the desirable procedure for their operators during times when a supply circuit is abnormally unbalanced.

RECORDS: A record should be kept by the signal companies of disturbances on signal circuits, and the supply companies should keep a record of accidental or transient conditions on supply circuits, so that a study of such disturbances which appear to be due to accidental or transient conditions will be facilitated.

MECHANICAL CONSTRUCTION: The mechanical design and construction of signal and supply systems should conform to good modern practice.

MAINTENANCE: Efforts should be made to anticipate and forestall failure of lines or equipment. Defective equipment should not be continued in service and repairs or renewals should be promptly made.

TREE TRIMMING: Trees should be trimmed as necessary, due consideration being given clearances to meet weather conditions. Due diligence should be exercised in obtaining permission to trim trees when such permission is needed and such trimming should be done in accordance with good modern practice.

INSULATION: Insulators and insulating material used on signal and supply circuits should be designed, constructed and maintained so as to provide adequate mechanical and electrical strength.

Practices Applicable to Signal Systems. General Co-ordinated Methods.

The following practices should be applied to all signal systems, except as deviations may be made under the principle of deferred co-ordination.

POWER LEVEL AND SENSITIVITY: The power level and sensitivity of signal circuits should be, so far as is practicable, designed and maintained at the standard recommended for the class of service involved.

PROTECTION: Protective devices should be such that they will not interrupt the signal circuits by operating at unnecessarily low voltages or currents.

Protective devices should be, so far as practicable, so designed, constructed and installed as not to unbalance the signal circuits.

The same type of heat coil or fuse should be used in all wires of a circuit.

Reasonable care should be used in the maintenance of all protective apparatus to avoid conditions which will unbalance or interrupt the signal circuits.

INSPECTIONS: Adequate field inspection and routine tests of lines and apparatus should be made with a view to maintaining the electrical balance and efficiency of the circuits.

DISCONTINUITIES: Discontinuities should be limited to the number required by the conditions.

Lines.

In order to minimize line unbalances, the resistance, inductance, capacitance and leakage conductance of one side of a circuit, in each section thereof, should be equal respectively to the corresponding quantities in the other side of the same section of the circuit insofar as is necessary and practicable.

Some of the methods and means which should be followed for the purpose of minimizing unbalance in lines are as follows:

TRANSPPOSITIONS: The capacitances to earth of the two sides of a telephone circuit should be suitably balanced by transpositions. Before a signal line is placed in service, a check should be made to insure that the transpositions are properly installed and correctly located.

EXCESSIVE SPACING: Excessive spacing of conductors should be avoided. This does not mean that the spacing should be less than that required by considerations of safety, service and the future requirements of the circuits.

DERIVED CIRCUITS: In the creation of circuits from one or more circuits without adding line conductors, due regard should be given to avoiding unnecessary increases in susceptiveness.

Phantom circuits should be created only from similar adjacent pairs. Branches connected to but one side of a phantom circuit should be avoided unless connected through isolating transformers.

If one side circuit of a phantom group is loaded, the other side should be loaded at the same loading points, such loading to have closely the same electrical characteristics.

Phantom circuits should in general be used only for toll or trunk circuits except in cases of long rural circuits.

CONNECTIONS: Effort should be made to prevent the introduction of unbalance by contact resistance.

All joints in toll cables should be soldered or welded. All joints in open-wire toll conductors should be made with sleeves or should be well soldered or welded.

All wires should be properly cleaned to secure good contact before the joints are made.

All test connections, terminal boxes and associated wiring should be designed, constructed, installed and maintained so as to minimize the unbalances of the conductors.

CONDUCTORS: Conductors of the same material and commercial size should be used in the two sides of the circuit at any point.

GROUND RETURN CIRCUITS: Ground return telephone circuits should not be employed.

USE OF CABLE: Consideration should be given to placing circuits in cable at the time of rebuilding heavy open-wire subscribers' lines.

Apparatus.

All apparatus electrically connected to a signal circuit should be so designed, constructed, installed and maintained as to minimize, insofar as is necessary and practicable, unbalance of the series impedance and admittance to earth of the two sides of the circuit.

Some of the methods and means which should be followed for the purpose of minimizing unbalance in equipment are as follows:

PHANTOM CIRCUIT APPARATUS: Balancing resistance or other compensating apparatus should be inserted in the through side of a phantom group at the point where the other side circuit is terminated.

If one circuit of a phantom group is equipped with composite sets or composite ringers, the other side should be similarly equipped and the sets or ringers used on the two sides of the phantom group at any given point should have closely the same impedance characteristics.

SERIES APPARATUS: Where series apparatus, such as series condensers of a composite set is applied to toll circuits, those parts inserted in each side of a circuit should have closely the same electrical characteristics.

COILS: Loading coils should be so designed, constructed and installed as to insert closely equal impedance in each wire of a circuit. Loading coils should be located as nearly as practicable at neutral or balanced points of the transposition system. In the design, construction, installation and maintenance of loading coils, efforts should be made to secure permanency of characteristics.

The coils employed for phantoming, compositing, simplexing or sectionalizing signal circuits should be as closely balanced as practicable. If in any case unbalanced coils are necessary, they should

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be isolated by properly balanced repeating coils.

The windings of retardation coils connected to the two sides of the same metallic circuit should have closely equal self-impedances. The coils of the different circuits should be equipped with suitable cases or so installed as to have negligible mutual impedances.

CONDENSERS: The condensers employed in composite sets, signaling devices, etc., should have adequate balance of admittance to ground.

RINGING AND SIGNALING EQUIPMENT: The unbalance introduced by ringing or signaling equipment should be limited, insofar as is necessary and practicable.

CENTRAL OFFICE CIRCUITS: Central office circuits are to be so designed, installed and maintained that any connection between toll circuits and subscribers' circuits may be made through repeating coils.

Attention should be given to the control of unbalance in cords and central office wiring.

Effort should be made to prevent the introduction of unbalance by contact resistance.

GROUND CONNECTIONS: Ground connections, if employed on equipment connected to toll circuits, should be in the balanced or neutral position of the circuit.

Specific Co-ordinated Methods.

The specific practices outlined here are to be used in addition to the general practices to supplement the latter insofar as may be necessary and practicable in cases where signal and supply lines are involved, or are about to be involved, in inductive exposures.

All of these practices are not required to be applied in any one specific case, but in each instance that practice or those practices in combination should be selected which will under the conditions afford the best engineering solution.

POWER LEVEL AND SENSITIVITY: Consideration should be given to maintaining in the signal circuits as high a power level and such a degree of sensitivity as is consistent with good economics.

SELECTIVE AND OTHER SPECIAL DEVICES: Consideration should be given to the use of such devices as neutralizing transformers, sectionalizing transformers, filters, resonant shunts or drainage coils in any case where they may offer benefit and the service requirements of the circuit will permit.

REROUTING SERVICE: If abnormal conditions should temporarily prevent the use of a certain line and the effect of the abnormal conditions can be avoided only by temporarily rerouting the supply or signal service over a route not involved in the inductive exposure, consideration should be given to the adoption of this expedient.

Where the rerouting of either service is impracticable, the choice as to which service is to be temporarily suspended should be governed by the relative importance to the public of the respective services affected.

RECORDS: Routine measurements of insulation, conductor resistance, balance and induction should be made on toll circuits involved in inductive exposures and records kept of the readings.

A record should be kept of abnormal conditions in toll signal circuits involved in inductive exposures where a study of such conditions is advisable. Such records should as fully as practicable include time, duration, circuit designation, location, probable cause and effect of the abnormal condition and how the circuits were cleared.

All the above records or a convenient summary thereof, should be available for the purpose of analyzing causes and effects of disturbances.

Lines.

CONFIGURATION: Where service requirements permit a choice of configuration of a signal circuit, or a group of signal circuits, consideration should be given to the selection of a configuration such as to limit susceptiveness.

CABLE: Consideration should be given to the use of cable within an inductive exposure.

Where signal circuits are carried in aerial cable, consideration should be given to the use of properly arranged and installed grounds on cable sheaths or other methods of shielding.

CO-ORDINATED TRANSPOSITIONS: Consideration should be given to the use of transpositions in supply or signal circuits, or both, within inductive exposures, for the purpose of limiting the coupling. Such transpositions should be installed at suitable intervals, the location to be such as the local conditions demand.

Where transpositions are installed in both supply and signal circuits within inductive exposures, they should be properly co-ordinated.

Care should be taken in the installation of transpositions that, so far as practicable, the transpositions are located nearest the theoretically correct point. In determining the most economical scheme of transpositions, effort should be made to utilize as many as practicable of any existing transpositions.

Where the transpositions required within an inductive exposure impair the gen-

eral transposition scheme of signal or supply circuits outside the limits of inductive exposure, the necessary readjustment of transpositions should be made in the section or sections of the line adjacent to inductive exposure. Uniformity of separation generally assists in the attainment of co-ordination. If discontinuities are of sufficient magnitude to substantially affect the coupling, sections between such points should be treated independently.

Apparatus.

PARTY LINE RINGERS: Consideration should be given to the use of high impedance substation party line ringers or their equivalent.

CENTRAL OFFICE EQUIPMENT: Consideration should be given to equipping toll circuits, which may be switched to other toll circuits, with repeating coils. In those cases where the design of a central office is such that there is a possibility that toll circuits may be switched directly to local circuits, consideration should be given to the use of repeating coils if their omission would contribute to interference.

Where series apparatus is applied to local signal circuits, consideration should be given to so arranging it that equal impedances are inserted in each side of the circuit where necessary and practicable.

GROUND CONNECTIONS: Ground connections, if employed on equipment connected to local signal circuits, should so far as is practicable be at neutral or balanced points. *(To be concluded.)*

Changes in Accounting Department of Northwestern Bell.

The Northwestern Bell Telephone Co. has reorganized its revenue accounting department, established in 1920, when the consolidated plan of revenue accounting was adopted.

The former organization consisted of five departments, each in charge of a supervisor reporting to the division auditor of receipts. The new organization consists of three departments, each in charge of a supervisor and reporting to the same head. This was accomplished by combining the former subscribers' accounts and the rate and station departments into one bureau. The former toll settlements and toll billing departments were similarly treated, the first being under a supervisor of exchange accounting and the latter one for toll accounting.

E. R. Redding, who was supervisor of methods, has gone to the A. T. & T. Co., at New York, to serve on the general staff of supervisor of methods, revenue accounting, in the assistant comptroller's office. He is succeeded by J. J. Higgins, who has been division revenue accountant for the Nebraska division. He has been succeeded by L. E. Seymour, division auditor of receipts' office, who is in turn succeeded by H. J. Season, former division revenue accountant for the Minnesota division. J. S. Riordan, former toll settlements super-

visor, has been appointed supervisor of toll accounting, Nebraska division.

Another change in the Northwestern general staff, is the retirement of O. M. Taylor, who has become assistant to President W. T. B. Belt, and the appointment in his place, as general employment supervisor, of George T. Gorham, who steps up from the position of maintenance supervisor for the Nebraska division. L. S. Lambert has been transferred from the office of general superintendent of plant to take Mr. Gorham's place.

Statistics of the Telephone Business in Nebraska.

Of the 213 telephone companies reporting to the Nebraska State Railway Commission, according to the annual report for 1921, just issued, but 51 paid dividends, while 32 of them failed to earn their operating costs.

Outside of the Northwestern Bell and the Lincoln, the two largest companies in the state, the net earnings of all of the telephone companies, after interest had been paid, totaled \$375,000. Of this sum, \$72,000 was paid in dividends on capital stock of \$4,800,000 and present value, as shown by the books, of over five millions. The remainder was apparently held in depreciation reserve or passed to surplus.

At the present time a little over 31 millions is invested in telephone property in the state. Of this amount the two big companies between them own 87 per cent—the Bell 58 per cent and the Lincoln company 29 per cent. The dividends paid by the Bell are not reported in the tabulation, but the Lincoln company paid \$387,000 on a capital stock of \$6,700,000, or a little less than 6 per cent. The Bell has been paying 6 per cent dividends.

The companies, exclusive of the Bell, hold \$2,750,000 in their replacement fund, of which the Lincoln company has \$1,529,000. The total present value of the property, against which there is outstanding \$9,352,000 of stock, is \$11,300,000. The companies have notes and bonds outstanding of \$2,202,000 to represent this difference. The total capital liabilities are \$11,562,199, and they have total surplus and undivided profits of \$1,074,396.

Operating revenues of the companies, including the Bell, total \$8,393,000, of which the two big companies received \$6,600,000. Operating expenses and all other deductions except interest and dividends are \$7,045,000, leaving as net before those two items, \$1,348,000. Interest accrued, \$139,441; dividends paid, (both items not included in Bell report), \$459,000; profit and loss, \$131,112.

Thirteen persons own all of the stock of the Bell company, and 2,093 of the Lincoln company. The total number who hold stock in all the companies is 19,945.

The 213 companies operate a total of 238,265 stations and, in addition, they switch 26,249 lines owned by mutuals that

made no report because not under the jurisdiction of the commission. Of this total, 168,496 are located in the cities and towns and 61,527 in the rural districts. Of this number the Bell has 99,105 divided 87,958 in the cities and towns and 11,147 rural, while the Lincoln company has 66,005, divided 45,457 and 20,548. The Bell switches 10,092 and the Lincoln 1,822.

Fifteen companies in the state have more than 1,000 stations each. The other 13 are: Bloomington, 1,158; Crete, 1,136; Farmers Home, Gibbon, 1,075; Farmers & Merchants, Alma, 1,456; Farmers of Dodge county, North Bend; 1,441; Glenwood Mutual, Roseland (which has 1,566 stockholders), 1,738; Hamilton County Farmers' Telephone Association, Aurora (which has 1,447 stockholders), 2,832; Kearney, 1,931; Monroe, Albion, 3,136; Nuckolls County, Nelson, 1,159; Platte County, Columbus, 1,973; Platte Valley, Scottsbluff, 3,242; Southeastern, Nebraska Falls City, 2,253.

There are eight companies having between 700 and 1,000 subscribers; 22 that have between 400 and 700; 71 between 200 and 400 and 82 less than 200. Reports are lacking from 15 companies. The Mutual at Merriman holds the low record. It has one station and five subscribers, rural.

During the year there were filed 62 applications for rates and service and 57 were disposed of. One formal complaint as to service was filed and 70 of an informal character. Forty-five of these were disposed of, nine dismissed for want of sufficient evidence, 16 for no cause of action, three because of lack of jurisdiction and two because of no prosecution.

Each one of the cases is set out in detail in the book, together with copies of the orders issued.

French to Install Automatic Prepayment Telephones.

Automatic prepayment telephones, well known in America, England and Germany, have heretofore been used in France only to a very limited extent, according to United States Commercial Attache Chester Lloyd Jones, Paris.

The service which this means of communication gives in foreign countries has caused the French administration of posts and telegraphs to examine the various systems in use to determine which is best suited to the circumstances under which the French communication system operates. As a result a contract has now been made with the company controlling the rights of the taxiphone for France.

The company, which was formed on December 11, 1922, is to receive the exclusive concession for 20 years to establish and operate in France telephone booths fitted out with automatic prepayment telephones. The company plans ultimately to extend its operations to all parts of the republic, but for the present it will undertake the installation of only 1,000 stations.

Some Plant and Management Ideas

Improved Methods in Running Drop Wire and Cable.

By H. Johnson, *Engineer, Two States Telephone Co., Texarkana, Ark.-Tex.*

A drop wagon recently built for the Greenville Telephone Co., Greenville, Tex., is shown in the accompanying photographs. It will be recalled by some of TELEPHONY'S readers that our company—Two States Telephone Co.—built one of these wagons for Texarkana some time ago. It was very similar to the new one, which has been improved in several ways.

The new car is composed of an Overland chassis, on which has been placed a truck body, built by Halbert. The body is somewhat longer, and has mounted in the back a stringing reel on which can be placed a coil of either paired or bare wire.

The box back of the seat has a false bottom, and opens from the top and back. In this box are carried telephone instruments.



Side and Rear Views of Drop Wagon Used by Greenville Telephone Co.

The compartments on each side of the bed are seven in number, and are intended as receptacles for various items of material used in placing the subscribers' drops and installing the telephones.

It will probably be of interest also, to hear how we handle our drop work. First, the workman drives alongside the pole from which the drop is to be run. He then sizes up the situation, decides where the entrance to the building will be, installs the protector, and wires the house.

He then places all the knobs and house brackets necessary, and also the pole bracket. In placing the knobs and brackets on a house, he takes particular care that the drop, when run, shall, without being tied, stay in place on the knobs. The next step is to place the drop.

The reel on the back of the truck facilitates the work greatly, as it is not necessary for the workman to handle the coil by hand. The loose end of the wire is pulled over the pole bracket and then past each knob on the house. A two-groove knob is tied to the end of wire on the ground, leaving enough to pass through the house to the protector. The knob is

then screwed in place, the slack pulled up and the dead-end tie with a loop, made at the pole.

The workman then goes back to the house and ties the drop to each knob. By handling the work in this way, the wire run on the house looks more uniform as each section, whether large or small, has uniform amount of sag.

Another photograph shows the simple and inexpensive way of mounting a cable reel where a company does not care to go to the expense of buying cable jacks. Two saw horses are made, one end on each being about six inches lower than the other. The cable reel, after having been delivered by truck is rolled into place and a piece of shafting placed through the center bearing of the reel. The wooden horses are then shoved in place, and the reel rolled up on them until it clears the ground.

Iron pins are dropped into holes already



Simple and Inexpensive Cable Reel Mounting.

graph was taken just as the workman was about to cut the cable.

It might be mentioned that in delivering the cable reels, care should be taken to figure the economical location for setup. In case of a long run, where a second setup is necessary, it is best to place the reel in the center of the section, and after pulling one way, reverse the reel and pull the other.

How One Company Has 97 Per Cent Collections.

By B. F. Chambers, *Secretary-Treasurer Consolidated Telephone & Telegraph Co., Moultrie, Ga.*

During the year of government control the monthly rates for service of this company were increased by 13 per cent and March 1, 1921, they were again increased, by order of the Georgia Public Service Commission an average of 12 per cent or to the rate we are now applying, viz: Moultrie, \$5.25 per month for special line business and \$3.25 for residence; Boston, \$4.15 for special line business and \$2.65 for residence. All other exchanges are \$3.25 and \$2.25, business and residence respectively.

We allow a monthly discount of 25 cents

PAYMENTS BY MAIL PREFERRED. KINDLY MAKE ALL CHECKS PAYABLE TO THE ORDER OF THE COMPANY AND RETURN BILL WITH CHECK.

CONSOLIDATED TELEPHONE & TELEGRAPH COMPANY, DR.	
FORM 5-10M-5-22	IN ACCORDANCE WITH THE CONTRACT, THIS BILL IS NOW DUE AND IS PAYABLE AT THE OFFICE ON OR BEFORE THE 15TH INST. IF ANY ITEM OF ARREARS APPEARS HEREON SERVICE WILL BE DISCONTINUED AFTER THE 15TH INST. WITHOUT FURTHER NOTICE, UNLESS PAYMENT OF THE ENTIRE BILL IS MADE ON OR BEFORE THAT DATE. IF THERE IS ANY QUESTION AS TO THE CORRECTNESS OF THIS BILL, PLEASE SEE OR WRITE THE MANAGER AT ONCE.
 1922	O. H. LANG 726 HILL CREST MOULTRIE GA.
	1313 532 L
1. Exchange Service as per Contract, one month from above date	3.17
2. Toll, Telegram and Messenger Service per statement herewith,	25.35
3. Balance due, on bill previously rendered,	
4. TOTAL	28.52
5. Credit Balance	
A DISCOUNT OF \$0.25 WILL BE ALLOWED FROM COLUMN ONE, IF PAYMENT OF THIS BILL IS MADE AT THE COMPANY'S OFFICE ON OR BEFORE THE 15TH INST.	

Text Matter to Which Hand Points Is Printed in Red on This Rental Bill.

from the rental, provided both rental and toll for the month, together with balance, if any, is paid at the office on or before the 15th of the month in which the bill is rendered. All bills are dated the first of the month and without exception are in the post office the evening of the last day of each month. The subscribers get their bill on the first of each month.

The accompanying rental bill will give some idea of the first impression a subscriber would get when he looks at his bill. Note the wording, which is printed in red, just under the name of the company. Sometimes we have a subscriber who fails

month's bill and this is the bill following which if not paid by the 15th, the service to that telephone is temporarily discontinued. The subscriber is notified on the 14th by telephone and mailed a notice that the 15th is the last date of payment, and that if the bill is not paid the service will be temporarily discontinued.

A list of all such subscribers are made up in triplicate and handed to the manager for his information and approval. One copy goes to the rack man, one to the chief operator, and the cashier keeps one.

The secret of whatever success we have attained lies in what is done at this point.

he is required to sign the regular service contract, pay the 30-day advance rental, the service connection charge and his old balance.

We have used this plan for the past three years and our subscribers have become accustomed to it. As a result we have been able to collect in actual money for the past year a little more than 97 cents out of each dollar.

To give an idea of the attitude of the employes who are responsible for the collections, I will quote what one of our local managers said in a circular letter early in December: "I do not want any of the children of a subscriber to be without Christmas but the subscriber must know that the telephone bill is to be paid regardless of the effect it would have upon his children's Christmas."

The curve shows the results of our plan throughout the year and the average charge and collections for the year. The peaks in July and October are on account of the watermelon and cotton seasons, respectively, which are the largest money crops we have. The money in each case is about all cash, especially for watermelon but some cotton raisers hold their cotton expecting higher prices.

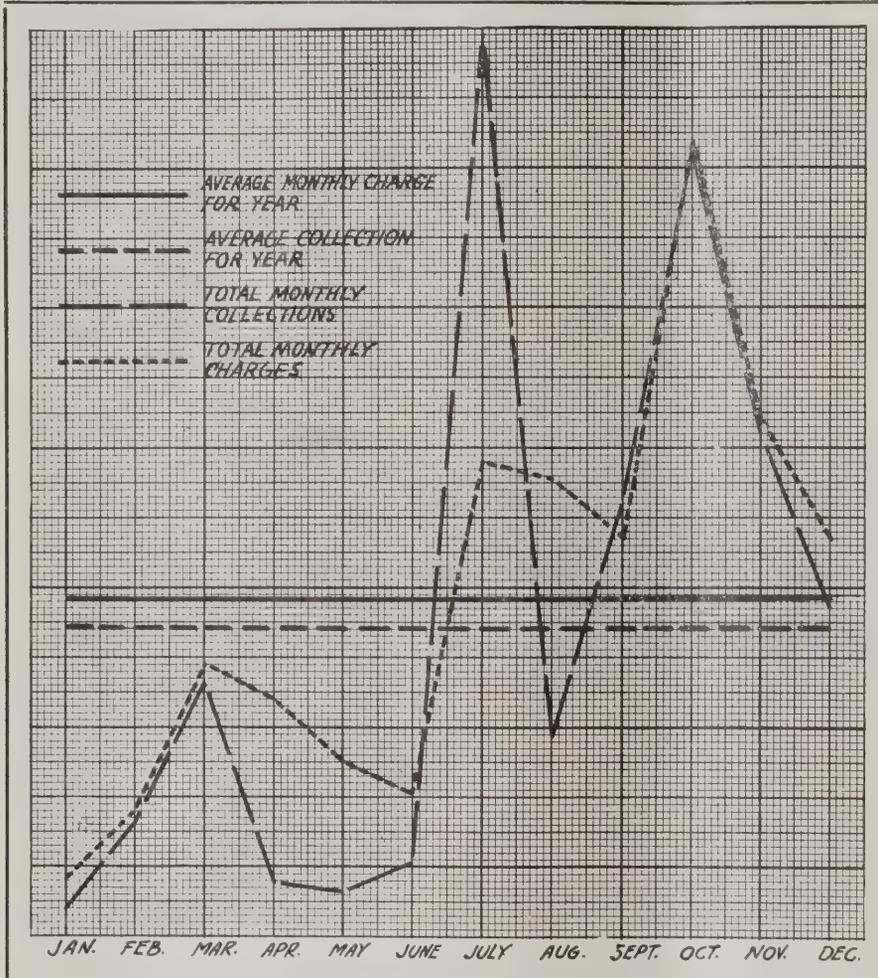
From January to June, there is no money crop until the watermelons are put on the market. Prior to June the farmer is paying out on his watermelons and, therefore, our collections are slow and not up to normal, but when the crop is sold they pay up and many pay in advance—thus the July peak in charge and collection and the falling off of collection is in August. In October the farmer is better fixed and is not so in debt and generally pays up for the last quarter of the year.

The peak in revenue is principally caused by increase in long distance tolls. The watermelon buyers come to this section and buy their melons, while during the cotton marketing long distance is used more than any other time during the year; thus the increase in revenue and collections for October and the decline in November and December.

The difference between the average charge and the average collection is as follows: Rebates, .0041; Suspense, .0176; still uncollected and transferred to ledger for 1923, .0053. Our collection for the year is .9736. You will note this makes 100 per cent, or how each one dollar due the company has been disposed of from a collection standpoint.

The foregoing describes the way the collections are handled from a subscriber's standpoint, but we have not referred to the employes' side. In order to get the results that would be pleasing to the company, it is necessary to train both the subscriber and employes.

Throughout the year we have meetings for the employes and discuss the work. Circular letters are sent out giving the results of what each exchange is doing. At



Collection Results During 1922 of Consolidated Telephone & Telegraph Co., Moultrie, Ga.

to read this or ignores the warning, but there are very few that do this more than once. The total of \$3.17 on the bill is for duplex residence, \$2.75, with 42 cents for extra mileage.

The service is actually temporarily discontinued. I mean that the service is stopped by pulling the heat coils on the main frame. The service remains suspended for ten days, at the expiration of which if the account is not paid in full, the instrument is removed.

A subscriber is not required to pay his account in part or in full for the current month. He only loses the discount but the amount unpaid at the end of the month is shown in red as a balance on the next

There are no exceptions—good or bad, rich and poor all are treated alike. We have five millionaires who are subscribers, and two of them have been victims of this plan. We sometimes disconnect the service of people who are our best friends. Personally it hurts one to do his best friend that way, but we do not discriminate and I will say that this plan will be a failure if you do not treat all alike.

Should a telephone be removed for non-payment, the amount due us is not forgotten and all efforts possible are made to collect it, but should we fail, that amount is transferred to suspense and there carried until the subscriber applies for service again. In case he does apply for service,

the end of each month the result of the month's work of each exchange is sent to all employes. Now and then, we go out into the woods for the evening and enjoy a "weinie roast"; during the cane grinding season, we will go to a cane mill and there drink juice. This affords diversion and is quite a pleasure and is enjoyed very much by all employes.

In addition to these things, we have given a prize in the form of a gold coin to the employes responsible for the highest four exchanges. The denomination of the coin varies according to the standing of the exchange. Unquestionably, the secret of the success of an organization lies in the feeling the employes have for one another, and the full spirit of co-operation and the desire to make the work of their associates easier rather than harder. We have an organization that is getting results and the officials of the company appreciate their work very much.

Illinois January District Meeting Held at Monmouth.

Telephone executives and operators assembled at Monmouth, Ill., in the rooms of the Commercial Club on January 30, the occasion being the January district meeting of the Illinois Telephone Association.

In connection with the meeting of executives, a plant school was held at which methods of cable splicing was the subject. An actual demonstration of ap-

proved methods was given by H. A. Wilson, of Champaign, assisted by his helpers. An actual 50-pair splice was begun and completed in the convention hall under the close examination and scrutiny of all the delegates present.

In the unavoidable absence of Dr. R. E. Gordon, of El Paso, president of the Illinois Telephone Association, Jay G. Mitchell, secretary-treasurer of the association and chairman of the legislative matters committee, presided. A number of excellent addresses were given and a very interesting and profitable discussion was had.

The principal subjects discussed were: Pending legislation in Illinois, cable specifications, practical public relations methods, telephone company financing, and association activities. Addresses were delivered by C. B. Cheadle, of Joliet, general counsel of the association; Jay G. Mitchell, Springfield, secretary-treasurer of the association; E. R. Allen, general manager, Carroll County Independent Telephone Co., Savanna; A. P. Shaver, North Henderson; Ralph P. Dexter, secretary, Galva Telephone Co., Galva; R. G. Roadstrum, manager, Galesburg Union Telephone Co., Galesburg; and James E. Peck, of Rushville, as well as a number of others.

The representatives of manufacturers, jobbers and supply dealers were present and contributed greatly to the discussion of cable specifications and other points.

The usual operators' conference was held under the supervision of W. S. Vivian, of Chicago. Both the delegates and attendants at the operators' traffic conference had luncheon together, the luncheon being featured by community singing of a very high order. Incidentally it was discovered that Tom Endsley and John Haley were unquestionably material for grand opera soloists and they are recommended to their friends as song-birds of the very highest ability.

On Monday, January 29, at noon, through the co-operation of F. A. Norris, general manager of the Monmouth Telephone Co., a meeting of the Rotary Club was held. At this meeting a brief address was delivered by Jay G. Mitchell entitled "The Builders." This address was also delivered in the evening to the Exchange Club of Monmouth, and was very well received at both meetings. In this address the position of the public utility companies as community builders is pointed out. The underlying thought is one which appears to be worthy of being impressed upon the commercial interests of each and every progressive city.

The success of the district meeting was largely due to the very excellent arrangements made by F. A. Norris, of the Monmouth Telephone Co., who is also a director of the Illinois association.

The next monthly district meeting will be held at Effingham, the exact date to be announced later.

Annual Meet of Indiana Utility Men

Government Ownership of Public Utilities Discussed by Edward N. Hurley at the Annual Meeting of the Indiana Public Utility Association—Present and Former Governors Strong for State Commission Regulation of Public Utilities

Ownership of public utilities by the customers it serves, as opposed to the ownership and management of utilities by government, has demonstrated undeniable merits while the government ownership method has been creating inefficiency and dissatisfaction, said Edward N. Hurley, of Chicago, chairman of the United States shipping board in the world war, in an address at a banquet closing the annual meeting of the Indiana Public Utility Association, which was held in Indianapolis, January 25. A number of Indiana telephone men were present. Frank E. Bohn, of Ft. Wayne, general manager of the Home Telephone & Telegraph Co., was one of the principal speakers at the meeting.

James P. Goodrich, former governor, and Taylor E. Groninger, corporation counsel for Indianapolis, warned public utility interests against a tendency to rush appeals to the federal court, when turned down in rate cases by the public service commission.

Both Mr. Goodrich and Governor War-

ren T. McCray reaffirmed their stand for regulation of utilities by the public service commission, and both said they believed the public service commission law is not in danger at this session of the legislature. Mr. Goodrich also warned utility interests against a danger that might arise from the tendency toward consolidation of utilities.

"As one who formerly examined the theory of government ownership sympathetically, and who later had the opportunity of observing it in practical operation," Mr. Hurley said, "I believe I am competent to give testimony.

"The federal government's ventures in the field of public management of industrial and public service enterprises demonstrated conclusively that not more than 50 per cent personal efficiency can be obtained under such management. It demonstrated that not more than 50 per cent of personal interest in the work of the individual can be obtained under this system. I speak advisedly and out of full and intimate knowledge of the facts, and

I do not hesitate to tell you that this average of 50 per cent gradually decreases the longer the individual manager or the individual employe continues in industrial service under public management."

The one outstanding instance where public ownership and management has met with some success, Mr. Hurley said, is in the case of the Detroit Street Railway Co., bought when James Couzens was mayor. Mr. Couzens's executive ability has made this experiment thus far a success, he said, but he asked who is to succeed Mr. Couzens.

Regarding customer ownership as the remedy for unsuccessful public ownership, Mr. Hurley said that this movement begun in the midst of the world war, has brought about the diffusion of the public ownership of public utilities among 1,750,000 persons, as compared with a few thousands a short time ago. It is predicted that sales to customers of utility stock will exceed \$250,000,000, he said. Advantages of the plan are far-reaching.

"The first standard by which it must be



The Marion County Telephone Company, operating exchanges at Marion, Waldo, Green Camp, and Morrall, Ohio, believes in modern equipment. Not a single manual telephone is connected to any of their exchanges, all of which are of the Strouger Automatic type. Above is shown the Marion switchroom.



judged," Mr. Hurley said, "is, of course, its influence on the public service. That influence is not difficult of detection in places where the customer ownership idea has been applied. The manager of the utility is keenly aware of his responsibility. The man who pays for telephone, lighting or power service is likewise a participating employe. The manager is conscious of the surveillance of his customer employes.

"A most fortunate feature of the movement is that it takes in, among the company stockholders, many of the workers and the number is increasing daily. Public utilities and manufacturers who have had experience in this direction know that the interest displayed by the employe who is a stockholder is very marked over the interest of the employe who is not a stockholder.

Thus the worker realizes that his own efficiency in giving service to the public will have a great deal to do in determining a dividend on his stock holding. There is little likelihood of workers in this position soldiering on the job or requesting exorbitant wage increases. Thus, both employe and management are subject to an energizing influence tending to promote efficiency and create high standards of service.

Owners of public utilities, whether steam or electric, as well as manufacturers, should encourage their employes to become stockholders and make the buying of the stock so easy, with the proper safeguards against the losses, that a substantial percentage of all their employes could afford to become stockholders.

Customer ownership is the foil to the unscrupulous political agitator. No one will challenge the statement that the radical public official subsists only on such support and encouragement as he can obtain from the constituency to which he addresses himself. If his denunciation fall on deaf ears it is not many times repeated.

Picture to yourself the response which such an agitator would gain from a community where satisfactory service was being rendered by a utility company whose ownership was distributed among its officers, employes and the citizens of that community. Not only would they withhold encouragement; they would quickly exert a restraining influence. A state made up of communities in which a similar situation existed would be assured of a constructive policy looking toward the development of its utilities.

The customer ownership movement commands admiration for another important reason. It opens a broad market for utility securities which will go far toward enabling them to finance the growth that is necessary. The electric light, telephone and power industry of America must produce in the next seven years a volume of electrical energy equal to that

produced in its entire history. This enormous growth is demanded to meet the requirements of American homes for electric service, to extend the benefits of this service to the farmer whose needs for it are so insistent and to meet the requirements of American industry.

The financing of this growth is a problem great enough in itself. The task would be impossible if the industry were subject to constant attack such as would deprive the investor of the feeling of security in his holdings and would make it impossible for him to obtain a fair return

Have You Sent in Your Report for "Telephony's" Directory?

Two weeks ago cards were mailed out for telephone companies to use in reporting information for TELEPHONY'S 1923 edition of its "Directory of the Telephone Industry." Many have complied with the request and we thank them for their cooperation, but not all have been so prompt.

Have you?

Follow-up letters will be sent February 15 to the companies that have not reported. You can save us this trouble by returning your card at once.

It is to the interest of every company to make this directory as complete and accurate as possible, for it is the handbook of the telephone industry—*your* business—and you can help make it so by mailing your report without further delay.

The card is postpaid. All it costs you is a minute's time filling in the answers and the trouble of dropping the card in the mail box.

Please do it now!

upon his investment. With the growing willingness of public utility patrons to participate in the ownership of their utilities, this task will be enormously facilitated.

Customer ownership is not put forward, however, as a cure-all, not as a complete solution for all of the problems that confront you. An industry engaged in rendering so essential a public service will continue to be judged by exacting standards. Management must be alert and seize on new methods. It must be honest in all political contacts. It must be quickly responsive to sound public opinion. It must be not only fair but liberal in dealing with employes."

Discussing conditions in the utility industry, Mr. Hurley said:

"Wages are higher than they were, but we must recognize this fact and adjust ourselves to it. We must not expect any material reduction. The great preponderance of wealth created in the last two decades has gone back into industry in the form of improved facilities. Labor shares the benefits of this reinvestment through the larger wage return for each

individual which our industrial progress has made possible.

Our country, today, not only has the largest per capita wealth but the greatest diffusion of wealth. The workers enjoy a standard of living that eclipses the luxury of any previous age. Such conditions create a bulwark against the forces of unrest; but gratifying as these reflections are they must not be permitted to blind us to the subtle and dangerous efforts of the forces of unrest.

Nothing could be more dangerous or deplorable than failure to recognize our lack of immunity against the disruptive influences that hold so free a sway in other lands. Liberalism is alike the counsel of expediency and of devotion to American ideals. Let us not dwell on the obstacles that must be met nor on the extent to which efficiency standards fall short of the standards that are possible. Let us rather envisage the superiority of our situation to that in any other country."

Railroads are overcoming the obstacles placed on them, crippling transportation conditions several months ago, Mr. Hurley said.

Charles L. Henry, president, made a short talk on the accomplishments of the association in its three years of existence. It has provided information for the public regarding the utilities, he said, and at no time has there been any criticism to the effect that the information was inaccurate. There is no reason why there should be any secrecy about the affairs of utilities, he asserted.

"Thanks to the legislature, for a number of years the utilities and the public have learned to look for that kind of regulation that protects the interests of the public and the utilities alike," he said. "Utilities advocate fair dealing."

Talks were given by representatives of utilities of the state on conditions in their lines of the industry. All expressed the belief that the utilities gradually are working out of war conditions, and that they have been the last industries to work away from those conditions. Optimism for the future was expressed.

A. W. Brady, president of the Union Traction Co. of Indiana, spoke on the condition of the traction companies; S. E. Mulholland, Ft. Wayne, of the Northern Indiana Gas & Electric Co., on the gas utilities; Howard Dill, Richmond, on the water utilities; Harry M. Reid, president of the Interstate Public Service Co., on the electric power field, and Frank E. Bohn, Ft. Wayne, of the Home Telephone & Telegraph Co., on the telephone field.

Governor McCray said he believed the danger of a repeal of the public service commission law by the legislature is over.

"It would be a tremendous backward step if that statute should be removed," the governor said. "There has been a good deal of talk, but I believe the dan-

ger is over. I don't think sensible, thinking people would let that step of retrogression take place."

Governor McCray said the public must be served by public utilities, and that investors in utility stocks must have fair returns to enable their companies to give the kind of service the public demands.

"We are properly organized when we have a public service commission with authority to regulate these utilities," he said. He assured the members of the association that so long as he was governor he would give them a square deal.

Mr. Goodrich, who preceded Governor McCray as chief executive of the state, took a stand also for regulation of utilities by the public service commission, and likewise said he did not believe the law to be in danger of repeal. He pointed to what he termed "an element of danger" in the tendency toward consolidation of utilities into the erection of "super" corporations and plants. Like Mr. Groninger, Mr. Goodrich warned utilities against rushing to the federal court in an appeal from orders of the public service commission.

"We might be driven to public ownership," said Mr. Goodrich, "a consummation not to be wished for."

The tendency to consolidation, he said, is fraught with some danger, if it means simply operating with a larger capitalization, with greater earnings to shareholders, and if the public is not to receive some benefit. If it is not designed in part to add to the things that the public receives, it should be avoided, he said.

"Then there is the danger of appeals to the federal court," Mr. Goodrich said. "A constant appeal to the federal court may create such sentiment as to cause an attempt to break down the safeguards we have as a basis for operation of the utilities. The greatest care should be exercised that only cases of supreme necessity be taken to the federal court.

"There is not the slightest danger of repeal of the public service commission law, notwithstanding the plank in the platform of the party with which I am affiliated. The members of the party would violate the policy of the platform, for they know that the policy should not have been made and ought not to be carried out. The question of regulation of public utilities is a settled policy in Indiana, unless the public service commission, by the policies it creates, creates such a demand."

The nation as a whole feels the deadening influence of public regulation, Mr. Goodrich said, referring to operation of the railroads in the war, the Esch-Cummings bill, the government's shipping enterprise in the war and the war labor board.

Heads of utilities are in a position of trust, he said, representing on the one hand the persons that have invested their

money in utilities, and on the other as trustees for the public.

The time is past, he declared, when any kind of a business is a private business. Every business man is charged with public trust and is bound to use his wealth with due regard to the public interest, he said.

"I advise you," he said, "to conduct your business so that the public at all times will feel that it is getting a square deal."

Federal Radio Regulation Bill Passed by House.

The federal radio control bill, vesting broad powers in the Department of Commerce for regulation and supervision of all phases of wireless telegraph and telephone communication, was passed January 31 by the House.

The bill is intended to bring order out of the chaos in the air resulting from thousands of stations competing on similar wave lengths. Licenses would be required from all transmitting operators except government employes, and the Secretary of Commerce would assign wave lengths to various stations and supervise, when necessary, their sending periods.

A section of the bill dealing with possible monopolies of the wireless business of the nation vests in the secretary the power to refuse or revoke licenses where a monopoly is threatened. Army, navy and all other government stations, although exempt from the licensing provisions, would be required to conform to the rules when handling commercial or other non-government business. The assigning of wave lengths for the governmental plants would be in the hands of the President.

The bill provides for an advisory committee consisting of men appointed by department heads, radio experts and amateurs, to keep abreast of development and the needs of the wireless industry.

Amateur receiving stations would not be affected by the bill, and amateur transmitters would have a special series of wave lengths set aside for them.

Northwestern Bell Would Sell Out Clarinda, Iowa, Exchange.

A proposal for the unification of telephone service in Clarinda, Iowa—which is furnished by the Northwestern Bell Telephone Co. and the Farmers Mutual Telephone Co.—was placed before a recent meeting of the city council when the Bell company made a tentative offer to sell its local lines and business, maintaining the office and switchboard for its toll business.

The Farmers Mutual company, it is understood, is giving favorable consideration to the plan of taking full control of the city business, in connection with its many rural lines. It is in good condition and is one of the strongest mutual companies in the state.

Service Unified in 21 Ohio Towns During Last Year.

Twenty-one Ohio cities and villages were provided with unified telephone service during 1922, according to an announcement made February 1 by the Ohio Bell Telephone Co.

Unification of service was brought about by the merger of the Ohio Bell Telephone Co. and Ohio State Telephone Co. and includes 45 cities and villages, all told.

The unification record for 1922 follows:

Place	Date of Unification	No. of Bell	No. of State
Dresden	Jan. 13	259	112
Salineville	Feb. 13	21	127
Columbiana	Feb. 28	22	364
Sebring	Feb. 28	94	256
Leetonia	Mar. 3	79	291
Roseville	Mar. 6	123	235
Lisbon	Mar. 16	57	841
East Palestine	Mar. 31	139	670
Nelsonville	Apr. 15	1,016	462
Sandusky	May 29	4,549	625
East Liverpool	June 1	3,927	85
Wellsville	June 1	1,028	40
Fostoria	Aug. 19	1,990	578
Doyer	Sept. 1	56	483
Washington C. H.	Sept. 25	852	2,487
Salem	Oct. 28	1,460	800
London	Nov. 28	463	845
Lowellville	Dec. 1	79	76
Xenia	Dec. 28	1,965	790
Yellow Springs	Dec. 28	249	136
New Carlisle	Dec. 29	503	136

Controller of Telephones in London, England, Retires.

George Frederick Preston, C. B. E., who for 11 years has controlled London's telephone service retired at the end of last month, and it is likely that he will act as adviser to a foreign telephone organization.

Mr. Preston and telephones have been associated for many, many years. The retiring telephone chief started his career with the old London Globe Telephone Co., leaving this for the Northern District Telephone Co., finally going to the National Telephone Co. He became manager of the new telephone system for London under the Post Office in 1901, and became controller when the government took over the National Telephone Co.'s system in 1912.

Mr. Preston says his experience goes to show that few men make good telephone operators. He is a believer in women for exchange operating, and he is certain that London never had such a good telephone system as now. This service, he says, now compares favorably with that of any great city of the world.

Farmers in Tornado's Path Saved by Telephone Man.

G. W. Williams, operator of the telephone exchange at Dudley, Texas, outwitted a tornado January 31. Seeing the twister strike near Dudley, he telephoned to farmers in the path of the storm and warned them to seek storm cellars. No one was injured, but several houses were damaged, granaries blown down and other damage done.

Northern White Cedar Association

Annual Meeting of Pole Men Held in Minneapolis—Officers Tell How to Use Association Facilities to Get Best Return—Members Have No Right to Simply Support Organization and Not Use It—Constructive Activities Discussed

The 27th annual meeting of the Northern White Cedar Association was at the West Hotel, Minneapolis, Minn., January 30 and 31.

The election of officers resulted in M. H. Schussler, of Minneapolis, Minn., being selected as president; E. N. Whyte of the Curry & Whyte Co. of Duluth, Minn., vice-president; H. F. Partridge, of the T. M. Partridge Lumber Co., was continued as treasurer; W. C. Meader of the Bell Lumber Co., Minneapolis, Minn., was reappointed a director for two years, as was W. H. Gilkey, of Pendleton & Gilkey, Minneapolis, Minn.

At the meeting of the board of directors, held immediately following adjournment of the convention, N. E. Boucher, of Minneapolis, Minn., was continued as secretary for the ensuing year.

President Thomas in his annual address said among other things:

"The year 1922 closed with much to be thankful for, and conservative optimism is more warranted today than at any time since the Armistice was signed. We want to be careful not to become an overtime optimist, for such a one is like the ostrich—he hides his head from the truth, and repeats again and again, 'Every day in every way, business is getting better and better.'

The dominant note in American trade is hopeful. While the return to better conditions has not been as rapid as many hoped for, it must nevertheless be a source of much satisfaction to everyone when comparing our condition with that of other countries. There is nothing wrong with our situation, comparatively speaking, that hard work, thrift and sound thinking will not correct.

In this connection, I wish to quote the words of one of the outstanding figures in the world of finance, given when views in general were gloomy:

Let me remind you of the most important thing that is taking place. We sometimes forget it. The earth is still growing crops, the soil is still fertile, the sun shines on it, the rains fall upon it, and the crops are grown and harvested and feed people.

The mines still furnish us with coal and metals. The forests still grow and the oceans and rivers still give up their annual catch of fish. Only a few years past we went through a calamity of awful moment; how small the destruction when compared to the whole of the great earth, and its capacity to continue giving us what we need if we are willing to work to get it.

Economists have said that prosperity could not be on a solid basis until the buy-

ing powers of the American farmer were restored. Here we find encouragement. As we all know, the farmer suffered particularly because the prices of things he sold fell long before the drop in the prices of the things he had to buy. Slowly this situation has been remedying itself.

Our industry is a buyer of railroad transportation, we are all interested in the railroad situation. Railroad facilities in this country are admitted inadequate. Having just passed through a great car shortage, the attention of the public has



M. H. Schussler, of the Coolidge-Schussler Co., Minneapolis, Minn., Was Elected President.

been focused upon the necessity for backing the railway executives who are striving through every means in their power to give the adequate transportation service upon which the commercial structure of the nation depends.

Government ownership does not offer a cure. It was government control and operation which largely brought about conditions that have been so costly to the general public. It is estimated that the total capital expenditure to be made by the railroads for improvement during 1923 will be in excess of 700 million dollars, the greatest of any year since 1917. As buyers of transportation and shippers, of essential commodities, one thing we want to keep before us is that what we need is good transportation service at a reasonable rate, rather than inferior service at a cheaper rate.

The labor supply is apt to become a serious problem. The year closed with a

labor shortage after starting out with two millions unemployed. The industrial expansion of the United States has been largely based on immigration. It is becoming clear that the restrictions which are now in effect are in need of modification if we are to have a supply of common labor adequate for the development of the business of the country.

The problem is that of selection. Immigrants who may not immediately speak the English language are not necessarily hostile to the ideas and ideals of this country. The desirable immigrant is he who regardless of race or language has within him the spirit of individualism in which the country was founded and upon which its future rests.

We will get much more out of the association if we lend not only our moral support and dollars, but our activity as well. Service is the basis of all business, and it applies to the trade organization as well. Some of us are Rotarians. Can't we in the year to come instill into our association the thought of the Rotary motto, 'He profits most who serves best.'

No member has a right to simply support the organization and not use it. Suppose everybody just supported it and didn't use it. Why, if everybody did that, it would go out of commission. We have no right to do a thing, the doing of which by all would defeat the purpose for which the organization exists. We have an organization which represents a basic industry, we have a secretary who is and has been untiring in his effort to serve.

If you need information, some statistics, that are not at your command take it up with him. If you have not availed yourself of the facilities of the association, and say you don't see why you should be in it, that you don't get any good out of it, nobody is to blame but yourself.

Make a memorandum of this and take it home with you, 'I am going to use the association facilities.' Keep this idea in mind during the year and we will have a better association—one that will be better appreciated. As the secretary says, 'It is my belief that association accomplishments are limited only by its opportunities to serve, and the more it serves the better and stronger it becomes.'

The French started the Panama Canal and sunk a barrel of money. Uncle Sam finished the big ditch. The water was turned in and the canal began to serve commerce. Not until the water was turned in did the job count. Your membership in this association will count just as soon

as you commence to serve the organization, and let it serve you."

Secretary Boucher in his report said in part:

"For 27 years the Northern White Cedar Association has endured. Through periods of depression and prosperity, it has continued to serve in the interests of an industry. Ever-changing in its personnel, it has continued to hold within its membership men whose advice and judgment can be relied upon to further the aims of those engaged in it.

The present membership consists of 39 firms, withdrawals, at the beginning of the year, being: American Cedar Co., Minneapolis, Minn.; Northern Cedar & Timber Co., Menominee, Mich., and William Bonifas Lumber Co., Escanaba, Mich.

Misleading statements in advertisements of a Southwestern manufacturer, concerning the relative strength of cedar and pine poles were withdrawn because of our intervention.

At the instigation of a member, we challenged the advertised statement of a steel pole manufacturer that their poles would last longer than a generation beyond the longest life of wood poles. This resulted in instructions to their agencies to refrain from statements other than tending to emphasize the merits of their own products.

In another instance, we questioned the accuracy of statements made in an article appearing in a leading farm paper concerning the comparative life of steel and wood posts. Although objectionable statements were not retracted, we were assured that the information conveyed was enlightening.

Inspections performed under association supervision were ten in number. Your inspection committee considered modification of specifications as they pertain to crook in poles, time for peeling cedar, allowable percentage of ant-eaten and worm-scored poles, allowable dry strip or cat face.

L. L. Hill acted as representative of this committee in connection with specifications for transmission lines of less than 6,600 volts, prescribed by the engineering department of the state of Iowa. He also fulfilled a like mission with the Engineering Standards Committee in arranging standard specifications for wood poles. Mr. Hill also is acting on a sectional committee in the revision of the National Safety Code of the Bureau of Standards at Washington, D. C., in prescribing rules for installation and maintenance of overhead lines.

The secretary's office took occasion to compile and distribute a comparative statement of strength of poles of northern white cedar, western red cedar and southern pine, which received favorable comment.

That greater achievements may be realized, I suggest to those working in cedar and allied products that they make a firm resolve, at this time, to do all possible to

HAT RACKS.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Any successful enterprise owes its success to good leadership—whether the leader runs a lunchcounter or a prominent hotel. He does not expect that all of the pulling will be done by his employees. His personal effort to make the enterprise a success acts as a stimulant to his employees.

The employer who is not a leader is either a driver or a would-be boss. The employer who is a leader employs men; the driver and the would-be boss hire help, and are continually hiring new help. The leader builds up his employes along with his business.

* * * *

Joseph French says, "Thinking is hard work. It is much easier to saw wood."

Quite true, but work which requires only physical effort is deadening. On the other hand, work which requires thinking is broadening. There is no work which will not be done better if the person doing it *thinks* about it while he works.

* * * *

Three men were cutting stone. A stranger who was watching them noticed that while they were all doing the same work, each worked in a different way. The first one hacked away at a stone in a dead-from-the-neck-up manner; the second one hustled when the boss was near, and put in time one way or another when the boss was not near; the third one, a little old man with bent shoulders, seemed oblivious of everything except the work he was doing.

"Friend, what are you doing?" the stranger asked the first man.

"Cutting stone," he replied shortly.

"Friend, what are *you* doing?" the stranger asked the second man.

"Earning seven dollars a day," said the second man.

"Friend, what are *you* doing?" the stranger asked the third man.

"I am building a cathedral, sir," replied the little man as he looked up with smiling eyes.

* * * *

Thousands of young men have sat at telegraph instruments and ticked away without thinking unnecessarily. One young man among those thousands thought of a way to send more than one message over the same wire.

* * * *

Century after century women had done the sewing of the world. In all of those years not one woman thought of a better way than threading the needle at one end and pushing the point at the other end through and sewing slowly by hand. Undoubtedly, these women thought while they sewed, but not one of them thought hard enough to find an easier way.

One man watching the women with their needles thought of a better way. The result of his thinking was to put the eye of the needle in its point. That made possible the sewing machine. Why didn't some woman think of that?

* * * *

MORAL: Some people never make any use of the upper part of their heads except when they hang their hats on them at the close of a day's work.

protect your industry; to replace jealousy and distrust in your fellows with friendship and trust; to be not only a manufacturer of cedar poles, posts, ties, pulpwood, etc., but a student of conditions, as well; to strive to make themselves a credit to the industry and its allies; to discourage poor manufacture; to boost the association and aid its officers to appreciate the value of their investment in association dues."

In the absence of Treasurer Partridge, the secretary read the treasurer's report, which showed the association to be in good financial condition.

T. M. Partridge offered a resolution in

connection with the death of J. C. Kirkpatrick expressing sympathy to his relatives and business associates. It was adopted and the gathering stood in silence with bowed heads for one minute in tribute to their late associate.

The Wednesday morning session was practically consumed by the report of advertising committees.

The pole advertising committee, after a long discussion, sanctioned an expenditure of not to exceed \$8,000 for advertising.

The inspection committee framed certain changes looking toward the improvement of the grade of northern white cedar poles.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Must Preserve Records for Period of Federal Control.

The Interstate Commerce Commission issued an order dated December 26 rescinding its order of April 6, 1922, and providing that in computing time during which records shall not be destroyed telephone companies shall include the period of government control. The new order became effective January 1.

The commission gave as its reason for revoking the former order the fact that the period of time within which claims for reparation arising prior to federal control could be filed had expired and that no such claims were pending.

The order was served on the United States Independent Telephone Association, as agent for member companies.

California Company to Sell to U. S. Forest Preserve.

The Inyo Coöperative Telephone Co., of Lone Pine, was given permission by the California Railroad Commission's order of January 23 to sell to the United States Department of Agriculture, Forest Service, the telephone system in Menache Meadows.

The system has been operated for the last ten years as a coöperative service for the convenience of stockmen.

Swing Legislative Ax on "Deadwood" in Illinois Commission.

Bills aimed at Governor Small's commission have been introduced into the Illinois legislature by Representative Charles W. Baker. The bills would eliminate two of the seven commissioners and all of the eight assistant commissioners from Governor Small's payroll.

In fixing the number of commissioners at five, the Baker bills reduce the Illinois Commerce Commission to the size of the old commission. The last two commissioners appointed would be taken from the payroll. They are William J. Smith, of Waukegan, editor of the Waukegan Sun, and Alex J. Johnson, of Chicago.

Records show that 85 per cent of the actual work of the commission is done by three men: Chairman Frank L. Smith, of Dwight; James R. Clark, of Bloomington; and J. Paul Kuhn, of Batavia.

Hearing Held on Proposed Rate Increase at Leesburg, Fla.

There was no opposition presented at the hearing before the Florida Railroad Commission in Leesburg, January 24, on the increased rate schedule proposed by the Leesburg Telephone Co. However, the

commission took the case under advisement.

Otto Wettstein, president of the company, showed that the last raise was in January, 1920, and since that time at least 125 new telephones had been installed and the entire system rebuilt. He also stated that, if the raise is granted, inside of three months subscribers in the city will have common battery telephones and the magnet system will be eliminated.

Mr. Wettstein declared that even with the increase Leesburg would have the lowest rates for common battery service of any city in Florida except Monticello.

Free Telephone Service Ordered Until It Is Improved.

A somewhat drastic order was issued by the Indiana Public Service Commission on February 2, when it announced that the Citizens Independent Telephone Co., of Columbus, must suspend collection of charges until March 1, or "such time as the company is giving satisfactory service."

Kansas Company Asks Injunction Against Commission.

The United Telephone Co., of Abilene, Kans., which recently was refused an increase in rates for its Marysville exchange, has applied to the district court for an injunction to have the order of the Kansas Public Utilities Commission set aside.

The company alleges that it has spent \$20,000 in improving its plant to give its subscribers common battery metallic service and it is unable to give the service with its present rates. The commission, in its order denying the rate increase, stated that companies in six other towns are giving its subscribers the metallic service with lower rates.

Lewisville, Ind., Subscribers Agree to Buy Bell Exchange.

The controversy over the sale of the Lewisville exchange of the Indiana Bell Telephone Co. to George Watts, of Knightstown, ended on January 24 when an agreement was reached whereby a group of Lewisville citizens will become owners of the property. Adjustments of the differences and the reaching of an agreement was made when a hearing on the petition of the Bell company for approval of the sale was reopened before John M. McCardle, chairman of the Indiana Public Service Commission.

Mr. McCardle told the parties the commission would approve the transfer of the property to Mr. Watts and then approve the transfer to the Lewisville people.

In this way the Lewisville people will gain direct control of the system.

The subscribers of the Bell exchange opposed the sale to Mr. Watts on the ground that the Knightstown company has a system of toll charges, whereas they had access to 1,400 instruments in the Lewisville vicinity at a flat rate.

In addition to selling the telephone equipment to the Lewisville men, Mr. Watts also sold five miles of telephone line, extending from Lewisville to Dunreith. This will enable the company to build up its business in that direction.

Iowa Companies Urged to Oppose Unfavorable Legislation.

A letter has been sent out to Iowa Independent telephone companies by Chas. C. Deering, secretary of the Iowa Independent Telephone Association, urging them to write to their representatives protesting against the proposed amendment to the law which exempts from taxation the stock of telephone companies.

It is pointed out by Secretary Deering that telephone property in Iowa is now subject to a high rate of taxation; that the capital stock of manufacturing and merchandising companies is now exempt and that this exemption is not affected by the bill now before the legislature.

There is much more reason for exempting telephone stock," states Mr. Deering's letter, "as telephone companies are furnishing the most generally used public utility service, and their earnings are universally low."

The bill objected to is known as House File No. 341 by Ontjes, and would repeal paragraph 7 of section 1304, Supplemental Supplement to the Code of Iowa, 1915, with amendments.

Attention is also called to Senate File 266, giving town councils the power to regulate telephone rates, which is still in the hands of the telephone committee. Secretary Deering requests that companies which have not already written to their senators in opposition to this bill should do so at once.

Trying to Get City Control of Telephone Companies in Iowa.

A bill to make telephone companies subject to municipal control was introduced in the Iowa legislature recently by Senator M. L. Bowman, of Waterloo.

When the Northwestern Bell raised its rates on business telephones in Des Moines last fall, a complaint arose among the business men, which resulted in the present measure before the Iowa house.

The bill is an amendment to the law which places under city control gas, electric and water companies. The clause which it is sought to add to the law reads:

"The power herein granted to cities and towns shall apply in all particulars to individuals or private corporations operating a telephone plant or exchange, and to the rents, rates, and charges for telephone service."

City Ordinance Gives Owensboro, Ky., Rate Increase.

In accordance with resolutions adopted at a mass meeting of the telephone users in Owensboro, Ky., the city commissioners passed an ordinance February 1 granting the Home Telephone & Telegraph Co. an increase in rates.

The new rates are \$4.25 for business telephones and \$2.50 for residence, the same as charged by the Cumberland Bell. The ordinance became effective February 1.

Louisiana Commission Wants Bell to Pay Litigation Costs.

Through Huey P. Long, chairman, and W. M. Barrow, attorney, the Louisiana Public Service Commission went into the United States District Court on January 25, asking that the costs in the recent telephone litigation be paid by the Cumberland Telephone & Telegraph Co.

No figure was fixed. It was said, however, that the adjustment would involve thousands of dollars.

On January 15, the company filed its acceptance of the commission's order reducing rates and making the new rates retroactive to May 13, 1922.

Civic Bodies Approve Plan for Merger in Louisville, Ky.

Several civic organizations of Louisville, Ky., have given their endorsement to Mayor Quin's proposal for a consolidation of the Louisville Home company with the Cumberland Bell.

A recent editorial in the Louisville Times expressed the opinion that unified service would be welcome but considered it doubtful whether telephone users would be willing to stand the increased rates necessitated by the cost of joining the systems.

Says Company Must Economize—Gives Slight Increase.

In the opinion of the Minnesota Railroad and Warehouse Commission, the Backus Rural Telephone Co., of Backus, will be able to get along on only a slight increase in rates, if managed with the strictest economy. The company had requested advances ranging from 25 to 50 cents a month, but the commission on February 2 authorized an increase of 25 cents in the one-party business, 10 cents in the rural switching rate, and established some new classes of service.

The company was ordered to furnish service from 7 a. m. to 9 p. m. on week days; from 8 a. m. to 10 a. m. and 6 p. m. to 8 p. m. on Sundays and holidays; and emergency service from 9 p. m. to 7 a. m. It was also required to install a system of accounts that will comply with the commission's accounting rules.

It was brought out at the hearing that the stockholders of the company operate other telephone exchanges and an extensive electric light and power system. The manager at Backus testified that he devotes his entire time to that exchange, but the commission said that it could be managed so that it would require only a small portion of his time and the remaining portion could be distributed over the other properties of the stockholders.

There was some protest by rural subscribers as to the grade of service rendered. The commission found, however, that it was not entirely the fault of the Backus company, as there appeared to be a lack of coöperation between the company and the officers of the township rural lines.

"Where the lines outside of the village limits are owned by one organization," said the commission, "and the lines and switching apparatus within the village are owned by another organization, harmony and coöperation must exist in order to obtain good telephone service."

The old and new net rate schedules follow:

Business:	Old rates	New rates
Two-party		2.00
Extension		1.00
Residence:		
One-party	1.50	1.50
Two-party	1.25	1.25
Extension .....		.50
Rural:		
Multi-party (metallic) ..	1.50	1.50
Multi-party (grounded) ..	1.50	1.25
Switching service .....	.25	.35

The Backus company serves 26 town stations and performs switching service for 174 connection stations.

Business Men Express Confidence in Commission.

The Cozad Mutual Telephone Co. found little opposition, at the hearing held in that city on January 11 by Commissioner Browne of the Nebraska State Railway Commission, to the request for an increase in rates. The city has spent a large amount of money laying down paving, installing sewers and adding other metropolitan frills. It required the telephone company to put all of its construction in the business district underground, and the business men expressed a willingness to pay whatever rates the commission found would pay expenses and give an adequate return.

The company levied an assessment of \$50 a share to pay for the improvements and other new construction, and those of the old stockholders, who refused to pay,

found ready takers for their holdings. The former manager was the only one to object to an increase. He said that the company had cut a melon back in 1909 and now had more stock than property.

At the present time the company has 350 stations of its own, but no rural lines. It switches between 500 and 600 farmers' telephones.

Trying to Organize Louisville, Ky., Bureau of Rate Data.

An effort is being made to hasten the passing of an ordinance by the city council of Louisville, Ky., creating a utility bureau. The new department would be under the supervision of the board of works and would have an annual appropriation of \$30,000 for costs of operation—\$10,000 of which would be paid by the Louisville Home Telephone Co.

The purpose of the bureau is to furnish figures on which to base sliding rates for service, so that information might be furnished when disputes arise.

Minimum Wage Bill Passed by Nebraska Lower House.

To the surprise of most observers, the lower house of the Nebraska legislature, after a half day of debate, recommended for passage by a vote of 58 to 42, the minimum wage bill which carries a \$12 weekly wage for all women, except those engaged in domestic work and on the farms, with 35 cents an hour as the smallest amount to be paid for irregular employment.

The bill has not yet been put on final passage, and there is a chance that it will fail, as it has in previous legislatures, when put to a final test.

It was possible to secure favorable action only after the introducers had consented to an amendment that excepted from its operation all industries located in cities of less than 3,000 population. This will relieve practically all of the smaller telephone companies of the state, which would have been hard hit by such a law.

The companies principally affected by it are the Northwestern Bell, the Lincoln, the Kearney, the Platte County and the Platte Valley. The minimum is much above the starting wage for operators, and in the case of the Lincoln company would add something like \$60,000 to its annual operating expenses.

File Amended Answer in Federal Court to Bell's Petition.

The Nebraska State Railway Commission and Attorney General Spillman have filed in federal court an amended answer to the petition of the Northwestern Bell, enjoining the rate schedule ordered into effect on January 1, last and which lowers exchange rates 10 per cent.

The commission, in the new document filed, emphasizes the principal points of attack it will make on the Northwestern

Bell's figures, which, on their face, justify higher rates than were granted. The commission raises the direct issue that the Bell pays too high salaries and too much for labor, and that it is not, therefore, economically and efficiently managed. It also challenges the conduct of the company in turning over much of its long distance business to the parent Bell company, which owns all of its stock, when it could route much of this over its own toll lines or carry all of the business in this way.

The commission makes it also plain that it proposes to attack in the court the justness of the 4½ per cent of gross revenues paid monthly to the parent company for apparatus and services furnished. In its order the commission criticised this contract, but did not denounce it. It also denies that the fair value of the property of the Northwestern is in excess of its 18 million stock outstanding, insists that 7 per cent and not 8 per cent is a fair return, and attacks the allocation of revenues and expenses made by the company and that these are not kept as prescribed by the Interstate Commerce Commission.

Bills in Nebraska Legislature Affecting Telephone Companies.

Two bills affecting Nebraska telephone companies have been indefinitely postponed, but others have taken their place. The time for introducing bills has passed, and none can be filed except by the governor or standing committees.

One of those that received its quietus proposed to lodge with the state railway commission power to fix the salaries of all officers and employes of companies. The other prohibited telephone companies from charging additional message tolls between any offices in a multi-office exchange and limited the charge to the flat station exchange rates fixed by the railway commission.

Other pending measures cover these subjects; repealing law fixing toll rate charges on air line mileage basis; forbidding companies operating more than one exchange within an incorporated city from charging for calls between exchanges; making it unlawful for any company to charge for calls between exchanges; making it unlawful for any company to charge more than a cent for every four-tenths of a mile, airline, for a five-minute conversation, and prescribing \$1.25 as the maximum charge between any points in the state; and amending the present forcible connection law by changing commissions.

Company Expresses Disagreement with Commission Order.

In a statement issued January 30, the New York Telephone Co. expresses its disagreement with the findings made by the New York Public Service Commission in its rate order handed down January 25. The company declares that the valuation of its property as fixed by the com-

mission is far below its present fair value; that the 7 per cent return allowed by the commission is inadequate and out of line with court and commission rulings allowing 8 per cent and more, and that under the new schedule of rates the revenue will still fall short of the amount to which the company is entitled.

Speaking for the company, J. S. McCulloh, commercial vice-president, said:

"In its order the commission fixes the value of our entire property used in furnishing service in New York state at \$246,182,491. Last April when the United States District Court for the Southern District of New York enjoined the commission's temporary rate orders of March 3, 1922, on the ground of confiscation, the court said that in its opinion 'no computation can reduce the basis for return much below \$300,000,000.' The valuation used by the commission in its recent order is \$53,000,000 below that stated by the federal court in its opinion last year, and since then a new plant costing more than \$50,000,000 has been added to the system.

Upon this reduced and unfair valuation the commission estimates that the new rates will provide a return of 7 per cent, although 8 per cent and more has been regarded as a reasonable return under similar circumstances and has been allowed by this and other commissions and by the courts to many public utilities. Moreover, this 7 per cent return is to be secured only if several millions of dollars are saved by a slashing cut in expenses. There is nothing in the evidence before the commission which justifies either such a reduction of expense or such a cut in the valuation of the company's property.

It is in the public interest that the telephone property should be fairly valued and the rate of return sufficient to enable the company to attract a continued flow of new capital which otherwise will seek other lines of investment. At least \$250,000,000 will be required in the next five years for the construction of new facilities in New York City alone. During the past two years we have been before the commission seeking to secure adequate rates and at the same time we have been confronted with an unprecedented demand for new service. Such a demand can only be met by continued additions to our plant provided by new capital.

Under these circumstances we are giving serious consideration to the action we should take in reference to this final order of the commission so that we may fulfill our obligation to the public to provide and maintain service that is adequate in quality and quantity and also to protect the rights of investors in our securities."

Oklahoma Companies Must Maintain Depreciation Reserve.

An order requiring that public utility companies maintain a depreciation reserve, was issued by the Oklahoma Corporation

Commission on January 8, becoming effective February 1. The order proper follows:

That every public utility company operating within the state shall, from and after February 1, 1923, create, provide and maintain separately, a depreciation reserve fund into which shall be placed all moneys allowed and provided for depreciation.

No public utility company shall be permitted to pay out in dividends any sum in excess of 6 per cent of the record value of its property used and useful in rendering service, until after the full amount of allowed depreciation shall be paid into the depreciation reserve fund of such company.

That the fund shall be handled and accounted for entirely separate and apart from the other ordinary funds of such utilities.

That the depreciation reserve shall be held strictly in the fund and shall only be used in the following way and for the following purpose:

1. For meeting depreciation;
2. For investment in government or other high grade listed securities to be held strictly in the fund, and which shall return to the fund not less than 4 per cent per annum; or
3. Any such utility may borrow from its depreciation reserve fund for a period of not to exceed three years, not more than 60 per cent of the cost of any new construction, extension or addition to the property—items chargeable to capital account—but as security to the fund there shall be deposited in the fund the utility's own bonds or the notes of such utility bearing interest at not less than 5 per cent per annum, which interest shall accrue to the fund.

In handling such fund the utility will be held strictly accountable for its safe investment, proper administration and accounting. The accounting shall be double-entry, with the asset account designated "depreciation fund", and the liability account designed "depreciation reserve."

Each annual report filed by any public utility company shall set out clearly the exact condition of such fund, showing clearly all additions to or deductions from this fund during the year covered by such report, the balance of the fund at the close of the year, and how invested.

Close Estimate of Service Cost Per Mile Used to Fix Rates.

On January 24, the Wisconsin Railroad Commission granted permission to the Horseshoe Telephone Co. to change its rates as follows:

Line rental: \$8 per year per telephone for the first mile from Kewaunee measured from the point where connection is made with the system of the Wisconsin Telephone Co. and 40 cents additional for each mile thereafter. This rate was formerly \$3 for the first mile.

First!

—first to brand Butt-Treated poles for the protection of the buyer.

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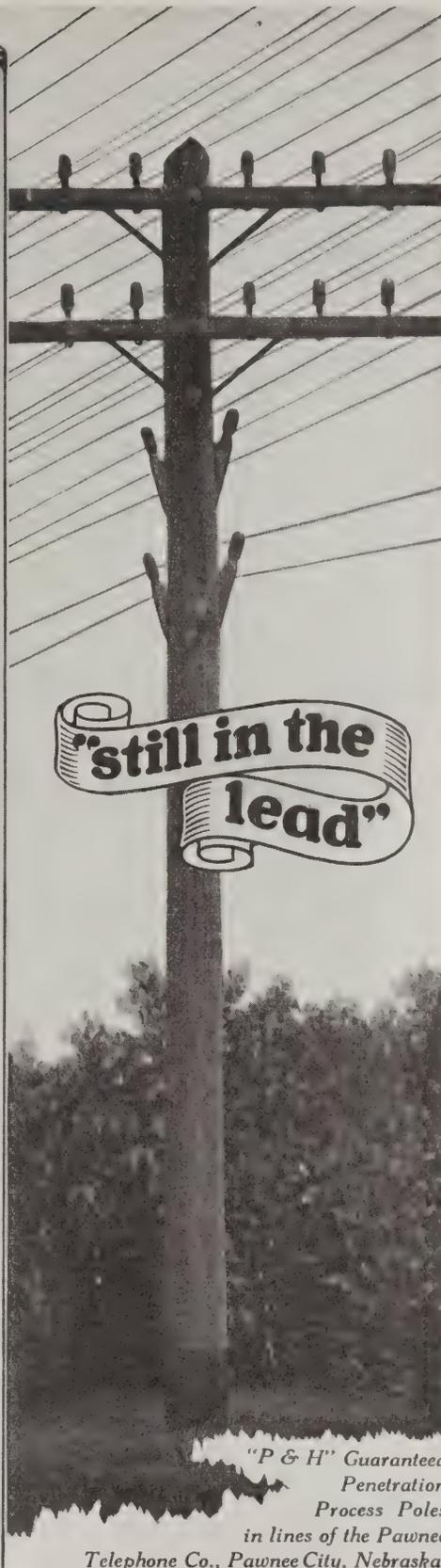
For longest pole life---for greatest satisfaction and economy---insist on the "P & H" --- the original Guaranteed Penetration Process.

We produce and sell butt-treated and untreated Northern White and Western Red Cedar Poles; --- we can give you any form of butt-treatment; --- and we are the originators of the Guaranteed Penetration Process---the "P & H".

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Omaha, Neb., 513 Electric Bldg.

Houston, Texas, 1111 Carter Bldg.
Dallas, Texas, 311 Sumpter Bldg.

Buffalo, N. Y. 950 Ellicott Sq. Bldg.
Louisville, Ky. 1416 Starks Bldg.

Instrument rent: \$2.35 per year per instrument, including receivers, transmitters, and induction coils, whether such equipment is furnished by the Wisconsin Telephone Co. or by the Horseshoe Telephone Co. This rate was \$1.75.

Switching service: \$7.50 per telephone per year, instead of \$8.10, as charged by the Wisconsin Telephone Co.

The company operates roadway lines in the vicinity of Kewaunee and receives its switching service from the Kewaunee exchange of the Wisconsin Bell. The sleet storm of February, 1922, completely crippled the service, and it was necessary to rebuild practically the entire line with heavier poles, cables and new wire at high prices. The report shows a reconstruction item of \$3,568, due to this sleet storm.

This type of rate schedule is unusual as it is the only one of its kind in the state. Its departure from the ordinary type is in the direction of an unusually close approximation of the cost of service based on the distance from the central office.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

December 26: Order issued revoking order of April 6, 1922, which provided that telephone companies might exclude period of federal control in figuring time for which to preserve records.

FLORIDA.

January 24: Hearing held at Leesburg on application of Leesburg Telephone Co. for increase in rates; matter taken under advisement.

GEORGIA.

January 20: Application filed by Monroe Telephone Co., of Monroe, for authority to issue a stock dividend to increase its capital stock.

ILLINOIS.

January 26: Proposed increased rates of Shiloh Mutual Telephone Co., of Huntsville, suspended until June 1.

February 6: Hearing held at Springfield on complaint of Versailles Telephone Co. that J. E. Hall is operating a telephone utility in Versailles without having applied for or receiving a certificate of convenience and necessity.

February 6: Hearing held at Springfield on the application of the Westfield-Kansas Telephone Co. for an advance in rates for service in Kansas and vicinity.

February 7: Hearing held at Springfield on complaint of E. N. Irish relative to certain practices and charges of Blandinsville Switchboard Co. in and near Blandinsville.

February 7: Hearing held at Springfield on complaint of Commercial Telephone & Telegraph Co., of Olney, relative to failure of Calhoun Independent Telephone Co. to carry out certain rules and regulations in connection with toll line and exchange connections with complainant between Olney and Calhoun.

February 7: Hearing held at Springfield on complaint of Commercial Telephone & Telegraph Co., of Olney, as to failure of Parkersburg Mutual Telephone Co. to carry out rules and regulations in connection with toll line and exchange connections between Olney and Parkersburg.

February 7: Hearing held at Springfield on complaint of Commercial Telephone & Telegraph Co., of Olney, alleging failure of Claremont Farmers Independent Tele-

phone Co. to carry out rules and regulations regarding toll line and exchange connections between Olney and Claremont.

February 7: Hearing held at Springfield on citation in the matter of failure of Commercial Telephone & Telegraph Co., of Olney and Dundas Mutual Telephone Co., of Dundas, to handle telephone messages between Olney and Dundas. Cross petition filed by Commercial Telephone & Telegraph Co. against Dundas Mutual Telephone Co., regarding exchange connections and toll lines between Olney and Dundas.

February 7: Hearing held at Springfield on citation to Herrick Limited Telephone Co. and Oconee Telephone Co. to show cause for discontinuance of toll service between Herrick and Oconee.

February 7: Hearing held at Springfield on petition of Farmers & Merchants Telephone Co. of Moultrie County, of Livingston, regarding rules for toll service.

February 7: Hearing held at Springfield on proposed increase in rates of Morrison Telephone Co. for service in Morrison and vicinity.

February 8: Hearing held at Springfield on application of Illiopolis Telephone Co., of Illiopolis, for authority to issue its first mortgage, 6½ per cent, gold bonds in the aggregate amount of \$12,500, and to execute its deed of trust to W. C. Durkes, as trustee.

February 8: Hearing held at Springfield on joint application for approval of sale by F. M. Page, administrator, and Mary H. Page and S. H. Aikman to the Hume Telephone Co. of the telephone property in the villages of Hume and Brocton, for the sum of \$40,000; also for a certificate of convenience and necessity to operate the property, and authority to issue and dispose of its capital stock in the amount of \$40,000.

INDIANA.

January 24: Hearing reopened on application of Indiana Bell Telephone Co. to sell Lewisville exchange to George Watts, of Knightstown; agreement reached by subscribers and Bell company by which subscribers will take over exchange.

February 2: Citizens Independent Telephone Co., of Columbus, ordered to suspend collection of charges until March 1, or until service is improved.

MINNESOTA.

February 2: Authority given Backus Rural Telephone Co., of Backus, to place in effect a small increase in rates; ordered to increase hours of service and to install accounting system acceptable to commission.

February 21: Hearing in Sherburn on application of Sherburn Mutual Telephone Co. for authority to increase its local and rural rates.

February 28: Hearing in Barrett on petition of Barrett Rural Telephone Co. for increase in business rate and rural switching charge.

NEBRASKA.

January 27: Application filed by the Lincoln Telephone & Telegraph Co. for the discontinuance of its toll station at Princeton on the ground of insufficient revenue. Service to be furnished over farm lines from Cortland exchange.

January 27: Complaint filed by the Ohio Telephone Co. against the Lincoln Telephone & Telegraph Co. alleging exorbitant increase in toll collections.

January 29: Complaint filed by the Southeast Telephone Co., of Falls City, against the Lincoln Telephone & Telegraph Co. asking for rearrangements of toll liabilities.

January 30: Application of the Platte Valley Telephone Co. for permission to make a joint-user rate; granted, with per-

mission to charge standard rate of 50 cents per month.

January 30: Application of the Wehn Telephone Co. for permission to make a joint-user rate; granted with permission to charge standard rate of 50 cents per month.

January 31: Application filed by the Farmers Telephone Co., of Newcastle, alleging that financial condition of the company requires an increase of 25 cents a month for each class of service, and asking order allowing it.

NEW YORK.

February 2: Proposed schedule of advanced rates, effective March 1, filed by Walton Peoples Telephone Co., serving Walton and vicinity.

February 9: Hearing held at Buffalo on complaint of the city of Jamestown and Jamestown Chamber of Commerce as to rates of Jamestown Telephone Corp.

OHIO.

January 25: Increased rate schedule filed by Ashtabula Telephone Service Co., of Ashtabula.

February 15: Hearing to be held in Columbus on application of Ohio Bell Telephone Co. for increased rates in Toledo when service is unified.

OKLAHOMA.

January 20: Authority granted Guymon & Hansford Telephone Co., of Guyman, to increase its capital stock from \$7,000 to \$35,000.

WASHINGTON.

January 22: Hearing held in Spokane on joint application of Pacific Telephone & Telegraph Co. and Spokane Home Telephone Co. for increased rates.

WISCONSIN.

January 29: Authority given Oakfield Telephone Co., of Oakfield, to issue \$15,000 of first mortgage bonds, dated March 1, 1923, maturing March 1, 1933, for the purpose of securing funds with which to pay for additions and extensions to its property and plant.

January 29: Ryan Telephone Co., of Ryan, authorized to issue 80 shares of its capital stock of the par value of \$60 per share, making a total issue of \$4,800. This stock is to be issued to the present stockholders, who will surrender an equal amount of shares at the par value of \$50 each to the company, and pay the company \$10 per share for each share of the new stock.

January 29: Permission granted the Hampden Farmers Telephone Co., of Columbus, to issue \$6,000 of its capital stock, consisting of 60 shares of the par value of \$100 each, for the purpose of securing funds with which to pay for additions and extensions to its property and plant and all for purposes properly chargeable to capital account.

February 1: Clinton Telephone Co., of Clinton, authorized to issue \$5,500 of its capital stock, consisting of 220 shares of the par value of \$25 each, for the purpose of securing funds with which to pay existing indebtedness incurred in the purchase and improvement of real estate used for quarters for the company, and all for purposes properly chargeable to capital account.

February 7: Hearing held at Madison on the application of the Richmond Telephone Co., of Delavan, for authority to increase its rates.

February 9: Hearing held at Madison on the application of the Hampden Farmers Telephone Co., of Columbus, for authority to increase its rates.

February 13: Hearing at Boscobel on the application of the Boscobel Telephone Co. for authority to increase its switching rates.



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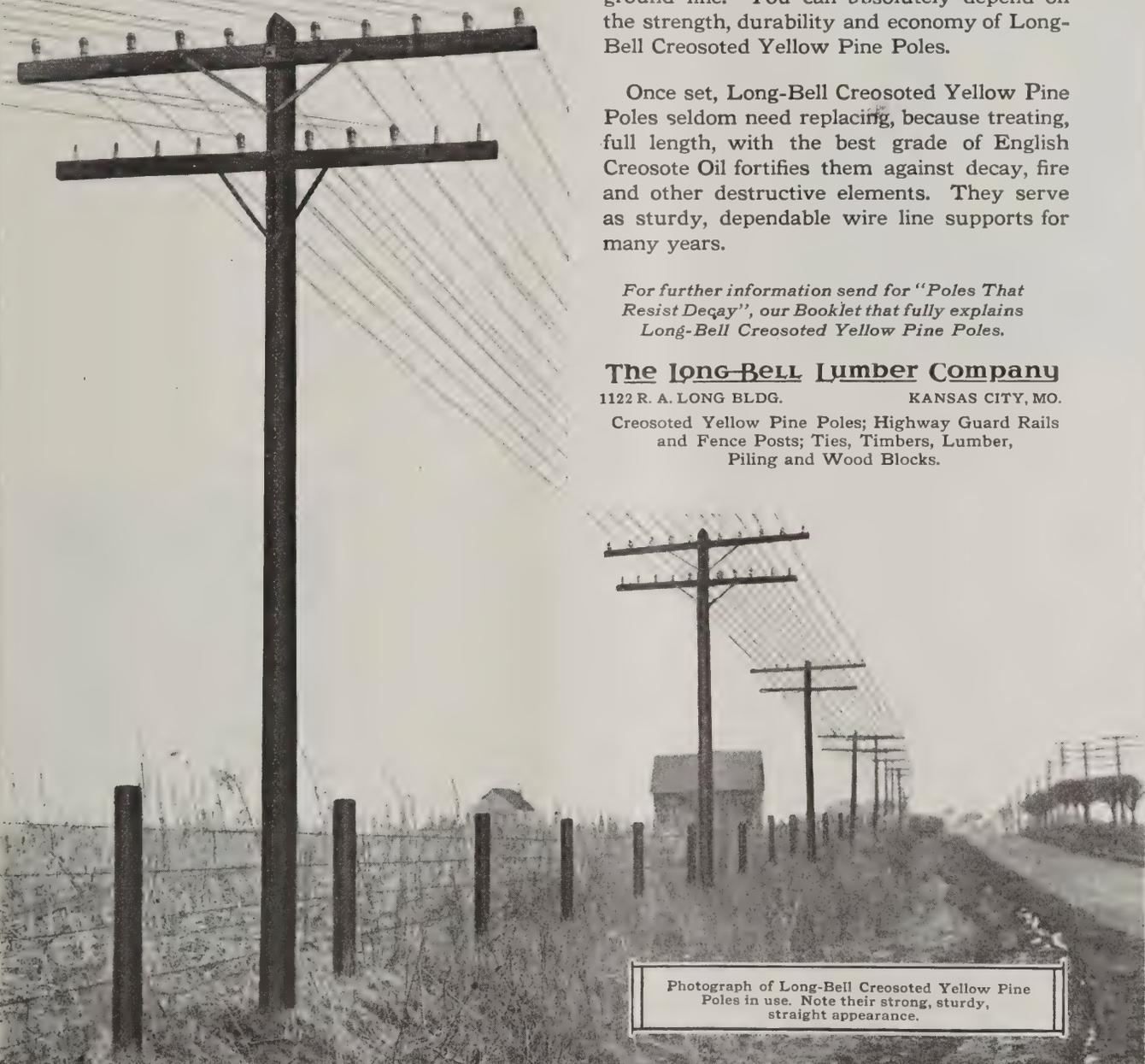
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LONG-BELL

Obituary Notices of Telephone Men

Damon W. Gretorex, vice-president and general manager of the Blue Earth Valley Telephone Co., Blue Earth, Minn., died at St. Joseph's Hospital in Mankato



The Late D. W. Gretorex, of Blue Earth, Well Known in Southern Minnesota, Was Active in Telephone and Civic Affairs.

on January 27, after but ten days' illness with influenza.

The death of Mr. Gretorex came as a great shock to the community in which he lived—for he had taken a keen interest in its affairs—as it does to the telephone world. He had been prominent in Minnesota telephone affairs for a number of years, a good worker for the association, and his place will be hard to fill. He was vice-president of the association when he died. In the telephone world he was highly regarded and his many friends received the news of his death with great sorrow.

At the annual convention of the Minnesota Telephone Association in St. Paul two weeks ago, he was to have made an address but President Jay Greaves announced his serious illness.

"D. W." was born in Sheldon, Iowa, January 13, 1880, and was just a few days over 43 years old at the time of his death.

He moved with his parents to Hartford, S. D., at the age of 12, and was educated in the public schools and attended the Sioux Falls College.

He was married to Miss Ruby Norton, at Hartford, on November 26, 1903. Three children were born to them: Darrell, Wynona and Genevieve. All survive him as

does also a sister, Mrs. W. A. Eckles, of Nora Springs, Iowa.

While at Hartford, Mr. Gretorex organized and promoted the local telephone company, and was also in the United States revenue department for five years.

The family later moved to Portland, Ore., where they lived for a few years, going to Blue Earth in 1913.

The Blue Earth Valley Telephone Co. was then purchased and Mr. Gretorex became the vice-president and general manager. By a combination of hard work and intelligent effort, he built it up and put it on a paying basis.

Mr. Gretorex was a very public spirited man and greatly interested in civic work. He was chairman of the Faribault County Red Cross chapter, chairman of the Blue Earth Chautauqua & Lyceum Course boards, and a member of the city library board. He was a very active man and took a prominent part in all matters that meant for progress. He was a Mason and a Shriner.

Joshua D. Powers, of Louisville, Ky., prominent in telephone and financial affairs, died on January 31, at the age of 78.

He was one of the organizers of the Central Home Telephone & Telegraph Co., of Louisville, of the Louisville Home Telephone Co., and was an officer and director of both companies continuously until his death.

While his death was not unexpected, it came as a shock to those who had been associated with him, who not only miss him as a friend but feel that they have lost one of their wisest counsellors.

He had been in failing health for three years, having suffered two strokes of apoplexy, and had visited several sanatoriums in an effort to regain his health. Three months ago he returned to his home in Louisville and his condition gradually grew worse.

"Colonel" Powers—the title given him by his friends—was born October 17, 1844, in Hawesville, Ky., receiving his education there and in Georgetown and being later admitted to the Kentucky bar.

When he was a young man he moved to Owensboro, where he practiced law and conducted a small bank. He also built the first telephone exchange in Owensboro—which was, in fact, claimed to be the first in Kentucky. He was collector* of internal revenue at Owensboro, being appointed by President Cleveland and serving from 1895 to 1899.

He went to Louisville more than 30 years ago to organize the United States Trust Co., and after effecting the corporation decided to make his residence there.

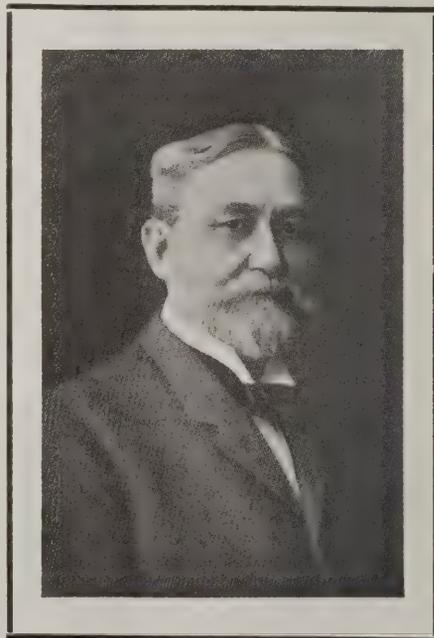
Mr. Powers was one of the strong men in the Independent telephone field during

the last quarter of a century. About two years ago he retired from active executive work in connection with the telephone business, but he never lost his interest in it. He was a fighter from the word "Go!" and back in the old days, the Independent people had in Colonel Powers an able champion.

He was very active in both the state and national associations several years ago. His talk before the convention of the national association—then known as the Interstate Independent Telephone Association—in December, 1902, on "Independent Telephone Securities as an Investment" is memorable for its clear conception of the status of Independent telephony at that time. Many were the telephone managers and owners who received encouragement from his words, coming as they did from such a reliable source.

There was a general expression of appreciation of the merit of Colonel Powers' address, and it was decided to put it into pamphlet form. It was heralded as a valuable aid to any exchange that wanted security—first, because it told how to build the exchange so that there would be some security; next, so that the companies might show it to the bankers in order that they might be able to calculate what comprised securities.

One of the principles which Colonel



"Col." J. D. Powers, One of the Pioneer Fighters for Independent Telephony, Passed Away on January 31.

Powers—in common with other pioneers who have built up successful companies—stood for was expressed in these words from his address at that convention 20 years ago: "Good service should always

command reasonable compensation. Do not seek to reduce rates, but strive to improve the service to the end that Independent securities may be placed on a permanent and stable basis." Time has demonstrated the soundness of his theory.

He believed in the telephone business, invested in it, and gave it the best of his brain and energy.

He was a leading figure in the business realm of Kentucky for many years. He was founder and first president of the Commonwealth Life Insurance Co. He resigned as president of the insurance company a year ago and accepted the chairmanship of the board of directors. He retired from active participation in the banking business some time ago.

Colonel Powers was also vice-president of the board of trustees of the Louisville public library, a thirty-second degree Mason, a member of the Pendennis Club and of the Methodist Church at Owensboro.

He was a widower at the time of his death—his wife having died in 1915—and is survived by six sons and two daughters.

Robt. E. Chetwood, plant engineer of the Western Union Telegraph Co., New York City, died at his home in Elizabeth, N. J., on January 25, at the age of 50 years.

Mr. Chetwood was a graduate of Lehigh University and was regarded as one of the foremost engineers in the electrical industry. He had many years of experience in telephone engineering but for the last several years had been associated with the Western Union.

Dr. Wm. F. Smith, president of the Mexican Telephone & Telegraph Co., died at his home in Somerville, Mass., on February 2.

He was a graduate of Harvard and in addition to his interest in telephone development in Mexico was engaged for many years in chemical and metallurgical research.

J. A. Devore of Bryan, Ohio, died Monday afternoon, January 29, after but two days' illness with pneumonia.

His death was a shock to the community where he had been in active life and health for the past 20 years. He was president of the Williams County Telephone Co. for 16 years, resigning only about a year ago.

Mr. Devore was a regular attendant at the meetings of the Ohio Independent Telephone Association and was active in its affairs.

James Asbury Devore went to Bryan from Lincoln, Neb., about 20 years ago and he and his wife were prominent in social and religious activities there until her death five years ago last fall.

During his life in Bryan Mr. Devore was always active and a leader in business, church and social affairs. He acted as an official of the Presbyterian church for many years. He was a man of sound opin-

ions, unquestioned integrity and wide acquaintance. He served in the Union army in the Civil war, enlisting as a young man of 15 years, and was always patriotic and active in his citizenship, being prominent during the late war as head of the county organization during the bond drives.

Funeral services were held February 1 under the auspices of Bryan Commandery Knights Templar, of which he was a member.

Personal and Biographical Notes.

H. H. Wheeler, Jr., for a number of years plant engineer of the Lincoln Telephone & Telegraph Co., Lincoln, Neb., has been made chief engineer of that organization. The company has had a number of engineers in its employ in the past, and it was decided that it could be made more effective if these were also grouped into one department. It was created, and Mr. Wheeler chosen to head it.

R. M. Morris, commercial engineer of the Mountain States Telephone & Telegraph Co. at Denver, Colo., has been named as commercial manager to succeed H. E. McAfee, who has been made assistant vice-president in charge of operations.

Mr. Morris began his telephone career in Kansas and was first employed by the Mountain States company as wire chief at Cripple Creek, Colo. He was successively district manager at Durango, division commercial manager at Helena, Mont., and commercial manager at Denver.

R. L. Burgess, of Denver, Colo., general commercial supervisor of the Mountain States Telephone & Telegraph Co., has been named to succeed R. M. Morris as commercial engineer.

He was originally a clerk in the Denver plant department and, after considerable experience in that city was made district manager at Tucson and later general commercial supervisor. During the war he had charge of important telephone operations as an officer of the signal corps in the A. E. F.

Fred C. Smith, manager and treasurer of the Vernon Telephone Co., of Vernon, N. Y., has been recommended for postmaster by Congressman H. P. Snyder—this being in line with the rule that ex-service men shall be given preference.

Mr. Smith enlisted and was in training during the world war, and was awaiting orders to go across when the armistice was declared.

He is a progressive man and one who likes work. The Vernon Telephone Co. is being operated in a very efficient manner and furnishes high grade service—even giving its subscribers radio reports and concerts. Besides managing the telephone company, Mr. Smith is local manager of the Adirondack Power & Light Corp.

He is president of the Central New York Independent Telephone Association; a Mason, a member of the I. O. O. F. and of the American Legion.

For Sale
KELLOGG TWO WIRE
C. B. SWITCHBOARD

Golden oak cabinet
Automatic listening
Automatic ringing, dark key shelf

	Capacity	Equipped
Sections	7	6 3/4
Positions	21	18 1/2
C. B. Lines per position	120	120
C. B. Lines total...	1960	1960
Cord circuits per position	15	15
Multiple jacks, total	21000	14320
Rural positions ...	1	1
Rural lines	60	50
Pay Station positions	1	1
Pay Station lines..	160	60
Toll to Local trunks	20	15
Toll to Rural trunks	5	5
Inter office trunks..	20	20
Recording trunks to toll	10	10
Chief operators Desk (sanitary style) ..	1	1
Information Desk (sanitary style)..	1	1
Operator's chairs...	20	20
Operator's Breast plate sets.....	27	27
Lighting fixtures...	9	9
Relay Rack.....	2160	1960
Power Switchboard	1	1
G. E. Arc Rectifier (50 amp)	1	1
Motor gen. Charging set (60 amp)	1	1
Four frequency vibrator ringing machines	1	1
A. C. Motor driven ringing interrupter	1	1
D. C. Motor driven ringing interrupter	1	1
Storage batteries, Exide F 11.....	11	11
Storage batteries, Exide F 7.....	11	11
Wire Chief's desk (sanitary style)....	2 pos.	2 pos.

This equipment includes everything required for a 1960 line exchange. It is in first class condition and is now satisfactorily handling a load of 40,000 calls per day. Delivery can be made in September, 1923. Terms if desired.

FORT DODGE
TELEPHONE CO.
Fort Dodge, Iowa

POSITION WANTED

WANTED—Widow wants position as telephone operator in small town in Wisconsin. Sixteen years' experience. Prefer living rooms in connection with office. Address 5208, care of TELEPHONY.

FOR SALE

FOR SALE—One Holtzer-Cabot 65-volt D. C. generator, 30-amp. capacity, 750 r.p.m. One Holtzer-Cabot 2 h. p. 200-volt D. C. motor, 1360 r.p.m. One Holtzer-Cabot harmonic motor generator ringing set consisting of 220-volt D. C. motor, directly connected to sep-

arate 1/2-amp. generators of 50, 66.6, 16.6 and 33.3 cycles. This machine is equipped with speed regulator, howler, busy-back and trouble-back attachments and is practically new. Will sell all or part of the above equipment at a very low price on account of change in power voltage. Address 5209, care of TELEPHONY.



Approved by National Board of Fire Underwriters

Immune from service interruptions is the telephone line protected by

**ARGUS TYPE
A-C LIGHTNING ARRESTER**

It is as efficient in guarding against crosses with high tension circuits as against lightning.

Two short plates above the ground plate and separated from it by .004 in. offer safe protection against crosses with high tension lines of 500 to 1200 volts.

A neat porcelain cover keeps out dirt, dust and moisture.

(The Type A-C Argus Arrester is effective, too, in protecting radio receiving sets.)

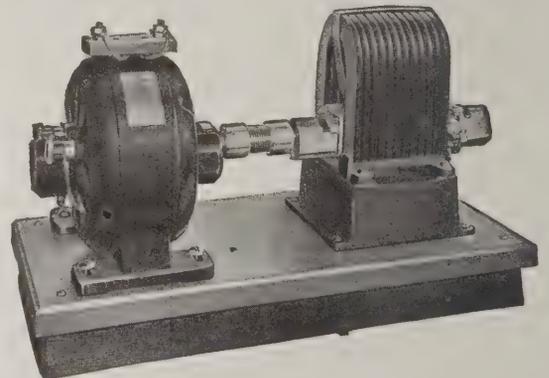
Write immediately for our special spring offer to telephone men.

FOOTE-PIERSON & CO., Inc.
160-162 Duane St. New York City

**Constant Voltage
Constant Frequency**

Do *YOU* Have These Conditions
In *YOUR* Exchange?

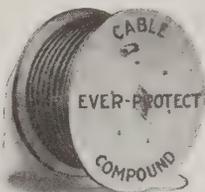
**Install the Holtzer-Cabot
Magneto-Ringing Motor-Generator**



And you are assured **PERFECT RINGING SERVICE** under all conditions. You owe this to your subscribers and you owe it to your exchange.

IT PAYS!

THE HOLTZER - CABOT ELECTRIC CO.
Chicago Boston



TRADE MARK

**It's Rightly Named
"Ever-Protect"**

This cable compound is for underground cable without use of conduit. Through its use, corrosion and deterioration of cable sheath by chemical action are eliminated.

Prevents depredation by rats—dampness due to defective cable sheath and defective wiping of joints. It's flexible. It's lasting.

Write for important data—today.

NATIONAL CABLE COMPOUND CO.
MITCHELL - INDIANA

Note Protection at Corners

Blake Insulated Staples

Unequaled for telephone and bell wiring. The fibre insulation prevents troublesome short circuits and grounds.

4 Sizes Pat. Nov., 1900

Write for Samples

Blake Signal & Mfg. Co.
BOSTON, MASS.

**NORTHERN POLE
and
LUMBER COMPANY**

POLE SERVICE

**DULUTH
MINNESOTA**

**RELIABLE
TELEPHONE
SUPPLIES**

from firms that are equipped to supply the needs of the industry may be obtained by patronizing the advertisers on these pages.

Telephony

THE AMERICAN TELEPHONE JOURNAL

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There is still plenty of room for the telephone industry to grow.

"The need for telephone service is as great in the country as in the city or village, perhaps even greater because of the relative isolation of farm homes. Yet less than two-fifths of our country homes have telephones."

This is the foreword of Farmers' Bulletin No. 1245, just issued by the United States Department of Agriculture, dealing with farmers' telephone companies, their organization, financing and management. According to the government statistics, there are 2,500,000 telephones on the farms of this country, with more than 4,000,000 farms lacking service.

This will open the eyes of many people—even those in the telephone business—who have heard so much about what the telephone has done to lighten rural life that they have taken it for granted that nearly all farms have wire connection.

* * * *

Census figures are not infallible, but, taking them as a basis, they mean that only two American farms out of five have telephone connection. The ratio varies greatly according to states. In Iowa, for instance, five out of every six farms have service, while in South Carolina only one out of every 18 farms is so equipped.

* * * *

The government's investigation shows that the states which are in greatest need of rural telephones are South Carolina, Louisiana, Florida, Georgia, Mississippi, North Carolina, Alabama and Virginia in

MORE FARM TELEPHONES NEEDED

with a percentage of 51.8, leading New York which

has 47.6 per cent and Pennsylvania with 43.5 per cent.

In four states—all in the South—less than 10 per cent of the farms have telephones. South Carolina is the most needy, only 5.7 per cent of its farms having service. Seven other states have telephones on between 10 and 20 per cent of their farms, and in seven others the percentage of farms having service runs between 20 and 30 per cent.

* * * *

This brief summary gives a birdseye view of the possibilities for further extension of telephone development throughout the country.

It is true that the high wages paid in industrial centers during the war encouraged a movement away from the farm, and greatly increased the massing of population in cities and towns, but the agricultural sections of America still remain the backbone of the nation. The farmer is coming back into his own and as the remote districts are developed and conditions improve, he will be an important factor in the market for telephone service.

* * * *

As they can use it to advantage, telephone managers should secure a copy of this Bulletin No. 1245 from the Department of Agriculture. They will find it contains considerable information of value to those dealing with farm lines or who plan extensions in rural districts.

While the bulletin touches technical and

"Telephony" Offices Moved.

Our general offices are now located in Rooms 1636-1642 (inclusive), Transportation Building, 608 South Dearborn St., Chicago. Telephones Wabash 8604 and 8605.

Telephony Publishing Corp.

the South, and New Mexico, Arizona, Montana, Utah and Wyoming in the Western mountain region.

The reason for this shortage in the South is attributed to the fact that most of the farms are occupied by tenants on short-time contracts, whose uncertain tenure prevents them from planning for telephone service and hinders the service companies from seeking their patronage. In the mountain states the rugged country, sparse population and great distances are the difficulties that account for the lack of telephones.

* * * *

An interesting map prepared by the Department of Agriculture shows the percentage of farms in each state having telephones. Iowa leads with 86.1 per cent, Kansas is second with 77.9 per cent, Nebraska third with 76.4 per cent. Illinois fourth with 73.2 per cent. Then comes Indiana with 66.4 per cent, Missouri with 62.2 per cent, Ohio with 62.1 per cent and Minnesota with 62 per cent. Closely following are South Dakota with 59.4 per cent and Wisconsin with 59.1 per cent.

Connecticut leads the Eastern states

engineering matters only incidentally, it deals with the general problems of organizing, financing and operation, and is aimed to assist in the development of telephone service in territory now without it, or in the improvement of existing rural service.

* * * *

One needs only to glance over the last report of the Nebraska rate commission to be convinced that there is no profiteering in the telephone business of that state. Of the 213 telephone companies reporting to the commission, it appears that only 51 paid dividends in 1921, while 32 companies failed to earn their operating expenses.

Having put this statement in its report, the question naturally arises: Why doesn't the Nebraska commission adjust the rates of these companies and enable them to get off the red side of the ledger.

Of course, a rate commission is not urging utilities to seek more revenue. Maybe the fault lies with the companies for failing to make application and demand their rights. They should get busy.

* * * *

Exclusive of the two largest companies in the state—the Lincoln T. & T. and

the Northwestern Bell—the other 211 concerns earned a net of \$375,000 in 1921 on a capital stock of \$4,800,000, which is a trifle over 7.8 per cent. Only \$72,000 was paid out in dividends, the balance going to reserves and surplus. The two big companies paid about 6 per cent dividends.

* * * *

Analysis of the Nebraska report brings out some interesting facts. There are 19,945 owners of stock in the companies furnishing telephone service in the state. If this army of investors were to co-operate and act unitedly they could do the industry incalculable good. Supposing, for instance, each one used his influence to obtain a fair deal for the business in which he has invested his money.

* * * *

Imagine the effect on a legislature or a commission that received 19,945 letters or telegrams urging a specific action along utility lines! No doubt they would have a powerful influence. We have yet to hear of a political body which would not pay respectful attention to the request of nearly 20,000 voters acting in concert.

That is one of the big advantages of local ownership of a utility enterprise.

The home folks who have their money at stake are in a position to defend the company's rights.

In this connection it is interesting to note that the Lincoln company, whose public relations are in a fine, healthy condition, has 2,093 stockholders. The commission reports the Bell company as having but 13 stockholders.

* * * *

Copper is a big item in the telephone business. Therefore, the merger of the two big copper producers, the Anaconda and the Chile companies, last month is of special interest to telephone men, as, indeed, it is to everybody who drives an automobile, listens in on radio or builds a house.

The statistics show that the telephone and telegraph industry used 100 million pounds of copper in 1920, at which time it was the largest consumer of the metal.

The merger, it is said, will reduce the cost of copper production almost half, and the Chile properties will add a supply of 225 million pounds a year for 125 years. Rightly managed this should prove an advantage to industries like the telephone business which use the metal in huge quantities.

The Third Link in Connection Chain

Here Is the Story of the Methods Used by One Large Business Establishment to Educate Its Employes in the Answering of Telephone Calls, Thus Promoting Sales and Increasing the Efficiency of Its Telephone Service

By M. J. Fleming

Realizing the extent to which telephone service may assist in making or marring the reputation of a business house in a community, one of the large retail department stores of Boston, Mass., inaugurated an educational program last fall, with the purpose of teaching its employes how to gain the greatest benefit—for themselves, their patrons and the store.

The educational department of the Jordan Marsh Co.—of which Mary Hopkins is director—seeks to bring about the highest grade of intelligent efficiency. That is, its aim is to convince the employes that a little thought put into their service will produce results sooner and better than a mechanical or slipshod manner of serving.

The idea of a demonstration which would let the employes see themselves as others see them, presented itself. The department of education received it with open arms, moulded it into a definite shape, worked over it, and polished it until every member of the department and the man-

agement—which had been asked to lend its coöperation to make the affair a success—beheld it with enthusiasm.

Then came its presentation before the employes—who not only enjoyed seeing themselves as others see them, but started in to check up on themselves (for everyone admitted that he was guilty of at least a few of the errors portrayed) and apply what they had learned.

The demonstrations lasted a week, so that all might be able to attend, and were given every morning at 9:15. They were staged in the assembly hall, with employes as actors and equipment furnished by the New England Telephone & Telegraph Co.

Previous to the demonstration, Superintendent Fairclough, of the Jordan Marsh Co., explained why it was held and expressed his appreciation for the coöperation given by the New England company in supplying the necessary apparatus.

The demonstration took the form of dialogues between persons representing the

public, the store's switchboard operators, and various persons in the store. The conversations were actual ones which had been taken down by a stenographer who listened in at the switchboard several weeks before the demonstration. Names were changed to save embarrassment.

The stage was divided into five sections, each screened off from the others—part of it being shown in the accompanying illustration. One section—the center one—represented the Jordan Marsh switchboard; two represented departments in the store, and the other two were customers' homes.

The switchboard was there and all the telephones in the different sections were connected to it, so that it was very real.

It was a good entertainment—the humorously human incidents keeping the crowd laughing, and yet leaving a deep impression on all. "Believe me," said one girl after she had witnessed the performance, "I watch my step now when I use the telephone."

The first dialogue was called, "A Sale Lost." A customer called the store before nine in the morning. The operator, unable to get any response in the department wanted, took the customer's name and address and said she would call him. He told her to hurry for he had to leave at nine o'clock.

The operator tried again to get the department, but the salesperson who was in early took his time about answering the telephone. He also failed to see that the call reached the person who was wanted and, of course, the receiver was left off so that the operator couldn't call him again. She had to get the supervisor to call the adjoining department to have the receiver hung up.

While the operator was doing all this, the customer became impatient and finally had to leave just before the operator called him back. So, the sale was lost.

Then they gave the dialogue to show the kind of service the customer should have received. That was called, "A Sale Made." It showed a quick connection with the department, intelligent service by the salesperson—who worked in some suggestive selling talk—and a delighted customer. It all went off as smooth as silk and showed how easy it is to do the right thing.

"Unintelligent Handling of a Customer" was the title of the next act. In it the customer called Jordan Marsh Co. to ask about something she had not received. She was switched all over the store, and in each place she had to tell her story over. No one knew anything. Finally she gave her complaint to some one who fumbled her address and wasn't the least bit interested in helping her, and the poor customer hung up in despair.

The point brought out in this scene was that the first clerk who talks to the customer should ask a few questions and find out just what department is wanted. As one girl put it, "It's up to us to make telephone service a help to the customer instead of a burden."

Then there was one of those non-es-



Placed on Each Transmitter, This Is a Constant Reminder of Telephone Courtesy.

sential, interminable conversations between a saleswoman and her sister. It was called "Business Held Up," and started something like this: "Hello, Kitty darling! Have you bought the tickets for the theater?"

The conversation itself amounted to nothing, but two outside parties were trying to get the department and the other saleswomen in the department were rushing around trying to take care of their own customers and those of the person who was chatting with Kitty.

In the opposite dialogue, the salesperson politely told her sister that she was busy and would call her on her lunch hour. That was termed, "Lines Open for Business."

The next act was "Overheard by the Customer." Two girls were standing near the telephone while the receiver was off and were talking, the customer getting the full benefit of what they said.

The customer had called and asked to speak with the salesperson who usually waited on her—she didn't know her name. At first the girls made some comment about the patron's foolish question, and then they forgot all about her because one of them had on a new dress and fall styles were much more interesting.

Finally the cashier came to and realized

that the customer had been waiting, so she calmly informed her that there wasn't any one there who knew her and hung up—and she hadn't even tried to find any one.

In the second scene of that act, "The Customer Is Considered," the cashier was very polite and intelligent. She put her hand over the transmitter when she called the superintendent. He came, found out what the customer wanted, and took her order. He was so courteous that the customer thanked him.

The last act of all was "Just Among Ourselves." The firm's office called for Mr. London, one of the store's executives. The operator had considerable difficulty in finding him. The trunk department said he was in the receiving room—and the receiving room said he was in the trunk department. No one really bothered to find out where he was.

Then they gave the dialogue as they'd like to have it happen. Mr. London left word where he was going so that the telephone operator could reach him if he was wanted. (Mr. London was game and took his part in both of these scenes, even though there was a big laugh on him in the first one for his negligence.)

The clerk in the receiving room took the trouble to find him the first time he was called, and the firm's office didn't have to wait while the operator hunted for the needle in the haystack.

The performance closed with the singing of a song, "The Voice with a Smile," to the tune of the song "Smiles" which was popular a few years ago. It was composed by F. W. Walthers, one of the store employes. The words of the song are:

Did you ever stop to ponder
When you use the telephone,
Of the many, many kinds of voices
That you find the folks who use it own?
There are voices that are hard and grating,
There are voices always sweet and clear,
But the voice that always speaks like Service
Is the one that we like to hear.
There are many irritations
That besiege our path each day.
It will make our own task seem much lighter
If we help some others on their way,



This Scene Illustrates How a Department Store Brought Home to Its Employees the Various Aspects of Telephone Efficiency.

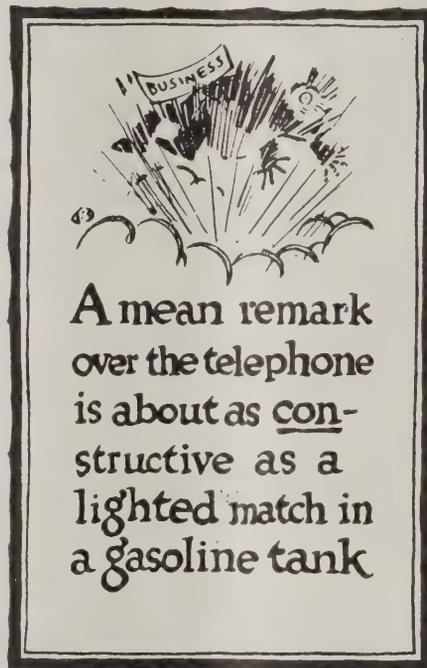


Some of the Clever Posters Used in the Educational Demonstration Before the Jordan Marsh Employees in Boston, Mass.

What we need right here to give good service
Is cooperation that's worth while.
Let us prove there is no voice so winning
As a voice with a pleasing smile.

When the time came for the publication of the store's monthly paper, "The Fellow Worker," a week or so later, the application of the principles gleaned from the better telephone service demonstration was well under way and the results could be seen in the store. Almost the entire issue was given over to an account of the affair, with comments on its success and the sincere manner in which the better service idea was being carried out.

Several interesting drawings were published—some of them being taken from large cards used in the demonstration. They all had some point or points of faulty service to bring up and showed the method which would be more pleasing to the customer, thereby making a friend for the



No One Failed to Get the Significance of This Poster.

store and for the employe. The cards are reproduced here.

Besides the leading article, telling all about the affair, there was a semi-editorial article, reminding the employes of some of the points brought out and of their good resolution.

"The telephone plays an important part in our store," it was stated. "It is probably the most vital and necessary service branch of the organization. Without good telephone service our business would be seriously affected." These maxims started a line of thought which would have carried an appeal even if there had been nothing at all to keep it before the employes in a concrete way.

There was a message of appreciation

published by Miss Hopkins in the paper, in which she expressed gratification for the spirit in which the campaign was received throughout the store and the hearty cooperation given it.

Scattered about the "Here, There and Everywhere About the Store" page were such comments as these:

"Did you benefit by Telephone Week? It behooves everyone to take advantage of campaigns that stimulate better service throughout the organization."

"Better Telephone Service From Now On" is the accepted slogan of the hour. It rests with every fellow worker (individually) to make our telephone service 100 per cent efficient."

"Make Good Telephone Service a slogan all through the approaching seasons. Nothing will help business more, or have more lasting effect, than good telephone service. It is up to you to make our telephone ser-



The Points of Telephone Usage Were Driven Home by Graphic Illustrations.



"Put Yourself in the Other Fellow's Shoes" Is an Old Quotation Aptly Applied.

vice the very best in any retail store in the country."

The New England Bell publication—Telephone Topics—too, thought the affair worthy a good write-up, and complimented the store on its progressiveness and thanked it for realizing that the whole task of furnishing good telephone service does not lie with the telephone company.

The more coöperation a telephone company gets from the community it serves, the better understanding the community will have of the company, but usually the company has to start the ball rolling and wake up the community to the fact that it has a part to perform if it would have good telephone service.

Too long have the telephone companies been trying to carry the burden alone, but it's a hopeful sign to learn of such whole-heartedness and enthusiasm as were displayed by the Jordan Marsh Co. in campaigning to improve the telephone service within the store.

Western Society of Engineers to Discuss Automatic Telephony.

The February 19 meeting of the Western Society of Engineers—which will be held in the Monadnock Block, Chicago, at 7 p. m.—will have to do with automatic telephony and promises a very interesting program.

P. G. Andres, research engineer of the Automatic Electric Co., Chicago, will speak on "Automatic Telephone Connections: Speed of Central Office Equipment"; and J. W. Walcott, engineer of the Illinois Bell Telephone Co., Chicago, will discuss "Introduction of the Machine Switching Telephone in Chicago."

Annual Meeting of Florida Association March 27 and 28.

March 27 and 28 are the dates for the annual convention of the Florida Telephone Association. The place is Miami.

The committee in charge of the program is hard at work getting the plans in order for the convention sessions and the entertainment. The Florida association is determined that its annual meeting shall be an event as important as any other state convention, and to that end no effort is being spared in getting up a program that will be interesting and valuable.

Program for the Nebraska Convention at Lincoln.

The program for the annual convention of the Nebraska Telephone Association to be held in Lincoln, February 20, 21 and 22 has been completed. As the program covers subjects of interest, there should be many fruitful discussions developed.

The program in full follows:

Tuesday A. M., February 20.

Registration and inspection of exhibits.

Tuesday 1:30 P. M.

Address of Welcome, Frank C. Zehrung, mayor of Lincoln.

President's Address, Bruce Brown, Brady.

Report of Secretary-Treasurer, A. W. Forbes, Stanton.

"Radio. What Is There in It for the Telephone Man." Discussion.

"Financing Problems," Eben D. Warner, Scottsbluff. Discussion.

Address, Commissioner Chas. A. Randall of the Nebraska State Railway Commission.

Inspection of exhibits.

Wednesday, February 21, 10 A. M.

Bug Hunters' Reunion. (Prize for the most complicated bug—box of cigars.)

"Maintaining Telephone Cable," M. T. Caster.

"Underground Cable," M. D. Young, Franklin; J. W. Richmond, Wisner, and E. C. Hunt, Walthill.

Wednesday, 1:30 P. M.

"Taxes," C. E. Hall, Omaha.

"What Is News," H. T. Dobbins, Lincoln.

First aid demonstration. (Movie.)

6:30 P. M.

Banquet.

Thursday, February 22, 10:00 A. M.

"Efficiency," H. F. McCulla, Hastings.

"Relation of Telephone Man's Wife to Business of Telephone Company," Mrs. J. W. Richmond.

"Operating Efficiency."

"Collecting," J. E. Grint, Sargent.

Report of committees.

Thursday, 1:30 P. M.

Election of officers.

Round table.

New business.

Oklahoma Association Will Have Its "Greatest" Convention.

The Oklahoma Utilities Association announces that its annual convention to be held March 12, 13 and 14 at the Huckins Hotel in Oklahoma City, is going to be the greatest convention it has ever had and more than likely the best the state has ever had.

The word "greatest" is used advisedly and truthfully, Acting Secretary O. D. Hall declares, because more educational and entertainment features have been provided than ever before. The association will have as its guests many utility men from the southern states.

The sessions will open at 9:45 Monday morning, March 12, and continue three days. On the last day there will be a joint session with the Southwestern Geographic Division of the National Electric Light Association, with a big joint banquet and entertainment in the evening. The N. E. L. A. sessions will continue on March 15 and 16.

Several public utility speakers of national reputation have agreed to talk at the Oklahoma convention, and have chosen subjects that will hold the interest of the visitors and delegates, give them something to think about, and outline some

plans to assist the companies to progress.

Entertainment arrangements include a special program and dance on Monday night, program on Tuesday night, and banquet and feature program on Wednesday night.

As several matters of importance will come up on the first day, all the members and visitors should lay their plans so as to be in Oklahoma City for the first session. They are also urged by the association's officers to remain over for the N. E. L. A. sessions, if possible.

It is expected that hotels will be crowded during the convention, so those desiring reservations should make them now.

Fort Wayne, Ind., Company Plans Big Improvements for 1923.

Following the authorization of the stockholders at the meeting on January 29, the Home Telephone & Telegraph Co., of Fort Wayne, Ind., plans to issue \$1,500,000 in preferred stock and to sell \$1,000,000 worth of 6 per cent improvement bonds. Over 12,000 of the total of 15,000 shares in the capital stock of the company were represented. This action will increase the capital resources of the company from the present \$1,600,000 to \$3,250,000.

When the issues are approved by the Indiana Public Service Commission, the increased capital will be used in retiring \$500,000 worth of notes now outstanding against the company, and for retirement of \$311,750 worth of preferred stock now in the hands of stockholders. Extensive improvements in the entire telephone system of the city will be financed by the additional \$1,688,250 shown in the increase of capital.

Frank E. Bohn, secretary and general manager of the company, said that improvements will include the erecting and equipment of a main office and exchange building at Barr and Berry streets, and a large south side exchange at Piqua and Wildwood avenues. Work on these two buildings will be started before the end of this year, according to Mr. Bohn, and it is expected that the entire new system will be ready for operation before the end of next year. The company will continue to make great extensions in the underground system.

It was explained by Mr. Bohn that the entire issue of stock and bonds will not be made at one time, but additional stock will be placed on the market as additional capital is needed to carry on the improvements contemplated.

New England Bell Spends \$23,400,000 for Improvement.

The report of the New England Telephone & Telegraph Co. shows that during 1922 the company completed more than 42,000 regrades and spent \$23,400,000 for construction work. Charges against depreciation reserves on account of the sleet storm of 1921 are put at \$2,000,000.

There was a net gain of 70,046 in new station installations during the year and progress is reported in the matter of improving the service situation in sections which have been waiting a long while for better service.

Minnesota Association Issues "In Memoriam" of D. W. Gretorex.

The committee of the Minnesota Telephone Association has prepared a resolution in memory of D. W. Gretorex, of Blue Earth, Minn., who passed away on January 2. He was a director and second vice-president of the association for several years. That he was held in high esteem is indicated by the in memoriam which reads:

D. W. Gretorex—In Memoriam.

When we approach the infinite and the eternal, human speech is powerless to express the emotions of the heart; and especially is this true when in the presence of some untoward event for which the heart and mind are unprepared.

Thus we feel in view of the sudden passing into his eternal rest of our honored associate and our well loved friend, D. W. Gretorex, the patriot, the upright citizen, the capable business man, whom this association will miss more and more as time passes and we do not find him in his accustomed place among us. He passes on after a brief period in our midst, esteemed most by those who knew him best and recognized as one of our foremost members.

In this hour of their great sorrow we extend to his bereaved wife and family our deepest sympathy, and we know that

the association as a whole joins us in this expression of the feelings that possess us in the irreparable loss which both family and association have sustained.

With sincere regard,

Jay Greaves,
D. M. Neill,
H. F. Lueders,
Committee.

Fort Dodge, Iowa, Company Plans Large Expenditures.

Enlargements and improvements will be made at the central office of the Fort Dodge Telephone Co., Fort Dodge, Iowa, this spring at a cost of \$130,000, according to an announcement made last week by J. M. Plaister, general manager of the company.

The program of improvement includes the installation of all new equipment for the central office and the construction of an addition to the building that will nearly double the present capacity. The new equipment will cost, it is estimated, \$100,000 and it is planned to spend \$30,000 on the addition. The cost of these improvements, said Mr. Plaister, will be financed by the sale of additional stock to present stockholders and the issuance of bonds.

Work will be started at once and it is hoped to have it completed by August 15. The contract for the installation of the equipment has been let to the North Electric Mfg. Co., of Galion, Ohio. Plans for the addition to the building are being drawn and the contract will be let as soon as completed.

Increase in business to the point that the present quarters are no longer large

enough and "looking ahead to 1933" are reasons given by Mr. Plaister for the company's building program.

The present central office building was constructed 11 years ago when the company had 3,400 telephones in service. Today there are 6,250 telephones in use, an increase of almost 100 per cent. Some idea of the development of the local company can be gleaned from the statement that at present some 40,000 calls are handled each day through the central office.

All of the present equipment at the central office will be discarded and complete new equipment installed.

"The service that will be given when our new equipment is installed," said Mr. Plaister, "will be all that it would be possible for any company with any system to give."

So far as the method of operation of telephones for the subscribers is concerned there will be little change when the new equipment is installed. There will be a few minor changes. The busy signal, for instance, is now given by Central. Under the new system this will be given automatically.

There will be no interruption in service for the installation of the new equipment. The connection will be made at midnight some Saturday night and will take but six minutes.

The addition to the central office will be made on the north of the present building and will be, as the present building, two stories with basement. The basement of the addition will be used as a garage and store house.

Hearings in the Indiana Bell Case

Company Presents Figures on Appraisals of Its Property and Results of Its Financial Operations—Contract with Western Electric and Methods of Appraisals Explained—Depreciation of Poles and New Rate Schedules

The Indiana Bell Telephone Co. appraises the value of all its property in Indiana for rate-making purposes at \$42,611,591, according to an exhibit filed February 5 with the Indiana Public Service Commission in the consolidated Bell rate hearing. The hearing was resumed on that date after a recess of a few weeks.

Thomas R. Keyes, auditor of the company, testified that if the commission granted all the pending petitions of the Indiana Bell for increases in telephone rates the net earnings would be increased in an amount that would give the company a return of 4.8 per cent. on the \$42,611,591. The net earnings for the year ending October 31, 1922, he testified, were 313, or about one-third of 1 per cent. of the claimed value of the property.

In its appraisals the company sets aside 20 per cent of the total physical plant value for going value. The going value

is figured at \$7,027,953, which is 20 per cent of \$35,139,764.

In the total physical plant appraisal of \$35,139,764, it appears, there is approximately 20 per cent for structural overhead, or about \$6,000,000. Structural overhead ranges from under 15 per cent in the case of some exchange areas to about 25 per cent in Indianapolis.

The physical property of the company put in at \$35,139,764 is appraised on the basis of reproduction costs at average prices for 1916-1920, with actual outlay for net additions and improvements from 1920 to October 31, 1922. The company asserts that prices today are 20 per cent higher than average prices for 1916-1920.

One set of exhibits presented the financial operations for 70 exchange areas for the year ending October 31, 1922, some of them showing deficits. These statements also showed the estimated increase in revenue for the various exchange areas

if petition for higher rates pending before the commission were granted.

In the exhibits were also 70 appraisals of exchange areas.

The company's exhibit, showing revenues, expenses and net earnings under proposed rates for one year based on actual results for ten months ended October 31, 1922, was as follows:

Total physical plant, October 31, 1922 (present condition).....	\$35,139,764
Going value	7,027,953
Working capital	443,873
<hr/>	
Total property	\$42,611,591
Number of stations October 31, 1922,	172,658.
Revenues:	
Exchange	\$ 5,844,492
Miscellaneous operating	206,173
Net non-operating	12,782
Toll	1,819,590
<hr/>	
Total revenues	\$ 7,833,037

Expenses and deductions:	
Current maintenance	\$ 1,474,223
Traffic	2,439,875
Commercial	721,041
General and miscellaneous.....	318,799
Rent deductions	97,676
Uncollectibles	39,253
Taxes	558,187
Licensee revenue—Dr.	319,431
*Depreciation	1,781,133

Total expenses and deductions	\$ 7,749,618
Balance net earnings.....	\$ 133,418
Per cent net earnings to total property .....	.313
Estimated increase in annual revenue from proposed rates.	1,911,771

Total net earnings with proposed rates	\$ 2,045,189
Per cent. net earnings with proposed rates to total property..	4.800

*6.08 per cent on book cost of depreciable property, \$29,272,353.

The Bell contract with the Western Electric Co. under which the former buys of the latter nearly all equipment and supplies, either manufactured by the Western Electric or supplied by the Western Electric as purchasing agent, is advantageous to the Indiana Bell, according to B. G. Halstead, engineer for the Indiana Bell.

Mr. Halstead submitted exhibits to show the Indiana Bell pays less to the Western Electric under the contract than it would pay in the open market. He testified that the Ohio State Telephone Co., an Independent, was bought by the Ohio Bell in 1921, and that he went to Cleveland to study prices paid by the Ohio State, when an Independent company, as compared with prices paid by Bell associated companies to the Western Electric. He said the saving would have been 14.99 per cent if the Ohio company had held a contract with the Western Electric.

He testified that the purchasing agent of the Indiana Bell recently got a bid on stationery from an Indianapolis concern which was 47 per cent higher than the prices paid to the Western Electric, which acts as purchasing agent of stationery for the Indiana Bell.

How the 70 exchange areas and the toll systems of the Indiana Bell company were appraised for the consolidated rate case also was testified to by Mr. Halstead. The total of the appraisals, together with going value and working capital amounts to \$42,611,590.93. This is for all the Indiana Bell property in Indiana. The Bell property in Lake and Porter counties is a part of the Illinois Bell Telephone Co.

He said the appraisals were made by applying unit costs to the items in the inventories. The appraisals were made on the basis of unit costs for the five-year period 1916-1920, inclusive, and adding cost of net additions from October, 1919, up to October 31, 1922. The unit costs, he said, were obtained by taking from the records of the company what the costs for 1916-1920 actually were, and taking

an average of the costs for those years.

He testified particularly on the appraisal of the Frankfort exchange, and said the same methods were pursued in appraisals of the other 69 exchange areas and of the toll system.

Mr. Halstead testified that the average life of a telephone pole in a city is about ten years and hence the rate of depreciation allowed for such property should be 10 per cent.

During the discussion, W. H. Thompson, attorney for the Indiana Bell, said he was preparing to argue that the Indiana commission is without jurisdiction on the matter of depreciation and that control of that matter lies with the Interstate Commerce Commission.

For all the Bell property in Indiana a depreciation allowance of \$1,781,133 is asked. This amount is 6.08 per cent of \$29,272,353, the book cost of depreciable property.

The rate of depreciation asked for the different exchanges varies. For the Frankfort exchange the rate asked is 5.86 per cent on book cost of depreciable property, \$335,935. The amount proposed as an annual operating expense is \$19,636 for Frankfort.

Frank B. Faris, of counsel for the commission, challenged Mr. Halstead's figures on 10 per cent for depreciation on city poles, and asked him many questions in an effort to show that he did not base his depreciation estimates on actual experience of the company.

It was explained by Mr. Halstead that when property is replaced, the cost of replacement is charged to capital account, and the difference between the replacement cost and the original book cost of the thing displaced is charged against depreciation reserve, and deducted from capital account.

C. A. Romine, rate expert of the Indiana Bell, testified that he prepared the proposed new rate schedules for the various exchanges. He said the higher rates proposed for the Frankfort exchange were not more than the value of service, and he said the same was true of other rates proposed.

In 35 of the 70 exchanges involved, he said, the proposed rate schedules discontinued two-party line service and introduced four-party line. In Indianapolis measured service would be dispensed with and a four-party service at \$3 a month would be introduced. The measured two-party line service is now \$2.25 a month.

Thomas R. Keyes, auditor of the Indiana Bell, testified that in the financial setups introduced, revenues and expenses of the toll system had both been taken out of the various exchange areas. He said the total operating expenses of the Indiana Bell, in 1922, were \$82,231 less than the same expenses in 1921, the chief saving being in traffic expenses. He thought the net earnings of the property in 1923

would be about the same as in 1922, if present rates continued.

He said the Indiana Bell funded debt is \$11,416,000 and demand notes \$5,632,000, and that the amount of interest due and unpaid on these debts is \$1,264,458. All except \$416,000 of the funded debt bears 7 per cent interest, the \$416,000 bearing 6 per cent. The rate of interest on the demand notes, he said, is 6 per cent. He said the company received 100 per cent from the demand notes and 98 per cent from the funded debt. All of the debt, except \$416,000, is due the American Telephone & Telegraph Co., he said.

The total license revenue paid in 1922 to the A. T. & T. Co. under the 4½ per cent contract was \$319,789.

Beginning with January 1, 1922, Mr. Keyes said the A. T. & T. has paid to the Indiana Bell \$1 a year a set of non-Bell instruments. The Indiana Bell has acquired several properties that did not have the receivers, transmitters and induction coils used as one of the bases for the 4½ per cent lease rental charge. Mr. Keyes said the arrangement was not retroactive and that the A. T. & T. does not pay the \$1 a year unless at least 10 per cent of the stations in an exchange have non-Bell sets.

For a time in 1922, it appeared 10 per cent of the instrument sets in Indianapolis were non-Bell, having been acquired in the purchase of the Independent company, but now it was said the number is less than 10 per cent and no rebate is received by the Indianapolis exchange, though 4½ per cent of the gross revenue, received from non-Bell instrument set stations, as well as from Bell instrument set stations, is paid to the A. T. & T.

Iowa Rural Company Sold to Western Electric Telephone Co.

The property of the Northern Rural Telephone Co., of Spencer, Iowa, was sold on January 25 to the Western Electric Telephone Co., which owns and operates the Spencer and other exchanges.

The charter of incorporation of the Northern Rural expired on January 27 and the directors of the company met about two weeks previous to that date and voted not to renew the charter but to sell the property to the highest bidder.

The only bid received was the one of \$6,767 from the Western Electric. As the Western Electric already owned about four-fifths of the Northern Rural stock, and the Spencer exchange for some time has been doing all the switching for the Northern Rural, the sale makes no difference in the actual control and operation of the Northern Rural lines.

The sale to the Western Electric was approved at a meeting of stockholders of the Northern Rural.

There are 1,800 stations, city and rural, connected with the switchboard of the Spencer exchange.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

F. M. Boardman, Nevada, Iowa, manager of the Story County Independent Telephone Co., is one of the telephone managers who is experimenting with radio and carefully following developments.

For several weeks he had been listening at various high wave lengths as he was aware that tests of some kind were under way. On the evening of January 14 his efforts were rewarded for he heard practically all the speeches that were transmitted to listeners in England that night.

"On the evening of January 14," says Mr. Boardman in a letter to TELEPHONY, "while listening in at around 5,000 meters, I heard someone pronouncing the names of the various large cities of Europe and a little later, after some telegraph signals, the same voice came back and named over a long list of both European and American cities. And then after some more signals, it announced that President Thayer would make some announcements for the benefit of a group listening in at London.

"I had gotten well tuned-in by that time and the talk came in very clearly and loud enough so that with the use of a Western Electric loud-speaker it was easily heard all over the house. It was especially clear of all howling and, in fact, there was very little if any so-called carrier wave to be detected.

"The matter, as transmitted, was exactly as per your article except that at one place it was announced that if anyone except the group in London should hear the test, they would very much appreciate hearing from such people.

"I at once telegraphed Mr. Thayer at 195 Broadway, New York City, that his and Mr. Carty's messages were coming in very clearly at about 5,000 meters and the next day received the following telegram:

Many thanks for telegram to Thayer. Much appreciate it if you would write details at your convenience. Our messages received in London with complete success.
JOHN J. CARTY.

"I wrote him fully as to the type of set I was using and as to the quality of the received matter, etc. I use a No. 110 Kennedy set for reception with a local heterodyne."

A new variety of swindler recently made his appearance in New Bedford, Mass., posing as a representative of the New England Telephone & Telegraph Co., authorized to collect telephone charges in advance. His activities came to the attention of W. H. Fox, New Bedford manager, through a report turned in by Mrs. Eliza Sylvia, of 12 Sears street.

The "representative" called at Mrs. Sylvia's tenement one afternoon, and announced that by a new rule of the telephone company the rates would have to be paid two months in advance henceforth. He said she must pay him, or have her service discontinued. Mrs. Sylvia, who is elderly and quite infirm, was not lacking in wit or pluck. She asked to see the man's badge.

"I have it here under my coat," he said. "Won't you take my word for it?" Mrs. Sylvia insisted that she couldn't take his word for it, even if it was some trouble to show it. He tried to bluff her into paying, but she remained firm and finally told him that if he couldn't show his badge, he had better get out before she called the police. He got out.

Telephone service is made the butt of many jokes on the stage and in cartoons and usually the operator is represented as doing everything except serving the subscriber. Some time ago such a cartoon appeared in the St. Paul (Minn.) Pioneer Press—and then things began to happen.

The story is told in the St. Paul Pioneer Press of Sunday, January 21, under a two-column head, reading:

COMIC STRIP DECLARED SLUR ON SERVICE BY HELLO GIRLS.

Webster's Idea of Kidding Operators Positively Does Not Go in St. Paul, Indignant Band of 700 Declare in Resolution; Service Cannot Be Beat, They Are Ready to Inform World.

The story was placed under a cut right at the top of the page where it instantly caught the eye of the reader—just as the reproduction on the next page caught your attention. Here's the article that tells the story:

"Fools may rush in where angels fear to tread, and sometimes get away with it.

But when H. T. Webster, cartoonist, got the idea of 'kidding' the telephone service he made the great mistake of a hitherto successful life.

On account of the 'insulting,' 'untrue,' 'ridiculous,' 'silly' strip of pictures that appeared over his signature, under the title 'How Did We Ever Get Along Without the Telephone?' in the Pioneer Press of December 14, his usefulness with St. Paul's 700 operators is a complete wash-out.

This is no idle statement. The operators' eight service committees—one from each exchange—have met solemnly and turned thumbs down on Webster. A statement expressing indignation and contempt was circulated for signatures through the

length and breadth of the telephone company. Fair names were subscribed to it, one girl who has just been married even signing both her names, before and after. With virtually 700 signed, the paper has been sent to Mr. Webster, and the St. Paul 'hello' girls hope he chokes on it.

'I'd like to have that man ask me for the fire department when his house was on fire,' says Miss Irene Pesch, 226 Maple street, supervisor at the Cedar exchange, with little glints of white lightning in her black eyes.

The 'management' had no part in the unleashing of the storm—in fact, knew nothing about it until the chandeliers commenced to rattle. The tornado broke the moment Miss Ann Brennan, 1037 Churchill street, secretary of the operators' service committees, saw the cartoon. She sent out an S. O. S. call for an immediate meeting of the committees, and within an hour between 30 and 40 determined girls were gathered about the judgment table at the main office.

With a snort through a nose far too good looking for such rough usage, Secretary Brennan tossed the cartoon to the board before the irate eyes of the vigilantes.

'The fish!' shouted one and all. And the campaign of retribution began.

Miss Marie Enders, 905 Beech street, senior supervisor, says the very idea that this Webster person should show a man trying to get a number at 6:30 and not getting it until 7:15!

'It's impossible and ridiculous,' she says. 'If an operator can't handle a call within two minutes and satisfy the subscriber, she turns it over to a supervisor, who gives the party calling a report immediately.'

Miss Frances Jones, 551 Capitol boulevard, and Miss Lorraine Sweet, 437 East Minnehaha street, being operators, can describe succinctly what would happen to anybody who handed out the line Webster put into his man's mouth, 'Operator, would you be good enough to lay aside your correspondence course in movie acting long enough to get me Goldfish 6872?'

'We would put him on the supervisor's line because we are not allowed to hold conversations,' they explain, 'so the cartoon should really have ended one-third way through.'

'The telephone service this Webster person describes may be true of New York,' says Miss Brennan, 'but it certainly isn't true of St. Paul, and I am surprised at the editor of the Pioneer Press for printing such a thing. The service in St. Paul is exceptionally good. We know, because we keep records. The time it takes to get Central, taking a four months' average

ST. PAUL PHONE OPERATORS WHO TELL WHAT THEY THINK OF CARTOONIST



How Did We Ever Get Along Without the Telephone?—By H. T. Webster



"These are some of the St. Paul telephone operators and supervisors," says the St. Paul Pioneer Press, "who don't think Cartoonist H. T. Webster is the elephant's hips or even the bee's knees, since he drew his 'ridiculous' cartoon about telephone service. From left to right, they are, Misses Frances Jones, Ann Brennan, Irene Pesch, Marie Enders and Lorraine Sweet."

them?' from Miss Enders. 'We had a nurse at the house once, and well, my dear, I hope to tell you she took off every afternoon from 1 till 6 when she was only supposed to be off from 2 to 4!'

'The inference that Mr. Webster makes possibly might apply to service given elsewhere, but *not here*. We feel that a good grade of service is being given in this city by us, and that injustice is being done in reproducing anything that in any way reflects on our work.'

'We respectfully request that you submit this protest to Mr. Webster.'

'And lawyers, how do they get by?' Miss Brennan would like to know. 'I knew somebody who had to have a lawyer once and—well, it was just terrible, that's all I've got to say!'

The official remonstrance to the Pioneer Press and Mr. Webster from the 700 St. Paul telephone operators is as follows:

'We, the undersigned, are local telephone operators, employed by the Tri-State Telephone & Telegraph Co., St. Paul, and we do hereby protest against the putting of cartoons in your paper such as appeared in the Press December 14, on page 8, drawn by H. T. Webster.'

over the entire city, is exactly 3.5 seconds.' 'Telephone operators are the most patient and the most abused people in the world,' says Miss Enders. 'Yes,' exclaims Miss Pesch, 'we get it even worse than that street car company, and that street car company! Well, all I can say is that out in Dayton's Bluff, we've been trying for months and months to get them to put on a car between 7 a. m. and 18 minutes past, and you can imagine how far we've got.' 'And nurses, why don't they pick on

Through a coincidence this article in one of the representative papers of the Twin Cities appeared on the same date that the Hearst's Sunday papers published a spread feature article telling about the poor telephone service in Minneapolis—in 1918 and in 1920—*five and three* years ago.

The article related to the decision—published in TELEPHONY of December 9—of the Hennepin County District Court last fall awarding \$1,000 damages for alleged inefficiency of telephone service.

Nothing was said in the article of the difficulties experienced by telephone companies all over the world in securing employees and materials and supplies to take

care of the service demands during the wartime period and the business boom which followed. In addition to the troubles encountered by telephone companies in general, the Northwestern Bell com-

pany had on its hands the work of unifying the two systems in Minneapolis.

the handling of telephone traffic by the operators. The action of the St. Paul Tri-State operators in promptly "calling" the cartoonist for this alleged humor at the opera-

jingle of the sleigh bells and all singing all of the late popular songs.

At 9:30 they went to the Arcade Tea Room, where the private dining room had been reserved, and were served to an oyster supper with all the "fixin's."

All had an enjoyable time, although there were many cold fingers and noses; and not a few voices were a little husky next morning, when they, as usual in their pleasant way, inquired "Number, please!"

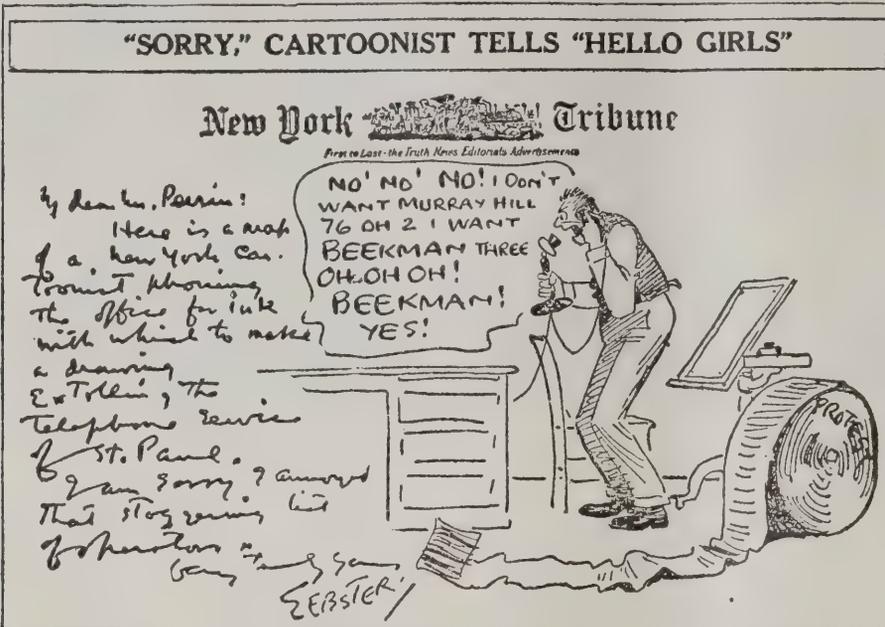
How the primitive man learned to talk and gradually developed a language is a problem which may be unraveled through researches in the laboratory of the American Telephone & Telegraph Co., according to Professor Mark H. B. Liddell, professor of English at Purdue University who recently spoke before the American Anthropological Association.

Many of the earliest skulls of the human type have indicated that the mouth of some of the primitive types of men was not equipped for making complex sounds that go with any kind of developed language. The apparatus of the telephone company for the exact study of the production of speech will be used on this problem, according to Dr. Liddell, who said:

"I would suggest as a preliminary effort an especially careful measurement of the remains of human resonance organs as they appear in the palatal arches and nose cavities of prehistoric skulls, for the time may come when the physicist, with such data on hand, can reconstruct the types of resonance that such remains of resonance chambers would give out when the skill of the anatomist had invoked the missing parts.

"Of course, this does not mean that we shall ever be able to reconstruct primitive speech, but we may gain some definite scientific conceptions of its elements."

"SORRY," CARTOONIST TELLS "HELLO GIRLS"



The Reply Which the St. Paul Pioneer Press Published.

pany had on its hands the work of unifying the two systems in Minneapolis.

It was this period, when the company operated under most difficult conditions, that was covered in the case taken into court. Telephone service in Minneapolis at the present time is said to be on a par with that given in any city in the country.

It is most unlikely that telephone service now, or at any future time under normal conditions, in any place in this country could be shown poor enough as to furnish cause for damages to be assessed.

The sequel to the protest of the St. Paul operators appeared in the St. Paul Pioneer Press of January 28 in the form of another cartoon which is reproduced on this page. Beneath this cartoon was the following:

"When Webster, the cartoonist, drew a 'funny' cartoon which appeared in the Pioneer Press December 14, showing in progressive scenes his efforts for three-quarters of an hour to get a telephone number, the 700 operators in St. Paul got mad and signed an official protest, which the Pioneer Press forwarded to the perpetrator of the cartoon.

Here is his answer, in pictorial form, with a note to the city editor, saying:

'Here is a map of a New York cartoonist phoning the office for ink with which to make a drawing extolling the telephone service of St. Paul. I am sorry I am annoyed that staggering list of operators.

'Very truly yours, 'WEBSTER.'

It's quite likely that editors of newspapers in the Twin Cities will be rather careful of what they publish in regard to

tors' expense furnishes a cue for operators in other places when similar cases arise.

On Friday evening, January 5, 28 girls from the traffic department of the Fort Dodge Telephone Co., Fort Dodge, Iowa, cast cares and worries aside and went for a bob ride. It was a beautiful moonlight night, air crispy and keen, with the thermometer at four degrees below.

Two bob sleds, filled, left the Telephone Building at 7:30, after a flashlight picture was taken of the group. They rode for two hours around the city to the merry



One of the Two Bobsled Loads of Jolly Fort Dodge Operators Who Braved Sub-Zero Weather for Pleasure Early Last Month.

Inductive Interference Problems

Principles and Practices for Inductive Coordination of Supply and Signal Systems Given in Reports of Joint Committee of N. E. L. A. and Bell on Physical Relations Between Electrical Supply and Signal Systems—Conclusion

The following practices should be applied to all supply systems except as deviations may be made under the principle of deferred co-ordination.

Practices Applicable to Supply Systems—General Co-ordinated Methods.

RESIDUAL VOLTAGES AND CURRENTS: Residual voltages and currents should be limited as far as is necessary and practicable.

Unsymmetrical loads between phases should be avoided insofar as is practicable where they would give rise to residual currents or voltages.

Circuit conditions may cause a residual voltage to appear on a three-phase system. If the neutral of the system is grounded at one point, residual current may flow and the residual voltage may be increased or decreased.

In this case, the residual current may consist in part of current through the total direct admittance of the system to ground due to voltage impressed between the three conductors and ground. It may also consist in part of unbalanced charging current to ground, due to voltage impressed upon unbalanced direct admittances of three conductors to ground. The former will not be affected by transpositions while the latter may be reduced or eliminated by equalization of the conductor admittances to ground.

If the system is operated without a neutral ground, the residual voltage would be reduced by equalizing the admittances of the conductors to earth.

If the phases are not symmetrically loaded and two or more neutrals of the same electrically connected system are grounded, residual currents will flow. However, substantial residual currents due to unsymmetrical loads will not flow if the system has a single or no neutral ground.

Single phase taps from three-phase circuits have inherently a residual voltage; such taps, if long, tend to appreciably unbalance the three-phase circuit to which they are connected.

If the neutral of a system is grounded at two or more points, the residual voltage or the residual current may be increased or decreased. Whether the total influence of the system is increased or decreased will depend upon local conditions.

DISCONTINUITIES: Discontinuities should be limited to the number required by the conditions.

SWITCHING: In all switching operations care should be taken to limit, so far as is practicable, the production of transient disturbance leading to excessive momentary influence.

Care should be taken to avoid repeatedly energizing at normal voltage a transmission supply circuit in order to locate a fault. It is sometimes practicable to locate such faults by means of lower voltage testing methods.

MAINTENANCE: In the maintenance of supply circuits, attention should be given to the prevention of mechanical or electrical failures which would lead to residual voltages or residual currents of substantial magnitude. When supply circuits become unbalanced, due to any cause, every reasonable effort should be made to remedy the unbalanced condition promptly.

"Telephony" Appreciates This Letter of Appreciation.

In writing for a copy of the index to Volume 83 of TELEPHONY M. L. Welliver, of the Fairview (Kansas) Telephone Co., says in a letter dated January 19:

"TELEPHONY is surely a great magazine for telephone men." No telephone manager should be without it, and he should do well to pass it along to his employes, to linemen, operators and everybody interested in his plant.

"I want to thank you for the many things your journal has contained in the last five years we have read it. They have helped make myself better equipped to make our telephone service better."

The motto of the Fairview Telephone Company is "service that satisfies," and Manager Welliver lives up to it.

CONTACT RESISTANCE: Care should be taken to avoid contact resistance which would affect influence.

Lines.

In order to reasonably limit the residual current and voltages arising from line unbalances, the resistance, inductance, capacitance and leakage conductance of the several conductors in each section of a circuit should, so far as is necessary and practicable, be equal respectively to the corresponding quantities in any other conductor of the same section of the circuit.

Some of the methods and means for limiting unbalance in lines are described below.

CONFIGURATION: Where there is a choice between two or more types of configuration, consideration should be given to use where practicable of such configuration of a supply circuit or a group of supply circuits as provides the superior balance.

EXCESSIVE SPACING: Excessive spacing of conductors should be avoided. This does not mean that the spacing should be less than required by considerations of safety, service, and the future requirement of the circuits.

TRANSPPOSITIONS: Capacitances to earth of the conductors of transmission supply circuits should be suitably balanced by transpositions so far as is necessary and practicable.

BRANCH CIRCUITS: Where branches employing less than the total number of phase wires are to be used, they should be so planned as not to give rise to excessive residual voltages or currents on the three-phase system.

SERIES LIGHTING CIRCUITS: In the construction or rearrangement of series street lighting circuits, unbalances which materially contribute to inductive influence should be avoided.

THREE-PHASE, FOUR-WIRE SYSTEMS: If three-phase, four-wire grounded neutral supply circuits are used, the neutral wire should be continuous except in case of a three-phase branch which is either operated non-grounded or is grounded only at symmetrical load points.

GROUND RETURN CIRCUITS: Ground return circuits or ground return branches of multi-wire supply circuits should not be employed. This does not apply to track return circuits.

Apparatus.

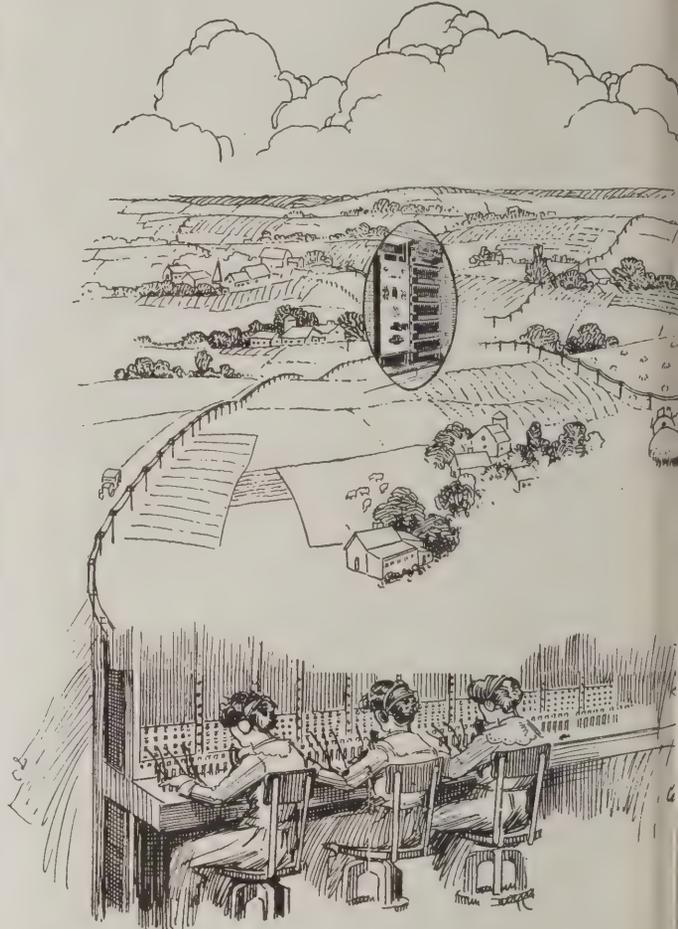
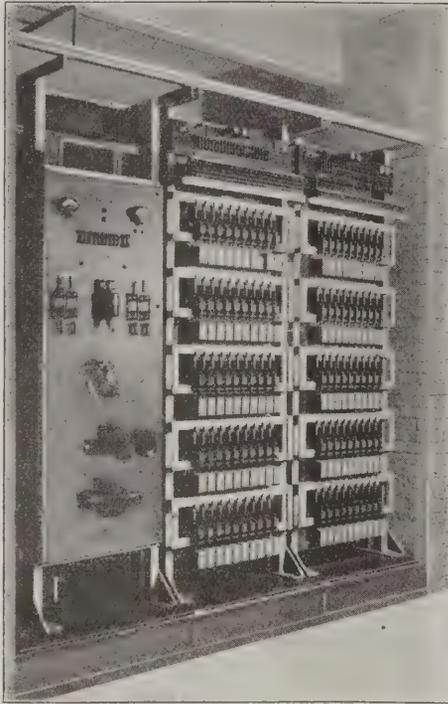
It is recognized as commercially impossible to build rotating machinery entirely free from harmonics. It is further recognized that some distortion of wave form—and consequent introduction of harmonics—is inherent with power transformers which must employ iron in their magnetic circuits.

However, in both these cases the introduction of harmonics can, to a considerable extent, be controlled within the limits of commercial design and practice. So, the above provisions are intended to secure the attention which this matter deserves because of its basic importance and its reaction on the necessity for other methods.

ROTATING MACHINERY: Synchronous machines should be specified and selected so as to have a wave form in which the harmonic components are limited so far as necessary and practicable.

Induction motors and generators should be selected which cause the least practicable amount of harmonic voltages and currents on the system to which they are connected.

TRANSFORMERS: In order that the wave



Community Automatic Exchange

The Most Modern
Most Dependable
Most Profitable
Rural Service





Centralize Your Operating Force

EMPLYING operators to take care of service in small villages or rural communities is an economic waste. Manual service no longer meets the needs of our growing rural districts, and operating costs are too high to make manual operation profitable.

All operators and other regular attendants can be eliminated entirely from outlying exchanges by installing the C. A. X., a simple and reliable automatic switchboard for small towns. The C. A. X. is arranged to operate twenty-four hours a day, entirely without attention except for two or three visits a month for purposes of maintenance or adjustment.

All toll or other calls requiring the services of an operator, are handled at a convenient automatic or manual toll center. Often one operator handles the toll and other manual calls from several of these exchanges.

The service rendered by the C. A. X. is the same rapid, accurate and convenient service that subscribers of city automatic exchanges know and appreciate.

We will be glad to supply further facts in connection with your small exchanges.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



form of voltage and current may be affected as little as practicable by transformers, such apparatus should not be designed so as to operate at excessive magnetic densities. In the installation, connection, and operation of transformers, care should be taken to avoid excessive over-voltages or excessive magnetizing currents.

When star-connected transformers or autotransformers are employed with a grounded neutral on the side connected to a line circuit, low impedance closely-coupled ternary windings or delta-connected secondary windings, or other suitable means for adequately limiting the triple harmonic components of residual current or voltages should be employed.

Where open delta transformer banks are used, they should be distributed symmetrically among the phases insofar as necessary and practicable.

Care should be taken that the individual units in each grounded neutral bank of transformers connected to a transmission supply circuit are substantially alike as to electrical characteristics and that they are similarly connected.

SWITCHES: Each switch controlling the supply of energy to transmission supply circuits should have all poles arranged for gang operation. So far as is practicable, these switches should be automatic for short circuits between phases and from phase to ground.

PROTECTIVE APPARATUS: Protective apparatus should be such that it will not unnecessarily add to transient disturbance, and should so far as practicable forestall or limit such transient disturbances.

Routine inspection of lightning arresters should be provided, and the periodic charging, where such is required, should conform to good practice.

Arresters should be maintained in good condition. Arresters which have been temporarily withdrawn from service should not be replaced in service until they are in proper operating condition.

Where lightning arresters requiring periodic charging are employed on a supply system involved in an inductive exposure, they should be equipped with auxiliary resistances and contacts.

Routine inspection or tests should be made to determine whether or not adjustments in all protective apparatus are properly maintained.

ABNORMAL CONDITIONS: Reasonable means should be provided to prevent the continuation in operation of faulty apparatus or lines for such periods or under such conditions as lead to excessive influence.

Reliable indicating or recording devices should be installed at the source of transmission supply circuits to show abnormal operating conditions.

SERIES LIGHTING CIRCUITS: Consideration should be given to the use of types of equipment in series street lighting which, so far as practicable, have a minimum distorting effect on the voltage and

current wave shape of the lighting circuit, both during times of normal operation and times of lamp outages.

GROUND CONNECTIONS: Ground connections, if employed on apparatus connected to transmission supply circuits, should be made in the balanced or neutral position in the circuit. This precludes the use of grounded, open-star transformer connections.

Specific Co-ordinated Methods.

The specific practices outlined herein are to be used in addition to the general practices to supplement the latter so far as may be necessary and practicable in cases where signal and supply lines are involved, or are about to be involved, in inductive exposures.

All of these practices are not required to be applied in any one specific case, but in each instance that practice or those practices in combination should be selected which will under the conditions afford the best engineering solution.

Lines.

CONFIGURATION: Where physical and economic conditions permit a choice of configuration of supply circuits within inductive exposures, the configuration should be selected so as to limit the influence.

BRANCH CIRCUITS: Consideration should be given to the isolation of branch circuits consisting of less than the total number of wires of the main circuit, resulting in substantial balance, by means of transformers when such main or branch circuits are involved in inductive exposures.

Consideration should be given to the isolation of loops of series lighting circuits.

CO-ORDINATED TRANSPOSITIONS: Considerations should be given to the use of transpositions in supply or signal circuits, or both, within inductive exposures, for the purpose of limiting the coupling. Such transpositions should be installed at suitable intervals, the location to be such as the local conditions demand.

Where transpositions are installed in both supply and signal circuits within inductive exposures, they should be properly co-ordinated.

Care should be taken in the installation of transpositions that where practicable the transpositions are located nearest the theoretically correct point. In general, transpositions may be omitted at the junction points of successive sections which are suitably balanced. In determining the most economical scheme of transpositions, effort should be made to utilize as many as practicable of any existing transpositions.

Where the transpositions required within an inductive exposure impair the general transposition scheme of signal or supply circuits outside the limits of inductive exposure, the necessary readjustment of transpositions should be made in the section or sections of line adjacent to induc-

tive exposure. Uniformity of separation generally assists in the attainment of co-ordination. If discontinuities are of sufficient magnitude to substantially affect the coupling, sections between such points should be treated independently.

ROUTING SERVICE: If abnormal conditions should temporarily prevent the use of a certain line and the effect of the abnormal conditions can be avoided only by temporarily rerouting the supply or signal service over circuits not involved in the inductive exposure, consideration should be given to the adoption of this expedient.

Where the rerouting of either service is impracticable, the choice as to which service is to be temporarily suspended should be governed by the relative importance to the public of the respective services affected.

Apparatus.

WAVE SHAPE: Where a ground connection used on the armature winding of an alternating current generator or motor electrically connected to supply circuits results in triple harmonics on circuits involved in inductive exposures, means should be employed to reduce the triple harmonics as far as may be necessary and practicable.

Rectifiers, arc furnaces and other apparatus which distort the voltage or current wave form of a supply circuit involved in an inductive exposure, should be equipped when and as necessary and practicable with suitable auxiliary apparatus to prevent such distortion.

Where the service conditions permit, consideration should be given to special means and devices for reducing the amplitude of harmonics on systems involved in inductive exposures.

Reasonable efforts should be made to promptly replace out-lamps on circuits equipped with individual transformers or bridged reactance coils.

TRANSFORMERS: Consideration should be given to the use of closed delta connection on main transformer supply banks or large distribution banks where necessary and practicable in preference to open delta.

LIGHTNING ARRESTERS: Where, notwithstanding compliance with the paragraph regarding equipment of the arresters, interference arises at time of charging lightning arresters, charging should be done at such times as will result in minimum interference to both services.

SWITCHES: Consideration should be given to the installation of at least one oil-break switch, or its approved equivalent, to control the supply circuit involved in an inductive exposure.

CURRENT LIMITING DEVICES: Consideration should be given to the use, so far as necessary and practicable, of current limiting devices in either the line wires or the neutral of transmission supply circuits.

GROUND CONNECTIONS: Ground Con-

nections if employed on apparatus connected to local supply circuits should, so far as practicable, be made at the neutral or balanced point of the circuit.

RECORDS: A record should be kept of all abnormal conditions on transmission supply circuits involved in inductive exposures, where a study of such conditions is advisable. Such records should, as fully as practicable, include time and duration, circuit designation, location, probable causes and effect of abnormal conditions and how cleared.

All of the above records, or a convenient summary thereof, should be available for the purpose of analyzing cause and effect of disturbances.

Definitions.

For the purpose of these principles and practices, the following terms are used with meanings as given in these definitions:

INDUCTIVE CO-ORDINATION: The location, design, construction, operation and maintenance of supply and signal systems in conformity with harmoniously adjusted methods which will prevent inductive interference.

GENERAL CO-ORDINATED METHODS: Those methods reasonably available for general application to supply or signal systems, which contribute to inductive co-ordination without specific consideration to the requirements for individual inductive exposures.

SPECIFIC CO-ORDINATED METHODS: Those additional methods applicable to specific situations where general co-ordinated methods are inadequate.

INDUCTIVE INTERFERENCE: An effect arising from the characteristics and inductive relations of supply and signal systems of such character and magnitude as would prevent the signal circuits from rendering service satisfactorily and economically if methods of inductive co-ordination were not applied.

INDUCTIVE EXPOSURE: A situation of proximity between supply and signal circuits under such conditions that inductive interference must be considered.

INDUCTIVE SUSCEPTIVENESS: Those characteristics of a signal circuit with its associated apparatus which determine, so far as such characteristics can determine, the extent to which it is capable of being adversely affected in giving service, by a given inductive field.

INDUCTIVE INFLUENCE: Those characteristics of a supply circuit with its associated apparatus that determine the character and intensity of the inductive field which it produces.

INDUCTIVE COUPLING: The interrelation of neighboring supply and signal circuits by electric or magnetic induction or both.

CONFIGURATION: The geometrical arrangement of the conductors of a circuit including the size of the wires and their

relative positions with respect to other conductors and the earth.

ELECTRICALLY CONNECTED: Connected by means of a conducting path or through a condenser as distinguished from connection merely through electromagnetic induction.

TRANSPOSITION: An interchange of position of conductors of a circuit between successive lengths.

CO-ORDINATED TRANSPOSITIONS: Transpositions which are installed in either supply or signal circuits or in both for the purpose of reducing inductive coupling and which are located effectively with respect to the discontinuities in both the supply and signal circuits.

DISCONTINUITY: A point at which there is an abrupt change in the physical relations of supply and signal circuits or in electrical constants of either circuit which would materially affect the coupling.

Transpositions are not rated as discontinuities, although technically included in the definition, because of their application to co-ordination.

RESIDUAL VOLTAGE: The residual voltage of a supply circuit is the vector sum of the voltages to ground of the several wires. In a three-phase system it is in effect a single phase voltage equal to one-third of the residual voltage, impressed between the wires in multiple and the ground.

RESIDUAL CURRENT: The residual current of a supply circuit is the vector sum of the currents in the several wires and is equivalent to a single phase current having the wires in multiple as one side and the ground as the other.

POWER LEVEL: The level of the electrical power flowing in a signal circuit. At any point the power level depends on the conditions of input and of losses between the point of input and the designated point.

In telephone practice the power level of a circuit is usually referred to the power level in a given circuit assuming that the acoustic input into the circuit under consideration is of a given amount and the same as the input into the reference circuit.

SENSITIVITY: The sensitivity of a telephone circuit or a part thereof is the ratio of the electrical or the acoustic output to the electrical input.

SELECTIVITY: That property of apparatus or a circuit which permits the transmission or conversion of currents of different frequencies in differing degrees.

Bibliography of Practices and Information Previously Issued by State Commissions.

(1) California Railroad Commission—Preliminary Report of the Joint Committee on Inductive Interference, July 7, 1914.

(2) California Railroad Commission—General Order No. 39, August 20, 1914.

(3) Iowa Board of Railroad Commissioners—Electrical Interference Between

Transmission, Telephone and Telegraph Lines—Decision and Order—December 30, 1916.

(4) Illinois Public Utilities Commission—General Order No. 30—October 12, 1916.

(5) California Railroad Commission—Final Report of the Joint Committee on Inductive Interference—September 28, 1917.

(6) California Railroad Commission—General Order No. 52—August 1, 1918.

(7) Nebraska Railway Commission—Rules Relating to Overhead Lines at Crossings and Conflicts or Involved in Parallels—September 5, 1919.

(8) Illinois Public Utilities Commission—General Order No. 30 as Amended—March 16, 1920.

(9) Nevada Public Service Commission—Rules for Overhead and Underground Lines for Electric Utilities—July 24, 1920.

(10) North Dakota Board of Railroad Commissioners—Hazard and Inductive Interference Rules, November 1, 1920.

(11) Oklahoma Corporation Commission—Tentative Instructions for the Various Public Utilities, Engineers and Operators in Oklahoma for Study and Trial in the Matter of the Construction and Operation of Power and Communication Lines for the Prevention or Mitigation of Inductive Interference—Issued in Connection with Order No. 1946—October 31, 1921.

(12) Ohio Public Utilities Commission—Administrative Order No. 65—March 6, 1922.

Since the publication of the second progress report, the Public Service Commission of Indiana has issued "Principles and Regulations for Safety and Inductive Coördination," effective November 1, 1922.

French Government to Retain Telephone Monopoly

French telephone service will continue under the government administration instead of being transferred to private corporations as has been proposed. This was decided by the Chamber of Deputies December 23, when during the budget discussion an amendment was introduced by Deputy Lambert authorizing the state to hand over by special conventions all or part of its telephone service to private companies or to special organizations created for the purpose.

Several spoke against the proposed amendment and Paul Laffont, under secretary of postal and telegraphs, declared that the government could not admit either a cession of any part of the system or the exploitation of the whole to any private concern.

The amendment when put to vote was defeated by 397 votes to 70.

There had been considerable talk of the government giving up the operation of telephones in favor of private operation.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Indiana Commission Allows Rates for Consolidated Service.

Telephone rates of \$3.25 a month in Princeton and \$3 a month in Ft. Branch, Oakland City and Patoka for business telephones, and \$2 a month in Princeton and \$1.75 in other towns of Gibson county for individual residence lines were established by the Indiana Public Service Commission in a decision made Thursday, February 8. The Princeton Telephone Co. now controls all the telephone business in Gibson county.

The rates were those asked by the telephone company when it took over the Bell and Oakland City interests in Gibson county, with the exception of the Princeton business telephone rate. The company had asked a rate of \$3.50 a month for this service.

The new rates will go into effect March 1, it was said by Fred Parrett, manager of the Princeton Telephone Co.

In its decision, the commission said the company estimated its operating expenses at \$50,377.35, while the total revenue from the proposed rates will produce annual estimated revenue of \$57,249 and with other revenue will total \$65,735. The commission fixed the value of the properties at \$167,000. The revenue will not be sufficient to yield a return of 7 per cent depreciation fund but the commission said it felt the estimate of expenses in certain respects is slightly high and estimate of revenues in some cases somewhat low.

Taking up the objections of certain subscribers on rural lines, who maintain their lines to the city limits, to the charge of 50 cents a month, which represents increases of from 200 to 600 per cent, the commission held the new rate was not exorbitant.

The percentage of increase cannot be material when it is apparent that the subscribers have been receiving service at a rate which can represent only a small proportion of the cost of rendering such service, the decision held. A 50-cent rate is entirely fair for a service which enables the subscriber to reach, without further cost, 3,255 other subscribers as well as numerous subscribers of small local exchanges exchanging free service with the company.

At the end of the year, if it is found the new rates do not yield the revenue necessary or that they yield a revenue greater than is contemplated, the question of fixing the proper rates can be brought before the commission by the company, by any of the towns involved or by the proper number of subscribers, said the commis-

sion. Its estimates were based on a consolidation not already made and which may not yield exactly the figure estimated.

In cases where service extends beyond the boundary of the base rate area, the charge for each quarter mile beyond is to be 50 cents for individual line, 30 cents for two-party and 20 cents for four-party lines.

Commission Approves Merger of Companies at Concordia, Kans.

The Kansas Public Utilities Commission gave its approval on January 29 to the proposed merger of the New Hope Telephone Co. and the United Telephone Co. at Concordia and it is expected that the transfer of the properties will be completed within the next few weeks.

The sale price as tentatively agreed upon is \$8,000 and it is said that this will just about give the New Hope stockholders the money which they have invested. Some of the details of the transfer have not been completed.

Will Johnston is president of the New Hope company, which is a mutual line, owned by subscribers. The coming of the New Hope into Concordia in 1906 brought about one of the biggest local fights in the history of the community. The poles and lines were put in the town at night, under a guard, contrary to the order of the mayor and council.

Coin Boxes and Private Exchanges Not Excepted from Order.

The Cumberland Telephone & Telegraph Co. was advised on February 1 by Chairman Huey P. Long of the Louisiana Public Service Commission that the commission declines to except coin boxes, private branch exchanges and extensions from the refund and reduction order promulgated by the commission on January 13.

The reason given was that an estimate supplied by the commission's accountants showed that the earnings of the company are sufficient and do not require the reduction of these classes.

Reports are being prepared by accountants for the commission in connection with the hearing March 1 to determine whether the rate reduction shall be made permanent.

Nebraska Minimum Wage Bill Practically Dead.

Telephone companies in Nebraska are breathing freer. Although the lower branch of the legislature, by a vote of 58 to 32, had sent to third reading the minimum wage for women bill, when it came up for passage 12 of those who had pre-

viously supported it, changed their minds and voted against it. It failed of passage by a vote of 39 to 43. Of the 18 absentees a majority were opposed to the bill when it first came up.

Representative Gallagher, who presented it, tried to take advantage of the situation and called the bill up for third reading when more opponents than friends were absent. He secured a call of the house in an effort to round up friends of the measure, but was unsuccessful.

Former Representative Jerry Howard, author of the bill, said that the effort to secure it would end with that vote. He said it was useless to try to resuscitate it in view of the change of front of so many members. The bill made \$12 a week the minimum for women, and 35 cents an hour for irregular employment. The amendment exempting cities and towns under 3,000 was responsible for the change of front of members, who explained their votes by saying that if it was a good bill, it should apply everywhere in the state.

Company to Increase Capital Stock by Stock Dividend.

The Monroe Telephone Co., of Monroe, Ga., filed a petition on January 20 with the Georgia Railroad Commission for authority to issue a stock dividend of 400 per cent.

The company asks to be allowed to increase its capital stock in this way, citing statistics to show the development of the property since it was incorporated in 1900. The result will be an outstanding stock issue, all common, of \$42,900, the total dividend to amount to \$34,320 which, it is stated, is about \$5,000 less than the book value of the company, and at least \$10,000 less than its actual value on the basis of last appraisal of the properties.

The company was chartered in 1900 with a capital stock of \$400, and the privilege of increasing to \$10,000. In 1907 the charter was amended and the capital increased to \$8,580, when additional property was bought, and the charter privileges were extended to a maximum of \$50,000, although the actual outstanding capital remains now at \$8,580.

In 1916 there was an appraisal of the properties, fixing the value at \$61,245, less a depreciation of \$18,000, having an actual appraised value of \$62,717. Since that time the company has made real estate and other additions by investments of \$7,705, placing the value at the present time at \$47,803.

The application shows that the properties have been well managed all along and the business has enjoyed a healthy and

substantial development, which justified the proposed stock dividend issue of 400 per cent on the basis of the showing made, and which would still be in the neighborhood of \$10,000 under the present actual value of the properties.

About a year ago Judge James K. Hines, then special counsel for the Georgia commission, in an opinion, held that such stock dividends, upon proper showing were legal and proper.

Ask State Supreme Court to Affirm Verdict of Lower Court.

Attorneys for James L. Hendrix, who secured a substantial judgment against the Lincoln Telephone & Telegraph Co., have asked the supreme court to affirm the verdict of the lower court. Hendrix was a lineman in the employ of the Lincoln Gas & Electric light Co., another pole line corporation in Lincoln.

Unknown to the telephone company, employes of the gas company had long been using a pole on an abandoned telephone line for the light wires. When the telephone company heard of it, notice was sent the gas company to remove them. This was the first intimation responsible officers of the latter had that their wires were on the pole, and they sent Hendrix out to remove them. While he was on the pole it broke. He sued the telephone company and recovered damages on the ground that the telephone company was legally charged with the knowledge that the pole was rotten.

The telephone company appealed, claim-

ing that the wires had no business on its pole, that the gas company was a trespasser and so was Hendrix. The latter's attorneys say on this point:

"The telephone company, in its answer, states that it notified the gas company to remove the wires. Here the defendant alleges it gave an express invitation to go upon the pole. How could the gas company remove its wires otherwise? What difference does it make how the gas company's wires got there?"

The plaintiff was the employe of the gas company. It was pursuant to the defendant's notice to his employer that he was directed to go to the defendant's pole and remove the gas company's wires. How could he be a trespasser when engaged in executing for his employer an express request of the defendant? He was just as much entitled to warning at the hands of the defendant that the pole was rotted off underground and dangerous, as a new employe, who did not know the condition of the pole, would have been."

Hendrix's attorneys insist that the instructions of the court as to the lack of any duty on the part of the telephone company to Hendrix were fully given, and that the instructions were more favorable to the defendant than the record justified. They conclude:

"The record did not justify the trial of the issue as to how the gas company's wires came to be on the defendant's pole. It is conceded by all that the wires were there, and that the plaintiff attempted to remove them in response to a request made

by the defendant on the gas company to have them removed.

"This was an express invitation that the plaintiff, as the employe of the gas company, should climb the pole, and the jury has said by its verdict that the defendant knew the pole was unsafe and gave no warning. The plaintiff is seriously crippled for life due to the deliberate and wanton negligence of the defendant, whose servants sat by and watched the plaintiff climb a pole that they knew was rotted off underneath the surface of the ground.

"If the plaintiff's ox had escaped and broken into the defendant's pasture and the defendant had notified the plaintiff to come and take him away, without warning him that a bull which he knew to be cross, occupied the pasture where the ox would be found, and the plaintiff without knowledge that the defendant's bull was cross, went into the pasture to remove his ox, and was injured by the bull, would there be any doubt of defendant's liability notwithstanding the ox was a trespasser?"

Hendrix was recently adjudged by the compensation commissioner to have suffered permanent injuries to the extent of 20 per cent of both hands. He was awarded, from the gas company, compensation at the rate of \$2.40 a week for 300 weeks and \$2.83 1-3 each week for the remainder of his life.

Missouri Mutual Company Reports on Business for 1922.

The annual statement of the expenditures and disbursements of the Andrew

Name of Company.	City or Town.	Popu-lation.	Type of equip-ment.	Total No. of tele-phones.	Net rate per annum—				Rural busi-ness.	Rural resi-dence.	Rural switch-ing ser-vice.
					1- party busi-ness.	2- party busi-ness.	3- party busi-ness.	4- party resi-dence.			
Eastern Wis., Wis.....	Valders	30	Mag.	.....	.....	.....	.....	.....	.....	.....
	Quarry				.....	.....	.....	.....	.....	.....
	Plymouth				.....	.....	.....	.....	.....	.....
Peoples Coöp., Minn.....	Glenbeulah	298	Mag.	191	.....	.....	.....	.....	.....	.....
	Williams				.....	.....	.....	.....	.....	.....
	Roosevelt				.....	.....	.....	.....	.....	.....
New London, Minn.	New London	527	C. B.	281	30.00	.....	.....	18.00	15.00	.....
	Chesapeake and Potomac.				.....	.....	.....	.....	.....	.....
D. C.	Washington	422	Mag.	.....	.....	.....	.....	*60.00	.....	.....
	Meriden Telo., Kans.				Meriden
Kansas Telo., Kans.	Ottawa	9,018	Mag.	.....	30.00	.....	.....	18.00	.....	.....
	Shawnee Ind., Kans. ...				Silver Lake
Geneva Telo., Ohio.....	Geneva	3,081	Mag. and C. B.	.....	33.00	.....	.....	21.00	18.00	.....
	Rock Co. Farmers, Wis..				Janesville
Eden Telo., Wis.	Eden	176	Mag.	270	24.00	21.00	.....	21.00	18.00	.....
	Mosel & Centerville, Wis.				Centerville
New Lisbon, Wis.	Mosel	25	Mag.	700	.....	.....	.....	.....	.....	.....
	Browntown, Wis.				New Lisbon
Zender-Nasville, Kans....	Camp Douglas	471	Mag.	733	24.00	21.00	.....	.....	.....	.....
	Hustler				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Browntown	245	Mag.	309	.....	.....	.....	.....	.....	.....
	Liberal Telo., Kans.				Woodford
Edwardsville, Kans.	Zender	188	Mag.	.....	30.00	18.00	.....	18.00	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Liberal Telo., Kans.	Nasville	210	Mag.	.....	36.00	.....	.....	18.00	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Lake-of-the-Forest	203	Mag.	.....	.....	.....	.....	.....	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Forest	203	Mag.	.....	30.00	.....	.....	27.00	21.00	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Liberal	3,613	Mag.	.....	33.00	.....	.....	21.00	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	New Salem	20	Mag.	.....	.....	.....	.....	.....	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Pierce	1,105	Mag.	.....	.....	.....	.....	.....	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Pomeroy	4,294	C. B.	.....	15.00	33.00	.....	26.40	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Perry	50	Mag.	.....	.....	.....	.....	.....	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Sussex	275	Mag.	176	.....	.....	.....	24.00	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....
Edwardsville, Kans.	Templeton	.....	Mag.	.....	.....	.....	.....	27.00	.....	.....
	Edwardsville				.....	.....	.....	.....	.....	.....

*Reduced rate. ¹Desk sets \$3 extra. ²One-party service \$3 per year extra for each quarter mile between city limits and subscriber's station. ³For each mile beyond six-mile radius of central office, \$1.20 extra. ⁴One-party service within one and one-half miles of central office, \$21; within six miles, \$30. ⁵Business switching service; residence switching service, \$6.

New Rate Schedules for Telephone Companies Approved by Various Commissions During December.

County Mutual Telephone Co., of Savannah, Mo., filed with the Missouri Public Service Commission, shows that for the year ending December 31, 1922, the receipts were \$43,089 and the expenses \$42,921, leaving a cash balance in the bank of \$168. The total of material and supplies in stock was \$3,252.

The number of telephones in use in Andrew county is 2,756.

Omaha Hotel Telephone Rates Under Commission Scrutiny.

The Nebraska State Railway Commission has cited the Northwestern Bell Telephone Co. and certain hotel managers to appear before it on February 16 for the purpose of a general inquiry into the reasons for increasing the hotel message rate in Omaha.

When the commission issued a recent order in the Bell case, it allowed the Omaha hotel managers to retain the existing hotel message rate of five cents or to elect to charge 10 cents on each local call originating at the hotels and terminating within the Omaha zone, provided they complied with certain other conditions of the order.

The five-cent rate was split between the company and the hotel so that the latter got 1¼ cents. It furnished no equipment and made no guarantee of a return under this arrangement. Under the 10-cent rate the hotel supplied the wiring, a guarantee and got a nickel as its share of each dime.

Shortly thereafter there appeared in each room of a number of hotels a card expressing the great regret of the management over having to increase the rate from five cents to ten cents, but saying that the telephone company was responsible. The Bell people protested so vigorously that the card was substituted by another which indicated that the hotels had increased the local message rate only under some compelling outside influence and with very great reluctance on the part of the management.

The railway commission suspects that it is the outside influence referred to, and it proposes to have the hotel men on the carpet long enough to explain. The commissioner's strongly suspect that it is the added nickel that is the compelling outside influence.

The commission will take the opportunity to make a close study of hotel rates in Omaha. Most of the newly constructed hotels have put in their own wiring. The commission is requiring of the respondents that they come prepared to answer these questions:

(a) The number of stations attached to the private branch exchange in each hotel;

(b) The number of one-way and two-way trunks serving each hotel;

(c) Revenue derived in January, 1923, by the telephone company from each hotel

on the divisions of the message charge;

(d) Revenue derived in January, 1923, by each hotel company on its share of the divisions of the local message charges;

(e) Revenue derived for the month of January, 1923, which would have been derived by parties to the contract had the former charges been maintained;

(f) Cost to each respondent hotel company for furnishing telephone service in January, 1923, and the part thereof chargeable to outbound local calls;

(g) Such other data, if any, as will justify or condemn a continuance of the optional rate of 10 cents per outward local message from such hotels.

Will Argue on Reopening the New York Bell Rate Case.

Responding to complaints from a number of civic associations in Brooklyn about the new telephone rates, effective March 1, the New York Public Service Commission announced on February 8 that, beginning at two o'clock, February 19, it would hear arguments in favor of reopening the case. The chief complaint is directed against the monthly contract plan, which fails to provide rebates if less than the maximum number of calls is made.

Chairman Prendergast said that everybody would have an opportunity to speak, although the application was made by the Brooklyn Heights Forum. Mr. Prendergast said the new rate was not a new idea but was already in effect in 437 cities and that it has been in effect in the City of New York for four years.

The commission already had held 66 public hearings on the rate cases.

Three Companies in New York Unite and Form New Company.

On February 9 the New York Public Service Commission gave the necessary authority to the newly formed Chenango & Unadilla Telephone Corp. to construct and operate a telephone line in parts of Chenango and Oneida counties and to take over the properties and franchises of the New Berlin, N. Y., Telephone Co., the Marquis Telephone & Telegraph Co., of Norwich, and the Waterville, N. Y., Telephone Co.

The new company is also given permission to operate under whatever franchises have been given to the three companies by the towns and villages in which they have been operating. The three companies will hereafter be operated as a single company.

Company Giving the Better Service Allowed to Continue.

The Oklahoma Corporation Commission on February 8 dismissed without prejudice the application of the Alma Telephone Co., of Alma, for an order requiring the Southwestern Bell Telephone Co. to use the lines of the Alma company in

transmitting messages between Robberson or Magnolia City and Duncan.

The case was heard by the commission on November 10 and was taken under advisement, but upon the intervening petition of the Western Telephone Co.—with lines between Elmore City and Wynnewood and Pauls Valley—a rehearing was held on February 6.

The evidence showed that both the Alma and Western companies have been giving service in the general locality involved in the case for many years. In July, 1921, an oil field was opened at a place designated as Magnolia City, now known as Parnell. The discovery of oil created an immediate demand for telephone service and the oil operators requested the Southwestern Bell to supply service.

The Bell company, being unable to parallel the lines of the Western company between Pauls Valley and Elmore City without first securing a certificate of public necessity from the commission, suggested to the Western company that it provide the service.

The Alma company, also realizing the need for service to and from the oil field, arranged with the owner of the toll station then at Robberson to extend a line to Magnolia City. Before this extension was made available, however, the Western company had financed a line from Elmore City to Magnolia for the same operator who owned the toll station at Robberson. Through this connection, an outlet for the oil field became available several weeks before the Robberson-Magnolia extension was completed.

The commission found that the Western company's line is a metallic circuit of first class construction and efficiency, while the lines of the Alma company and the Robberson-Magnolia extension are grounded lines, which the testimony showed to be more or less subject to cross talk and other interferences.

Although the wire distance on the Alma line is less than a third of that on the Western line, the evidence showed conclusively that the business handled over the latter was handled in a most satisfactory manner.

It appeared that the new investment of capital by the Alma company in anticipation of securing the business was small in comparison with that of the Western company, and further, that it had not been made until after the Western company had established the necessary service.

Under all of the circumstances, the commission was of the opinion that the existing arrangement was the most fair one and that it should continue until such time as there was a change in conditions.

Petition Denied When Company Fails to Appear at Hearing.

No appearance being made by the Canadian Valley Farmers Telephone Co., of Canadian, Okla., at the February 6 hear-



The intermittent nature of telephone use requires batteries to remain idle much more than they actually work. How they spend their spare time is therefore very important. Columbia Gray Label Batteries save their energy by quitting when the talk is over, by doing nothing at all to deplete their power while the receiver is on the hook.

It's the secret of why Columbias cost less per month of service. Fahnestock Spring Clip Binding Posts at no extra charge.

NATIONAL CARBON COMPANY, INC.
Long Island City, N. Y.

Atlanta

Chicago

Cleveland

Kansas City

San Francisco

Columbia Telephone Batteries

"less cost per month of service"

ing on its petition to discontinue service to certain subscribers at or near Piedmont, the Oklahoma Corporation Commission heard informal testimony in opposition and issued an order the following day denying the petition. The commission further ordered that the company furnish service to those whose service had been discontinued contrary to their wish and without authority from the commission.

The Canadian Valley company alleged in its application that certain persons who were subscribers on its lines and on the lines of the Deer Creek Mutual Telephone Co., of Deer Creek, and others who were on the Deer Creek line only, were in the habit of repeating or transferring calls or information from the telephones of one company to subscribers on another line, a practice detrimental to the financial interest of the Canadian Valley company.

While there was no formal hearing, several objectors stated that the Canadian Valley company had discontinued service to some of its subscribers as a result of the controversy and that such discontinuance had been made after notice was given to refrain from doing it until showing cause therefor.

The commission, while it could not countenance the ignoring of its rule that public utility service, once established, must not be denied or discontinued contrary to the wish of the patron except upon authority of the commission, declared that it did not intend by the order to approve the alleged practice of the subscribers.

In fact, the commission expressly disapproved such practice and stated that if it were shown that the practice amounted to a general abuse, it would enter an order to correct the condition.

Summary of Commission Rulings and Schedule of Hearings.

ILLINOIS.

January 3: Authority given Streator Telephone Co. to make certain increases and certain reductions in rates for service in Streator and Grand Ridge.

January 17: Approval given to agreement dated October 9, 1922, between C. B. & Q. R. R. Co. and the Illinois Bell Telephone Co., relating to the installation and maintenance of a telephone crossing at Nifa.

January 17: Order entered directing Vermilion County Telephone Co. to file on or before March 1 a detailed inventory of its property devoted to telephone service in Danville.

January 17: Order issued approving lease by the Illinois Bell Telephone Co. to the Western Electric Co. of certain premises in Chicago, from November 14, 1922, to December 31, 1925, at a rental of \$625.50 per month.

January 17: In the matter of the proposed advanced rates of the Westfield-Kansas Telephone Co. for service in Westfield and Kansas; motion carried that case be reopened for presentation of further evidence by the engineering department.

January 23: Approval given to sale by the Illinois Bell Telephone Co. to the Wisconsin Telephone Co. of an undivided

interest in certain conduit and cable extending from the Illinois-Wisconsin state line to Kenosha, Wis., for the sum of \$6,940.

January 24: Jasper County Telephone Co., of Newton, given authority to issue \$37,000 par value of its capital stock.

January 24: Permission granted Farmers Fountain Telephone Co., of Columbia, to issue \$8,155 principal sum of its promissory notes, bearing interest at not to exceed 6 per cent.

January 24: Rate increase granted St. Paul Telephone Co. for service in St. Paul.

February 13: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show cause why rates for service in Chicago and such territory as constitutes the Chicago exchange should not be reduced.

February 13: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in the counties of Cook, DuPage, Grundy, Kane, Kendall, Lake, McHenry and Will, should not be reduced.

February 13: Hearing held at Chicago on petition for approval of sale by Joe Cabeen and purchase by the Logan Telephone Co. of the telephone property located at Seaton; also for a certificate of convenience and necessity to the Logan company to operate the exchange, and for authority to issue \$10,000 capital stock.

February 13: Hearing held at Chicago on petition of Amos Haverstick and others for an order requiring the Illinois Bell Telephone Co. to furnish telephone service in or near Rock Falls.

INDIANA.

February 8: Decision on application of Princeton Telephone Co. for increased rates in Princeton, Ft. Branch, Oakland City, Patoka and other towns in Gibson County; rates as asked for by company allowed except the Princeton business telephone rate.

KANSAS.

January 29: Approval given to merger of New Hope Telephone Co. and the United Telephone Co. at Concordia.

LOUISIANA.

March 1: Hearing to be held at New Orleans in the matter of making permanent the rate reductions recently ordered for the Cumberland Telephone & Telegraph Co. throughout the state.

MICHIGAN.

January 30: Final hearing started in Lansing on application for approval of merger of Citizens Telephone Co., of Grand Rapids, with Michigan State Telephone Co.

MISSOURI.

February 5: Authority given the Lafayette Telephone Co., of Lexington, to issue its common stock in the sum of \$85,000; each holder of stock in the new company to receive such proportion of the issue as the number of his shares of the old company's stock bears to the total issue. This order, which is supplementary to that of May 25, 1922, is entered because it appeared that authority covering the issuance of \$85,000 of common stock was omitted from the former order through error.

NEBRASKA.

February 5: In the matter of the application of the Cozad Mutual Telephone Co. for permission to establish an increased schedule of rates; commission refuses to authorize rates asked for, but puts into effect a schedule of its own making.

February 5: Complaint filed by W. F. McMurray, of Violet, against Pawnee Telephone Co., alleging that he is being

charged business rate for service on a ten-party line from Pawnee City.

February 6: Request filed with the commission by Frank Ferree of the Loup River Telephone Co., asking that one Hamilton, who owns a line between Thedford, where the complainant company has an exchange, and Brownlee, be ordered to cease giving service to Thedford subscribers. This service was an emergency one given when the town company had had to quit because of financial difficulties. Mr. Ferree says that 90 per cent of the citizens want but one company, and there is not enough business for two.

February 6: Application filed by the Dawson-Nemaha Telephone Co. asking for authority to charge gross and net rates.

February 7: Application filed by the Platte Valley Telephone Co. for permission to issue \$100,000 of preferred stock.

February 7: Application filed by the Campbell Telephone Co. for gross and net rates schedule authorization.

February 8: Application filed by the Cambridge-Holbrook and Hendley Switchboard companies for permission to establish a schedule of gross and net rates.

February 8: Application filed by the Big Four Telephone Co., of Geneva, for permission to establish gross and net rate schedule.

NEW YORK.

January 29: Petition filed by Northern New York Telephone Co., of Plattsburg, for authority to increase its capital stock from \$1,000,000 to \$3,000,000.

February 9: Authority given Chenango & Unadilla Telephone Corp. to operate a telephone line in Chenango and Oneida counties and to take over properties and franchises of three other companies which have been united to form a new company.

February 19: Arguments to be heard in New York City on the petition to reopen the New York Telephone Co. rate case recently decided.

OKLAHOMA.

February 7: Canadian Valley Farmers Telephone Co., of Canadian, ordered to reestablish service to subscribers from whom it had been discontinued contrary to their wishes and without the commission's authority; petition to discontinue serving such patrons denied.

February 8: Application of Alma Telephone Co., of Alma, for an order requiring the Southwestern Bell Telephone Co. to use the lines of the Alma company in transmitting messages between Magnolia City and Duncan; dismissed without prejudice.

WASHINGTON.

January 29: Hearing held in Tacoma on application of Pacific Telephone & Telegraph Co. for an increase in rates.

WISCONSIN.

February 6: Investigation started—on motion of the commission—of the service and practices of the West Line Telephone Co., of Barneveld. U-2822.

February 7: Application filed by the Midway Telephone Co., of Stetsonville, for authority to issue \$20,000 of its capital stock for the purpose of securing funds with which to install an automatic exchange in the city of Medford and for the purpose of paying for other additions and extensions to its property and plant. SB-1863.

February 13: Hearing held at Madison on the application of the Boscobel Telephone Co., of Boscobel, for authority to increase its switching rates. U-2817.

March 1: Hearing at Madison on the proposed extension by the Farmers Telephone Co., of Cochrane, in the towns of Waumandee, Montana and Glencoe. T-1064.

The North Electric Manufacturing Co.
GALION, OHIO

Machine Switching Systems

AUTOMANUAL EQUIPMENT was installed at Conneaut, Ohio, TEN YEARS AGO. The Conneaut Telephone Company has recently erected one of the finest exchange buildings in the United States and moved the ORIGINAL "NORTH" APPARATUS to its new home. It was worth while because this "North Apparatus" originally installed 10 YEARS AGO will give SUPERIOR SERVICE FOR 20 YEARS LONGER. Recent tests of service at Conneaut show an ACCURACY and SPEED that are NOT EQUALLED by any other switching system.

Plan for the future when equipping your central office. We have a machine switching system that will meet your requirements. Investigate.

AUTOMANUAL

REMOTE CONTROL

DIAL CONTROL

The Policy

of Lynton T. Block & Co. is to issue the most satisfactory and comprehensive insurance to be had anywhere—

Furnishing absolute protection at cost.

Embodying all the standard features and more.

Covering special classes and selected risks.

Selling at established rates.

Returning savings at the end of the policy period, depending upon the individual experience of the risk.

Giving a claims service that is not equalled elsewhere.

It is an honest policy, carried out in an honest way and gives a square deal under all conditions.

This forms the creed of every member of the organization and has built up the reputation of Lynton T. Block & Co. until it is one of the best and most favorably known in the Mississippi Valley.

Insurance at Cost



*Workmen's Compensation
Employers' Liability
Public Liability
Teams Liability
Contractors' Liability
Elevator
Automobile*

LYNTON T. BLOCK & CO.

UNDERWRITERS OF

INSURANCE AT COST

UTILITIES INDEMNITY & FIRE EXCHANGES

EMPLOYERS INDEMNITY CORPORATION

Chamber of Commerce Building

St. Louis, Mo.

From Factory and Salesroom

Conventions : Nebraska, Lincoln, February 20-22; Ohio, Columbus, February 20-22; Kansas, Ottawa, March 6-8; Oklahoma, Oklahoma City, March 12-14; Texas, Dallas, March 20-23; Wisconsin, Milwaukee, March 21-23; Florida, Miami, March 27-28

New Turner "Master" Gasoline-Kerosene Blow Torch.

A new blowtorch, now being marketed by the Turner Brass Works, Sycamore, Ill., embodies a number of novel, useful and interesting patented features.

Its makers claim that it is the only blowtorch with a safety valve. This valve located at the end of the horizontal pump cylinder, is fitted with a diaphragm accurately proportioned to give away automatically at 40 pounds air pressure. As torches operate at 18 to 20 pounds pressure, this valve will not come into action until about double normal pressure is present. A thumb-nut on this valve permits the operator to release the air pressure, after his work is done, or to decrease the pressure as desired during the operation of the torch.

Another exclusive feature of this line of torches is the fact that there is but one opening in the tank. This opening is at the top, above the fuel line, and is sealed by the screw-thread filler-plug. A frequent cause of leakage trouble is removed through the eliminating of such soldered connections as burner inlet and upper and lower pump brackets.

The pump on this line of torches is equipped with a pump leather that spreads like a parachute on the work stroke, and like a parachute, closes on the return stroke. This leather is automatically lubricated from a reservoir of vaseline in the brass washer at the end of the pump rod.

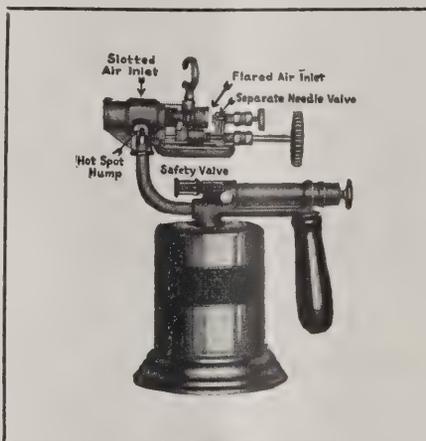
The sturdy, safe, smooth-functioning torch body is surmounted with a torch-head that may be said to play a "thinking" part in doing its daily work.

The fuel in its journey from the tank to the combustion chamber, passes through the interior of a solid bronze baffle, which its makers call the "Hot Spot Hump." This baffle is located near the outlet of the burner tube, in the path of the flame. It very soon becomes white hot, the intense heat vaporizing the fuel into a hot, dry, highly inflammable gas. This accounts for the makers' claim that these torches can burn kerosene or the leanest grade of gasoline; generating a heat some 400 degrees higher than ordinarily secured from high test gasoline.

The measure of the economical efficiency of any torch is the measure of the efficiency of the combustion it secures. Efficient combustion means not merely the

total consumption of the fuel without unburned residue, but also the maximum admixture and combustion of oxygen from the air.

The Turner "Master" torches admit the air through a flared inlet in front of the needle valve. This inlet is a bell-shaped nut, turned from brass screw stock and threaded so that the operator with thumb



The New "Master" Gasoline-Kerosene Blow Torch Manufactured by the Turner Brass Works Has Many Interesting Features.

and finger, can screw it into or out of the tube, thus regulating the distance from the needle-valve, and consequently the volume of air admitted. Air is also admitted through a long slot at the top of the burner tube, immediately about the "hot spot" hump.

This supplementary air inlet performs two functions: It deflects the flame downward upon the baffle or "hump," and it provides additional oxygen to insure complete combustion at this point. Absence of holes in the sides of the burner tube is cited by the makers of this torch to be one of the reasons why a Turner "Master" torch "can't blow out," in a gale of wind.

The wise manufacturer of any mechanical device or tool, recognizes that a certain percentage of his products will fall into ignorant or careless hands. For a manufacturer, therefore, to endeavor to make his product "fool-proof" is no reflection upon the intelligent workmen who will use it, but is a frank recognition of the fact that the best way to avoid trouble is to protect the most stupid operator from the results of his own folly or ignorance.

On blowtorches, a common source of trouble has always been the enlarging of the fuel orifice by "strong-arm" work at the hand wheel. To checkmate that form of abuse, the Turner people have separated the shut-off valve from the fuel-control valve, placing the latter above the shut-off.

For the same reason they have given the needle valve only a small thumb-nut control so as to make it practically impossible for the operator to exert enough pressure to enlarge the orifice. The larger wheel has only one use—that of opening or closing the fuel line. As its valve has a positive seat, there is never any occasion to use force on this wheel.

A welcome finishing touch to the "Master" torch is its wooden pistol-grip handle. This handle is hung at an angle that balances the torch perfectly, and at the same time gives ample room for the largest hand, so that the knuckles do not nearly touch.

The use of a single length of curved steel tubing to carry the fuel from tank to the torch, not only gives a pleasing grace to the torch, but it eliminates all soldered or threaded joints and connections.

The Master torch is built in a variety of sizes and types, for various purposes, the features here described being present in the whole line.

Wm. F. Pagel, the president of the Turner Brass Works, considers the "Master" line of torches the most important contribution to modern metal working crafts made by his company in its whole 44 years of torch building.

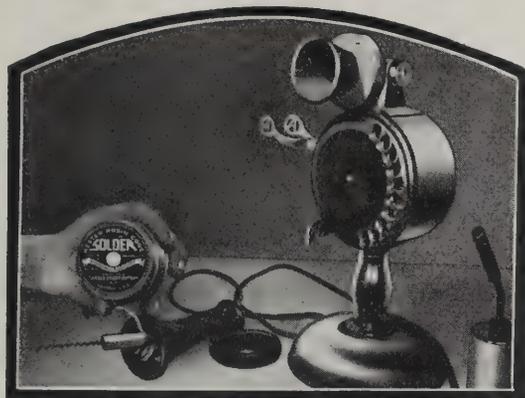
Annales Des Postes, Telegraphes et Telephones a Monthly.

The Annales des Postes, Télégraphes et Téléphones, the technical bulletin which the French government has published for several years, and appearing hitherto every two months, starting with the first of the year became a monthly publication.

Owing to this important change, the influence of the journal will be found greatly strengthened. However, the annual subscription price will remain at 24 francs in France and 27 francs in other countries.

The Annales des Postes, Télégraphes et Téléphones is published by La Librairie de L'Enseignement Technique, 3 Rue Thenard, Paris, France.

Those Inaccessible Soldering Jobs



A tight place, separate flux and common solder—that describes a mighty tough job.

Now then, the same tight place with Kester Solder and only heat; nothing to it, the job is done in a jiffy, neat and permanently.

The reason is that Kester Self-Fluxing Wire Solder carries its own flux, either rosin or a scientific acid, according to the delicacy of the job. Inside the hollow wire of virgin tin and lead, are tiny pockets which supply the flux in the exact quantity needed. This permits cleaner jobs and saves the time and material which was formerly wasted in applying a separate flux.

We'll gladly send a test sample for your own work.

"Write right now"

Sold everywhere by live dealers in one pound coils, in cartons, and on one, five and ten pound spools

Manufacturers

CHICAGO SOLDER COMPANY

4211 Wrightwood Avenue, Chicago

Direct Factory Representatives:

THE FAUCETTE HUSTON CO.

Chattanooga, Tenn.

LOUIS J. ZIESEL CO.
216 Market St.
San Francisco, Cal.

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66 W. Broadway
New York City

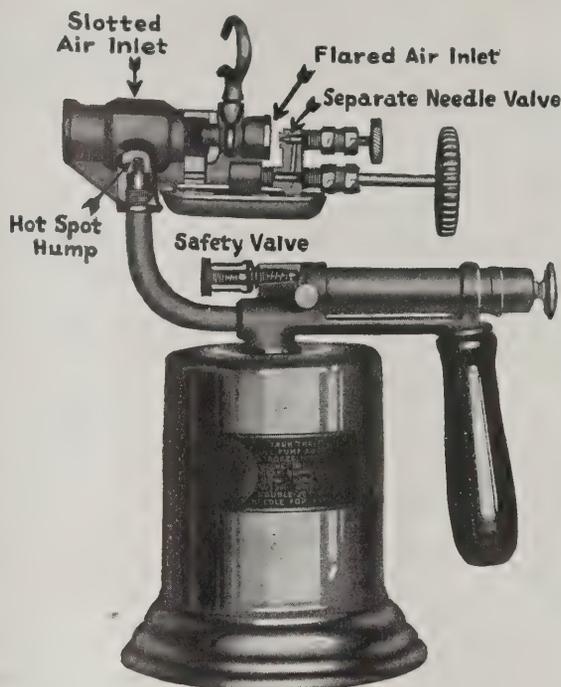
KESTER

Acid Core WIRE SOLDER



Requires Only Heat

ONLY SAFE BLOW TORCH



Only torch with **safety valve**.
Only torch with **no opening** in tank below fuel-line.

Air-release and automatic safety valve prevents excess or bursting pressure.

Hottest, by 400°

Because complete volatilization of fuel (kerosene or gasoline) at the Hot Spot Hump insures **perfect combustion**.

Pistol-grip—Comfortable, Convenient.
Shut-off and adjusting needle separate—obviates the enlarging of the orifice.

Costs no more, in spite of these and other patented features. Send for list and quantity discounts.

THE TURNER BRASS WORKS
Sycamore, Ill. U. S. A.
WILLOW ST.

District Representatives

Rice-Hitt Co., Denver, Col.
Rice-Hitt Co., 709 Mission St., San Francisco, Calif.
Rice-Hitt Co., 1427 L. C. Smith Bldg. Seattle, Wash.
Rice-Hitt Co., 417 Hibernian Bldg., Los Angeles, Calif.
A. H. Deveney & Co., 4th National Bank Bldg., Atlanta, Ga.

Paragon Grounds for Protection Against Interference.

One of the most important aids which the Paragon Electric Co., of Chicago, offers the telephone field is the newly improved "Paragon ground"—for protecting telephone equipment from lightning, high tension crossings, sneak currents, and excess potential.

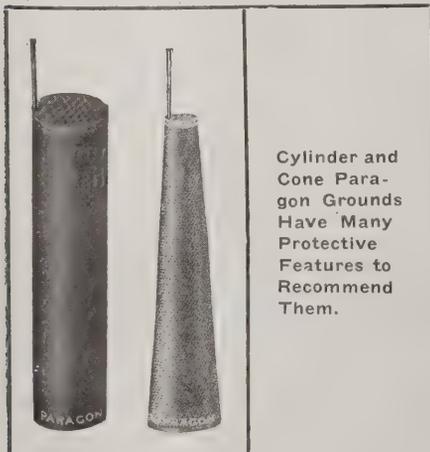
Paragon grounds have been passed and endorsed by the National Board of Fire Underwriters. After a rigid examination and test, confirmed by actual record in service, the board of underwriters has incorporated the Paragon ground into its specifications as an acceptable means of grounding under the requirements of the National Electrical Code.

The design and construction of the ground are such as to meet with general approval. The use of copper throughout, with solid welded connections between the parts, insures a permanent unit, well adapted to withstand corrosion and provided for lasting conductivity and low resistance so far as relate to the grounding device itself.

The copper is one continuous piece from base to point of connection, with the leading-in wire above the surface of the earth, making for efficiency and durability. The grounds are designed to insure concentration of discharge area in permanently moist earth, and as copper has the greatest conductivity and toughness for resisting underground corrosion, the use of that metal guarantees the greatest usefulness and capacity.

Regarding the effectiveness of Paragon grounds, tests of grounds in actual service of several large companies—which have used Paragon grounds for more than ten years—have proved them deserving of the endorsement given them by the board of fire underwriters.

They are easily installed—may be placed by an ordinary workman with such tools and methods as are used in setting fence



Cylinder and Cone Paragon Grounds Have Many Protective Features to Recommend Them.

posts. No large excavations are required, the earth adjacent to the device need not be disturbed and the device itself need not be subjected to rough treatment.

It is recognized that the use of inade-

quate, undependable grounds is not economy, for it risks valuable equipment and sometimes even life. A little attention given to such matters at the time of installation will be time well spent and the use of the kind which is decided to be the best is true economy.

It is impossible to know just when grounds may be called upon to furnish protection and, when the time does come, their efficiency is likely to be tested to the limit.

An interesting booklet on "Grounding Facts" has just been published by the Paragon Electric Co., Old Colony Bldg., Chicago, and the company will send it free upon request. Information may also be obtained upon the other telephone products of the Paragon company.

Changes in Western Electric's Hawthorne Organization.

Several changes in organization affecting the management of the Hawthorne works in Chicago and the big plant the company is about to build at Kearney, N. J., are announced by the Western Electric Co. These changes involve the administration of all the 29,000 workers at the Hawthorne plant and entail the organization of the big employe force that will eventually man the new plant in New Jersey.

Under its new manufacturing line-up, by which J. W. Bancker, formerly assistant general superintendent of the Hawthorne works has been transferred to New York as assistant vice-president, C. G. Stoll will assume the direction of the Chicago plant with the new title of works' manager.

Other important changes include the appointment of O. C. Spurling, formerly an assistant general superintendent at the Hawthorne works, to be engineer of the company's manufacturing plants, and the installation of F. L. Gilman, another former Hawthornite, as manager of the New Kearney works in New Jersey. All the new appointees will report to H. F. Albright, vice-president in charge of the Western Electric's manufacturing department.

C. G. Stoll, the new works' manager at Hawthorne, joined the Western Electric Co. at Chicago in 1903, almost immediately after his graduation from Penn State College, where he had gained intercollegiate fame as one of the best varsity baseball players in the East. He has been on the climb ever since.

In 1905 he assumed charge of the company's new apparatus design department, and six years later became head of the manufacturing branch of the Western Electric shop in New York. In 1912 he went to Belgium as shop superintendent of the branch at Antwerp, returning to this country a year after the war started. Since then he has been, in turn, operating superintendent, technical superintendent,

and assistant general superintendent of the Hawthorne works.

Chicago Representative of W. N. Matthews Has Good Record.

A capable and progressive young man is Haworth L. Brueck, the new Chicago representative of W. N. Matthews &



Haworth L. Brueck, Chicago Representative of W. N. Matthews & Brother, Is Progressive and a Good Business Getter.

Brother, St. Louis, Mo. Mr. Brueck has an experience behind him that justifies the Matthews company in expecting a big development in business in the central states district under his direction.

He graduated from the electrical engineering course of the Armour Institute of Technology, and took a two-year course at the James Millikin University.

His business career started in 1904 with the job of troubleman and inspector for the Decatur Railway & Light Co. Following that he was engaged in electrical construction and was then assistant wire chief for the Illinois Bell at Decatur.

From 1907 to 1910 he was erecting engineer for the Illinois Traction System, installing the first AC substation in the state. During 1910 and part of 1911 he was employed by the Wabash Railroad first as road electrical inspector, and then as chief electrician of the St. Louis yard.

Business from the selling side took Mr. Brueck's attention after that and he has built up a record that promises well for the Matthews company. In 1911 he joined the force of the Wesco Supply Co., of St. Louis, as sales engineer, going to the Commercial Electrical Supply Co., also St. Louis, in the same capacity in 1912 and remaining for about two years.

He was sales engineer of the Electric Appliance Co., of New Orleans, from 1913 to July 15 of last year, when he became connected with the Matthews organization

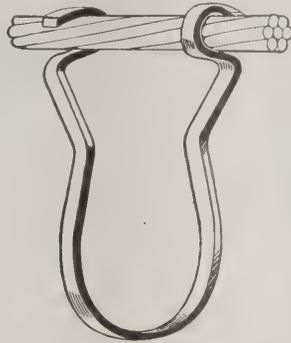
Are you using cable rings that slip? Don't imperil your constructions and interfere with the furnishing of perfect service.

The National Junior Cable Ring firmly grips the messenger with two prongs and the tension created by the spring in the ring absolutely prevents slipping.

And the National Junior is particularly convenient for reclipping purposes owing to the wide opening between the prongs. Made of high carbon wire galvanized by the hot dip process—in 1½ and 2 and 2½ inch sizes.

We suggest that you write immediately for prices. They're remarkably reasonable for cable rings capable of such splendid service.

The National Junior Cable Ring



Manufactured by
The National Telephone Supply Co.

5100 Superior Avenue
Cleveland, Ohio

Wire Chief



Wire Chief's Voltmeter Model 57

Here is the **VOLTMETER** for YOU. It is the Wire Chief's best friend in every trying situation where line faults or Central Office complications arise—and must be solved quickly. The Weston Wire Chief's Voltmeter has a record of increasing efficiency 25% in all exchanges where it has been used.

Do YOU want this increased efficiency?

Detailed information gladly sent upon request.

WESTON ELECTRICAL INSTRUMENT CO.
5 WESTON AVE. NEWARK, N. J.

Branch Offices in all Principal Cities

WESTON

"STANDARD" The World Over

ELECTRICAL INSTRUMENTS

"THE SUN NEVER SETS ON THE WESTON"

An Indicating Instrument For Every Individual Need and Industrial Purpose



WHY TAKE THE RISK WHEN

"COPPERWELD"
TRADE MARK REG. U.S. PAT. OFF.

GIVES GREATER SAFETY AND COSTS LESS PER MILE YEAR

*Line Wire-Twisted
Pair-Ground Rods
Data On Request.*

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 MAIN OFFICE AND WORKS: BRADDOCK P.O. RANKIN, PA.

Condensed Telephone News

Officers of Companies Are Requested to Forward to Us Promptly All Financial and Other Statements Issued and Any Items Relating to Construction, Rebuilding and Other Changes

For Sale

KELLOGG TWO WIRE C. B. SWITCHBOARD

Golden oak cabinet
Automatic listening
Automatic ringing, dark key shelf

	Capacity	Equipped
Sections	7	6½
Positions	21	18½
C. B. Lines per position	120	120
C. B. Lines total...	1960	1960
Cord circuits per position	15	15
Multiple jacks, total	21000	14320
Rural positions ...	1	1
Rural lines	60	50
Pay Station positions	1	1
Pay Station lines..	160	60
Toll to Local trunks	20	15
Toll to Rural trunks	5	5
Inter office trunks.	20	20
Recording trunks to toll	10	10
Chief operators Desk (sanitary style) ..	1	1
Information Desk (sanitary style)..	1	1
Operator's chairs...	20	20
Operator's Breast plate sets.....	27	27
Lighting fixtures...	9	9
Relay Rack.....	2160	1960
Power Switchboard	1	1
G. E. Arc Rectifier (50 amp)	1	1
Motor gen. Charging set (60 amp)	1	1
Four frequency vibrator ringing machines	1	1
A. C. Motor driven ringing interrupter	1	1
D. C. Motor driven ringing interrupter	1	1
Storage batteries, Exide F 11.....	11	11
Storage batteries, Exide F 7.....	11	11
Wire Chief's desk (sanitary style)....	2 pos.	2 pos.

This equipment includes everything required for a 1960 line exchange. It is in first class condition and is now satisfactorily handling a load of 40,000 calls per day. Delivery can be made in September, 1923. Terms if desired.

**FORT DODGE
TELEPHONE CO.**
Fort Dodge, Iowa

New Telephone Companies and Incorporations.

FOUNTAIN GREEN, ILL.—At a recent meeting of the citizens of this town the Farmers Telephone Exchange Co. was organized with the following officers: President, W. M. Jackson; secretary, A. G. Geddes; treasurer, M. H. Yetter; manager, H. Spangley.

LYNCHBURG, OHIO—The Lynchburg Telephone Co. has been organized and chartered to operate an exchange from Lynchburg. The incorporators are H. S. Pulse (who is also president of the company), L. L. Faris, G. C. Hopkins, J. Cochran, and J. T. Gibson (vice-president). The other officers are: G. Shaffer, secretary, and Dr. Cropper, treasurer.

POTEAU, OKLA.—L. E. Thrasher, L. E. Carmichael, both of Poteau, and I. H. Nakdimen, of Fort Smith, Ark., have organized the Oklahoma-Arkansas Telephone Co. with a capital of \$100,000.

BARKER, TEXAS—Articles of incorporation have been filed for the Barker Rural Telephone Co. by W. Hillendahl, L. Koch and R. Hoffman. The capital stock is named at \$1,560.

Construction.

PLACERVILLE, CALIF.—Two new ten-party lines are being built to connect the Placerville Telephone & Telegraph Co. with the Hanks Exchange section. Two more lines of like size will be built from Hanks Exchange to Diamond Springs to complete the rural service.

SIoux CITY, IOWA—Tentative plans for construction work necessitating an expenditure of \$200,000 are under consideration by the Sioux City Telephone Co. At the annual meeting it was decided to spend about this amount on improving the plant and service, but definite arrangements are not completed.

BLUE SPRINGS, NEB.—Plans for rebuilding some of the lines and making improvements to the plant of the Gage County Independent Telephone Co. are now under way.

Financial

GANGES, MICH.—The Western Allegan County Telephone Co. voted at its recent annual meeting to increase its capital stock from \$2,000 to \$10,000.

GUYMON, OKLA.—The Guymon & Hansford Telephone Co. has been authorized to increase its capital stock from \$7,000 to \$35,000.

Elections.

ALTONA, ILL.—At the annual meeting of the Altona Farmers Telephone Co. directors were elected as follows: A. McClure, D. N. McMaster, and H. McGaan. The officers reelected are: C. E. Johnson, president; E. E. Thrasher, vice-president; W. C. Stuckey, secretary; and O. Johnson, treasurer.

CAMERON, ILL.—A. H. Horney was reelected president of the Warren County Farmers Telephone Co. recently, and A. J. Temple was made secretary-treasurer. The trustees are A. R. Boydston, F. Hawkins, and H. Frymire—the latter to fill the vacancy occasioned by the death of E. Hanson.

ERIE, ILL.—The annual election of officers of the Crescent Telephone Co. resulted in H. H. Palmer being chosen as

president; E. McMurphy as vice-president; A. A. Matthews, secretary; and R. Palmer, treasurer. The following were elected to serve on the board of directors: C. G. Walther, F. Payne, G. Wainwright, C. Haak, J. Butzer, K. Thompson, S. Wilson, C. Pfundstein, and W. James.

FORRESTON, ILL.—Directors of the Forreston Mutual Telephone Co. reelected for three-year terms are: H. DeWall, T. J. Cordes, G. Gassmund, and J. Rademaker. H. DeWall is the president for this year; C. Gassmund, vice-president; H. Greenfield, secretary; H. J. Evers, treasurer; and C. Gassmund, manager.

MACOMB, ILL.—The officers—who also comprise the board of directors—of the Macomb Telephone Co. for 1923 are: C. K. Todd, president; H. G. Hungate, vice-president; R. D. Todd, secretary; A. A. Messmore, treasurer; and E. S. Slusher, general manager.

The report of the year's business read the meeting showed that 106 new telephones were installed last year, making a total of 2,550.

SIoux CITY, IOWA—The Sioux City Telephone Co. will have as its officers for this year: E. A. Burgess, president; J. A. Rae, vice-president and general manager; and L. R. Manley, who succeeds his father, W. P. Manley, as secretary-treasurer. The directors are: F. L. Eaton, W. B. T. Belt, D. S. Lewis, and J. P. Martin.

LITTLE RIVER, KANS.—At the annual meeting of the Little River Mutual Telephone Co. R. H. Smith was elected president; D. D. Smith, vice-president; and D. F. Armstrong, secretary-treasurer.

P. L. Perry was elected director for a term of three years, to take the place of W. J. Donnelly, who retired after serving as a member of the board since the organization of the company. E. H. Hodges was reelected director for a three-year term.

CRIDER, KY.—The annual election of the Crider Telephone Co. resulted in J. B. Hewlett being chosen president; W. R. Dunn, vice-president; and I. L. Traylor, manager. Serving on the board of directors will be the officers and H. C. Turley, P. M. Adamson, D. L. Wilson, R. E. Dalton, J. L. George, and W. B. Board.

GANGES, MICH.—The newly elected officers of the Western Allegan County Telephone Co. are: President, E. H. Atwater; vice-president, J. H. Craine; secretary and manager, C. W. Bowles; and treasurer, W. R. Gardner. G. Leland was elected director.

HOWELL, MICH.—The stockholders of the Livingston County Mutual Telephone Co., at their last annual meeting, elected as directors F. Kuhn, C. Miner, W. Sidell, F. Bidwell, and S. Munsell.

WEST CONCORD, MINN.—The following officers were elected at the recent annual meeting of the United Telephone Co.: C. D. Simpson, president; J. J. Cain, vice-president; and E. C. Kaiser, secretary-treasurer. The directors are D. M. McGowan and W. J. Smith.

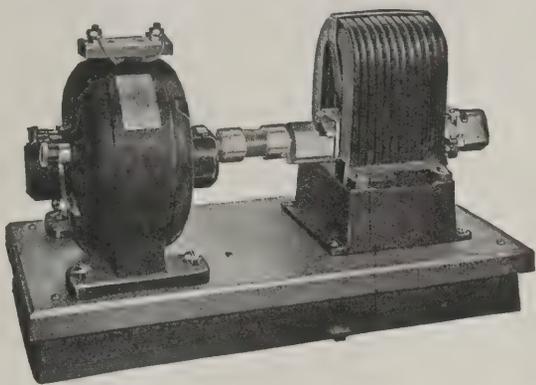
REDWOOD FALLS, MINN.—D. R. McCordale is the president of the Redwood County Rural Telephone Co. for the coming year; J. M. Little is vice-president; A. M. Dennistoun, secretary; and A. Olson, treasurer. Bert Kleaver, who has been manager for the last several years, con-

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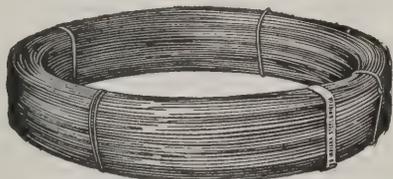
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tinues in this position. The directors of the company are: N. L. Queensberry, L. J. Lindeman, H. Dreyer, W. Raveling, J. S. Gunelson, and the officers.

GRANT CITY, Mo.—At the annual meeting of the stockholders of the Grant City Telephone Corp. all members of the board of directors were reelected. They are: C. Gardner, J. H. Kibbe, S. W. Lowry, H. Swift, and J. C. Jamison. Mr. Kibbe, the president, and Mr. Gardner, the secretary, have served as members of the board for 21 years.

Miscellaneous.

CRESCENT CITY, CALIF.—The Coos & Curry Telephone Co. has taken over the Del Norte People's Telephone Co. and will spend \$60,000 on improvements, it is stated.

BEAVER CREEK, MINN.—The village of Beaver Creek has voted to accept the ownership of the New Telephone Co., at a price of \$1,177.

CLARENDON, TEXAS—The partnership of Dr. Wm. Gray, W. H. Patrick and T. L. Benedict has sold its interest in the Clarendon Telephone Co. to O. L. Fink, of Wellington, who assumed active management January 1.

CLARINGTON, W. VA.—A local company has been formed to purchase the holdings of the Clarington Home Telephone Co. It is planned to rebuild the lines and improve the service.

POSITIONS WANTED

WANTED—I desire to be connected with some independent telephone system or exchange from 2,000 to 5,000 stations as manager which will afford an opportunity for me to invest in the property. Twenty-four years in telephone work. Nine years as manager

for the present employer. Age 39. Family. References. Address 5212, care of TELEPHONY.

POSITION WANTED—Manager with good investment on magneto exchange about 400 to 500 stations. A-1 on switchboard troubles. Installing and line work. Been in the field over nine years. Good references if called for. Prefer Wisconsin, Nebraska, Minnesota, North or South Dakota, or Iowa. Can be ready about the first of April, 1923. Address 5210, care of TELEPHONY.

POSITION WANTED—By all around telephone man. Married. Age 36. 18 years' experience. Three years' shop experience on telephones and switchboards. Address David Crawford, Luck, Wis.

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The open season on state utility commissions is now in

full blast, and the radical theorists, "Home Rulers" and political demagogues are out gunning for the principle of state regulation.

In several important states the legislature is being asked to pass laws abolishing the rate commission or curtailing its powers. These attacks on state regulation of public utilities are being made by politicians who hope by talking "Home Rule" and similar propaganda to strengthen their control in local affairs.

State regulation of utility rates and service has been established in all but three states for years and has slowly been developed and perfected until it has proved that it can produce infinitely better results than were obtained under the old plan of each individual municipality doing its own regulating of the companies supplying its people with telephone, gas, street car and electric service.

* * * *

State commissions have made mistakes, of course, but all disinterested observers and all authorities on the subject agree that state regulation is a great advance over the old system of uncoordinated municipal control.

The state that abolishes its utility commission, swallows the "Home Rule" buncombe, and reverts to the practice of the old days is taking a backward step.

Looking over the field of agitation on this issue, one stark, naked fact stands out, and that is that the legislatures considering the matter know very little about

RADICALS vs. STATE COMMISSIONS

the intricate question of utility regulations.

The men who are asked to pass these destructive bills are so uninformed on the subject that it is more or less Greek to them. They regard it solely from the political standpoint.

The politicians, of course, care nothing about the economic effect on the public service. All they desire is that the legislature hand back control of the utilities to the local authorities for their own political gain.

* * * *

The public and the utility companies would be the chief losers in any radical change from the present system of state regulation, and the business interests which are awake to this danger are opposing this type of radical legislation.

The New York State Chamber of Commerce has come out boldly against the plan of Governor Smith to kill state regulation in the Empire state and calls on all commercial organizations, and, in fact, the whole public, to join in preventing the passage of the administration bill.

The chamber presents a clear, forceful report of the situation that might well be used in other states where similar attacks are being made on state commissions.

* * * *

New York business men point out that "the commercial and industrial life of the state depends largely upon efficient, adequate service by the utilities supplying transportation, electricity, heat, power and telephone service," in which the investment

in New York aggregates more than a billion dollars.

This vast amount of money represents the savings of thousands of investors throughout the state, the nation and the world, thus reflecting their confidence in the permanency and integrity of private ownership under state regulation.

"These investments," says the report, "were made in reliance upon a system of just and impartial state regulation created at the instance of the business organizations of the state.

"Having brought about the conditions which induced investments, the business organizations and citizens of this state would be recreant to that trust and responsibility by assenting to a return to old conditions."

* * * *

Another important point made by the New York report is: "These companies, large and small, are creatures of the state, not of municipalities, and are operating under charters granted by the state; the adequacy of the service and the reasonableness of the rates are of state-wide, not merely local or municipal, concern.

A municipality is merely one of the many patrons of the service. Even when the municipality concerns itself with utility rates in its own behalf as a consumer and in behalf of the consumers residing within its territorial limits, the public interest in the matter is broader and more extensive than the interest of such consumers in the lowest possible rates.

"It would be breach of faith for the state, which chartered these enterprises

and induced large investments in reliance upon state regulation, to abandon them now and permit municipalities, for themselves as consumers and for other consumers, to determine what rates shall be paid for utility service."

* * * *

The New York utility law was passed in 1907 and state regulation as therein provided was found to be so superior to the old haphazard political control by municipalities that many other states followed its example. Like Wisconsin, New York blazed the way.

Adequacy of service and ability to attract new capital are essentials to success in the public service business, and these two elements require stability of conditions and a continuity of policy such as can be achieved only through a system of state regulation by commission. These essentials would be impossible if each municipality prescribed various rates and rules of control. It would be a case of too many cooks.

One complication which seems to escape the consideration of the uninformed sponsors of "Home rule" bills is the tremendous difficulty each municipality would encounter if it tried to handle the utility matters now controlled by state commissions.

The commissions have gradually built up organized staffs that are more or less trained to deal with various utility problems. Abolish them and the municipalities would face the gigantic and expensive task of doing in each locality what is now handled by the commission in a state-wide fashion.

The expense alone should be enough to discredit the "Home Rule" plan, regardless of the inevitable confusion of multiplied local control, and the certain breakdown of service.

* * * *

In other states, also, the radicals are doing their best—or worst—to harass utility companies, either by killing state regulation and throwing them back into the

turmoil of local control, or by demanding laws to hamper them in other ways.

In Kansas an effort is being made to pass the Knapp bill which is modeled after the Bacharach bill that the last Congress refused to pass, although Mayor Hylan of New York and Mayor Thompson of Chicago—those eminent friends of the "peepul"—backed it strongly.

The Knapp bill aims to prevent utility companies going to the federal court to appeal from a state commission order and having a full review of the case. The Kansas companies invariably won their appeals from the drastic decisions of the commission, and will oppose this bill which seeks to deprive them of ways of relief.

The bill to abolish the utility commission in Indiana has not progressed very far. Governor McCray is opposed to it and believes the people favor state regulation. If it came to a test he does not think the legislature will discard the commission.

Electric Waves—Modern Mercury

Speed of All Ether Waves Same, but Frequencies Differ—Characteristics of Wave Motion—Development of Carrier Currents—Electric Wave Filter and Vacuum Tube—Published by Courtesy of the Bell Telephone Quarterly

By R. W. King

All intelligence is brought to us by waves of one form or another. Hearing and sight are the familiar illustrations, one depending upon air waves and the other upon the so-called ether waves. The telephone and telegraph, whether wire or radio, are equally good examples. Like the sense of sight they depend upon ether waves.

In the radio telephone and telegraph the waves bearing messages spread out through space in all directions; in the wire telephone and telegraph they travel very close to the line wires which serve as guides between the sending and receiving points.

The familiar expression is that the electric "current" transmits telephone and telegraph messages. This is only a partial picture. An electric current in a wire implies the presence of electric waves in the region surrounding the wire, and physics teaches that the energy of the "current" is to be found in these waves.

This conception of the transmission of energy is deducible from Maxwell's fundamental postulates and will be found elaborated in the writings of Poynting, in 1884, J. J. Thompson, in 1893, and Heaviside,

in his Encyclopaedia Britannica article in 1902. When a current of electricity flows in a wire it represents the drawing energy from the surrounding ether waves, and if the current could be prevented the waves would travel with less tendency to die away.

The extent to which wires act as guides for the energy of the electric waves may be illustrated by a long open-wire telephone circuit. From Fig. 1, showing a section of such a circuit, it is seen that the ether immediately around the wires acts like a sort of duct through which the energy passes.

Electric waves used in telephony and telegraphy, both wire and wireless, belong to the same category of ether waves as the light waves of the visible spectrum and the infra-red, ultra-violet, and X-ray spectra. They are, however, of much higher frequency.

The relative frequencies of the principal portions of the ether wave spectrum thus far studied and classified are given in Table I. At one end lie the extremely short X-rays whose wave lengths are of the order of a billionth of an inch, a distance that is comparable with the distance

between the atoms of most crystals. At the other extreme come the very long waves used in electrical communication whose lengths range all the way from many feet to many miles.

The view that all ether waves are fundamentally alike—whether X-rays or the long waves used in communication—originated in the theoretical work of Maxwell and the experimental work of Hertz. Notwithstanding the fact that every wire carrying an electric current is surrounded by long ether waves, their existence became known only when Hertz succeeded, so to speak, in shaking them loose from their wire paths making them free to radiate in all directions. Because they originate about an electric circuit they are frequently referred to as electric waves, but the very much shorter waves of light are as truly electrical in origin.

So far as is known, all ether waves travel with a common speed, namely, 186,000 miles a second. This speed has been accurately measured for the waves of the visible spectrum and also for long Hertzian waves. The speed of X-rays has not as yet been directly determined but there is no reason to believe that they

form an exception to the general rule.

The question is frequently asked and seldom answered correctly as to the speed at which telephone and telegraph messages travel over long circuits such as that between New York and San Francisco or a submarine cable under the Atlantic Ocean. As a matter of fact the answer is very simple. As already pointed out the electric waves travel along the wire or cable with the speed of light.

On this basis, the waves constituting a telegraph message would require less than 1/50 of a second to travel from New Foundland to Ireland, a distance of about 2,800 miles. This does not mean, however, that the message sent from New Foundland will be reproduced at the receiving station on the Irish coast within 1/50 of a second.

The reproduction of the message requires movement on the part of the receiving instrument and this in turn depends upon the building up of an appreciable electric current in the receiving end of the cable. It is the building up of the current and the production of motion which requires time. In the case of the Atlantic cable some three or four seconds are required.

To put this another way, a telegraph or telephone message represents a case in which "coming events cast their shadows before." Along the surface of the wire and outside of it, the electric impulses or waves travel with the speed of light. After the initial impulse has passed, current in the same direction as this impulse proceeds to build up.

The rate at which the growth occurs depends upon the electrical characteristics of the circuit, it being much slower in a submarine cable than in an open-wire telephone or telegraph line. With the lapse of more or less time after the initial impulse, the current in the wire becomes large enough to operate the receiving instrument whether this be a telegraph sounder, a telephone receiver or a syphon recorder.

One of the most characteristic phenomena connected with wave motion is that of "resonance". Doubtless everyone has at some time made the acquaintance of a piano which attempts to talk back to him. This effect can be secured from any piano by lifting the dampers from the strings by means of the sustaining pedal. When free to vibrate, each string tends to set into sympathetic vibration by those sound waves of the voice which correspond to its particular frequency.

By gently pushing down a single key on the piano so as not to cause the string to vibrate and then singing that note, a very good illustration of sympathetic vibration or resonance is obtained. By holding down several keys and singing only one of them, it will be found that that one alone responds to resonance. This gives a very simple illustration of the

principle of "tuning" as practiced in radio telephony and telegraphy.

Carrying out the analogy, each string may be looked upon as a radio receiving station, only that single one being set into motion whose rate of vibration is the same as that of the sending station.

What is more natural than to attempt the transmission of several telegraph messages over a single wire at the same time

Wire transmission systems	.....0 to 30,000
Radio	.....15,000 to 10 ⁷
Hertzian waves	.....10 ⁷ to 10 ¹⁰
Infra-red	.....10 ¹² to 4 x 10 ¹⁴
Visible	.....4 x 10 ¹⁴ to 8 x 10 ¹⁴
Ultra-violet	.....8 x 10 ¹⁴ to 3 x 10 ¹⁵
X-Rays	.. about 3.5 x 10 ¹⁷ to 5 x 10 ¹⁸

Relative Frequencies of Principal Portions of Ether Wave Spectrum.

by employing this principle of resonance? As much as 50 years ago, we find that two notable attempts were made to develop an "harmonic" telegraph. About 1872 Elisha Gray and Alexander Graham Bell independently set out to solve the problem, making use of mechanical resonance as displayed by vibrating strings and reeds.

Gray succeeded in bringing his invention to a remarkably high state of perfection, but it did not prove capable of the important practical applications for which he had hoped.

Bell, on the other hand, encountered difficulties and digressed from his original plan due to certain curious observations which he accidentally made. He failed to complete his device but by digressing

water, or in the air, or sounding bodies, or in the ether of space, are practically identical. This does not mean that sound waves in air and electric waves in the ether are identical. It means that the mathematical equations which the physicist uses in his study of these two kinds of waves are similar.

A partial justification of this statement is found in the fact that the phenomenon of resonance as displayed by sounding bodies is parallel accurately by resonance in electric circuits. The "tuning" of a wireless receiving set consists simply in changing its natural rate of electrical vibration so as to be equal to the rate of some station which is sending out messages. When so tuned, it is relatively sensitive to the wave length sent out by this station and relatively insensitive to stations transmitting on other wave lengths.

With the discovery of electrical resonance and its close parallelism to mechanical resonance, there came renewed efforts to develop an harmonic telegraph. Naturally the new attempts involved the principle of electrical tuning as a substitute for mechanical tuning used by Gray and Bell.

About the year 1893, Pupin and John Stone Stone, an engineer of the American Bell Telephone Co., began working upon a system of harmonic telegraphy involving electrical tuning. Its fundamental idea was that the dots and dashes of the telegraph code should be carried by relatively high frequency currents, the simultaneous messages being each carried by a different frequency. Except for the fact that these high frequency currents were to be guided by wires and not radiated in all directions into space, the underlying principles were the same as those at present employed in wireless telegraphy.

About the same time Stone, in this country, and Messrs. Hutin and LeBlanc, in France, were attacking the problem of what might be called an harmonic telephone. Just as in the telegraph the effort was to carry dots and dashes by alternating currents of frequencies ranging from about 200 to 500 cycles per second, the seekers after the harmonic telephone proposed to carry the rapid fluctuations of the voice by alternating currents of higher frequencies between 10,000 and 20,000 cycles per second. By the use of several such high frequency currents they hoped to transmit several telephone messages at once over a single pair of wires.

Like Pupin, they made use of tuned circuits and electrical resonance. These pioneers in the field of harmonic telephony—or "carrier current" telephony, as it is known today—were able to make their inventions work under favorable conditions, but they proved too delicate, too unreliable, to be practicable for public use. Although means were provided for the simultaneous transmission of several mes-

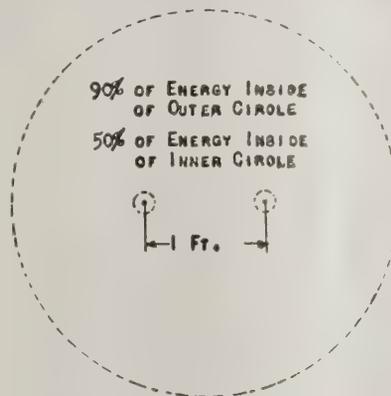


Fig. 1. Open-Wire Telephone Circuit Illustrating How Wires Guide Energy of Electric Waves.

he came upon another very useful invention, the telephone. He had for some time had visions of a device for transmitting speech electrically, and when he detected what he thought was a clue to it in his accidental observations, he straightway bestowed his energies upon it.

The fundamental properties of all wave motion, whether found on the surface of

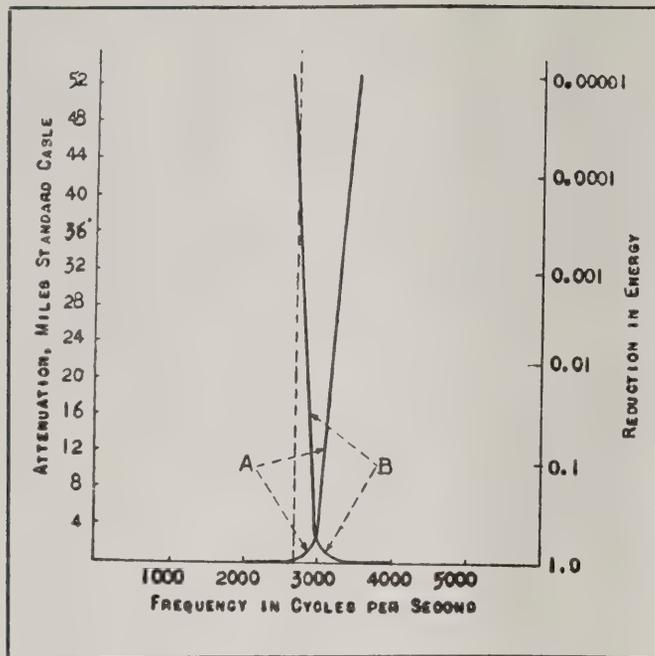


Fig. 2. General Characteristics of "Low Pass" (Curve A) and "High Pass" (Curve B) Electric Filters.

sages over a single circuit, the complications involved over-balanced any advantages that the multiplex feature might have.

An explanation of the failure which met the efforts of these pioneer investigators is found in the undeveloped state of the art of transmitting currents over wires which prevailed at that time. In the light of our present-day knowledge we see that the solution of harmonic telephony demanded certain devices which were not then to be found even in the imaginations of the foremost investigators.

Nor were these essential devices immediately forthcoming; for during the years 1906 to 1911 a number of workers, among whom may be mentioned Vreeland, Squier and Alexanderson in this country and Ruhmer in Europe, suggested multiplex carrier telephone and telegraph systems which employed the same fundamental principles previously worked upon by Pupin, Stone and others and with no better success.

The successful application of carrier currents has been a development of the past four or five years and looking backward, we can now see the factors that have turned failure into success. The most important of these are three in number:

1. Development of the familiar vacuum tube to such a state that it is a reliable and stable instrument for amplification, detection and modulation of electric currents.
2. Development of a device known as an electric wave filter which represents a vast improvement over the tuned circuit as a means of separating electric currents of different frequencies.
3. Development of the technique of transmitting telephone and other

developments of recent years in the field of electric circuits. The filter makes it as easy to separate alternating currents of different frequencies as screens with different sizes of mesh make possible the separation of stones and gravel of different sizes. It is the invention of Dr. G. A. Campbell of the American Telephone & Telegraph Co. and, were it not for the unfortunate fact that any comprehensive understanding of its action involves quite a bit of higher mathematics, it doubtless would be much more widely known today than it is.

The filter does not respond to electric currents in the same manner as the tuned circuit. It acts as a gate which can be placed in any circuit and which will admit only currents of predetermined frequencies. For example, a filter can be designed which will admit currents from zero frequency to any higher frequency such as 200 cycles. Or the filter may be designed to admit all currents between two definite frequencies as, for instance, 200 cycles per second and 500 cycles per second. Or again, it may be designed to admit all currents above a certain frequency.

These filters are known respectively as

currents over wires, with particular reference to telephone repeater operation and the methods of overcoming interference or "crosstalk" between adjacent circuits.

These developments have emanated from the research laboratories of the Bell telephone system, and indeed could scarcely have been possible except through the close co-operation and the careful dovetailing together of almost countless individual pieces of research which a large laboratory organization makes possible.

The electric wave filter is one of the most remarkable de-

"low-pass", "high-pass" and "band-pass" filters and the general characteristic of each is shown in Figs. 2 and 3.

The selectivity of the filter as shown by the solid line in Fig. 3 is remarkably uniform over any range of frequencies for which it may be designed—in Fig. 3 this range is from 9,000 cycles to 11,000 cycles. For comparison, the selectivity of the resonant circuit is shown by the dotted curve and, as will be seen, is great in the immediate neighborhood of 10,000 cycles but diminishes rapidly on either side.

The manner in which filters are used in a modern carrier telephone circuit is shown diagrammatically in Fig. 4. Each telephone channel must supply means of transmitting speech in both directions. This is generally accomplished by using a different carrier frequency to transmit in each direction.

In our diagram the lowest carrier frequency has been taken as 10,000 cycles per second. When this is modulated with speech, it becomes a band of frequencies ranging from 10,000 cycles to about 12,500 cycles because the band of speech frequencies is itself about 2,500 cycles wide. The next carrier frequency must, therefore, be somewhat greater than 12,500. In our illustration it has been chosen as 13,500. This in turn, when modulated with speech, becomes a band of frequencies ranging from 13,500 to 16,000. The next carrier channel runs from 17,000 to 19,500.

As shown in the diagram these three channels carry speech from west to east. To carry it from east to west three other channels running from about 20,000 to 30,000 cycles are employed. In this way

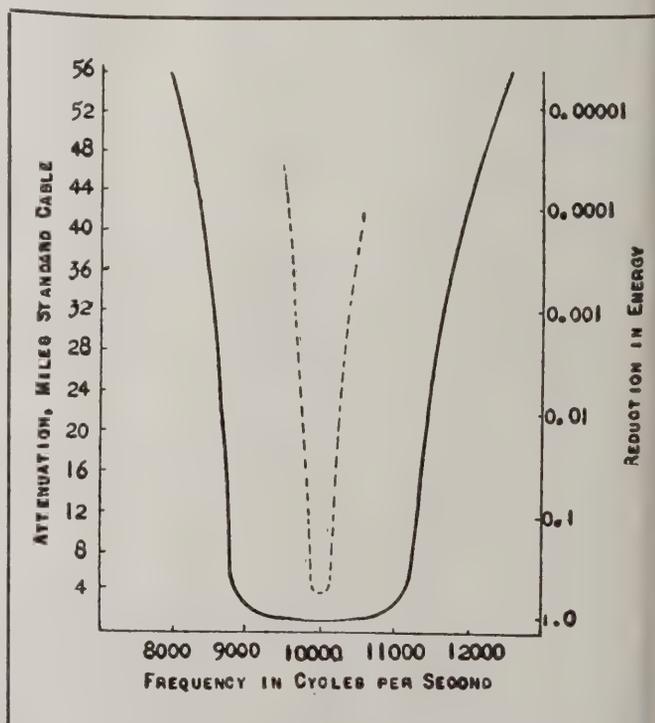


Fig. 3. General Characteristics of "Band Pass" Electric Filter (Solid Curve) Compared With Those of a Resonant Circuit (Dotted Curve).

the likelihood of the westbound channel A crosstalking into eastbound channels B or C is reduced to a minimum. This is a very important point for, as already indicated, the elimination of crosstalk between adjacent carrier circuits has been one of the most difficult problems for the telephone engineers to overcome in arriving at a successful carrier system.

Of equal importance with the filter has been the development of a successful telephone repeater. This, as is generally known, employs the three-electrode vacuum tube as one of its integral parts. The rise of the vacuum tube to a position of importance in the electrical art has been extremely rapid. It first assumed commercial importance by its use in the telephone repeaters of the transcontinental telephone line when that was opened in 1915.

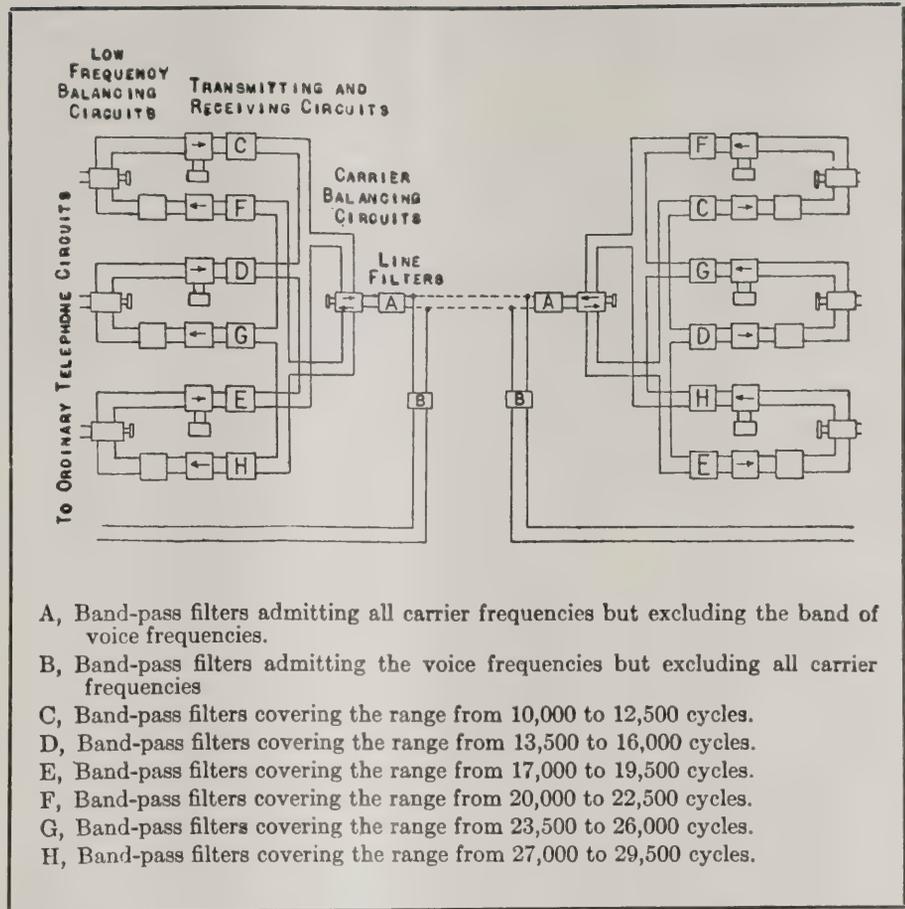
The studies which were made by the telephone engineers to adapt the vacuum tube to long distance telephony in the transcontinental line demonstrated that this remarkable device could also be made the keystone of a practicable radio telephone, and the development of power vacuum tubes very much larger than any theretofore made was immediately undertaken. With these tubes speech was successfully transmitted in the fall of 1915, from the city of Washington across the Atlantic to Paris and also westward, a distance of 5,000 miles, to Honolulu.

It was the success of this first large radio telephone demonstration that proved that radio telephony could be made sufficiently reliable for military purposes. Many new investigations were therefore begun by the telephone engineers in co-operation with the U. S. Signal Corps, with a view to perfecting small radio telephone sets for air-craft, submarine patrols and many other war-time uses.

Without the telephone repeater there would be no practicable carrier telephone system. Some experimenters in the field of carrier currents have had the curious misconception that the mode of transmission of the high frequency electric waves employed in carrier operation is different from that of the ordinary telephone and telegraph frequencies and that the carrier frequencies have some unexplained property whereby, although guided by the line wires, large energy losses in the wires are avoided.

There is, however, no theoretical or experimental justification for this idea. As a matter of fact, a high-frequency carrier current tends to die away more rapidly in traveling over a long line than does the ordinary telephone current. The higher the frequency the more rapidly does it die away.

To indicate the importance of telephone repeaters in a carrier system it may be stated that if the Harrisburg-Chicago carrier telephone line, 750 miles long, were operated without repeaters, it would be necessary to apply at the sending end a



- A, Band-pass filters admitting all carrier frequencies but excluding the band of voice frequencies.
- B, Band-pass filters admitting the voice frequencies but excluding all carrier frequencies
- C, Band-pass filters covering the range from 10,000 to 12,500 cycles.
- D, Band-pass filters covering the range from 13,500 to 16,000 cycles.
- E, Band-pass filters covering the range from 17,000 to 19,500 cycles.
- F, Band-pass filters covering the range from 20,000 to 22,500 cycles.
- G, Band-pass filters covering the range from 23,500 to 26,000 cycles.
- H, Band-pass filters covering the range from 27,000 to 29,500 cycles.

Fig. 4. Carrier Telephone Circuit Showing Manner in Which Filters Are Used.

power of 60 kilowatts; by the use of intermediate repeaters the power at no point exceeds 1/600000th of this figure, or 1/10 watt.

Since the difference between the two cases is represented by a factor of 600,000, it need scarcely be added that without telephone repeaters the carrier system would be utterly impracticable except perhaps on very short circuits. On short circuits, however, it is cheaper to provide additional line wires than to resort to the complications which are necessarily involved in the carrier system.

One of the most interesting and noteworthy features of the development of harmonic or carrier current telegraphy and telephony has already been hinted at. Upwards of half a century ago two inventors—one of them the subsequent inventor of the telephone—strove to perfect a harmonic telegraph. They were both men of vision—of vision so keen and far-sighted that they attempted what would ultimately come to be of great service, but which was far in advance of the electrical art of their day.

The art had not then dreamed of the essential stepping stones by which the desired end was to be reached—the vacuum tube and the filter. By the development of these and countless other and less conspicuous improvements in the transmission of communication currents over wires, the telephone engineers of today have

reached the goal for which the inventor of the telephone strove and by which efforts he was led to the telephone itself.

Sleet, Snow and Zero Weather Works Havoc in Alabama.

The zero weather and blizzards which have been general throughout the country even attacked Alabama. The official report for February 4 put the lowest temperature at 19 degrees above, and the severe weather continued for a few days.

Considerable damage was done to the rural and toll lines by the heavy snows and sleet, and service in Birmingham and several of the large cities was badly impaired. In that city, although a crew of men worked all day Monday, the 5th, and Monday night, there were still 2,000 telephones out of commission on Tuesday, and there was only one toll line in use.

The wires of the A. T. & T. and the Southern Bell were badly damaged and for a time the city was cut off from the outside world—the line to Atlanta being the last to go down and all telegraph communication having been cut off previously. Work was pushed on the one to Atlanta and it was operating by Tuesday.

In Jefferson County—the county in which Birmingham is located—there were 200 poles down.

The snow was about 6 inches deep—the heaviest that territory has had in years—and the sleet was from 2 to 2½ inches.

Telephone Plant Appraisals and Tax

Important Decision of Treasury Department's Committee on Appeals Offers Telephone Companies Relief from Unjust Assessments—Circular Issued by U. S. Independent Association Advises Operating Units How to Proceed

This is the season of the year when taxes constitute a live topic of discussion wherever business men meet, and telephone companies are by no means exempt.

For that reason, a circular issued by the United States Independent Telephone Association, under date of February 15, from the Washington office, is of vital importance to all telephone companies.

It covers the use of appraisals in establishing plant values for income tax purposes, and discusses the fact that by March 15, 1923, action to collect 1917 taxes must be taken by the Government.

The circular is signed by President F. B. MacKinnon and is as follows:

"Under date of September 30, 1922, the association sent out a letter relative to the attitude of the Income Tax Unit toward accepting retrospective appraisal in establishing invested capital (plant and surplus). With that letter the association sent a copy of Treasury Decision 3367, which sets forth the requirements and procedure to be followed in connection with proving-in invested capital.

Supreme Court Ruling.

"The United States Supreme Court, in its decision in the La Belle Iron Works vs. United States, held that the purpose of the tax law was to base invested capital on actual cost and not to allow appreciation in value of capital assets.

This supported the position of the Income Tax Unit taken before and even after the issuance of T. D. 3367, that invested capital must be based on actual cost of acquisition and that appraisals could not be accepted.

The association maintained, however, that the La Belle Iron Works decision is not applicable to many telephone companies for the reason that the La Belle Iron Works could prove its actual cost and was endeavoring to set up additional capital based on appreciation of ore and deposits.

Many telephone companies are unable, due to insufficient accounting in earlier years when complete accounts were not kept or required, to prove by their accounts the actual cost of their properties and must rely on appraisals to determine those costs.

Decision of Treasury Department.

Under date of December, 1922, the Treasury Department's committee on appeals and review reversed the action of the Income Tax Unit in reducing the invested capital of a company.

The committee held that an appraisal as of July, 1914, filed with the Income

Tax Unit was sufficiently definite proof of the value of the property on that date to be used as a basis for invested capital.

This decision is of considerable importance to those telephone companies that we have mentioned, who can establish their plant values only by appraisals, on account of their inadequate accounts.

The committee's decision practically reaffirms T. D. 3367 and removes the uncertainty as to procedure under which we have been working while the Income Tax Unit was refusing to follow that decision.

The committee's decision is based on Section 326 of the revenue law and Article 836 of Regulations 45.

For your information we think it best to outline the method of appraisal made by the appraisal company in the case decided by the committee on appeals in December. This method is stated by the appraisal company as follows:

Appraisal Company's Method.

The object of this inventory was to determine the actual cash value of the physical property as of July .., 1914. A complete inventory of all items of plant and equipment on hand and in active use at January .., 1920, was taken.

The date of installation of all items added since July .., 1914, has been determined from the records of the company, careful analysis of plant and expense accounts having been made by accountants. These items were further checked by information obtained in the plant and the remaining items are, therefore, considered to be the items which must necessarily have been in place on July .., 1914.

The prices applied to the items acquired from July .., 1914, to January .., 1920, have been actual cost prices taken from the records of the company by the accountants who worked in conjunction with the engineers.

It was then necessary to determine the value of the remaining items of equipment in the inventory as of July .., 1914.

The first step was to determine the reproduction cost of these items as of July .., 1914. This was done by using the records of the previous corporation and the records of the O company. Preference was given to records of the previous corporation when these were available, with the exception of the buildings of the plant which were acquired at a bankrupt sale.

Records of the O company are made up almost wholly of actual sales to numerous corporations and are not based on quotations or prices given 'for appraisal purposes' and are, therefore, we believe, the best evidence of the market price. Every effort has been made to have the prices applied conservative.

The reproduction cost having been determined, the next step was to determine the depreciated value and this was arrived at as follows:

Competent engineers made careful examinations of each item of equipment to

determine its actual condition and the accrued depreciation as of January .., 1920, was thus determined. Yearly depreciation rates were then determined and the entire plant worked back to January .., 1914, all as shown by accompanying schedules.

Accompanying this appraisal was an affidavit by the appraiser stating that in his opinion it was impossible to correctly determine the plant value from the books of account.

The Income Tax Unit rejected this appraisal on the ground that the values established by the corporation and set up on its books, should be used in the absence of more definite proof as to the value of the property involved.

The committee on appeals and review, upon examining the appraisal, found that it was prepared in the manner stated by the appraiser; that the rates of depreciation used were liberal, and that it complied with the requirements of T. D. 3367.

Companies whose 1917 accounts have been audited by income tax auditors and whose invested capital claims are disputed by those auditors ought to give this matter close attention.

As we have said in previous bulletins, we will be glad to do what we can in helping member companies in defending their reports and accounts. This service is rendered by the association to its members only and no charge is made for it.

Statute of Limitation for 1917 Taxes.

Under the law, if the Government does not claim an error in a company's report for 1917, and assess the amount of additional tax claimed within five years from March 15, 1918 (when the report had to be filed), that is, by March 15, 1923, the Government is debarred from claiming any error or making any such assessment.

Therefore, in the case of companies whose 1917 returns have not yet been completely audited the Income Tax Unit is sending a waiver and requesting the taxpayer to sign and permit a thorough audit of his return after that date.

The effect of this waiver, if signed by the taxpayer, is to permit the collection of whatever tax may be found to be due after the date on which the statutes of limitations expire. When the waiver has been signed and forwarded to the Income Tax Unit the case will proceed to conclusion in the regular way.

In cases where the taxpayer refuses to sign a waiver the increased assessment will be placed on the assessment list and collected through the collector's offices in the different parts of the country in the regular way by notice and demand.

Because of the congestion in the Income

Tax Unit it may be necessary to assess increased taxes without following the customary procedure of sending out registered letters to the taxpayers and giving a 30-day period for filing of objection thereto.

If any telephone company receives an assessment letter direct without receiving a registered letter from the bureau and the 30-day notice, the proper procedure is not to pay the tax unless it is recognized to be due, but to file a claim in abatement for the amount of the increased assessment, which will give the taxpayer an opportunity of raising any question relating to the increased assessment before payment.

It must be remembered, however, that claims for abatement cannot be used where the Income Tax Unit has given the 30 days' notice, but they can only be used where the unit has assessed the tax without the 30 days' notice.

In any event, claims in abatement should be filed before March 1, 1923.

We recommend the signing of the waivers as in that way no complications can arise, and ample time is allowed all parties to reach an agreement."

Georgia Independent Companies Organize Association.

Another addition has been made to the family of Independent state telephone associations. At a meeting held February 14 at the Ansley Hotel, Atlanta, the Georgia Independent Telephone Association was organized under conditions that promise a successful and useful career. Seventy-five telephone companies were represented at the initial meeting.

The officers, elected for the year are: President, W. R. Bowen, Bowen Tele-

phone Co., of Fitzgerald; vice-presidents, W. R. Hunter, Quitman Telephone Co., of Quitman; J. M. Dent, Douglas Telephone Co., of Douglas, and P. D. Fortune, Summerville Telephone Co., of Summerville; secretary-treasurer, J. L. Mathews, Statesboro Telephone Co., of Statesboro;

Florida Invites the Manufacturers.

As this issue of "Telephony" goes to press, the following telegram is received from W. G. Brorein, of Tampa, Fla., president of the Florida Telephone Association:

"Please publish in this week's issue invitation to manufacturers to have exhibits at the Florida Telephone Convention, March 27-28."

The convention will be held at Miami this year.

general counsel, J. Prince Webster, Atlanta.

The objects of the new association as outlined by the constitution are:

To aid the members in securing, and the Georgia Public Service Commission in formulating and promulgating, fair and just rules and regulations of the telephone business, under varying conditions, in the state.

To secure fair, reasonable and adequate rates for service rendered.

To collect, systematize and classify information and data concerning the telephone business and make it available for the use of members of the association.

To promote and systematize uniformity in accounting, operation, maintenance and construction for the growth and general development and extended use and service of telephone communication.

To disseminate useful information and generally to assist members in the conduct of their business.

To mutually work together to develop and promote the telephone business in the state of Georgia.

To devise means and ways to co-operate and harmoniously work not only with each Independent telephone company, but as well the Southern Bell Telephone & Telegraph Co. and other long distance telephone companies.

Announcement was made that the hearing on a petition by the Independent companies for a revision in the division of long distance toll charges, scheduled before the public service commission, was postponed until March 15, on account of the illness of an official of the Bell company.

Summaries of Reports of Class A Companies for October.

The combined report of 71 Class A telephone companies for October, 1922—as compiled by the bureau of statistics of the Interstate Commerce Commission—showed gross operating revenues amounting to \$51,341,854, an increase of \$4,843,574 as compared with October, 1921. Operating income after allowing for expenses amounted to \$11,899,440, an increase of \$2,403,933 over the preceding year.

For the first ten months of the year 1922 the aggregate gross earnings of the 71 companies stood at \$487,597,957, an increase of \$39,116,945 as compared with the corresponding period of 1921. Operating income, after deducting expenses, was \$104,494,257, an increase of \$14,760,780.

There was a decrease of almost 3 per cent in the ratio of expenses to revenues during the month, and a decrease of 2.15 per cent for the ten-month period.

Item.	—For the month of October—				For the ten months ending with October			
	1922.	1921	Amount.	Increase or decrease (*). Ratio, Pct.	1922.	1921	Amount.	Increase or decrease (*). Ratio, Pct.
Number of company stations in service at end of month	10,306,584	9,721,571	585,013	6.0				
Revenues:								
Subscribers' station revenues	\$32,311,259	\$29,803,610	\$2,507,649	8.4	\$313,052,210	\$289,167,436	\$23,884,774	8.3
Public pay station revenues	2,195,110	2,013,343	181,767	9.0	21,237,470	20,094,908	1,142,562	5.7
Miscellaneous exchange service revenues ..	429,506	405,523	23,983	5.9	4,162,537	4,168,984	*6,447	*.2
Message tolls	14,109,468	12,166,697	1,942,771	16.0	126,997,693	115,218,248	11,779,445	10.2
Miscellaneous toll line revenues	1,443,856	1,323,226	120,630	9.1	13,953,794	12,926,227	1,027,567	7.9
Sundry miscellaneous revenues	851,381	784,794	66,587	8.5	8,187,713	6,893,808	1,293,905	18.8
Licensee revenue—Cr.	1,872,826	1,702,498	170,328	10.0	17,981,452	16,640,293	1,341,159	8.1
Licensee revenue—Dr.	1,871,552	1,701,411	170,141	10.0	17,974,912	16,628,892	1,346,020	8.1
Telephone operating revenues	\$51,341,854	\$46,498,280	\$4,843,574	10.4	\$487,597,957	\$448,481,012	\$39,116,945	8.7
Expenses:								
Depreciation of plant and equipment	\$ 7,314,090	\$ 6,586,055	\$ 728,035	11.1	\$ 71,156,732	\$ 63,522,802	\$ 7,633,930	12.0
All other maintenance	7,650,072	7,239,438	410,634	5.7	71,402,956	67,349,502	4,053,454	6.0
Traffic expenses	13,873,099	13,375,768	497,331	3.7	134,624,316	132,145,444	2,478,872	1.9
Commercial expenses	4,422,631	4,367,784	54,847	1.3	44,214,006	42,807,398	1,406,608	3.3
General and miscellaneous expenses	2,292,034	1,976,608	315,426	15.9	22,521,783	20,128,292	2,393,491	11.9
Telephone operating revenues	\$35,551,926	\$33,545,653	\$2,006,273	6.0	\$343,919,793	\$325,953,438	\$17,966,355	5.5
Net telephone operating revenues	\$15,789,928	\$12,952,628	\$2,837,300	21.9	\$143,678,164	\$122,527,574	\$21,150,590	17.6
Other operating revenues	376	4,649	*4,273	*91.9	7,936	39,350	*31,414	*79.8
Other operating expenses	513	3,172	*2,659	*83.8	11,688	26,391	*14,703	*55.7
Uncollectible operating revenues	328,293	200,064	128,229	64.1	2,525,301	1,647,798	877,503	53.3
Operating income before deducting taxes ..	15,461,498	12,754,041	2,707,457	21.2	141,149,111	120,892,735	20,256,376	16.8
Taxes assignable to operations	3,562,058	3,258,534	303,524	9.3	36,654,854	31,159,258	5,495,596	17.6
Operating income	\$11,899,440	\$ 9,495,507	\$2,403,933	25.3	\$104,494,257	\$ 89,733,477	\$14,760,780	16.4
Ratio of expenses to revenue, per cent	69.24	72.14	*2.90	....	70.53	72.68	*2.15	....

Operating Statistics of Class A Telephone Companies for October, Compiled by Interstate Commerce Commission.

New Business Development Ideas

Here Are Some Ideas as to How Telephone Managers May Arouse and Create Interest in Different Classes of Service—A Few Suggestions That Are Easily Worked Out and Yet Will Attract the Patron's Attention

By Frank H. Williams

Why wouldn't it be a good plan for the telephone company to stage a spring opening this year? Many other lines of business stage spring openings each year. The public expects spring openings and any concern which could put over a spring opening that was a real novelty would receive a lot of attention and create new business.

The telephone company's opening might consist in the showing of a private branch exchange in its lobby with an attractive girl on hand to show how the exchange operates, and the "opening" might be said to be the chance that every local business has of expanding its business by installing such an exchange.

The company might rather extensively advertise its opening and urge folks to come around to see just what a modern private branch exchange is like. In all such advertising it might be stated that the opening will be a real novelty and it might be frankly said that the opening is, really, a chance for business men to expand their business.

This sort of a stunt would get a lot of attention and create a lot of talk, and if the company hooked it up with an intensive drive to interest all local business houses, which should have private branch exchanges, in the purchase of such exchanges, it would undoubtedly result in some increased business which, otherwise, the telephone company might not have.

If the company wanted to do so, it could have one day when carnations are distributed to all the visitors who come to see the exchange.

* * *

There ought to be some pictures in the lobby of the telephone company's offices where the folks, who come to pay their bills or who come for other purposes, will see them and be impressed by them and by reason of this will come to have a better feeling toward the company.

The sort of pictures which should be used in the lobby would be those showing details of various phases of the company's operations. Of course, each picture should be a booster for the company. Each picture should carry a complete typed description telling just what it is and just what the thing depicted means to the company's subscribers in better service, quicker service, and so on.

Some of the photographs which could be used in this way would be:

PHOTOGRAPHS OF THE OPERATORS AT WORK: Although most telephone sub-

scribers are entirely familiar with the appearance of exchange operating rooms, through the frequent publication of such pictures, many folks are not familiar with the positions that supervisors assume on the floor, with the appearance of "Information's" desk, with the way that names and numbers are arranged on "Information's" desk, and so on.

It would, therefore, be a good plan for the company to have photographs taken showing all these things, and to then put them in the lobby with inscriptions attached calling attention to the important things shown. For instance, one photograph might show the supervisors, as has been suggested and the typed description with this photograph might read in this way:

No Giggling or Chatting Among Operators at This Exchange.

Supervisors keep constantly on the job for the purpose of getting the speediest and most satisfactory service possible to subscribers and users.

Our operators know that giggling or chatting isn't permitted and that it is a cause for dismissal, so instead of giggling or chatting they stick strictly on the job.

Another photograph might show a new board just put in operation and the typed description might tell about the territory served and the way in which the company's business is growing so that the addition of the new board was made necessary.

Other photographs might show the operators' restroom, the operators at lunch, and so on.

All these photographs would give people a very clear insight into just what the operators are doing and would impress upon them the fact that the operators are at all times doing their level best to render top notch service.

PHOTOGRAPHS OF REPAIRMEN AT WORK: The general public thinks but little about the telephone company's "trouble-shooters" until such time as repairs are needed to the telephones which the individual members of the public are using. Then folks are apt to think that their telephone is the only one that's out of commission and that the telephone company has nothing else in the world to do but to repair that one instrument.

It would, therefore, be a fine idea for the telephone company to put photographs in its lobby showing the repairmen at work under varying hard conditions. And

it would also be a good idea in the typed descriptions accompanying each photograph to tell how quickly, on the average, trouble-shooters get out to telephones that need repairs and how quickly the repairs are made.

Also it would be a good idea to use photographs showing the various automobiles used by the company for this service, the amount of equipment on hand for making repairs, the desks from which all trouble matters are handled, and other phases of the repair work which very seldom are brought to the attention of the public.

PHOTOGRAPHS OF PRIVATE BRANCH EXCHANGES: It would be a good stunt for the telephone company to place in its lobby a number of attractive photographs of private branch exchanges which have been installed and to use typed descriptions telling where they are located, how much business is transacted through the exchange, how much of a help it is to each individual firm in the transaction of its business to have the exchange, etc.

All of this would be interesting to the visitors to the company's offices, and all of it would be quite helpful in creating more private branch exchange sales for the company.

It would also be a good plan to point out in the typed descriptions accompanying these photographs how the exchanges depicted do various things which make for better service; for instance, it could be told how our various private branch exchanges keep their operators entirely free from work save that of handling the board. Again it could be pointed out how the board has been placed so that no blinding light will be in the eyes of the operators, either directly or reflection.

All of the photographs whose use has been suggested could be easily and quickly secured by the telephone company, and without any great expenditure of money, either.

All the photographs should be neatly framed with the typed descriptions so attached that they wouldn't easily come off. And the photographs should be so placed that they can be easily seen by visitors without any great craning of necks or without any special effort being made to look at them.

The photographs could be allowed to remain on the walls for quite a long time, or could be changed every month or every other month, so that at all times they would have a newsy freshness which



FEEDING HIM TO EAT OUT OF YOUR HAND

THE PUBLICS FRIENDSHIP

THEY GO HAND IN HAND

SERVICE QUALITY EQUIPMENT POLITENESS

TEL. MGR.

GOOD ROADS

TELEPHONE FOR FIRE PROTECTION

GIVE US REASONABLE RATES AND WE WILL BUY NEW EQUIPMENT

TELEPHONE OFFICE

HE IS HOGGING IT ALL

PUBLIC UTILITIES

SOON THEY WILL BE GOSSIPING OVER THE BACK FENCE

THE SPIRIT OF 1923

MARS

THE EARTH

TELEPHONE SERVICE

LET US HAVE SOME

TAX EXEMPT BONDS

TAXED BONDS

AVAILABLE CAPITAL

GUIDO JONES

would add a great deal to their interest.

People always like to look at photographs, particularly when they deal with local propositions in which they are greatly interested. So folks would be greatly interested in this use of photographs and upon looking at them would have their respect for the company greatly enhanced, which would be a fine thing for the company.

* * *

When does the birthday anniversary occur of the installation of the first private branch exchange put in by your company?

When it does occur it would be a splendid idea to make the event serve as a promoter for more private branch exchange business.

The way to do this would be by playing up the anniversary in newspaper advertisements in which the company having the exchange would be quoted as to the many advantages coming from such an exchange and in which all the enterprising, live-wire, up-to-the-minute businesses in the city having no private branch exchanges would be urged to install such exchanges at once.

In connection with the birthday anniversary it would be a good idea to stage a private branch exchange exhibition in the lobby of the company's office building. In this exhibition a typical exchange of this character could be shown and with it could be a lot of placards giving "brass tacks" information as to the way in which such an exchange enables a concern to handle its telephone business more quickly and in a much more satisfactory manner.

All of this could be made to be a real booster for private branch exchange business for the company. And all of this would enhance the company's prestige for being a live wire concern which was up and coming all of the time. All of which would, of course, be a splendid thing for the company's business.

* * *

Every now and then, when people begin talking about the local telephone company, someone makes a remark of this character:

"The local telephone company is dead. It doesn't do anything toward improving its service. It lets the operators talk and chatter and giggle while subscribers waste time trying to get numbers, and it doesn't make repairs or fix up trouble quickly. You can't make me believe the whole company isn't asleep at the switch."

Such talk as this is, of course, bad business for the telephone company because it is really unwarranted in 99 times out of 100 and because it leads people to further criticising of the company, with the result that the little troubles which arise in the use of telephones from time to time become magnified from molehills into mountains and the public acquires a nasty, aggrieved and troublesome attitude toward the company.

Of course, though, the company can't be on hand in person whenever any such adverse comments as the foregoing are made. So such comments must be passed up unanswered unless the company, by the publicity it gets in the daily newspapers, combats some criticism by showing that it is always alive and alert to give the public the best possible service at all times.

There is a great deal which the company might do along the line of showing, by news items in the local papers, just

PUBLIC UTILITY REGULATION OF RIGHT KIND.

It is not fair play that the necessary power of regulation of those public services which necessarily possess the character of monopoly, such as railroads, traction services, or public utilities, shall be administered in such a narrow view of selfish interest and such total disregard of solemn responsibility that the investments that created these public services shall be undermined or destroyed.

There is every evidence that we have passed the era of unfair and short-sighted, over-rigid regulation, and are administering the public responsibilities toward those necessarily publicly regulated public services with a more enlightened vision of fair play.—Julius H. Barnes, president of Chamber of Commerce of the United States.

what it is doing. If this material was presented to the papers in the form of news, they would be glad to get it and to print it.

Let us consider some of the things which the company could present to the papers as news items and which would show its great activity in the service of the public at all times and which the papers would be glad to print as news. Here are some of them:

Estimate of the number of miles walked by the supervisors of the company during the course of a week, or month, up and down behind the operators for the purpose of seeing that the operators stick strictly to business and do not waste time in handling calls.

Estimate of the number of miles traveled by the company trouble-shooters during the course of a week, or a month, in hunting out troubles on lines and in repairing them.

Actual figures showing the length of time, on the average, from the time trouble is reported until the matter is adjusted and the telephone is again in commission. This would be about as effective a way as any of showing that the company is always on the jump to keep its service up to top notch all of the time and the publication of this sort of information would be sure to interest a great many of the readers of the paper and make

them comment favorably upon this phase of the company's activities.

Comparison of the number of calls per month received a year ago and at the present time, with figures showing how the number of trouble calls per 100 subscribers is being constantly cut down. Thus it is shown that the company's lines as a whole are constantly kept in better condition than ever before with the result that the subscribers are receiving better service from the company than they ever before received.

Figures showing the number of calls per hour received on the company's boards at the present time compared with the number per hour received during the corresponding period a year ago, two years ago and three years ago. This sort of information would show the way in which the traffic is growing and would demonstrate clearly and conclusively that the company's operators are strictly on the job all the time and have no time to waste.

Decrease in the number of complaints made to the chief operator, to Information, and to all the officials of the company this year as compared with a year ago, two years ago, and so on. This information would show "the knockers" that they didn't know what they were talking about when they kicked about the company's service as it would prove conclusively that there are more people satisfied with the company's service this year than a year ago, and so on.

Figures showing how much more extensive the traffic is now at the peak hours of the day than it was a year ago, two years ago, and so on. This, too, would go far toward showing how much more active the company is now than ever before.

Actual experiences of the company's trouble-shooters showing how many of the troubles are due to the subscriber's wrong use of the telephone and also showing how these troubles which come from the subscriber are becoming less and less each year as the subscribers become more and more familiar with the right way to use the telephone.

Figures showing number of new telephones installed during the past 12 months, number of miles of new wire put in use, number of new poles erected, and so on. This information, too, would go far toward showing how busy the company is all the time in serving the public.

All this sort of information could be very easily gotten together by the company. All of it would be real news which should be enthusiastically welcomed by the local papers. And, as has been said before, the publication of this information would go far toward cutting down many of the complaints made against the company and its service. It would develop a higher respect on the part of the public for the company as a business concern and a public servant.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

There's a slack little city called "Don't
Give a D—n"
In the country of "Devil May Care,"
Where the windows are dirty and the
doors always slam,
And no one bothers to bathe or comb
their hair.

No one is ever on time in this dingy old
town,
Nor expects other people to be;
They eat when they like and sleep pretty
late,
And are as lazy as you'd think them to be.

They have mighty queer ways in this
funny old town;
Where nothing is ever complete,
Their houses untidy and the beds never
made,
And all garbage they throw in the street.

There's many mishaps in this woolly old
place
From machinery that's all out of whack;
They run out of oil, they run out of gas,
Then borrow and never pay back.

The butcher and the baker are ready to
bust,
Also the doctor who cures their ills;
They patronize liberally whoever will
trust,
But never, no never, will settle their bills.

Some people dwell long in this leprous
town,
While others get wise and move far away.
Maybe you've been there on occasional
trips,
Before you discovered such visits don't
pay.

It would be useless to ask in what di-
rection this town lies, for you will never
run across it if you desire to shun it; and
if you are looking for it, you will find
yourself within its streets before you
know it.



Suppose They Did Miss a Train or Something—There
Would Be Another Train Tomorrow.

There was once a telephone system in
this town and traces of it can still be
found by any one who will look for them.
A new switchboard was installed and a
number of telephones placed.

The man who built the exchange was
from a large city far away and only con-
sented to come and help install the system
because he was out of work. His name
was T. Hel Mitem, and he had a very
poor opinion, indeed, of the
inhabitants of a small city;
though he seemed to enjoy
himself among them in spite
of that. He had to help
him two electricians named
"Sall Right" and "'S
Good 'Nuff," who were
very chatty and compani-
onable and who seemed to get
a lot done.

True, they bored too many
holes in walls and spoiled
a lot of woodwork in their
inside wiring, and heel
marks on many a hard
wood floor still date back
to their stay in town.
They strung wires across
yards, and over roofs and
any old way, and quite fre-
quently forgot to solder connections.

'S Good 'Nuff thought that, if they
"Scraped the wire bright and twisted 'er
tight," it was plenty good enough. His
partner, an amiable fellow, who superin-
tended the pole gang, didn't seem to care
because the holes were dug scant and not
lined up properly; neither did he take
care to see that the wires were strung
evenly nor the cross arms graded.

No guys were used where it could be
avoided and where it couldn't they just
tied a rock to a piece of messenger and
buried it a foot or so. Some of the tele-
phones were not hung straight and true
on the walls, but they talked
just as good, of course, and
no one objected. They
hired an operator who held
the gum-chewing champion-
ship of the county, and the
thing was ready to go. Of
course, there was some
trouble but there always
will be some, you know.

The cross-connecting rack
was a tangle because no ef-
fort was made to run jump-
ers in a methodical way, but
what can you expect from a
rural exchange. Things
were not so bad for a time,
while the plant was new,
and the people were not so hard to please.
They got service for a dollar-a-month and
unlimited connections all over the country
free.

A good many people forgot to pay their

dollar-a-month, but they got along on the
money that did come in and regarded the
"accounts receivable" with pride as a grow-
ing asset.

They had a troubleman, too, to fix up



Some of the Telephones Were Not Hung Straight and
True on the Walls, but That Was "All Right."

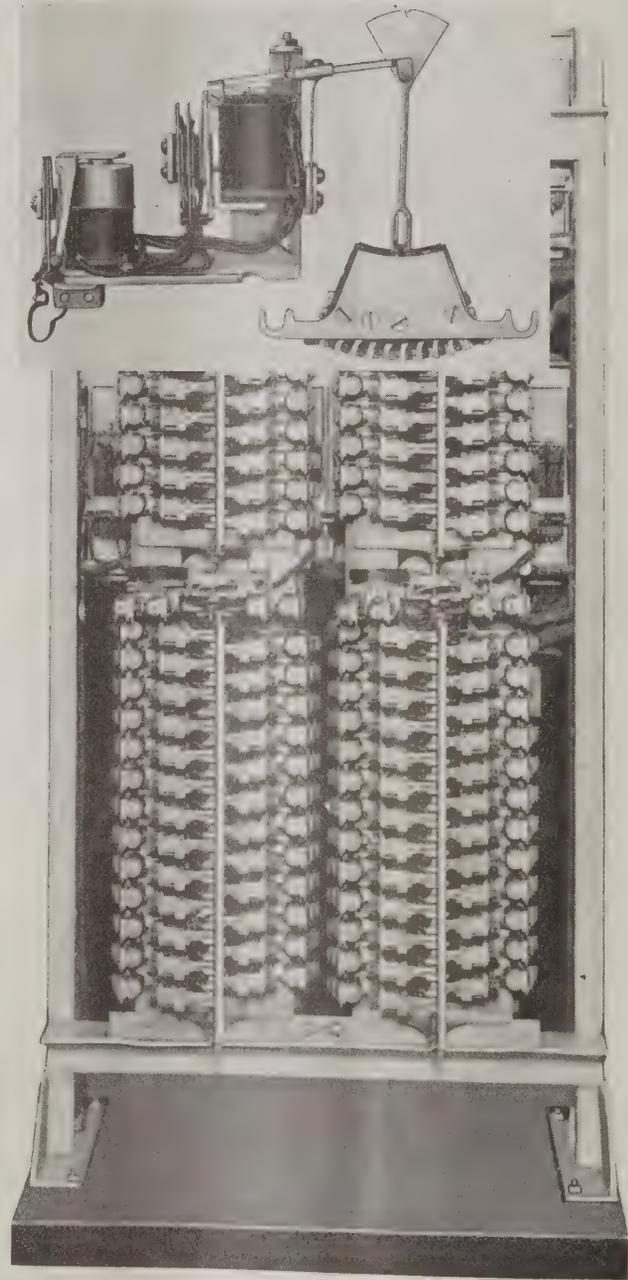
things that went wrong but he always
forgot to order batteries till they had been
out for a month or so—and he never could
get it through his head that the back doors
of the switchboard should be kept in
place. He couldn't see that it hurt any
for a little dust to accumulate. It didn't
affect the working of the board any and
folks couldn't see it.

When the wires fell down, they hung
them up again somehow, sometimes the
same day, so they wouldn't get in people's
way as they traveled along the street.

He never got in trouble about cutting
trees more than once in so often because
the wires worked sometimes, even when
they were grown into the bark. Once in
a while he would cut the heart out of a
tree, but he never tried to steal the limbs;
always leaving them where they fell so
the owner could do as he liked about their
disposition.

This troubleman's name was, as you
have doubtless heard, G. Etting Bye. He
belonged to a large family and many of his
relatives lived in this town. He seldom
worried, except when he was far from
home at mealtimes with a piece of repair
work to finish. Then he sure did make
things fly for fear he would be too late
for the first helping. True, most of the
time he had to go back and do the work
over again, but that didn't matter.

The operator always took her time about
answering calls; especially if she was in-
terested in listening-in on a particularly
spicy conversation. There was no sense
in people getting impatient about calls.
They had lots of time if they only knew it.
Suppose they did miss a train or some-



Strowger "Line Circuits"

AN interesting example of the remarkable speed with which telephone connections are built up in an automatic system is found in the action of the line switch—the "line circuit" of the Strowger switchboard.

When the receiver of the calling station is lifted the "plunger" of the line switch is instantaneously drawn into the contact "bank" and there causes connection between that line and an idle connector or automatic "cord circuit." The entire operation takes but a small fraction of a second.

Contrast this with the operation of the line circuit in a typical present day manual system. When the receiver is lifted, the line relay causes the line lamp to light. This signal must attract the attention of the operator, who must in turn pick up a plug and insert it in the proper jack before she may communicate with the subscriber. There is often an appreciable lapse of time, especially during very quiet or very busy periods, between the display of the signal and the insertion of the answering plug.

The uniform rapidity of the operation of the line switch is typical of every operation in the Strowger system.

The time is coming when all telephone men will need to know more about the Strowger automatic system. Why not get the facts now—as applied to your own exchange.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., London Compagnie Française pour l'Exploitation des Procédés Thomson-Houston, Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



ARE YOU AN ASSET OR A LIABILITY?

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

While shopping in a large department store recently, I noticed a saleslady who seemed to have very little success in selling, although she had a very attractive display of goods. Many people stopped, looked over the goods, and passed on. What was the trouble, I wondered.

About that time it started to rain. As I had no umbrella, the rain gave me an excuse for lingering. You see, I was curious to find out just why no one made any purchase at this counter, of this particular saleslady. Was the fault with the saleslady, the goods, or the price? I noticed that people were buying at other counters, so I knew that they were not all just "hanging around" like I was.

But I was not the only observer she had. Before long, the floorwalker stepped up to her and the following conversation ensued:

"Miss Johnson, for some time I have been noticing your work. You make very few sales in proportion to the number of people who look at our goods. What is the matter?"

"Well, Mr. Stevens, I cannot force people to buy; I can only show them the goods. What more do you expect?"

"I expect you to sell our goods. We are not in business just to display them and answer questions. You are not interested in your work. Plainly, we cannot afford to pay for the time you put in here. We expect to pay for service."

As he walked away, she said to another saleslady, "Well, that old thing! Did you hear him hawl me out? I don't see his name on the front door or on my pay check. Until I do, why worry?"

Miss Johnson belongs to the class whose slogan is, "Come day; go day; good Lord send pay day."

Operators, what do you say when your patron cancels a call which you are almost sure you could complete later in the day, or even the following day? Do you ask, "May we complete your call later, Mr. Grey" or "May we complete your call tomorrow, Mr. Grey"?

Remember, cancelled calls mean used circuit time. The saleslady can sell to some other person the goods you did not purchase, but you can never sell that same circuit time to another person. It represents lost revenue.

thing—there would be another train tomorrow.

The directors met once a year and voted to borrow enough money on their accounts receivable to pay a 10 per cent dividend. They did not believe in depreciation accounts and, anyhow, why worry.

When the plant began to go to pieces and the service got so bad they had to do something, they found they had nothing with which to work, from a financial standpoint. So they made application to the board of utility commissioners to raise their rates. The people, of course, rebelled and took out their telephones. If they didn't care much about their own business, they surely did not care about the other fellow's.

That is the way the matter stands now: Few patrons, and fewer still paying anything for a service which they rarely get; stockholders disgusted and patrons bull-headed. No one seems to care a d—n any more; don't know how to remedy matters and won't try. Does it pay to be a citizen of such a town?

APHORISM: Each weed scatters its own kind of seed.

Kansas Getting Ready for a Practical and Profitable Meeting.

Things are shaping up nicely for the largest, most practical and most profitable convention the Kansas Independent Telephone Association has ever had. It is to be held March 6, 7 and 8 at the Nelson Hotel in Ottawa.

"The program," announces Secretary L. M. Kraege, "is unusually broad and practical, full of good horse sense, shop talk by practical telephone men, some splendid educational features that must be heard to be appreciated, and the entertainment part has not been neglected but will contain some entirely new features that will certainly please."

The exhibits promise to be larger and more varied than usual—which feature, alone, would be worth a trip to the convention.

As it is the aim of the officers of the association to make the conventions as democratic as possible, there will be a question box and a round table. There will be an opportunity for discussion following each address and nothing will be left undone to give every member an op-

portunity to derive the greatest general and personal benefit from his attendance at the sessions.

The Kansas association operators' schools have proved a big success and this year special arrangements are being made to take care of the operators. A good set of demonstration boards has been procured and the operators will receive unusual benefits by going to the convention.

Reservations for rooms should be made through the secretary of the Ottawa Chamber of Commerce, who has agreed to take care of all advance reservations. Those planning to attend the convention should arrange to be in Ottawa on the first day, Tuesday, as that day's program will contain several items of importance.

Secretary Kraege appended to the bulletin which he sent to the members a note that those who have not received their annual report blanks from the Kansas Public Utilities Commission should write to the commission or the association at once, as blanks were sent January 15.

String Telephone Lines in India from Horseback.

The stringing of telephone wire is ordinarily a quite prosaic matter which rarely arouses more than passing interest in the spectator. In British India, however, the operation is sometimes rather thrilling.

In that country it frequently is necessary to install telephones temporarily at points where there are no permanent facilities. In such cases one method employed is to lay the insulated wires directly over the ground by means of a specially designed apparatus which is attached to the saddle of a horse, and which automatically unwinds the wire as the horse gallops.

Recently a Punjab horseman established a record by laying a line over two miles long in seven minutes.

Illinois Association Will Have Meeting at Monticello.

The Illinois Telephone Association will hold a district meeting at Monticello on February 28.

Those attending this meeting will enjoy an unusually fine program—which will include a plant school, cable splicing demonstration, and the always popular operators' school conducted by W. S. Vivian.

The responses received so far indicate that there will be a large gathering.

Ohio Association Holds Its Convention This Week in Columbus.

The program of the Ohio Independent Telephone Association for its annual convention—which was held Tuesday, Wednesday and Thursday of this week, at the Southern Hotel in Columbus—was an exceptionally good one.

The full report of the convention will be published in next week's issue.

Some Operating Ideas From New York

A Few Rules by Which Line Operator at Toll Center Can Assist Her Company in Giving Good Service—Also a Careful Study of Overlapping and Teamwork—Papers Presented at Syracuse Meeting of Up-State Association

Responsibilities of the Line Operator at the Toll Center.

By Mrs. H. I. Chase, *Traveling Chief Operator, Rochester Telephone Corp., Rochester, N. Y.*

Outward operators are primarily responsible for the satisfactory completion of calls and can be likened unto soldiers in the front line trenches. They are the first to receive a rebuff from subscribers if the service cannot be given or if delay is unavoidable. It is they who through their manner must convince the subscriber that every effort is being made to give the desired service.

They are directly responsible for service on every outward call that they handle, and other operators involved in completing the calls are subject to their orders. They are, therefore, responsible for giving such orders to those operators as will insure satisfactory completion of the call without delay.

Outward operators have many contacts with subscribers in their own town, in distant towns and many other operators. In her position, the outward operator commands an exceptional opportunity to develop ideal relations with the public and operators in other offices. Subscriber opinion of the company is largely influenced by the kind of a "job" which she produces.

We all know from experience that numbers and names heard over the telephone are not so easily understood as those spoken face-to-face. In long distance work, sometimes transmission is not so good and, since numbers and names play so important a part in handling calls, it is necessary that operators give serious attention to speaking in such a way as to avoid mistakes.

A number is either right or wrong—there is no such thing as nearly right. To the person using the telephone, a connection to a wrong number or person is a positive annoyance, but to us it is far more serious, not only because it reflects on the service we render, but also because it means waste in time, in effort, in the use of toll circuits and other property.

It is generally understood that the calling party's line must be secured before a toll circuit is taken up to work on calls; in order to guard against the possibility of finding the calling line busy when the operator is ready to establish the connection. This is done to avoid waste of toll circuit time and annoyance to the called party. A word of caution is advisable right here: Invariably operators are inclined to take up a subscriber's line before

they are ready to work on the call, and then continue to hold it for long periods after it should be released. This prevents the subscriber receiving incoming calls and frequently results in serious criticism.

An outward operator should arrange and handle calls, orders and reports in the order of their precedence. The first customer in a store is the first to be waited

A Toast to the Untoasted Toll Repairman.

By Layton E. Meadows.

Here's to the toll line repairman, who with great fortitude,

Trudges along the country lane, heart in service imbued.

Over mountains he goes and through the dale,

It matters not, wind, rain or hail,

He faces the blasts of icy sleet,

With water-filled shoes upon his feet,

Chapped face, sore hands and ankles, too.

Windburned skin and cold clear through,

Heart full of loyalty, stomach empty of bread,

He refuses to stop if trouble's ahead.

Pause a moment upon your way.

Not tomorrow, do it now—today.

Give a thought to this noble fellow,

True-blue clear through, devoid of yellow,

Frostbites, chilblanes and kindred ills.

With no quick comfort which heals or stills,

Despite cold extreme and raw winds blowing,

And everywhere from heaven snowing,

Though he has just come in, he'll not complain,

If you need him, say so, he's ready again!—Oregon Repeater.

on, so it should be in the establishment of our connections.

After plugging-in on a toll circuit the operator should ring immediately, remain on the line and pass the call promptly, and distinctly to the distant operator, and in turn continue to remain cut-in on the line to announce the call without delay to the called subscriber.

If the person answering the called or calling station does not give her the information she needs to complete the connection, she must assume leadership in obtaining the information and, therefore, should think and act quickly in order to get the desired results. Toll circuits are valuable and the time that circuits are used in attempting to complete calls should be kept as short as possible consistent with accuracy and thoroughness.

The outward operator is responsible for timing the length of conversation between the calling and called parties after she has

connected them. Errors in timing are serious, whether the mistakes are made in favor of the company or subscribers. It is my opinion that the timing of messages by our operators should be reviewed at frequent intervals to determine whether all operators thoroughly understand exactly when to stamp the ticket at the start of conversation.

In our district there are tributary offices—that is, offices whose toll traffic, except possibly number calls to a few nearby points, is handled and timed by another office. Subscribers to one of these tributary offices have been educated to ask for "long distance" when desiring to file a toll call. They are connected over a toll line directly with the long distance operator at the toll center, who records the call and handles it the same as if it originated from a subscriber in her own office.

However, there are numerous other cases where calls originating by a subscriber in a tributary office are first recorded on a ticket and then passed to the toll center operator, who completes the call. The toll center operator should give the reports as to the progress of call, direct to the calling subscriber. Timing of calls from tributary offices requires close supervision.

The strict adherence to the routing instructions in establishing connections is essential for the purpose of obtaining a satisfactory grade of transmission and reasonable speed in the establishment of connections. The engineers, I understand, laid out the routing instructions in order to insure these features. By the misrouting of traffic, it is not only likely to impair the transmission on a call, but delays our service and the service from other offices whose first routing may be over the route which we used without authority.

The outward operator is responsible for clearing the built-up connection in order to keep at a minimum the use of toll circuit time. It is essential that she originate this clearance immediately upon receipt of a disconnect signal or disposition of call, indicating to her that the connection should be taken down.

Overlapping — Teamwork — Co-Operation.

By Miss Pearson, *Chief Operator, Jamestown Telephone Corp., Jamestown, N. Y.*

It is our duty as employes of a telephone company to give good telephone service. In order to do this, it is of the utmost importance that a pleasant tone of voice and a courteous manner be exercised in dealing with the public or with another employe.

Courtesy smooths out difficulties, creates good feeling and encourages the use of the service by the public. It is what everyone has a right to expect from another, and is particularly important in telephone communication where impressions are conveyed by means of speech.

With the present-day telephone development, co-operation on the part of six or more operators is usually required to establish a long distance connection in the larger central offices. The local operator answers the subscriber, who says he wants "Long Distance," and she then plugs into an idle recording trunk. The recording operator, upon receiving the signal, answers "This is Long Distance," records the call and then dismisses the subscriber by saying "Thank you," or "Thank you, Mr. Smith, we will call you."

The call is then passed to the outward operator who, in turn, has to order her number through the "B" operator. After securing the calling number, the outward operator rings the distant office and reaches the inward operator who, in turn, has to ring the number called or reach it through another "B" operator.

The girl in the small office usually answers both local and long distance calls, which makes her work often more difficult than the girl in the larger central office. She will just begin to work on a long distance call when, perhaps, half a dozen other patrons want a local number.

She has to use her own judgment whether to stay on the toll line or cut out and answer the other calling subscribers. If just one of these operators, in either a large or small office, falls down on the job without co-operating, it probably means lost revenue or a delayed call.

Overlapping and Teamwork.

Overlapping enables an operator to make the best use of her time and to give the fastest service possible. The operator should learn to use both of her hands independently when it is desirable to do two things at the same time; for example operate a key and remove a plug from a jack.

The following are a few examples of overlapping operations:

- (a) Locating an "Out" or "In" ticket upon receipt of a report ticket.
- (b) Disposing of completed tickets.
- (c) Examining tickets covering delayed calls to ascertain when the second route may be used, when a subscriber's line should be released, or when a subsequent attempt should be made, etc.
- (d) Writing on tickets.
- (e) Attaching tiger clips.
- (f) Referring matters to the supervisor, except those involving long explanations.
- (g) Securing rates and routes.
- (h) Securing the trunk assignment and taking up the subscriber's line on the call to be worked on next.
- (i) Becoming acquainted with the details of the next call to be handled.
- (j) Proceeding to quote the charge—or

to give a report—and at the same time ringing on the toll circuit to pass the clearance order. If the calling station and the distant operator answer at the same time, the operator may cut out of the connection to the subscriber while passing the clearance order.

(k) Stamping off tickets at the end of conversation and disconnecting, on previous direct circuit connections.

(l) Stamping off tickets at the end of conversation, ringing, cutting-in, and passing verbal clearance, on previous built-up circuit connection.

(m) Cutting-in, listening, challenging and disconnecting, on previous in-calls.

(n) Cutting-in in response to a toll cord signal and executing an order to ring or receiving an "LK ticket" report on connections on which WH reports have been passed.

Teamwork.

An operator shall help operators at adjacent positions whenever an opportunity presents itself. Such as,

(a) Answering line signals appearing in multiple answering jacks, or at adjacent positions, if within reach.

(b) Quoting time and charge.

(c) Calling a subscriber upon receipt of a report ticket on which Pr is checked.

(d) Asking for rates or routes.

Good service cannot be given with faulty apparatus, so it is up to us to co-operate with the plant department and see that every case is reported, such as frayed and scratchy cords, bent or worn plugs, slow-acting or failing supervisory signals, burnt-out and dimmed lamps, dirty lamp caps, and poor transmission or hearing on operators' sets.

How much we can do for ourselves and our company if we just remember to put our personality into our work, not merely answer subscribers or other employes in a mechanical tone of voice, but make each one we come in contact with think we were glad to be able to serve them!

Things a Recording Operator Should Know and Do.

S. E. Neary, *Traffic Supervisor, Wayne Telephone Co., Newark, N. Y.*

The recording operator is the first long distance operator a subscriber meets in placing a call. Therefore, the entire service will be judged through the efficiency of the recorder.

A large percentage of our subscribers does not know or realize how many operators are required to handle one long distance message—they think that the entire call is taken care of by the operator who takes the details from them.

The recorder should try to impress the subscriber favorably through her attitude, speech and manner in handling the call. She should have an affable manner, and her voice should prove that she is glad to be able to handle a call for each patron. Courtesy is essential in recording a ticket,

and such little phrases as "please" and "thank you" do a great deal to favorably impress the subscriber.

In recording the details, the operator should make it as easy as possible to place the call and should assist the subscribers to give a complete ticket.

It is necessary when recording a ticket to be accurate in placing the details on the ticket the first time, as this makes the ticket more legible than when some of the details are crossed out and rewritten. Verification should be made of all numbers and names in doubt, but a subscriber should never be interrupted to verify—that is while he is talking. Wait until he pauses or finishes talking—then ask the necessary questions.

If a subscriber does not offer complete information, the essential questions should be asked, such as: "What place do you wish to reach, please?" "What is the address, please?" "What is your name, please?" etc. When all the necessary details have been obtained, dismiss the subscriber with the usual courtesy by saying, "Thank you, we will call you."

When in doubt as to whether the subscriber wants a station-to-station call, or a person-to-person call, ask, "Do you wish this to be a station-to-station or a person-to-person call?" If the subscriber is not familiar with the difference in the calls, explain it to him and tell him that the person-to-person rate is more than the station-to-station rate.

Occasionally the subscriber will give special instructions to the recorder, such as having the charges collect, or making appointments, or sending messenger. It is especially important that these be recorded in the proper space on the ticket, in such a manner that they will not be overlooked by the line operator.

It is most important to verify numbers, since the completion of calls depends largely on having correct numbers.

Another important item in recording is to place all the entries to the extreme left of the ticket, so that there will be sufficient room left for corrections and changes that the subscriber may make.

The spare moments a recording operator may have when not otherwise engaged may be spent in writing on a few tickets, the *hour*, and *A. M.* or *P. M.* and the *recorder's number*. This will save time later.

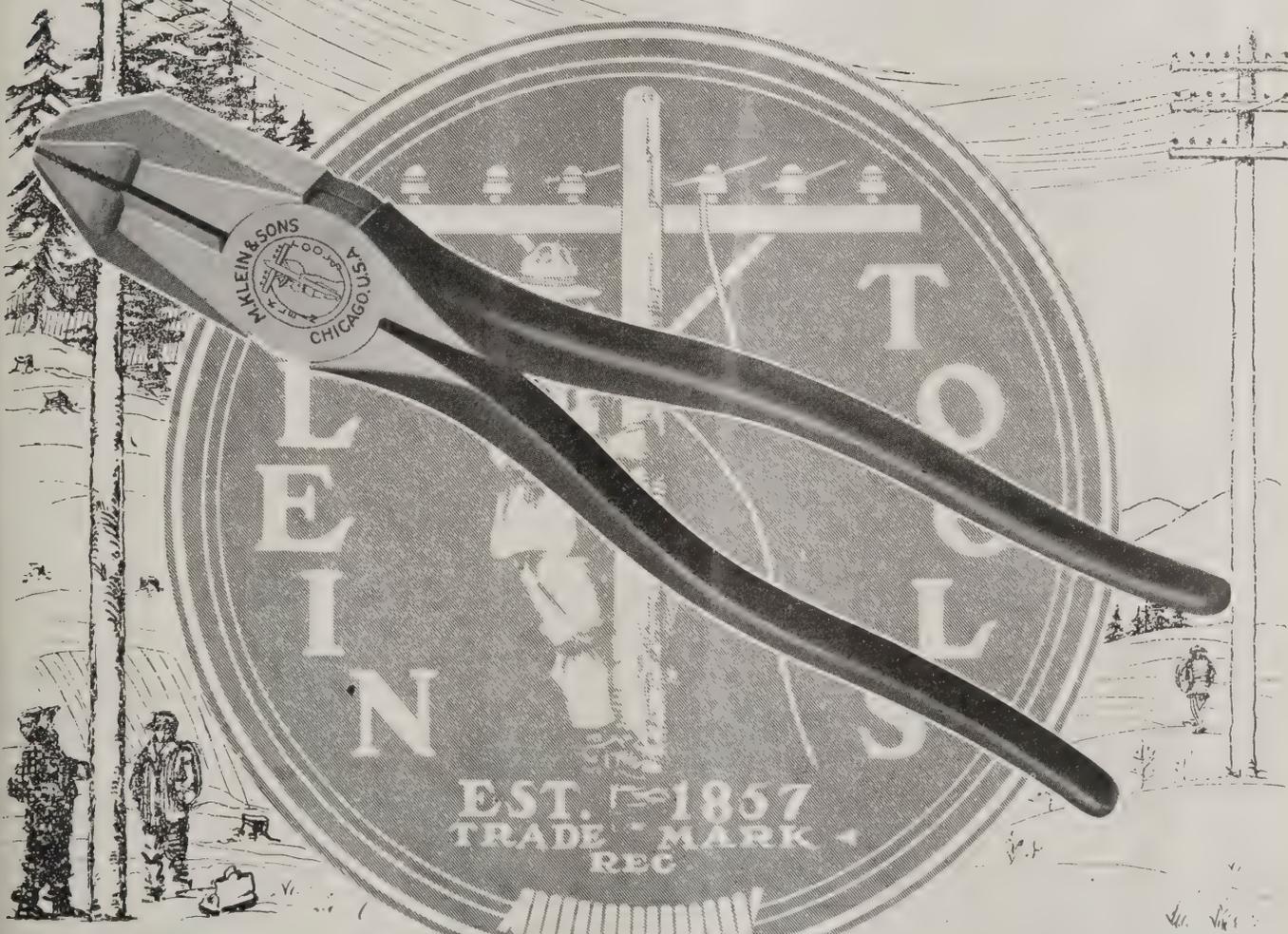
I have attempted to point out a few of the important items of recording. No doubt, the majority of you are already familiar with them, but in some of the smaller offices, where the recording is done by the long distance operator, or by a local operator, it has been found that the toll tickets are often recorded in a careless and inaccurate manner.

In our company, we are making a special effort to reduce the amount of errors and to increase the number of completed tickets, and I have found that neatly and accurately recorded tickets have surprisingly helped us to accomplish this.

Sure- they're KLEIN

What other pliers can stand the game? Klein Pliers have been hanging from the belt of the lineman that knows, for a good many years—they were made for him! Just the right spring and curve to the handles—just the right temper to the knives—just the kind of materials and manufacture that you've a right to expect when you see that sixty-six-year-old trade-mark on a plier.

Buy them for *your* linemen!



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Please tell the Advertiser you saw his Advertisement in TELEPHONY.

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News about Companies as Shown in Reports Made at Their Annual Meetings—Financial Conditions Reflected in Balance Sheets—Mountain States Company Had a Healthy Growth—Nevada Company in Good Condition

Report of Mountain States Company Shows Last Year's Growth.

The Mountain States Telephone & Telegraph Co.'s annual report, made public February 13 at the annual meeting of the corporation, shows a small balance carried to surplus account after payment of all expenses, interest and dividends. The exact amount is \$297,844, bringing the total surplus to \$624,402, which is 1.6 per cent of the outstanding capital stock.

Gross earnings totaled \$15,353,142; operating expenses were \$10,435,581, and net operating revenue, \$4,917,561. Uncollectible revenue, \$81,600, and taxes, \$1,515,514, brought the operating income to \$3,320,446.

Interest on \$4,300,000 of long-term funded debt was \$238,374, and dividends on \$38,439,700 of the outstanding common stock were \$2,680,779.

The company's balance sheet as of December 31, 1922, follows:

Assets.	
Intangible capital	\$ 1,079,881
Plant—	
Land and buildings	\$ 3,626,758
Other telephone plant	47,139,590
	50,766,348
General equipment	856,241
Other permanent investments:	
Investment securities	\$ 274,741
Advances to system corporations	40,000
Miscellaneous investments	24,974
	339,715
Total permanent and long-term investments	\$53,042,185
Cash and deposits	\$ 850,275
Bills receivable	79,673
Accounts receivable	1,335,426
Materials and supplies	483,968
Marketable securities and other current assets	50,016
Total working assets	2,799,358
Accrued income not due	6,810
Prepayments	\$ 81,167
Other deferred debit items	61,796
Total deferred debit items	142,963
Total assets	\$55,991,316
Liabilities.	
Common stock	\$38,439,700
Premiums on capital stock	47,973
Funded debt	\$ 100,000
Advances from system corporations	4,200,000
Total long-term debt	4,300,000
Total working liabilities (accounts payable)	645,454

Accrued liabilities not due	1,890,329
Liability for employes' benefit fund	182,000
Other deferred credit items	17,795
Total deferred credit items	229,795
Reserve for accrued depreciation	\$ 9,621,140
Reserve for amortization intangible capital	192,523
Total reserves	9,813,663
Corporation surplus unappropriated	624,402
Total liabilities	\$55,991,316

The summary of the company's affairs by President Ben S. Read gives the station gain for 1922 as 9,442—there having been 81,529 stations connected and 72,087 disconnected. At the end of the year the company was serving 340,471 subscribers and making connection to 36,349 connecting company stations.

The total wire mileage owned by the company was 867,600 miles, representing an increase of 45,279 miles during the year. This wire mileage radiates from 435 exchanges in the Mountain States territory, operated by over 6,000 employes, with a total payroll cost of almost \$7,000,000.

"During the past ten years," the report states, "the investment in plant and equipment, including construction in progress, devoted to rendering telephone service, has increased from about \$29,000,000 to \$52,000,000, or approximately 82 per cent."

The gross additions to central office equipment during last year amounted to \$1,143,000, while the investment in outside plant increased \$2,044,000. A great deal of attention was given to repairs and reconstruction, over \$2,265,000 being expended for current repairs alone. Besides this, there were the usual replacements of plant worn out and becoming obsolescent.

Nevada, Iowa, Company Reports on Operation for 1922.

From a gross income of \$57,915, the Story County Independent Telephone Co., of Nevada, Iowa, derived earnings of \$8,251, according to the statement of operations for last year.

Included in the assets are items of \$103,405 for exchange and rural lines; \$26,271 for land and buildings; \$14,457 for toll lines; \$5,880 for tools and \$7,235 due from subscribers and toll stations—other items and general equipment, bringing the total to \$188,522.

Outstanding stock to the amount of

\$56,578 and bonds of \$25,000 are listed in the liabilities. Accounts payable and accrued liabilities total \$4,206; surplus and earnings, \$48,254; and reserve for accrued depreciation, \$54,454.

The balance sheet reflects the following figures:

Revenues:	
Rentals	\$48,867
Tolls	13,611
Miscellaneous	437
	\$57,915
Expenses:	
Maintenance	\$15,736
Traffic	18,431
Commercial	3,971
General and miscellaneous	5,796
Taxes	3,205
Uncollectible accounts	996
Interest and rent	1,529
Earnings	8,251
	\$57,915

Keystone Company's Comparative Statement for January.

An increase of \$5,750 appears in the comparative statement of the Keystone Telephone Co., of Philadelphia, Pa., for January of this year and January of 1922. The net earnings, however, shows an increase of \$7,027, which was occasioned by a decrease of \$1,276 in the operating expenses and taxes.

Interest charges were about \$2,000 higher last month than during the preceding January, but there was some \$5,000 more to add to surplus than there was in January, 1922. The statement follows:

	For Month Ended	
	Jan. 31, 1923	Year previous
Gross earnings	\$144,111	\$138,360
Operating expenses and taxes	81,942	83,218
Net earnings	\$ 62,169	\$ 55,142
Less interest charges	43,703	41,885
Balance available for dividends, surplus and reserve	\$ 18,466	\$ 13,257

1922 Report of Iowa Company Not as Good as That of 1921.

The report of business for the year 1922 read at the annual meeting of the stockholders of the Mutual Telephone Co. of Traer, Iowa, showed profits of \$3,156 from the three exchanges at Traer, Gladbrook and Reinbeck. This return must be computed on an investment of \$47,000.

The net income for last year was \$1,200 less than for 1921, and \$4,000 less than for the year previous.

The company maintains free service between Traer, Gladbrook, Reinbeck, Dy-sart, Clutier, Lincoln, Voorhies, Dinsdale and Buckingham.

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The quality of the new French Telephone Battery deserves careful consideration from telephone company executives.

For years French Telephone Batteries have consistently stood for the highest development of practical battery efficiency—for full-rated strength, for long life under operating conditions, for negligible losses when idle.

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Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Nebraska Bill for Free County-Wide Service Killed.

The Barr bill in the Nebraska senate, which proposed to make the county the unit for telephone service, was reported for indefinite postponement, and the report was adopted by a unanimous vote. The bill provided that every subscriber in a county should have the opportunity to talk with every other subscriber without any charge other than that fixed by the railway commission for individual service.

Senator Chambers, chairman of the committee in charge of the bill, said that the committee was unanimously of the opinion that it would force upon the telephone companies an expense too great to be considered, and that the eventual result would be to raise rates. County-wide service is desired only by a comparatively few subscribers, and these now pay a small message toll for their calls.

The committee was of the opinion that it was much better, as a business proposition and entirely equitable, that those who desire added exchange service should pay for it rather than to attempt any plan such as this, which would distribute that cost among all of the subscribers, the majority of whom would never use or need to use the county service. Other members of the committee said that free service is a misnomer; that under regulation the telephone companies are entitled to a return on their investment, and that to make the county the unit of service would result in increasing the rate to everyone for the benefit of the few who now must pay for the privilege they are actually asking others to pay for.

Senator Barr was convinced of the soundness of the argument, and did not oppose indefinite postponement. He said that the bill had been introduced by him at the request of a constituent.

The house also put the axe to the Timme bill, which proposed, among other things, to take from the state railway commission all control over the Bell telephone rates in Omaha. The committee was unanimous in killing the measure. They said that not only did the utilities Timme sought to reach cover a wider area than the city, but that the bill was bad in that the constitution gave the commission power over the utilities and the legislature had no authority to take it away.

Accounting Data Required of California Companies.

An order was promulgated by the California Railroad Commission on February

14, requiring public utilities to file salary data and an accounting of donations, contributions, subscriptions and cash balances. All the data must be filed with the commission on or before March 10.

All public utilities having gross annual operating revenues of \$100,000 or more are directed to file a statement showing the names of all officers or employes who, during 1922, received a salary of \$5,000 or more per year; the salary received by such officer or employe; the amount of any contingent fee paid such officer or employe during 1922; and his title and duties.

Utilities having gross annual operating revenues of \$25,000 and less than \$100,000 are ordered to file the same data for officers who received a salary of \$3,000 or more during 1922.

All those utility companies which have gross annual operating revenues of \$25,000 or more must present reports for each of the years 1920, 1921 and 1922, showing the total donations, subscriptions and contributions of all kinds, as well as the total payments to attorneys—both of these totals to be distributed to accounts as charged on the companies' books during the years mentioned.

Those having annual revenues of more than \$25,000 must also submit a statement of the amount of cash they had for all purposes on December 31, 1922, the names of banks or other financial institutions with whom the cash was deposited and the rate of interest received, together with the amount of cash in the treasury of the utilities.

California Company to Sell Bonds Authorized Last Year.

Permission was given the Reedley Telephone Co., of Reedley, by the California Railroad Commission on February 15 to issue and sell for cash, on or before June 30, \$15,500 of the 20-year, 7 per cent bonds authorized by the commission on February 2 of last year.

The bonds must be sold at not less than 90 per cent of their face value and accrued interest.

Telephone Company Gets Verdict Against Utilities Company.

The Bureau County Independent Telephone Co., of Princeton, Ill., was given a verdict by agreement for \$800 against the Spring Valley Utilities Co. on February 7.

The suit was an outgrowth of a personal injury case resulting from the death of a young man who was electrocuted by contact with a telephone wire. The tele-

phone company claimed that the Spring Valley Utilities Co. was to blame for the accident because the power line crossed the telephone wires and jumped up the voltage.

Streator, Ill., Company Granted Increased Rate Schedule.

The new rates which the Illinois Commerce Commission authorized the Streator Telephone Co. on February 2 to place in effect as of February 1 at its Streator and Grand Ridge exchanges are somewhat lower than those requested, but are an increase over the old rates. Both schedules are shown below:

STREATOR.		
	Old rates	New rates
Business—		
One-party	\$3.00	\$4.00
Two-party	2.25	3.00
Residence—		
One-party	1.50	2.00
Two-party	1.75	1.75
Four-party	1.00	1.35
Rural—		
Business, ten-party.....	1.50	3.00
Residence, ten-party.....	1.50	1.75
GRAND RIDGE.		
Business—		
One-party	2.00	3.00
Two-party	1.50	2.25
Residence—		
Two-party	1.50	1.75
Ten-party	1.00	1.25
Rural—		
Residence, ten-party.....	1.50	1.75

An excess mileage charge of 50 cents per quarter mile or fraction thereof beyond the corporate limits of the city was also allowed.

The company placed the reproduction value of its Streator plant at \$476,470. The commission fixed the fair value of the company's property at \$335,000 and added \$15,000 for toll property, making a total valuation of \$350,000 and estimated that the rate allowed will give an income of 5.4 per cent on that valuation.

Iowa Association Wants Members to Get Busy and Protest.

Another bill to which the Iowa Independent Telephone Association takes exception is Senate File 379 by Brookhart, which would impose a franchise or corporation tax of 1 per cent of the net earnings on all corporations, limited partnerships, joint stock companies, and other companies.

Secretary Chas. C. Deering of the association is requesting the members of the Iowa association to write their senator at once protesting against the passage of the bill, for, he says, "most lines of business are just commencing to recover from a



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| Chicago, Ill., 19 So. LaSalle St. | Omaha, Neb., 513 Electric Bldg. | Dallas, Texas, 311 Sumpter Bldg. | Louisville, Ky. 1416 Starks Bldg. |

great depression and should not now be burdened with additional taxes.

"Further, our great need now is for a real equalization of taxes—not further discriminations in taxation."

Mr. Deering hopes that all those who have not heeded his last request and who have neglected to protest against Senate File 266 and House File 418, which are similar—both giving town councils power to regulate telephone rates—will take action immediately.

Senate File 412 by Campbell is not objectionable to the association, as it provides for the regulation of telephone utilities by the railway commission and the telephone men of the state are on record as preferring state regulation to city council regulation.

Bell Gets Permission from I. C. C. to Take Over Iowa Company.

The Interstate Commerce Commission on February 2 gave the Northwestern Bell Telephone Co. permission to take over the Musson Bros. Telephone Co. at Atlantic, Iowa.

The O. K. of the commission swept away the last reason for delay and the Bell officials at once took steps to merge the two companies.

Continue Efforts to Merge Companies at Louisville, Ky.

There is a continued effort on the part of Mayor Quin and various civic organizations of Louisville, Ky., to bring about a consolidation of the Home company and the Cumberland Bell in that city.

The mayor recently held a conference with L. K. Webb, local manager of the Bell, and P. S. Pogue, superintendent of the Home company, but so far nothing definite has been accomplished.

It is admitted by the mayor that there are many difficulties in the way of a merger.

Gets New Schedule of Service Connection and Other Charges.

It appearing to the Minnesota Railroad and Warehouse Commission that the schedule of service connection, move and miscellaneous charges proposed by the Parnell Telephone Co., of Graceland, was reasonable, an order was entered on February 16 approving the rates.

Service connection takes a rate of \$3 for business instruments not in place; \$2 for instruments in place, and \$1 for extensions. Residence instruments not in place are \$2 and instruments in place are \$1.50.

The contract term for main station service is not to exceed one month.

Outside moves will bear the regular service connection charge for the class affected, and inside moves—either main station or extension—within the same room or the same premises, will cost \$1.

The charge for changing the type of equipment will be \$1; disconnect and reconnect for non-payment, \$2, and change in name only in directory listing, not in telephone number, \$1.

The order takes effect March 1.

Bill Would Place Tax on Bell Dividends in Massachusetts.

Dividends on American Telephone & Telegraph Co. and New England Telephone & Telegraph Co. stocks, now exempt from the Massachusetts income tax, would be taxable under a bill advocated February 6 by Henry F. Long, commissioner of corporations and taxation, at a hearing before a committee of the legislature.

Under a law passed some years ago, both companies have been taxed on their franchises, and that law exempts dividends from taxation so long as the companies pay a franchise tax.

Practically 40 per cent of the \$700,000,000 capital stock of the A. T. & T. is owned in Massachusetts. The bill would affect 72,000 stockholders in the state, owning \$270,000,000 of common stock at par, or nearly \$330,000,000 of stock on the basis of its present market value, and would net the commonwealth about \$1,500,000 in taxation.

"On the basis of the present bill the franchise tax would be approximately \$40,000, levied on about \$3,360,000 of property, and the income tax on the stockholders, about \$1,000,000 or more, on the approximate amount of \$20,000,000 to \$25,000,000 in dividends paid during 1922," said the commissioner.

"In the event the bill does not become a law and the company refuses to pay the 1923 franchise tax and the courts say the tax is invalid, the stockholders will automatically, under the present law, become liable for an income tax on the 1922 dividends."

The A. T. & T. protested against the franchise tax imposed by Commissioner Long last year, amounting to nearly \$1,000,000. The company contended that the tax was unconstitutional and the attorney general coincided with that view. The company finally paid a tax of \$695,000.

W. S. Gifford, executive and financial vice-president of the A. T. & T., said he would regret the enactment of a law which would make stockholders liable, because they had bought the stock with the understanding that it was tax exempt.

Bill to Compel Service Passed by Nebraska House.

The Nebraska House has passed, with but few opposing votes, the Wells bill which provides that no existing exchange in a town can be abandoned unless 60 per cent of the persons who have held rental contracts for six months petition to have that done.

As originally drawn, the bill attempted

to compel telephone companies operating in a territory to establish an exchange in a town whether it could support one or not, but the introducer discovered this to be impossible, and as finally drafted it applies only to the continued maintenance of exchanges in towns where an exchange exists.

The bill was introduced by a Jefferson county member who wants to prevent the Lincoln Telephone & Telegraph Co. from abandoning its Endicott exchange. This was formerly operated by a local company that got into financial difficulties and sold out to the Lincoln corporation. It was necessary to rebuild the exchange and ask adequate rates. The people will not pay rates sufficient to pay a return on the investment, neither will they buy back the exchange and operate it themselves.

The senate has been more friendly to the corporations this session than has been the house, on the theory that this is no time to compel the corporations to make unnecessary expenditures of money.

General Manager R. E. Mattison of the telephone company says that the only answer to such legislation will be an application for a rate schedule sufficiently high to make the exchange a paying unit.

Most of the subscribers can be served at a low rate from the adjoining exchanges of Steele City and Fairbury, but the brick yards company, located a mile from town, has been most insistent on keeping the exchange open.

Small Mutual Companies Exempt from Reporting to Commission.

The Nebraska House has passed a bill exempting rural telephone lines that have no switchboard and farm mutual companies that have a capitalization of \$5,000 or less from making annual returns to the state railway commission with respect to the organization of the company and its operation.

The bill also carries a provision reducing from \$500 to \$50 the minimum fine that may be assessed against delinquent companies that are required under the act to make such reports.

Additional Bills Killed by the Nebraska Legislature.

The Beushausen bill, in the Nebraska house, which promised to have the support of a number of farm and labor organizations, has been indefinitely postponed and will not be again considered, as the three-day limit for calling it up again has expired.

This bill proposed to tax all telephone companies and that all other public utilities should be governed for rate-making purposes by their assessed valuation for taxation. The committee took judicial recognition of the fact that farm land is assessed at only 58 per cent of its value and personal property in the form of intangibles at only a fourth.



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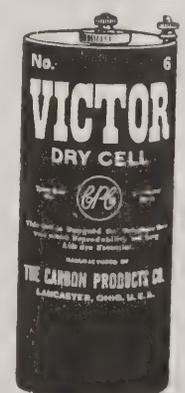
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Would it interest you to know that 1922 brought about a change among telephone companies whereby 15% of the industry "swung over" to VICTOR TELEPHONE CELLS? As one purchasing agent wrote:

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Another bill killed in committee, and one that was aimed at large corporations, was to give persons a specified notice before they could be laid off temporarily.

Still another—planned to weaken the anti-picketing law by allowing strikers to argue and talk with strike-breakers, now forbidden, so long as they did not use intimidating or coercive language—was killed.

A fourth bill would have required telephone companies to remove or relocate pole lines to conform to changes in public improvements without expense to the state or the governmental subdivision making such improvement.

The legislators have been pursuing a definite course of killing every bill that does not possess importance and confining their work to those deemed worth while, aside from the usual routine measures. The house has so far killed 90 out of the 672 introduced and has passed but 45.

Commission Starting to Save for Threatened Appropriation Cut.

No date has yet been set for the hearing before the master in chancery of the rate injunction suit brought by the Northwestern Bell Telephone Co. to prevent the reduction by the Nebraska State Railway Commission of exchange rates, and none will be fixed until the complainant company has completed the job it is now on, of getting up record testimony to prove its contention that the existing rates are not sufficiently remunerative.

The commission is anxious to have the case tried at Lincoln, as it is expected that it will take a month to hear.

The newly-elected governor has shown no signs of relenting from his determination to slash commission appropriations from \$155,000 to \$85,000 for the biennium; in fact, he now says he never told the commissioners that if they could get an increase from the legislature it would be all right with him. He declares he will fight any increase from his recommendation.

The commission is handicapped in that it must get 60 votes in the House to override him, and there are enough Democrats to defeat that.

For this reason the commission is anxious to have the hearing held where its experts and members will not be on state expense and where they can keep in touch with official matters.

Allowed to Issue Lower Stock Dividend Than Requested.

The Table Rock Telephone Co., of Table Rock, has been given permission by the Nebraska State Railway Commission to issue a stock dividend for the year 1922. The company had asked for a larger sum, but the commission holds that \$500 is a sufficient allowance at the pres-

ent time, but that this will not operate against a declaration later of a cash dividend for 1922 when the circumstances justify.

When the rates for the company were readjusted in 1920 it was found that the value of the property was less than the \$16,000 stock outstanding, and the company was ordered to invest \$400 a year for a stipulated period in new equipment out of its gross receipts for the purpose of equalizing stock and property values.

The commission finds that the company has been obeying the rule with scrupulous exactness, and that at the same time it has been earning enough in excess of the \$2,000 a year required for maintenance and depreciation to justify the declaration of stock dividends.

Hearings on Protests Against Order of New York Commission.

The order of the New York Public Service Commission on January 25 provided that by February 15 applications could be made to the commission for modifications of the order which fixed telephone rates of the New York Telephone Co. in New York state after March 1.

Three major applications have been filed with the commission. The New York Telephone Co. asks that the effective date of the order establishing a flat rate for four-party service in Buffalo be made October 1 instead of March 1. The four-party service at present is on a message basis.

The company alleges that the ordered change to a flat rate basis will result in materially increased traffic and that to meet it additional central office equipment will be necessary, and this installation can not be made by March 1 as provided in the order. The company says it will proceed with the installation of additional equipment as diligently as possible.

Hearing on this application is set for February 27 at Albany.

At the February 15 hearing in Albany, M. M. Fertig, assistant corporation counsel of New York City, appeared for the city and asked that the proposed monthly settlement plan put in effect by the terms of the order be abolished and payment for telephone service be made under the old contract system.

Mr. Fertig told Commissioner Blakeslee that under the monthly settlement plan resident subscribers whose use varied from month to month would not be able to take advantage, in months when their telephone use was large, of savings that had been made in months when they did not use the maximum number of messages.

He also stated that in his opinion, if the monthly settlement plan was continued, the amount of the minimum charge should be reduced from \$3.50 to \$2.

Mr. Wilson and Mr. Briggs, representing the New York Telephone Co., stated that considerable evidence was received in the case on this question of monthly settlements and such evidence in their opinion justified this change in the system of payment.

The hearing was adjourned until February 19 in New York City, and it was agreed that a further adjournment be taken until February 23 in New York City.

A request for modification of the order by the Public Forum of Brooklyn Heights was set for hearing February 19.

There will also be a hearing before the commission at Albany on February 28 on the complaints, numbering about 200, which were filed by about 135 cities, villages and towns against rates of the New York Telephone Co. which were put into effect in 1919 and 1920.

That hearing is for the purpose of further consideration and disposal of the 200 complaints which were filed with the commission and which have been pending during the inquiry and determination by the commission of rates of the New York Telephone Co. throughout the state.

Wisconsin Association Is Going to Have a Good Meeting.

The committee in charge of arrangements for the annual convention of the Wisconsin State Telephone Association—which takes place March 21, 22 and 23 at the Wisconsin Hotel in Milwaukee—has been working hard and the plans are now lined up in good order.

It promises to be the best convention the association has ever had and Secretary J. A. Pratt guarantees that no one will be sorry he attended. The program has been prepared with special reference to the conditions prevailing in the business of the various member companies. Each one is urged to come prepared to take an active part in the meetings, for it is the intention to get views from all angles when important questions come up for discussion.

A number of addresses of general interest by men of wide reputation are on the program, and every company should see to it that it has at least one representative at the sessions to carry away the results which such meetings furnish.

A full line of exhibits by manufacturers will be on hand to enable the delegates and visitors to keep in touch with the latest improvements in the art.

Oklahoma City Hotels Lose Case Against Southwestern Bell.

The Oklahoma Corporation Commission on February 2 denied the application of several hotels of Oklahoma City for reduction in telephone rates charged to hotels by the Southwestern Bell Telephone Co.

The contention of the hotels that the rates now prescribed by the commission and charged by the company are discriminatory against the hotels was overruled by the commission.

First Steps Taken on Promised Extensions in Tennessee.

The first step in the carrying out of the Cumberland Bell construction program for Tennessee was taken when the city council of Nashville passed two ordinances on February 7, giving the company permission to install conduit and extend the underground cable system. The extensive work planned by the Bell company was made a part of the recent settlement of the rate case.

It is estimated that this particular piece of work will cost \$90,000, and an additional \$38,000 is being expended in switchboard equipment for the Hemlock exchange. Improvements in other parts of the city will be started as rapidly as possible, according to District Manager K. C. Hardcastle.

Hearings on Bell Rates in Washington Drawing to a Close.

Final hearings on the rates of the Pacific Telephone & Telegraph Co. in Washington commenced with the one on February 20 in Tacoma, followed by the February 23 hearing in Seattle. The Spokane hearing is set for February 28.

At the first series of hearings held in Olympia only valuation matters were taken up. The second set of hearings held in January at the three cities brought out the company's testimony and exhibits on rates, service and facilities and completed the valuation matters.

The department's case, the cases of the cities and matters brought in by the general public were introduced at the final hearings.

Bell Asks I. C. C. for Leave to Purchase Washington Company.

The Pacific Telephone & Telegraph Co. has petitioned the Interstate Commerce Commission for authority to purchase for \$185,000 the property of the Angeles Telephone & Telegraph Co., which operates in and around Port Angeles, Wash.

Can't Make Both Ends Meet—Rate Increase Granted.

The Richmond Telephone Co. was given permission by the Wisconsin Railroad Commission, in an order of February 12, to increase its present rate of \$1.35 per month to \$1.50.

The company operates a small exchange of something over 80 subscribers, with a central office in a store at Richmond.

Two dollars per day, or approximately \$730 a year, is required for the handling of the switchboard, which is nearly \$9 per year per telephone. The remainder of

the revenue received, approximately an equal amount, must pay for all other service, and provide for taxes and depreciation on the property and plant.

Revenues Less Than Expenses—Increase in Rates Allowed.

The Wisconsin Railroad Commission, on February 12, authorized Charles C. Peterson, who is a successor to the local exchange business of the Siren Telephone Co., of Siren, to increase rates. The old and new rates are as follows:

Business:	Old rates.	New rates.
One-party	\$1.50	\$2.00
Two-party	1.25	1.50
Rural:		
Business	1.25	2.00
Residence	1.17	1.25
Switching service..	.33	.50

The new schedule also provides for an installation charge of \$3.50, payable in advance, to be refunded if service is retained, not necessarily in the same location, for two years. Move charges of \$2 for inside and \$3.50 for outside are also provided. The residence and extension rates remain the same.

There are 122 telephones connected at the exchange in Siren. A report shows that the monthly revenues are \$86.92, while the expenses amount to \$108.80. Aside from this, there is very little information based on the present operation. Mr. Peterson purchased the property of the Siren Independent Telephone Co. during 1922.

Higher Switching Rate Necessitates Increase in Rental.

On February 12 the Wisconsin Railroad Commission authorized the Farmers Mutual Telephone Co., of Baraboo, to increase its rates for service on its lines connected to the North Freedom exchange. The new rate, effective March 1, is \$5.15 net per quarter, an increase of 90 cents per quarter.

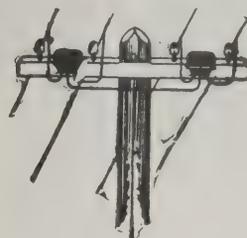
The system of the company in the vicinity of North Freedom consists of a number of rural lines which receive their switching service from the exchange of the Wisconsin Telephone Co. at North Freedom.

In October, 1922, the switching rate was increased from \$4 per telephone per year to \$7.50 per telephone per year; this amount not to include any provision for rental of receivers, transmitters or induction coils. An increase in the rates of the company seemed necessary to care for the increased switching rates.

Rates Raised, Must Improve Service and Take Over Equipment.

In an order of February 12 the Wisconsin Railroad Commission authorized the Peoples Telephone Co., of Mt. Hope, to increase its rates.

The new rates, effective March 1, are \$15 per year and \$6 extra for each exten-



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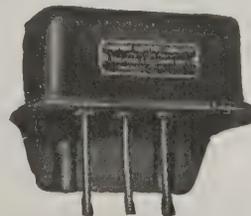
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	Capacity	Equipped
Sections	7	6 $\frac{1}{2}$
Positions	21	18 $\frac{1}{2}$
C. B. Lines per position	120	120
C. B. Lines total...	1960	1960
Cord circuits per position	15	15
Multiple jacks, total	21000	14320
Rural positions ...	1	1
Rural lines	60	50
Pay Station positions	1	1
Pay Station lines..	160	60
Toll to Local trunks	20	15
Toll to Rural trunks	5	5
Inter office trunks.	20	20
Recording trunks to toll	10	10
Chief operators Desk (sanitary style) ..	1	1
Information Desk (sanitary style)..	1	1
Operator's chairs...	20	20
Operator's Breast plate sets.....	27	27
Lighting fixtures...	9	9
Relay Rack.....	2160	1960
Power Switchboard	1	1
G. E. Arc Rectifier (50 amp)	1	1
Motor gen. Charging set (60 amp)	1	1
Four frequency vibrator ringing machines	1	1
A. C. Motor driven ringing interrupter	1	1
D. C. Motor driven ringing interrupter	1	1
Storage batteries, Exide F 11.....	11	11
Storage batteries, Exide F 7.....	11	11
Wire Chief's desk (sanitary style)...	2 pos.	2 pos.

This equipment includes everything required for a 1960 line exchange. It is in first class condition and is now satisfactorily handling a load of 40,000 calls per day. Delivery can be made in September, 1923. Terms if desired.

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sion. The former rates were \$10 and \$5 extra for each extension.

The commission further states that the company shall, within one year, comply with the following service requirements:

1. Reduce the number of subscribers per line to not more than 12.

2. Take over the maintenance and operation of all equipment used in giving telephone service. This includes subscriber instruments and stub lines now owned by subscribers, except that subscribers shall pay the cost of all batteries placed in their instruments.

3. Take over the rebuilding of all stub lines as rapidly as the rebuilding is required.

The company shall furnish all equipment and labor in rebuilding stub lines up to a maximum distance of 80 rods for any subscriber. Beyond that distance the subscriber is required to pay the cost of building or rebuilding, under the company's supervision.

All rebuilt stub lines, whether rebuilt by the company or in part by the subscriber, becomes the property of the company.

The company must also without delay adopt rules governing the manner of payment of rentals, and inaugurate a system of accounting that will in the future provide for a correct distribution of its capital, operating and renewal expenditures.

The Peoples company operates a system in western Grant County, with exchanges at Mt. Hope, Mt. Ida, Millville, Woodman, Werley, Bagley, Patchgrove and Bloomington. The total number of subscribers served is 1,312. All the lines of the company, with one exception, are of grounded construction.

The central offices are maintained in private houses, the operators' services being obtained for 50 cents per telephone per month.

The company is a mutual organization, loosely managed, and financed by yearly assessments. Subscribers own and maintain their own telephones including batteries, also the stub lines from the main line to their residences. The division of the ownership of the property between the company and the individual served and the sharing of the responsibilities of its operation and maintenance has resulted in very poor service.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

February 2: Northwestern Bell Telephone Co. authorized to take over the property of the Musson Bros. Telephone Co., of Atlantic, Iowa.

February 6: Application filed by Pacific Telephone & Telegraph Co. for permission to acquire the Angeles Telephone & Telegraph Co., of Port Angeles, Wash.

ARKANSAS.

February 19: Hearing held at Little Rock on application of Greenwood Telephone Co. for permission to increase the rates for service in Greenwood.

CALIFORNIA.

February 14: Order entered requiring public utilities to file with commission on or before March 10 salary data and an accounting of donations, contributions, subscriptions and cash balances.

February 15: Reedley Telephone Co., of Reedley, given authority to issue and sell on or before June 30, at not less than 90 per cent of face value and accrued interest, \$15,500 of the 20-year, 7 per cent bonds authorized on February 2, 1922.

ILLINOIS.

February 2: Increase in rates granted Streator Telephone Co. for service in Streator and Grand Ridge.

February 20: Hearing held at Springfield on petition of Illinois Bell Telephone Co. for increase in rates for service in Centralia, Central City, Womac, and vicinity.

February 20: Hearing held at Springfield in the matter of amended rate schedule IPUC 3 for proposed advanced rates for service by LaHarpe Telephone Co. in LaHarpe.

February 21: Hearing held at Springfield in the matter of complaint of Dr. W. C. Blaine relative to telephone service at his farm near Tuscola rendered by Atwood Mutual Telephone Co., of Atwood.

February 21: Hearing held at Springfield on petition of Shiloh Mutual Telephone Co. for advanced rates for service in Huntsville.

February 21: Hearing held at Springfield on application of Fayette Home Telephone Co., of Fayette, for authority to issue \$2,000 of common capital stock.

February 21: Hearing held in Springfield on petition of Illinois Bell Telephone Co. to sell and Fayette Home Telephone Co., of Fayette to buy certain telephone property of the former in the village of Brownstown.

February 21: Hearing held in Springfield on the application of Arch Bassett, owner of the Albion Telephone Co., for authority to sell telephone property in Albion to Commercial Telephone & Telegraph Co., of Olney.

MINNESOTA.

February 16: Authority given Parnell Telephone Co., of Graceland, to establish, beginning with March 1, a schedule of service connection, move, and other charges.

MISSOURI.

February 10: Hearing held in Carthage on application of Southwestern Bell Telephone Co. for increased rate schedule in Carthage.

February 15: Liberty Telephone Co. authorized to continue its present rates for service in North Kansas City.

February 15: Permission given the Kansas City Long Distance Telephone Co. to continue using the same rates at Excelsior Springs.

February 15: Kansas City Long Distance Telephone Co. given authority to continue the present rates for service in Richmond.

NEBRASKA.

February 13: Complaint filed by the Frederick Hotel, of Loup City, against the Northwestern Bell Telephone Co., alleging removal of booth without just cause.

February 14: Application filed by the Blair Telephone Co., of Blair, for permission to establish joint user, extra directory listing, and line call service.

February 14: In the matter of the application of the Table Rock Telephone Co., of Table Rock, for permission to declare a stock dividend; granted for good cause shown.

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February 15: In the matter of the citation of the Omaha hotels for cause in connection with their advertisement of increased local call charges; continued from February 16 to February 23.

February 15: In the matter of the application of the Cambridge-Holbrook Telephone Co. for permission to establish gross and net rates, with a 25-cents a month spread; found reasonable and in accord with standard charges, and granted.

NEW YORK.
 February 21: Hearing held at Albany on petition of Rochester Telephone Corp., of Rochester, for certificate of convenience and necessity of construction; also as to the issuing of stock, mortgage, bonds, and an agreement as to notes; and notes; joint petition of Rochester Telephone Corp., Rochester Telephone Co. and New York Telephone Co. as to transfer of franchises from last named two companies to Rochester Telephone Corp.; also on supplemental petitions.

February 23: Hearing held at New York City to determine whether or not a rehearing shall be had on the application of the New York Telephone Co.'s petition to increase rates in New York City.

February 27: Hearing to be held in Albany on application of New York Telephone Co. for a postponement from March 1 until October 1 of the effective date for the establishment of the flat rate for four-party residence service in Buffalo.

February 28: Hearing to be held in Albany on complaints filed by about 135 cities, towns and villages, against rates of New York Telephone Co. which were put into effect in 1919 and 1920.

NORTH DAKOTA.
 February 14: Noonan Farmers Telephone Co. allowed to file a rate for pay station in the village of Noonan.

February 15: The commission feeling that it had no jurisdiction in the application of the Hamble-Crete Telephone Co. to divide its lines; files ordered closed.

OHIO.
 February 15: Hearing held in Columbus on rates of Ohio Bell Telephone Co. for service in Cleveland.

OKLAHOMA.
 February 2: Order entered dismissing application filed by several hotels of Oklahoma City for reduction in the rates charged to hotels by Southwestern Bell Telephone Co.

PENNSYLVANIA.
 February 3: Proposed increased rate schedule of Kittanning Telephone Co., of Kittanning, denied.

WASHINGTON.
 February 20: Hearing held in Tacoma on rates of Pacific Telephone & Telegraph Co.

February 23: Hearing held in Seattle on rates of Pacific Telephone & Telegraph Co.

February 28: Hearing to be held in Spokane on rate case of Pacific Telephone & Telegraph Co. and Home Telephone & Telegraph Co. of Spokane.

WISCONSIN.
 February 12: Peoples Telephone Co., of Mt. Hope, authorized to increase rates; required to comply, within one year, with certain rules of the commission.

February 12: Increase in rates granted Farmers Mutual Telephone Co., of Baraboo.

February 12: Increase of 15 cents a month granted Richmond Telephone Co., of Richmond.

February 12: Rate increase granted C. C. Peterson, successor to the local exchange business of the Siren Telephone Co., of Siren.

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Elections.

ROCK GROVE, ILL.—At the recent annual meeting of the stockholders of the Rock Grove Mutual Telephone Co. the following directors were elected: C. Barker, D. Brobst, G. Nesemeier, G. Bixler, F. Meinert, A. N. Zimmerman, and E. Fisher.

TREMONT, ILL.—The new officers of the Farmers Mutual Telephone Co. of Tremont are: J. Sommer, president; J. Strickfaden, vice-president; and G. Brecher, secretary. A. L. Robinson and S. Kinsinger were reelected directors.

TRAEER, IOWA—T. J. Stoakes was reelected president of the Mutual Telephone Co. of Traer at the recent annual meeting; R. A. West was elected vice-president; R. C. Wood, secretary; and J. Kober, treasurer. The new board of directors consists of H. D. Loop, J. B. McDowall, T. R. McElhinney, and the officers. R. L. Parker has been retained as manager.

OZARK, MO.—The men chosen to head the Ozark Cooperative Telephone Co. for this year are: G. Gooch, president; U. S. Bylien, vice-president; and S. K. Stine, secretary-treasurer. The executive committee consists of L. E. Estes, E. Hanks, B. Wagoner, and the officers.

SAVANNAH, MO.—The stockholders of the Andrew County Mutual Telephone Co. recently met and elected C. Yenni, president; A. R. Gunselman, vice-president; O. V. Sells, secretary and manager; and E. F. Smith, treasurer. The board of directors, which is the same as it was last year, is composed of B. Robertson, W. W. Craig, F. A. Parker, and the president and vice-president.

AURORA, NEB.—The annual meeting of the stockholders of the Hamilton County Farmers Telephone Association resulted in E. D. Snider and J. Jones being reelected to the board of directors. At the directors' meeting P. Peterson was chosen president and J. Jones vice-president.

BLUE SPRINGS, NEB.—The Gage County Independent Telephone Co. will have as its officers for this year: J. McPherson, president; F. F. Roderick, secretary; and F. J. Patton, treasurer. W. Walker and L. M. Smith are the newly elected directors on three-year terms. Mr. McPherson has been president for nearly 20 years.

DILLER, NEB.—The officers of the Diller Telephone Co. were reelected for this year as follows: President, E. L. Looch; vice-president, A. Engelman; secretary, J. Smith; treasurer, F. E. Hale; and manager, G. Riddle—these officers constituting the board of directors.

The report showed that there are 85 stockholders and an investment of \$19,000.

ELIZABETH CITY, N. C.—There was a general promotion of young men at the annual meeting of the Norfolk & Carolina Telephone & Telegraph Co. recently. The oldest of the men promoted—H. W. Dewey, who succeeds C. W. Grice, deceased, as secretary and manager—is only 31 years of age. He has been an employe of the company for 15 years.

R. M. Dewey was promoted to superintendent, the position formerly occupied by H. M. Dewey. E. Blades was made treasurer. The president and vice-president are the same—Dr. L. S. Blades and J. T. McCabe, respectively. W. J. Woodley is secretary of the board of directors, the other members being Dr. L. S. Blade, J. T. McCabe, F. M. Grice, C. E. Thompson, L. Selig, E. Blades, and C. Blades.

WELCOME, N. C.—The Davidson Telephone Co. had its annual meeting recently and selected W. Miller as president for the coming year; E. S. Craver as secretary-treasurer; and J. H. Leonard, A. R. Hinkle, J. L. Foust, and O. H. Koontz, directors.

ADA, OHIO—The officers of the Ada Telephone Exchange Co. for this year are: I. McElroy, president; Dr. R. F. Coopess, vice-president; D. H. Herring, secretary and manager; and J. Brewer, treasurer. C. L. Brewer, C. M. Jones, J. Lantz and the officers compose the board of directors.

EATON, OHIO—At the stockholders' meeting of the Eaton Telephone Co. the following officers were elected: President, O. A. Gale; vice-president, C. B. Cokefair; secretary, L. D. Lesh; and treasurer, E. Fisher. T. W. Mitchell, H. Royer, U. J. Poffenberger, and the officers constitute the board. E. G. Morgan, is manager.

MARION, OHIO—F. E. Guthery was reelected president of the Marion County Telephone Co. at a directors' meeting, following the stockholders' meeting. Other officers chosen include S. E. Barlow, vice-president; and A. J. Berry, secretary-treasurer and general manager. Directors were selected as follows: H. B. Hane, J. F. Prendergast, D. R. Crissinger, W. G. Harding, F. A. Huber, J. A. Schroeter, A. E. Cheney, J. G. Leffler, and the officers.

AMITY, PA.—The Amity Farmers Telephone Co. at its annual meeting elected J. Watson, L. W. Thomas, J. L. Dunn, J. Sanders, W. L. Dodd, H. E. McCollum, and L. M. Van Dyke directors for the ensuing year. The directors organized by electing Mr. McCollum president; Mr. Thomas, vice-president; Mr. Van Dyke,

secretary and collector; and C. Condit, treasurer.

EVERETT, PA.—At the regular annual meeting of the stockholders of the Bedford-Fulton Telephone Co. the following directors were elected: H. F. Gump, Sr., J. S. Hershberger, J. H. Isett, H. E. Laher, D. C. Barkman, B. S. Jackson, Dr. H. W. Bender, W. N. Hershberger, and J. M. Clegg. At the directors' meeting which followed H. W. Bender was chosen president; H. E. Laher, vice-president; J. S. Hershberger, secretary; W. N. Hershberger, assistant secretary; H. F. Gump, Sr., treasurer; and H. H. Clark, manager.

WOODBURY, TENN.—The officers of the Home Telephone Co. elected for this year are: W. F. Brevard, president; R. B. McBroom, vice-president; and B. Tenpenny, secretary-treasurer. The new directors are A. A. Jernigan and S. Davenport.

GREENVILLE, TEXAS—The following officers were elected at the recent annual meeting of the Greenville Telephone Co.: A. C. Stuart, president; R. M. Chapman, vice-president; H. S. Brashear, secretary; and E. C. Russell, treasurer. The officers and W. L. Beckman, Sr., are directors.

MOUNT PLEASANT, WASH.—The Mount Pleasant Telephone Co. has elected the following officers for the ensuing year: N. L. Kingsbury, president, and M. G. Kingsbury, secretary-treasurer. The trustees are J. S. Winslow, F. Adams, and A. W. Rankin.

AMHERST, WIS.—The officers of the Amherst Telephone Co. for the coming year are: A. L. Rounds, president; P. Peterson, vice-president; J. O. Foxen, secretary; and C. P. Sommers, treasurer. Elected to serve on the board of directors are: J. A. Jordan, E. Kussman and O. K. Heath.

MERRILL, WIS.—Stockholders of the French Ridge Telephone Co. have elected A. Schmidtke and C. J. Travis directors for this year. The new officers are: M. Jole, president; C. Olson, vice-president; and A. Boettcher, secretary-treasurer.

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WANTED—Assistant secretary about April 1st for Class B telephone company. Must be familiar with I. S. C. accounting. Steady position for right party. Married man preferred. Give age, experience, reference, and salary expected. Only those giving the above information in first letter, need expect reply. Address 5222, care of TELEPHONE.

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Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 9

CHICAGO, SATURDAY, MARCH 3, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

There is a whole sermon—and a good one, too—in two lines

of a letter we received last week from a subscriber who is manager of a farmers' telephone company operating in Pennsylvania. "TELEPHONY," he says, "has helped us to give a better service that has increased our revenue."

It is gratifying to know that this journal has helped a telephone company to improve its service. That is what we are here for. However, the sermon lies in the statement that, *having bettered its service, the telephone company was rewarded with increased revenue—better rates*. That is the milk in the cocoanut.

Efficient service will build up the good will of the public towards the company, and when these two factors—good service and good will—accompany the telephone man when he appears before the rate commissioners, the task of securing adequate rates is practically accomplished.

* * * *

Utility rate-makers naturally have a watchful eye on the public effect their official actions will have. They are seeking the commendation of the voters who, directly or indirectly, place them in office. A company that cannot prove it is rendering good service, and that also is "in bad" with its patrons, generally speaking, hasn't much chance of getting a rate increase, no matter how much it may need it.

On the other hand, as our Pennsylvania subscriber unconsciously pointed out, better service brings increased revenue. The public good will created by improved service is the important step towards a

CURRENT OPINIONS AND COMMENTS

more healthy income for the telephone company. Good will also, needless to state, makes it easier to secure more capital.

* * * *

And capital with which to take care of the steadily increasing business is what the telephone industry needs—capital to finance expansion in response to the ever-growing public demand for service, and capital to replace equipment that has seen its best days or is unequal to the pressure of present day needs.

As the spring construction season approaches, telephone companies everywhere are making plans to enlarge and improve their service facilities.

The extensive building programs mapped out for Louisville and Fort Wayne are examples of what Independent telephone interests are doing throughout the country, while the Bell organization is providing for a big growth by all its associated companies.

* * * *

Telephone companies should give more publicity to the fact that investment houses are more and more recognizing the stability of public utility securities. The investment concerns are passing this belief on to their customers—the bond buyers—and recommending the purchase of utility bonds and stocks.

A year ago John Moody predicted that 1922 would be a good year for the utilities. February 1, 1923, he said:

"All groups of utilities have so amply

confirmed that confidence by actual accomplishment over

the past year that we have come to regard public utility securities, taken as a whole, as the most desirable and attractive class in the investment market today.

"The public utilities of the country face an assured future confronted by one great problem—to finance expansion of their facilities rapidly enough to take care of the steadily increasing volume of business offered to them.

"As we have previously pointed out, the stability of the utility business is due entirely to its essential character. To this may be added consideration of the fact that the business is very nearly on a cash basis, is properly non-competitive and involves no extensive inventories. The capital investment turnover, although slow, is sure."

* * * *

There are forcible points in the above paragraph which any telephone company can use with good effect in interesting those having money to invest.

In addition, there is the argument in favor of putting local capital into local enterprises. Supporting home industries, and making money to be spent at home, are ideas of special value right now when the "Home Rule" cry is being made by political demagogues in their attacks on service companies and state regulation.

An efficiently managed, locally owned and operated company is about as effective a defense against the radical "Home Rule" political buncombe as can be discovered. In fact, home ownership is home rule.

Publicity for the telephone company does not necessarily have to be only through the columns of the local newspaper. That is extremely valuable, of course, but there are other ways in which the company can get its message across to the public.

For instance, when the monthly bills are mailed out a slip or small folder, bearing printed matter, can be enclosed without adding to the postage expense.

The mails carry one ounce first class for a two-cent stamp, and as the monthly bill usually weighs but half that, only half the postage paid for is ordinarily used. Small circulars and printed slips, carrying any message the company desires its patrons to know, might as well go to them in the same envelope.

Good publicity can be distributed in this way and at no additional expense for mailing. Why not get full value out of the

fixed item of expense for postage and kill two birds with one stone?

* * * *

There is a certain telephone man out in rural Illinois who could earn a fat salary as a diplomat at some European court, judging from the clever way he handled a difficult rate situation recently.

A good-sized farmers' company, operating five exchanges in a rich agricultural section, desired to raise its rates to 75 cents and \$1.00 a month, and asked the commission for the necessary authority.

That certainly sounds reasonable enough, but when the hearing was held there were objections from some of the subscribers.

One group of kickers was represented by a positive individual who happened to be named Blowers—and he lived up to his name. After Mr. Blowers had "blowed up" sufficiently, the case was deferred.

Then the telephone diplomat got busy. He had Blowers elected a director of the company so he was in a position to investigate and know the financial condition of the concern.

When the commission took up the case again, Mr. Blowers informed the rate investigators that he had gone over the accounts and was satisfied that even the rates asked for were hardly sufficient. The objections were withdrawn, and the commission granted the company the additional revenue desired.

* * * *

The incident illustrates two things: It makes all the difference on which side of the table you are sitting, and, also, that the telephone man who put Brother Blowers on the board of directors belongs at Versailles, Genoa, or wherever the diplomatic confabs chance to be held.

Nebraska Holds a Lively Convention

State Telephone Association's Meeting at Lincoln Develops Spirited Discussions—C. L. Kelly Succeeds Bruce Brown as President—Annual Gathering Displays Plenty of Pep and a Keen Interest in Plans to Help the Industry

By H. T. Dobbins

The question of what constitutes a proper compensation for handling toll calls proved to be the liveliest topic of debate at the annual convention of the Nebraska Telephone Association, held at Lincoln February 20, 21 and 22.

For a number of years there has been on the statute books a law, which in addition to requiring physical connection, provided that companies should have a 10 per cent commission on all terminating and a 15 per cent commission on all originating calls, with provision for division upon a mileage basis.

President Bruce Brown of the state association secured the introduction early in the present session of S. F. 200, which repeals the settlement section of the Shipley law, the one above described.

The matter came before the convention on Wednesday on a motion to recommend the passage of the bill. A sharp difference of opinion developed during the debate, which did not end with the Wednesday session, but continued until Thursday, when it was voted to leave the matter in the hands of the association's legislative committee—Mr. Brown having suggested that the association ask that it be killed.

The meeting was well attended; there were a number of good talks made; and the social program gave the delegates and visitors an opportunity to forget their troubles and frolic together.

Officers Elected.

The election of officers resulted in the following being chosen for the coming term:

President, C. L. Kelly, of North Bend; vice-presidents, E. D. Warner, Scottsbluff, and J. W. Richmond, Wisner; secretary-treasurer, A. W. Forbes, Stanton.

The directors are: Lloyd B. Wilson, Omaha; R. E. Mattison, Lincoln; George E. Becker, Pawnee City; Warren Pratt, Kearney; D. E. McGregor, of the Kellogg Switchboard & Supply Co.; M. D. Young, Franklin; J. E. Grint, Sargent, and E. B. Wait, of Comstock.

The opening session of the convention was held on the afternoon of Tuesday, Feb. 20, when Mayor Frank C. Zehrung delivered an address of welcome in which he expressed the appreciation of the city over the annual visit of the telephone men.

He said that it was a wonderful age in which he had been permitted to live, and the rise and development of the telephone industry—from the little three blocks line over which he first talked to the present continent-wide system of communication—was not the least of the magic transformations.

Warren Pratt, of Kearney, in response, said that the fact that the convention was always held in Lincoln was proof sufficient of the appreciation of the city's hospitality.

After the opening address, President Brown appointed these committees:

Credentials and membership: Messrs. Bradley and Emerson.

Entertainment and banquet—Messrs. Barratt, Prebble and Jack.

Finance: Messrs. Grint, Hancock and Rodwig.

Resolutions: Messrs. Kelley, Miller and E. B. Wait.

Secretary-Treasurer A. W. Forbes, of Stanton, presented as a part of his report a redrafted constitution and by-laws, and this was referred to a committee composed of Messrs. Pratt, Bagstrom and Becker, to con, and report later.

A letter was read from M. D. Young, of the Republican Valley Telephone Co., Franklin, in which he suggested that something should be started to relieve the patrons of the toll tax and the companies of the annoyance of collecting it. He said other industries had secured the repeal of these war taxes, and that if the companies took the initiative they could get rid of something that was unfair to both the companies and the patrons.

C. C. Deering, secretary of the national association, said that matter had been considered by his board, and it had been found that the attitude of the taxing authorities is that if the customer does not protest it is unbecoming for the telephone companies to object.

Warren Pratt thought it unwise to take the initiative in this matter as it may react upon rates, and on his suggestion the matter was referred to the resolutions committee.

An invitation was read from Montreal for the association to hold its next convention in that city. President Brown said he would decline to ask for any expression of opinion in view of the subtle suggestion contained in the invitation that in Montreal individual liberty is not restrained.

In his annual address to the convention President Brown said that during the year an effort had been made to build up the association so that it might be worth more to the telephone men individually and raise their ideals of public service.

"The telephone man is too much inclined to take his business as a matter of course," said Mr. Brown, "and he ought not to be surprised if the public does so, too."

"The public is too much inclined to give importance to wrong numbers, and it seems to me that if they knew more about the efforts of the management to give better service they would be less critical. The average person has little conception of what giving good service means."

He was surprised to find at a legislative committee hearing that even senators had the idea that toll operators were under instructions to rob patrons by refusing to take out time for interrupted connections.

He pointed out that telephone men judge of their service by the scientific average of completed calls, the patron by the one call on which he fails to get proper service.

Mr. Brown said that seven district meetings had been held during the year with a total attendance three times that of the state convention. This work should be enlarged the coming year, and chief operators and linemen invited to take part. Also, the social end ought not to be neglected.

He said that in Indiana some of the group meetings have grown so large that they overshadow the state convention, and he thought that if a success was to be made of the Nebraska association it would be along the lines of enlarging the district meetings.

In introducing Hon. Charles A. Randall, member of the Nebraska State Railway Commission, President Brown said that in spite of the doubts and uncertainties that often beset men in the midst of political campaigns with respect to what candidates may do if elected, he had found that public officers were just as honest and just as desirous of dealing fairly and squarely with him as he had been in dealing with them.

Mr. Randall said that possibly there were some grounds for whatever fore-

bodings may have been held by telephone men during his campaign, but that he desired them to understand that he stood only for the square deal, and that so long as he is in office every citizen and every public utility with which the commission had to deal would be fairly dealt with.

When it came to rate matters, all that he insisted upon was in being shown that increases were justified, and when justification was shown he would be prompt to see that they were granted.

He said that in rate controversies in his



Bruce Brown, Retiring President of the Nebraska Association, Who Presided at the Lincoln Convention.

section he had been on the other side of the table, and that in lieu of other champions he had undertaken to see that the side of the patrons was properly presented.

At the same time, when it was shown that the rates asked for were necessary, he had appeared before a mass meeting called to decide on a general strike of patrons and had advised against it. As a result, but six telephones were taken out.

Mr. Randall said that when he assumed the duties of office he undertook to dissect the entire rate situation, and he presented a set of charts illustrating what he had discovered.

He said it was a revelation to him to find out that at no time had telephone rates kept pace with the ascending scale of commodity prices, and that in fact it was nearly two years before the companies sought the relief that it is now quite evident they should have asked for long before they did.

The criticism he had to make of the companies was that they waited as long as they did. It was a mistake. They should have asked for higher rates at a time when producers and business men were getting bigger prices than ever be-

fore, and when there would have been no protests.

He illustrated by one of his charts the sharpness of the deflation that had occurred in the state's principal industry, agriculture, and said that in part telephone rate increases were asked for at a time when the farmers and the business men who depend upon them for prosperity were being pinched.

The commissioner declared that if the people could see these charts they would understand how unfair had been their criticisms, and that they would not be damning the commission for doing its plain duty in the face of the facts and criticising the company for asking for higher rates in recent months.

Mr. Randall was pointed and caustic in his criticism of the governor's attitude towards commission appropriations, which he has cut almost in two.

He said that the commission is better equipped with engineers and experts to protect the people from excessive utility rates than any other department of the state government, and he believed that if the people understood that the power that controls its appropriations was seeking to deprive them of that protection they would rise up and demand a change of policy.

He thought it strange, indeed, that a man elected to high public office would be guided in his attitude by prejudice, that he would take occasion to reflect upon men who are doing their duty by all and that he would even refuse to listen to statements of facts about the work of the commission or to look into what it had been doing and was equipped to do.

Mr. Randall thought the telephone business a hazardous one at best, subject as it is not only to the criticisms of the patrons but to the severity of the elements.

On one of his charts he showed how slow and gradual had been the price recession following the Civil War and how sharp following the World War, and it was this latter fact that brought upon the telephone companies that did not move fast enough all of their rate troubles.

On the other chart he showed how commodity prices had gone from the 100 level of 1914 to 260 in 1920, back to 153 later in 1920, and in July last stood at 160.

Telephone rates did not begin to go up till 1916, the Lincoln company going to 129 in 1920 and remaining there. The Bell was the lowest for a time, until 1920, and now stands at 137½. The Independents were better off in 1918 than the others, but were the lowest in 1919 at 110; in 1920 they rose to 115, and now stand at 125.

He said, in closing, that the commission will not harass the companies, but will protect them and the people until the country gets back to normal and in the

readjustment everybody will be satisfied.

Eben D. Warner, of the Platte Valley company, talked on "Financing Problems." He said that in his earlier experience he had the good fortune to have a partner with a long pocketbook, and that



W. W. Johnson, of Kearney, Led a Discussion on Radio in Relation to the Telephone Industry.

all he had to do was to show improvements would pay in order to get the cash.

When he took over the Platte Valley in 1919, he found the company had not taken care of its needs, especially in the copper toll line circuits.

He embarked on a program of rebuilding and extension that called for the expenditure of \$220,000. In the midst of this, when he needed \$75,000, the financial pinch came, but he was able to borrow money and later to float a bond issue because he could show men with money that the company had been on a paying basis, paying regular dividends and had taken care of its depreciation reserve.

Mr. Warner said his experiences had proved conclusively that if a company could show that its public relations were favorable, that it had good financial history, and that the property was there and in place, financing was always possible. Show you are on a sound basis and the money will be available for your financing, was his theory.

President Brown said it was a disgrace to the telephone industry that so many companies ended the year in the red. He felt it to be a reflection on the business as a whole.

"The public needs the companies, and will pay if we can show them we are running on a business basis," he stated.

He emphasized the importance of proper public relations and the value of selling securities to home people.

W. W. Johnson, of the Kearney company, led in a discussion of the relation

of radio to the industry. He gave a humorous account of his early experiences with it. He said he believes radio has come to stay and that in time it will become a necessary modern convenience. The manufacturers are anxious to pioneer in this matter.

He thought it possible to put in a receiving set at the central office and furnish service to patrons, but as radio now occupies the same position as did the telephone business in its infancy it might be as difficult to sell patrons radio service as it was then to sell telephone service. This could not be entirely satisfactory until cross-talk is eliminated and real service given.

Mark T. Caster, plant superintendent of the Lincoln company, opened the second day's session with a paper on "Maintenance of Cable," which he illustrated with blue prints and also with the aid of a board upon which he had fastened samples of about everything that has ever happened to cables in place.

These showed sheathings with trolley burns, rat bites, knife cuts, shotgun holes, fire, rubbings of tree limbs, bullet hole, ring burn, squirrel bite, crystallization, ring cut, lightning, crack, shot in two, spur hole, wire cut and moisture.

He described the various methods of testing, the use of sets and fault finders, the handling of paraffin, and a wealth of practice details that held the interest of the audience to the close.

Following Mr. Caster's talk a number of telephone managers expressed their emphatic approval of what he had said.

Mr. Caster said that cable investments

now represent about 25 per cent of the total in the distribution systems of the country. Like war, prevention is cheaper than cure. Lead had been chosen as sheathing because of its low cost and its pliability, and alloys with tin and antimony now give it greater resisting powers against crystallization, vibration, bending and pressure.

The speaker said his experience was that 90 per cent of the cable troubles can be avoided by frequent and proper inspection—aerials at least twice a year, and conduits once in two years.

J. W. Richmond, of the Cuming County Independent Telephone Co., Wisner, discussed "Underground Cables," and declared his experience very discouraging.

Just out of Wisner are two miles of soft ground where spring rains made it impossible to maintain pole lines. Laying the cables three feet underground appeared to be the best solution of the problem, and it was done. The big mistake was in not making a soil analysis in advance. This was in 1918.

In 1920 it became necessary to do some rebuilding at the Beemer exchange. The cable was wrapped in tar paper and he had congratulated himself on doing a good job at 6½ cents a foot, excluding materials.

Not long after that the cable out of Wisner started giving trouble. Investigation revealed that the ammonia acid from the barnyard of a big stockman had drained into the trenches and mixed with the alkali of the soil. Result was about 3,000 feet of cable eaten up. He relaid this, and plans to try asphalt as a cover.

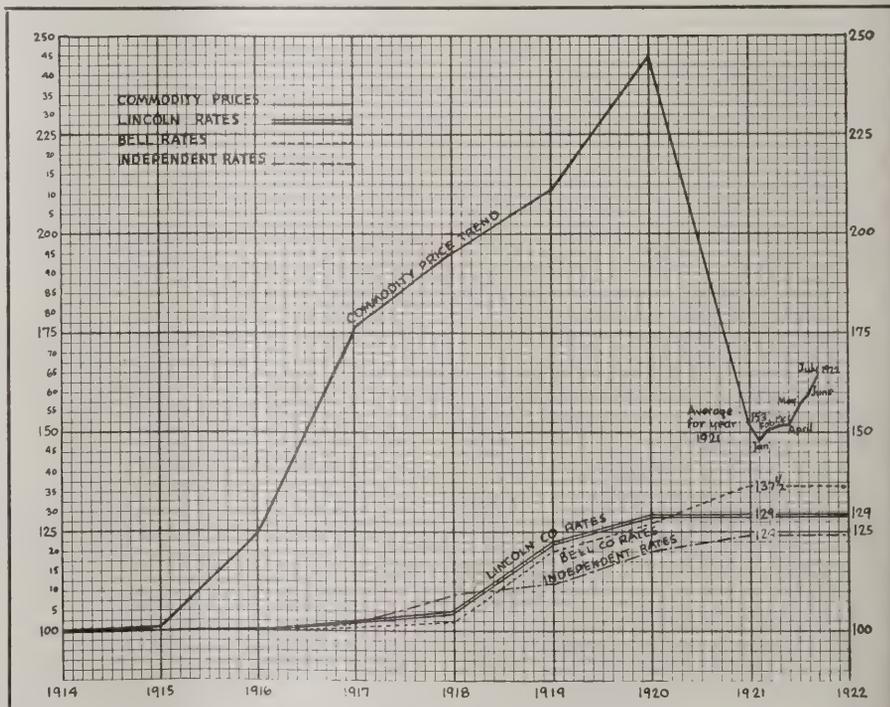


Chart Prepared by Accounting Department of Nebraska Commission Showing How Telephone Rates in Nebraska Have Not Kept Pace with General Commodity Prices. At Present, the Bell Company with 37½ Per Cent, the Lincoln Company with 29 and Others with 25 Per Cent Increases, Do Not Represent Prevailing Commodity Price Increases.

Since then he has been elected a member of the board of county supervisors, and there isn't any ditch there now.

At Beemer a lack of mechanical knowledge on the part of the operators of the local electric plant caused grounds that made it necessary to dig up a large part of the buried cable there and replace it with aerial.

Mr. Richmond advised the small town companies to use aerial even though it costs a little more.

At the afternoon session Mr. Caster introduced A. J. Cole of the Platte Valley Power Co. Mr. Caster said that only a small percentage of the men, both in the telephone and in the power line companies, had any conception of the power and danger from the heavy voltage lines when handled.

The rapid development of the power business, he stated, resulted in hundreds of miles of pole line construction which inevitably had to be built on territory occupied by telephone lines.

In order to avoid constant litigation and trouble a joint committee was organized, known as the Nebraska joint committee on physical relations between electric supply and signal lines. He said Mr. Cole would speak on the results attained.

Mr. Cole said it was early evident that the many problems arising out of this new construction would result in litigation or at least complaints and hearings before the state railway commission unless a better way could be found. It had been found, he declared, in the creation of this committee, on which all lines are represented.

"It acts as jury," said Mr. Cole, "and the parties have accepted, in all disputes, its findings. This committee system makes it easier for the telephone man because he can say to his board that what was decided upon was not his idea but the verdict of a jury of experts.

"Speedy decisions are made by the committee, and it removes the possibility of the injustice possible if the railway commission were appealed to and it applied the law, which does not meet all emergencies."

H. T. Dobbins, associate editor of the Nebraska State Journal, discussed "What Is News" and its application to the telephone industry. He defined what is news in the technical sense, how it is gathered, what it consists of.

He told the telephone men that his observation was that although through this avenue they could solve many of its problems of proper public relations, they had not availed themselves of it.

The speaker pointed out that the average weekly newspaper editor is just as anxious to get the news of the telephone company as the company ought to be to see that it was given publicity.

He pointed out the various ways in which the telephone managers could cooperate with the local news-gatherers. He

said that the newspaper offices are flooded with press-agent stuff, and emphasized that what they should furnish their local newspapers was real news and not propaganda.

He outlined the happenings in the telephone business that constitute news and



Mark T. Caster, Plant Superintendent of the Lincoln Company, Gave An Extremely Interesting Discussion of Cable Maintenance.

suggested various subjects for time and human interest stories.

This led President Brown to inquire how many of those present read TELEPHONY regularly. So many hands were up-thrust that he said it would be easier to find out how many do not take it. Two hands went up.

"Well, my advice to you," he said, "is to subscribe for it right away. No telephone man can afford to do without it. Many of the single articles in it are worth more to you than a year's subscription. You are welcome in its columns as contributors as well."

Dan H. Dunham, in charge of the safety first and accident prevention work of the Northwestern Bell, staged a demonstration of the training given to its workers in taking care of injured men until medical aid could reach them, showing what not to do as well as what to do.

He told how to stop arterial bleeding, treatment of infections, handling of men who had been knocked breathless by electric contact and other first aid treatments.

The convention discussed and went on record in opposition to H. R. 598, before the legislature, which requires the state railway commission to make maximum rates only for public utilities.

It was pointed out that this would practically end the usefulness of the commission, as if any utility cut below it, this could be used to argue the uselessness of the commission.

Former Commissioner Wilson pointed out that this could easily result in discriminatory conditions—the making of one rate for one man and another rate for another, so long as the maximum was not exceeded.

It also defeats the court's holding that in making rates the commission should take into account the recent experience of the company, and if this showed a deficit rates would have to be raised.

Warren Pratt said it was a most dangerous bill, and would prove a source of many disturbances.

The convention also recorded its opposition to S. F. 263, which cuts toll message rates for five-minute conversations to 4/10 of a cent for each air mile, with a limit of \$1.25 for the state.

The discussion of the bill to repeal the Shipley law was carried over to Thursday's session.

Wednesday evening the convention was the guest of the Lincoln Telephone & Telegraph Co. at a banquet. Music was furnished by employes of the company, with Milton Barratt in charge as stuntmaster.

Discussion of Toll Law.

When the motion was brought up recommending the passage of the bill which would repeal the present law regarding the division of tolls, Mr. Brown said that he believed the law should be repealed because the 10 and 15 per cent commission was inadequate in the first place, especially for those companies that had only short hauls, and in the second place every telephone company ought to be free to make whatever contract it could.

It is inequitable, he said, because costs rise and fall and a proper division one year may not be proper the next. He said that as a matter of fact the law was not being generally obeyed, and that many companies were accepting 25 per cent on the originating calls in full settlement—this being due to the modern practice of the single ticket method.

Former Commissioner Wilson was of the opinion that to repeal the law would be to clothe the railway commission with power to fix the proper commission to be paid.

Lloyd Wilson, general commercial superintendent of the Northwestern Bell, said that the present method was not scientific, although that did not necessarily condemn it. Two methods have been in vogue, the flat commission, which results in the inadequate payment of an average of about 3½ and 4 cents a message, and the flat message, which was inequitable because it resulted in 18 per cent. returns on long hauls and 48 per cent. on short hauls.

The Bell company believes in properly compensating the connecting company, he said, because it does not believe that the exchange should be burdened by the toll business any more than the toll business should be burdened with exchange costs.

(Continued to page 22.)

Big Money for Telephone Expansion

Louisville (Ky.) Home Telephone & Telegraph Co. Will Spend \$1,500,000 for New Buildings, Switchboards and Equipment—Demands for More Telephone Service Require Enlargement of Plants All Over America and the World

The constantly increasing demand for additional telephone service is compelling service companies all over the United States to plan for plant extensions and adequate facilities to care for the growing business.

Many Additions to Be Made to Plant in Louisville, Ky.

Additional improvements to equipment of the Louisville Home Telephone Co., of Louisville, that will involve an expenditure of \$1,500,000 were announced recently by Philip S. Pogue, president.

The new projects include erection of a central office building and exchange, the construction of which will entail an outlay of \$750,000, and the installation of a new switchboard at a cost of \$500,000.

Another telephone exchange will be erected to care for the southward growth of the city.

Mr. Pogue said that the Crescent and Parkway offices of the company would be abandoned on completion of the new Magnolia station and the addition to the Shawnee exchange.

A switchboard costing \$105,000 is to be installed in the Magnolia station, capable of caring for 3,000 lines, with a maximum capacity of 5,000. With the completion of the present improvements under way, expected by May, the total number of lines that will be in service will be 22,000.

Work on the new central office and board will not be attempted until the present improvements are completed.

Indiana Company Expanding.

As soon as the Indiana Public Service Commission approves the stock and bond issues authorized by the Home Telephone & Telegraph Co. of Fort Wayne, work will begin on the extensive improvements planned by General Manager Bohn.

The new financing will provide over \$1,600,000 for the extensions and replacements in view, and the work will enable the Fort Wayne company to satisfy the requirements of the public for a wider and better telephone service.

Improving business in general lines has added to the need for more telephones all over the country, and the year 1923 will see great activity among the operating companies furnishing service.

Ohio Company Improves Efficiency via Construction Method.

The Mt. Vernon Telephone Co., of Mt. Vernon, Ohio, is making a considerable change on its toll boards in order to increase the efficiency of its long distance service.

This improvement is just one of a series that will be made in the near future, it being the plan of the company to give all the exchanges copper toll circuits and make other improvements as soon as possible.

Manager Frank Van Voorhis states that the company is proud of its service lines between Mt. Vernon and Fredericktown. It has recently completed the installation of a copper circuit between the two towns, and has finished trimming all trees and freeing the wires of all kinds of overhanging incumbrances, thus practically freeing the lines of any transmission losses.

During the month of January the toll board at Mt. Vernon handled over 4,248 messages, and of this number 3,930 were completed to the satisfaction of the customer. This meant that the company satisfactorily completed 92.5 per cent. of its outgoing business.

The office handles around 5,000 outgoing messages every month.

New Owners of Ohio Company Start Improving the Plant.

With two carloads of poles, 500 cross-arms and a supply of pole line hardware, the United Farmers Telephone Co., of Westminster, Ohio, has joined the telephone construction workers.

The company was recently taken over by R. T. Means and F. W. Bechdolt, of the Auglaize Telephone Co., Wapakoneta, Ohio, who have purchased all of the stock of the Westminster company.

It is the aim of these men to have one of the best plants in their territory and they are going about it in a manner that should produce a first class telephone system.

Big Building Program Planned for California During 1923.

Some idea of the growth of Los Angeles, Calif., and environs is given by the 1923 building program announced by the Southern California Telephone & Telegraph Co., the plans of which necessitate an expenditure of \$14,000,000.

The entire system of the company is being perfected according to a schedule which also embraces erection of five new major structures, three of which will be of the steel and concrete order throughout.

Elaborate plans for improving office equipment and service facilities go to make up the balance of the improvement program. Of these the Hollywood station, with an approximate figure of \$2,000,000, tops the list, so far as expenditure is concerned.

The tremendous demand made by the

present system and the natural growth, which reached the highest figure in the history of the company in the fiscal month ending January 20, promises an increase of 40 per cent over the 1922 mark, according to estimates in the company's office.

A total of 5,800 orders for new telephones were registered during January.

Hold Up Telephone Building as a Model of Fire Protection.

The Kansas City Telephone Co.'s main building in Kansas City, Mo., is better equipped to protect its occupants against fire than any other building in the city, according to a statement by Alex Henderson, fire chief.

The building is provided with two concrete fire shafts, one in the center of the building and the other in the west wing. These are entered from the steel balconies at each floor on the outside of the building. Each shaft is provided with a 5-foot concrete stairway, steel reinforced. There are "panic" doors and many other protective features which the fire department commends.

The building is 14 stories high and is normally occupied by five hundred persons.

Work Progressing on Chicago-Boston A. T. & T. Cable.

Work on the new Boston-Chicago cable of the American Telephone & Telegraph Co. is expected to be completed as far as Cuyahoga Falls, Ohio, by May 5, it was announced a few weeks ago by officials of the company. The cable is to be 1,150 miles in length.

The line—which is being constructed at a cost of \$200,000 a mile—has been completed and is in operation as far as New Castle. The route from New Castle takes it aerially over a new pole line being constructed from New Castle to Cuyahoga Falls via Youngstown and Ravenna. In certain sections of the cities it passes through it will be routed through existing cables.

The line from Pittsburgh to Youngstown, now about completed, will cost \$125,000,000. Repeater stations, to improve efficiency of the circuit, are built every 50 miles. One of these is located at Cuyahoga Falls.

Report Texas Toll Line Co. Controls Four Large Companies.

Under the caption, "Texas Toll Line Company Buys Eight Exchanges," the Dallas (Tex.) *News* of February 8 published the following item as having been

received from its Waco correspondent on February 7:

"On his return to Waco from Sherman, J. B. Earle, president of the Texas Toll Line Co., announced that he and his associates had secured the controlling interest in four North Texas Independent telephone companies, which include eight exchanges. Mr. Earle declined to give the consideration for the properties, which will be continued, he said, as separate corporations.

"The companies of which Mr. Earle and his associates are the controlling factors are: The Grayson County Telephone Co., Sherman and Howe; the Peoples Home Telephone Co., Denton; the North Texas Telephone Co., with exchanges in Whitesboro, Collinsville, Tioga and Pilot Point; and the Bonham Telephone Co."

Two Groups of A. I. E. E. 1,000 Miles Apart Hold Joint Meeting.

A novelty in meetings was staged by the American Institute of Engineers on February 14 when it held a joint meeting of two bodies 1,000 miles apart, presided over simultaneously by an officer, addressed by the same speakers, and followed by a common discussion. The session marked the close of the first day of the mid-winter convention.

A loud-speaker enabled the two gatherings to listen to the same program—part of it being presented in Chicago and the rest in New York. Then followed a general discussion in which Chicagoans made remarks on papers read in New York and New Yorkers returned the compliment to the westerners. A small, sensitive transmitter was located on the speaker's desk for the return talks.

Several thousand others heard the discussion, as the amplifiers were attached to a local radio station, which broadcast the speeches.

The New York meeting was called at 8:30 p. m., while that in Chicago began at 7:30.

Monday to Be "Silent Night" in Chicago Radio.

Local representatives of Chicago broadcasting stations held a meeting Feb. 20 at which it was decided, beginning Feb. 29, to make Monday a silent night, so far as the Chicago program is concerned.

In agreeing to close the stations so that fans may listen in on programs broadcast from distant cities, Chicago broadcasters asserted that the silent night was to be regarded purely as an experiment.

In agreeing to the proposal, C. W. Horn of Pittsburgh, Pa., superintendent of broadcasting for the Westinghouse Manufacturing & Electric Co., pointed out several of the objectionable features to the silent night so far as Chicago is concerned.

"Chicago is one of the two cities where

SMILIN' THROUGH

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Do you realize, girls, that it requires fourteen muscles to frown and only four to smile? Have you been working your face overtime?

The law in many states forbids women to work over eight hours a day. I worked in one of those states recently.

I met an operator there who reported for duty frowning, frowned all day at every little thing, and went home frowning. Had she also drawn a salary for her poor, overworked face, she could have retired in a year, I do believe. But she did not draw one single cent for that face service and it took dollars' worth of massage cream to soothe those tired muscles.

Poor, mistaken Lucinda Cutter. She worked the toll board at Harmony. What a joke that town Harmony was to the operators in neighboring exchanges!

As soon as she landed in her chair, there was a bang-fizz-bang. No wonder none of the other operators wanted to learn long distance, when all they heard was her one-sided quarreling.

"Well, don't ring in my ear!"

"Well, don't bite my head off. I told you 'No!'"

"Why don't you answer me?"

"Quit your ringing on a busy line!"

Lucinda punctuated her work with such remarks as the foregoing.

"I'm all shot to pieces," she wailed in the rest room, one day. "This work is killing me. I'm going to see Doctor Nerves. I know he will say it's the work."

She went. Doctor Nerves recommended a complete rest. As he could not very well advise her to rest her face, and charge her two dollars a call—there were six of them—he just recommended a *complete rest*. Well, she and her face took a trip—more useless expense.

Poor Lucinda Cutter!

the best of talent is obtainable for radio programs," said Mr. Horn. "People throughout the middle west depend on Chicago for their entertainment. To close down one evening a week would be depriving them of entertainment. I venture to say 99 per cent of the people who want the silent night care only about hearing the call letters of the distant stations and are not interested in the program. That is not in the best interests of radio."

It was also agreed to by the representatives of the stations that in event some exceptionally prominent person should be in Chicago and available for broadcasting on that night only, that E. A. Beane, United States radio inspector, would serve as arbitrator to determine whether or not the silent night should be interrupted.

Chinese Telephone Service Confined Mainly to Cities.

Telephone service in China is confined almost exclusively to the principal cities. With the exception of a few short and scattered toll lines, there are practically no facilities for telephone intercommunication, so that the telephone exchanges in the cities are independent of each other.

As regards ownership and operation, there are four distinct classes of ex-

changes in the country: (1) those owned by the central government at Peking; (2) those owned by the provincial governments; (3) those owned by private Chinese merchants; and (4) those owned by foreigners.

Most of the systems are quite small, using a type of equipment that is considered altogether obsolete in other countries.

The telephone system at Shanghai, however, is a rather striking exception. It is owned and operated by a private company, and its equipment and operating methods compare very favorably with the latest standards. It has about 13,000 telephones, which is about 20 per cent of all the telephones in China.

Bristol, Tenn.-Va., Is Going After Automatic Service.

The chamber of commerce of Bristol, Tenn.-Va., backed by various organizations and business men, is investigating the manner in which other cities are taking automatic installations.

Letters have been received by the chamber of commerce from Tampa, Fla.; Lincoln, Neb.; and Ithaca, N. Y., which indicate that the system has been very successful in those places, and the Bristol men are studying the matter carefully.

Ohio Ass'n. Makes Important Changes

Independent Convention at Columbus Elects Frank A. Knapp President—
F. L. Beam Retires After Twenty Years' Continuous Service in State Organization Work—Buckeye Telephone Men Hold Successful Three-Day Meeting

Ohio Independent telephone men always have an interesting time at their yearly conventions, and the twenty-eighth annual meeting of the Ohio Independent Telephone Association, which was held at Columbus February 20-21-22, was no exception. In fact, the 1923 convention presented features that had never before marked any of its predecessors.

Chief of the novel developments was the retirement by Frank L. Beam, of Mt. Vernon, from active participation in the affairs of the Ohio association. For 20 years Mr. Beam has been the leader of organized Independent telephony in the Buckeye state, and in his presidential address to the convention he announced his decision to withdraw. Division on the board of directors has developed during the past year, and Mr. Beam, referring to the discord, made clear to the convention that he would not allow the use of his name for reelection or even be considered for a directorship. His retirement was regretted by all who know of his valuable service to the telephone industry in Ohio, and a suitable resolution, offered by Washington Hyde, of Warren, was unanimously adopted by the convention expressing deep appreciation of his efforts in behalf of the organization.

Frank A. Knapp, of Bellevue, who succeeds Mr. Beam as president of the Ohio association, also has long been a prominent figure in the Independent field, both state and national. He controls several of the largest and most successful Independent properties in Ohio, and is recognized as having unusual force and ability.

The other officers elected were Conrad Kipp, Greenville, vice-president, and Frank L. McKinney, Columbus, secretary-treasurer. The executive committee consists of the three officers named and G. P. Thorpe, Wilmington, and C. L. Jones, Athens.

The board of directors elected for 1923 includes W. L. Cary, Newark; A. J. Curran, Elyria; Harry Graham, Cygnet; C. L. Jones, Athens; Conrad Kipp, Greenville; Frank A. Knapp, Bellevue; Earl Lutz, Circleville; Frank L. McKinney, Columbus; E. G. Miller, Warren; W. A. Norton, Kenton; George Quatman, Sidney; J. Warren Safford, Troy; Fred L. Sears, Cambridge; Harry Sotzen, Shelby; G. P. Thorpe, Wilmington.

There was a large attendance Tuesday afternoon, February 20, at the New Southern Hotel when the first session was called to order. An address of welcome was delivered by James J. Thomas, mayor of Columbus, who said many complimentary

things about the visiting telephone men, in token of the importance of the service they render the public in this age.

Charles Cary, of Millersburg, responded on behalf of the association in a happy vein, after which the business of the convention was taken up.

In his annual report—which was his valedictory—President Beam gave an interesting review of the history of the



F. L. Beam, of Mt. Vernon, Who Retired After 20 Years' Service as President of the Ohio Association.

association, containing much instructive information concerning Ohio telephone affairs.

His report follows:

"This convention marks the twenty-eighth annual meeting of this association, and also marks the end of the twentieth year I have served as your president. At this point I wish to emphasize that our accomplishments have been, first and last, the result of the untiring efforts and close coöperation on the part of every man engaged in the Independent telephone business throughout the various districts of the state, with the directors and officers of this association. It has been the willingness on the part of you men to promptly respond to every call of necessity for the general good of the association, without hope of immediate personal reward, that has made possible results attained which have benefited every subscriber, stockholder and Independent company throughout the state.

"This coöperation and unity of purpose has existed throughout the entire per-

sonnel of this association, through all of the members, board of directors and officers up until a very recent time. However, I now regret to learn, and feel the necessity of frankly advising you, that there has been a division of support and opinion within our present board; and I therefore wish to make it clear that even if offered, I am not a candidate for further office or directorship of this association.

In closing a service of 20 years, I feel that it is not only proper but well advised in terminating my service, to include in my final report to you, in as brief a way as possible, a short history of this association and some of its major accomplishments. I shall endeavor to handle these subjects in a chronological way as far as possible. I feel that a brief survey will not only be of interest, but serve as authentic record of the purposes, results, activities and accomplishments of this association from its beginning down to the present time.

History of Association.

The Ohio Independent Telephone Association was organized in Columbus, Ohio, at the Chittenden Hotel, April 29, 1895, and our organization came into existence almost simultaneously with the launching of the Independent telephone movement in this state.

The men who organized this association were drawn together for the purpose of protecting the interests and the properties that they represented, to study the practical questions of operation and plant building and to combat a competitive situation which daily threatened their existence.

The Independent telephone business was in its very infancy, and the most common details as we now know them were matters of gravest importance. In short, these pioneer telephone men at the very outset realized *first*, the possibilities of the business, *second*, the necessity of the development of their local territory, and *third*, the development of the entire state; this was the forerunner of the long distance service.

Shortly after the organization of the Ohio Independent Telephone Association, and with the completion of the Independent exchanges in many counties of the state, the necessity of long distance lines and a service which should also be in its nature Independent, was readily recognized. This necessity led to the organization of the United States Long Distance Telephone Company, and most of the larger trunk lines of this long distance company were built and in operation prior to 1900.

This brought a stimulus in the development of Independent telephony over the entire state and a reassurance to companies already organized and operating, who at the time of their organization possibly did not appreciate the necessity of an Independent long distance company for their own self-preservation.

Independents' Rapid Growth.

The rapid development of the Independent telephone movement in Ohio is concretely shown by the fact that in 1895 the state of Ohio, with a population of more than four million people, had less than 30,000 telephones in service, and about one-half of the 88 counties of the state were without any kind of telephone exchange, and quite a number were even without a toll station or connection.

In 1905, after 10 years of Independent telephone development in the state, there were over 200,000 Independent telephones in Ohio operated by about 300 Independent companies.

Our statistics of 1910 show that after the first 15 years there were more than 325,000 Independent telephones in service in the state of Ohio on that date, a public service shared in and offered to the public by over 30,000 stockholders in approximately 600 different companies with an actual investment of over \$30,000,000, furnishing the highest class telephone service to practically every county in the state.

During this period of most rapid development as described above, it was found essential to prevent conflicts and the development of overlapping territories between the Independent companies by providing for the very closest coöperation between all Independent companies of the state. In June, 1904, this problem was successfully worked out by revamping our organization and dividing the state into nine districts, each having a vice-president and secretary, with an executive committee composed of representatives from each county in the district.

The plan of carrying the problems into each section of the state by means of district meetings was inaugurated a little later and helped keep your association and its entire membership alive to the interests of all sections of the state.

Good and Bad Times.

There has been a continual effort on the part of your officers and directors to make a careful study of business conditions, to meet our problems in advance, and to try to anticipate conditions before they arrive; and, before directing your attention to some topics which will follow, it is of interest to recall that the years of 1907-1908 brought a period of general business depression which almost amounted to a financial panic in this country. This was of short duration and the recovery to normal business conditions came about promptly. The five-year pe-

riod from 1910 until practically the opening of 1915, while not a panic, nevertheless was a period of rather sluggish business condition in this country.

From 1914, the beginning of the world war, to the year 1920, there existed a period of great business activity in this country. The years 1920 and 1921 marked again a cycle of depression. It is of interest to note that through these periods there has been a continual growth in the telephone business in this state. The value of its securities have not been touched by the marked fluctuations affecting industrial and other stocks.

Rate Question Serious.

It was in the year 1909 that the question of rates became a serious matter for the first time, and this was because the



Frank A. Knapp, of Bellevue, New President of the Buckeye Independents, is Widely Known in the Telephone Field.

Independent companies sought to start business upon insufficient information as to the cost of furnishing service.

Since that time the matter of proper accounting methods, separation of costs, which lead to the determination and fixing of fair and adequate rates for the class and kind of service rendered, has continually been a subject for discussion and consideration at our district meetings. The value of this association to its members on this one matter cannot be overestimated.

It has been firmly established that the law of supply and demand which controls the price of commodities in general has little or no effect upon the rates charged by utilities. Further, the telephone business must be content with only an average rate in the days of best business, and must be prepared to serve at all times even in the periods of panics and business depression.

This association has constantly been on

guard to protect the interests of its members and the telephone business in general from adverse legislation. During the period of rapid development preceding the year 1910 there seemed to come as a natural sequence of this development a theory on the part of the legislature that as the telephone business was rapidly growing in the state of Ohio, some sort of legislation should be passed controlling the various phases of its activities.

The unfairness of most of these early and numerous bills was because they were offered by individuals or interests not having a full grasp of the telephone business, and were usually drawn to cover only one particular feature of our business and leaving out of consideration the subject as a whole. Therefore, the early efforts of this association in connection with legislative matters was to prevent the passage of such individual bills as could not have been otherwise than detrimental, not only to the telephone business itself but to the public at large.

However, pressure became so strong that this association took an active part in the drafting and passage of the public utility law of Ohio which became an operative law on July 1, 1911. It is a source of satisfaction that this law stands intact as a statute today as originally written, with the exception of a few minor amendments.

It is a well recognized fact that the operation of telephone companies in Ohio under our public utility law has proven not only satisfactory from the operating companies' standpoint, but further, at a recent public hearing on a bill to do away with the public utilities commission not a single person appeared in behalf of the bill, which illustrates that the public is also well satisfied with its working.

In connection with other legislative matters and orders affecting the operation of our business, reference should be made to the law which was passed in 1921 placing within the jurisdiction of the public utility commission the regulation of high tension lines.

You will recall that the first war order vitally affecting the Independent telephone interests of Ohio came from the office of the Ohio state fire marshal, which as a conservation measure ordered the installation of protectors on all classes of telephones. Through coöperation this order was modified so that it eventually covered fifteen classes of essential war industries, thereby meeting the full requirements of the state fire marshal and only placing on the telephone companies a minimum amount of labor and expense.

Government Wire Control.

One of the most trying situations with which the telephone men of this state have been confronted came as one of the problems of the war. Politicians had long been urging the necessity of government ownership of utilities and the war came

(Continued to page 33.)

Chicago Telephone Rate Case Resumed

Objections Made to Depreciation and $4\frac{1}{2}$ Per Cent Contract by City Witness—Opinion Given That Charge of \$2.55 Per Station Should Be Reduced to 80 Cents—Bell Operating Costs Compared to Those at La Crosse, Wis.

The hearing by the Illinois Commerce Commission of the case brought by the city of Chicago against the Illinois Bell Telephone Company, objecting to Chicago exchange rates, was resumed on February 28.

Since the last report, evidence has been heard on the subjects of depreciation and the $4\frac{1}{2}$ per cent. contract.

According to W. H. Crumb, city engineer, the payments under this contract by the Chicago exchange have amounted to \$2.55 per telephone station. He told the commission that the charge should not run over 80 cents per telephone.

Operating Costs.

On operating costs, Mr. Crumb testified that for the five-year period 1907 to 1911 the average cost of adding stations to the Chicago exchange was \$83.89; for the period 1912 to 1916, the average cost was \$117.82, and for the period 1917 to 1921, it was \$197.85.

He stated that this great increase in cost could not be accounted for by the increase in the cost of labor and material.

Had the increased cost of labor and material been the only causes, then the stations added during the 1912 to 1916 period would have been about \$90.35 instead of \$117.82, and in the 1917 to 1921 period the average cost of adding stations would have probably been about \$138.12 instead of \$197.85.

The balance of the increase in cost, he stated, must have been due to a change in the policy of the management of the company.

He criticized the management for extravagantly increasing the fixed capital account, thereby increasing the amount necessary to be charged in rates to yield a return upon fixed capital investment.

Mr. Crumb had previously testified with regard to the operating efficiency in the Chicago exchange and was cross-examined by W. D. Bangs, general counsel for the Bell, upon the methods which he claimed would increase the operators' efficiency, which had declined about 18 per cent. in 1921 as compared with 1915.

Improvements Suggested.

The switchboard improvements suggested consisted of multiple appearance of answering jacks and line lamps upon the "A" board and straight forward trunking of calls from A operators to B operators and line lamp recall signals.

The witness stated that with better equipment, the operators would be able to handle more calls per traffic employe hour than at present and thereby decrease the traffic expense, which is now running

in the neighborhood of \$1.60 per station per month.

The basis for the conclusion that these improvements in the switchboard would result in economies of operation was the results which have been obtained at La-Crosse, Wis., where these improved methods have been installed with the exception of straight forward trunking, which he stated, was not at present in use in any place that he knew of.

He stated, however, that straight forward trunking was made up of essential features which had been used by operating telephone companies for years, and that he had full confidence that these features could be practically combined and made a part of the Chicago exchange system with great economy in traffic costs.

Depreciation Charges.

Mr. Crumb also testified at length with regard to the principles underlying depreciation charges and their application to the situation in Chicago.

He made a distinction between the exchange value of money which a stockholder in a public utility company invests and the property which is purchased with that money by the company and placed in the service of the public.

It is his contention that when invested money is exchanged for the property the value with which the investor is concerned is no longer exchange value, but the service value of the property which is devoted to the public service.

So long as this service value of the property through repairs and replacements is maintained in its maximum economic service condition, he said, it does not depreciate, and if it is permanently maintained in 100 per cent service condition, then the stockholders' investment is permanently worth 100 per cent because the property which represents that investment is at all times in a condition to earn, in addition to necessary operating expenses, a reasonable return upon the investment.

It is the duty of rate regulating bodies to see that rates are sufficient to produce enough revenue to pay all necessary operating expenses and provide enough to make all necessary repairs and replacements to permanently maintain this 100 per cent service condition, and in addition yield a fair return to the investor.

When rates sufficient to do this have been provided, the duty of the rate regulating body and the rate payer is fulfilled.

With sufficient rates to enable it to do so, it is the duty of the company to permanently maintain its plant in 100 per cent

service condition, and if it fails to do so, the fault is its own and the rate payer cannot be penalized for this failure.

Mr. Crumb showed, by exhibits, that the depreciation reserve of the company for its Chicago exchange had increased from \$1,500,000 in 1908 to over \$23,000,000 at the close of 1921.

This large balance in the depreciation reserve account has been built up through charges to depreciation ranging between 5 and 6 per cent during most of these years, whereas, he testified, during this period, a charge of $2\frac{1}{2}$ per cent to depreciation would have provided sufficient funds to have made all of the replacements to plant, which were made during that period and still have increased the balance in the reserve from \$1,500,000 at the beginning of 1908 to over \$4,300,000 at the close of 1921.

In other words, the depreciation charge of $2\frac{1}{2}$ per cent during these years would have provided \$2,883,000 more than was required to maintain the plant in 100 per cent service condition.

It was his conclusion that the excessive charges to depreciation should be discontinued and that the amounts collected from the rate payers on account of depreciation be used exclusively for the purpose for which they were charged instead of being largely invested in plant as they now are.

The witness stated that if this were done, it would be unnecessary for the company to make further charges to depreciation for a number of years, and on this account the rates charged for service could be considerably reduced without injury to the plant or depreciating the value of the stockholders' investment.

He stated that it is the duty of the company to provide all of the plant which is necessary for the public service and that it was no part of the duty of the rate payer to provide funds for the purchase of any of the plant used in producing such service.

A. T. & T. Contract.

The payment of $4\frac{1}{2}$ per cent of the gross receipts by the Illinois Bell Telephone Co. to the American Telephone & Telegraph Co. was vigorously attacked.

Mr. Crumb stated that the annual report of the A. T. & T. for the year ending December 31, 1921, showed that the company's investment in telephone transmitters, receivers and induction coils as of December 31, 1921, did not exceed \$2.75 per set.

He considered a 15 per cent return upon this investment to be a sufficient charge

for the A. T. & T. company to make to cover all of its costs for furnishing these sets to the Illinois Bell Telephone Co.

An analysis of the annual report of the American Telephone & Telegraph Co. to the Interstate Commerce Commission was made in order to determine the fair cost of the general services which are furnished by the parent Bell company to its associated companies.

Considering these reports, Mr. Crumb testified that, in his opinion, a payment based upon 40 cents per station per year was sufficient to fully compensate the American Telephone & Telegraph Co. for all of the costs of producing these general services.

This, added to 40 cents which he estimated to be a fair cost of furnishing the transmitters, receivers and induction coils, makes 80 cents per station per year which the witness considered a fair compensation to be paid by the Illinois Bell to the A. T. & T. for its Chicago exchange, instead of an amount which is equivalent to \$2.55 per station per year which is now being paid.

Summaries of Reports of Class A Companies for November.

The increase in telephone earnings during November, 1922, was moderately higher than the average rate of increase for the first 11 months of that year, according to a compilation prepared by the Interstate Commerce Commission bureau of statistics.

Total November operating revenues of those companies, the table indicates, were \$51,133,736, an increase over November of 1921 amounting to \$4,944,561. Operating income totaled \$10,550,543, an increase of \$1,087,588.

For the eleven months operating reve-

nues totaled \$538,731,693, an increase of \$44,061,505, while operating income amounted to \$115,044,799, an increase of \$15,848,368.

Safety Campaign of Chesapeake Bell Producing Good Results.

As a result of three years of effort to prevent accidents among its workmen, the Chesapeake & Potomac Telephone Co., in its 1922 safety campaign achieved a record which is looked upon by all industry as quite remarkable.

With the best record yet established, the Richmond Va., division of the company again has been declared winner in the annual accident prevention contest. There were only two accidents among telephone men in the whole state of Virginia during 1922, against 55 in 1919, when the company's safety campaign first got into full swing.

British Telephone Service Improving—Extensions Planned.

Although the government has speeded up the telephone service in England, to almost unbelievable standards it is not yet going to rest from its labors. Big things in the telephone world there are being planned for 1923-4 it being proposed to absorb a large percentage of the present unemployment figures in linking up every town and hamlet in the country by telephone. The plans embrace a country-wide system of automatic telephones, a complete underground system of cables and the linking up with the outside world of every village and farmhouse in the land.

The old year saw the completion of 18 additional underground cables which already has resulted in a vast improvement in the service. These were long dis-

tance cables running from such centers as London out to Manchester, Birmingham and the coastal ports.

Several other long distance cables are in hand, notably from London to Southampton, London to Bristol, London to Brighton, and so on. More than 30 additional underground cable schemes are under contemplation during the financial year 1923-24, and 16 of these, covering a large area, are to be put in hand either this month or next.

The telephone service, although still inadequate and costly, has improved wonderfully since the war. The influx of automatic telephones is to continue. Another 40 automatic exchanges have been approved for future installation by the post office telephone service.

At present there are 16 automatic exchanges working in the country, and controlling a total of 20,000 lines. The post office system now has 3,000 telephone exchanges, the total number of telephone "stations" being more than 1,000,000. Last year there was a net increase of 65,000 "stations."

Nearly 1,700 exchanges serve rural districts. The rural needs of telephones and farmers' lines have been considered. The old year saw the addition of 54 rural exchanges while another 230 exchanges for country districts have now been authorized for installation. Many are now nearing completion.

Where sufficient support could not be obtained to justify new country exchanges, call offices were erected. Around 530 of these call offices were opened in the country districts last year bringing the total number of such call offices in the country to 4,000. Farmers are being offered unlimited telephone service (local) at a rental of \$5 to \$5.62 per quarter.

Item.	For the month of November.				For the eleven months ending November.			
	1922.	1921.	Increase or decrease (*). Amount.	Ratio. Pct.	1922.	1921.	Increase or decrease (*). Amount.	Ratio. Pct.
Number of company stations in service at end of month	10,380,708	9,777,940	602,768	6.0	.....	.....	.....	.....
Revenues:								
Subscribers' station revenues	\$32,647,193	\$30,031,815	\$2,615,378	8.7	\$345,699,403	\$319,199,252	\$26,500,151	8.4
Public pay station revenues	2,252,323	2,071,971	180,352	8.7	23,489,792	22,166,879	1,322,913	6.0
Miscellaneous exchange service revenues	426,898	415,291	11,607	2.8	4,589,436	4,584,275	5,161	0.1
Message tolls	13,446,456	11,621,871	1,824,585	15.7	140,444,149	126,840,119	13,604,030	10.7
Miscellaneous toll line revenues	1,482,046	1,309,747	172,299	13.2	15,435,841	14,235,974	1,199,867	8.4
Sundry miscellaneous revenues	877,739	737,625	140,114	19.0	9,065,452	7,631,432	1,434,020	18.8
Licensee revenue—Cr.	1,902,738	1,717,820	184,918	10.8	19,884,190	18,358,113	1,526,077	8.3
Licensee revenue—Dr.	1,901,657	1,716,965	184,692	10.7	19,876,570	18,345,356	1,530,714	8.3
Telephone operating revenues	\$51,133,736	\$46,189,175	\$4,944,561	10.7	\$538,731,693	\$494,670,188	\$44,061,505	8.9
Expenses:								
Depreciation of plant and equipment	\$ 7,493,066	\$ 6,659,569	\$ 833,497	12.5	\$ 78,691,203	\$ 70,182,372	\$ 8,508,831	12.1
All other maintenance	7,484,699	6,908,146	576,553	8.3	78,846,249	74,257,648	4,588,601	6.2
Traffic expenses	13,720,748	13,204,627	516,121	3.9	148,345,064	145,350,071	2,994,993	2.1
Commercial expenses	4,410,559	4,408,648	1,911	†....	48,624,566	47,216,047	1,408,519	3.0
General and miscellaneous expenses	3,352,621	2,021,888	1,330,733	65.8	25,874,404	22,150,180	3,724,224	16.8
Telephone operating expenses	\$36,461,693	\$33,202,878	\$3,258,815	9.8	\$380,381,486	\$359,156,318	\$21,225,168	5.9
Net telephone operating revenues	\$14,672,043	\$12,986,297	\$1,685,746	13.0	\$158,350,207	\$135,513,870	\$22,836,337	16.9
Other operating revenues	446	3,721	*3,275	*88.1	8,381	43,072	*34,691	*80.5
Other operating expenses	861	2,473	*1,612	*65.2	12,549	28,865	*16,316	*56.5
Uncollectible operating revenues	354,690	224,895	129,795	57.7	2,879,991	1,372,693	1,007,298	53.8
Operating income before deducting taxes	14,316,938	12,762,650	1,554,288	12.2	155,466,048	133,655,384	21,810,664	16.3
Taxes assignable to operations	3,766,395	3,299,695	466,700	14.1	40,421,249	34,458,953	5,962,296	17.3
Operating income	\$10,550,543	\$ 9,462,955	\$1,087,588	11.5	\$115,044,799	\$ 99,196,431	\$15,848,368	16.0
Ratio of expenses to revenues, per cent	71.3	71.9	*0.6	....	70.6	72.6	*2.0	....
†Less than 1/10 of 1 per cent.								

Operating Statistics of Class A Telephone Companies for November, Compiled by Interstate Commerce Commission.

NEBRASKA HOLDS A LIVE- LY CONVENTION.

(Continued from page 15.)

The Bell theory is that a minimum charge should be paid irrespective of the length of the haul, but that the haul should be given some recognition. A 50-mile haul might have to go through several exchanges while a 500-mile message might require only a center checking route.

Believing that there should be some incentive given the exchange in handling collections, report and proper overtime charges, the Bell adopted in Iowa, Minnesota and North Dakota a built-up payment method.

Mr. Wilson stated it pays connecting companies eight cents for each completed outward call and then a quarter of a cent for each 2½ cents as the message value increases. This has been arrived at as the result of complete studies made in connection with other companies. A uniform system is necessary, he declared.

R. E. Mattison, general manager of the Lincoln company, strongly advised against any tampering with the existing law, because of the uncertainty of what the companies might get in its stead.

The telephone men ought to be sure, in advance, of what it is they really want and what is in their interest, Mr. Mattison pointed out. He did not believe that repeal would place the matter in the hands of the railway commission because it relates only to a distribution of expenses and does not deal with rates or charges to the public.

His company's experience had shown him that some of the companies could not prove in on the present commissions. He thought that if a revision of settlements were made, those companies with grounded lines now getting paid on the mileage basis could not uphold the present division, when contrasted with copper circuits carrying it the remainder of the way. He did not believe it wise to seek a repeal of only a part of the law.

Mr. Brown said, in reopening the discussion Thursday morning, that he was sorry that Mr. Mattison had gained the idea that he had been trying to slip something over on him or to cram down the throat of his company something that it did not want.

He said that he had introduced the bill on his own initiative and as a telephone man and not as an association officer. He believed every company should be free to make its own contract with the toll companies.

His disagreement with Mr. Mattison arose out of a misunderstanding, he said, as he had not been aware that the board of directors was to pass on the matter, and he apologized for having brought about the situation. He said the association should either ask for the withdrawal or killing of the bill.

Various efforts were made to get some sort of an instruction, and when Mr. Thompson moved that it be left to a committee of three, W. E. Bell moved that Messrs. Pratt, Kelley and Becker be made the committee. Mr. Thompson insisted this was a slap at the chair. Mr. Bell said it was not so intended, and Chairman Brown said it was satisfactory to him.

The presence of only a handful of members resulted in the decision that the legis-



Warren I. Pratt, of Kearney, Was Re-elected a Director of the Association.

lative committee should handle it in the interests of all the companies.

The nominating committee, under instructions, then presented a duplicate list of names for officers, and the balloting that followed resulted in the election of the officers previously mentioned.

Messrs. Pratt, Bagstrom and Becker were continued as a committee to revise the constitution and bring it up to date. It is to submit its draft to the board of directors, and then it will be submitted at the next state convention for adoption.

The matter of dues was a lively subject for discussion. A motion was made that the annual dues be \$10 with an additional payment of one cent a station.

This was objected to as certain to bar the smaller companies, and it was finally decided to allow the board of directors to make whatever assessment they found necessary to finance the budget for the year.

The finance committee reported a balance of \$300 on hand, but stated that Secretary Forbes had not been paid for his services as legislative representative.

H. M. Davis, who is director of the state committee on public utilities information and also secretary of the Nebraska Electric Light Association, presented to the convention the suggestion that is being made to other utilities in the state that they combine into one association.

He proposed that the forenoon of each convention day be devoted to sectional group meetings, at which each utility may discuss its own problems, and in the afternoon discuss public relations.

"The attitude of the public toward the utilities," said Mr. Davis, "is based on ignorance of what is actually being done to better methods and service.

"It is felt that an association of this kind could better undertake the education, first of the utility men themselves as to the proper attitude toward the public, and, second, the education of the public to a better understanding of utility problems and what is being done to solve them in the public interest, since in that way lies better profits. The power companies have taken the initiative.

Mr. Davis said that nothing of a definite nature had yet been done, but that the state electric light association would take it up at its convention in May, and the gas and street railway companies would come in.

This would mean larger conventions, he declared, and with better finances national figures could be secured to make addresses and it would be possible to print their addresses in pamphlet form.

The telephone convention voted to refer the matter to the board of directors with power to act.

The resolutions committee reported against any pronouncement in favor of repeal of the federal tax on toll calls. The committee thought that as this is a tax paid by the customer, any agitation for repeal should come from him.

The resolutions adopted extended thanks to the city for its welcome, the chamber of commerce for courtesies and to the exhibitors, the Lincoln Telephone & Telegraph Co. and its employes for hospitality and entertainment.

Mrs. J. W. Richmond, of Wisner, pleased the members greatly with a paper on "The Relation of a Telephone Man's Wife to the Business of the Telephone Company." Mrs. Richmond's husband is one of the most active of the association members, manager of the Cuming County Independent Co. and vice-president of the state organization.

Mrs. Richmond said that she was a telephone switchboard operator in a small town when she married her husband, then a troubleman. She continued in that position until he was called to a more responsible position in Wisner.

She said that she felt it was necessary, if they were to make a success of the telephone game, that she take a large part and interest in the work.

She had been asked by a number of friends why she had kept on working extra when there was no pay in it for her.

She said that this was a mistake; there was something in it for her. It is not a question of dollars; it had given her a social standing; it had added to her inter-

est in life, and there was much satisfaction in feeling that she had been a real help to her husband in his business success.

She had worked as an operator, in the collection department, and in the auditing department. She had learned as she went along how to handle people and their complaints, and after she had been out of it for a time she grabbed the first chance she got to get back into it.

After competition had been eliminated she discovered one interesting fact—that the one company left had upon it a heavier obligation than before, because, where under competition a dissatisfied person could go elsewhere, a higher conception of the duty to serve was inculcated.

She had been able to relieve her husband from secretarial duties and given him more time for the important plant work. From the experience she had gained she had been able to help smaller companies in their accounting problems.

Mrs. Richmond said she had felt that public relations could be bettered in a social way if she took an active part in the lighter affairs of the town.

She had found it a very effective way for the telephone manager's wife to make easier the pathway of her husband as a telephone man, and that the patrons, when they come to her know her, made it much easier for her to deal with them in the matter of collections, and easier for the company when it came to a matter of rates.

She believed that the telephone man's wife should take the lead in the matter of maintaining proper public relations. She joined various clubs, and when it came her turn to present a program for the woman's club she had suggested a switchboard demonstration in the theater. The idea was acclaimed.

The Bell company loaned its demonstration board, the employes were thoroughly drilled in their parts, and the result was an intense interest manifested by an overwhelming house and pleased patrons.

Miss Ruth Elizabeth Martin, a toll supervisor from the Lincoln company's exchange, charmed the members with a very cleverly written paper on "Operating Efficiency," which was filled with witty comments and interesting experiences.

Miss Martin pictured the operator in her first hours of employment, and then as a part of the machinery of service. The operating department owes a duty to the commercial department—after the latter has procured the business—to give satisfactory service.

Among the things that people always exaggerate, she said, are the speed of their car, the length of a fish they almost caught and the time they wait for telephone calls.

"A few subscribers," said Miss Martin, "will not make any allowances and will have little patience to wait for adjustments.

"Even the most reasonable of them thinks his dollar is worth a great deal and unless he receives value in service equal to the value in money which he has spent for tolls and rental, he feels that he has realized an actual business loss.

He takes his grievance to the men responsible for persuading him to buy, and the commercial department must then make a second sale under a great handicap or else realize a double loss.

Each instrument installed is so much gain, but each one taken out is more than the same amount of loss. Reports may contain figures showing that the company has sustained a decrease in earnings, but the department knows that the loss of friends is a condition which greatly adds to quoted figures.

As a consequence we operators who help to produce telephone service ought to see how essential our cooperation is."

Miss Martin paid the plant department a tribute for its part in preparing for service, and said that the best plant a company can maintain is useless wood, iron and glass unless operators are capable of being intelligent and obliging.

Chief operators and supervisors must be able to inspire loyalty and to make a closely connected system out of the parts and people who compose their department.

It has been found that girls between 17 and 23 learn more rapidly than those who are older. They are more subject to discipline; they have not yet exhausted



R. E. Mattison, of Lincoln, Association Director, Opposed Bill Which Would Repeal Section of Toll Commission Law.

their nervous energy, and they are better able to endure the strain of operating.

Those with a good appearance are more desirable. With a girl who dresses neatly, the same thing which makes her pin her collar straight will make her more accurate about the company's business.

An invalid, she said, has no place in any business concern, least of all in the employ of a public utility which never dares to close.

A certain amount of schooling is required in order to spell and figure efficiently.

To use correct grammar is even more essential than it would be in talking with a patron face to face for, at best, a telephone conversation must be abbreviated, is sometimes hard to hear, and the most correct phrases and answers are none too plain.

It must be remembered, too, that a large percentage of subscribers are among the educated classes since they are the most likely to be financially able to keep up the rent on an instrument. Such persons feel better when their wants are supplied by operators who speak well. A grade school education and even two years in high school is not too much to require of applicants, she said.

Miss Martin emphasized the obligation of operators in educating the public to telephone usages of all kinds and to carefully explain whatever they do not understand.

She spoke of special qualifications for the different types of operating, the need of independent effort on the part of information operators, accuracy and rapidity on local positions, alertness and knowledge of her board.

On the toll boards salesmanship is important. Operators should remember that a call is merchandise which changes hands, but that goods cannot be taken out on approval or exchanged afterwards.

A salesperson must be very exact in measuring her merchandise carefully. A man should not be required to pay for 75 seconds wasted by an operator any more than to be charged for sugar which a careless clerk spilled on the floor.

Miss Martin detailed what the company does to insure health and efficiency, advantages that ought to attract ambitious girls. A big obstacle is the turnover, which rises quite high in percentage in a year, and which cannot be reduced much below 80. She closed by saying:

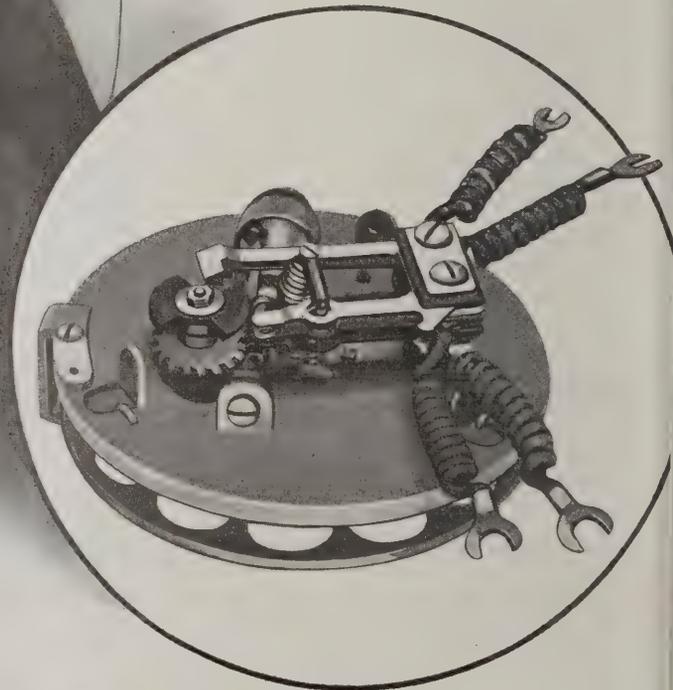
"As part of such a live and potential system, we operators intend to be on the job acting as efficient contact points to make possible the circuits through which full-power currents of telephone service may pass 365 days in the year, and 365 nights."

H. F. McCulla, commercial engineer of the Lincoln company, read a paper on "Organization."

The new note in organization, he said, is freedom from force, but a mutual understanding of its members that they are all systematically united in a body working together for a common end. If that note can be made to reach to every employe, troubles in organization will be at an end.



In telephone exchanges in all parts of the world the dial is fast becoming a symbol of all that is best and most modern in telephony. Wherever the dial is in use, the service is pleasing and reliable, and the company prosperous.



The Dial and the Subscriber

TO a telephone subscriber of an automatic exchange, the dial is much more than a mere piece of mechanism; it represents the vast differences between the slow, old-time manual service with its inaccuracies and uncertainties, and the most pleasing and convenient service that modern telephony has to offer.

As a mechanism, too, the dial is the most important part of any automatic telephone exchange. It is the link that must convey the desired number with unerring precision to the central office switches. To do this, it must be designed and made with the utmost care, and with full knowledge of the design and adjustment of the central office equipment with which it is used.

Automatic Electric Company's dial is a product whose value has been proven by many years of actual experience in operation. It has been designed and is produced by the world's pioneer automatic telephone manufacturing organization. This is a guarantee of merit that no others have.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS.

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd.
London.

Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



Mr. McCulla traced the growth of business organization from individual ownership up to the most popular form ever devised, the corporation. The outstanding features of this form are the continuity of operation, the limited liability of those forming it, and its flexible character.

The two vital parts of the problem of how to improve the business organization of telephones are: What may be done to improve organization practice, and what may be done to improve organization service? Mr. McCulla's address, which develops these points, will be published in an early issue.

Texas Association Plans Almost Ready for Annual Meeting.

Plans are being made so that everyone who attends the annual convention of the Texas Independent Telephone Association will have the best and most profitable time ever had at one of the state meetings. It will be held at the Adolphus Hotel in Dallas, March 20-23, inclusive.

There will be good talks on a variety of subjects—both by Texas men and men from outside the state. The plant school will be reproduced on a larger and better basis. In addition to the talks made by those taking part in the plant school, there

will be several practical demonstrations.

Matters of importance to come up will include reports regarding the legislative work and regarding the proposition for financing small companies.

CONVENTION DATES.

The dates and places of meeting for the various state conventions to be held in the near future are as follows:

Kansas, Nelson Hotel, Ottawa, March 6-8; Oklahoma, Oklahoma City, March 12-14; North Dakota, Grand Forks, March 13-15; Texas, Hotel Adolphus, Dallas, March 20-23; Wisconsin, Wisconsin Hotel, Milwaukee, March 21-23; Florida, Roberts Hotel, Miami, March 27-28.

The April conventions scheduled so far are: New York Up-State, Powers Hotel, Rochester, April 18-20; Iowa, Ft. Des Moines Hotel, Des Moines, April 24-26.

The social features are not being forgotten and the committee is working hard to see that everybody has a good time.

Reservations should be made early, as it is expected that there will be a bigger attendance than ever.

North Dakota Will Hold Its Convention March 13, 14 and 15.

An announcement comes from Secretary-Treasurer A. J. McInnes, of the North Dakota Telephone Association, stating that the convention this year will be held in Grand Forks on March 13, 14 and 15.

Elaborate plans are being made to make it a noteworthy meeting. Several prominent men are going to speak on subjects in which every telephone man is interested; there will be discussions of important matters; and the social activities during the convention are planned to be better than ever.

Bell to Erect New Exchange Building in Waurika, Okla.

Work will be started in a short time on a new exchange for the Southwestern Bell Telephone & Telegraph Co. in Waurika, Okla. The ground has been purchased and the plans are completed. The building will be of the bungalow style and will cost about \$10,000.

With the completion of the building, a portion of the new common battery equipment will be installed in it, and the present instruments will be gradually discarded.

“A Stitch in Time” in Plant Upkeep

Inspection of Central Office Equipment Inside as Well as Outside in Small Plants—Things to Watch to Prevent Trouble—Paper Presented at Middletown District Meeting of New York Up-State Telephone Association

By E. R. Davenport

Equipment Engineer, Orange County Telephone Co., Middletown, N. Y.

It has been said “That a man who looks for trouble usually finds it.” If that is the cause we of the telephone fraternity are unusually well blessed, for as a rule we can find enough to keep us busy. Even though we think we are well caught up at times, we can easily find conditions that sooner or later will cause trouble; and if we can head them off before causing an interruption to the service, we have done well.

The idea of inspections of central office equipment, as well as outside plant, is an excellent one. We sometimes smile at the idea of routine inspections, but if we will keep an accurate record of all our troubles covering a period of time, say one year, without inspections and then start a regular inspection at stated intervals during the next year and plot these troubles on a sheet of cross-section paper as a curve, it will be surprising to note how the curve falls off under a rigid inspection system.

Possibly some may think that this should apply only to the large companies. I disagree with this idea as it can be done and is of just as much importance to the

small company for the reason that the smaller company in many cases has only one man to take care of both inside and outside troubles. While it may be hard to find time to get the routine started, the persistent effort to obtain a definite period for inspection each week will in time work wonders in the improvement of service.

The class of troubles known as “loose connections” will interfere with the service in a number of ways. They affect us all, whether we operate magneto or common battery, and the more complex your switchboard or plant is, the more trouble they can cause. Careless soldering, or so-called rosin joints, probably cause most of these troubles.

It is a difficult matter to convince men of the importance of soldering; some of them cannot realize how important it is to see that all jumper wires, all switchboard wires must be firmly held by solder and not by flux to insure reliable service. If these connections are in your line circuit, they unbalance the line, making it noisy at times, or interfere with battery current operating the line signal, although at times you are able to ring and talk

through a poor connection which will not pass enough battery to allow the line relay to operate.

In common battery, also some types of magneto, switchboards, the third conductor or sleeve is used. Loose connections in the sleeve circuit cause various troubles, as no supervision, and in machine ringing, automatic listening, etc., switchboards, a further variety of troubles too numerous to mention. Here in particular does the routine inspection play its part in discovering and remedying the trouble before it really has done much harm.

By this I mean that very often a circuit will work all right at first with wires not properly soldered, as they are bright and clean and make good contact, perhaps just as good as when soldered, but as time goes on—and that time is not long—oxidation sets in, then corrosion and the joint increases in resistance until the point is reached where not enough current can flow to allow the apparatus to function properly. If in the line, the transmission becomes poor and affects the service seriously.

Speaking of transmission, that is our

Permanent Line Construction

International Creosoted Pine Poles

AN attractive permanent line of International Creosoted Southern Yellow Pine Poles, because every pole is straight, strong and durable.

The constantly increasing demand for large quantities of better poles has been met successfully by the use of creosoted southern yellow pine poles. These poles are not offered as a substitute pole, but as a *SUPERIOR POLE*, for they are stronger, last longer and are more reliable.

Comparative strengths of timber determined by government tests prove that Yellow Pine is far superior in breaking and shearing strength to either Northern White Cedar or Western Red Cedar. These natural strength characteristics of yellow pine are very valuable in pole line construction and especially so where high winds prevail and under extreme adverse weather conditions.

Prepare now to make your pole lines permanent. International Poles are framed from sound live yellow pine, the poles are quickly removed from the woods, and only high grade creosote oil is used in treatment.

Send us a list of poles you need—we will send full particulars.



A section showing International Creosoted Southern Pine Poles between Hicks and Fort Worth, Texas. The poles are 40 feet long, straight and uniform in size and average 52 poles per mile.

International Creosoting & Construction Co.

General Office—Galveston, Tex.

Plants: Texarkana, Texas

Beaumont, Texas

Galveston, Texas

"If You Were Building a New Exchange"

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: GALION, OHIO.

FROM: GALLON TELEPHONE COMPANY

WE BELIEVE WE WOULD STOP (AUTOMATICALLY THE NEW TYPE OF EQUIPMENT.

J. D. FODDAR

AMAROLA TELEPHONE COMPANY

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: AMAROLA, OHIO.

FROM: GALLON TELEPHONE COMPANY

WE BELIEVE WE WOULD STOP (AUTOMATICALLY THE NEW TYPE OF EQUIPMENT.

J. D. FODDAR

AMAROLA TELEPHONE COMPANY

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: WANSFIELD, OHIO.

FROM: WANSFIELD TELEPHONE COMPANY

IF WE WERE BUILDING NEW EXCHANGE, WE CERTAINLY WOULD INSTALL AUTOMANUAL BASED ON OUR EXPERIENCE. WE BELIEVE WE ARE GIVING THE FINEST SERVICE IN THE WORLD.

WANSFIELD TELEPHONE COMPANY

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: WAPARONIA, OHIO.

FROM: WAPARONIA TELEPHONE COMPANY

THE EQUIPMENT HAS PROVEN VERY SATISFACTORY. IF WE WERE TO PURCHASE NEW EQUIPMENT AGAIN, IT WOULD BE AUTOMANUAL.

W. F. FLEMING, MGR.

WAPARONIA TELEPHONE COMPANY

Here's the wire they sent

Read the replies!

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: FORT DODGE, IOWA.

FROM: FORT DODGE TELEPHONE CO.

NOVEMBER 24, 1922

IF YOU WERE BUILDING NEW EXCHANGE WOULD YOU INSTALL AUTOMANUAL BASED ON YOUR PAST EXPERIENCE PLEASE WISE ANSWER COLLECT TRANS. TO.

FORT DODGE TELEPHONE CO.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: CORONAUT, OHIO.

FROM: CORONAUT TELEPHONE COMPANY

"OVER TEN YEARS OF UNEXCELLED SERVICE. WOULD INSTALL SAME AGAIN."

CORONAUT TELEPHONE COMPANY

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: CELINA, OHIO.

FROM: CELINA TELEPHONE COMPANY

WELL PLEASED SO FAR.

E. G. UNKLES, MGR.

CELINA TELEPHONE COMPANY

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, PAINT VICE-PRESIDENT

CLASS OF SERVICE DESIRED: Day Letter Night Letter

TO: EVERETT, WASHINGTON.

FROM: PUGET SOUND TELEPHONE CO.

MOST EMPHATICALLY, YES.

W. M. WINTER,

PRES. PUGET SOUND TELEPHONE CO.

Would You Install Automanual?"

Before deciding on North Automanual for his new exchange J. M. Plaister, Manager of the Fort Dodge (Iowa) Telephone Co., wired that question to telephone companies using Automanual.

And North Automanual Users Said "Yes" in Every Case

They not only said *yes* but they were emphatic in their *unqualified approval*. Just read a few of the answers.

"Over ten years of unexcelled service" wires one user. Another says "We would install Automanual based on our experience. We believe we are giving the finest service in the world."

The new Fort Dodge Exchange serving 6500 stations will be cut over next August. North Automanual desks with their simple sets of keys, will reduce operating room costs. North Machine Switching will improve the service and give other economies.

Let us show you how you can give

Better Service with Greater Profit

Instant recall.

Automatic disconnect Short answering time. Uniform distribution of calls to idle operators. Impartial service. Less tiresome operation. Operators can't listen in.

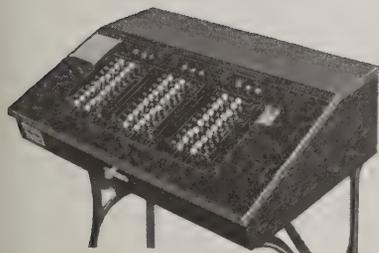
Low Maintenance and Depreciation.

More calls per hour per operator. Quick training. Distribution of switching centers. Remote control of small exchanges. Rate raises with public approval.

With

NORTH MACHINE SWITCHING

The North Bulletin describes North Automanual, explains remote control of outlying exchanges, and describes the equipment. We'd like to send you a copy.



Keyboard replaces all cords and jacks. Operates like electric adding machine. As high as 1250 calls per hour per operator (average 750).

The
**NORTH ELECTRIC
 MANUFACTURING COMPANY
 GALION, O.**

North P. A. X. (dial equipped phones) for private exchange subscribers—and North Machine Switching Systems for City Telephone Exchanges. Manufacturers of telephone equipment since 1884.

main stock in trade as it were—that is what we sell. If our transmission is poor, the public has a just complaint. There are many things which enter into the transmission game.

The Bell companies all have their transmission engineering departments, and these men are constantly busy in various parts of the country. We smaller companies cannot afford many of the instruments used in these tests, nor would it be entirely profitable to own them. There are certain instruments I hope some day to be able to have for our company, but what I wish mainly to bring to your attention are some of the things we can do to maintain satisfactory transmission.

First of all let us take the central office. Are we sure all of our equipment is designed to produce the most efficient transmission? Most manufacturers nowadays have laboratories where the apparatus and circuits are tested, but some of the older equipment had repeating coils and various apparatus which were far from efficient. There are always some losses in any apparatus, but those losses have been standardized by both the Bell and the United States Independent Telephone Association standardization committee and are practically the same.

One of the easiest things to take care of, and oftentimes the most neglected in central offices, large and small, is the care of switchboard cords and plugs. Some offices still use the steel cord on account of its longer life. Steel cords have a large loss and in my opinion should not be used. Personally I prefer a good tinsel cord, even though they require rebuttoning more often. I have had some last a year or more when new without rebuttoning in a busy "A" board position, one that is used both day and night.

The cleaning of plugs, or polishing the brass work, is a very important thing. An operator once said to me, "My, but you are fussy, polishing up the brass work just to make it look pretty." I explained that was hardly my object, although I liked to see the brass shining.

It was my privilege some time ago to witness some tests made on cord circuits with a W. E. No. 1-A transmission set and this set plainly indicated a loss of ½-mile of standard cable due to dirty plugs, which cleared up immediately upon applying a little metal polish and elbow grease. Hence the importance of keeping the plugs clean—a very small amount of work, but great results, as every half-mile loss, added to more here and there, means poor transmission on a long haul. Some losses are beyond our control, but here is one that every maintenance man can eliminate very easily.

Another thing which comes to mind is the importance in central office areas having aerial or underground cables, particularly aerial cables, with multiple boxes—that is, cable pairs appearing in a number

of boxes. In case a station is removed and the drop left up, due to the possibility of someone moving in and wishing service, when this subscribers' station equipment is removed, see that his drop is disconnected from the cable; not only for the protection of the cable, but sometimes these drops are forgotten, the cable pair cut dead for a while and then after months picked up for use, to find it in trouble.

Report comes back from the cableman, sent to clear the trouble next day, that he found a dead loop on it in Box No.

These Two Letters Sound Good to Us—Thanks!

In a letter renewing his subscription, H. W. Marks, manager of the Humes-ton (Iowa) Telephone Company, says:

"I have read 'Telephony' for the last 14 years, and don't seem to be able to get along without it. I have taken it in Michigan, Louisiana and Iowa, and find it fits in as a helpful article for any telephone man wherever located."

B. H. Smucker, secretary and treasurer of the Farmers' Telephone Co., of Belleville, Pa., in a letter remitting for his 1923 subscription, says:

"We are interested in the inductive interference problems and have received much good information in the past year. 'Telephony' has helped us to give better service that has increased our revenue."

XZ; or perhaps your installer has chased up and down the street several times before it entered his head that there is a dead loop in this house, or it dawned on the testboard man that such might be the case. In either case, money is lost in useless work.

All dead drops and dead bridles, cross-wiring, in fact all equipment from the main frame should be disconnected whenever a line is cut dead; have no dead lines connected either to outside cables or inside plant.

Today nearly every office, no matter how small, has some testing equipment. Occasionally one is found where nothing is furnished the troubleman but his own experience and judgment. Small testing cabinets can be bought from any reliable manufacturer for a comparatively small sum.

All that is needed is a reliable voltmeter, say with 0-30 scale, a shunt controlled by a key to change the resistance for more accurate readings, and 30 volts of dry battery with a few keys for connecting the battery and voltmeter to ground and across line. These with a simple formula, which involves the ratio of the readings of the total voltage to the reading obtained with the shunt in circuit, will determine very close to

where the trouble is, providing of course the wire measures somewhere near what it should per mile.

Speaking of wire, it has been the tendency in the past for some companies to use iron wire for all open lines; today the tendency is to change to copper—and it is a good move. Iron wire does not last long, particularly where affected by gases. Hard-drawn copper is far better from a transmission standpoint and if ever removed has a junk value, while iron has not.

Another common source of trouble is found in test connectors. These are somewhat of a necessary evil as we must have places where the line can conveniently be opened for tests without disturbing the line wires.

These test connectors must be watched as they corrode easily. Sometimes they are not properly tightened up by the troubleman, or they do not take the trouble to clean both wire and connector, if it is to be reused. Particularly after severe lightning storms these test connectors often show trouble, as the lightning, traveling through them, seems to act on the corrosion existing there in some way to partially insulate the joint. I have, in times past, found some of these connectors with a resistance of 600 ohms or more.

There is another thing we must all be on our guard against, and that is inductive interference from electric light and power lines. Today, all over the country, where there is water power available, you will find that the power companies are building transmission lines and powerhouses. In some cases, these power lines will parallel existing telephone lines and, unless the utmost care is taken, will interfere seriously with transmission.

We must use every precaution in building jointly with them in cities and towns, as many of the power companies now are using the system known as the four-wire three-phase system in which a neutral wire is used. This gives a potential of 4,000 volts across the phase wires and a potential of 2,300 volts to neutral or ground.

The position of this neutral wire on joint constructions has a great deal to do with interference with the telephone circuits. It seems to me a case where we must work to obtain the co-operation of the power company so that we may both occupy the same area.

In closing, I would like to leave this thought with you, quoted from a recent number of "Long Lines":

"Do your work efficiently, but don't wear blinders so you can see nothing else. Find out why you are doing your job. To determine this, you will have to ascertain why and how the other fellow is doing his. Of the two kinds of men in business ruts, one is there because he didn't look closely at his job; the other is there because he saw nothing else."

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

"Is it not wonderful how cheering a little word or two of praise sometimes is?" writes a chief operator of many years' service. "There was a time a few weeks ago when we were so very short of help, and so many of our operators were new, that I was feeling quite discouraged.

"You see, we were to have a rate hearing the following week, at which the city hoped to prove that the company was not in need of the schedule of rates then in effect. Of course, at such a time we wished to keep our service up to normal, but being short of help it was very difficult to do so. We had three new operators and two students.

"On this day I speak of, it just seemed to me that we would not be able to make a very good showing of our service—for that week, at least. At noon, when I was on the street a prominent business man said he wanted me to tell the operator who had handled his calls that morning that he had received excellent service.

"It seemed that he had called a series of numbers and had no trouble whatever in reaching the called party. He said that the operator had always come back on the line instantly.

"I found that one of our new operators had handled his calls and that the supervisor had not been told of it, so that she might caution the operator to pay special attention to him—which we always like to do when a party calls a series of particular numbers. I felt really pleased to know the operator was progressing so well.

"Then, during the same day, another patron—who had been placing a great many long distance calls in work for the coming election—advised us that he had been receiving excellent service; that he appreciated it so much he would remember the operators in a special way as soon as the campaign was over.

"After receiving these compliments on our service, I did not feel so 'blue,' for I felt that some of our people were sympathizing with us and appreciating our efforts to do the very best we could."

Striking tribute to the telephone was paid by the Consolidated Gas, Electric Light & Power Co., of Baltimore, Md., in a recent advertisement which appeared in the Baltimore daily newspapers.

The advertisement was one of a series covering a period of the last ten months, and still in progress. The purpose of the series is to familiarize the public with the workings of a modern public utility.

Most of the advertisements have been of full page size and none of them less than three-quarters of a page. In this liberal space the story of the company's various departments has been told once every week in the four daily newspapers of Baltimore, with a completeness and "punch" that could not fail to attract and hold the attention of the public.

Instead of "An illustrated tour of the Gas and Electric Company," the series might well have been called "Getting acquainted with a telephone number."

THIS IS
PLAZA 8000
WHERE YOU GET
GOOD PUBLIC SERVICE

Plaza 8000 is a Gateway to Good Public Service That Never Closes

You, as the recipient of our service, are Plaza 8000 and are connected to the "Plaza" as well as the "Company." A large department of our company is the maintenance of our 4,000,000 calls per year, to reach them, by the telephone in the Company's buildings and operating stations.

You find Plaza 8000 quick and convenient way to reach all services, to call any number or disconnected and make inquiries or complaints, to be practical in everything.

You obtain the same "Good Public Service" over the telephone as by calling personally and you may be assured of the same personal attention. We are glad to have you visit us, but if you find it more convenient to telephone, the facilities have been provided.

We are glad to have you visit us, but if you find it more convenient to telephone, the facilities have been provided.

24-Hour Emergency Service
In the event of an emergency, all calls are taken care of. The 24-hour emergency service is available at all times.

THE GAS & ELECTRIC CO.

Good Public Service
Is Your Service Good?
If Not, Please Let Us Know

Telephone Plaza 8000
General Service Department

One of a Series of Advertisements Used by An Electric Company to Boost Its Telephone Business.

Throughout the campaign emphasis has been given "Plaza 8000," as a means of direct contact with the offices of the corporation. Each advertisement has carried this number in conspicuous type, with an invitation for customers to use it as freely as their own.

A typical form of this invitation is afforded by the legend: "Is your service good? If not, please let us know. Telephone Plaza 8000, General Service Department."

The company devoted one full page advertisement in each of the four local papers to specific treatment of its telephone service. The conspicuous feature of this display was a picture of the corporation's private branch exchange.

At first thought, it might not appear that a full page advertisement of a telephone number would sell gas and electricity, but the well-worded copy makes clear the intimate relationship between the two subjects.

As an introductory phrase the advertisement uses the heading, "This is Plaza 8000, where you get good public service."

In this phrase the copy carries the keynote of the campaign, which is "Good Public Service" as the company's responsibility and pleasure.

Following this introduction is the message: "Plaza 8000 is a gateway to good public service that never closes. You lift the receiver of your telephone, say 'Plaza 8000,' and are connected with your gas and electric company's exchange—the switchboard operated by 14 competent women who handled 4,000,000 calls last year, to and from the 541 telephones in the company's buildings and operating stations.

"You will find Plaza 8000 a quick and convenient way to transact business—to order service connected or disconnected, and make inquiries or complaints—in fact, practically everything.

"You obtain the same good public service over the telephone as by calling personally and you may be assured of the same personal attention. We are glad to have you visit us, but if you find it more convenient to telephone, the facilities have been provided."

Supplemental to this general invitation is the specific suggestion: "24 Hour Emergency Service. At any hour—day or night—in case of emergency, all you have to do is lift the receiver and say 'Plaza 8000.' One of our operators will connect you with the proper department to give prompt and effective relief in any emergency arising from the use of gas or electric service."

Can there be any higher tribute to the value of the telephone than this simple treatment of the instrument as a vital part of the everyday business operation of the gas and electric company?

The Jamestown Telephone Corp., of Jamestown, N. Y., is stirring up advertising for its next directory, which comes out May 15. One means of solicitation which the company utilizes takes the form of a blotter with this message in clear type, well spaced and easy to read:

New Phone Directory May 15th.

"The phone directory is used more constantly in office and home than any other book. It is referred to approximately 50,000 times every day in Jamestown.

"Advertising in its pages is just as valuable the last day the directory is in use as it is the day the new directory comes from the press.

"These are the reasons the directory gives higher direct advertising value, per dollar of cost, than any other form of local publicity.

"They explain the large volume of advertising the Jamestown Telephone direc-

tory always carries and why the same advertisers use it year after year."

Then, under the heading, "Here Is What One Regular Advertiser Says," is reproduced a letter which testifies that the advertiser considers the Jamestown telephone directory "the best advertising medium we are using."

Some people just can't see any romance in telephone operating and the equipment used—and then, again, some can see whole worlds of pleasant things. A conductor of a humorous column in one of the Chicago daily papers published a contribution from "Maurice" who "saw" beyond the prosaic and put his vision into this rhyme:

Hello.

Just the receiver clamped to her hair
As she sits before the keyboard there,
Switching the little twinkling lights;
But somehow I think of summer nights
And quickening breezes of the dawn
When Helen puts her headpiece on.

I know there is no magic spell
To such a thing as a telephone bell,
So it may be something in her eye
That makes me see—I don't know why—
The first spring crocus on the lawn
When Helen puts her headpiece on.

For the gleaming band of metal bright
Is like a campfire in the night—
Or is it just the girl below
The thing that sets me thinking so
Of a lane I hope some day I'll tread
With Home and Helen just ahead?

An idea worth while passing on to other telephone companies is that recently used by a Florida company when it had occasion to celebrate and let the town know about something big it had done.

Members of the employes association of the South Atlantic Telephone Co., of Miami, made merry Tuesday night, January 30, at the Tropical Grille at the first annual banquet given to celebrate the first anniversary of the automatic telephone system in Miami.

More than 100 employes and their especially invited guests attended and made the occasion a distinct success. Throughout the evening the same spirit of coöperation which has tended toward giving Miami a telephone service second to none, was displayed.

L. L. Sertel, chief clerk of the company, was the toastmaster. Others on the program included Frank B. Shutts, president of the company, who made a talk expressing his appreciation of the loyalty of the employes; F. W. Webster, and Charles J. Holditch, general auditor, who has been connected with the southern division of the company for 28 years, and Mr. Gilbreath.

Mr. Shutts declared that the spirit of coöperation of the employes with the management was reflected in the service given by the company.

Mr. Holditch complimented the employes on the service and especially mentioned the spirit shown by the employes. "There are no finer people than the telephone people," he said. "They are glad to serve the public and then they enjoy going out and mingling socially as you are doing tonight. There is a social pleasure which makes it a pleasure to do things for the public on the part of the telephone people."

In addition to the program, much fun was interspersed throughout the evening by the arrival of humorous telegrams received by R. J. Gilbreath, F. W. Webster,

Business Is Good, and So Is "Telephony."

F. M. Coker, of the Coker Electric Co., well known to the telephone manufacturing and supply trade, writing from Los Angeles, to change his address and enclose check for his subscription, says: "Cannot afford to miss a single issue of 'Telephony.' Business is so very good we are simply forced to new and better quarters on account of increased requirements."

L. S. Baker, C. W. VanLandingham, L. L. Sertel and Mrs. Harris Koch.

The one to Mr. Gilbreath, which was delivered at 8 p. m., read: "Desiring that the Follies chorus for next season shall be unsurpassed I hereby tender you position as official classifier stop name your own salary and employ Tarry as assistant if you desire." It was signed by Mr. Ziegfeld. Evidently, Messrs. Gilbreath and Tarry know feminine beauty when they see it.

Mr. Webster's was signed by "Chronic Kicker" and was delivered at 8:15 p. m. It was one complaint at which he could legitimately indulge in a grin. "Am unable to get Central," the telegram informed him, "from Pompano stop either put a collector on this telephone or take it out stop regret it is necessary to bother you but you will notice I am paying for this message."

Entertainment features in the form of solos and recitations were contributed by Allen Carr, who sang "The Star"; Mrs. Ruby Baker, who sang "Because I Love You, Dear," accompanied on the piano by Mrs. I. S. Baker; and Miss Madelyn Lynch, who recited "At the Theater."

Mrs. Ruby Baker led in the singing of a telephone parody on the old popular wartime melody "Smiles."

It doth appear there is considerable talent in the force of the South Atlantic company, for reliable information has it that there is more where that came from and that the employes don't need to go outside of their own circle for entertainment.

Streamers and clown caps added to the informality and gayety of the affair.

The menu card, which was comically arranged in the telephone vernacular, contained these goodies:

50 G Cocktail
Overcharged Chicken, a la King
Mashed Dry Cells First Selector Peas
Primary Carrots
Lead Sleeved Rolls wh Butter
Rotary Group Lettuce with Collection
Dressing
FX Pic Spliced with Soldered Cream
48 Volts in Cup

Hints to the guests were appended as follows:

Report indigestion to..... 114
Report slow service to.....9031
Report an overcharge to.....9026
For further information, dial.....113
If not given proper attention, dial...9011

Toastmaster Sertel in closing the program gave the credit for the success of the occasion to the members of the committee who worked with him. This committee was composed of Mr. Sertel, Mrs. Rose Hogan, Mrs. Harriet Koch, Mrs. Mary Hudspeth and Miss Florence Reburn. Mr. Sertel also said that the banquet was the idea of the employes and had been made a success through their efforts.

After the program of the evening was completed the guests danced until a late (or early?) hour.

The New York Telephone Co. took its educational demonstration right up to the state house a few weeks ago.

On February 15, to be exact, an entertaining and instructive demonstration was presented at the Chancellor's Hall in Albany for the particular benefit of the members of the state educational department. The affair was not limited to this department alone, however, invitations being extended to members of all the various state departments and their friends, and there was a good crowd to learn what the operators had to say for themselves.

The program began with a vocal number, than an instrumental, and then a Harold Lloyd comedy. After these offerings, the operators took charge and showed, by means of switchboard apparatus, the intricacies of telephone operating that the patron does not see.

An announcement was made that the girls would be glad to answer any questions that were asked. Several of those in the audience called for explanations on certain points and the information was given in an intelligent, clear way, that showed the girls thoroughly understood their work and were efficient public servants.

The program closed with a feature moving picture, which revealed the task of building and maintaining the modern telephone system.

OHIO ASS'N. MAKES IMPORTANT CHANGES.

(Continued from page 19.)

on with men in office high up in our national affairs committed to this policy.

On July 1, 1918, Congress passed a law authorizing the President to assume control of all telephone and telegraph companies. This was done on August 1, 1918, by a proclamation of the President, investing the operation of all telephone companies in the Post Office Department.

Your association, acting in conjunction with the National Independent Telephone Association, took immediate steps to protect the Independent interests of this state, and cooperated in having F. B. MacKinnon appointed general supervisor of the Independent interests. Mr. MacKinnon appointed C. Y. McVey supervisor for the Ohio district.

Backed by the press, which to a considerable extent influenced public opinion, it was seen that—with the government's attitude of unifying all classes of service which it controlled during the war period and eliminating competition—the government could not operate telephone lines for a very long period of time without so unifying and combining them that it would be practically impossible to have returned them to private ownership.

Few realized the dangerous situations that were eliminated by the appointment of the men referred to above, and the grief and expense they saved the operating companies during this period of government control which was fortunately terminated August 1, 1919, after a period of a year.

Ohio State Company.

The old United States Long Distance Telephone Co., mentioned previously, was taken over in 1914 by a new organization known as the Ohio State Telephone Co.

After the passage of the public utility law in Ohio in 1911, many men connected with the Independent telephone business in Ohio expressed the fear that this would bring about a merger or sale of that company with its long distance lines promptly with the Bell company. Assurances were made through this association that no merger or sale of this large Independent company and its long distance lines would be made until after ample opportunity and time had been given to all of the smaller companies of the state to merge or sell and unify their own local condition.

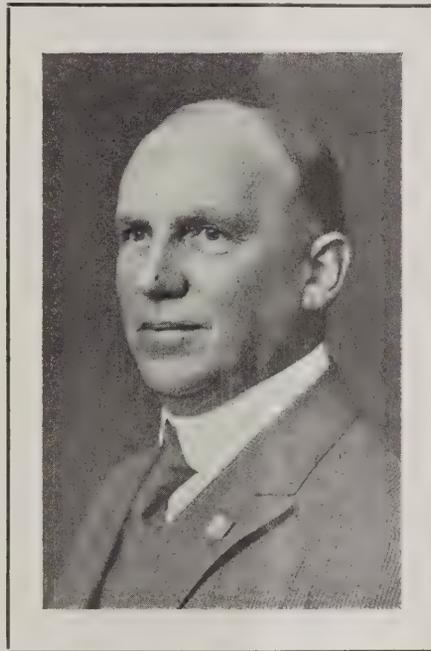
You are all familiar with the fact that immediately after the passage of the public utility law in Ohio in 1911, sales and mergers were accomplished at one point after another until in the year 1920 there were not more than a dozen Independent properties in the state in active competition with the Bell company other than those exchanges owned and operated by the Ohio State Telephone Co.

The war period brought with it a crystallization of sentiment on the part of the Ohio public in favor of a unified telephone

service which had been growing for years, and in 1921 negotiations were under way for a merger of the Ohio State Telephone Co. and the Ohio Bell Telephone Co.

During this year Congress enacted a law providing a definite procedure to be followed by telephone companies in effecting consolidations. The Interstate Commerce Commission was given authority to issue a certificate which, in effect, suspends the anti-trust law in so far as the particular transaction is concerned. This certificate is to be issued when the commission is shown that the proposed consolidation will be a benefit to the telephone subscribers immediately concerned and also in the public interest.

The merger of the Ohio State Telephone Co. and the Ohio Bell Telephone Co. was concluded and formally approved by the Interstate Commerce Commission,



C. L. Jones, of Athens, is a Member of the Executive Committee of the Ohio Association.

and also, on September 22, 1921, by the Ohio Public Utility Commission.

While it was unfortunate to lose this large company from the Independent ranks, it came about as an inevitable result of extensive competition which had continued for a period of years. However, it was most fortunate that the passing of this company did not occur until after competition had been eliminated at practically all other points in the state with the Bell company.

Need for Association.

Looking to the future, an association is just as necessary as in the past. It is impossible to state at what time or what matters may arise that will require the concerted action of this association. Legislatures will meet regularly and politics is ever active against any business of a public nature that does not take steps to protect itself.

Whatever the policies of the Bell company may be, it is necessary for us to work with them in harmony if possible. The same problems that concern us are before them in even greater magnitude and our interests are at least sufficiently mutual that any open division cannot bring about the best results.

Our business has reached such a magnitude that it is of utmost importance that attention be constantly given to the problem of educating the public. The Ohio Committee on Public Utility Information is doing a wonderful work through its news bulletin, and every company should make use of the opportunity of giving the information contained in this bulletin to the public.

Educate the Public.

We occupy a position of great importance in the industrial development of this state, and it is most essential that we place before the public constantly our problems and aims. Let them understand the source of our income and what becomes of it; let them understand the amount we are being assessed for taxes and what it means on each individual telephone. Let them know the regulation we have in the various phases of our everyday activity. Take them into your exchanges and show them your operating problems, and have your managers and employes join in all civic activities. Cooperate in all of the local affairs of your community, and when the occasion comes you will find that you will have help and understanding from the public you serve.

The question of the rates for service and revenues to companies must be given constant attention. The immediate future points again to a period of rising operating costs. Sufficient revenue must be obtained as will not only safeguard present capital invested, but such as will attract new capital and cover satisfactorily telephone costs, depreciation and taxes.

One of the unusual expenses affecting many companies is the great system of road building over this state. This work, I understand, during the coming year will be more extensive than ever before, and this usually necessitates the moving of pole lines which is a most expensive item for all telephone companies.

In concluding this address, I wish to thank the various manufacturers for their interesting and instructive exhibits. I wish to express to you the gratitude I have for the spirit of loyalty and helpfulness you have given to me during the past 20 years. The attachments formed, the friendships made and the memories of strenuous days will ever be with me, and I bespeak for my successor the same hearty cooperation and loyalty."

Following President Beam's address, Secretary-Treasurer McKinney made his report, which showed the association to be in a most flourishing condition. During the past year a gain of almost 100 per cent has been accomplished, both in mem-

bership and revenues. A considerable number of new companies have signified their intention to become active contributing members of the association during the years to come.

Directors Nominated.

After the committees had reported, the convention proceeded to the nomination of officers. Nominations for directors were made from the floor. Not only Mr. Beam, but D. J. Cable, of Lima; H. W. Cary, Millersburg; H. P. Folsom, Circleville; W. B. Gregson, New Philadelphia; W. H. Heseltine, Delaware; Washington Hyde Warren; J. W. Longwell, Van Wert, and W. Scott McKell, Chillicothe, manifested a determination to retire from the board of directors. When the names of these "old guards" were proposed, they declined, and the convention then chose the board named in a previous paragraph.

The new board met the last day of the convention and selected the officers and executive committee.

At the Wednesday session F. B. MacKinnon, president of the United States Independent Telephone Association, addressed the convention, relating the work being done by the national body. He stressed the importance of maintaining two groups in the telephone industry, and urged the necessity of telephone men educating rate commissions along this line. President MacKinnon covered the same ground traversed in his Detroit address before the National Association of Utility Commissioners, which was published in TELEPHONY in the November 25 issue.

He emphasized the fact that success in the telephone business is a matter more of management than money, as he believed that capital will always be available when good management is provided.

E. G. Miller, general manager of the Warren & Niles Telephone Co., spoke on the topic "When a Company Reorganization Is Needed to Give Stockholders a Square Deal—How It Is Accomplished." J. Warren Stafford, general manager of the Troy Telephone Co., followed with a paper on "The Future Movement of Telephone Rates—Up or Down?" Both Mr. Miller and Mr. Stafford were applauded for their excellent addresses which gave rise to considerable discussion.

After luncheon, Prof. C. O. Ruggles, of Ohio University's College of Commerce, spoke on "Some Larger Aspects of the Public Relations Feature of the Utilities Business." Ward Snook, engineer of the public utilities commission, gave an interesting talk on "The Practical Application of the Commission's Standard Regulations Governing Electrical Interference."

Other speakers at the Wednesday session were Geo. B. Quatman, of Sidney, who discussed legislative matters, and Sam Kraus, of Covington, who gave the convention a talk on radio.

The banquet was held Wednesday eve-

ning and proved a great success. V. G. Eastman was the "stunt master," and a fine entertainment program was rendered. Julius Stone, of Columbus, one of the pioneers in the exploration of the Grand Canyon of the Colorado, gave a lecture on "Our Western Wonderland," which was the feature of the banquet.

Thursday the convention met at 10:30 and carried out a program which was interspersed with general discussions on the topics treated by those who read papers. Ralph Wolfrom, of Bellevue, handled "The Business Side of the Independent Telephone Industry." W. R. Ellis, of Geneva, and L. R. Wittemire, of Mansfield, spoke on "Our Own Rate Problems." J. D. Bonnar, Ashtabula, and C. R. Love, of the Williams County Telephone Co., spoke on "Our Efforts to Improve Plant and Service," while C. A. Smith, of Morenci, Mich., had the topic, "Operating a Telephone System in Two States—Its Joys and Sorrows."

Wm. L. Cary, of the Newark Telephone Co., told the convention about "The Newark Rate Case."

Ohio's three-day convention was a success in every particular. The manufacturers' exhibits were unusually elaborate and interesting, attracted wide attention, and heavy orders were taken by the concerns represented.

Before adjourning, the association adopted its new constitution which was drafted by a committee appointed at the 1922 convention. The constitution limits membership to Independent companies, and to manufacturers, dealers, engineers, accountants and "others whose business shall be principally or largely allied with the Independent telephone industry." Their reception as members shall be with the approval of the board of directors.

Program for Kansas Convention Promises Many Treats.

There will be plenty of things doing at the annual convention of the Kansas Independent Telephone Association, which takes place March 6, 7 and 8 in the Nelson Hotel and the Chamber of Commerce rooms, Ottawa.

The program—which seems to have left out nothing that could be of interest and assistance to telephone men—is so attractive that there is bound to be an unprecedented attendance. It is:

TUESDAY, MARCH 6—10:00 A. M.

Registration, dues and badges.

Renewing acquaintances and general social time. Lobby, Nelson Hotel and Chamber of Commerce rooms.

10:30 A. M.

Visit the exhibits and meet the exhibitors.

TUESDAY, 2:00 P. M.

Call to order, Chamber of Commerce rooms.

Prayer, Rev. W. A. Elliott, First Baptist Church, Ottawa.

Address of welcome, P. A. Elder, postmaster and president, Ottawa Chamber of Commerce.

Response to address of welcome, C. S. Gibbens, secretary-treasurer, Nickerson Telephone Co., Nickerson.

President's address, T. L. Youmans, Osawatomie.

Report of secretary.

Report of treasurer.

Appointment of Committees.

Organizing operators' school.

Address and demonstration, open wire splicing, O. P. Nokes, manager, Emporia Telephone Co., Yates Center.

Question Box.

Plant and equipment, round table.

6:30 P. M.

See exhibitors, Nelson Hotel. Get acquainted with the exhibitors.

Theater party.

WEDNESDAY, 9:00 A. M.

"Independent Pioneer Telephone Men of America," J. K. Johnson, Indianapolis, Ind.

"Telephone Publicity," Keith Clevenger, publicity manager, Associated Utilities, Abilene.

Address and demonstration, "Cable Splicing," V. C. Parr, cable man with Emporia Telephone Co., Emporia.

"On the Radio," by M. F. Potter, of the Kellogg Radio Department Sterioptican.

1:30 P. M.

Operators' school.

Address and demonstration of telephone test sets, by Chas. Hughes, plant chief, Kansas City Telephone Co., Lawrence.

"Class and Freak Legislation," John B. Maling, Chicago.

Address, F. B. MacKinnon, president United States Independent Telephone Association, Chicago.

"The Banks of the River," E. L. Chase, assistant to general manager, Kansas City Telephone Co., Kansas City.

6:00 P. M. (SHARP).

Banquet, Chamber of Commerce.

Stunts, Independent Pioneers of America.

Dance.

THURSDAY, 9:30 A. M.

Operators' school.

"The Increasing Cost of the Telephone Plant," W. O. Pennell, chief engineer, Southwestern Bell Telephone Co., St. Louis, Mo.

Address on accounting, Mr. Buchanan, chief accountant, Kansas Public Utilities Commission.

Reports of standing committees.

Election of officers.

Installation of officers.

Announce Hotel at Which Florida Meeting Will Be Held.

The Roberts Hotel, Miami, Fla., has been selected as the place for the convention of the Florida Telephone Association. The dates, as previously announced, are March 27 and 28.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Argue in U. S. Supreme Court on New York Bell Rates.

The New York telephone rate case has reached the U. S. Supreme Court. On Feb. 21 arguments were heard by the highest tribunal of the land in the appeal brought by the state of New York from the decision of the Federal Court for the Southern District of New York restraining the New York Public Service Commission from enforcing its orders of March 3, 1922, fixing temporary rates for the New York Telephone Co.

The orders of the commission were never put into effect as a special statutory court consisting of Judges Hough, Hand and Knox held that the proposed temporary rates would be confiscatory. This special court granted an interlocutory injunction.

John W. Davis, former ambassador to Great Britain, and Charles T. Russell, general counsel for the telephone company, pointed out in their arguments before the Supreme Court that since the lower court had granted the company the interlocutory injunction, the company had maintained the rates in effect when the orders in controversy were made, and that the commission had proceeded with its hearings in the case in which the so-called temporary orders in controversy had been made, and on January 25, 1923, entered final orders, establishing a complete schedule of telephone rates for New York State.

They pointed out that the annual revenue from the final schedules so established will be not less than \$2,000,000 more than the revenues from the rates that have been in effect, and was so stated by the commission, and will be about \$5,000,000 more than the revenues which the orders in controversy would have produced.

They contended, therefore, that the final orders of the public service commission completely vindicate the decision of the lower court and preclude the state of New York from urging that there was an abuse of discretion on the granting of the interlocutory injunction. They asked for a dismissal of the state's appeal.

Judge Ledyard P. Hale, of Albany, and Simon Fleischman of Buffalo, appearing for the commission, and Deputy Attorney General W. W. Chambers, representing Attorney General Carl Sherman of New York, argued that the lower court unlawfully granted the restraining order.

The city of New York, through M. M. Fertig, assistant corporation counsel, filed

a brief in opposition to the telephone company's contentions. He also argued an appeal taken by the city of New York from the decision of the lower court which refused to permit the city to intervene as a party in these proceedings.

Increased Rate Schedule Granted Company at Leesburg, Fla.

The Florida Railroad Commission gave the Leesburg Telephone Co., of Leesburg, permission to place in effect on March 1 a schedule of increases which include rates of \$3.50 per month for business and \$2.50 for one-party residence telephones. The order was dated February 12.

In allowing the advances, the commission pointed out that the company had installed improvements two years ago, in accordance with an agreement with business men of the town that the \$3.50 business rate would prevail. The charge was later ordered discontinued because the increase had not been sanctioned. The improvements were broadened to cover all telephones.

Florida Commission Gives South Atlantic Company Increases.

The South Atlantic Telephone & Telegraph Co. was granted the increases it requested for Miami and Miami Beach, Fla., although its specifications in connection with the service to be rendered and those relating to the applicability of the new rates, were materially altered. The Florida Railroad Commission issued the order February 12, and it became effective March 1.

The increases granted include the rate of \$7.50 per month for business and \$4.25 for single party residence telephones.

Illinois Company Not Responsible for Death of Operator.

The Hoopston Telephone Co., of Hoopston, Ill., was not responsible in any way for the death of Miss Caroline Benham, who about a year ago fell down an elevator shaft, to her death, in the Waldron building, where the company has its offices, Judge John H. Marshall decided in circuit court at Danville on February 10.

An arbiter who first heard the evidence ruled that the father of the girl was entitled to \$1,620. The state industrial commission reversed the decision of the arbiter, and took an appeal to the circuit court.

Miss Benham was working as a telephone operator for the company at the time the accident occurred.

Two Indiana Companies Want to Build the Same Toll Line.

The Rochester Telephone Co., of Rochester, has filed a petition with the Indiana Public Service Commission for the privilege of taking a new copper toll line to Akron, in addition to the present toll line facilities, and terminating it in the Akron exchange switchboard.

The petition sets forth that the manager of the Akron exchange and the manager of the Bell company asked the Rochester company to become the switching center for westbound Independent toll business and for all Bell business to and from Akron.

After the Rochester company had enlarged its capacity and increased its operating expense to handle the business, it found that more toll line capacity was needed. When it attempted to take another line to Akron, on its construction already there, it is alleged, the manager of the Akron company refused to permit the additional switching capacity and demanded that he be permitted to build his own line to Rochester—thus getting the benefit of the enlarged capacity the Rochester company had put in at the Akron manager's request.

Settle Suit for Damages Against Indiana Telephone Company.

The suit filed by John W. Strauss, of North Manchester, Ind., for \$10,000 damages against the Eel River Telephone Co., also of North Manchester, has been settled out of court.

The jury was ready to hear the case last week when attorneys announced that a settlement had been made, Strauss to receive \$500.

The suit arose out of injuries suffered by Strauss to himself and to an automobile while he was driving along a highway in North Manchester. Obstructions of the telephone company resulted in a collision.

Strauss charged that he had requested previously that the obstructions be removed, but that they were not removed.

Proponents and Opponents Discuss Iowa Regulation Bill.

The first skirmish over utility legislation in the Iowa legislature took place at a joint meeting of the telephone and telegraph committees of the senate and house, February 14.

There are a large list of bills tending to regulate telephones in the state. Three of them were discussed. The Bowman bill

would give towns control over rates; the Buser bill would divide regulation between cities, supervisors and the railroad commission, and the Campbell bill would regulate telephone companies through the state railroad commission.

The telephone company representatives present declared for state regulation if there must be some regulation.

The spokesmen for the Iowa League of Municipalities said they wanted municipal or no regulation. Those who spoke in favor of the Bowman bill were Mayor Short of Sioux City, City Solicitor Hunt of Ottumwa, and Mayor Gnagny of Waterloo.

Charles Deering, secretary of the Iowa Independent Telephone Association, and the presidents of two farmers' mutual companies at Charles City and West Bend spoke against regulation as defeating its own purpose.

J. L. Parish, counsel for the Northwestern Bell Telephone Co., said there was a vast difference between town control over telephone companies and gas and water companies—for example, the extension of wires beyond the city limits, and the difficulty in separating long distance from local fixed charges in determining what is a fair rate.

Montana Legislature Orders State-Wide Investigation.

Investigation of charges and rates made by telephone companies in Montana will be launched at once, it is expected, following adoption in the house recently of a motion to the effect that the Montana Public Service Commission collaborate with the new tax commission of the state in its appraisal of the value of plant and equipment of telephone companies within this state.

It is provided that after a thorough investigation of all elements entering into the rendering of the telephone service to the public have been carefully considered, the commission shall "prescribe such rates as will allow telephone companies proper earnings compatible with the fair rates to the public."

Hearings on Affairs of Rochester (N. Y.) Company.

On February 21 the New York Public Service Commission held a hearing in Albany on the joint application of the Rochester Telephone Corp., the Rochester Telephone Co., and the New York Telephone Co. for the transfer of franchises of the last two companies to the Rochester Telephone Corp.

Milo R. Maltbie, of New York City, expert for the city, was cross-examined as to his compilation of tables showing accounting analyses of books and records of the New York and the Rochester companies, and relating to their properties. Mr. Maltbie was also cross-examined as to his valuation of the property used in giving

telephone service in Rochester—approximately \$5,000,000.

The case was continued to March 13 at Albany.

The hearing on the complaints of the cities of Rochester, Brockport, Canandaigua and Bergen against the rates and service of the Rochester Telephone Corp. was set for March 20 at Albany.

Approves Schedule of Sundry Charges for Minnesota Company.

By an order of February 20, the Minnesota Railroad Commission granted the Madison Telephone Co., of Madison, permission to place in effect, as of March 1, service connection charges of \$2 for business instruments not in place, and \$1.50 for residence; \$1.50 for business instruments in place, and \$1 for residence. A charge of \$1 was authorized for connecting extensions not in place.

The charge for moving instruments within the same room or within the same premises will be \$1, and that for change in type of equipment \$1. Disconnect and reconnect for non-payment will take a charge of \$2, and change in name in directory listing but not in number will cost \$1.

I. C. C. Authorizes Bell to Take Over Kinloch System.

The Interstate Commerce Commission on February 20 gave its approval to the merger between the Kinloch Long Distance Telephone Co. of Missouri, the Kinloch Telephone Co., the Suburban Telephone Co., and the Sedalia Telephone Co., all of Missouri.

Hearing Held in Carthage, Mo., on Home and Bell Rates.

That it is the policy of the Missouri Public Service Commission, in determining rates to be charged by a public service corporation, to permit valuation only on such equipment as is actually used by the corporation in furnishing service to its patrons, was the statement made by Commissioner Hugh McIndoe at the hearing in Carthage, February 10, on the application of the Home and Bell telephone companies for increased rates in Carthage.

The applications are again held in abeyance pending the outcome of negotiations for a consolidation of the two systems.

The hearing was the second held under the application, which was made in April, 1921, and which asks for virtually double the present rates.

It was generally conceded at the hearing that while the Home company was not getting a fair return for its service, the service rendered was poor.

Referring to a statement made by counsel for the telephone company that the city had turned down a proposal for consolidation of the two systems and improved service, City Attorney Birkhead declared that the consolidation had been opposed by the citizens because they had

no assurance that improved equipment would be installed and that the rates would not be based on an unreasonable investment covering junked and useless equipment.

Following expressions from a number of citizens present at the hearing, in which all emphasized the need of better service if rates are to be increased, J. G. Crane stated that his company would abide by the decision of the commission after its engineers had made a survey and valuation on the telephone properties.

Commissioner McIndoe stated that if the consolidation is desired the commission will provide the engineers and auditors to get the facts and see that the service is provided at reasonable rates under the conditions ascertained.

Minnesota Commission Corrects Order Formerly Issued.

On February 20 the Minnesota Railroad and Warehouse Commission entered an order correcting the one which had been entered on February 16 for the Parnell Telephone Co., of Graceville.

The new order makes the service connection charge for business instruments not in place \$2, instead of \$3 as allowed in the former order; residence instruments not in place \$1.50 instead of \$2; business instruments in place \$1.50 instead of \$2; and residence not in place \$1 instead of \$1.50.

The other charges allowed remain the same.

Hear Evidence of Toledo's Witnesses in Ohio Bell Case.

The first day's hearing on Ohio Bell Telephone Co. rates in Toledo was held before the Ohio Public Utilities Commission in Columbus on February 15.

The city's valuation of the company's property showed a value of \$2,447,000 under the figure compiled by the company. It was on a valuation of \$5,492,000 that the Bell company put into effect the increased rates which it is now charging for service and which the city is fighting.

Service Director Jackson was the chief witness of the city at the first day's sessions.

His statement that the average building had a life of 50 years and that he figured the company's buildings deteriorated 2 per cent each year led to an altercation with the company's attorneys, but Jackson's contention was upheld by the commission.

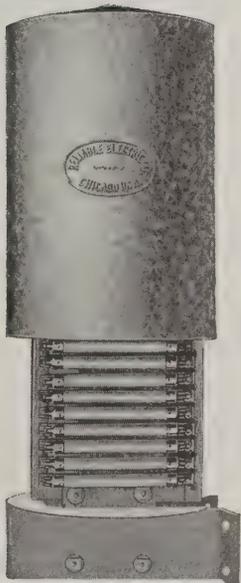
Pennsylvania Company Denied Proposed Increase in Rates.

On February 3 the Kittanning Telephone Co., of Kittanning, Pa., was refused its proposal which, it was estimated by the Pennsylvania Public Service Commission, would produce an annual revenue of \$163,000. The company has been granted permission to file a new rate schedule to produce \$150,700 yearly.

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The commission determined a fair value of the company's property to be \$450,000, permitted operating expenses of \$94,000, a depreciation value of \$25,000 and a return at 7 per cent or \$31,500 annually.

The company has approximately 5,000 subscribers and operates exchanges in Kittanning, Ford City, Leechburg, Rural Valley and Apollo.

Cannot Subscribe for Service and Then Refuse to Accept It.

Four actions previously decided in favor of the Johnstown Telephone Co., of Johnstown, Pa., plaintiff, by a Johnstown alderman, and carried to the Court of Common Pleas in appeal, were decided by that court in favor of the telephone company. The opinions were handed down by Judge John H. McCann on February 13.

The Johnstown Telephone Co. brought suit before the Johnstown magistrate to compel the payment of \$5.70, with interest from April 1, 1922, for telephone rental, claiming the defendants—the actions were all individual ones—had signed a contract for the installation of telephones at an annual rental of \$18 per year, and later refused to permit the telephones to be installed, although the telephone company was willing to comply with the contract.

Upon refusal of payment of the sum demanded, the action was brought before the alderman.

In appealing the issue, the defendants raised a point of law, alleging that rental could not be collected where no service was given. This point was denied by the court, and judgment was affirmed, the case being dismissed at cost of the appellants.

Tennessee Commission Reports on Work for Last Two Years.

The fourteenth biennial report of the Tennessee Railroad & Public Utilities Commission, for the years 1921-1922, has been submitted to Governor Peay and members of the legislature.

The report reviews the two years' proceedings of the commission and presents a summary of accomplishments.

In asserting that regulation of public utilities by a state central agency is progressive regulation, the commission's report points out that public utilities are thus governed in 45 of the 48 states of the Union.

While the report does not mention the agitation from some quarters for the recall of the public utilities act, some guarded comment is made about such a suggestion.

The report shows that 220 formal cases were docketed by the commission from January 1, 1922, to January 1, 1923, and that many informal complaints and cases have been disposed of by the commissioners.

While the report contains a brief history of each important case heard by the commission, that requiring the greatest length is of the litigation and hearing of the Cumberland Telephone & Telegraph Co. The commission's decision to give a final ruling on telephone rates in the state is indicated in its statement that the rates temporarily installed on January 1, 1922, "will not remain in force longer than is found necessary to work out permanent rates."

The assessment of all public utilities and railroads for taxation purposes is given great attention, the statistical tables showing that under the 100 per cent assessment plan last year's assessment reached a total of \$264,693,638, the assessment having more than doubled since that of 1913, when it was \$111,757,070.

The commission cites figures showing the utilities alone were assessed at \$73,665,108 last year, and at \$67,671,128 in 1920. Before the commission was empowered to assess, the report shows, the valuation for assessment was \$21,407,205 in 1918.

A reference is made in the report to the death of Col. B. A. Enloe, who was chairman of the commission at the time of his death during the past year. The resolutions adopted by the National Association of Public Utilities Commissioners are reprinted in the report.

Status of the Bills to Which Texas Association Objects.

In a bulletin sent out February 15 to the members of the Texas Independent Telephone Association, attention is called to three bills now pending in the Texas legislature and action against them is urged.

The utility bill introduced by Representative Gipson was reported favorably by the house committee to which it was given and is now on the calendar in the house. It seeks to place all telephone and telegraph companies and lines under the jurisdiction of the state railroad commission.

Opposition to the bill is urged by the association on the ground that it would create an additional tax to support the commission, and an additional expense for keeping the required records and furnishing reports.

The bulletin also points out that telephone rates in Texas are as low as they are in any other state that has a commission, and in many cases they are lower. Therefore, it would seem impractical for the public to expect the commission to reduce rates.

The public utility bill fostered by the Texas League of Municipalities has been reported unfavorably by the senate committee, but it is also before the house committee on state affairs. When it came up for hearing last month there were sev-

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C. B. Lines per position	120	120
C. B. Lines total...	1960	1960
Cord circuits per position	15	15
Multiple jacks, total	21000	14320
Rural positions ...	1	1
Rural lines	60	50
Pay Station positions	1	1
Pay Station lines..	160	60
Toll to Local trunks	20	15
Toll to Rural trunks	5	5
Inter office trunks.	20	20
Recording trunks to toll	10	10
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Information Desk (sanitary style)..	1	1
Operator's chairs...	20	20
Operator's Breast plate sets.....	27	27
Lighting fixtures...	9	9
Relay Rack.....	2160	1960
Power Switchboard	1	1
G. E. Arc Rectifier (50 amp)	1	1
Motor gen. Charging set (60 amp)	1	1
Four frequency vibrator ringing machines	1	1
A. C. Motor driven ringing interrupter	1	1
D. C. Motor driven ringing interrupter	1	1
Storage batteries, Exide F 11.....	11	11
Storage batteries, Exide F 7.....	11	11
Wire Chief's desk (sanitary style)....	2 pos.	2 pos.

This equipment includes everything required for a 1960 line exchange. It is in first class condition and is now satisfactorily handling a load of 40,000 calls per day. Delivery can be made in September, 1923. Terms if desired.

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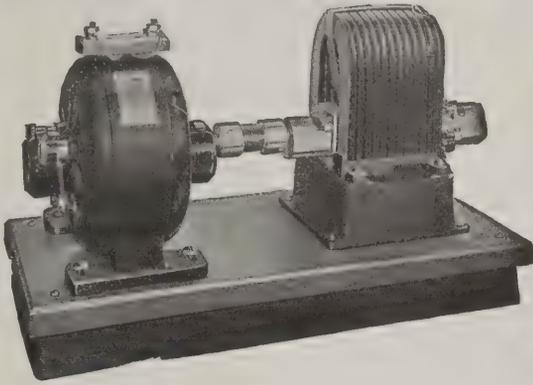
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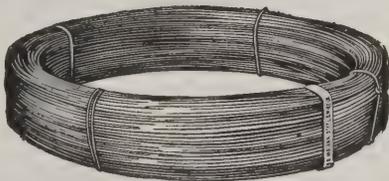
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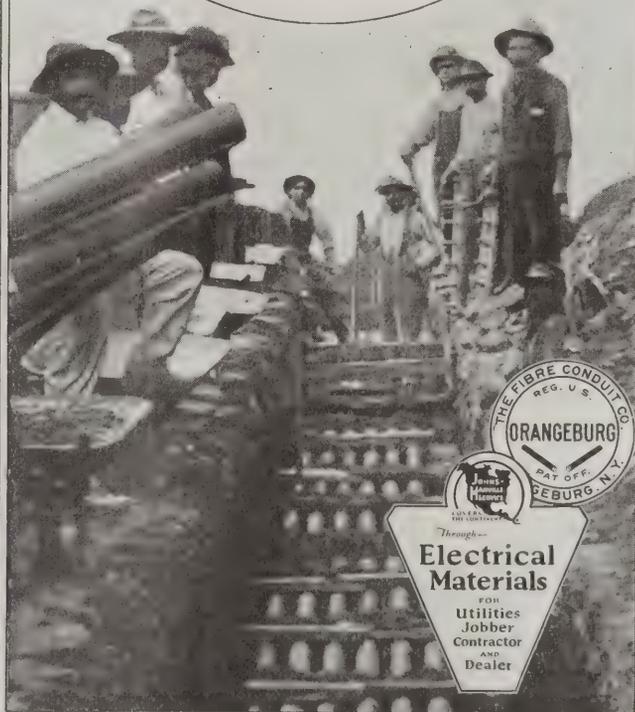
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eral Independent telephone men present to object to its passage, including officers of the association.

The minimum wage bill is pending before both branches of the legislature. It has been reported favorably and probably will be fought out on the floor of the house or senate. It is claimed that this bill is not as fair as the one that was repealed two years ago, and that it is practically the same as the District of Columbia law which was declared unconstitutional last fall.

The intangible assets bill affects the large telephone companies and has been passed by the house and referred to the senate for action. It is merely a taxation proposition and seeks to tax the difference between the capital stock, surplus and undivided profits and the actual physical properties.

Commission Fixes Rates for Interchange of Messages.

On February 19, the Wisconsin Railroad Commission authorized the Alliance Telephone Co., of Minong, to place in effect certain switching charges covering service rendered through a switch or a small switchboard located in a store in Lampsen.

The Alliance Telephone Co., the Trego Telephone Co. and the Gull Lake Telephone Co. receive service through this switch and the plan for interchange of messages provides that a charge of 10 cents be placed on calls between the Alliance company subscribers and the Trego company subscribers, of which five cents is to be paid to the store for switching service and the other five cents retained by the company on whose lines the message originates.

The interchange of messages between the other companies at this switch provides for a similar arrangement.

In its decision, the commission stated that this was a situation where the matters involved could not be determined in a manner which might be used in a case of a well developed telephone system, but that the principal problem was to secure any service at all and for that reason the above arrangement was approved.



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Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

February 20: Approval given to the acquisition by the Southwestern Bell Telephone Co. of the properties of the Kinloch Long Distance Telephone Co. of Missouri, Kinloch Telephone Co., Suburban Telephone Co., and Sedalia Telephone Co., all of Missouri.

CALIFORNIA.

February 20: Complaint filed by California Telephone & Light Co., of Santa Rosa, alleging that Mary F. Patton, owner of the St. Helena, Inn, has failed to make payments in conformity with the terms of a contract; authority asked to disconnect a toll station upon the premises of the defendant.

February 20: Petition filed by Upper Lake Farmers Telephone Association for authority to discontinue service in the town of Upper Lake and vicinity, and for authority for the Upper Lake Central, a newly organized unincorporated association, to take over the service.

February 20: Application filed by L. E. and G. Dean for authority to sell to L. and A. Harris a telephone system between Aukum and other points in Alvarado and Amador counties.

February 21: Complaint filed by J. Gowland, charging that the Pacific Telephone & Telegraph Co. has failed to supply telephone service at 469 Westlake avenue, Daly City.

FLORIDA.

February 12: Lake County Telephone Co. denied permission to increase rates at Eustis, pending improvements in service which the company promises to effect by October 1.

February 12: Increased rate schedule granted Leesburg Telephone Co., of Leesburg.

February 12: South Atlantic Telephone & Telegraph Co., of Miami, authorized to increase rates at Miami and Miami Beach.

ILLINOIS.

February 28: Hearing held in Chicago on citation issued to Illinois Bell Telephone Co. to show why rates for service from the Chicago exchange should not be reduced.

February 28: Hearing held in Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in Illinois (outside of Chicago) should not be reduced.

March 1: Hearing held at Chicago on application of A. Haverstick and others for an order requiring the Illinois Bell Telephone Co. to furnish service in or near the city of Rock Falls.

INDIANA.

February 23: Petition filed by Rochester Telephone Co., of Rochester, for authority

to extend a new copper toll line to Akron and terminate it in the Akron exchange.

KANSAS.

February 12: Hearing held at Topeka on application of Cherryvale Telephone Co. for a certificate of convenience and authority to issue \$50,000 worth of preferred stock.

MINNESOTA.

February 20: Order entered permitting Madison Telephone Co. to place in effect certain sundry charges for service at Madison.

February 20: Order entered revoking order of February 16 fixing various charges for the Parnell Telephone Co., of Parnell. Certain charges made lower.

March 7: Hearing to be held at Wendell on application of Wendell Telephone Co. for authority to increase its rates.

MISSOURI.

February 12: Hearing held in Carthage on application of Home and Bell companies for increased rates.

February 12: Hearing held in Carthage on petition of Mt. Vernon Telephone Co. for rate increase for service in Sarcoxie.

NEBRASKA.

February 20: In the matter of the application of the Blair Telephone Co. for permission to make certain charges; ordered that the company be granted permission to charge 25 cents a month for extra directory listings; 50 cents for joint user service, and 10 cents a line call at exchanges at Blair, Kennard and Fort Calhoun.

February 20: In the matter of the application of the Blair Telephone Co. for validation of a 50 cents a month charge for extension service; commission finds that company should charge these standard rates: Business extension, with bells, \$1, and without bells, 75 cents; residence extension, with bells, 75 cents, and without bells, 50 cents.

February 21: Application filed by the St. Bernard Telephone Co. for permission to establish a rate of \$15 a year, with discount.

February 22: Hearing held in the citation of Omaha hotel companies with respect to advertising of local call charges and to ascertain costs of giving service; nine hotels appeared, and submitted figures and arguments; taken under advisement.

NEW YORK.

February 21: Hearing held at Albany on joint petition of Rochester Telephone Corp., Rochester Telephone Co., and New York Telephone Co. relative to transferring the Rochester franchises of the last two named companies to the former company, and on petition of the corporation for a certificate to operate and for issuance of securities. Further hearing to be held in Albany on March 13.

February 26: Hearing held at New York City on question of whether or not rehearing shall be granted in the New York Telephone Co. rate case.

February 28: Hearing held at Albany on rate complaints pending against New York Telephone Co.

March 2: Hearing held at Buffalo on complaint of city and chamber of commerce of Jamestown against rates of Jamestown Telephone Corp.

March 20: Hearing to be held in Albany on rates and service of Rochester Telephone Corp. in Rochester.

OHIO.

February 15: Hearing held in Columbus on application of Ohio Bell Telephone Co. for increased rates for service in Toledo.

PENNSYLVANIA.

February 13: New schedule—proposing to become effective March 3—filed by Mastersonville Telephone Co., of Mannheim. The schedule would change the rates for private box exchanges, moving telephones and other services.

WISCONSIN.

February 19: Switching rates fixed for Alliance Telephone Co., of Minong; Trego Telephone Co., of Trego; Gull Lake Telephone Co., and other companies switching messages through Lampson.

March 1: Hearing held at Madison in re proposed extension by the Farmers Telephone Co., of Cochrane, in the town of Waumandee.

March 2: Hearing held at Madison on application of Eastern Wisconsin Telephone Co. for authority to increase rates at Mt. Calvary exchange.

March 6: Hearing to be held at Madison on application of Lima Telephone Co., of Oostburg, to increase local and rural rates.

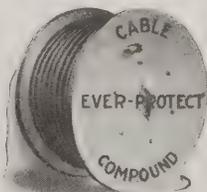
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Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 10

CHICAGO, SATURDAY, MARCH 10, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

CURRENT OPINIONS AND COMMENTS

In the worthy achievement of making the telephone

popular and bringing it within reach of all classes of people, the state of Ohio has played a prominent part.

Back in the '90s, pioneer Independent telephone men of the Buckeye state took the field, and so persistently and effectively did they carry on the work that within ten years they increased the number of stations fully ten-fold. Frank L. Beam, one of these pioneers, retired from the presidency of the Ohio association at its recent convention, after serving continuously for 20 years.

Mr. Beam's intelligent and faithful services to the telephone industry have won him the respect and friendship of the large army that is now necessary to operate the many Ohio companies serving the public. They will regret his withdrawal from the leadership of the Ohio association, although admitting his well-earned right to a rest and feeling assured that able hands will carry on the work he lays down.

* * * *

The interesting statistics Mr. Beam quoted in his last report to the association show clearly and forcibly what Ohio Independents accomplished in the early days to popularize the telephone.

In 1895, with a population of more than 4,000,000 people, there were fewer than 30,000 telephones in the state—even including Cincinnati, Cleveland and other sizable cities. Half of the 88 counties in the state had no telephone exchange, and many did not have even a toll station.

By 1905, when the Independents had been at work ten years, there were more than 200,000 Independent telephones alone, operated by 300 companies. Five years later this development had reached 325,000 stations, representing an investment of \$30,000,000, while the quality of service had been greatly improved.

* * * *

From the start Ohio has had a strong, active telephone association. To its efforts is largely due the success of Independent telephony in the state, although it should not be forgotten that the men of Ohio individually have been unusually aggressive and constructive in their work. They have always realized, however, the benefits of organization.

The Ohio politician long ago was given first place in his class as a result-getter, and the Ohio telephone man isn't a bit behind.

With the adjustments made, eliminating service duplications and stabilizing the field, the Ohio telephone companies face a secure future, and the state association, led by Frank A. Knapp, will continue to function for their protection and successful development.

* * * *

The rider of a hobby will often do queer things in order to protect or advance his pet scheme. Take, for instance, the advocates of public ownership of the utilities. For years their favorite stock argument has been that public ownership meant the dethronement of the millionaire class,

which, according to their peculiar reasoning, have for

years been waxing rich through control of utility corporations.

The public ownership and "Home Rule" shouters have urged that the government—federal or municipal—should take over the utilities so as to stop the rich from getting richer, and give the people a chance to profit by owning and running the street car, gas, electric, telephone and railway facilities. That, in fact, has been their most effective argument.

* * * *

On this basis, logic suggests that the public ownership advocates would be strong supporters of the movement to abolish tax-exempt bonds. Yet, strange to say, the Washington dispatches record that they were opposing the effort to compel the wealthy investors to pay a larger share of taxes.

The reason they assigned for this astonishing attitude is that the amendment to abolish tax-free securities is "a scheme by which the powerful, rich, monopolistic corporations are trying to prevent towns and cities from getting municipally owned electric, gas, street car and other utility service."

* * * *

With such a strong sentiment existing in favor of abolishing tax-free securities and inducing the millionaire investors to bear their share of the tax load, it must have been a big strain on the public ownership spokesmen to rush to the defense of the "plutocrats"—as they call all investors—but they blindly took the jump

at the mere suggestion that the amendment might lay a straw in the way of municipal ownership.

They fear if tax-free bonds are abolished that municipalities will not find it so easy to get the money with which to launch into the utility business.

Bond issues to supply the politicians with oceans of dollars to spend would have to compete with the securities of business and industry, and pay the higher rate which business and industry have had to pay. Of course, that would be a fair, square deal, but the "Home Rulers" do not want it applied to their pet hobby.

* * * *

Apparently they are willing to protect the billions of tax-free bonds to be owned by the "powerful, rich monopolists," if

necessary to *get theirs*. Public ownership makes strange bed-fellows.

Carl D. Thompson, of the Public Ownership League of America, is fighting the amendment bitterly because he thinks the end of tax-exempt bonds would handicap municipal ownership of the utilities.

* * * *

"Two great advantages are enjoyed by publicly owned public utilities in lowering the cost of living," he is quoted as saying. "The first is that these publicly-owned public utilities are not operated for profit, but for service. The second is that they can borrow money at a lower rate of interest than any privately-owned public utility can command.

"This latter advantage will be largely worn away by this new proposed constitu-

tional amendment. It is a thoroughly reactionary measure and should not pass."

On the other hand, it is interesting to note, that Senator Couzens, of Michigan, who as mayor of Detroit put the street railways of that city under municipal control, intends to vote for the amendment. He recognizes the peril and inequity of a situation which permits huge additions to the flood of tax-free bonds, to the injury of general business, and, while admitting there are drawbacks to the proposition as outlined in the amendment, believes it should be adopted.

As a matter of fact, the opposition of the public ownership bloc should win for it the votes of those not bearing the radical brand, when the amendment is again considered next session.

Bell Directors Report on Year 1922

Annual Report of American Telephone & Telegraph Co. Presents Financial and Operating Statistics Showing Organization in Excellent Condition—Interesting Discussion of Various Subjects Relative to the Industry

Twenty-five Bell associate companies earned 5.6 per cent on the book cost of their plants during 1922. Not including its share in the undistributed profits of the associated companies, the American Telephone & Telegraph Co. earned 11.14 per cent on its average outstanding capital stock as compared with 11.10 per cent in 1921. It is conservatively estimated that the equity in the business represented by the American company's stock, including the recent issue, now equals approximately \$190 per share.

At the end of 1922, there were 14,050,565 telephones connected to the Bell system of which 9,514,813 were owned by the Bell companies. There was an increase of 600,658 in the Bell stations during the year and 69,688 in the stations of the Bell connecting companies.

On December 31 the number of stockholders of the American Telephone & Telegraph Co. was 248,925, an increase during the year of 62,583, the largest increase in a year in the history of the company. The average number of shares held is 28. Approximately 46,700 of the stockholders of record are employes of the Bell system.

Extracts from the annual report follow:
New York, March 5, 1923.
To the Stockholders:

In general, the year 1922 has been a year of steady accomplishments in our undertakings, marked by a sensational increase in the demand for telephone service.

The administration of an institution like

the Bell telephone system with its responsibility for a service entering into all of the ramifications of the domestic and commercial life of millions of users and with its responsibility to hundreds of thousands of stockholders and security holders, to work effectively, must be actuated by a continuous policy or motive and must make every line of action conform to a program directed towards carrying through that policy. Changes in times and conditions may properly affect the program but the underlying policy must be constant.

The function of the institution is to give service. Its policy is to subordinate all other considerations to giving a satisfactory service. Service to be satisfactory must be of the scope and quality desired, and it must be worth all and more than it costs.

The service we render is to furnish facilities for intercommunication, and there is no service which enters more largely than intercommunication into family and social life and into the development and operation of commercial activities.

The country we serve differs from any other in the world. It covers an immense area, and but one language comparatively free from dialects is generally spoken. Family, social and commercial interests are widespread. They are not bounded by city, county or state lines, and not entirely by the boundaries of the nation. Telephone service to be satisfactory can be limited by no narrower boundaries.

The service must not only be widely

extended, covering the whole country, but in each community it must be available by a subscriber's line or pay station to the whole community. Telephone service must be available to everyone everywhere in the country for communication with anyone anywhere in the country. That is our objective as to the scope of the service.

The extension of the scope of the service depends first upon there being a demand for it. It must be good service. It must be worth more than it costs.

There must be a supply of money with which to extend the facilities, and in order that that supply shall be forthcoming, the public with money to invest must think well of the institution—and as the investor judges the management largely by the quality of its product, the service must be good.

The earnings must be satisfactory. They must be high enough to attract investment but well within any reasonable measure of value the public may put upon the service.

For a public service institution to have and hold the good will and respect of the public it must have the good will and respect of the employes. They furnish the contact between the institution and the public and they cannot convey what they do not have.

When money is paid for a commodity the purchaser is satisfied if it conforms to his specifications and is worth to him all or more than he pays for it. When money is paid for a continuing service

something more is wanted, and that is: Evidence, by the conduct of the servant, of willingness to serve and a desire to please. A really satisfactory service, therefore, must besides being a technically good service, include that intangible quality which we call "the spirit of service" pervading the whole personnel through all contacts with the public we serve.

Furthermore, there is a condition peculiar to this institution which has to be borne in mind. The public has no opportunity of choice between the service we furnish and another similar service. We alone furnish a nation-wide telephone service. In order to be satisfied, the public must be convinced that we are operating economically and efficiently and furnishing the service at a reasonable charge.

That the other requirement of satisfactory telephone service—that it should be worth more than it costs—is amply met, is proven by the continued demand for more telephones with no effort of salesmanship except the effort to continually improve the service.

The policy of the company is to give such a service as has been described, broad in scope, good in quality and in every way satisfactory to the public.

In our methods of carrying this policy into effect there are certain lines of action which have a bearing upon all phases of the undertaking. In all of these lines of action, foresight based upon studies of the facts of the past and present and intelligent estimates of the future has to be the basis of our program.

Of prime importance in the giving of telephone service are estimates of probable growth in the public's demand for it and provisions for meeting that demand. From the selection of the site for one of the larger central office buildings to the time when that central office is put into complete operation covers a period of about three years.

We can make reasonably accurate estimates as to the increase in population of the country, but we know of no agency which can definitely predict detailed movements of population either from city to city or from city to suburb or from country to city or from one part of the city to another. Of such movements we can only learn when they start and then promptly lay plans to follow with telephone service.

We can make some estimate of the increased demand which will result from the expected improvement of the telephone service or changes in rates and can provide for it, but changes which come about through changes in the value of the dollar or through any other abnormal economic conditions cannot be foreseen.

Telephone rates have not advanced in ratio with individual incomes, resulting in the condition that rates are relatively lower than formerly and more people than before can afford to have telephones.

CONVENTION DATES.

The dates and places of meeting for the various state conventions to be held in the near future are as follows:

Oklahoma, Oklahoma City, March 12-14; North Dakota, Grand Forks, March 13-15; Texas, Hotel Adolphus, Dallas, March 20-23; Wisconsin, Wisconsin Hotel, Milwaukee, March 21-23; Florida, Roberts Hotel, Miami, March 27-28.

The April conventions scheduled so far are: New York Up-State, Powers Hotel, Rochester, April 18-20; Iowa, Ft. Des Moines Hotel, Des Moines, April 24-26.

It is due to such factors that there has been an abnormal demand for service during the past year—some of it general and some increased by movements of population—which we have been unable to wholly meet.

A national service can exist only through an organization which provides for a uniform policy and co-ordinated action. Uniformity of policy and co-operation come to the Bell system through contract relations and community of ownership. The American Telephone & Telegraph Co. owns directly or indirectly all of the voting stock of 14 associated companies, 78 per cent of nine others and 31.5 per cent of two others.

The operation of the Bell telephone system is in the very capable hands of the regional operating organizations, the associated companies.

It is the responsibility of the headquarters organization—your company—to make such provisions for the future as will establish more firmly each year the standing and soundness of the system as a public institution.

A very large and constantly increasing proportion of the men, women and even the children of the country in their personal and business affairs are either regular or occasional users of the telephone. Hundreds of thousands are owners of our stock and other securities. It is essential to the perpetuation of this institution furnishing the telephone service of the country that it should have the good will and respect of the country, fully justified by performance.

To get and retain that good will and respect it seems to us that, besides giving good service at reasonable rates, we must spare no effort to get in the minds of the people a thorough and complete understanding of our problems, our aims, our methods and our results. We attempt to accomplish this through our policy of full publicity and particularly through agencies which are a part of the institution.

Well-informed and widely-distributed stockholders are a valuable agency. We

embrace every opportunity to increase their number, and through the publications of the company and the Bell Telephone Securities Co. to have them well informed.

It is our aim also that every employe in every division and rank in the service shall take such an attitude toward the part of the public with which he or she comes in contact as can only go with interest and pride in the service. With that end in view, not only ownership of stock is encouraged but every possible opportunity is taken to inform all of the employes, whether stockholders or not, as to what we are trying to accomplish and why, and as to what they can individually and jointly contribute to that accomplishment.

Financial Results.

The investment of the Bell system in plant and equipment, including construction in progress, as carried on the books of the companies as of December 31, 1922, aggregated \$1,758,000,000, but as stated in previous reports the true value of this investment is much greater than its book cost.

The 25 associated companies (excluding your company) earned 5.6 per cent on the book cost of their plant during 1922, but based on the true value of the property, a lower return was realized. This earning, while still below what is considered by regulatory bodies and the public to be a fair return, represents a slight improvement over 1921. There are some areas where earnings are too low, and in them every effort is being made for improvement.

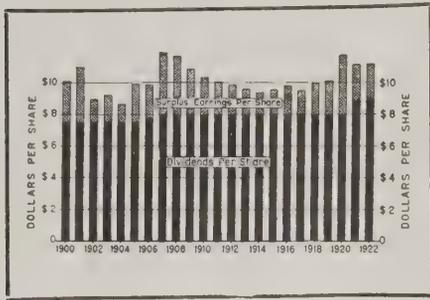
Not including its equity in the undivided profits of the associated companies, your company in 1922 earned 11.14 per cent on its average outstanding capital stock, compared with 11.10 per cent for 1921. About 20 per cent of the net income of the associated companies was retained by them as undivided profits and has been invested in their respective plants, i.e., in telephone property required to meet the increased service demands.

While the average rate of return on the book cost of the associated companies was 5.6 per cent, due to the conservative financial structure of the Bell system, with a return of only 4.7 per cent the American Telephone & Telegraph Co. would still have earned—but without any margin for surplus—its 9 per cent dividend.

Conservative financial and business policies have been followed during the entire history of your company. Adequate provision has been made for depreciation, and the funds taken from earnings for this purpose have been invested in the business, so that the investment of its stockholders and creditors has at all times been kept unimpaired. In the aggregate more than \$40,000,000 in excess of par has been paid into the treasury in cash in respect of stock outstanding. At no time have all of the earnings been paid out in divi-

dends, but during its entire history a portion thereof has annually been retained in the business and invested in property.

Taking into account the actual amounts paid in on issued capital stock, the surplus earnings and other company funds in-



Net Earnings Per Share of the A. T. & T. Stock Available for Dividends.

vested in the business, and accumulated surpluses of the associated and controlled companies, it is conservatively estimated that the equity represented by the stock of your company now equals approximately \$190 per share. This figure gives full effect to all new capital stock issued during the year, including that issued under the offer of August 24, 1922.

A knowledge of these facts is fundamental to a correct understanding of the financial strength of your company and the continued stability of its dividend rate.

The accompanying chart presents in graphic form the net earnings per share available for dividends on the stock of your company for each year since 1900.

During the past two years the new financing for the Bell system has been accomplished more through the issue and sale of stock, than through the issue of bonds and notes. The total capital stock outstanding now exceeds debt obligations. Such an improved relationship provides a sound basis for the issue of long-term and other debt obligations by the companies at reasonable rates of interest if and when funds are required for the extension of the business or when desirable for refunding.

The percentage relationship of capital obligations now outstanding in the Bell system, as compared with similar outstanding obligations at the end of 1920, is shown in the accompanying chart.

Common stock (including installments) of the Bell system in the hands of the public was increased during the year \$166,100,000, of which practically the entire amount is stock of the American Telephone & Telegraph Co.; and preferred stock outstanding was increased \$38,700,000, all of which was stock of associated companies. On the other hand, outstanding debt obligations show a net decrease of \$22,600,000—this, after marketing two major bond issues aggregating \$60,000,000.

Rate Regulation.

When the United States government relinquished its war control of the telephone system, our companies were confronted

with the problem of readjusting telephone rates to meet the new conditions created by the war.

At the same time, the regulatory powers of the state public service commissions, which had been in suspense during the period of federal control (although not completely so until near the close of the period), were revived.

Increases in rates for service were necessary generally throughout the country, if the system was to preserve that sound financial condition which was in the interest of the public no less than of the companies themselves. This problem presented two difficulties in particular.

One of these difficulties grew out of the fact that before the war our companies had rarely found it necessary to increase rates, although giving a constantly enhanced service—a result which had been made possible by economical management and by great strides in the development of the art.

The other difficulty was due to a more or less widespread belief that there would be an immediate sharp recession in the cost of labor and material, which would make increases in rates unnecessary. The expected price recession did not materialize, has not yet materialized, and it is now generally recognized that it cannot be looked for during the next several years.

The fact that it was a new experience for the state commissions to be asked to approve increased telephone rates, coupled with the feeling on the part of many commissions that conditions would soon right themselves and take care of a revenue situation admittedly unfair to the companies for the time being, made the problem harder than it should have been.

This was not unnatural but it was unfortunate. The companies of the system adopted and pursued a policy that was patient, fair and most conservative. Rate increases were made or sought quite generally throughout the country, never more than were reasonable and generally substantially less than the facts would justify.

For the most part, the commissions have frankly faced the facts and have fairly discharged their duty under the law, with the result that in the great majority of instances, telephone rates have been placed on a level approximately fair to the companies and certainly not unfair to the subscribers. In a few instances, the state commissions have not responded in this way, but have persisted in refusing or failing to take cognizance of the new higher level of wages and prices.

In such cases, the companies have been obliged to have recourse to the state or federal courts to secure and protect the revenues required as much in the public interest as in theirs, and to which they are entitled under the law. Happily, the number of these appeals to the courts has been small and has constituted a very small percentage of the total number of cases.

Happily, also, the companies have been almost uniformly successful to date in this litigation, the courts having vindicated the position taken by the companies.

Early in 1922, the Supreme Court of the United States decided the first case involving the license contracts with the associated companies to reach that court. It affirmed a decision of the lower court holding that the license contract is fair and reasonable and advantageous to the associated company.

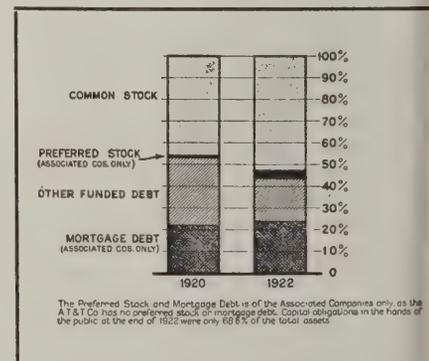
Progress has been made during the year toward the clarification of some of the fundamental questions involved in the administration of the commission laws of the various states. Two or three decisions by the courts in 1922, including one by the Supreme Court of the United States, should exert a marked influence toward the recognition of the sound construction of these laws.

Development and Research.

The use of cable, whether underground or overhead, though absolutely necessary, has presented most formidable scientific problems. When first introduced, less than half a mile of cable in a circuit was enough to seriously interfere with conversation between city and suburbs. By our continued efforts, the range of possible use of cable was gradually increased until by 1920 conversation was possible through 2,000 miles of cable.

The work of the past year has developed methods which will make conversation scientifically possible through 3,000 miles of cable equal in all respects to a conversation from one room to another in the same building.

During the year we have continued our studies and experiments in wireless telephony. They have been directed toward ascertaining more about the laws governing the various conditions of the ether as a medium of communication, as well as developing better methods of transmitting and receiving. We have devised new



Capital Obligations of the Bell System in the Hands of the Public.

methods for measuring accurately the currents transmitted by radio and for measuring the intensity of the so-called static disturbances which interfere with radio transmission.

To test these improvements a new series

of trans-oceanic experiments was undertaken late in the year, previous experiments of this kind having been successfully conducted as described in our report for the year 1915. From these recent experiments valuable data have already been obtained showing the variation in intensity in trans-oceanic speech during the periods of daylight and darkness and twilight, and under different conditions of weather.

During the night of January 14-15, 1923, for a period of two hours, long telephone messages were sent from the offices of the American Telephone & Telegraph Co., 195 Broadway, New York City, through the Rocky Point station of the Radio Corporation. The speakers at New York were distinctly heard and understood in London and their voices were easily recognized by representatives of civic, scientific and commercial interests and of the press.

The extent to which wireless telephony becomes or continues of real value to civilization as a means of intercommunication across the ocean or similar spaces which cannot be bridged by wires depends upon many other than scientific and technical conditions.

In certain sections of this country, less than a year of radio broadcasting has shown how interference destroys its value even as a source of entertainment, and in connection with international intercommunication, there are all of the difficulties arising from lack of centralized control of the complete medium of communication.

It is in the expectation that ultimately by national and international control interference will be obviated, and that by co-operation other problems having international aspects may be at least partially solved, that we are continuing our studies. Experiments in wireless telephony as an additional agency of intercommunication are, therefore, under present conditions, more of scientific than of commercial value.

The exchange of patent licenses between this and certain other companies, described in the report for 1920, has proved valuable. The co-operation in research and use of facilities which it provided has greatly facilitated our experiments in trans-oceanic wireless telephony.

Radio Corporation Stock.

Ownership of stock in the Radio Corp. of America has not, however, proved to be necessary for co-operation. Therefore, in line with our general policy to hold permanently only the stocks and securities directly related to a national telephone service, we have disposed of all stock in the Radio Corporation, a small amount which appears among the assets on December 31 having since been sold.

As in the past, the greater value of the development and research department is in the continual study of all of the mechanisms and materials going into the

plant of the Bell system and the improvements resulting in greater economies in construction, maintenance and operation, in protection of the plant and in better service. In this report we can only mention an occasional conspicuous scientific contribution which seems to have a large possibility either in extension or improvement of the service.

Operation.

Not only are the speed and accuracy of establishing the desired telephone connections better than in previous years, but in the toll service there has been a marked improvement. The standard of transmission—that is, the clearness and loudness of speech—has been maintained, and in many cases improvements have been made over the results of previous years.

The maintenance or upkeep of the plant has been kept at the high standard necessary to give satisfactory service.

During the year there have been added to the system by new construction and extension a total of 586,000 stations, the largest number of stations ever added in any one year. Large as this figure is, the construction work required to connect them has been made even greater by the fact that these stations have not been uniformly distributed over the system.

Many communities and sections, chiefly those primarily dependent upon agriculture and mining, have shown relatively small growths, while in other sections the demand for additional service has been unprecedented. As a result of the very large growth and its concentration in certain sections of the country, the extensive program planned for the beginning of the year and enlarged from time to time during the year has not been sufficient in a few places, especially in the more rapidly-growing residence areas, to provide the lines and switchboards necessary to meet immediately as received all demands for new service.

These places are receiving special attention and work is under way in order that we may be able to promptly furnish telephones to all applicants for service.

In any emergency the first relief is by communication—by an appeal for help—and the agency to which the public turns first is the telephone. All practicable precautions should be taken in order that an agency upon which the public has come to rely should be always available.

Our plan is to protect the main arteries and the large centers and the particularly vulnerable points, and elsewhere to provide means of quick restoration after occasional damages.

Over 93 per cent of the exchange wire plant is in cable and 74 per cent of that cable is underground.

There are now in service approximately 2,100 miles of long-distance toll cables connecting the Atlantic seaboard cities from Boston to Washington, with an arm extending west to Pittsburgh which will

be extended this year through Youngstown to Cleveland and will later be extended through Toledo to Chicago. Each year adds something to this factor of safety. The larger central offices and the shops of the Western Electric Co., Inc., are housed in fireproof buildings, and all through the system gangs are on the alert to repair without delay damage to the plant as it occurs.

In faithful reproduction of human speech at a distance so that the person listening will understand with ease, so that the speech transmitted will be of proper volume and quality without distortion, our engineers and scientists have achieved what seemed to be the impossible.

On the through lines distance has been eliminated. There is practically little difference to the listener whether speech over the telephone comes from the next room or across the continent.

The program of introducing machine switching in the larger centers is going on as planned and with satisfactory results.

The Working Forces.

The construction, maintenance and operating forces were never in better condition or producing more satisfactory results. The production per employe in every branch of the work is higher than previous records.

This gratifying showing is due to a number of causes among which are improvements in methods, the interest and loyalty of the forces and their greater experience due to the reduced turnover as contrasted with recent years. For the past year the turnover of the working forces of the Bell system has been about one-half of what it was two years ago, and compares favorably with the best of the pre-war years.

Previous reports have referred to the plans for employe representation in the associated companies. These plans naturally vary in different companies in accordance with the preferences or desires of the employes in each company. The general result of the various plans, however, is much the same in that they practically lead to regular meetings for conference and discussion between representatives of the employes and representatives of the management.

These meetings have come to be recognized as a regular and valuable function in the conduct of the company's business. The result of the activities of these joint conference committees is proving to be more far-reaching than was anticipated.

The primary purposes of the plans were to provide the machinery for establishing a better acquaintance and more sympathetic understanding between the management and the other employes; and to afford ready opportunity for individuals or groups of individuals to discuss with the management any policy or practice of the company which directly or indirectly affected the employe, his relations to the

company or the conditions under which he performed his work.

Experience has demonstrated that the representation plans have in the main served admirably to meet these purposes. But the activities of these joint committees are rapidly broadening into new fields of constructive effort, and not only the joint committees but the various employe organizations and special employe committees are continually making new and valuable contributions in the operation of the business.

There is not only a steadily growing interest on the part of the individual employe in the technique of his own special work and its relation to the work of his associates; but there is generally on the part of all employes a notably increasing appreciation of their responsibility to the public and of the fact that they are representatives of and spokesmen for the companies of which they are an important part.

During the past year the management has taken advantage of the opportunities presented by the joint conference committee meetings to outline operating objectives, methods and results, and already it is evident that employe representation can contribute as much to the success of the operating performance of the organization as it has contributed to its public relations and morale.

The Western Electric Co.

It is a feature of telephony on the national scale that every part of the widespread physical plant must be related to every other part in order that intercommunication may be universal and reliable.

Thus, while the technique is advancing and the plant is expanding, both design and construction must harmonize with what already exists and must look forward to the future. Furthermore, every piece of equipment must be designed with a view to quantity production, ease of shipment and installation, reliability of operation and simplicity of maintenance, as well as its first cost.

It follows that during the entire design process there must be a continuing contact of minds skilled in operation, in invention and in manufacture. This contact is maintained in the Bell system because the different companies which are necessary under our laws and which are responsible for operation and for manufacture of equipment are bound together as parts of one system with a common purpose and a coordinated program.

It was a recognition of this underlying principle that led to the acquiring many years ago of a controlling interest in the Western Electric Co. and the gradual evolution during succeeding years of a relationship which has resulted in that company becoming the manufacturing and purchasing department of the Bell system. About 98 per cent of its voting stock is

owned by the American Telephone & Telegraph Co.

The expansion of the company during the past few years has been rapid in order to keep pace with the rapidly increasing demands for telephones and telephone equipment. Important additions have been made to its principal manufacturing plant at Hawthorne (near Chicago), Ill., and a tract of about 50 acres at Kearny, N. J., has been acquired, where it is proposed to build an auxiliary manufacturing plant.

The sales billed by the company during the year 1922 aggregated \$210,900,000, which is the largest year on record. Of these sales, \$158,600,000 were to the Bell companies and \$52,300,000 were to other customers.

At the end of the year the unfilled orders on hand aggregated about \$62,000,000 and the company's prospect for 1923 is a volume of business at least as large as that of 1922.

Statistics and Financial Data.

The United States is served by approximately 10,200 separate telephone companies, including the 26 companies associated in the Bell system, and 9,261 companies whose stations are connected with the Bell system. There are also a large number of rural lines and associations operated mainly on a mutual or co-operative basis and not rated as companies. Of this group, over 27,000 are connected with the Bell system.

At the end of 1922, the number of telephone stations connected with the Bell system in the United States was 14,050,565, of which 9,514,813 were owned by the associated companies of the Bell system and 4,535,752 by local, co-operative, and rural Independent companies or associations having sublicense or connection contracts, i.e., the so-called connecting companies.

The following statistics show the development of the Bell system on December 31, 1922, and its growth during that year:

	Telephone Stations Number at end of Year	Increase dur- ing Year
Bell-owned	9,514,813	600,658
Bell connecting	4,535,752	69,688
Total	14,050,565	670,346

There is now one Bell telephone station to each eight of the total population in the United States, as compared with one station to each 13 of the population ten years ago, and one to each 90 of the population in 1900.

Telephone Connections—Bell-owned Exchanges		
Average Number Daily During Year		
Exchange connections		36,831,000
Toll connections		1,523,000
Total		38,354,000
Increase over 1921		3,327,000

Miles of Wire at End of Year					
	Bell owned	Aerial	Under-ground	Total	Increase during Year
Exchange	8,184,372	18,222,913	26,407,285	2,625,107	
Toll	2,653,068	1,556,169	4,209,237	171,594	
Total	10,837,440	19,779,082	30,616,522	2,796,701	
Bell connecting					
Toll			464,790	3,290	

There has been distinct gain in the amount of wire carried in underground

cables. At the end of the year, over 64 per cent of the Bell-owned wire mileage was in underground cables.

Net Plant Additions—Bell-owned.	
	Added in 1922
Real estate	\$ 14,416,880
Equipment	83,681,931
Exchange lines	45,103,137
Toll lines	13,732,127
Construction work in progress	28,419,290
Total	\$185,353,975

The above amount of net plant additions compares with the additions of the previous 19 years as follows:

Net Plant Additions During 20-Year Period	
1903	\$35,368,700
1904	33,436,700
1905	50,780,900
1906	79,366,900
1907	52,921,400
1908	26,637,200
1909	23,700,100
1910	53,582,800
1911	55,660,700
1912	75,623,900
1913	54,871,900
1914	50,045,300
1915	32,863,700
1916	65,224,700
1917	118,590,500
1918	77,922,600
1919	73,446,000
1920	147,882,100
1921	180,039,200
1922	185,354,000
Total	\$1,479,331,300

Employees	
Number on December 31, 1922	243,053

The number of employes in the service of the Bell system at the end of 1922, compared with the number on December 31, 1921, shows an increase of 18,765. The increase in number for 1922 is comprised almost entirely of plant and traffic employes, reflecting the effort made by the companies to meet the increased demand for service with the accompanying requirement of additional facilities.

Bell System Income Statement
For Years Ending December 31, 1921 and 1922 (Duplications Excluded)

	1921	1922	Increase
Exchange revenues	\$343,133,098	\$374,718,580	\$31,585,482
Toll revenues	146,459,202	163,097,837	16,638,635
Miscellaneous revenues	7,495,933	9,012,656	1,516,723
Total operating revenue	\$497,088,233	\$546,829,073	\$49,740,840
Depreciation	\$ 70,858,073	\$ 80,081,280	\$ 9,223,207
Current maintenance	73,061,099	79,817,856	6,756,757
Traffic expenses	148,372,962	152,948,539	4,575,577
Commercial expenses	47,831,650	49,650,397	1,818,747
General and miscellaneous expenses	23,563,499	25,853,826	2,290,327
Total operating expenses	\$363,687,283	\$388,351,898	\$24,664,615
Net operating revenues	\$133,400,950	\$158,477,175	\$25,076,225
Uncollectable revenues	\$ 1,843,962	\$ 3,081,821	\$ 1,237,859
Taxes	34,512,479	41,215,441	6,702,962
Operating income	\$ 97,044,509	\$114,179,913	\$17,135,404
Non-operating revenues—net	13,651,814	17,209,311	3,557,497
Total gross income	\$110,696,323	\$131,389,224	\$20,692,901
Rent and miscellaneous deductions	\$ 6,497,642	\$ 6,897,106	\$ 399,464
Interest deductions	36,773,998	37,869,366	1,095,368
Total deductions	\$ 43,271,640	\$ 44,766,472	\$ 1,494,832
Net income	\$ 67,424,683	\$ 86,622,752	\$19,198,069
Deduct dividends	47,848,394	60,305,204	12,456,810
Balance	\$ 19,576,289	\$ 26,317,548	\$ 6,741,259

(Please turn to page 29.)

Telephone Poles Break With a Snap

Old Cedar Poles Varying in Age from 10 to 20 Years Tested to Destruction by Engineers to Verify Theory That There Is Little Change as to Unit Strength with Age—Published Through Courtesy of The Northwestern Bell

By L. F. Holmes

Iowa Division Toll Line Engineer, Northwestern Bell Telephone Co.

A big truck, bearing on its side the Bell seal, drew out to the side of an Iowa road and unloaded a crew of men who set about doing one of the strangest things telephone men ever did. After deliberate and rather painstaking preparations, they began breaking down telephone poles.

Waste ful? Not a bit of it! Economical; vastly economical in the work of prolonging the life and saving of thousands of telephone poles throughout the United States—the whole Bell system.

Engineering theory says, "There is very little change in the unit strength of a cedar pole on account of age so long as it remains sound." In order to verify this theory, more than 80 old poles varying in age from 10 to 20 years, were tested to destruction by Northwestern Bell and American Telephone & Telegraph Co. engineers in the Iowa division. The poles tested were in seven different toll lines, with many different soil conditions.

A rope was attached at or near the top of the pole to be broken. The pole was then pulled over by the use of snatch blocks anchored to another near-by pole. The breaking strength of the pole under test was measured in several ways, including the use of a 5,000-pound dynamometer or scale, which was inserted be-

tween the snatch blocks and the pulling rope.

The pull was increased gradually on each pole until in some cases it became terrific. Then, when the pole, unable to

ing taken out of the snatch blocks and before any reading was taken on the dynamometer, while another pole with a very small circumference refused to break; the butt of the pole cutting out of the ground.

Both of these poles looked to be in about the same condition from a casual survey, while as an actual fact the small pole was solid and the large pole was dry rotted.

At each pole broken, a picture was taken of the break and about six to ten inches of the pole adjacent to the break were sawed off, weighed to the fractional part

of an ounce and then carefully wrapped in heavy paper for shipment to laboratories, where careful reports were compiled on their strength under test. These reports have been distributed to companies throughout the Bell system and will help prolong the lives of thousands of other telephone poles.

The department of development and research of the American Telephone & Telegraph Co. and the chief engineer's department of our company separately computed the breaking strength of each pole and the unit fibre strength in pounds per square inch of sound wood, obtaining practically identical results which are shown in the accompanying table.

From this table it will be noted that the poles 22 years old were the strongest. This



When Cedar Poles Are Broken Their Interiors Are Sometimes Found to Look Like This.

longer stand the strain, broke with a snap, the dynamometer showed the pull in pounds. This tragic moment in the life of the pole is technically described as, "Failure usually occurred with a snap!"

These tests called my attention very forcibly to the fact that the strength of a pole cannot be accurately estimated by its appearance above the ground line. One pole with an exceptionally large circumference broke when the slack was be-



Method of Measuring Amount of Yield at Ground Line During a Pole Test. Results of This Measurement Must be as Exact as Possible.



Method of Measuring Strain of Pole Under Test. The Pole Is About to Snap.



The Dynamometer Measuring the Strain Put Upon the Cedar Poles in Testing Them to the Breaking Point to Determine Their Strength.

does not mean that the strength of a pole increases with age, but that in this particular case the oldest poles happened to contain sound wood that was above the average in strength. A strength of 3,600 pounds per square inch has long

Years in service.	Number of poles completely tested.	Average unit fibre strength per square in.
22	11	4,303
20	4	3,854
16	6	3,185
15	2	3,492
14	3	3,583
13	3	3,532
10	4	4,150

Results of Strength Tests of Cedar Telephone Poles.

been accepted as a standard for the average strength of eastern white cedar poles.

While final figures were obtained from only part of the poles tested, on account of the destruction by insect life and decay not being confined within reasonable limits, it is felt that sufficient poles were tested to bear out the original theory that "there is very little change in the unit strength of a cedar pole on account of age so long as it remains sound."

In other words, from the conditions outlined in this article it appears that the replacement of a pole should not be determined by its age, but by the amount of actually sound wood at its weakest point, which is generally at or near the ground line.

Telephone and Power Engineers Coöperate for Mutual Benefit.

Learning that the California-Oregon Power Co. contemplated building a 115-mile, 110,000-volt power line from Prospect to Eugene, Ore., the Pacific Telephone & Telegraph Co. investigated and found that the power line was to follow the same general routing as the San Francisco-Portland toll line for a distance of about 70 miles, between Roseburg and Eugene.

The matter was promptly taken up with the California-Oregon Power Co.'s engineers, from whom it was learned that their plans called for an intermittent power exposure with the San Francisco-Portland toll lead for a distance of 14 miles at a roadside separation of approximately 45 feet. Obviously, this arrangement was not a desired condition, because of interference that might be expected.

In addition, the original survey contemplated several power crossings over the Pacific Bell Co.'s toll lead. Through coöperation between the two public utilities, the power crossings were stricken from the plans and the separation between the two leads was increased from 45 feet to a minimum of 500 feet. Changes were necessarily made in both

leads and the expense thereto was apportioned satisfactorily.

During the construction of the power line, it was necessary to overbuild working toll circuits at some points before they could be removed to their new permanent location. As a means of physical protection, the power company placed wooden protecting bars on the top crossarm of each pole in order to lessen disturbances to the Pacific Bell service during the time of stringing its wire.

The power circuit, as completed, is 128 miles in length instead of 115, as originally planned. It was energized with 60,000 volts, ultimately 110,000, and put in service the first of November. To date no trouble has been experienced on toll circuits, by virtue of the parallel as created, although some noise was introduced on the Bell lines north of Eugene, where they closely parallel the old power system to which the new line is now connected.

The entire project from date of announcement to date of service exemplifies and proves the value of prompt and satisfactory coöperation between the two groups of engineers representing power and voice transmission.

Investigation of Soil Corrosive Action on Pipes.

The damage to buried pipe structures, due to the corrosive action of soil, is known to run into enormous sums annually. In order to throw further light on the ways and means of reducing losses from this source, the U. S. Bureau of Standards instituted, about a year ago, a very comprehensive investigation into the entire subject.

This investigation has been undertaken with three main objects in view: First, to determine what types of soils throughout the country are especially corrosive to iron and steel; second, to determine which kinds of iron and steel pipe are most resistant to the corrosive action of particular types of soils, and, third, to investigate the most practical means of reducing damage from this cause.

The work is carried on with the active co-operation of the principal manufacturers of iron and steel pipe, and the large public utility corporations throughout the country and the principal users of pipe, and with the Bureau of Soils of the Department of Agriculture.

The steel interests and the public utility interests are incurring the major part of the expense of the investigation. The Bureau of Standards plans and directs the work. Approximately 9,000 specimens of the pipe have been furnished free of charge by pipe manufacturers.

The last of these specimens were buried several months ago.

The tests are being made in 46 different soils in as many separate locations

widely scattered throughout the United States. They represent practically all the principal soil types to be found in this country. It is planned to start taking these specimens up for examination after they have been down about a year. This work was started in February in the southern district, where the pipe specimens were buried last winter. It is expected that the more corrosive soils will yield considerable information on the first examination and the less corrosive soils will require a longer period. The investigation will be continued for a period of at least eight or ten years. Specimens being taken up for each location about every year or two for examination. The field work is being supplemented by a series of laboratory investigations that have a direct bearing on the soil corrosion problem.

Owing to the very urgent demand from many sources, it is planned to increase considerably the scope of this investigation. The brass manufacturers have requested that numerous brass specimens be included in the test, particularly of fixtures designed to be used with wrought iron and cast iron pipes. It is planned also to include a considerable number of specimens of pipe coated with various types of protective coatings.

These will include some additional specimens of pitch-treated pipe, but will more particularly refer to metal covered pipe, such as those covered by the various processes of galvanizing, also lead covered pipe for which rather strong claims have recently been made. Arrangements have been made with the manufacturers of galvanized pipe and lead-covered pipe to furnish the necessary samples. These will be buried at the various locations when the first inspection of the iron pipes is made.

Third Machine Switching Central Office in Service in New York.

"Walker" the third of a series of machine switching telephone central offices which the New York Telephone Co., is now installing in Greater New York, was placed in successful operation Saturday night, January 20, in the company's building at 24 Walker Street, Manhattan. This central office serves a portion of the downtown wholesale district. The new apparatus was placed in service by the transfer of 2,200 telephone stations from the Walker manual switchboard to the new equipment.

Inauguration of the machine switching type of central office operation in New York City has been completely successful. Pennsylvania, the first of the machine switching offices has been in operation since October, 1922, while the second office, "Academy" was placed in service in December. These, together with the new Walker office are now serving about 23,000 telephones in the city from which calls are made by the use of dials.

Argue Going Value and Depreciation

At Hearing of Indiana Bell State-Wide Case Last Week Extended Discussion Took Place Regarding Going Value and Depreciation as Applied to Present Property of the Indiana Bell Telephone Company and Its Purchases

Testimony submitted to the Indiana Public Service Commission last week by B. G. Halstead, appraisal engineer for the Indiana Bell Telephone Co., in regard to the inclusion of going value in the purchase price of the Central Union Telephone Co., was directly opposite to testimony submitted by him to the commission at a hearing held in South Bend, Ind., it was brought out through cross-examination of Mr. Halstead by Frank B. Faris, attorney for the commission, at the continuation of the consolidated rate case hearing.

Discussion of Going Value.

The Central Union property was purchased by the Indiana Bell for \$18,000,000, both companies being owned by the American Telephone & Telegraph Co. Mr. Halstead testified, when questioned by Mr. Faris, that in his opinion the item of going value was not included in the purchase price.

Mr. Faris then produced the record of the South Bend case and read where Mr. Halstead had testified it was reasonable to assume that the item of going value had been included in the purchase price.

Mr. Halstead was visibly disconcerted by having this conflicting testimony brought to light. He attempted, however, on further questioning by Mr. Faris, to reconcile the two statements by saying that it was possible that the item had or had not been included in the purchase price.

Mr. Faris scored again during the hearing when he drew from Mr. Halstead his theories on determining the item of going value in making a valuation of utility property. Mr. Halstead insisted that the cost of reproduction of a business should be the controlling factor in determining going value.

Mr. Faris read from the Indiana public service commission law, in which it is stated that in fixing a valuation the commission shall take into consideration the "cost" of establishing a business. He took the position that this section of the law referred particularly to going value and it appeared that Commissioner Edgar Blessing accepted the same interpretation as he continued the examination of Mr. Halstead along this line.

Mr. Halstead refused to admit that the Indiana law quoted by Mr. Faris referred directly to the determination of going value, stating that it might refer to past profits.

Methods of determining going value of property occupied a large part of the testimony submitted, although at times

the discussion wandered into other fields. Mr. Halstead was asked and expressed his opinion in regard to the cost of reproducing paintings of the great masters, rare books and other artistic objects.

Graphs submitted by Mr. Faris, based on testimony of company witnesses, were discussed at the hearing. The graphs showed the relationship between going value per station for the various exchanges and revenue derived from the present and proposed rates. It was brought out that in many exchanges a high going value was established, although the property is shown as being operated at a loss or no profit.

Counsel for the company questioned the accuracy of the graphs since the revenue from all classes of service was not included in making up the exhibits.

When the hearing opened Friday, Commissioner Glenn Van Auken presiding, Mr. Halstead was asked many questions pertaining to the weight that prices at recent purchases and sale should have in valuing the telephone property, and about the method by which the appraisal was made and by which going value was calculated.

Mr. Faris brought out while Mr. Halstead was under cross-examination that he is claiming for the company a going value for the Indianapolis exchange of \$3,032,174.76; that in 1919 he claimed a going value of \$1,998,382; and that in 1918 the company claimed a going value of \$932,000. The Indianapolis Telephone Co. in 1919 had not yet been acquired by the Bell, which paid \$4,250,000 for it. Mr. Halstead admitted that in the purchase of the Independent company its going value was included and Mr. Faris wondered how the going value was jumped from \$1,998,382 in 1919 to \$3,032,174.76 for the present rate case.

Appraised Value and Purchase Price.

Referring to Mr. Halstead's testimony that if appraised value were less than the purchase price, he would give weight to the purchase price, Commissioner Van Auken asked:

"You have appraised the Indiana Bell property at \$42,000,000 in round numbers. Suppose the property had been bought for \$50,000,000. Would you have considered the purchase price?"

"If in my opinion a greater value (than the appraised value) were necessary to protect the securities of the company to keep it from bankruptcy, I might consider the purchase price," was the reply.

Mr. Halstead said that there might be a time when it would be necessary, for the protection of the property, to permit

it to earn more than the usual return on value of the property.

"Under what circumstances?" asked Commissioner Van Auken.

"Where capitalization exceeds physical value. Where it would mean bankruptcy and stop service to the detriment of the public. In that case the protection of capitalization might be justified."

Answering Commissioner Van Auken's question, Mr. Halstead said in appraising the property he did not give any consideration to present earning power. He said he considered in his appraisal whether the plant was economically wise and needed, and answered in the affirmative in the case of all the exchanges. He took the situation of the Indiana Bell as a whole.

Considerations in Buying a Utility.

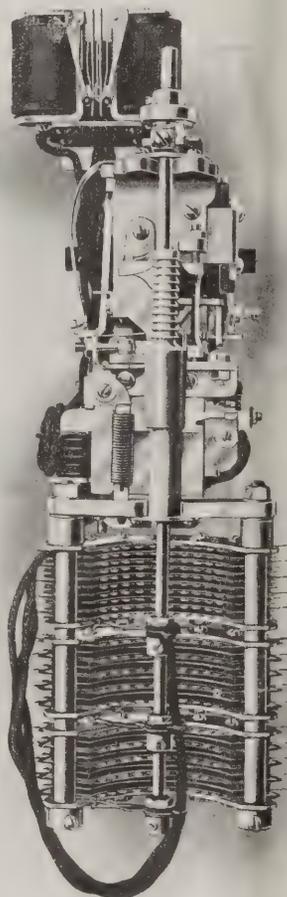
The commissioner asked a series of questions as to what a group of men proposing to buy a utility would consider. In answer Mr. Halstead said earning power would be an important consideration. The commissioner's questions were by way of showing that the purchase price paid by the Indiana Bell to the Central Union was entitled to much weight, though Mr. Halstead said he gave it no weight in his appraisal.

How Mr. Halstead computed a going value of \$7,027,952.90 was the subject of a cross-examination Thursday afternoon for more than three hours by Mr. Faris. The going value claimed by the company is 20 per cent of \$35,139,764.45, at which Mr. Halstead appraised the physical plant.

From the cross-examination it appeared that when the Indiana Bell bought the property of the Central Union company about three years ago and paid \$18,000,000 for it, as shown by the Indiana Bell books, it acquired whatever going value there was in the property, and the question has been raised as to whether in calculating 20 per cent for going value in the present rate case, the case on which the 20 per cent is applied does not already include a good deal of going value.

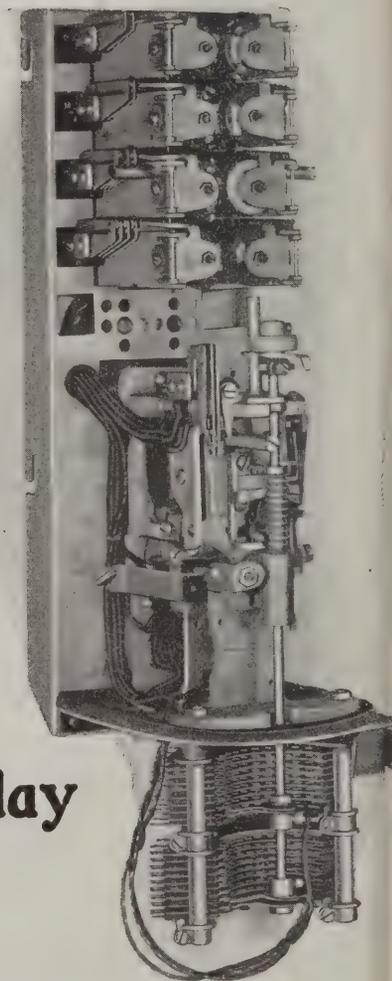
After the Indiana Bell acquired the Central Union it bought other telephone property in Indiana and made additions and extensions so that the capital account was increased on the books from \$18,000,000 to about \$30,000,000. The company in the rate case is claiming a value of \$42,611,590.93, which includes the physical value, going value and \$443,873.58 for working capital.

Mr. Halstead's appraisal was on the cost of reproduction basis, and does not



In 1902

The Strowger Automatic Switch



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Oldest, but Most Modern

Strowger Automatic equipment is not new. The same basic design is in use today that was established more than twenty years ago. That the fundamental principle behind this design is sound is proven by long successful operation in scores of exchanges in all parts of the world.

Strowger Automatic equipment is modern. Added to the original basic design are all of the improvements and refinements that have been made available through twenty years of careful research and extensive operating experience.

Strowger Automatic combines all of the advantages of standard, time-proven design with the best and latest ideas known to modern telephone engineering.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS
BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd. London Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



relate to original costs, or to what the Indiana Bell paid for the Central Union or other telephone property. He testified that in calculating going value he used as a basis the physical value of the property and estimated what it would cost to reproduce the business and make it a going concern as distinguished from a plant ready to do business but without patrons.

He did not use the actual cost of producing the business, as might be shown from the books, but estimated what it would cost to make the property a going concern on the basis of present reproduction cost values. He used actual costs of getting business as a measure in determining what the costs would be on an assumed or estimated reproduction cost.

Mr. Faris brought out in the cross-examination that such items as advertising and soliciting, which are costs paid to produce going value, are charged as operating expenses and come out of rates paid by patrons. This presented the question of whether it is equitable to use a going value, contributed by ratepayers, and add it to the valuation on which the company is asking for a return, and whether in such a case the ratepayer would not be called on to pay on a value, a part of which he had already contributed.

Mr. Halstead said there was a going value, whether the cost of it came from earnings or was charged as an operating expense.

"The value inheres in that which exists and not the cost of it," said he.

As to 20 per cent claimed for going value in the consolidated rate hearing, Mr. Halstead said it was a conservative figure. It had been used by other engineers, and he testified he had made studies of going value for different exchanges of the Indiana Bell and had found it was generally in excess of 20 per cent of the physical plant value, compiled on a reproduction new cost basis.

Mr. Faris read from the public service commission law which says one of the elements the commission shall consider in finding value is the reasonable cost of bringing the property "to its then state of efficiency."

Prices paid by the Indiana Bell Telephone Co. to the Western Electric Co. for telephone apparatus, under the so-called Western Electric contract, have not varied in keeping with the fluctuation of commodity prices since 1913, but have risen radically on particular dates when the Western Electric adopted new price lists, it was brought out at the hearing.

A rather innocent-looking graph, prepared by Mr. Halstead, and introduced in evidence, called forth a cross-examination of Mr. Halstead by attorneys for the commission and members of the commission, lasting almost two hours.

The graph, which is exhibit No. 290, presents the results of what the experts

DANDELIONS

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Mary Ethel was born and reared in Slocum. Both of these events, however, occurred in the remote past. But, "the remoter the better," Mary Ethel reflected, as she gave her hair a final dip in a basin of Golden Glints.

There were not many old people left in Slocum to tell her story, and the young generation was busy with its own affairs.

While her hair was drying, she sat down and shortened her dress. Why all this preparation? For this reason: Mary Ethel is living over the cheers of her far-away yesterdays. This is her story:

When she was a young girl, she had two aims in life—one to avoid housework, so as to save her hands (she had beautiful hands). The other aim was to work some place where she could dress in her best and meet many people—I mean young men. Both aims were realized when she became Slocum's Central.

Mary Ethel was the prettiest 16-year-old girl in Slocum, and she was very popular. She reigned like a queen at her switchboard. She had the advantage over all of the young girls in the village. She kept company with all of the nicest young men in Slocum, besides having a bevy of out-of-town friends.

Whenever there was a marriage in Slocum, Mary Ethel would laughingly say, "He had a case on me once." And so, as time rolled on, the wedding bells merrily rang for most of the girls of Mary Ethel's age. Of course, these girls "were all second choice," Mary Ethel reflected, but an inner voice whispered:

"Were you ever first choice, except for dances and hayrack parties?"

Before Mary Ethel realized it, the younger generation gave her a shove aside. Today, she sits at her switchboard, dressed in her best, and often listens to these "second choice ones" talking about their husbands, children and chickens.

"Some day, I'll fool them all," she says, as she tucks a stray curl under her net. She still hears the cheers of yesterday.

I asked an old lady in the village why none of the young men of Mary Ethel's day had asked her to marry them. She said,

"Well, you see, it's just as my boy said—she was so everlastingly popular with all of the boys. Why, they could go to see her any time, at work or at home; and so, as the novelty wore off, they just dropped out, one by one.

"Why, everyone in town knows Mary Ethel. No one takes her seriously any more. But she ought to quit using that yellow dye on her hair and settle down."

Poor Mary Ethel is listening for the cheers of yesterday.

MORAL: One blooming dandelion is beautiful; a lawn full of them is common.

call studies. The general aim of the graph evidently was to show that telephone costs have risen greatly since 1913, though not as radically as commodity prices generally, as evidenced by the reports of the United States bureau of labor statistics covering wholesale prices for 300 raw and manufactured articles.

The graph shows, however, that the average of commodity prices about the middle of December, 1922, was about 152 (using 100 as the 1913 basis) as compared with about 165 for telephone apparatus and 195 for telephone construction costs. In other words, it shows that prices of telephone apparatus bought by the Indiana Bell of the Western Electric, and telephone construction costs of the Indiana Bell did not come down in 1921 and 1922 in keeping with the descent of gen-

eral commodity prices as shown by indexes.

The Indiana Bell, in the rate case before the commission, is asking for an annual allowance for depreciation of \$1,781,133.49 or 6.08 per cent of the book cost of depreciable property, \$29,272,353.71. The allowance would be added to operating expenses paid out of rates.

Bell to Open Two Automatic Exchanges in New England.

The automatic exchanges which the New England Telephone & Telegraph Co. has installed in Boston, Mass., and Providence, R. I., will be placed in operation within a few weeks, according to a recent announcement.

This is in line with the company's plan to gradually extend the use of automatic exchanges and the dial system.

From Fence Lines to Common Battery

New Building, Switchboard and Equipment at Marysville Is an Example of How United Telephone Co. Is Improving Its Exchanges Throughout Kansas —Improvements in Telephone Apparatus Have Helped Build Up Its Territory

By Fred Coulson

Assistant General Manager, United Telephone Co., Abilene, Kans.

The old telephone switchboard at the Marysville (Kans.) exchange of the United Telephone Co. came from Sweden. During the time it was in service, the telephone changed from a luxury used by a few of the wealthier citizens of Marysville to a necessity for all.

While every patron and employe of the



Manager I. M. Sparks and This Efficient Staff of Operators Give the People of Marysville, Kans., Good Service.

telephone company was glad when the overhead wires gave way to the new underground plant and the old Swedish board was replaced by an up-to-date common battery switchboard, yet several of the older employes—and among them was I. M. Sparks, manager of the exchange and one of the pioneers of the telephone business—were reluctant to see the old magneto board go, because with the old board went Marysville history, its development from a small frontier town to a modern city of the West, with some 4,000 inhabitants and many live-awake organizations that kept the town and its industries buzzing.

The new Stromberg-Carlson common battery switchboard at Marysville has eight positions—four toll, three local, and one rural. The exchange is one of the best toll centers in the state, the lines of the United company connecting with the Lincoln Telephone & Telegraph Co. on the north, the two connecting companies handling a large amount of north and south traffic. The increased facilities for handling calls given by the new board has

made it possible for the company to not only give better service but also to increase the business itself appreciably.

Marysville is the most northern of the United Telephone Co.'s exchanges and, with some of its toll lines extending over the Nebraska border, it promises to become one of the banner cities in the system.

However, it is by no means the only exchange which received common battery service during the past year, for Hays, Ellsworth and Belleville also

discarded their hand-twisted devices for up-to-date common battery switchboards. Workmen are busy now constructing the building and preparing for the cut-over at the Belleville exchange. New buildings were constructed during the year at Abilene, Concordia, Clay Center, Beloit, Hays and Belleville.

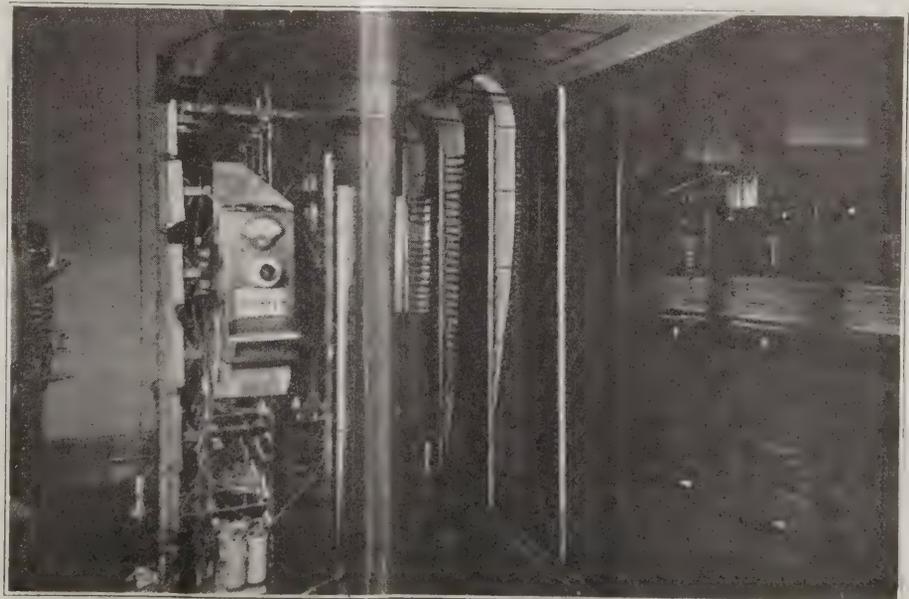
These buildings conform to a style that



This Good-Looking Building Which the United Company Put Up in Marysville Adds Greatly to the Town's Appearance.

the United Telephone Co. has found most efficient. The outside is of brick and white stone, the structure always two stories, and about 35 by 120 feet. By utilizing the basement and two main floors the United has found that this type of building gives maximum efficiency at minimum building costs.

In 15 years the United Telephone Co.

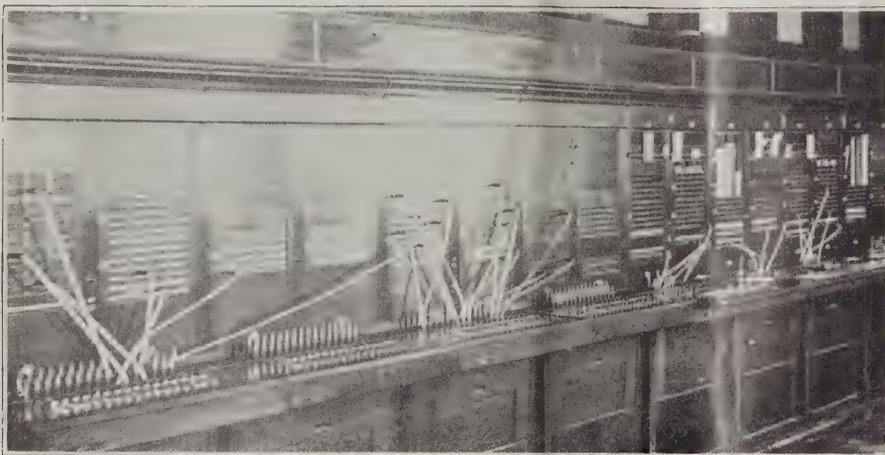


Connecting Rack and Rear of Switchboard at the Marysville, Kans., Exchange.

has grown from a one-town company to a system of 60 exchanges and more than 45,000 patrons, and is owned by over 2,500 Kansas stockholders.

Plans have just been completed for doubling the size of the Salina building and plant in order to take care of a rapidly increasing population, which promises to grow to 30,000 in a comparatively short time. This is the largest exchange of the United company.

At the same time the plans are complete for the erection of a new building and entirely new equipment at Manhattan, the company's second largest exchange and where, by the way, the first telephone in Kansas was built. It was turned out on



View of the New Marysville Switchboard Just Preparatory to the Cut-Over.

an old lathe in the shops of the Kansas State Agricultural College, and the really remarkable thing about the whole affair was that at times it was possible to conduct a conversation over the old steel wires.

The first rural line in Kansas was also built at Manhattan by utilizing an old barbed wire fence. When the cows were browsing and brushing their tails elsewhere than near the telephone-fence, farmers found it possible to talk to town: this, of course, was accomplished by screaming into the transmitter and then putting the same device to the ear to hear the reply.

But with all other developments in Kansas, the telephone has kept right up with industry, farming and other of the state's interests.

The telephone has paved the way for development in all parts of the state. The lines of the United have connected the remote farms, with miles and miles of prairie land separating them from town. Many of these lines penetrate a district that is sparsely settled, with few subscribers on several miles of line.

The United Telephone Co. is serving a great agricultural area that is still open to a vast development, and the company will continue to keep in advance of all communities.

The immense part that improvements

to telephone apparatus has played in the development of such a territory, keeping the cost of service within the reach of every one, is incalculable.

Program for Annual Convention of Oklahoma Telephone Men.

A program of exceptional merit has been prepared for the fifth annual convention of the Oklahoma Utilities Association, which will be held March 12, 13 and 14 at the Huckins Hotel in Oklahoma City.

The utilities association will have a joint session with the Southwestern Geographic Division of the National Electric Light Association, and the members

Companies," by E. C. Patton, Oklahoma City, telephone division attorney.

Adjournment to select division officers for the coming year.

TUESDAY, 11:00 A. M.

"Results of Organization and Accomplishments of District Meetings," J. W. Walton.

"Relations of the Public to the Telephone Industry," H. W. Hubenthal, Oklahoma City, telephone engineer, Oklahoma Corporation Commission.

"What Illinois Is Doing Through Its Telephone Association," Jay G. Mitchell, Springfield, Ill., secretary-treasurer Illinois Telephone Association.

Business Meeting.

2:00 P. M.

"Inductive Interference from High Tension Lines and Remedies," E. B. Jennings, Oklahoma City, transmission and protection engineer, Southwestern Bell Telephone Co.

School of local operating.

Discussion:

Butt treatment of poles.

Proper methods of construction in small plants.

Cable construction and maintenance. Switchboard terminal room and main frame.

Depreciation of telephone property.

Publicity of the telephone business.

Collections and financing.

Telephone accounting and collecting.

Telephone rates and councils.

What is a fair return on telephone property?

Management problems: Increasing traffic; securing new business; stopping revenue leaks—free service.

Public Relations: Utility standpoint; subscriber's standpoint; corporation commission standpoint.

Shop talk: How to maintain rates; when are telephone rates coming down; what to do when they are insufficient; collections.

8:00 P. M.

Theater party for delegates and visitors to the convention of Oklahoma Utilities Association and Southwestern Geographic Division of National Electric Light Association.

WEDNESDAY, 11:00 A. M.

"Co-operation of Telephone Interests," J. P. Gibson, Elmore City, president, Western Telephone Co., and president State Bankers Association.

"Construction and Maintenance of Small Telephone Plant," L. E. Carmichael, Poteau plant superintendent, Poteau Telephone Co.

"Accounting Methods," R. J. Benzel, Oklahoma City, general manager Southwestern Bell Telephone Co.

2:00 P. M.

Toll operating, school and conference.

7:00 P. M.

Joint banquet and entertainment.

of the former group are urged by their officers to remain over for the Thursday and Friday meetings of the N. E. L. A.

There will be a general meeting of all the divisions in the ball room on Monday morning at which F. B. MacKinnon, of Chicago, president of the United States Independent Telephone Association, will be one of the speakers. Mr. MacKinnon will have for his subject, "Maintaining Equity Values." He will also be one of the speakers at the banquet Wednesday evening.

Jay G. Mitchell, of Springfield, Ill., secretary-treasurer of the Illinois Telephone Association, will deliver an address at the general session on Tuesday morning, on "The Builders."

The division meetings will begin in the afternoon, the telephone division to have theirs in one of the private banquet rooms. The program for the telephone division follows:

MONDAY, MARCH 12, 3:00 P. M.

Address by J. W. Walton, chairman Telephone Division, manager Broken Arrow Telephone Co., Broken Arrow.

"Collections," by C. P. Hicks, Wetumka Telephone Co., Wetumka.

"Development of the Independent Telephone Industry," by F. B. MacKinnon, Chicago, president, United States Independent Telephone Association.

"Legislative Problems of Telephone

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Telephone Operator Makes Odd Damage Claim.

The California State Industrial Accident Commission held a hearing at Lodi recently to determine whether a telephone operator can develop heart trouble by reaching to a switchboard several hundred times a day.

Mrs. Elsie L. Lykers, former operator in the Lodi office of the Pacific Telephone & Telegraph Co., has asserted she developed heart trouble as the result of continuous "plugging in" of calls and has filed an application for compensation.

City Ordinance Reduces Bell Rates in Fort Smith, Ark.

The city commission of Fort Smith, Ark., at special session on February 20, passed a reduced rate ordinance with Mayor Bourland voting against it and two commissioners voting for it. It became effective March 1.

The ordinance was first amended to add to the rates prescribed, supplemental rates of \$2.50 per month for two-party lines and 75 cents for extensions. On the amendment the vote in favor was unanimous.

The ordinance as passed fixes business rates at \$6; one-party residence at \$2.90; and party lines at \$2.50; extension lines at 75 cents per month.

District Superintendent McCall, of the Southwestern Bell Telephone Co., stated that an injunction suit against the city would be filed at once.

The rates have been \$7 for business and \$3.25 for residence telephones.

Bell Must Equalize Toll Rates in San Diego County, Calif.

An order was entered on February 27 by the California Railroad Commission instructing the Pacific Telephone & Telegraph Co. to continue the present toll rates for service between San Diego, National City and Chula Vista, and to place in effect the same toll rates for inter-exchange service between San Diego, El Cajon and Pacific Beach, as are now in effect between other exchanges and toll points in San Diego County for similar service.

It was also ordered that standard toll rates be established for local exchange service within El Cajon and Pacific Beach.

The cities of San Diego, National City and Chula Vista filed a complaint with the commission against the Pacific Bell, alleging that the toll rates in effect for switching between these three cities and

between them and other communities in San Diego County—which were established in 1918, when the telephone companies were under federal regulation—were unjust, and asking for the restoration of free switching service.

Upon reviewing the case, the commission found the rates to be fair, but did find that discrimination existed as to subscribers in the cities of El Cajon and Pacific Beach with relation to the monthly rates and the free switching service.

The commission was of the opinion that there did not exist a community interest between San Diego and the other communities involved, which would justify the continuance of unlimited free inter-exchange switching or the elimination of toll charges.

Hold Telephone Company Is Not Liable for Auto Accident.

In the circuit court in Belleville, Ill., on February 22, Judge George A. Crow directed the jury to return a verdict for the defendant in the suit of Mrs. Lena Link, of Mitchell, against the Looking Glass Prairie Telephone Co., of Mascoutah.

Mrs. Link sued for \$5,000 damages on the ground that she suffered injuries when an automobile in which she was riding near Mascoutah on August 17, 1922, was struck by the trailer of a truck belonging to the telephone company.

Several others were injured in the accident—one of whom has a suit pending for \$5,000, but because of the outcome of Mrs. Link's action it will be dismissed.

It was shown that the trailer became disengaged from the truck at the moment the automobile passed. The trailer swung into the other car and upset it.

Judge Crow held that the testimony proved the incident was purely an accident and was in no way attributable to negligence on the part of the telephone company's employees.

Philip Mann, president of the company, testified that on the morning the accident occurred he had inspected the coupling of the trailer to the truck and that he was certain it had been securely fastened and was not defective.

Trying to Introduce Metered Telephone Service in Michigan.

Detroit's unmetered telephone rates were attacked in the Michigan house of representatives by a bill introduced by Representative Robert Wardell, of Detroit.

The bill would make it unlawful for telephone companies to charge their sub-

scribers for service computed on the basis of the number of calls, unless such calls have been recorded by a mechanical meter. It does not affect long distance or public booth service.

Business and Residence Increases Allowed Florida Company.

The order which the Florida Railroad Commission issued on February 8, granting increased rates to the South Atlantic Telephone & Telegraph Co., of Miami, covered various classes of service and miscellaneous charges. The flat rental rates are:

Business—	
One-party	\$7.50
Four-party	5.00
One-party incoming	5.00
Residence—	
One-party	4.25
Two-party	3.50
Four-party, semi-selective	2.75

Joint user rates are \$2 for business and \$1 for residence. Extensions are \$1 extra and desk sets 25 cents a month extra. The four-party business service is only available outside of the base rate area.

The rates for measured service are \$5 per month for one-party business, with 100 messages a month, and 3½ cents each for additional originating messages. The joint user business rate is \$1 per month for measured service.

Rate Increase in Buffalo, N. Y., Delayed to October 1.

The city council on February 21 endorsed the application made by the New York Telephone Co. to the New York Public Service Commission to postpone until next October 1 the putting into effect of the new four-party line rate, which was ordered for March 1.

The present four-party rate is \$2.75 a month with a limited number of messages. The new rate is \$3, with unlimited service. The company declares that to put the order into effect at once would cause congestion of service. Corporation Counsel Rann said that inasmuch as the company would stand the loss there is no reason for opposition.

At the February 28 hearing on the company's application Franklin Briggs, representing the telephone company, said considerable new equipment would have to be installed to make the change to the flat rate service and that under present operating conditions the change could not be made without seriously impairing the service.

R. A. Walker, an engineer, detailed a

survey of present operating conditions, especially in the Crescent and Abbott exchanges in Buffalo. He said the calling rate per station under a flat rate would be about doubled and that the present exchange equipment and force could not handle the increased traffic. Making the change to the flat rate calling basis on such short notice, he claimed, could not be brought about without seriously interfering with the service.

There was no opposition to the company's application.

Bills in New York Legislature to Change Commission Law.

Three bills affecting the New York Public Service Commission have been introduced into the New York legislature.

The first, which provides "home rule" for public utilities, seeks to amend Section 2 and to add new Article 1-A to the public service commission law, by empowering every city of the state to regulate and control public utilities, as well as the corporations owning and operating them, to the extent that the lines, routes, tracks, plants, equipment, property, rates, charges, operation, service, facilities or practices of such utilities are located, established or maintained within such city.

It provides for the establishment of a public utilities commission in every city and for the transfer to such commission all of the powers and jurisdiction over public utilities in such cities as are now possessed by the public service commission.

Any city not desiring to establish a utilities commission could elect to accept the jurisdiction of the public service commission with respect to all public utilities operated within such city.

The second bill would permit cities to own and operate public utilities. It provides for the ownership, establishment, construction, acquisition and operation of public utilities by cities.

All or part of the property of an existing public utility may be acquired by condemnation.

The municipal policy with respect to such utilities is to be determined by the governing body of the city, subject to approval by the mayor. Except for the transportation facilities in New York City, the provisions of the bill apply to all public utilities in every city of the state.

The third would reorganize the public service commission with limited powers.

The present commission of five members would be abolished and provision made for a new commission of three members, to be appointed by the governor, for six-year terms.

The provisions of the present law authorizing the commission to increase or decrease the rates, fares and charges of public utility corporations, notwithstanding such rates, fares and charges have been

prescribed by statute, contract, grant, franchise, or other agreement, are stricken out in the bill.

The powers of the commission to establish a temporary rate pending hearings on proposals for suspending rates in force and authorizing new rates, are also eliminated.

Commission Denies Rehearing—Disposes of Several Complaints.

The New York Public Service Commission ruled on February 28, after a hearing in Albany, that telephone rates fixed by the commission on January 25, covering all exchange districts in the state, would go into effect March 1 under tariffs which were filed with the commission on the 28th. The tariffs cover the rates established by order of the commission in its recent state-wide inquiry and are the same as announced following the commission's decision in January.

The commission on the same day denied an application made by the New York City administration and the public from Brooklyn Heights for a reconsideration of its January 25 order in which rates for telephone messages in New York City were placed on a monthly instead of a yearly contract basis.

Arthur D. Welch, general commercial manager of the telephone company, admitted at the hearing that the monthly plan would add about \$200,000 a year to the revenues of the concern. He explained that this would mean only about 50 cents a year more for each subscriber.

Answering questions by Franklin Briggs, general counsel of the company, the witness said that the proposed system would reduce the cost of bookkeeping and do away with many disagreements between the company and its patrons over bills. He explained that the change would not affect the interests of any subscribers save those whose calls fluctuate below or above the number fixed in the contract.

The commission explains its ruling by saying that the monthly contract plan has been in almost universal use throughout the country and that New York City has been one of a very few localities where contracts were made on a yearly basis.

On the eve of putting into effect the new telephone rates ordered by the commission, J. S. McCulloh, vice-president of the New York Telephone Co., answered statements that the new schedules would increase the revenues of the company about \$12,000,000 a year; that some of the largest users of the service would find their bills increased 10,000 per cent, and that the economies which the company has effected and is contemplating should reduce rates instead of increasing them.

Concerning increased revenue, Mr. McCulloh said that the company accepted the estimate of the commission that the new rates would yield additional revenues

aggregating \$2,500,000 but he qualified the figure by stating that reduction made elsewhere in the state would bring the net increase down to \$2,000,000. He described the statement made by Max H. Winkler, a lawyer and an expert in telephone subjects, that the increased revenues would aggregate in the neighborhood of \$12,000,000, as "absolutely false."

Under the new rates, he said, the small subscriber would pay less for his telephone service and "the only persons who pay more will be those who fluctuate below and above the minimum number of calls allotted in the contract. Up to 140 calls a month the small subscriber will pay less than under the old schedule."

Regarding the automatic system, Mr. McCulloh said:

"It is not true that the new automatic system will cut the overhead by a reduction in the number of operators. There will be no reduction in the operating force. As a matter of fact, it will be necessary to increase the force, even under the dial system, about 30 per cent by 1931. I predict that the present 1,100,000 lines will be increased to 2,000,000 lines in the next eight years."

He added that it would take about 15 years to install the new automatic system. Replying to another statement by Mr. Winkler that the company could save \$1,000,000 a year by issuing only two telephone directories a year, Mr. McCulloh said that the company issued only two editions a year.

Mr. Winkler, in turn, had this to say:

"One of the engineers of the telephone company testified that the change from the manual to the automatic system would enable the company to dispense with from two-thirds to three-quarters of its operating force. This witness stated that the company had about 13,000 operators and that the automatic system would result in a saving of about \$10,000,000 a year in operating cost. The statement that the company could save \$1,000,000 a year by issuing two instead of three directories was made by an officer of the company."

Disposition of about 200 complaints filed by 135 municipalities in the state against the increased rates put into effect by the New York Telephone Co. in 1919 and 1920 was considered by Commissioner Blakeslee at the February 28 session.

The former commission started hearings on two complaints, Syracuse and Buffalo. They were undecided when the present commission took office in 1921. These two cases were disposed of and then the commission took up the inquiry into the telephone company's rates on a state-wide rather than single community basis.

Then came the decision in January last establishing new rates in every telephone exchange district in the state. Reduction were generally ordered for certain classes of service in all the communities where

Name of Company.	City or Town.	Popu-lation.	Type of equip-ment.	Total No. of tele-phones.	Net rate per annum										
					1- party busi-ness.	2- party busi-ness.	3- party busi-ness.	1- party resi-dence.	2- party resi-dence.	3- party resi-dence.	4- party resi-dence.	Rural busi-ness.	Rural switch-ing.	Rural resi-dence vice.	
Farmers' Telo., Ill.	Anboy	1,749	Mag.	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$12.00	\$.....
	Ashton	779													
	Franklin Grove	572													
	Lee Center	150													
Northwestern Bell, Minn. (See issue of Jan. 6.)	Duluth	98,918
	Blue Earth, Minn.	2,568													
Blue Earth, Minn.	Blue Earth	2,568	Mag.	3,037
Eastern Wis., Wis.	Marytown	225													
Park River, N. D.	Park River	1,074	Mag.	4,800
Southwestern Bell, Ark....	Fort Smith	29,390													
Emporia Telo., Kans....	Emporia	9,707	Mag. and C. B.
Mann Telo., Ill.	Bushnell	2,619													
	Cumberland T. & T., La. (See issue of Jan. 27.)	New Orleans	387,219	Mag. and C. B.
Shreveport		37,064													
Alexandria		17,544													
Baton Rouge		16,232													
Lake Charles		14,930													
Monroe		13,698													
Crowley		5,099													
Lafayette		6,392													
New Iberia		7,499													
Bogalusa		15,000													

*Extension, \$15 extra. ¹Desk sets, \$12 extra. ²Incoming line. ³Two-way trunk. ⁴Incoming trunk. ⁵Reduced rates.

New Rate Schedules Approved by Various Public Utility Commissions and Published in "Telephony" During January.

the complaints filed in 1919 and 1920 were still pending.

All complainants were notified of the pendency of these complaints and their advice as to future disposition sought. Commissioner Blakeslee read into the record replies from various communities stating that they did not desire to further progress the old complaints and consenting that they should be closed in view of the decision of the commission in January fixing the new rates to be charged.

The following day, March 1, the commission closed upon its records about 50 of the complaints which were filed.

Hotels to Remove Placards Blaming Commission for Increases.

The hotel keepers of Omaha, recently called on the carpet by the Nebraska State Railway Commission for advertising to guests that the raise in local calls from five cents to ten cents was regretted by them, but was due to orders from the commission, have made ample apology. They said they did not wish to embarrass the commissioners by a statement that was not founded upon a fact, and promised to remove the offending placards.

Each of the hotels submitted statements showing that in each case even a ten-cent charge for local out calls did not pay the expense of maintaining a P.B.X. board. The Rome, with 234 stations, reported that for January its receipts, if only five cents had been charged, would have been \$188.65, whereas it had to pay the telephone company \$297 and its operators \$155 a month, leaving a deficit from operation of \$264 a month. At 10 cents a call the actual loss was \$125.

The Castle, with 266 stations, reported receipts of \$120.95, and a loss of \$258. The Loyal, with 129 stations, had a loss of \$73. The Fontenelle, the largest in the city, figured its deficit at 10 cents, was over \$300.

Cross-examination by the commissioners

developed the fact, however, that they were charging all expenses of the P.B.X. board to the service, and made no allocation for incoming calls and for the necessary service that is a part of the whole furnished by each hotel. It was also shown that many traveling men make it a point to give the operator a list of business houses in the mornings to call up for them so that they may make up an appointment list for the day.

The commission went thoroughly into the matter of costs, and secured from the Northwestern Bell a statement which shows that during the month of January it received, from the six principal hotels represented, a total of \$1,607.90, which, if it had been furnished on the basis of other P.B.X. service in the city, would have brought in \$2,193.10. Other P.B.X. patrons pay for trunks; hotels do not.

Questions by the commissioners indicated a belief that the hotel men should consider the readiness to serve as part of the room rent, and that it is not properly chargeable to expenses that show up later as deficits in operation.

Rates in Newark, Ohio, Up to the State Supreme Court.

The Supreme Court of Ohio consented, on February 20, to review the case of the Newark Telephone Co. against the city of Newark.

The lower courts of Licking county granted the city a permanent injunction against a raise in rates under a franchise of 1910. It is from these decisions that the company appeals.

Stockholder Subscribers of Farmers' Mutuals Given Special Rate.

The Nebraska State Railway Commission has given permission to the Farmers' Mutual Telephone Company, of Avoca, to make a rate of 70 cents a month for service to stockholder subscribers. This is

a reduction from the rate of 90 cents that has been in vogue for a considerable period and paid by all subscribers. The company is owned by 77 farmers and it furnishes service to 43 others who are not compelled to own stock.

The request was bottomed on the belief that as the stockholders do not receive any dividends they should be favored in the matter of rates. The commission also found that they repaired the lines and maintained them, and held the request was a reasonable one.

Oregon Commission Adopts National Electrical Safety Code.

The Oregon Public Service Commission, in a ruling of February 7, canceled all general regulations which it had previously made governing overhead and underground construction, and substituted portions of the National Electrical Safety Code as now issued in its third edition by the Bureau of Standards, Department of Commerce.

The order of the Oregon commission provides that every utility company building new lines or reconstructing present lines shall apply the regulations of the safety code.

The sections of the code adopted are: Definitions of Special Terms, section 1; Rules Covering Methods of Protective Grounding, section 9; Rules for the Installation and Maintenance of Electrical Supply Stations and Equipment, part 1, and Rules for the Installation and Maintenance of Overhead and Underground Electrical Supply and Signal Lines, part 2.

Court Orders Sale of Property of Pennsylvania Company.

The sale of the property of the United Telephone & Telegraph Co., of Lancaster, Pa., which serves 13 counties, was ordered February 22 in Sunbury by Judge Charles R. Witmer, in the United States Court.

The sale will be held in Sunbury on March 15.

Judge Witmer's order was based on the petition of a committee of bond holders. The company has been in the hands of receivers for eight years and the order was made upon William B. McCareb, of Lancaster, the present receiver.

The bond holders' petition for sale stated that mortgages totaling \$259,000 are held against the company and its subsidiaries, by banks in Lancaster, Shamokin, Williamsport and Bloomsburg. The property of the company is said to be worth \$1,000,000, including 2,200 miles of lines and 20,000 telephones in operation.

C. A. Carl, of Lancaster, general manager of the company, said the sale is in line with a plan of reorganization in which capitalists of that city and other places throughout central Pennsylvania are interested.

The bond holders who petitioned for the sale of the property to protect their interests, he said, hold the \$1,700,000 outstanding of a total authorized issue of \$2,000,000 in bonds. The bond holders may buy the property or figure in its purchase.

Among the assets of the company listed in the petition are \$24,685 due the company in bills receivable, properties at Lancaster and Altoona, and automobiles and materials worth \$20,000.

The property was ordered sold in three blocks. One block includes the Irish Valley & Seven Points Telephone Co., and the Sunbury, Shamokin & Milton Telephone Co. The petition says mortgages of \$110,000, held by the Guarantee Trust & Safe Deposit Co., Shamokin, and of \$9,000, by the Northern National Bank of Lancaster, are charged against these properties.

The second block consists of properties and equipment in the Williamsport section, including the North & West Branch Telephone Co. Against this property, according to the petition, is a mortgage of \$100,000 held by the Susquehanna Trust Co., of Williamsport.

The third block will be the Columbia & Montour Telephone Co., serving those counties. A \$40,000 mortgage is held against that property by a Bloomsburg bank, according to the petition.

The order for sale specifies that each bidder upon the property must deposit a certified check for \$25,000 with the bid.

Federal Judge Rules in Favor of Bell in South Carolina.

In an opinion handed down February 23, in Anderson, S. C., Federal Judge H. H. Watkins decided in favor of the Southern Bell Telephone & Telegraph Co. in its case against the towns of Calhoun and Clemson College.

The company was granted a permanent

injunction restraining the enforcement of the joint resolution of the general assembly requiring that the corporation furnish and maintain local and long-distance service for these towns and surrounding territory.

"The joint resolution is not only void as repugnant to the 14th amendment of the constitution of the United States, but is equally violative of section 17, article one of the constitution of the state of South Carolina," Judge Watkins held in rendering his decision in the case. Attorneys for the plaintiff alleged that the resolution was unconstitutional in that it deprived the company of property without due process of law and denied the Bell company equal protection.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

February 27: Pacific Telephone & Telegraph Co. instructed to maintain the present toll rates between San Diego, National City and Chula Vista; to place in effect the same toll rates for service between San Diego, El Cajon and Pacific Beach, as are now in effect between other exchanges and toll points in San Diego county; and to establish for exchange service within El Cajon and Pacific Beach the standard toll rates.

ILLINOIS.

March 7: Hearing held in Springfield in the matter of proposed advance in rates for service in Danville by the Vermilion County Telephone Co.; petition filed by company for a hearing on the order of January 17 and for vacation of certain requirements of the order pertaining to inventory to be filed.

March 7: Hearing held in Springfield in the matter of joint application of Galesburg Union Telephone Co., of Galesburg; Abingdon Home Telephone Co., of Abingdon; and Avon Telephone Co., of Avon, for an order authorizing the sale by the Galesburg company and purchase by the Abingdon and Avon companies of a certain pole line in Abingdon; and of sale by the Abingdon company and purchase by the Avon company of a portion of the line.

INDIANA.

February 28: Hearing resumed in Indianapolis on the consolidated rate case of the Indiana Bell Telephone Co.

MICHIGAN.

February 27: Hearing in Lansing on the merger of the Citizens Telephone Co. of Grand Rapids with the Michigan State Telephone Co. postponed from this date to March 9.

MINNESOTA.

March 23: Hearing to be held in Sanborn on application of the Sanborn Telephone Co. for increased local and rural rates.

MISSOURI.

February 23: Hearing held in Jefferson City on application of the Home Telephone Co. for authority to purchase the exchange of the Southwestern Bell Telephone Co. at Carthage.

February 26: Southwestern Bell Telephone Co. authorized to continue using the present rates for service in New Madrid.

NEBRASKA.

February 26: Application of the Farmers' Mutual Telephone Co., of Avoca, for

permission to reduce rates to stockholders subscribers; found reasonable, and order issued granting it.

February 26: Application filed by the Walnut Grove Mutual Telephone Co. for permission to incorporate and sell service.

February 27: Application filed by the Cloudy Telephone Co., of Dodge, asking for permission to sell \$2,750 worth of stock.

February 27: Application filed by the Stanton Telephone Co. for permission to destroy ancient and obsolete records.

NEW YORK.

March 5: Hearing held at Binghamton on complaint of the village and chamber of commerce of Walton against the proposed increased rates of the Walton Peoples Telephone Co.

NORTH DAKOTA.

February 28: Application filed by Griggs County Telephone Co., of Cooperstown, for authority to issue \$10,000 of common stock.

February 28: Petition filed by Milnor Rural Telephone Co., of Milnor, for a reduction of rural rates, to be effective October 1, 1922.

March 1: Petition filed by Oliver-Mercer Telephone Co. for a decrease in the switching rates of the Mercer County Telephone Co., of Center.

March 1: Increased rate schedule filed by Farmers Success Telephone Co., of Lisbon.

OREGON.

February 7: All general rules and regulations previously adopted regarding overhead and underground construction, canceled and certain portions of National Electrical Safety Code substituted.

PENNSYLVANIA.

February 17: New rate schedule, effective March 7, filed by the Brush Valley Telephone Co. for service in Brush Valley.

TENNESSEE.

March 5: Final hearing started in Nashville in the matter of making permanent the temporary rate schedule allowed in December for the Cumberland Telephone & Telegraph Co.

WISCONSIN.

March 2: Investigation started on motion of the commission of the alleged unlawful increase in the rates of the Farmers Independent Telephone Co., of Grantsburg. U-2835.

March 6: Hearing held at Madison on the application of the Lima Telephone Co., of Oostburg, for authority to increase its rates. U-2823.

March 7: Hearing held at Madison on the application of the Bear Valley Telephone Co., of Bear Valley, for authority to increase its rates. U-2830.

March 12: Hearing to be held at Barneveld on the investigation on motion of the commission of the service and practices of the West Line Telephone Co., of Barneveld. U-2822.

March 15: Hearing at Madison on the application of the Pewaukee-Sussex Telephone Co., of Pewaukee, for authority to increase its rates. U-2832.

March 20: Hearing at Madison on the application of the Annoton-Preston Telephone Co., of Montfort, for authority to increase its rates. U-2834.

April 10: Hearing at Soldiers Grove on the complaint of C. A. Peterson and others of Soldiers Grove against the Sylvan-Soldiers Grove Telephone Co. and other companies operating the Soldiers Grove exchange, alleging that the service rendered is inadequate. U-2824.

Further Cable Extensions to A. T. & T. Toll System.

The American Telephone & Telegraph Co., in the development of its long lines department business will have completed the construction of an aerial toll cable running from Chicago to South Bend, Ind., during the latter part of the coming summer, it was announced a week or so ago.

Construction work on this job is to start soon, with much work on the preliminary plan already completed.

Within the next few years cables are expected to be required from Cleveland to Toledo and from there to South Bend. When completed these four cables will provide a toll cable plant extending from the Atlantic seaboard to Chicago and Milwaukee.

BELL DIRECTORS REPORT ON YEAR 1922.

(Concluded from Page 16.)

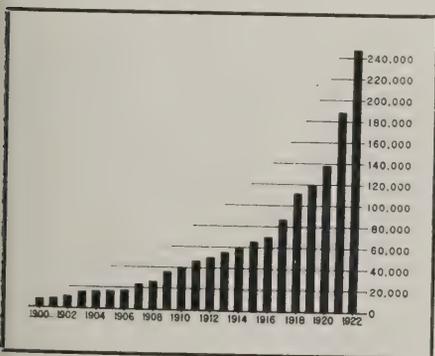
The consolidated Bell system income statement, from which all inter-company duplications have been eliminated, represents the telephone business of the system as a whole, i.e., the business of the American Telephone & Telegraph Co. and its associated companies, including the Bell Telephone Securities Co., in its relation to the public.

Bell System Earnings and Expenses.

It does not include data for connecting, independent, or sublicense companies, or the Bell Telephone Co. of Canada, the Western Electric Co., Inc., and the 195 or 205 Broadway Corporations, except as interest and dividends from these companies are included in non-operating revenues.

The growth of the business, increased stations, more intensive use of the telephone, and improved business conditions have produced a satisfactory increase over the previous year in toll and exchange revenues.

Adequate charges have been made during the year to the expense accounts for

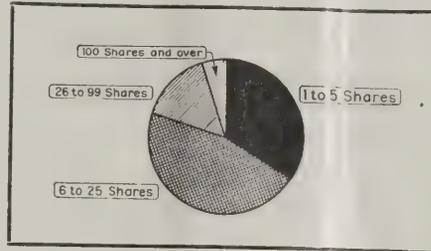


Growth in Number of American Telephone & Telegraph Co. Stockholders.

depreciation and obsolescence, and the cost of current maintenance. The charges against the companies' earnings for these purposes during the year amounted to \$159,899,136, an increase of \$15,979,964

over the preceding year. These comprise, in the case of current maintenance, 5.2 per cent on the average plant in service, and for depreciation and obsolescence 5.2 per cent of the cost of plant.

In making these charges to operating expenses for depreciation and obsolescence, the Bell system companies have carried out their long-established policy of providing currently for the cost of plant which is being used up in furnishing service. These latter charges are definitely



Distribution of Stockholders According to Size of Holdings.

related to the character, net cost, and probable service life of the plant.

Traffic expenses, representing the largest of the several groups of expenditures, increased \$4,575,577, or 3.1 per cent, over 1921, as compared with an increase in number of calls handled of 9.3 per cent. Approximately 85 per cent of the item of traffic expense is comprised of wages.

Adequate provision has been made for all federal, state, and local taxes chargeable against the earnings for the year. The charges for this purpose amount to \$41,215,441, an increase of \$6,702,962 over taxes for 1921. During 1922, taxes comprised a charge against earnings of approximately \$4.50 per station, in comparison with the corresponding figure of \$2.29 per station ten years ago.

Interest charges, including amortization of debt discount, in respect of borrowed capital used in the business, amounted to \$37,869,366, an increase of 3 per cent over 1921.

After meeting all expenses and paying a return on the capital used in the business, there remained as a balance, earnings of \$26,317,548. Out of these earnings appropriations aggregating approximately \$1,700,000 were made to provide for the possible contingencies in respect of refunds of charges for service in the event of adverse decisions of rate investigations now before courts and commissions.

The surplus earnings together with company funds made available through charges to expenses for depreciation and obsolescence, have been invested in the telephone business, and to that extent it was unnecessary to provide an equivalent amount of new capital for the business.

Balance Sheets.

On this page are the combined balance sheets of the Bell system in the United States for the years ending December 31, 1921 and 1922.

All intangible assets have been excluded from these balance sheets, and accordingly, the item "Surplus and Reserves" shows an amount considerably less than the aggregate of the surplus and reserve items as they appear on the books of the separate companies.

The assets of the Bell system show a total increase of \$260,012,470 during the year. Of this amount approximately \$208,800,000 represents increased investment in plant and other permanent assets, while the remainder represents working assets of which a considerable part remains available from new financing during 1922, as described below. Pending their use for permanent investment purposes during 1923, the major part of these surplus working assets not represented by cash on hand, has been invested temporarily in United States securities and other short-term marketable securities.

Capital stock, bonds and notes payable of the Bell system outstanding in the hands of the public at the close of the year 1922 amounted to \$1,483,466,673, a net increase of approximately \$182,140,165 over similar obligations outstanding at the end of 1921.

The cost of the net assets which are devoted to earning a return on these outstanding securities amounts to over \$2,065,700,000, while the actual value thereof is considerably in excess of this figure.

Bell System Balance Sheets, 1921 and 1922 (Duplications Excluded)		
Assets:		
	Dec. 31, 1921	Dec. 31, 1922
Telephone plant.....	\$1,543,865,545	\$1,729,215,520
Supplies, tools, etc..	47,944,435	50,744,200
Stocks and bonds..	126,202,014	146,834,400
Receivables	74,720,690	87,681,728
Temporary cash investments	52,133,110	100,539,281
Cash	57,044,707	47,503,842
Total	\$1,902,510,501	\$2,162,522,971
Liabilities:		
Capital stock (including Installments)		
Common—		
American Tel. & Tel. Co.	\$ 551,385,213	\$ 715,083,854
Associated companies	59,174,498	61,535,743
Preferred—		
Associated companies	21,656,547	60,387,747
Total capital stock	\$ 632,216,253	\$ 837,007,344
Funded Debt—		
Mortgaged bonds		
Associated companies	302,753,415	360,072,390
Collateral trust bonds		
American Tel. & Tel. Co.	163,502,500	162,750,500
Convertible bonds and notes		
American Tel. & Tel. Co.	47,647,400	23,851,300
Associated companies	26,738,400	25,180,100
Debentures and notes		
American Tel. & Tel. Co.	89,500,000	40,000,000
Associated companies	36,598,875	34,178,875
Total funded debt	666,740,590	\$ 646,033,165
Bills payable—		
Associated companies	2,369,665	426,164
Total capital Liabilities ..	\$1,301,326,508	\$1,483,466,673
Accounts payable ..	39,478,986	38,116,351
Accrued liabilities not due	46,095,881	58,702,050
Employes' benefit funds	9,485,910	18,655,184
Surplus and reserves..	506,123,216	563,582,713
Total	\$1,902,510,501	\$2,162,522,971

Personal and Biographical Notes

John C. Koons, who was first assistant postmaster general during the Wilson administration and part of the Harding administration, was recently elected one of the vice-presidents of the Chesapeake & Potomac Telephone Co.

Mr. Koons will be in charge of public relations and personnel.

He is widely known, not only in Washington, but throughout the United States, on account of his long career in the post-office department.

Entering as a substitute railway mail clerk in 1895, he served until he resigned to enter the telephone company service in July, 1921, as executive assistant.

He was advanced in every administration from Cleveland to Harding. In the latter part of his term in the postoffice department he had an important part in framing the policies of the service.

He was successively appointed post-office inspector, division superintendent of salaries and allowances, chairman of the committee in charge of the development of the parcel post and chief postoffice inspector.

In September, 1916, he was appointed first assistant postmaster general, and on April 8, 1921, he was made special assistant postmaster general.

When, August 1, 1918, the government



John C. Koons, Vice-President of the Chesapeake & Potomac, Became Well Known to Telephone Men During the Government Control Period.

took over the operation of telephone wires as a war measure, Mr. Koons was one of a committee appointed by Postmaster General Burluson for the governmental management, operation and control of the

telegraph and telephone systems. Mr. Koons, on that committee, had charge of the matters relating to organization and personnel and became well acquainted with telephone men in many states who are glad to learn of his advancement.

William L. Moellering, of Fort Wayne, Ind., terminating an active career of more than a quarter of a century as one of the pioneers in the telephone industry in the Middle West, resigned as president of the Home Telephone & Telegraph Co., Fort Wayne, at a meeting of the board of directors of the company March 3. The resignation will not become effective until April 2, when Mr. Moellering's term expires. Impairment in health and incident need for a protracted rest, have prompted Mr. Moellering to resign.

Mr. Moellering's identification with the telephone business for the past 26 years, first as secretary and manager of the Fort Wayne company, and since 1913 as president, marks one of the most interesting chapters in the telephone history of the entire Central West, for the Home Telephone & Telegraph Co. is one of the large Independent telephone companies.

Mr. Moellering was born in Fort Wayne and has resided in that city his entire life. For a period of 20 years he was actively engaged in the retail drug business in Fort Wayne. Disposing of his interests in the drug business, Mr. Moellering became associated with the telephone company in 1898, two years after it was organized, and has been actively identified with it ever since. His resignation brings to a close an active business career of more than 46 years.

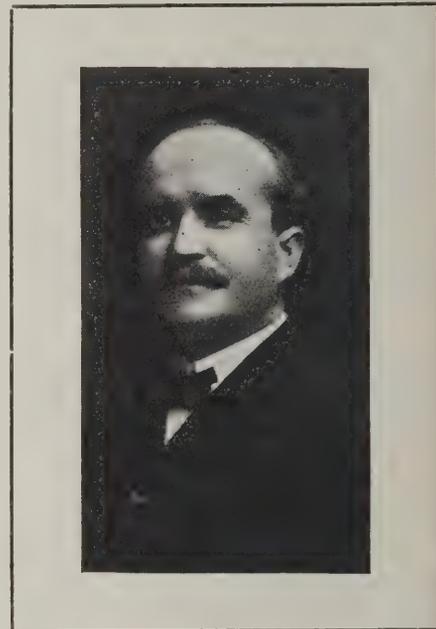
He assumed charge of the telephone company at a time when the Independent telephone industry was handicapped on every hand and was subjected to the strongest kind of competition. He successfully piloted the company through years of patent litigations and lawsuits at a time when capital was slow to invest in the business, due to hazards then existing, and through his managerial genius brought the affairs of the company to such a high state of efficiency that the Indiana Public Service Commission in 1915, in its tabulated report of comparisons with other telephone companies, made the following comment:

"The highest efficiency in management, so far as financial results are concerned, is found in the Home Telephone & Telegraph Co., of Fort Wayne, Ind."

The Home Telephone & Telegraph Co. was formed among a group of approximately 100 Fort Wayne business men. At that time the Central Union Telephone

Co. was operating and maintaining 527 telephones in Fort Wayne. Today the Home company operates and maintains 21,000 telephones and has no competition.

Through the lower rates which the



Wm. L. Moellering, of Fort Wayne, Ind., Will Retire from the Telephone Field April 2, After Many Years of Strenuous Activity.

Home company has been able to give residents of Fort Wayne since the year 1896, Mr. Moellering conservatively estimates that the company has saved the people of Fort Wayne approximately \$3,000,000 during the past 25 years.

In addition to being an official of the Home company, Mr. Moellering was also in the early days secretary-treasurer of the National Telephone Co., which operated toll lines in Indiana, Ohio and Michigan, and finally induced the Home company to buy this company. He was also organizer of all the various Independent companies in the towns and cities surrounding Fort Wayne.

The first of these lines was the one to Leo. In his efforts to extend telephone service into the rural districts and surrounding towns and cities, Mr. Moellering worked very hard. He would hold schoolhouse meetings in the rural districts and even see the farmers in the fields to convince them of the practicability of the telephone.

Illustrative of his confidence in the industry is the fact that he started the first of these smaller companies at Leo with only three persons signing contracts for service. By the time the line was finished, however, he had nine subscribers and from then on the list grew rapidly.

This was the case in practically every instance, and a man with less vision, confidence and managerial ability would not have taken the chances which Mr. Moellering did in developing the early telephone industry in his community.

The battle with the Bell company was probably the greatest in Mr. Moellering's

telephone career. This battle was bitterly waged for years, until the Home company finally emerged victorious and succeeded in buying the local interests of the Bell.

Besides his strenuous career as head of the telephone company, Mr. Moellering has also been actively identified with many

other industries both in Fort Wayne and elsewhere. He was the organizer of what is now the Wayne Tank & Pump Co. and is a director of the First National Bank and the Citizens Trust Co., both of Fort Wayne, as well as of the National Steel Casting Co. and the Montpelier Mfg. Co., both of Montpelier.

From Factory and Salesroom

Kellogg Company Features a Light Weight Radio Head Set.

It is but natural that the Kellogg Switchboard & Supply Co., of Chicago, with its personnel, its testing laboratories and very complete manufacturing organization—which have made the company so prominent in the telephone field as a manufacturer of exchange equipment—should be interested in radio appliances.

The high standard of manufacture at Kellogg meant that the production of a new line must be accomplished slowly and carefully, and in its new radio department this has been uniformly done.

Beginning with the head set, the company has gradually designed, built, and put into production variable condensers, variocouplers, variometers, rheostats, and other important parts—making up a dependable and high class line of equipment from which radio sets are being built.

Working along the lines of the Kellogg operator's head receiver which has proved so popular, the company's experts have

When a Kellogg head set is connected, the manufacturer states, there is nothing further to do with it except place it upon the head and listen. There is no adjusting, and the less tampering or removing of the receiving caps, the better. The Kellogg Bakelite receiver shell is non-metallic and all the terminals are entirely enclosed within the shell.

The cap is of the approved design, the concave surface being the result of years of practical telephone receiver construction. The diameter of the cap is 2 3/16 inches, and it screws into place with heavy threads which do not allow the cap to slip in any ordinary usage.

When two people desire to use one set or one receiver each in listening, the head band may be easily removed and may be as easily replaced when desired.

The magnet of the Kellogg radio head set is of special tested steel and is hardened by a special method which controls the heat and time, electrically and mechanically. It has concealed binding posts, which do away with tampering or adjusting. The magnet windings are of great accuracy, the mountings, end plates, wire, and other parts are of the highest grade and of the material best suited for the purpose.

The sets are wound to 1,200 ohms per receiver—2,400 ohms per set. The Kellogg company will be glad to furnish more complete information about the radio head sets, as well as the many other items of radio equipment which it has perfected.

Minneapolis Pole Firm Unites Departments for Efficiency.

As the result of many years of experience and observation, the Lindsley Brothers Co., well known in the pole business, has departed from the custom of having the sales office and plant in cities far apart.

The main Eastern sales office of the company is now located in the large concentrating yard at Minneapolis—3101 University Ave., N. E.—and F. D. Scott has been placed in charge.

Mr. Scott, who has been sales manager of the Canadian company, the Lindsley Brothers Canadian Co., Ltd., of Nelson, B. C., has had several years of experience as a construction man and has been in the cedar pole game for a long time.

Another change is that of transferring L. E. Dunn, traffic manager of the Spokane office, to Minneapolis.

The location of the company's yard in Minneapolis seems logical, as it is midway between the producing districts of the West and the consuming territory. Placing the main sales office directly in touch with the shipping and treating departments would seem to be a move in harmony with the company's facilities for increased production.

The Minneapolis plant of the Lindsley Brothers is a very up-to-the-minute affair. The large treating tanks and the Pentrex machine are located there.

The company found it necessary, in order to give the best of service, to add another complete unit to the treating plant—making at present four large carload vats, and one small vat.

The new unit is entirely separate and apart from the original plant, in that the huge derrick is operated by an electric



Radio Head Set Featured by the Kellogg Company Has Been Found Very Practical.

produced a radio head set which is one of the lightest and most efficient on the market.

The comfort and efficiency of a light and small head set for radio receiving is appreciated when using Kellogg receivers, which are also very sensitive.



Fred Scott Has Been Made Manager of Lindsley Brothers' Main Eastern Sales Office.

hoist and the creosote system is handled by an electrically-operated centrifugal pump.

This new battery of vats gives the company an added capacity of two to three cars daily, depending upon the kind of

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800—20 East Jackson Blvd., Chicago, Ill.
Telephone Wabash 5212

treatment. The company's Pentrex machine is located so that it serves both units of vats with equal efficiency.

From 10,000 to 15,000 poles are carried in the yard and a constant string of transit cars is enroute from the producing yards in the West—insuring the prompt filling of orders.

The company wants the trade to know that it is endeavoring to be always just a little ahead of the game.

Illinois Electric Co. Manager Likes Telephone Industry.

Crawfordsville, Ind., has done some things for the world, but what telephone men are particularly interested in is that it gave Jack Duncan, now manager of the Westinghouse and Appliance departments of the Illinois Electric Co., Chicago, to the industry.

"Dunk," as he is familiarly known among his associates, at an early age



Jack Duncan ("Dunk") of the Illinois Electric Co., Chicago, Has a Leaning Toward the Telephone Industry.

sought fields for his endeavor, which were somewhat larger than Crawfordsville.

He started with Fort Wayne, where he became connected with the Home Telephone & Telegraph Co. as a general, all-around trouble man. He liked Fort Wayne and Fort Wayne liked him, and he moved up the scale very rapidly. He also liked many of the girls in the town, but he liked one of them "extra special". Her, he married.

He heard the call to country during the Spanish American war and he shouldered a musket and took his part with credit to himself and his country.

He became so accustomed to the use of a gun that after he returned he decided to emulate some of the famous American Scouts and went to the then far west territory of Sioux City, Iowa. He found that ducks flew only in the fall and spring, and in the meantime, just as a sort of vacation, he joined the Sioux City Telephone Co.



CHAPMAN
LIGHTNING ARRESTERS
Manufactured by
MINNESOTA ELECTRIC CO.
Minneapolis, Minn.

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and other printed supplies at "money saving" prices. Ask us for quotations before placing your order.

Lambooy Toll Ticket Ptg. Co.
KALAMAZOO, MICHIGAN

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Indianapolis, Ind.
Exclusive Telephone Accountants

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Carried in Stock by
Southern Electric Supply Co.
Atlanta, Ga.

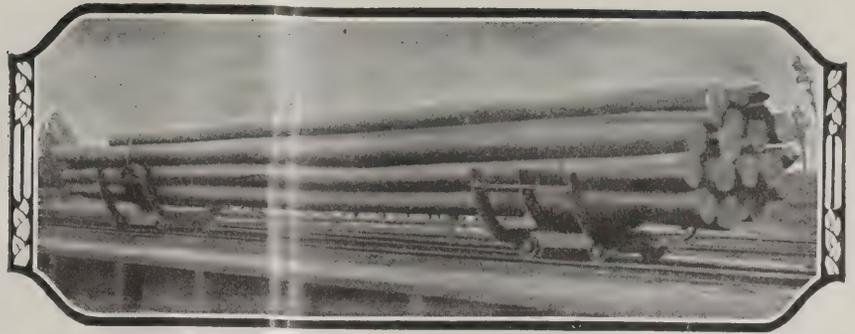


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CHICAGO, ILL.

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Operation of Telephone Companies.
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Long-Bell air-seasoned poles loaded on trams ready to be treated by the Pressure-Vacuum process

Permanent Strength

Because of the great bending and shearing strength of Long Leaf Yellow Pine, Long-Bell Creosoted poles are particularly suited for use on telephone and other wire lines where dependability is mandatory. They stand severe strains without injury.

LONG-BELL

Creosoted Yellow Pine Poles

Creosoted Yellow Pine Poles are treated with the best grade English Creosote Oil by the pressure-vacuum process. This treatment preserves their strength and enables them to resist decay, fire and weather. They are smooth, straight and good looking.

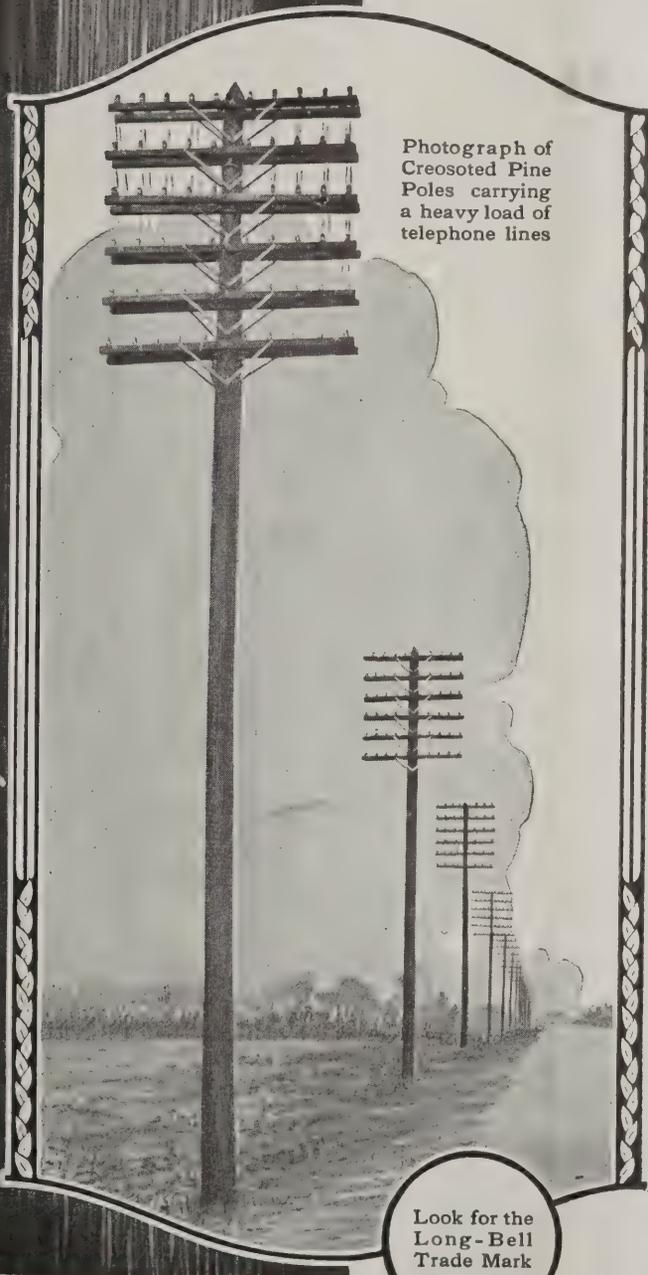
Long-Bell Creosoted Yellow Pine Poles last longer than untreated poles—they seldom need replacing. They can be set farther apart because of their greater strength; an important economy factor.

For further information send for "Poles that Resist Decay," our Booklet that fully explains Long-Bell Creosoted Yellow Pine Poles. We'll gladly send it Free.

The Long-Bell Lumber Company
1123 R. A. Long Bldg., KANSAS CITY, MO.

Creosoted Yellow Pine Poles, Highway Guard Rails and Fence Posts, Ties, Timbers, Lumber, Piling and Wood Blocks.

Photograph of Creosoted Pine Poles carrying a heavy load of telephone lines



Look for the Long-Bell Trade Mark

On account of his affable manner, he became lonesome, being confined to the limits of that section, so he started on the road with the Illinois Electric Co., covering Iowa territory, "where," says one of his present associates, "he is known as well as a 2 cent postage stamp." During the years that he traveled that territory, "Dunk" made a host of friends, who missed him greatly when he was called to Chicago in 1920.

He is very proud of his Scotch ancestry and, true to it, his favorite pastime is golf.

Of Special Interest to Telephone Companies and Radio Fans.

After extensive experiments the Leich Electric Co., of Genoa, Ill., has devised a method whereby practically all of the interference between their frequency converter and radio receiving sets may be eliminated. The method consists of bridging two condensers, one between each outside terminal and center terminal of the left hand transformer.

While not all the interference is stopped, it makes radio receiving practicable and by keeping the contact points clean at all times, the results are much better.

These condensers may be obtained from the Leich Electric Co., of Genoa, Ill., and the company will give any further information requested.

POSITIONS WANTED

POSITION WANTED—Telephone executive with technical training and years of successful experience in both exchange and sales management—at present employed—desires connection with progressive manufacturing or operating telephone company in executive capacity. Moderate salary to begin, with results the basis for future remuneration. Address 5229, care of TELEPHONY.

POSITION WANTED—Man capable of doing neat and efficient work on either cable maintenance or construction. Can furnish references and report immediately. Address Cableman, 3908 Westminister Place, St. Louis, Mo.

WANTED—Position as wire chief or plant chief. 25 years in telephone business. 15 years on switchboard, testing, and maintenance work. Married. Want permanent position. Address 5230, care of TELEPHONY.

POSITION WANTED—By a graduate telephone engineer. All around telephone experience, best of references. Plant department preferred. Address 5232, care of TELEPHONY.

WANTED—Position as manager or superintendent of a plant, 300 to 600 stations. Or, will lease same, paying all expenses and giving the owner 35% rentals. Address 5235, care of TELEPHONY.

POSITION WANTED—As manager or superintendent of Independent telephone exchange. Have had 12 years' experience. Can furnish best of reference. Address 5223, care of TELEPHONY.

WANTED TO BUY

WANTED TO BUY—Holtzer Cabot ringing machine. Must be in working order and priced right. Address No. Liberty Telo. Co., North Liberty, Ind.

"COPPERWELD"

TRADE MARK REG. U. S. PAT. OFF.

TELEPHONE WIRE

MADE BY THE MOLTEN WELDING PROCESS

Where No. 10 hard-drawn copper or No. 12 BB Galvanized iron telephone wire would be used, a No. 12 Copperweld Telephone Wire may be properly selected. 70 lbs. excess weight of wire per mile is avoided.

	Diam.	Breaking Weight	Weight per Mile	Relative Factor of Safety	
				With 1/2" Ice and 8 lb. Wind Pressure	With 15 lb. Wind Pressure. No Ice.
10 B&S hard-drawn Copper.....	.102"	528 lb.	166 lb.	98%	80%
12 BWG BB Galvanized Iron.....	.109"	476 "	170 "	88%	68%
12 B&S Copperweld .....	.081"	520 "	96 "	100%	100%

Copperweld does not rust. It stays up under sleet loads and wind pressure when other wires would be wrecked.

COPPER CLAD STEEL COMPANY, Braddock P. O., Rankin, Pa.

"STEWART" CABLE TESTER

Locates shorts, grounds and crosses to an inch. The only practical tester for locating water trouble.

Write for circular today, and be ready for trouble which is sure to come.

Sent on trial.

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OTTAWA ILLINOIS



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Dial-equipped telephones (North P. A. X.) for private exchange subscribers.

Machine Switching Systems for City Telephone Exchanges.

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RELIABLE TELEPHONE SUPPLIES

from firms that are equipped to supply the needs of the industry may be obtained by patronizing the advertisers on these pages.

**Southwestern Bell Expanding—
“Production on the Increase.”**

The Southwestern Bell Telephone Co.'s program of expansion was given impetus on February 20 when the Interstate Commerce Commission formally authorized the company to acquire the properties of the Kinloch system, of St. Louis, Mo.

Some conception of the prospect for expansion of the Southwestern Bell may be obtained from the expectations for the Texas branch. F. M. Hoag, general manager of Texas properties, predicts that approximately 90,000 stations will be added in Texas to the exchanges of the Bell and those of the Dallas Telephone Co. within the next five years. He says: “During 1922 the Southwestern Bell Telephone Co. added 14,000 stations to its previous total of 185,000, and the Dallas Telephone Co. added 4,300 stations to an existing total of 40,000. During 1923 it is expected the gain for Texas will be about 24,000 stations.

“Production in all activities is on the increase, and as this is a definite measure of progress, there is every indication that the demands on all business institutions will be greater. Certainly, this will be so with the telephone company. Also, the average family income has an increasing purchasing power, which means that residence users will increase in number, too.

“This brings up another point peculiar to the telephone business. Increased demand for service not only requires larger mechanical facilities, but requires more employes. Contrary to the law of all other businesses, telephone costs increase as the number of subscribers increase. Therefore, we are required to exercise the strictest economy in operating so that rates may be changed as infrequently as possible.

“However, once we are assured that rates will be maintained at a point which will allow a reasonable return on present investment—a return sufficient to attract the new capital which is required for every telephone added to our system—we can provide for growth and give service that will materially assist other business men to prosperity.”

French Are Urged Not to Use the Telephone on Sunday.

“The public is urgently requested to use the telephone on Sunday only in case of necessity.”

A flood or a fire may put the best built and operated telephone plant temporarily out of commission and, before complete repairs can be effected, make it necessary to ask the indulgence of the public for restricted service with hastily patched-up equipment.

But the notice quoted above was not the result of a disaster or an emergency. It is an official notice of the French government telephone department to its patrons, including those of the great city of Paris, and applies to every Sunday in the year.

A BARGAIN IN KELLOGG EQUIPMENT

Two Wire C. B. Switchboard

**Golden oak cabinet—Automatic Listening—
Automatic Ringing—Dark Key Shelf.**

Here is everything required for a 1960 line exchange—in excellent condition and now satisfactorily handling load of 40,000 calls a day. Delivery can be made September, 1923.

(Equipment)

	Capacity	Equipped		Capacity	Equipped
Sections	7	6 3/4	Operators' Breast		
Positions	21	18 3/4	plate sets.....	27	27
C. B. Lines per			Lighting fixtures..	9	9
position	120	120	Relay Rack.....	2160	1960
C. B. Lines total..	1960	1960	Power Switchboard	1	1
Cord circuits per			G. E. Arc Rectifier		
position	15	15	(50 amp.)	1	1
Multiple jacks, total	21000	14320	Motor gen. Chargin		
Rural positions ...	1	1	ing set (60 amp.)	1	1
Rural lines	60	50	Four frequency vi-		
Pay Station			brator ringing ma-		
positions	1	1	chines	1	1
Pay Station lines..	160	60	A. C. Motor driven		
Toll to local trunks	20	15	ringing inter-		
Toll to rural trunks	5	5	rupter	1	1
Inter office trunks.	20	20	D. C. Motor driven		
Recording trunks to			ringing inter-		
toll	10	10	rupter	1	1
Chief operator's Desk			Storage batteries,		
(sanitary style) .	1	1	Exide F 11.....	11	11
Information Desk			Storage batteries,		
(sanitary style) .	1	1	Exide F 7.....	11	11
Operators' chairs..	20	20	Wire Chief's desk		
			(sanitary style)...	2 pos.	2 pos.

A remarkable—an unusual opportunity to secure super-equipment on exceedingly favorable terms.

Don't let some other telephone man “beat you to it.” Fill in the coupon today.

FORT DODGE TELEPHONE CO.

Fort Dodge, Iowa

**Fort Dodge Telephone Co.,
Fort Dodge, Iowa.**

Gentlemen:

I am interested in securing more complete details and prices on your special Kellogg Equipment offer.

Name

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- A 3—American Cross Arm & Conduit Co. 10
- A 4—American Electric Co. 40
- A 5—American Electrical Works 1
- A 6—Am. Copper Products Corp. —
- A 7—American Steel & Wire Co. —
- A 8—Anaconda Copper Mining Co. 1
- A 9—Automatic Electric Co. 20-21

B

- B 1—Babcock, Garrison 32
- B 2—Baker & Co. 40
- B 3—Barrett Co., The. —
- B 14—Bartlett Mfg. Co. 40
- B 4—Belden Mfg. Co. —
- B 5—Bell Lumber Co. 34
- B 7—Benson Co., Alex R. 40
- B 8—Beyer & Manly. 32
- B 9—Blake Signal & Mfg. Co. 38
- B 10—Block & Co., Lynton T. —
- B 11—Bowdle, F. A. —
- B 12—Brach Mfg. Co., L. S. —
- B 13—Buhke Co., R. H. —
- B 15—Buckeye Telo. Supply Co. 35
- B 16—Burgess Battery Co. 1

C

- C 1—Calculagraph Co. —
- C 2—Cameron Appliance Co. —
- C 3—Carbon Products Co., The. —
- C 12—Chance Co. —
- C 5—Chicago Solder Co. 32
- C 6—Clay Products Co. —
- C 7—Coffey System & Audit Co. 32
- C 8—Cook Electric Co. 6
- C 9—Cope, T. J. 38
- C 11—Copper Clad Steel Co. 34

E

- E 1—Electric Storage Battery Co., The. —
- E 2—Electrical Instrument Repair Co. 35
- E 4—Everstick Anchor Co. 1

F

- F 1—Federal Telephone & Telegraph Co. 40
- F 2—Foote Pierson Co., Inc. 3
- F 7—Fort Dodge Telo. Co. 37
- F 3—Ft. Wayne Ptg. Co. 1
- F 4—Fowle, Frank F. 32
- F 5—Frankel Connector Co. —
- F 6—French Battery & Carbon Co. —

G

- G 1—Gottschalk Mfg. Co., J. W. —
- G 3—General Insulate Co. —
- G 2—Gund Mfg. Co. —

H

- H 14—Hall Bros. Cedar Co. 40
- H 13—Harrah Mfg. Co. —
- H 1—Hazard Mfg. Co. —
- H 2—Hemingray Glass Co. 10
- H 3—Hill, H. F. 40
- H 4—Hirsch, Gustav 32
- H 5—Holtzer-Cabot Electric Co. 3
- H 6—Hoosier Telo. Equip. Co. 35
- H 7—Hubbard & Co. 1

I

- I 2—Illinois Electric Co. 38
- I 1—Indiana Steel & Wire Co. 3

J

- J 1—Johns-Manville, Inc. —

K

- K 1—Kellogg Switchboard & Supply Co. 8-9
- K 2—Klein & Sons, Mathias. —

L

- L 1—Lambooy Toll Ticket Ptg. Co. 32
- L 2—Lanz Bolt Co., M. —
- L 3—Leich Electric Co. 2
- L 4—Long-Bell Lumber Co. 33

M

- M 1—Mansbridge, G. F. 2
- M 2—Matthews & Bro., Inc., W. N. 1
- M 3—Minnesota Electric Co. 32
- M 4—Mitchell, J. G. 32
- M 5—Monarch Tel. Mfg. Co. 7

N

- N 10—National Cable Company. 10
- N 1—National Carbon Co. —
- N 2—National Electric Specialty Co. —
- N 4—National Pole Co. 1
- N 5—National Telephone Supply Co. —
- N 6—Naugle Pole & Tie Co. 1
- N 7—North Electric Mfg. Co. 34
- N 8—Northern Pole & Lumber Co. 34
- N 9—Northwestern Electric Equipment Co. 33

O

- O 1—Oshkosh Mfg. Co. —

P

- P 1—Page & Hill Co. 39
- P 2—Paragon Electric Co. 10
- P 3—Partridge Lumber Co. 40
- P 5—Polk, W. C. 32
- P 6—Premier Electric Co. 35

R

- R 1—Rebuilt Elec. Equip. Co. 35
- R 2—Reliable Electric Co. 10
- R 3—Roebing's Sons, J. A. 10
- R 4—Rubber Insulated Metal Corporation. —
- R 5—Runzel-Lenz Elec. Mfg. Co. 3

S

- S 2—Smith & Hemenway Co., Inc. —
- S 5—Sparta Mfg. Co. 38
- S 7—Standard Underground Cable Co. —
- S 8—Stewart Bros. 34
- S 9—Stromberg-Carlson Telo. Mfg. Co. 4-5
- S 10—Suttle Equipment Co. 35

T

- T 1—Telefon Fabrik Automatic. —
- T 2—Thomson-Levering Co. —
- T 3—Topping Valuation Co. 32
- T 4—Turner Brass Works. —

U

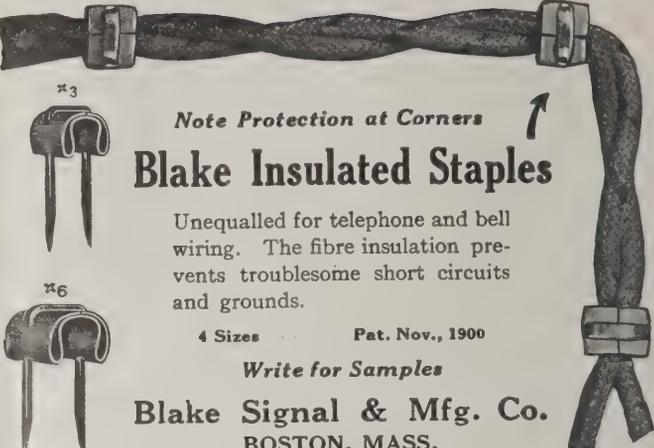
- U 1—Universal Specialty Co. 44

V

- V 1—Valentine-Clark Co. —
- V 2—Van Emon, Carlton G. 32
- V 3—Veeder Mfg. Co. —

W

- W 1—Weston Elect'l Inst. Co. —
- W 2—Wray & Co., J. G. 32
- W 3—Western Electric Co. —



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Telephony

THE AMERICAN TELEPHONE JOURNAL

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CURRENT OPINIONS AND COMMENTS

Telephone companies that are contemplating buying

equipment for needed extensions or replacements "before long" should get busy and do it now. All the business experts and observers now agree that industry has started on a definite period of activity that probably means higher prices for labor and materials.

Even the Federal Reserve Board—never over-enthusiastic—takes an optimistic view of conditions.

When there is serious talk of copper approaching 20 cents this year it is time for the telephone man who plans to buy equipment containing that metal to bestir himself and forward his order to the factory without further delay. The copper industry is experiencing a remarkable boom, the rising price being due to the immense demand in many industries, notably building and railway electrification.

* * * *

With March more than half gone telephone men will find themselves in the midst of the construction season before they know it, so they should enter their orders for equipment and supplies at once. The best judges do not see any prospect of descending prices very soon; on the contrary, as indicated by the copper pendulum, the trend rather is considered upward.

Keeping the plant up to working efficiency is a good investment even though it involves immediate expense, for it lays the foundation for a successful application for better rates. More and more the rate commissions are showing a disposition

to reward the utilities that manifest a sincere desire to improve service.

The moral, then, is get busy on your construction program. Remember Well Clay's moral: "Never mending makes a quick ending."

* * * *

As usual, the annual Bell report lays stress on the importance of every telephone subscriber being able to reach every other subscriber in the country. This, of course, is intended to focus attention on the "universal system" which the A. T. & T. Co. is always praising so highly.

Long distance telephone facilities are important, but to the overwhelming majority of the telephone-using public it is far more essential that there be efficient local service.

Both are highly desirable, but the average citizen of this work-a-day world would a thousand times rather feel absolutely sure he can always get a satisfactory connection with a man across town in his own community than to know he can talk to New York, if by some rare chance he might wish to once or twice a lifetime.

As some of the rate commissions have hinted, long distance service, to the average man, is akin to a luxury, while local service is a necessity. As has been said of charity, good telephone service should begin at home.

* * * *

In emphasizing the need of satisfying the public, the Bell report touches on one important point that too often escapes

attention; that is, the mere giving of technically good service

is not sufficient. The public must be made to feel that they are served willingly—even eagerly—by employees sincerely anxious to please their patrons.

This is the essence of genuine service, and is bound to produce good results, for the public will doubly appreciate the efforts of those who consistently show an enthusiastic desire to do the job cheerfully and well.

"The spirit of service," continuously impressed upon the public mind, will add many a strong timber to that structure of good will that telephone companies and all utilities need.

* * * *

General business will be helped by the adjournment of Congress for it will end—at least for the time being—the danger of radical federal legislation that always has a disturbing effect. The radicals will be back on the job next December when the new Congress convenes, however, more vociferous than ever, but meantime national industry will have a breathing spell.

Meantime, also, the radicals in the various state legislatures are still busy. In Wisconsin they have passed such distasteful tax laws that many business enterprises have pulled up stakes and moved to other states where so-called reform is not so malignant. In other states the reform programs single out the public utility companies for attack, and contemplate the abolition of state rate commissions and the establishment of public ownership or municipal control.

That the opposition of the business element to these two plans is being vigorously continued is shown by the fact that the New York Merchants' Association has declared itself for state regulation of telephone, gas and electric service, and issued a statement demonstrating how much more satisfactory it has proved than the old system of municipal control.

State regulation, it asserts, protects the public, the company and the investor, while a return to local control would result in chaotic conditions that would break down service and prove a calamity to the people of the whole state.

* * * *

An important point brought out by the Merchants' association is that municipal control usually arouses public hostility toward the service company. This is undoubtedly true, and the reason is not far to seek. It is the work of the local political demagogue.

To curry favor with the voters, the politician does his utmost to stir up trouble for the utilities, picturing them as "soulless corporations", and "grasping monop-

CONVENTION DATES.

The dates and places of meeting for the various state conventions to be held in the near future are as follows:

Texas, Hotel Adolphus, Dallas, March 21-23; Wisconsin, Wisconsin Hotel, Milwaukee, March 21-23; Florida, Roberts Hotel, Miami, March 27-28.

The April conventions scheduled so far are: New York Up-State, Powers Hotel, Rochester, April 18-20; Iowa, Ft. Des Moines Hotel, Des Moines, April 24-26.

lies", and himself posing as the defender of the people's rights. He wants the utility companies under local control to help him in local politics. That is the only interest he has in the matter.

* * * *

Everybody has heard of "Safety First," and most sensible people think pretty highly of what it stands for. The phrase has become a part of the language. Not so many had ever heard of "Safety Last" until the other day when a stepple-jack, wearing that ominous sign on his back,

tried to climb a sky-scraper in New York City.

Twenty thousand people choked the streets to watch the "human fly" pick his precarious way up the masonry, and wondered if the "Safety Last" banner would prove a mascot or a hoodoo. At the tenth story the climber lost his grip and fell to his death.

* * * *

"Safety Last" held the breathless gaze of the crowd until disaster came. Then "Safety First" resumed its hold on the public mind as the sane principle.

At that, if American pioneers had clung entirely to "Safety First" this country would not have reached the development it boasts today. To carry the idea further, probably no important progress would ever have been made in the wide world.

* * * *

There is a big difference, however, between "Safety First" and "Safety Last". The former means reasonable precaution; the latter represents a reckless, daredevil spirit that, even if successful, accomplishes little genuine good.

Opportunity in Independent Field

That There Is a Real Opportunity in the Independent Telephone Field for the Ambitious Young Man, Is the Opinion of One Man, Formed as Result of 20 Years of Experience and Observation—Some Logical Reasons Advanced

In the opinion of one whose experience has been such that his observations have extended over a period of some 20 years, the opportunity for the ambitious young man to become a proprietor, or at least a substantial owner of a telephone company, is far greater in the Independent field than in the Bell field. The young man who enters the Independent telephone field without the aim of becoming an owner or part owner in the business, may find the opportunity for development in this field somewhat limited, although this depends a great deal upon the man himself. But for the young man who enters the telephone field with the desire to become an owner of a telephone business, there is no field that offers the same opportunity as does the Independent field.

In the end, what greater aspiration can one have than to be the owner of some business of his own? And to those taking up the telephone business as a life work, what greater ultimate aim can be had than to be the owner of a telephone property, or at least a substantial owner of such business?

There are in the United States, approximately 10,000 individually-owned tele-

phone companies, and one can readily see that this situation in itself makes an active field for ownership, for there are constant changes of ownership going on due to natural causes. The Bell field offers very little, if any, opportunity for ownership in control to its employees, due to the method of financing in use for the Bell system and its subsidiary companies.

The same fundamental problems which have to do with management and operation in the larger companies are present

SUCCESS IS NOT LUCK.

Many people think of success as they think of a four-leaf clover. If they are the chosen favorites of fortune, they think they will find it. But success is not luck. Success is playing the game; playing on the team. Organized effort will produce a more far-reaching brand of success than individual work. It is a curious contradiction of nature that the greatest help towards the success of one's self is unselfishness, and he who works best for all certainly works best for himself.—L. M. Boomer.

in the smaller companies. While it is true that they are not of the same magnitude, they must, however, be given the same careful consideration as would be given to them in the larger companies.

With the same fundamental conditions existing in the smaller companies, it is apparent that the individual mind can readily grasp all of the various angles and phases of the problems and arrive at the answer more quickly than is the case in the larger companies where so many departmental conditions enter into and have a bearing on the problem.

The most successful owners are those who have all of the fundamentals well in hand, and these can, as a usual process, be acquired only through actual work in all of the phases of telephony.

There is no better place to learn the fundamentals of the telephone business than in the smaller Independent companies, for the reason that there are various types of equipment, construction and business methods used in most of the companies. By studying these methods intelligently, one should be able to learn all of the fundamental principles involved in telephony. As each of these principles is found only

in a greater measure in the larger organizations, so arranged as to fit their requirements, it is evident that an excellent opportunity exists in the smaller plant for the laying of the necessary ground work for future development.

In addition to the fundamentals, there is the overlapping of duties, such as line-man, operator, maintenance man, collector, etc., which offers an excellent opportunity to study the various phases of the business necessary to the successful operation of the property.

It is obvious that there are official positions of greater importance in the Bell field, due to the fact of its larger and more complex organization, which requires a big working field spread, making it necessary to secure the services of the higher caliber employes for supervisory purposes and executive heads. But the man who aspires to controlling a business, need concern himself as to the relative merits of position only to the extent that such positions in the smaller plants offer a stepping stone to ownership.

One of the reasons that the opportunity toward ownership in the Independent companies is better than in the Bell companies is that the very character of the plan of organization of the Bell companies, whereby the employe deals only with other employes and not with the owner, does not lend itself readily to the development of the younger and newer employes who enter its field.

In the Independent field the employe has the opportunity to deal with the owners who are ever watchful for timber which has the capabilities of making associates in the proprietorship of the telephone property.

There is always the opportunity ahead

MEN WHO "ARRIVE."

The young man of today says that there is no chance, or very little, for the poor, the unknown, the stranger in the ranks of our industry. The ranks vary greatly. There are three principal departments—the maintenance of way, the motor and car department, and the transportation department. Each has its own heads, its own executives.

Almost without exception, these men are the boys who 20 years ago started out as apprentices, as mechanics, as clerks.—General W. W. Atterbury, vice-president, Pennsylvania Railroad Co.

for the young man in the smaller cities to acquire part or whole ownership in the local company. Who is better fitted to operate and own the small company than the employe who has grown up with the company through years of service?

Certainly it should not be necessary to go outside of the community and bring in new people to handle an old established local business. It is certainly more desirable to the interests of the community to keep in their midst those who have been associated with the community over a long period of years than it is to bring in new people who have no conception of community interests.

There is no doubt that it is better, in a great majority of cases, for the young man who started to work for the local Independent telephone company during his spare hours and whose home life has been associated over a long period in the community, to stick on the job with the local company, for during the subsequent years of his activity he will be in a better posi-

tion to judge the local situation and can very readily identify himself more closely with the affairs of the community

He can become a power in the civic affairs of the community as well as place himself and family on the higher plane of the better citizen. He has always ahead of him the possibility of becoming an owner in the property.

The ownership or part ownership of a locally-owned telephone company is very desirable and always has many opportunities for interest in diversified lines of business and civic affairs. It should place the owner in the same relative commercial position in the community as the owner of a commercial business institution or the president or director of a bank. He is at least on a par with any business man in the community.

To be one's own boss, to be responsible for the success or failure of the property and know that, so long as the property is effectively and profitably run, one cannot be dislodged from the position which one holds, and to be identified in the business affairs of the community, is in the minds of many, the height of achievement in the telephone industry.

There is no reason why the young man in the Independent telephone field should not avail himself of the opportunities, offered by the company for which he works, to obtain the necessary knowledge to fit himself for advancement to a position of ownership.

It is directly up to him to fit himself for his position in life. If he does not do so, he has only himself to blame, for in the Independent field there are ample facilities for gaining sufficient information to enable those aspiring to ownership, to achieve the fulfillment of their desire.

Kansas Better and Better Every Year

Annual Convention of Kansas Independent Association Last Week at Ottawa Best Yet in Attendance and Interest—Operators' School—Other Features Include Demonstration of Plant Work—Mutual Companies Well Represented

It seems that the state conventions of the Kansas Independent telephone men grade upward in regular series from year to year, each being better than the one held the year before. The convention held at Ottawa last week, March 6, 7 and 8, was no exception to the rule and proved by all odds to be the largest and best annual meeting ever held in Kansas.

One of the exhibitors, who has been a regular attendant at the Kansas conventions for years, expressed the general opinion when he said: "It had 25 per cent larger attendance and 50 per cent more pep than the Wichita convention of last year." And the Wichita was the largest convention held in Kansas up to this year. The exhibitors swamped the quarters arranged for them. They were compelled to

leave the Nelson hotel for lack of display room and move to the large stage of the Auditorium building.

The general meetings were also changed from the Chamber of Commerce rooms, originally arranged for, to the audience room of the Auditorium. It was just a matter of an all-round larger convention; an attendance of over 300 with 22 exhibitors—they certainly needed the room.

The program in all its variety of shop talks, educational addresses and entertainment features was carried out as scheduled with but one or two exceptions, so the time was all taken up and used profitably.

A noticeable feature of the attendance was the number of representatives from mutual telephone companies, and the inter-

est taken in the convention by them, both in their own activities and in the bringing of a goodly number of young women to the school for operators. This is especially gratifying as the association officers want the mutual companies to feel it is for them as well as for the commercial companies; in other words, they want to make it in its broadest sense a convention for all Independent telephone men of Kansas. From the spirit shown at this year's convention, it is growing that way rapidly.

These officers were elected for the ensuing year: President, T. L. Youmans, Osawatomie; first vice-president, A. J. Stevens, Hiawatha; second vice-president, Bruce Goff, Wakeeney; third vice-president, J. A. McDonald, La Harpe; treasurer, H. L. Harris, Kansas City; assistant treasurer,

Miss M. J. Hancock, Kansas City; and secretary, L. M. Kraege, Topeka.

Executive committee: H. L. Harris, Kansas City; Samuel Tucker, Pleasanton; Fred Coulson, Abilene; C. C. Raymond, Greensburg; J. A. Gustafson, Fredonia; J. H. Campbell, Baldwin; and Foster Lanning, Tonganoxie.

Promptly at 2 o'clock Tuesday afternoon, March 6, President T. L. Youmans, of Osawatomic, called the convention to order.

The address of welcome, given by P. A. Elder, postmaster and president of the Ottawa Chamber of Commerce, was a warm, cordial and whole-hearted expression of greeting and good-will toward the telephone men and made them feel quite at home at once.

The response to the address of welcome was expressed by C. S. Gibbens, secretary and treasurer of the Nickerson Telephone Co., of Nickerson, and was delivered in the excellent and happy way that "Charlie" always speaks.

President Youmans in his address referred to the past history of the association and the problems confronting the members today. He showed the need is more than ever before for closer co-operation of all independent telephone men.

Reports of the secretary and the treasurer and the appointments of convention committees were quickly disposed of.

The operators' school, in charge of W. S. Vivian, of Chicago, was then organized in the Chamber of Commerce rooms to which the operators adjourned after the



J. A. Gustafson, of Fredonia, Member of Executive Committee, Operates a "Radio" Exchange With 60 Subscribers and Has a Waiting List.

opening exercises of the convention. The regular convention program was then taken up.

An excellent address and demonstration of "Open-Wire Splicing" was given by

O. P. Nokes, manager of the Yates Center exchange of the Emporia Telephone Co. Mr. Nokes convinced his hearers that he understood all the principles involved in open-wire splicing. This address provoked



President T. L. Youmans, of Osawatomic, is Also a Director of the United States Independent Telephone Association.

much discussion that occupied the remainder of the afternoon.

A theater party was enjoyed in the evening.

The Wednesday Morning Session.

F. B. MacKinnon, president of the United States Telephone Association, was the first speaker at the opening session of the Wednesday morning session and gave a splendid talk on the general situation of the telephone companies over the country and stressed very strongly the need of closer co-operation. "Mac" was quite at home among the Kansas boys, as he was formerly a Kansan himself; in fact, he is a native of Kansas.

J. K. Johnston, of Indianapolis, Ind., spoke on the purposes and benefits of the Independent Telephone Pioneers of America, and urged those eligible to join.

An excellent talk on "Telephone Publicity" was given by Milton Eisenhower, who substituted for Keith Clevenger. The address was full of excellent suggestions of benefit to every telephone company.

The group assembled for the photograph taken at noon was the largest ever gathered at a Kansas Independent telephone convention. It made a splendid picture.

The address Wednesday afternoon on "Class and Freak Legislation," by John B. Maling, was a wonderful one and appreciated by all. His talk was full of information, delivered in a clear, concise and forceful manner, and left an impression with every telephone man as Mr. Maling has a real message and one to ponder on deeply.

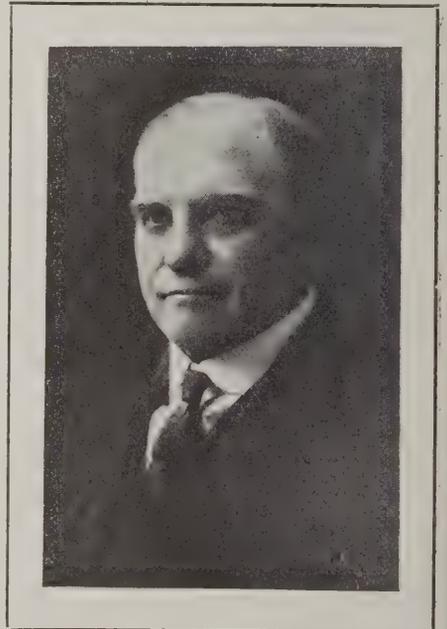
E. L. Chase, of Kansas City, who was to have given an address on "The Banks of the River," was ill at home. His address was sent to the secretary and will be put out into the field in form of a bulletin in the near future.

M. F. Potter, of New York City, gave an excellent stereopticon address on "Radio." It was arranged especially for the laymen in the business and was enjoyed by all who heard it.

The banquet, Wednesday evening, was enjoyed by 175 people. The Pioneer degree conferred upon a candidate was a scream. It came up to the greatest expectations of every one. Then followed the dance and entertainment feature that cannot be left off the program of a successful telephone convention.

Another entertainment feature was the excellent piano music furnished by Miss Youmans, of Osawatomic, daughter of President T. L. Youmans. Miss Youmans proved to be mistress of the piano and was heartily encored.

The address at the Thursday morning session on accounting, given by Mr. Buchanan, chief accountant with the Kansas Public Utilities Commission, was thoroughly appreciated by all. His theme was the annual report for Class C and Class D companies. It was full of excellent advice, clearly and simply given, and will make it easier for these companies to handle their annual reports. The association felt very grateful to the public utilities commission for sending Mr. Buchanan with this message.



Secretary L. M. Kraege Was Pleased to See Representatives of Mutual Companies at Convention—He's Strong for 100 Per Cent Cooperation.

An address and demonstration of "Telephone Test Sets" was given by Charles Hughes, plant chief of the Kansas Telephone Co. at Lawrence. Mr. Hughes had an excellent exhibit of ap-

paratus arranged for his demonstration and gave a splendid talk on the various forms of test sets.

The address on "Cable Splicing," by V. C. Parr, cableman with the Emporia Telephone Co., Emporia, was enjoyed by all. It created a great deal of interest, judging from the discussion that followed.

The operators' school, in charge of W. S. Vivian, of Chicago, was a wonderful success, both in attendance and interest. A three-way demonstration board was loaned by the Kellogg Switchboard & Supply Co., of Chicago, and was very helpful to the school. This feature of an operators' school has now become permanently established in Kansas conventions.

A special feature of the convention this year was the organization of a Kansas branch of the Independent Telephone Pioneers of America with 14 charter members for Kansas.

Another feature was the coming back to Ottawa for this occasion of "Dad" Hannum, who organized and built up the Home Telephone Co. at Ottawa; Fred Coulson, who was at that same time in charge of the Bell interests at Ottawa; and last, but not least, was the "Kid," Jack White, the Missouri representative of the Kellogg Switchboard & Supply Co., who took his first lessons in the telephone game under "Dad" Hannum, at that time in Ottawa. Each told of his experiences in those days. This sentimental feature was thoroughly appreciated by the convention.

Another special feature of the convention was the discovery that J. A. Gustafson, manager of the Fredonia Telephone Co., of Fredonia, had more than a year ago started a radio exchange at Fredonia. He has a present subscription list of 60 and is swamped with orders.

"We believed the time had come," says Secretary L. M. Kraege, "for telephone men to get into the radio game as a department of the telephone business. We feel that Mr. Gustafson is the first telephone man in Kansas who has successfully worked out the problem and we believe he is the pioneer for the United States in this field."

Among the visitors at the convention were J. G. Crane, W. C. Polk, V. E. Chaney, A. C. Jack, all of the Kansas City Telephone Co.; E. C. Blomeyer, of the Automatic Electric Co., Chicago; and J. H. Ainsworth, assistant engineer of the Kansas Public Utilities Commission. Splendid informal talks were given by Mr. Blomeyer and Mr. Ainsworth.

The convention from all angles was a record maker for Kansas. The shop talk, the educational features, the entertainment, the operators' school, the exhibits, and, last but not least, the splendid hospitality of the citizens of Ottawa, all contributed to the success of the meeting.

The spirit of co-operation among telephone men is stronger than ever. With

TWO CAPTAINS OF SALESMANSHIP.

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Any day, on one of the busy streets in Des Moines, you can see and hear my two captains of industry. Each has his own particular stand and they are not much more than a shouting distance apart.

One of them, a lad of about 16 years, stands on the corner—the corner on which he has been daily for a year and a half—and calls "Capital! Capital!" I wonder how many thousands of papers that boy has sold in this time. I attempted, this afternoon, to count his sales, but I lost my count as he darted in and out among the crowds, and sometimes half-way across the street.

It was interesting to watch this boy go after the business. He seemed to "spot" a customer before the customer realized that he wanted a paper. I suppose this lad had grown to know the faces of many people who took certain cars at certain hours of the day. He evidently knew that these people usually bought a paper before the car came, if time permitted. He was ever on the alert for a possible customer and always went out to meet his customer. His interest never slackened.

He told me—of course, I had to talk with him—that if he had good luck selling his papers, he finished by 7:30 in the evening. He started to work at 11 in the morning. I wonder what the future holds for this lad.

About the same hour of the day that my little "newsie" takes his stand, the other captain sits himself down on a stool and grinds and grinds out, "Good-bye, My Blue Bell," "Where Is My Wandering Boy Tonight," "Just Before the Battle, Mother," and a few tattered, old songs of other times.

What is this old man selling the crowds that surge past him? He is not selling these songs; he is selling his bent, old carcass to the sympathetic side of the people.

He is a shrewd, old man—just shrewd enough not to care to meet the gaze of his sympathetic customers, except from under the shade of his hat brim. He takes a sneaking, peeking view of the crowd and grinds out doleful tunes to attract attention.

He has nothing to sell, after all, except himself. He sells himself for pity.

MORAL: People who crave pity from their fellowmen are virtually dragging their own souls in the dust.

the growth of this co-operative spirit is bound to come a greater benefit to telephone men and an increase in the standard of service for subscribers. Everything points to improved conditions for Independent telephony in Kansas.

Illinois Operators Pass Resolution Against Eight-Hour Bill.

At the operators' school held at Monticello, Ill., on February 28, in connection with the regular monthly district meeting of the Illinois Telephone Association, resolutions regarding the women's eight-hour bill were passed by the operators. The resolutions follow:

"Whereas, it has come to our attention that a bill has been introduced into the legislature providing for the compulsory limitation of the hours of labor of female workers, known as Senate Bill No. 16 and House Bill No. 88, and

"Whereas, by a unanimous vote of the female telephone employes assembled in a district meeting at Monticello, Ill., February 28, 1923, it was found that the members unanimously disapproved of the limi-

tation of the hours of the female labor as applied to telephone work,

"Now, therefore, Be It Resolved by the undersigned female employes of telephone companies that a resolution be sent to the legislature and members thereof requesting that their class of service be omitted from the said law when the same is framed for passage."

The 25 girls signing it were: Florence L. Knight, Bement; Edna Schneider, Bement; Grace Nash, Bement; Rose Sarver, Clinton; Florence M. East, Cerro Gordo; Pearl Baker, Cerro Gordo; Ruby Green, Henry Telephone Co., of Henry; Martha Hudson, Independent Toll Clearing Co., of Springfield; Evelyn Simonds, Decatur; Fern E. White, Monticello; A. Maude Jones, Champaign; Grace Bowers, Champaign; Nelle Crump, Champaign; Helen Beckhart, Monticello; Gwendolyn Lugg, Cerro Gordo; Mary Frantz, Cerro Gordo; Gertrude Alsip, Champaign; Ruby Benton, Cerro Gordo; Dottie Giesler, Cisco; Ruth Pattengale Leach, Cisco; Lula Spieler, Iroquois; Ruby Nosker, Iroquois; Della Duvall, Monticello; Lena Roth, Farmer City; and Daisy Shaw, Farmer City.

What "Efficient Service" Requires

Dependable Service to Subscribers Means Careful, Selective Picking of Operators So They Will Successfully Meet Problems That Constantly Arise—
Paper Presented at Syracuse District Meeting of New York Up-State Association

By Mrs. G. L. Ames

Manager, Operators' Training Department, Syracuse, N. Y.

The chief aim of the telephone company is to render efficient service. By efficient service, I mean courteous, accurate and prompt service. Therefore, the primary problem of every telephone operator is to handle every call in such a way that the subscriber will be convinced that the service is courteous, accurate and prompt.

You probably noticed I said *every* call; this makes the service dependable so that the subscriber knows he may expect the same grade of service on Tuesday that he does on Monday.

It was not that way in the old days; for example, I remember hearing of an incident which happened about 25 years ago in one of our offices. A circus parade was passing and immediately the operators stopped their work and went to the windows to view the parade.

Later a subscriber, thinking there was something wrong with his telephone, called the chief operator and complained that he was unable to reach the operator for some time. The chief operator explained that the circus parade was passing and the operators were watching the parade. The subscriber apologized for calling and stated he had forgotten about the circus.

At that same office today, we are giving a high grade of service *every minute* regardless of circus parades.

To meet this primary problem, operators must be selected with great care and the following qualifications should be considered:

First of all the mental characteristics; prospective operators should be well educated, intelligent, keen and alert. Girls who have had high school training are preferable, as the better educated girls grasp the instructions more readily. Frequently, however, exceptions are made and girls who have finished grammar school or who have had a little business experience are given a trial.

Applicants between the ages of 17 and 23 should be selected, as girls of this age progress faster and are more amenable to discipline.

The amount of school training an applicant has had should not be the sole criterion of her adaptability. It is often found helpful to discuss some popular subject in which the applicant might be interested; this tends to display her intelligence and alertness.

It is of the utmost importance that special attention be given to the physical con-

dition, for it goes without saying that our operators must be in good health in order to be regular in their attendance—and we all know how important it is for our forces to be regular in attendance. Operating is not the kind of work which can be laid aside to do at some future time; we must be "on the job" when our subscribers wish to call.

The applicant should be questioned regarding her general health, any recent or

SUCCESS IS NOT PRIVATE.

The higher up in life that a man goes, the more necessary it becomes that he shall cooperate with other men. Any man's success depends largely upon the efforts of others, and anyone who is not willing to share his success with these others very seldom has much success to share.—Winthrop Mason.

serious illness, how long since vaccinated, throat trouble, swollen glands, goitre trouble, nervousness or any deformities which are noticeable that would interfere with her work or attendance. If the girl is anemic and frail looking, it should be ascertained if there is or has been any tuberculosis in her immediate family.

She should be carefully scrutinized as to cleanliness and neatness. It is very essential that the girl be neat in her appearance, as this is a good indication that she will be neat in her work.

The hearing can be determined by talking in an ordinary tone and noting whether or not the applicant answers readily.

The eyes can be tested by the use of a regular physician's chart.

In some cases the applicant is considered eligible in every way, except that she does not pass the eye test. This is explained. I have known of cases where the girl returns wearing glasses and states she did not realize her eyesight was poor and is very grateful for having her attention called to it.

Her character may be judged by her personal appearance and mannerisms. She may also be judged by her place of residence and her previous working conditions. In case of doubt in the larger offices, a personal investigation may be made, and in the smaller offices inquiries may be made among the forces.

Special attention should be given to enunciation and tone of voice as this is one

of the *greatest* qualifications. One way to determine this is to have the applicant read aloud a paragraph from the operator's rules book and note the quality, clearness and distinctness of the voice. A pleasant, courteous tone is required in order to give the subscribers a good impression of the service.

In addition to the primary problems which confront the operators every day, various other problems arise from time to time. I will enumerate only a few of these problems, for in the space of a short paper it is impossible to mention all of them.

I believe I can safely say that in every central office there are subscribers who are commonly called "chronic kickers" or "grouches." This is where our voice training plays an important part; it is a good place to practice "The Voice with the Smile." Very often a little personal touch is also necessary to win over these people.

Some time ago it was necessary to cut over the line of one of our so-called "grouches" from a larger office to a smaller office. Everyone looked forward with dread to the complaints which they were sure would follow this action by the company. However, the operator in charge of the smaller office, being familiar with Mr. Grouch's previous record, was determined to convince him that he would get better service in her office.

Being a firm believer, as we all should be, in "A soft answer turneth away wrath," she decided upon this course. On the first call he placed each morning, she greeted him with a cheery "Good morning," and when giving reports to him used a particularly pleasing tone. Very soon the subscriber felt that he was receiving special attention and complaints were eliminated.

The following month when he paid his bill, he left a box of candy for the operator. Later, upon an invitation from the operator in charge, he made a personal visit to the office. No longer was it a dreaded task to answer this subscriber and you can readily see what an important part "Courtesy" played in winning him over.

I might also relate many instances of the heroism of operators who were alone in small offices in times of peril, such as floods, fires, etc.—what difficult problems they have had, how they notified the proper people to take care of the emergencies, rang the telephones of subscribers whose lives were in danger and stayed

in the office until compelled to leave; but they are too numerous to mention here and I think most of you are familiar with them.

It is a difficult problem to make a hard and fast rule that will cover every condition which may arise. This is particularly true on long distance calls where we receive so many different reports. It is often necessary for the operator to use her own judgment and ingenuity. I will tell you about an important call where the subscriber gave a very indefinite address.

A toll call was placed for a party who lived on a farm between Canastota and Wampsville. The only address the calling party could furnish was Canastota R. F. D. He knew the called party's mother-in-law lived across the road and had a telephone, but he did not know her name. Undoubtedly you have had many calls of a similar nature and might be interested to know how this particular call was handled.

The operator attempted to reach the Canastota post office, thinking they could furnish her with the called party's correct address, but unfortunately there was no telephone at the post office. The Canastota operator then furnished a rural line number which she thought might be of some assistance, but the rural line number was unable to furnish any information.

The next step taken by the operator was an attempt to reach the general store at Wampsville, but this telephone did not answer. She then called a public telephone and received the information that they knew the called party but he lived too far to send a messenger. However, they did furnish the mother-in-law's name and telephone number, which was connected to the Oneida central office. The telephone did not answer.

The Oneida operator then furnished a nearby telephone who stated he could reach the called party in about 15 minutes. In the meantime the mother-in-law answered her telephone stating she was out in the field and did not hear the bell the first time. In a very few minutes the connection was completed. This was due particularly to the good judgment and common sense used by the operator.

Another problem is to conserve the company's revenue and, as far as possible, to get the public to pay for just service rendered. Every possible effort should be made to complete every toll call presented.

Here is an illustration of how an operator saved a call which had been cancelled. On a particular-person call to New York a report was received that the called party was out for the day. The calling party did not wish to talk with anyone else and instructed the operator to cancel the call and he would write instead. Later in the day this same operator had a call to New York for the same called party and succeeded in reaching him.

Remembering the cancelled call she immediately secured the ticket, rang the calling party and explained she could now complete his New York call as she had

The Human Transformer.

By C. G. Vickery, *Traffic Supt., Rochester Telephone Corp., Rochester, N. Y.*

Conscience, "The power or faculty which distinguishes between right and wrong."

Sub-conscience, "Only dimly conscious, lacking clearness."

Auto-suggestion, "Ability to hypnotize oneself, to kid yourself."

An electrical transformer used in commercial practice is a piece of apparatus consisting of two coils associated in close proximity to one another without coming into direct metallic contact.

Electrical energy from some source which, as a rule, is of a voltage considerably higher than the voltage required for commercial purposes, is forced through one of the coils, which in turn excites the second coil producing an electrical current of a much lower voltage depending, of course, on the arrangement and the requirements. Resistance cut into the path of the second coil checks its full power or action, depending on the amount of resistance placed in the circuit.

The human transformer is more like the "second coil," as stated above, and *thought* is the power. The Great Unseen Power that controls the Universe is the source from which man receives his power. Every man is a transformer hooked-up directly to this Great Unseen Power.

Remember that man represents the second coil, and resistance in the path of his thought reduces his power and action.

Very well, what is this resistance? In order to understand that question, you must know that the Great Unseen Power is all that is good, and delivers constantly right activity.

The coil—Man—must constantly keep out of the path of his thoughts all that is unlike that from which he derives his all. Very well, answer the following questions:

Are you a chief operator, a supervisor, or an operator?

Are you placing in the path of your thoughts a resistance that will interfere with good service?

You know that good service is "right activity." Also, you know that your company is anxious to render good service, and that it has established for your use, certain requirements that will produce good service. Yes, you realize all of that.

Well, then, cut out all resistance in your thoughts that in any way will interfere with "right activity," and you will find that you, as a human transformer, are delivering constantly, a grade of service second to none. Try it!

reached the called party. The subscriber stated that he had already written, the operator suggested, "But wouldn't you rather talk with him?"

"Well, you are some business woman," the subscriber answered. "Yes, I'll talk, put him on," and so the call was completed.

As a result, she saved a cancelled call and gained the confidence of another subscriber. It would be an easy matter to save more cancelled calls if all of our operators would use as good judgment when the occasion arises.

As a considerable number of toll calls are placed from coin box stations, the problem of collecting the overtime from these stations is sometimes a difficult one, as the patron frequently, unintentionally or otherwise, leaves the telephone without paying the overtime.

One solution of this problem is an attempt to secure from the calling telephone the name and address of the calling party or other information as to his identity. If the calling telephone is unable to furnish this information and the amount involved is sufficient to justify it, the called party may be reached and questioned in regard to the calling party. If the information is obtained, the calling party may be billed for the amount due, or if the called party volunteers, the overtime charge may be reversed.

Another problem which is sometimes difficult to solve is convincing a subscriber of the reasonableness of some of our practices; for example, operators should not assume the responsibility of taking an oral message to be delivered at some future time. Should any mistake occur, the company would be held responsible and might become involved in serious difficulties.

On a recent call into Pennsylvania, it was impossible to raise the called telephone and our patron requested the operator to take his message to be delivered when the station answered. The supervisor explained why we could not accept such responsibility and suggested he give his message to some party at the distant point for delivery. He agreed and upon completion of the call, called the chief operator to express his appreciation of the courteous and efficient manner in which his call was handled. This is but one illustration to prove that subscribers can be convinced if proper methods are used.

A still greater problem which confronts the operator is the one of educating the public to new types of service or changes in present methods.

Recently about 1,500 lines in Syracuse were cut over to a new machine switching office and instead of assigning a central office name, the number "2" was assigned as the central office designation. The subscribers, who were accustomed to call by name, found it rather difficult to drop the central name, consequently we received

calls as Warren 2-0123 and James 2-1621, etc.

In order to educate the subscribers not to use central office names with the designation "2," it was suggested that we have the operator say, "The number is simply 2-0123." In a few hours we were receiving calls for "Simply 2-1026." So then we changed the phrase to "That number is 2-0126," leaving out the word "simply." This is only one of the many cases which prove how readily the public adopts any change given by the operator.

A new practice of handling single ticket calls on long distance is about to be put into effect. This new practice will be known as "Overlap Ringing" and provides that the inward operator announce "ringing" as soon as she starts to ring the called number. The "outward" operator acknowledges by saying "right" and rings the calling party.

If the calling party answers before the called party answers, he is given a preliminary report and asked to hold the line. When the called party answers, the call is announced and all reports received in the hearing of the calling party.

This modified method has been tried out between some large offices and has proved that if properly handled it is satisfactory to the public and will save about 10 per cent circuit holding time and operators' work time.

As you probably noticed in the solution of the problems outlined, our aim is to give the subscribers the service which they want and which we want to give—courteous, accurate and prompt.

The Need of Telephone Development in Latin America.

By LEWIS J. PROCTOR,

Vice-President, International Telephone & Telegraph Corporation.

The importance of a continental telephone system to North America is well appreciated by everybody familiar with business methods in the United States and Canada, and there is no practical reason why the same facility in the transaction of business should not exist in South America. With almost a common language, and with practically similar laws and institutions, the republics of South America ought to be on terms of closest intercommunication, not only for their social but also for their commercial advantage.

This ambition on the part of those who are interested in the Pan-American idea can be realized only when all the Spanish-speaking peoples of the new world are able to talk and to do business together as readily as is now the fact among the English-speaking peoples to their North.

The stimulation of trade which up-to-date national and international telephone service produces would have a very

marked effect on the general prosperity of the entire continent.

A gradual combining of the telephone systems of South America in the matter of control, administration and engineering methods seems the most practical way of arriving at a continental system of communications. This would involve the standardization of the equipment methods and the transmission practices of all local plants as well as the extension of the long distance lines. Millions of dollars could be spent in development of the local systems as individual units, and the result would be ineffectual towards producing international communications unless there were some central plan of control and standardization.

It is quite possible to have numerous satisfactory local systems which could not be harmonized to carry on international communications, if uniformity of equipment and operation methods were lacking; or if such isolated, independent systems were harmonized after a fashion, long distance international communications could be carried on, if at all, only under most trying and disadvantageous conditions.

The situation in South America, with few exceptions, is in no way comparable with that in the United States or that with which the people of Cuba are familiar, where standard practices have been accepted, with the result that it is as easy to talk today from Santiago de Cuba to California or Canada as it is to talk between two houses in the same street.

In some countries in South America the people have put up with old-fashioned plants so long that they do not know what good telephone service is. This explains to some extent the failure of the public to insist on good communications.

Most countries in South America are unable to raise, yearly, the new capital which is needed for extensions and improvements and also to provide funds to maintain and replace depreciated or worn out plants. The result is that the once good service is broken down by the introduction of makeshift and inexpensive methods on the part of local people who are limited in what they can do by what they can finance.

The only feasible plan for an up-to-date service is a central organization of some sort able to control the type of equipment used and the methods to be followed.

In many instances it has appeared that there was a general lack of desire on the part of the companies to cater to the public needs and a failure on their part to appreciate that furnishing good service really reacts powerfully to the benefit of the companies themselves.

My recent tour of investigation in South America was for the purpose of finding out how it might be possible to work out a plan for the standardization of tele-

phone systems which would be the foundation of an international and transcontinental system of telephone lines that would be as efficient as the system now existing in the United States.

The International Telephone & Telegraph Corp. has signified its willingness to enter any country of Latin America for the purpose of developing local telephone plants so that they may become units of such a general telephone system for all South America. It is a thing which is bound to come, for South America is both wealthy and ambitious.

The main purpose of the International Telephone & Telegraph Corp. today is to carry out this plan, and we are working constantly upon the details of a program which we confidently believe will put telephone communications throughout Latin America on the same high standard now found in Cuba.

In facing this task, we are fortunately greatly aided by years of experience in the successful development of telephone communications of a high standard in other Latin countries. Our studies are being made and our plans arranged by men who are not only familiar with the problems of the telephone industry, but who also have spent many years in South America and other Spanish-speaking countries. We, therefore, possess the all-important familiarity with the customs, conditions and traditions of these peoples without which no such plan, as indicated above, could reach complete success.

Rate of Sulphation of Storage Battery Plates.

An investigation has been undertaken by the U. S. Bureau of Standards to establish, if possible, a speedy and accurate method for the measurement of the effect of impurities in storage battery electrolytes. Methods which have previously been used require considerable time, and accurate and consistent results are difficult to obtain with them.

The new method which has been devised is based upon successive weighings of the positive or negative plates while immersed in the solutions to be tested, which are maintained at a constant temperature.

The battery plates were immersed in the various electrolytes contained within a thermostat bath and so arranged that any plate could be brought in the arm of a sensitive balance for weighing. Weighings of the plates were made daily, and the results were computed as the increase in weight of the plate per hour.

The results showed considerable differences in the rates of sulphation of plates made by various manufacturers, and marked differences in the rate of sulphation produced by different concentrations of the acid solution were demonstrated. Temperature also plays an important part in determining the rate of sulphation.

In the Midst of the Cedar Pole Season

What George K. Gann, General Superintendent of Tri-State Telephone & Telegraph Co. Saw and Learned During a Visit to Gemmel Camp of Page & Hill Co.—Radio Threatens to Disturb the Early Rising Custom

Getting out cedar telephone poles in the dead of winter in at least one Northern Minnesota lumber camp is not the lonesome, dreary occupation it was in the olden days, according to Geo. K. Gann, general superintendent, Tri-State Telephone & Telegraph Co., St. Paul, who recently was the guest of L. L. Hill, president of Page & Hill, in the latter's camp near Gemmel, Minn.

The radio has done away with the isolation. The lumberjacks in this camp, after a hard day's toil and a bounteous supper, slip receiving sets over their heads and listen-in on concerts, dance programs and what not which come in strong and clear due to the fine air conditions and lack of electrical interference.

The storekeeper at the Page and Hill camp had received a single tube radio set

the very day Mr. Gann arrived and asked him to set it up for him. This was soon accomplished.

"The results were really wonderful," said Mr. Gann in describing the experience after his return to St. Paul, "and seemed miraculous to the lumberjacks. Atlanta, Ga., was the first station tuned in, then in rapid succession we picked up Regina, Can., Winnipeg, Memphis, Kansas City, Emporia, Kan., and several others, all clear and distinct. It was obvious that the usual camp bedtime, about 8:30 is due to be seriously affected by this new interest."

A few days after Mr. Gann's return home he received a letter from P. V. Murphy, foreman at the camp, advising that the tube had been broken and asking for a replacement P. D. Q. "Send six or seven of 'em" was the concluding injunction. Pat, of course, was not aware that tubes cost six or seven dollars each, wholesale. He received one tube by return mail and was very well satisfied with the explanation which accompanied it.

As illustrative of just how much the

radio means to these boys, buried in the northern wilderness, 17 miles from the nearest railroad, the following extracts from Mr. Murphy's letter are interesting. He writes:

"I will tell you about my luck last night. I tuned away for a little while getting odd pieces until I hit KDKA, East Pittsburgh, Pa. Got that station good and clear and settled down for an enjoyable couple of hours. The program consisted of old negro songs by Steven Collins Foster, 'Old Black Joe,' 'My Old Kentucky Home,' etc., some solos and orchestra selections. After they concluded, I tuned around again and picked up Fort Worth, Texas, broadcasting music by Crockett's dance orchestra and we certainly enjoyed listening to them.

"Among other things a Dr. Coulter, a



Trees Are Notched Before Sawing Commences, to Get the Right "Fall"—L. L. Hill and "Pat" Murphy, Foreman at the Page & Hill Gemmel Camp, Saw That Geo. K. Gann, of the Tri-State Company, Was Properly Outfitted—Gann Looks Like a Real "Lumberjack."



"A Close-up" of One of the Huge Pole Sleds With the Settlement at the Railroad in the Background—The Icicles on the Bunk House at the Gemmel Lumber Camp Took George Gann's Eye; They Are Surely of Some Size.



Telephone Poles at the Railroad Ready for Shipping—Lumber Train Coming Through the Woods on the Iced Track—Geo. Gann Giving the Iced Track the "Once-Over" While Resting After a Five-Mile Hike With the Mercury 35° Below Zero.

druggist in Arlington had the announcer advertise for a wife for him. After playing a number the announcer said that a young lady, 19 years of age, had inquired over the telephone as to her eligibility. After another number the announcer stated that a minister had telephoned that he would perform the ceremony and not to be outdone the station offered to make it a radio wedding.

"After this I started off again to pick up some more and got a station in California but I don't know what station it was. Regina got in at the same time and I could not tune either one out. I got Denver, Winnipeg, Memphis and Arlington time signals relayed, but the only ones I got clear and continuous enough to enjoy were East Pittsburgh, Pa., and Fort Worth, Texas, but that was enjoyment enough."

Describing his visit to the camp, Mr. Gann said he spent the time tramping over its environs, watching and studying, first hand, the process of producing eastern cedar telephone poles.

"One day, while I was in the woods," he said, "the temperature hovered around 30 degrees below zero, and on another day it hit 48 below. I walked 12 miles the day it was 30 below and after the first few miles found it uncomfortable to have my coat buttoned or my gloves on. I found it hard to believe that the

little weather indicator was telling the truth. The fact was forced in upon one's consciousness with direct suddenness that defied contradiction when my



An Eight-Sled Train Winding Its Way Through the Woods to the Railroad.

cigaret, removed for a moment from between my lips, froze solid before I was ready for another puff.

"That same day I rode about nine miles

on top of a log train and about 35 miles in a small automobile of familiar make. Only during the time that I was riding on top of the logs did I feel at all chilly. I wore the prevailing lumberjack togs which included a heavy suit of wool underwear, four pairs of socks, wool trousers, coat and vest, wool sweater and an overcoat lined with sheepskin."

Work in any lumber camp is strenuous. The lumberjacks are out and at it very early every morning except Sunday and those who presume the bill of fare and cuisine are not in keeping with the work required are mistaken, according to Mr. Gann. Referring to his experience along this line, he said:

"For breakfast one morning we had steak, sausage, ham, wheatcakes, biscuit, doughnuts, several kinds of pie and a few other miscellaneous articles of food. Not so bad, particularly when one has an appetite which measures up to such an array of well cooked things to eat.

"Telephone poles, after they have been cut and trimmed in the woods are hauled to the railroad over a specially-built ice road on the huge sleds pulled by a sturdy caterpillar engine. From this camp the distance is 17 miles. The runners of the sled run in ruts which have been cut in the frozen ground and then built up by means of icing. The final result is a road covered with ice about a foot thick in



Gann Even Tried "Chauffing" the Caterpillar Engine While at the Gemmell Camp of the Page & Hill Co.—Lumber Train at Full Speed, All of Six or Seven Miles an Hour on the Specially Prepared and Expensively Maintained Ice Track.

which are two grooves eight feet apart. This icing must be done every few days.

"A road of this kind costs about \$1,000 a mile to build and between \$200 and \$300 a season to ice and maintain. However, once constructed, it is as good as a railroad, at least during the winter season. Each sled has the capacity of two ordinary freight cars and the trains usually consist of eight sleds. Thus, one train carries the equivalent of 16 carloads of poles and other lumber products. The train proceeds at an average rate of six of seven miles an hour."

"World Communication" Demonstrated by Gen. Carty in Chicago.

The wonders of "World Communication," the subject of an address by Brig. Gen. John J. Carty, vice-president of the American Telephone & Telegraph Co., were demonstrated to the members of the Commercial Club of Chicago at its banquet on March 9, when the general called the roll of 20 cities by telephone. The banquet was held at the Congress hotel.

Mr. Carty used in his demonstration five amplifiers used to broadcast President Harding's Armistice day address, and a map studded with electric lights. As a voice from each city answered to the roll call, a light on the map flashed to show who was talking.

Havana, Cuba, came in first with "fair and wet" and members of the club sighed appreciably. A violin solo from San Francisco was next. Other cities responding included Jacksonville, Fla.; Richmond, Va.; Omaha, Salt Lake City, and New York.

B. E. Sunny, president of the club and chairman of the board of directors of the Illinois Bell Telephone Co., traced the growth in use of the telephone in Chicago from 350 in 1879 to 648,000 today.

He brought out that there were less than 5,000 telephones in the city in 1887, 10 years after the exchange was started, and 28,000 in 1900; 240,000 in 1910; and in 1920, 648,000.

It required the first 20 years, he said, to get rid of the knobs, switches, and bell cranks; to clear the wire of noises; to develop speedy and accurate switching apparatus; and to find out how to make cables for underground work, to replace the masses of wires in the streets and on the roofs.

Briefs About the Illinois District Meeting at Monticello.

On February 28 the Illinois Telephone Association held a district meeting at Monticello. It included a district plant school at which approved methods of cable splicing were demonstrated, as well as a traffic conference at which the operators in Monticello and vicinity were assembled for the discussion of the latest methods of handling telephone traffic.

At noon the delegates met at luncheon

with the Community Club at the Presbyterian church.

In the evening a dance was given to all the delegates and operators and their guests.

The Illinois association, which comprises 96 per cent of the operating telephone industry of Illinois in its membership—is committed to the policy of whole-hearted and effective coöperation with the public in the rendition of adequate service at reasonable rates.

Dr. R. E. Gordon, of El Paso, president; E. S. Sterrett, Henry, vice president; and Jay G. Mitchell, Springfield, secretary-treasurer, were present at the Monticello meeting and made addresses.

Department of Agriculture Combatting "Short-Circuit Beetle."

Beetles which bore through lead covered cables, and which, nevertheless, do not or can not penetrate pure gum rubber, have proved a serious problem and pest in California and many other parts of the United States.

One of the most important injuries inflicted by these beetles is the damage done to the lead sheathing of telephone cables in California. The beetles bore circular holes in the sheathing, about one-tenth inch in diameter. Moisture enters the cable through these holes, causing a short-circuiting of the wires and interruption of service to the public. As one hole may put from 50 to 600 or more telephones out of use for from one to ten days, the damage is rather extensive.

Experiments have been undertaken at various times, by the Bureau of Entomology of the United States Department of Agriculture, to determine what treatment could be used to keep the beetles from injuring the cables. These experiments are summarized in a professional paper, issued as Department Bulletin 1107, The Lead-Cable Borer in California, by R. D. Hartman, H. E. Burke and T. E. Snyder, entomologists.

Thus far the results indicate that the beetle is able to penetrate any lead alloy used as a cable sheathing or any poison or repellent placed on it. Probably it is able to penetrate the poisons because it does not feed as it bores through. Beef tallow, when sufficiently soft, will stick to the beetle and suffocate it, and has been used with some success on the rings which suspend the cable, since practically all the boring is done near the rings.

Layers of friction tape impede the boring and thin sheets of copper, zinc and steel prevent it. Sleeves of these metals can be placed around the cable at the rings, but the cost would probably be too great for general use. A new type of ring made of flattened steel-wire stock galvanized is now being installed by the telephone companies, and it is believed that this ring is better, from the standpoint of preventing attack by the beetle, than the old one.

Meantime, allowing the rings is the most promising method of control.

Telephone News Notes From Great Britain.

The first British wireless telephone broadcasting service was inaugurated during the latter part of last year from the London broadcasting station, Marconi House in the Strand. Messages are broadcasted twice every night, at 6 and at 9 p. m., on a 360-meter wave length. The news summary was spoken into an ordinary telephone receiver connected to a 1½-kilowatt wireless transmitter.

The Duke of York opened an exhibition in North London recently by telephone. Special wireless telephonic apparatus was rigged up with a system of amplifiers and projectors operating over wired circuits. The duke was enabled to sit in his room at Buckingham Palace and speak into a small transmitter.

The transmitter was connected to a one-stage amplifier connecting in turn with the Victoria exchange. The message was thus carried to the exhibition hall, passing through the remaining amplification stages to eight projectors suspended from the roof of the hall at a height of 30 feet. This method is said to be similar to that used on the occasion of President Harding's speech at the burial of the unknown American warrior.

A telephone system has been installed in the Presbyterian church at Eastbourne on the south coast for the benefit of folks who may be hard of hearing. A small fee will be charged to members of the congregation availing themselves of the instruments which will be placed in every pew. A transmitter sufficiently sensitive to carry the preacher's voice has been installed in the pulpit.

These pew telephones, of course, are intended chiefly for use during sermons. The idea is now spreading to the local Baptist churches.

Actuated by the necessity of speeding up business in the rural telephone districts, the government telephone officials have their rural linemen out taking an informal census of all poles, connections and overhead lines. The linemen are asked to make rough maps of their particular district, showing the location of poles and subscribers' lines by means of black dots.

New York's Fourth Machine Switching Office in Operation.

New York City's fourth machine-switching telephone central office, designated "Applegate," was placed in operation by the New York Telephone Co. on Sunday morning, March 18, to serve the Applegate central office district in East New York, Brooklyn. Approximately 1,550 lines were transferred to the new office which has been installed in a new telephone building at the corner of Liberty Avenue and Milford Street, Brooklyn.

Discuss Valuation of Indiana Bell

Chicago Expert Would Have Value Based on Actual Investment—Proposes Basing Rates on Operating Costs Instead of Plant Value—Advocates 4% Depreciation Allowance—Declares Bell Paid Too Much for the Central Union

Valuation of public utility property on the basis of estimated cost of reproduction new for rate-making purposes, which involves appraisals by engineers on estimated unit costs, is not as trustworthy and desirable, in the long run, either to the public or the utilities, as valuation based on actual investment prudently made, according to the view expressed by W. H. Crumb, consulting telephone engineer for the city of Chicago, testifying as an expert witness for the Indiana Public Service Commission last week in the Indiana Bell Telephone Co. consolidated rate case.

In his preliminary testimony, Mr. Crumb qualified as an expert, discussed the fundamental principles of depreciation of utility properties, and observed that the per cent condition of telephone properties has increased gradually, and will continue to increase because of more permanent construction and increase in the relative proportions of the long-life parts of telephone plants.

Instead of varying the valuation for a rate base, according to changes in prices, or the fluctuating purchasing power of the dollar, Mr. Crumb would have the rate of return to the utility, and hence the rates paid by utility patrons, varied to meet the changing costs of operation, including the cost of getting money.

The war sent up costs of coal, wages and other operating costs. Prices generally rose. He would meet such a situation by increasing rates to take care of increased operating costs, instead of the system that has been usually followed of finding a new and higher valuation for utility property based on present prices or average prices for a period of years.

While he admitted that his theory had not been followed, as a rule, by commissions and courts, he said original cost has been taken into consideration, and it is his prediction that courts and commissions will do so more and more, instead of using so much the appraisals of experts estimated on costs of reproduction.

He was asked by Frank B. Faris, of counsel for the commission, to assume that a utility property which cost \$1,000,000 could be reproduced today for \$500,000. Mr. Faris asked what should be the basis for rates in such a case.

Mr. Crumb said that assuming the plant was established to serve a public need, the rate base would be \$1,000,000.

"Your theory goes through both ways?" he was asked, and his answer was "Yes."

"Your theory is that fluctuating costs

should be recognized in the rate of return?"

"Yes," said Mr. Crumb. "These utilities must be earning enough to pay the going price of money. Investors' money is a very independent commodity."

He said the rate paid by patrons should be sufficient to pay all operating expenses

The Right Spirit.

A busy man who is never too busy to learn more about his business is sure to succeed. We received the following recently from G. S. Horner, president of the Tufonboro Telephone Co., Melvin Village, N. H.:

"To the makers of 'Telephony': Your paper has been a great help to me, as I have to do the work as well as be the boss. I enclose check for my subscription. I would suggest that you give a question and answer column in your valuable journal. Here's for better production the coming year."

The editor of "Telephony" will gladly receive any question from the telephone field and give it prompt attention.

of a utility, set aside a depreciation reserve, and give a fair return on investment.

In estimating the value of the services of the American Telephone & Telegraph Co. to the Indiana Bell under the 4½ per cent contract, Mr. Crumb calculated the professional services, aside from the leased instrument service, as worth 40 cents a station a year. In cross-examination W. H. Thompson, attorney for the Indiana Bell, asked him whether he had included financial services of the A. T. & T., which finances the Indiana Bell. Mr. Crumb said he had not. Mr. Thompson sought to show that the Indiana Bell could not have obtained money in the open market at as low a rate as it got it from the A. T. & T. Co.

Referring to the fact that the A. T. & T. owns the stock of the Indiana Bell, Mr. Crumb said it was the duty of a stockholder in an enterprise to finance it. Not a legal obligation, he said, but a duty for the stockholder's own protection.

In calculating that 40 cents year a station was a sufficient sum to reimburse the A. T. & T. for instrument sets leased to the Indiana Bell, Mr. Crumb said the 40 cents was cost and that he was influenced in his conclusion by the fact that a telephone company at Eagle, Wis., pays 50 cents a year lease rental for instrument

sets leased from an Independent company, the 50 cents including a profit to the lessor.

Eighteen million dollars was too much for the Indiana Bell Telephone Co. to pay for the Central Union Telephone Co. property in Indiana in view of the financial conditions of the Central Union, Mr. Crumb said while he was under cross-examination by Mr. Thompson. He said he based his opinion upon the financial condition of the Central Union as shown by its books.

Mr. Thompson, referring to Mr. Crumb's testimony on direct examination that 4 per cent would be a generous annual allowance for depreciation (the company asks for 6.08 per cent), asked him whether he had considered the conditions during the war, and had considered the receivership years of the Central Union, as they would affect the amount of realized depreciation. Mr. Thompson's idea was that the realized depreciation was less because of the conditions he referred to. Mr. Crumb adhered to his 4 per cent opinion.

Then Mr. Thompson, having in mind the Indiana Bell, asked about a utility organized in 1920, and in October, 1922, having a large corporate deficit and a book value of about \$30,000,000, the corporation having failed to pay dividends and not having earned enough for interest requirements. Under those circumstances he asked Mr. Crumb what he thought about the rate for telephone service and for depreciation.

Mr. Crumb said the books of the Central Union showed it had suffered losses for many years, but that those losses were capitalized and passed on to the Indiana Bell when the Central Union was bought. He evidently had in mind the Central Union book value of less than \$16,000,000 and the sale to the Indiana Bell for \$18,000,000. He said no depreciation reserve was carried over in the sale.

To fix rates for telephone service on such a property high enough to yield a return on investment and provide for a depreciation reserve, such as the Indiana Bell desired, would result in excessive and unreasonable rates for telephone service as compared with companies that had not been through such an experience as the Bell concern, he said.

Mr. Crumb advanced the theory that there is no average life for a telephone plant as a whole, but there is average life for units of the plant. Mr. Thompson asked for an example. Mr. Crumb said the life of poles is from 15 to 18 years, according to T. N. Vail, formerly head

of the Bell system of the United States. B. G. Halstead, appraisal engineer for the Indiana Bell, had testified that the life of an exchange pole is about ten years.

Mr. Crumb testified on direct examination that the traffic expenses a year an exchange station of the Bell plant at Muncie were \$7.89 and at LaCrosse, Wis., \$3.10. He offered to supply new central office equipment at Muncie without charge if the Bell company would let him have the savings he could effect in traffic expenses for six years.

Mr. Thompson brought out that the rate of calls a station at Muncie was seven as compared with five at La Crosse, and that a higher rate of calls caused more traffic expenses. Replying to Mr. Thompson, Mr. Crumb said about 5 per cent saving in traffic costs would have to be effected to repay him for the estimated investment in new central office equipment. Mr. Thompson sought to show such a reduction was improbable if not altogether impossible. Mr. Crumb said he was willing and able to carry out his proposition.

A bad investment in a utility property can not be underwritten by the public, and when a man invests \$1,000 in a utility property, the \$1,000 loses its exchange value and takes a service value, which is sold to the ratepayer, Mr. Crumb testified at the hearing.

A telephone company plant, he said, will go on providing service indefinitely "and you can not say at any time that the plant is going to come to an end of its life." This testimony was by way of combatting the theory of depreciation based on an assumption that life of a telephone plant is limited.

While it is the duty of a ratepayer to pay a sufficient sum to bear operating expenses, give a fair return on investment and keep the property in good operating condition, he said, at the same time it is the duty of the operator of a utility to operate the plant as efficiently and economically as it is possible, for if there is not efficient operation it penalizes the public to charge a rate that will give a so-called fair return on investment.

He said the term "value" had long been loosely used and it was necessary sometimes to use adjectives to define the particular kind of value meant. Before \$1,000 is invested in a utility property it has "exchange value," he said, but after it is invested it has "service value." He made the point that it is the "service value" for which the public should pay and not necessarily the "exchange value."

When a man invests in a utility property, he said, he does it with a full understanding that the amount invested loses its "exchange value" and that the value thereafter is for the purpose of public service, and for such a purpose there is no public guarantee that a wise investment has been made.

On the other hand, he said, the rate-

payer should be as much interested in a reasonable return on the investment as the company is because if there is not a reasonable return, there will not be money invested in the utility necessary to supply the demands of the public service.

Asked by Mr. Faris how a utility property after 20 years may be in a 90 or 95 per cent condition, Mr. Crumb explained repairs and replacements which are charged to expenses, repairs usually being charged to maintenance and replacement to depreciation reserve, but that both maintenance and depreciation reserve come out of the rates. He thought it did not make much difference how an item was classified so long as charges were not duplicated by being charged to both maintenance and depreciation reserve.

The public service commission is having its engineers investigate the question of whether the Indiana Bell Telephone Co. has duplicated property as a result of the purchase of the Indianapolis Telephone Co. and the unification of the plants. Commissioner Glenn Van Auken said investigations were being made in New Albany and other places to find out whether any property is not "used and useful."

In the cross-examination of Mr. Crumb, Mr. Thompson read statements on the theory of valuing public utilities for rate-making, being in substance that a public utility is as much entitled to enhancement in the value of its property as a private individual, and that the purchasing power of the dollar has so fallen that it takes about \$1.60 to buy what \$1 formerly bought.

He asked Mr. Crumb, who is an advocate of the theory of book cost and prudent investment as a basis for return, whether he agreed with the statements read to him. Mr. Crumb generally disagreed with them. Mr. Thompson did not say who had made the statements but it was learned they were taken from the order of the Indiana Public Service Commission last January in the Indianapolis Water Co. case.

The aim of Mr. Thompson was evidently to put the commission's expert witness in conflict with the commission on the way utility property should be valued for rate-making. It was brought out that Mr. Crumb had testified in the Michigan telephone rate case, setting forth his theory of "exchange value" of a dollar becoming "service value" when invested in a utility, and his theory that valuation for rates should be on original cost and prudent investment rather than on the cost of reproduction new on the basis of present day prices.

Program for Convention of the Wisconsin Telephone Men.

For the first time, all branches of public utilities in Wisconsin will hold their conventions at the same time. The meetings will be held in Milwaukee, March 21, 22

and 23, the telephone men having theirs at the Wisconsin Hotel.

The program for the Wisconsin Telephone Association contains several talks on timely subjects, as well as some discussions that should bring forth a number of interesting viewpoints and experiences. The opening session will be at 10 o'clock Wednesday morning, and Secretary Pratt expects a large attendance.

Reduced fares are being allowed by the railroad for the convention.

The program follows:

WEDNESDAY A. M.

Address of welcome, Ex-Governor E. L. Phillip, of Milwaukee.

Response, W. L. Smith, Neilsville, Badger State Telephone & Telegraph Co.

"Increasing Interest of Investors in Public Utility Securities," Morris F. Fox, Milwaukee, Morris F. Fox & Co.

WEDNESDAY P. M.

"Wisconsin's Road Building Program and Its Relation to Telephone Development," M. W. Torkelson, Madison, Wisconsin Highway Commission.

"What Constitutes a Permanent Telephone Investment," discussion led by S. L. Odegard, Madison, Commonwealth Telephone Co.

THURSDAY A. M.

"State and Federal Regulation of Telephone Companies," L. E. Gettle, chairman Wisconsin Railroad Commission.

"Famous Sleet Storms and Their Lessons," discussion led by Walter J. Gallon, Antigo, Antigo Telephone Co.

Traffic demonstration and discussion, F. M. McEniry, Milwaukee, Wisconsin Telephone Co.

THURSDAY P. M.

"Wisconsin the Wonderful," Burt Williams, Milwaukee, Burt Williams & Co.

President's address, Arthur Taylor, Rhinelander, Rhinelander Telephone Co.

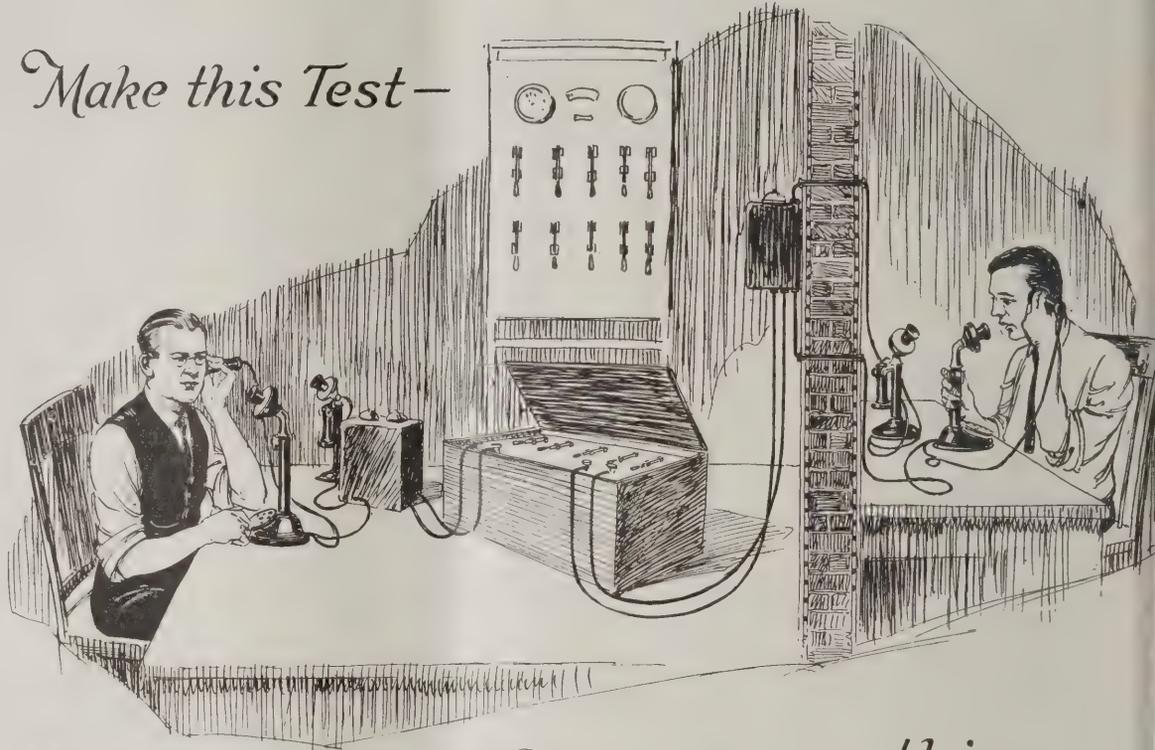
Business session, final reports of committees on safety rules and regulations under the new Wisconsin electrical code, standard rules of operation for small exchanges.

A joint session with the Wisconsin Utilities Association will be held Friday morning at the Hotel Pfister. Talks by Arthur Taylor, Rhinelander; John A. Pratt, Madison, and John B. Maling, New Haven, Ind., will constitute the telephone association's share of the program.

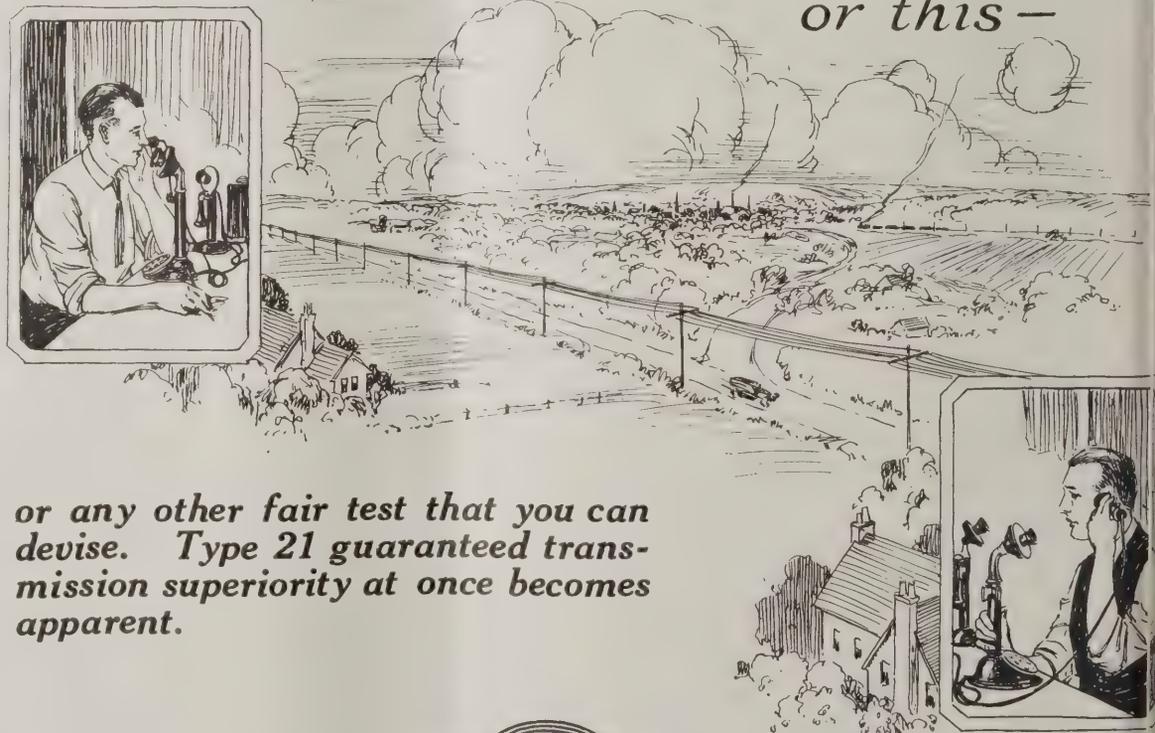
Vermont Association Holds One-Day Meeting at Rutland.

A program of helpful talks, a discussion on plant matters and a visit to the Rutland exchange, comprised the bulk of the activities of Group No. 3 of the Vermont Telephone Association, which held an all-day meeting at the Berwick Hotel in Rutland February 28. The conference was under the direction of President M. W. Hicks of the Granville Telephone Co., and former Lieut. Gov. Abram W. Foote of the Cornwall, Shoreham and Rutland

Make this Test—

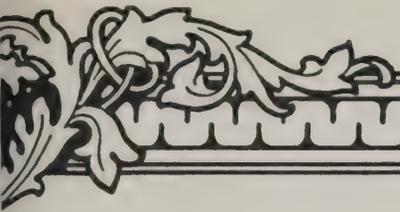


or this—



or any other fair test that you can devise. Type 21 guaranteed transmission superiority at once becomes apparent.





Transmission Quality

of Type 21 Telephones is Definitely Guaranteed

Before leaving Automatic Electric Company's factory, every Type 21 telephone is carefully tested over a standard artificial cable circuit and must compare favorably with special laboratory standards. These standards are frequently and regularly compared with the best available samples of other makes and are required at all times to measure appreciably better.

We know these are rigid specifications. We made them so purposely, so as to leave no room for doubt that Type 21 telephones are the best to be had. But note this carefully! Since placing these telephones on the market a few months back we have received a number of reports that they not only test up to our own specifications in actual use, but in many cases greatly exceed them.

The above are concrete, definite facts, and are worth vastly more than all the glowing generalities we could squeeze into this advertisement. The transmission of Type 21 telephones *is* better because it is *made* better, by definite comparison. The same is true of their other features—finish, durability, appearance and construction.

Whether you operate manual or automatic equipment, you will be interested in Type 21 telephones; they can be furnished for both kinds of service, with or without dials, or blanked for dials for present manual and future automatic operation.

*Write for samples, prices and
details of special contract plan*

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS.
BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd. Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



County Telephone Companies—both directors of the association.

Group No. 3 is one of five comprising the Vermont association and consists of the following companies: Addison and Panton; Champlain; Cornwall; New England Bell at Rutland and Bennington; Rutland County; Shoreham; Granville; Cuttingsville & Shrewsbury; Weybridge; Mount Holly and Ludlow.

Each of the five groups holds a meeting at some time during the year, the purpose of the organization being to promote the telephone business so that it meets the requirements of the public and to obtain closer co-operation between the companies.

The meeting opened at 11:15 o'clock in the morning with brief addresses of welcome by Mayor James C. Dunn and Rev. Dr. George E. Price, secretary of the Rutland Chamber of Commerce.

C. D. Cushing of Bethel, president of the association, spoke of the benefits to be derived from these meetings, especially to the smaller companies, which are given opportunities to meet highly trained plant and traffic specialists and learn from them the best methods in each department. He asked that every company represented enter into the discussions of the various subjects so that each might obtain something which would be of use in its business.

There were also talks by J. G. Ihmsen, vice-president and general manager of the Up-State Telephone Association of New York, and F. W. Story, of the New England Telephone & Telegraph Co., who is a director of the association.

Mr. Ihmsen devoted considerable time to urging co-operation between the Independent companies, themselves, also co-operation with the municipal and state officials, and with the telephone subscribers.

He pointed out the benefits which will accrue to the smaller companies from the district meetings and stressed the fact that it is the duty of the companies to give a good class of service.

The introduction of operators' schools and plant schools was urged by Mr. Ihmsen. Better acquaintance of operators, resulting from these gatherings, also makes for better service, he said.

Prompt collection of subscribers' bills and the adoption of accounting methods that would reflect the true condition of the company's property and finances were advocated by Mr. Ihmsen.

Mr. Story expressed the willingness of the New England Bell to help in any way it reasonably can to promote the welfare of the smaller companies in the state. He also believes that a close co-operation between companies will be developed by the district meetings.

The morning session closed at 1 p. m., after which a real turkey lunch was served in the hotel dining room.

After lunch the telephone men took up

plant matters and discussed the problems confronting each company, the meeting being under the direction of C. J. Knickerbocker, superintendent of plant of the Granville Telephone Co. Engineers and plant men of the New England Bell attended the meeting to assist the companies in solving plant problems.

After a visit to the Rutland exchange, the operators held a session under the direction of Miss Willard, divisional traffic superintendent, assisted by Miss Crowley, chief operator of the Granville Company, and the chief operators at Burlington, Rutland and other points at which the companies of Group No. 3 connect with the Bell. The program closed with a first aid demonstration by Dr. E. W. Bullock and his assistants.

Program for Annual Convention of the Texas Association.

The program for the 18th annual convention of the Texas Independent Telephone Association—which will be held in the Adolphus Hotel, Dallas, March 21, 22 and 23—contains a number of features that will appeal to every wide-awake telephone man.

The plant session will include several talks by experienced telephone men on every phase of construction and maintenance of telephone plant and equipment.

As will be seen from the following, several real treats are in store for those attending the convention and the program is an inducement for every telephone man in the state to make it his business to be there.

WEDNESDAY, MARCH 21, 2 P. M.

Invocation, Rev. C. E. Snowden, Dallas.
Address of welcome, Mayor Sawnie Aldridge, Dallas.

Response, C. A. Shock, secretary, Grayson Telephone Co., Sherman.

President's address, R. B. Still, general manager, Gulf State Telephone Co., Tyler.
Address, George Waverly Briggs, Dallas.

Address, Judge G. N. Harrison, president, West Texas Telephone Co., Brownwood.

THURSDAY, 9:30 A. M.

"Telephone Management," Hal M. Cox, vice-president, Texas Telephone Co., Waco.

"Independent Telephone Industry—Its History and Development," F. B. MacKinnon, president, United States Independent Telephone Association, Chicago.

"A Coöperative Loan Plan for Small Companies," Judge S. A. Lindsey, president, Gulf States Telephone Co., Tyler.

"Revenues and Expenses," J. C. Paxton, assistant general manager, Grayson Telephone Co., Sherman.

2 P. M.

Address, E. C. Blomeyer, vice-president, Automatic Electric Co., Chicago.

"The Work of the Texas Public Serv-

ice Information Bureau," George McQuaid, director, Texas Public Service Information Bureau, Dallas.

"Telephone Accounting," F. M. Moore, auditor, Texas Telephone Co., Waco.

"Bell and Independent Relationships," V. E. Cooley, Southwestern Bell Telephone Co., Dallas.

"The Telephone Industry and the Public," C. A. Shock, secretary, Grayson Telephone Co., Sherman.

7:30 P. M.

Annual banquet.

FRIDAY, 9:30 A. M.

(Plant session)

"Telephone Engineering," F. W. Greber, general manager, West Texas Telephone Co., Brownwood.

"Storage Batteries," C. D. Kinne, salesman, Stromberg-Carlson Telephone Mfg. Co., Dallas.

"Cable Construction and Maintenance," R. W. Garner, plant superintendent, Texas Telephone Co., Waco.

"Outside Plant Construction and Maintenance," Herrick Johnson, plant superintendent, Two States Telephone Co., Texarkana.

"Switchboard Installation and Maintenance," Sam B. Dibble, equipment engineer, Texas Telephone Co., Waco.

2 P. M.

General discussion of various subjects of interest.

Reports of officers and standing committees.

Business session.

Election of officers.

New York Up-Staters Will Have Their Best Convention.

The plans for the annual convention of the Up-State Telephone Association of New York are getting into good shape and it promises to rank with the best state conventions that have been held anywhere. "Interesting, informative and enjoyable," is the way Vice-President and General Manager J. G. Ihmsen describes it.

The meeting will be in Rochester, at the Powers Hotel, on April 18, 19 and 20. These dates have been chosen as by that time the snow will be gone, the roads will be open, and the railroads will be making the regular schedule—so it should be possible for every company to send a good size delegation.

An operators' conference will be conducted on the last two days of the convention and the present indications are that it will have a very good attendance of operators.

The manufacturers' exhibits will be double the number that were shown at the last convention, and will include a full line of telephone instruments, switchboard and supplies.

Reservations for hotel accommodations should be made direct with the hotel as early as possible.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

If you wish to succeed
With all possible speed,
There's one rule you ever must heed:
When you decide you will do it,
Pick your line and go to it,
Leave everything else to relentlessly pursue it.

When this you have done,
And success you have won,
You'll find in winning you had all the fun.

Did you ever go fishing and catch a mess of fish, when you didn't enjoy the fun of catching them far more than you did the cleaning of them afterwards? Or even the eating, when it comes to that?

When a man has amassed a great fortune or invented a wonderful machine, or discovered a new principle, or raised a family, or painted a masterpiece, he finds that in the toil and trouble he had in getting the thing done, he had his enjoyment.

To sit afterwards and contemplate his achievement is not nearly as fascinating or pleasurable as was the achieving, except perhaps in the matter of raising a family; then he won't have time to sit down and do any contemplating if he has to begin to look out for sons-in-law and keep the daughters-in-laws from scrapping with mother-in-law. He will be too busy to take on any extended course of contemplation.

If it were more pleasureable to contemplate a finished success than to achieve new ones, perhaps Edison would have done more of the former and not so much of the latter.

If you have planned for years, and worked and engineered and contrived and managed to finally build up a really fine system for serving the public with telephone service in your community, and finally

attain what you consider to be a perfect example of your art, and if you did you would then lose interest at once in the whole business and turn to something else.

The man who forms a statue from the pure marble with a chisel, or the painter who brings out a masterpiece with his brush, can always see the imperfections better than any one else and it, therefore, follows that a worker is often able to see the defects in his handiwork where others, not of the craft, discover nothing wrong.

In the giving of good telephone service, however, we are a little differently situated. Not for us to laboriously carve through the hours and days of many years to produce a masterpiece, and then lay aside our labors; with us that would be insufficient. We must have another day, tomorrow, good service rendered—and then another one following that without end, if we would serve the public.

If the water service is on today and off tomorrow, we do not call it efficiency. No matter how good it has been one day, all that is forgotten on the morrow if the taps are dry.

Same way with us, no final culmination of high grade efficiency and then a stop to receive recognition and applause. We must not only achieve but maintain a high level of efficiency, if we would be considered as having filled the requirements.

To achieve in paint and marble, of course, is a difficult thing, but to achieve in a thing which has an ever-changing shape from day to day, and is animate and insistent instead of being inanimate and cold, is something else again.

The sculptor or painter could easily ruin his masterpiece if he kept on tinkering with it after he had reached perfection, as far as it was in his power to achieve it, but he wisely leaves it be. With the telephone man it is different. He must keep on working at his ideal every day, and great are the possibilities that he may undo some of the previous good work and spoil the effect by some unfortunate move or ill-considered action.

Then, when he is finally called off the

job, he leaves with misgivings as to whether his successor will continue to keep up with the ideals he has set up, or whether there will be a change of program.

There is as wide a range in the conception of what constitutes telephone service



We Must Not Only Achieve But Maintain a High Level of Efficiency If We Would Fill the Requirements.

from a manager's standpoint as there is between the conception of what constitutes art, by the artist who releases with his chisel the delicate outlines of a fairy-like form from the cold lump of rough stone, and that entertained by the convict who breaks stone on the highway.

Not that art is the end sought but that the soul be fired with the inclination to achieve some greater thing from the rough material at hand; to serve willingly, and not merely to endure because he must.

Whether we serve to make possible an easier pathway for countless messages to thread their way shuttle-like back and forth through the welfare of community life—or whether we serve that we may find the point of contact which will blaze a pathway and release to follow it back to human ears for human entertainment and service, the flood of lost echos from the voices and sounds of the world which have heretofore been lost in space—it is with an underlying motive of something more than the way of putting ourselves in a position where we can collect a mere day's wage or insure for ourselves the necessary food, clothes and bed which are the reward of even a prisoner pounding stone under an armed sentinel's eye.

APHORISM: Good food, well served, is doubly delicious.

A. T. & T. Capital Stock to Be Increased to a Billion.

A special meeting of American Telephone & Telegraph Co. stockholders has been called for March 27. The authorized capital stock of the company will be increased from \$750,000,000 to \$1,000,000,000.



Pick Your Line and Go to It. Leave Everything Else to Relentlessly Pursue It.

ally you feel that at last you have attained your desires along that line, do you then sit down and spend blissful moments in contemplating your great achievement? You do not! Why?

Well, for the first reason, you never do

Radiotelephony and Wire Systems

Carrier Current Communication Over High Tension Lines.

Before representatives of the larger light and power companies of the United States, a new use of radio was brought to light recently when it was demonstrated that voice conversations could be carried on by means of radio waves over high tension power lines, without the use of switches and just as is done in the ordinary telephone connection.

The test was carried out between experimental stations located in the Colfax and Brunots Island power stations of the Duquesne Light Co., points located about 30 miles apart, by engineers of the Westinghouse Electric & Manufacturing Co. and the power company. It was also demonstrated that this system could be used for remote control of all manner of apparatus.

For a long period of time the Westinghouse company has been working on a method of carrier current control for use in central power stations and electric railways, or other points using high tension electrical lines. The idea behind the whole scheme is to superimpose radio waves on the power lines and thus make use of radio transmitting and receiving for both voice communication and control of remote switches.

In this work the Duquesne Light Co. has co-operated and provided experimental stations at its power stations in Brunots Island and Colfax, Pa.

Preliminary research work on ordinary transmission lines and feeder circuits had indicated that the use of wired wireless communication was simple and effective on such lines. But when trying out the Duquesne Light lines it was found that its system was so complicated and extensive that many additional problems had had to be solved before it could be demonstrated that carrier current dispatching could be done successfully.

The members of the radio subcommittee of the National Electric Light Association, members of which are representative of all light and power companies of the United States, decided to hold a meeting in Pittsburgh especially to see a demonstration of this revolutionary method of communication and control.

The test held Thursday afternoon, January 11, was entirely successful and demonstrated conclusively that this method of interlacing the telephone with the power lines would soon be a feature in the plants of more progressive companies.

It was demonstrated in a small room of the power plant in Colfax, where the committee had assembled, that the carrier current system of telephony, allowing communication over high tension lines,

besides saving an additional right of way, does away with the great noises and high induced voltages which operators so much dread in talking along lines that parallel high tension systems.

The new system was demonstrated over a 66,000-volt line and is unique in that the system is duplex and operates as does the ordinary telephone. When the telephone receiver is unhooked, the transmitting station automatically starts up, allowing talk in both directions without any switching. This feature is entirely new in radio as all other transmitting and receiving must be done by switching back and forth, because a station transmitting will not receive messages. The transmitting apparatus must first be switched off and the receiving circuit switched in. However, all this is done away with in the newest of systems.

The calling or ringing of numbers is selective and operated by special selector keys which cause the bell to ring only at the station desired. This eliminates the distractive code ringing and allows power station operators to keep their minds on their work.

The improved system developed by the Westinghouse company has been carefully worked out by C. A. Boddie, radio engineer of the company, and the technical and economic features are now being analyzed by Mr. Boddie, assisted by M. W. Cooke, of the Duquesne Light Co.

Description and Operation of an Electron Tube Detection Unit.

To meet the great popular interest in the use of radio receiving apparatus, the Bureau of Standards of the Department of Commerce is publishing a series of circulars descriptive of simple receiving sets.

The first two of this series are Bureau of Standards Circulars Nos. 120 and 121. These two circulars describe the receiving sets which use crystal detectors. The third paper of this series is Bureau of Standards Circular No. 133 and may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents a copy.

This circular is a description of an electron tube detector and gives instructions for its operation. A receiving set employing an electron tube detector is more sensitive than a set employing a crystal detector and may be expected to give more satisfactory results. The tuning devices, antenna, lightning switch, ground connection, and telephone receivers with which this electron tube detector is used may be those previously described in Circulars Nos. 120 and 121.

This paper describes in detail the vari-

ous parts which constitute the electron tube detector unit and gives illustrations showing the arrangement of these parts in the complete assembled unit. Detailed instructions for operating this set are also given.

Radio Conference to Be Held in Washington Next Week.

A radio conference has been called by Secretary Hoover for March 20, in Washington to clear the air of the present chaos, due to conflict from broadcasting stations all over the country. A statement announcing the calling of the conference reads:

"The Department of Commerce has sent out invitations for a reassembly of the radio conference held a year ago, together with some additional members.

The conference held last year was for the purpose of considering legislation necessary in order to reduce the amount of interference in radio broadcasting. The legislation having failed to pass Congress, it is felt desirable to investigate what administrative measures may properly be taken temporarily to lessen the amount of interference in broadcasting.

Since the last conference the number of broadcasting stations has increased from 60 to 581, and it is estimated that somewhere between 1,500,000 and 2,500,000 receiving stations are now in use. The amount of interference has increased greatly and threatens to destroy the growth of the art."

Mr. Hoover is considering the possibility of inducing the navy department to give up the control it now has over wave lengths between 600 and 800 meters. A number of university broadcasting stations and educational institutions now using radio, he said, could arrange their equipment to send on the longer waves.

Great Britain Has Over a Million Telephones.

At last Great Britain is able to claim a million telephone stations.

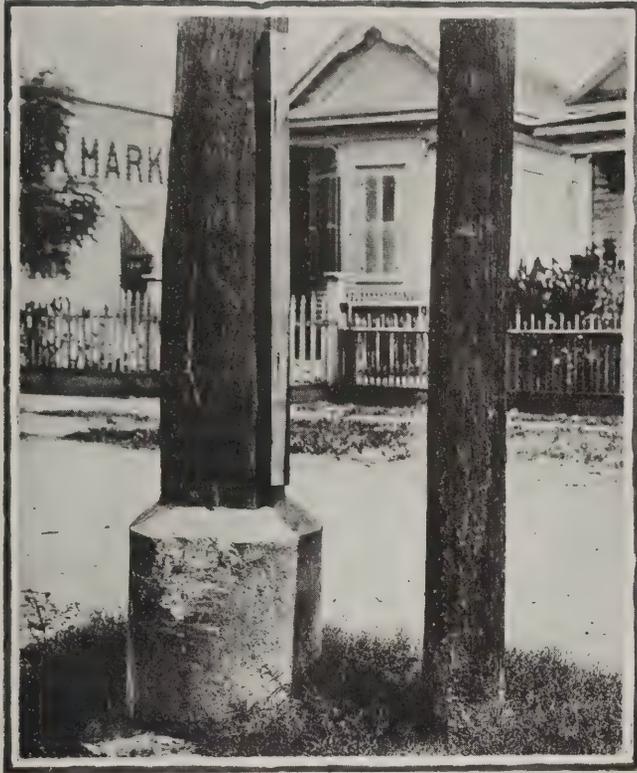
The latest government postoffice statistics show that March 31, 1921, there were 1,004,429 telephones in use in the United Kingdom. Ireland has 33,740; Scotland, 103,677, and the remainder are in England and Wales.

City Gets \$582,962 as Telephone Franchise Share.

The city of Chicago has received a check for \$582,962, representing 3 per cent of the gross receipts of the Illinois Bell Telephone Co. for the six months which ended December 31, 1922.

The payment is in conformity with the company's franchise.

EXPERIENCE Taught a Wonderful Lesson Here



EXPERIENCE is a wonderful teacher, providing you abide by its teachings.

The Service life of the two pole lines illustrated below exemplifies the superiority of creosoted pine poles over poles of other species.

Seven years after the higher pole line was constructed it was necessary to reinforce the butts with concrete—(see illustration at left) because of decay at the ground line,—after eleven years the entire line was removed. This was a costly experiment—high maintenance expenses and heavy replacement charges.

Right next to this line and under exactly the same climatic and soil conditions is shown a line of International Creosoted Pine Poles with a record of 22 years' service and no replacements—the cheapest in the long run.

Companies having the foresight and good judgment to use Creosoted Pine Poles are now reaping their reward in lower maintenance and fewer interruptions to service.

You can start now to lay the foundation for future economies—send us your pole requirements and we will quote prices and deliveries

International Creosoting & Construction Co.

General Office—Galveston, Texas

Plants: Texarkana, Texas Beaumont, Texas
Galveston, Texas



Please tell the Advertiser you saw his Advertisement in TELEPHONY.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

City Council of Newark, Ohio, Passes Higher Rate Ordinance.

The city council of Newark, Ohio, has finally passed an ordinance giving the Newark Telephone Co. increased rates. It was passed on March 5, a few days after the state supreme court had granted a re-hearing.

It has been a long fight between the city and the company on the question of higher rates—the city claiming that the contract ordinance of 1910 was a valid contract and could not be abrogated by any subsequent legislation on the part of the state.

The company contended that the contract was annulled by the enactment of the public utilities act, which places the matter of rate making with the commission.

In the trial in the supreme court, the court, by a vote of four to three, held in the city's favor.

In a statement issued after the passing of the ordinance, the city solicitor, city attorneys, and municipal judge pointed out that since the decision of the supreme court the personnel of the bench has changed and that the outcome might not be favorable to the city.

If a reversal were made by the supreme court, it would place the matter of rate fixing with the Ohio Public Utilities Commission and the city officials were certain that the commission would allow the higher rates.

The ordinance as passed contains a provision that the pending litigation be dismissed and another that the company spend \$150,000 on improvements during the next two years.

The company agreed to withdraw its claim on the escrow fund of \$40,000, with the granting of increased rates.

The old and new rates are:

	Old rates	New rates
Business:		
One-party	\$2.50	\$6.00
Four-party	2.00	4.00
Residence:		
One-party	1.75	2.75
Four-party	1.25	1.75

The council meeting at which the advanced rate ordinance was passed opened with a prayer offered by City Solicitor E. Randolph, during which the members and the audience stood. This is encouraging evidence of the trend toward religion and normalcy, where selfish self-interest will not override fairness and equality.

Bell Decrease in Fort Smith, Ark., Temporarily Halted.

The ordinance providing for a decrease in telephone rates in Fort Smith, Ark., passed by the city commission February

20 and scheduled to go into effect March 1, was held up pending decision by Federal Judge Frank A. Youmans on an application for a permanent injunction against the city enforcing the ordinance.

Judge Youmans granted a temporary injunction on February 24 in favor of the Southwestern Bell Telephone Co.

The city contended that the federal court had no jurisdiction in the case in view of the fact that the telephone company had not carried the matter through the state courts. The telephone company contended that the controversy was of a judicial nature and that it had the right to choose its forum. Judge Youmans said that if he decided to hear the case it would be set for next September.

In the meantime patrons are paying the old rate for their telephone service, though the restraining order provided that the company furnish a bond of \$25,000 pending decision in the case.

Illinois Commission Defines Reasonable Telephone Service.

Just what service users of telephones in Illinois are entitled to is specified in general order No. 107 which has just been promulgated by the Illinois Commerce Commission.

Cross talk and noise resulting from leakage and induction and other improperly constructed lines shall be eliminated as far as possible, the commission's order states. Provisions are made for the elimination of noise caused by grounded wires and other common defects.

If the subscriber's call is not answered in a reasonable time, he has grounds for a "kick" the commission rules, and specifies what a "reasonable" time for answering calls is, according to its estimates.

"Any telephone exchange serving more than 500 city subscribers shall be considered as giving reasonably prompt service if 95 per cent of all the calls are answered in 10 seconds or less," the order states.

"All other telephone exchanges shall answer at least 90 per cent of the calls within 10 seconds except where the traffic is insufficient to require the entire attention of an operator and the exchange is operated in connection with other work, slower service may be adequate."

"Listening-in" by operators is forbidden and the commission also advises that "the tone of voice used by operators is very important, particularly on toll service. Toll operators should cultivate not only a distinct articulation, but low tones and a pleasing voice."

Directories of exchanges serving more

than 1,000 subscribers should be issued after revision twice a year. Other directories should be issued at least once a year.

"On new construction," the commission allows only four subscribers on local exchange lines and not more than 10 on rural lines having a length of five miles or less. On rural lines of greater length additional subscribers may be allowed but in no case should more than 15 be on the same line.

Under the commission's rules a record of all complaints shall be kept by the companies in the state and these records shall be used as the basis for the commission's inspectors to determine if the company is giving satisfactory service.

Hopkinsville, Ky., Orders Rates Back to Pre-War Basis.

The city commissioners of Hopkinsville Ky., passed an order on March 7 requiring the Christian-Todd Telephone Co., to restore pre-war rates specified in the franchise granted in 1911.

During the war increases were permitted, and when called on recently to show cause why the franchise rates should not be reestablished, the company declared it would not be able to operate and show a reasonable profit without further increases.

A series of conferences followed, and at a special session of the commissioner an application for additional increases was refused and franchise rates ordered restored dating from March 1.

Michigan Commission Approve Sale of Westphalia Plant.

The Michigan Public Utilities Commission on February 27 gave its approval to the purchase of the Union Telephone Co. Westphalia equipment by the Farmer Telephone Co. and it is expected the consolidation will be made within the very near future.

At the time of making the order, boundary lines were fixed, so there will be no conflict as to territory. Those within the Westphalia territory who now have service from Portland and those in the Portland territory who are now connected with Westphalia exchange may continue their arrangement however, as the commission made exceptions for cases where telephones are already installed.

Approves Proposed Schedule of Miscellaneous Charges.

Effective April 1, the Kenyon Telephone Co., of Kenyon, has been permitted by the Minnesota Railroad & Warehouse Commission to establish the charges for ser-



He can double his day's work with—

BONITA
Patented
AERIAL CABLE RINGS

Reg. U. S. Pat. Off.

Grip, squeeze, snap—and the hanger is ready for cable.

That's why there are more than 50 MILLION in use.
 Standardized by the A. T. & T. Co. and Western Union.

ORDER FROM YOUR JOBBER OR DIRECT

CAMERON APPLIANCE CO., Everett, Mass.

ice connection, change of name, moving equipment, and other miscellaneous charges proposed by the company. The order was dated March 6.

Service connection charges are: \$2 for business instrument not in place, and \$1.50 for instrument in place; \$1.50 for residence instrument not in place, and \$1 for instrument in place; \$1 for business extensions.

Small Missouri Company Ordered to Cease Giving Service.

On complaint of the Johnstown Farmers Telephone Co. and of the Spruce Mutual Telephone Co. that the Allie McCracken Telephone Co. was operating an exchange in Spruce without permission from the commission, the Allie McCracken company was ordered by the Missouri Public Service Commission to cease furnishing service over its lines or conducting a telephone business for hire. The order was entered March 2 and became effective March 14.

Evidence showed the Allie McCracken Telephone Co. to be a small exchange with 32 members, each owning his own line and telephone, paying \$1.25 per month for the operation of the switchboard and maintenance of lines owned by the company. It also furnished service to four subscribers, charging them 60 cents per month each.

A charge of 10 cents per message was made where a non-subscriber used the lines and instruments in talking to subscribers of the Butler Telephone Co. This 10 cents was turned over to the Butler company. The Allie McCracken company also paid the Butler company 10 cents per month for each subscriber on its system being given service over the Butler company's system.

Kinloch System Now Under Management of the Bell Company.

The Southwestern Bell Telephone Co. has begun operation of the Kinloch system as a result of the absorption plans initiated more than a year ago. Through the delivery of \$4,200,000 of preferred stock of the Bell company to the stockholders of the Kinloch Long Distance Telephone Co. on February 28, the Bell company acquired the Kinloch corporation and its assets, and the latter company, after 25 years of operation, ceases to exist as an operating unit.

The physical linking up of the two systems will be completed in about 18 months.

Hold First Hearing on Purchase of Bell Plant in Carthage, Mo.

On February 23, the Missouri Public Service Commission ordered a detailed account of the proposed sale of the Bell telephone plant in Carthage to the Home Telephone Co., of Joplin, together with a suggested order for a consolidation of the two systems.

According to F. R. Birkhead, city attorney, who represented the city of Carthage at the hearing, the purchase price of \$70,000 for the Bell plant has been agreed upon to be paid in cash or approved securities.

Hearing Before Federal Court in Nebraska on Northwestern Case.

It is expected that hearings before a federal court referee will shortly begin in the case brought in Nebraska by the Northwestern Bell Telephone Co., challenging the reasonableness of a recent order of the state railway commission with reference to exchange rates.

The commission's answer directly raised the entire question of valuation, and recognizing that this would mean a vast amount of technical, documentary and blue print evidence, attorneys for the commission and the company are seeking to stipulate undisputed facts wherever an agreement upon them can be had. When this is completed, Referee Dunham will be asked to fix a date. The 4½ per cent contract with the American Telephone & Telegraph Co. will be one of the matters fought out to a finish.

Effort to Legislate a Maximum Toll Rate Fails.

The latest effort in the Nebraska legislature to make a legislative maximum for toll rates in the state fell flat. The senate committee on miscellaneous corporations, which had the bill, S.F. 263, in charge, reported it out the other day for indefinite postponement. Senator Thielen, who had sponsored the bill, lost interest in it, and made no motion to have the committee decision reversed. By formal action of the senate it was killed, although this does not prevent any attempt to revive it later. This is not regarded as likely.

The real author of the bill was Joe Burns, a Lincoln man who had been a member of the house and senate on several occasions, in the days when the railroad machine ran Nebraska politics. In recent years he has been a reformer, and at the last session was behind anti-telephone legislation that failed. Before the legislature met he began writing letters to local newspapers asserting that toll rates in the state were excessive, and when they failed to print what he had to say, he got a suburban taxpayers' league behind him.

When before the committee Mr. Burns said that he represented this league. He tried to prove that toll rates were too high by setting up an imaginary toll line ten miles in length, estimating how much it cost to construct and then figured out how much it would earn for its owners if kept busy for eight hours every day. His figures and conclusions were battered by the telephone company representatives present, and the committee soon after lost interest in the measure.

As Burns had drawn the bill it proposed

that it would be unlawful for a telephone company to charge more than four-tenths of a cent an airline mile for a five-minute conversation, with a maximum of \$1.25 between any two points in the state. It would have cut toll rates in two.

The state railway commission, not long ago, following an exhaustive investigation held that toll rates were too low in comparison with exchange rates and authorized their increase in order to remove the burden on exchange rentals.

Probable Action on Nebraska Maximum Rate Bill.

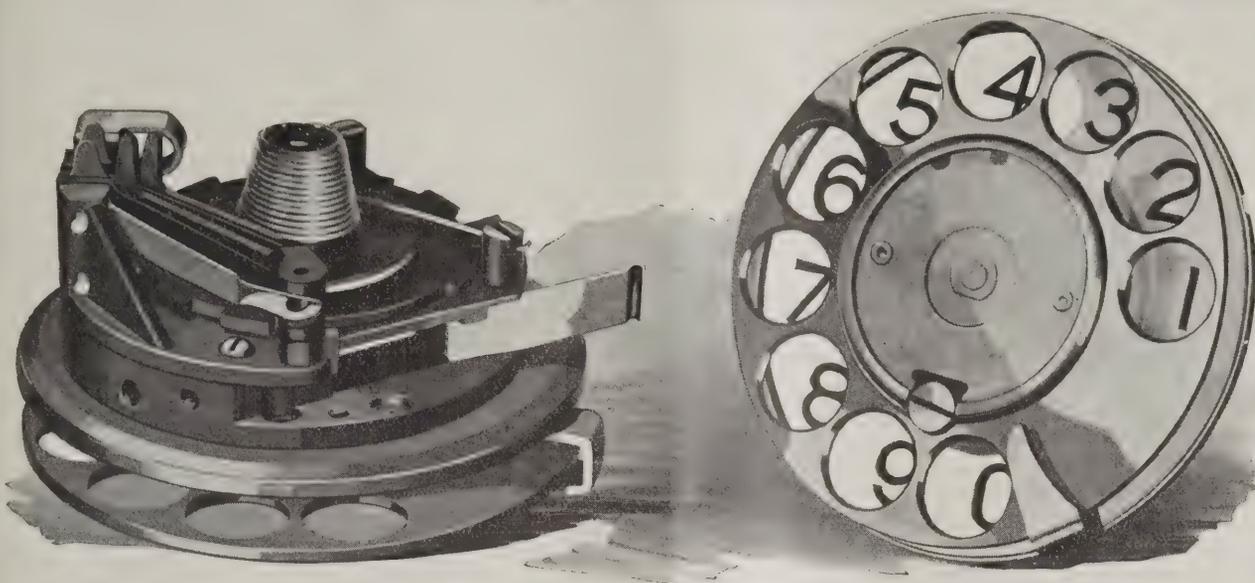
While no action has yet been taken by the Nebraska house judiciary committee on the Osterman bill forbidding the state railway commission from establishing minimum rates, the belief is that it will be reported for indefinite postponement. The introducer, who is the Democratic floor leader, was unable to make it clear to the committee how this would accomplish what he believed it would—restore competition in the telephone business in the state.

The bill provides that no public body authorized to fix rates for the service of any public utility shall establish other than maximum rates and that any minimum rate should be null and void. Within 30 days after the act goes into effect, a public utility charging for any service less than the maximum rate fixed shall file with the regulatory body a certified copy of its schedule, including the minimum rate charged in any particular and thereafter no change shall be made until after 30 days' notice.

R. E. Mattison, general manager of the Lincoln Telephone & Telegraph Co., told the committee that at the present time there is no law, rule or scheme that prevents competition, and that he was of the opinion the legislation proposed would fail to accomplish the avowed purpose. He said the only way to increase competition in the telephone business is to stop regulation, and let the companies charge what rates they think are justified. Telephone competition in the past had cost a lot of fortunes, and it no longer existed because nobody was willing to risk capital putting in a competitive plant.

Chairman Taylor of the Nebraska State Railway Commission, who was present on another matter, was asked for an opinion. He said that there is no longer any such thing as competition in the telephone business, but that it is not the fault of existing laws. If a company desires to step in competition with an existing company in any community, it may do so without any interference from the commission or anyone else.

The reason is, he said, that the small companies find it impossible, under regulation, to make a proper return on capital. Many of them are ready to sell out. The Lincoln company had purchased a number of these that were unable to finance their



As Carefully Built as a Fine Watch

Precision in making parts and *accuracy* in assembly that rival the skill of the finest watchmakers—

Care in selecting materials to assure only the best—

No wonder the NORTH dial operates so smoothly. Its soft whir-r-r is the song of a perfectly attuned mechanism. To attempt comparison would be as futile as to liken a fine watch to an alarm clock.

The NORTH Finger Wheel is solid rust-proof Monel-Metal. If worn clear thru it would retain its original lustre.

The Governor and Spindle Bearings are carefully housed in a dust-proof case to assure long service.

The NORTH Dial may be used to operate any type of machine switching system—its application is universal.

The price is surprisingly low for a mechanism so fine.

SPECIAL TEST OFFER

We will send a limited number of NORTH Dials to telephone companies for test. Acceptance of this Test Offer incurs no obligation. We know that when you FEEL it work you'll appreciate its excellence.



The
**NORTH ELECTRIC
 MANUFACTURING COMPANY**
GALION, O.

NORTH P. A. X. (dial equipped phones) for private exchange subscribers — NORTH Machine Switching Systems for City Telephone Exchanges. Manufacturers of telephone equipment since 1884.

selves further under existing rates. The commission had called a halt on these purchases because rebuilding was followed by rate increase applications and a general disturbance of conditions.

The commission has never denied the request of any telephone company to reduce rates. It has no right to pass on the question of public convenience and necessity when a new company proposes to enter an occupied field. If a man or group of men desire to engage in a utility business at a financial loss, the commission will not apply the brakes.

Nebraska Bill for Division of Tolls Reported Out of Committee.

S.F. 200, introduced in the Nebraska legislature at the request of Bruce Brown, former president of the state telephone association, has appeared from the committee, all dressed up in new form, and now occupies a place on the general file awaiting action by the senate.

Mr. Brown sought, by this bill, to strike from the state law covering toll and other physical connections any reference to the amount of commissions to be paid, on the theory that every company ought to be free to make the best deal it might with the toll companies.

This action was taken without consulting the directors of the state telephone association, and at its meeting in February R. E. Mattison, general manager of the Lincoln company, attacked the bill as likely to lead to disagreeable complications for all the companies. Mr. Brown offered to have the bill withdrawn, but it was deemed better to have it changed from an absolute repeal of the particular section covering commissions to a full enactment of what was desired.

As reported out from the committee, the bill is a complete substitute for the other one. The section as amended reads as follows, and will probably go through in this form:

Amend by striking out all of the bill after the enactment clause and substituting therefor the following:

Section 1. That section 7091, compiled statutes of Nebraska for 1922, is hereby amended to read as follows:

Tolls—division. All long distance telephone rates in this state shall be based on air-line mileage between points. Of any toll charge, at least 15 per cent shall go to the company where call originated and 10 per cent to the company where message terminated; and the balance of such charge shall be divided between the different companies over whose lines and through whose stations it passed, pro rata, according to the number of units involved in delivering the message, after taking out a sufficient amount for clearing such message through the office of the state railway commission, in case the commission is called upon to make such clearing.

Each circuit mile of trunk or toll line shall be taken and considered as a unit, and each switching station where a message is switched through to another company shall be considered as having five units in making the division of toll

charges for any message passing through its station.

Telephone companies may by mutual consent clear their toll business or have the same done by a clearing house agreed upon; but in case of a failure to agree, the company where the messages originate and the company where the messages terminate shall report to the railway commission each message, stating the origination, destination, and exact number of miles of line of each company over which such message was transmitted; and then it shall be the duty of the commission to divide the amount of the charges for the different messages according to the provisions herein made and collect and deliver to each company its just share, after taking out a sufficient amount for the actual expense of making such a clearing as herein stated.

Decision for Company in New York Rate Case.

New York City, as a subscriber, had no right to bring suit in the courts to compel the New York Telephone Co. to comply with orders of the New York Public Service Commission fixing temporary rates for telephone service, it was held by the United States Supreme Court in a decision handed down March 12.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

February 26: Application filed by Pacific Telephone & Telegraph Co. for approval of its acquisition of the stock of the Willamette Telephone Co., which operates exchanges in Oregon.

February 27: Joint application filed by Cass County Home Telephone Co. and Michigan State Telephone Co. for permission to sell out to the Dowagiac Telephone Co. exchanges located in Cass and Van Buren Counties, Mich.

CALIFORNIA.

March 1: Authority granted to L. and A. Harris to purchase and L. E. and G. Dean to sell a telephone system extending through a portion of El Dorado County, in the vicinity of Aukum, and in a portion of Amador County south of Aukum, for a consideration of \$200.

March 1: Pomona Valley Telephone & Telegraph Union given an extension of time until December 31, 1923, to issue and sell bonds authorized by the order of March 17, 1922.

March 7: Application filed by Lindsay Home Telephone & Telegraph Co., of Lindsay, for authority to issue a corporation note for \$10,000, for the purpose of reimbursing the First National Bank of Lindsay and others for moneys advanced for extensions and additions to the plant.

March 7: Petition filed by the Huntington Beach Telephone Co. for authority to increase its rates for service in the city of Huntington Beach and vicinity.

ILLINOIS.

February 27: General order No. 107 issued, defining what constitutes reasonable telephone service.

March 13: Hearing held in Chicago on application of Illinois Local Telephone Co. for permission to issue cumulative preferred capital stock.

March 13: Hearing held in Chicago on citation in the matter of failure of the Commercial Telephone & Telegraph Co. and the Dundas Telephone Co. to handle messages between Olney and Dundas; cross petition filed by the Commercial

company against the Dundas company, covering exchange connections, toll lines, etc., between Olney and Dundas.

March 14: Hearing held in Chicago on application of Amos Haverstick and others for an order requiring the Illinois Bell Telephone Co. to install and furnish telephone service in Rock Falls.

MICHIGAN.

February 27: Approval given to sale of Westphalia plant of United Telephone Co. to Farmers Telephone Co.

MINNESOTA.

March 6: Kenyon Telephone Co., of Kenyon, authorized to establish on April 1 the schedule of service connection and miscellaneous charges which it had proposed.

March 29: Hearing to be held in Granite Falls on application of the Granite Falls Telephone Co. for authority to increase its local and rural rates.

MISSOURI.

February 23: Hearing held in Jefferson City on application of Home Telephone Co., of Joplin, for authority to take over the Carthage plant of the Southwestern Bell Telephone Co.; ordered that complete details of the proposed merger be filed with the commission.

March 2: Allie McCracken Telephone Co., doing business in Spruce and vicinity, ordered to cease furnishing service or conducting a telephone business for hire; effective March 14.

NEBRASKA.

March 5: Application of the Republican Valley Telephone Co. for permission to make certain charges for certain services, dismissed for lack of prosecution and insufficient information furnished.

March 5: Application of the St. Bernard Telephone Co. for permission to charge a gross rate and net rates, with a spread of 25 cents per month, found to be reasonable and according to the rule, and granted.

March 5: Application of the Big Four Telephone Co., of Geneva, for permission to establish gross and net rate schedule, granted with the stipulation that the spread shall be 25 cents a month.

March 6: In the matter of the application of the Northwestern Bell Telephone Co. for permission to abandon the exchange at Lakeside; it appearing to the commission that this was established in 1918, at a time when the potash industry flourished in that section, that the closing of the works has left the company with but five subscribers, all of whom have signed a petition agreeing to the abandonment of exchange service, permission granted, on the understanding that a toll station will be maintained.

March 6: Complaint filed by N. M. Williams, of Weber, against the Frontier Telephone Co., alleging an improper installation charge.

March 7: Complaint filed by B. F. Gustafson against the Hamilton County Farmers Independent Telephone Association and the Lincoln Telephone & Telegraph Co., alleging inadequate toll facilities.

NEW YORK.

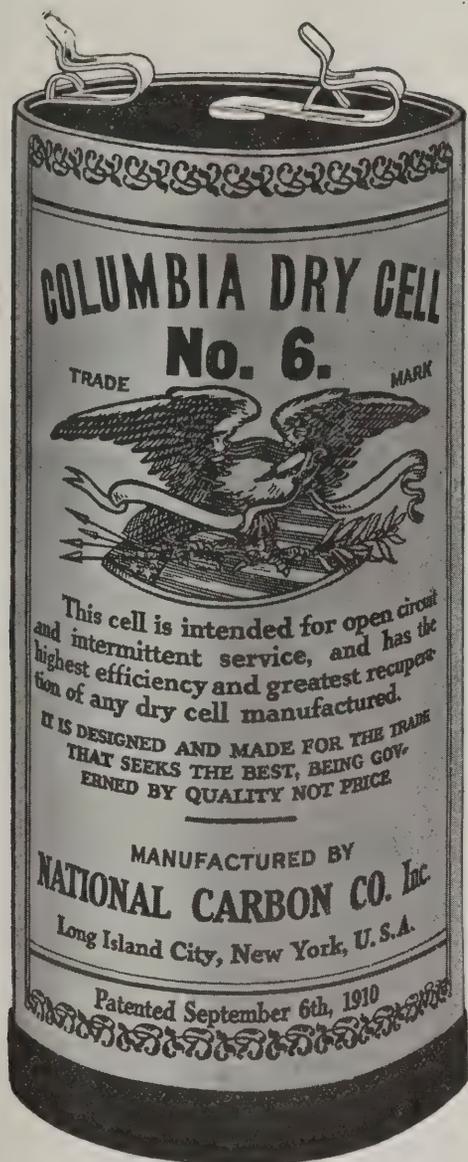
March 13: Hearing held at Albany in the matter of consolidation of the Rochester Telephone Corp., franchises, and other items.

PENNSYLVANIA.

February 23: New rate schedule to become effective April 1, filed by Conyngnam Valley Telephone Co.

TENNESSEE.

March 5: Hearing on the Cumberland Telephone & Telegraph Co. rate case postponed from this date to March 26; hearing to be held in Nashville.



Telephone men demand a smart response from their batteries when asked for—but no fidgets when told to keep still. The corrosive sulks between visits—that’s what consumes the energy of most batteries. Columbia Gray Label Batteries work to perfection, then they save their power by resting contentedly while there’s nothing to do; thus they cost less per month of service. Fahnestock Spring Clip Binding Posts at no extra charge.

NATIONAL CARBON COMPANY, INC.
Long Island City, N. Y.

Atlanta Chicago Cleveland
Kansas City San Francisco

Columbia Telephone Batteries

“less cost per month of service”

Personal and Biographical Notes

George Codington, of Auburn, Neb., one of the oldest telephone men in the state, has resigned as manager of the Auburn branch of the Lincoln Telephone & Telegraph Co.

Mr. Codington organized the Auburn Telephone Co. about 20 years ago, later selling out to the Lincoln people, who named him manager of the local exchange and plant, which position he has held to the present time. He will continue to make his home in Auburn, looking after his land and banking interests.

He was recently made director of the Lincoln company.

L. M. Corrington has been named Mr. Codington's successor as manager of the Auburn exchange. He has been in the telephone service for 11 years, the last four of which he has occupied the position of wire chief at Auburn. His experience, knowledge and supervision of actual operations have been in no small measure responsible for the steady improvement of the local plant and service.

His new position will but enable him to continue and enlarge his former efforts in making the service modern, efficient and smooth-running.

Burdett Stryker, of Washington, D. C., general manager of the Chesapeake & Potomac Telephone Co. since 1919, was recently elected one of the vice-presidents of the company.

He is a Bell system veteran, having gone to work as a boy, when the first grounded circuit switchboard was being installed in Washington. He was also the first operator at the Capitol.

Mr. Stryker left Washington in 1895 and had a wide continuous experience in the Bell system in Baltimore and Philadelphia, where he was made general superintendent of plant in 1916.

Herbert F. McCulla, manager at Hastings for the Lincoln Telephone & Telegraph Co., has been named as commercial engineer and assistant to the general superintendent, with headquarters at Lincoln.

Mr. McCulla began his work with the company 19 years ago as a troubleman at Holstein and has steadily advanced in the service of the company.

C. L. Kelly, of North Bend, Neb., the newly-elected president of the Nebraska Telephone Association, is one of the most active and best known of the Independent telephone operators in the state. Mr. Kelly has been interested in association affairs from the beginning, and is a never-failing attendant at the state association meetings.

He has been connected with the telephone industry for 20 years, serving as director and holding the office of secretary

or treasurer of the Farmers' Telephone company of Dodge county, one of the strong Independent companies of the state. At present he is the secretary and general manager of the company. He is thoroughly familiar with the problems of the



The New President of the Nebraska Association, C. L. Kelly, of North Bend, Is a Hard Worker, But Has Always Found Time to Assist Others in the Business.

telephone managers, and has been called to various parts of the state in past years to assist the smaller companies in their accounting and managerial problems.

The honor of being president was not sought by Mr. Kelly. In fact, he tried his best to have Bruce Brown, of Brady, continued for another year. He said he was too busy a man to give the affairs of the association the attention he felt they deserved, but after the honor was thrust upon him, he promised to do his best.

The Farmers company of Dodge county operates exchanges at North Bend, Scribner, Dodge, Webster and Snyder, and serves acceptably a large territory. While three of the five exchanges are located in comparatively small towns, it serves over 1,500 stations, and the company stands sixth among the Independent companies of the state in the number of persons served.

F. P. Ogden, of Denver, Colo., general tolls superintendent of the Mountain States Telephone & Telegraph Co., has been promoted to the office of general traffic manager, the place made vacant by the death of Walter F. Brown.

Mr. Ogden is a graduate of the University of Kansas and has been with the Mountain States company for about ten

years, having served as division traffic superintendent at Helena, Mont., and Salt Lake City, Utah; general tolls superintendent at Denver and now general traffic manager—a rapid rise for a studious and industrious young man.

Carl B. Campbell, of Dysart, Iowa, recently became part owner of the telephone company at Bloomfield, Neb., and will take up his duties as manager March 1.

Mr. Campbell joins the advent of the younger generation into the executive end of the business. He possesses a very good knowledge of the telephone industry and how to operate an exchange, as well as a vast supply of energy and pep. For the last two years or more he has been manager of the Farmers Mutual Telephone Co. at Dysart.

Bloomfield is a thriving little city in eastern Nebraska and has a telephone exchange with 850 subscribers. There is no doubt that a hustler such as Mr. Campbell will make the exchange the nucleus of a big telephone system.

T. B. Clarkson, of Washington, D. C., assistant secretary and assistant treasurer of the Chesapeake & Potomac Telephone Co., has been elected treasurer of the company. He entered the telephone company as a bookkeeper in 1898 and filled various positions in that line of work. He was made paymaster in 1910 and in 1913 he was made assistant secretary and assistant treasurer.

Obituary.

A. M. Danforth, manager of the Somerset Farmers' Co-operative Telephone Co., of Skowhegan, Me., died on February 26, after a few days' illness with influenza and double pneumonia. He was 57 years of age.

Mr. Danforth was in former years employed by the Farmers' Telephone Co. Skowhegan. About two years ago he became manager of the Somerset company.

He had attended to the duties of the office—to which he had been elected for the third year—very capably, and left a wide circle of friends.

He is survived by his widow, two children, his parents, a brother, and a sister.

H. H. Floyd, manager of the Winchester, Ky., exchange of the Cumberland Telephone & Telegraph Co., died at home after being ill two days with pneumonia.

For several years he had been superintendent of the Paris office of the Cumberland Bell, but about a year ago was transferred to the office at Winchester.

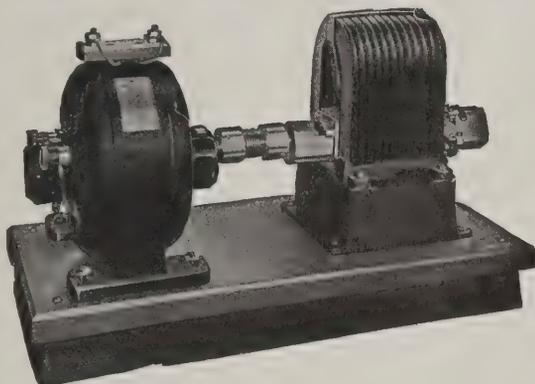
He is survived by his widow and one son.

Constant Voltage Constant Frequency

Do *YOU* Have These Conditions
In *YOUR* Exchange?

Install the Holtzer-Cabot

Magneto-Ringing Motor-Generator



And you are assured PERFECT RINGING SERVICE under all conditions. You owe this to your subscribers and you owe it to your exchange.

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Chicago Boston

Steel Peavies and Cant Hooks

In addition to making high grade malleable peavies and cant hooks, we also supply these tools furnished with STEEL fittings. We especially recommend them for extra-heavy service. THEY STAND UP.

Keep our No. 65 catalog handy. It lists and illustrates our complete line of construction tools, which are sold by all leading jobbers.

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Construction Tools

"INDIANA" TELEPHONE AND TELEGRAPH WIRE



PROVEN BEST BY TEST

Time and the aid of America's foremost engineers, have enabled us to develop and manufacture the highest grade wire known to the trade. It is greatest in conductivity and lasting qualities, due to the superior quality of material from which it is made, as well as its *Extra Double Galvanizing*, which insures longest life.



STEEL STRAND

Single and Double Galvanized, Standard, Siemens-Martin, High Strength and Extra High Strength Grades.

HANDLED BY MOST JOBBERS

MANUFACTURED BY
INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

HAZARD

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Condensed Telephone News

Officers of Companies Are Requested to Forward to Us Promptly All Financial and Other Statements Issued and Any Items Relating to Construction, Rebuilding and Other Changes

New Telephone Companies and Incorporations.

MANTECA, CALIF.—The Manteca Telephone Co. has been incorporated with a capital stock of \$50,000, divided into 500 shares at \$100 each. The organizers of the company are C. W. Forbes, M. A. Forbes and E. Powers, who have one share each.

LEWISVILLE, IND.—With a capital stock of \$10,000, the Lewisville Telephone Co. has been organized by H. Hall, O. E. Hayes, V. O. Chance, W. H. Livingston and F. Lindsay, who are also named as directors.

GUTHRIE CENTER, IOWA.—The newly-organized Guthrie Center Telephone Co. has a capital stock of \$10,000. The officers are: C. H. Nelson, president; F. M. Hopkins, vice-president; J. B. Moore, secretary-treasurer, and W. R. Shaw, general manager.

MURRAY, IOWA.—Articles of incorporation have been filed for the Citizens Mutual Telephone Co., the capital stock being mentioned as \$15,000. C. O. Freel is president and F. E. Burgus is secretary of the new company.

NORTH LIBERTY, IOWA.—The North Liberty Mutual Telephone Co. has filed its articles of incorporation, naming \$10,000 as the capital stock. The officers are: E. Myers, president; C. W. Lininger, vice-president; and W. A. Potter, secretary-treasurer.

POPULAR GROVE, KY.—L. R. Beverly, J. C. Stewart and J. F. Brock have organized the P. & G. Telephone Co. in Owen County, with \$285 capital stock.

RICHARDSVILLE, KY.—The Richardsville Telephone Co. has been incorporated with a capital stock of \$1,200. T. E. Young is president; M. Taylor, secretary-treasurer; and S. E. Miller, manager.

PAWHUSKA, OKLA.—B. E. Quimby, J. C. Hobbs and C. B. Ritberger have incorporated the West Telephone Co.

MIDDLEBURY, VT.—The Shoreham Telephone & Telegraph Co. was purchased early in January by A. W. Foote, and has since been incorporated under the name of the Shoreham Telephone Co., Inc. The capital stock of \$7,000 is divided into 700 shares of \$10 par value each. The company has 416 subscribers.

At the reorganization meeting the following officers were elected: A. W. Foote, president; Mrs. K. D. Foote, vice-president; O. S. Wisell, secretary-treasurer, and R. A. Foote, manager.

Construction.

MIAMI, FLA.—At the annual meeting of the South Atlantic Telephone & Telegraph Co. approval was given to the tentative plans of President F. B. Shutts and General Manager F. W. Webster for extensions and betterments during the coming year and the adoption of a general program of continuous expansion for the future. The plans for this year call for an outlay of about \$500,000.

WINTERHAVEN, FLA.—The Lake Region Telephone Co. has installed a new switchboard which doubles the former capacity.

WAYCROSS, GA.—Work has been started by the Southern Bell Telephone & Telegraph Co. on the extension of the underground cable system in the business section. It will cost about \$50,000.

LA SALLE, ILL.—The Illinois Bell Telephone Co. has a crew of men at work enlarging the switchboard. The workers will also convert one rural switchboard into a toll position. The renovation will be completed some time during the summer and will cost approximately \$50,000.

FORT DODGE, IOWA.—Announcement was made recently that the Fort Dodge Telephone Co. would spend \$130,000 this season toward enlarging and improving the system. Of this amount, \$100,000 will be for equipment and the remaining \$30,000 for an addition to the central exchange.

ROBINSON, KANS.—New lines have been built by the Robinson Mutual Telephone Co. and the North East Telephone Co. to connect the switchboards of both companies. One line extends from Robinson to White Cloud and another from Robinson to Hiawatha.

PARIS, KY.—The Cumberland Telephone & Telegraph Co. is preparing estimates for extensive improvements in the way of cables, wiring and enlarging switchboard.

ST. JOSEPH, MICH.—Improvements at an estimated cost of between \$50,000 and \$75,000 will be made to the property of the Michigan State Telephone Co. in St. Joseph, according to a recent announcement. The additional equipment will provide for five years' expansion and will include the installation of over four miles of aerial cable and the laying of underground cables. Work has already been started on some of the improvements.

KANSAS CITY, MO.—Toll service between Kansas City and St. Louis over the Southwestern Bell Telephone Co. lines is to be improved by the placing of two miles of cable underground, at an estimated cost of \$109,000.

LOWVILLE, N. Y.—The Black River Telephone Co. is installing a new switchboard at an approximate cost of \$20,000.

YONKERS, N. Y.—The New York Telephone Co. has made a purchase of property and will make extensive alterations and additions to its present building.

SALISBURY, N. C.—At a cost of \$60,000, the Southern Bell Telephone & Telegraph Co. will place all wires underground in the business section.

OXFORD, OHIO.—Work will commence within a short time on the remodeling of the building which will be the new home of the Oxford Telephone Co. Entirely new apparatus will be installed, including a switchboard which will cost about \$12,500.

ASTORIA, ORE.—The Pacific Telephone & Telegraph Co. is placing a new submarine cable across Young's Bay.

MEYERSDALE, PA.—The Economy Telephone Stock Co. plans to make improvements to its Berlin and Garrett exchanges during this year, as well as to renew a number of rural lines.

PHILADELPHIA, PA.—It is announced that the Bell Telephone Co. of Pennsylvania will soon take bids for its new three-story and basement building, which will be erected at a cost of about \$250,000.

PARIS, TENN.—The Cumberland Telephone & Telegraph Co. has started a reconstruction program which will require about four months to finish and will include the laying of larger cables. The switchboard will also be improved.

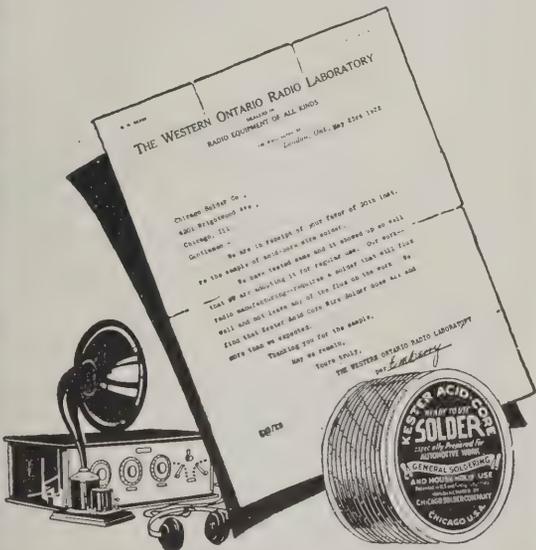
GREENRIVER, UTAH.—The Midland Tele-

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phone Co., of Moab, has a carload of poles ready at Greenriver and construction will start at once on the line to connect Price and Greenriver. Double wires will also be installed between Grand Junction, Colo., Moab and Greenriver, Utah. This will make possible direct communication between Salt Lake City and southeastern Utah.

Eau Claire, Wis.—Approximately \$900,000 will be expended during the next five years for plant and switchboard additions by the Wisconsin Telephone Co., it is announced. The plans include a new central office, as well as some reconstruction of and additions to the existing pole and cable lines. The company is at present serving 4,832 subscriber stations in Eau Claire.

LANCASTER, WIS.—At the annual meeting of the Farmers Telephone Co. it was definitely decided to erect a new exchange building some time within the next two years, at a cost of not to exceed \$15,000. The new building will have a switchboard and operators' quarters on the upper floor and business and supply offices on the lower floor.

WAUSAU, WIS.—The Wausau Telephone Co. expects to spend about \$50,000 for the installation of underground cable and putting in a 300-line addition to its central office equipment.

Financial.

MIDDLETOWN, IND.—The Prairie Creek Mutual Telephone Co. has increased its capital stock from \$10,000 to \$20,000.

MEYERSDALE, PA.—The Economy Telephone Co. has mailed checks to its more than 1,300 stockholders—a dividend of 4 per cent of the earnings of the past year having been declared.

KERRVILLE, TEX.—The capital stock of the Kerrville Telephone Co. has been increased from \$30,000 to \$60,000.

Elections.

MIAMI, FLA.—The officers of the South Atlantic Telephone & Telegraph Co. elected for the coming year are: F. B. Shutts, president; E. C. Romfh, first vice-president; J. Brand, second vice-president; F. W. Webster, treasurer and general manager; R. J. Gailbreath, secretary, and C. J. Holditch, general auditor.

The directors are Messrs. Shutts, Romfh, Brand, Webster, and H. M. Van Court, J. E. Brown, J. M. B. Hoxsey, D. Laird and R. L. Boyd.

DENVER, ILL.—At the annual meeting of the McClintock Telephone Co. C. Fleming was elected director and J. Ufkes was the retiring director. The other two members of the board for this year are R. Thompson and G. Harrison.

LINCOLN, ILL.—C. E. Gullett is the president of the Lincoln Telephone Co.



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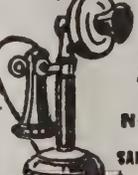
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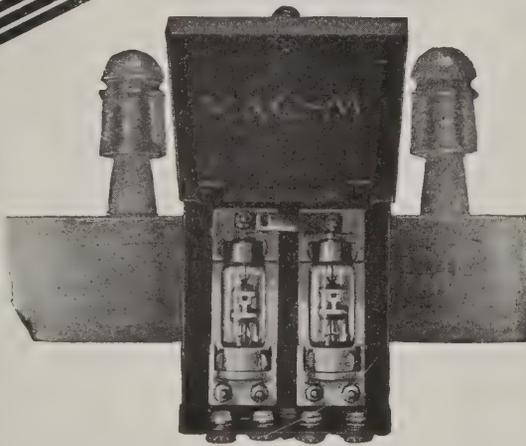
But let us point out that these sleeves have been proved by actual tests to be stronger than wire itself. What does this mean? It means that not only will the joint be a strong one—but an economical one—for once the construction is completed it requires no "looking after" whatsoever.

And, of course, such a joint—sturdy, durable, efficient, and economical, is the kind that goes "hand in hand" with good service.

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You can readily afford BRACH Vacuum Arresters at our present low prices. Type 440, shown above, complete with porcelain base, fuses and mountings, sells at \$1.50 each.

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NEWARK, N. J.

for the coming year. The other officers are: W. M. Young, vice-president; F. W. Longan, treasurer, and J. C. Poole, secretary and general manager. W. J. Gullett and W. C. Bates, with the officers, are directors in the company.

MONMOUTH, ILL.—The officers and directors elected to serve the Monmouth Telephone Co. for the ensuing year are: President, C. C. McClung; vice-president, F. B. Pattee; secretary-treasurer, F. A. Norris; directors, D. E. Gayer, E. C. Hardin, R. Lahann, and the officers.

The report shows that the company now has 3,054 subscribers, compared with 2,906 a year ago. Extensive improvements were made during last year, the most important being the laying of about three miles of cable underground. The company expects to perform an even greater amount of extension this year.

OSCO, ILL.—The following men will be on the board of directors of the Osco Mutual Telephone Co. for this year: A. L. Westerlund, W. H. Samuelson, W. Sell, C. C. Smith, E. Collis, C. Stoughton, H. Magerkurth, E. A. Rehn, C. Bestor, A. Nash and I. Holmstrom.

The directors elected Mr. Samuelson, president; Mr. Holmstrom, vice-president; and Mr. Westerlund, secretary-treasurer.

PORT BYRON, ILL.—The stockholders of the Port Byron Telephone Co. recently held their annual meeting and elected directors for this coming year as follows: S. L. Woodburn, W. H. Ashdown, W. McRoberts, and G. Hoffstetter. The directors then met and elected S. L. Woodburn, president; W. H. Groh, vice-president; Elizabeth Young, secretary; and G. Hoffstetter, treasurer.

TOULON, ILL.—At the annual meeting of the Stark County Telephone Co., W. F. Price was elected president; W. R. Sandham, secretary; and C. P. Dewey, treasurer. A. B. Hoff is manager of the east division, and Mr. Price is manager of the west division.

The following directors were reelected: W. H. Jackson, J. H. Wrigley, A. B. Hoff, and A. Walters. The hold-over directors are the officers and J. T. Rogers, J. Fuller and J. H. Duncan.

HILLSBORO, IND.—The annual election of the stockholders of the Merchants & Farmers Telephone Co. resulted in L. Starnes being chosen as president; W. A. Wright, vice-president; E. Rivers, secretary; T. Long, treasurer; and J. Tinsley, manager.

The board of directors for the ensuing year is the same as last year's. It comprises W. Rusk, T. Booe, W. Epperson, G. McBroom, J. Glascock, F. Songer, and the president, vice-president and manager.

CALAMUS, IOWA—The Farmers' & Business Men's Mutual Telephone Co. has elected G. Raiber president for the coming year; C. Lohman, secretary; and W. Siegmund, treasurer. Serving on the board of directors will be W. Sheldon, H. Smith, J. Neff, G. Muhl, L. Smith, J. Schneider, and E. G. Christensen.

ELDRIDGE, IOWA—The new officers of the Eldridge Mutual Telephone Co. are: F. Baustian, president; G. Grell, vice-president; M. H. Calderwood, secretary; and A. C. Oetzmann, treasurer. The officers, together with F. Keppy, Jr., W. Jahn, H. Runge, W. Kreiter and A. Hamann, comprise the board of directors.

LOST NATION, IOWA—The affairs of the Lost Nation Telephone Co. for 1923 will be in charge of W. Kuehn, president; W. D. Mohr, vice-president; F. Daniel, secretary-treasurer; and H. C. Huett and H. Hohn, directors.

ABILENE, KANS.—The annual meeting of the United Telephone Co. resulted in the former officers being reelected. They are: C. L. Brown, president and general manager; W. P. Wareham, vice-president; W. M. Irwin, treasurer; F. Coulson, assistant manager, and J. O. Wilson, chairman of the executive committee.

GASCONADE, MO.—The directors of the Gasconade Central Telephone Co. for this year are: F. H. Caughell, D. F. Stoenner, G. C. Eberlin, Dr. H. J. Rickhoff and J. Jordan.

MIDDLEBURG, N. Y.—The officers who will serve the Middleburg Telephone Co. for the coming year are: C. S. Best, president; F. E. Rose, vice-president, and W. E. King, secretary.

LIMA, OHIO.—N. L. Michael has been chosen to fill the vacancy in the board of directors of the Lima Telephone & Telegraph Co., caused by the death of J. B. Kerr. Other members of the board are: D. J. Cable, president; E. R. Curtin and A. D. McDonnell, vice-presidents; G. H. Metheany, secretary and general manager; W. H. Duffield, treasurer; C. H. Corey, H. Deisel, A. J. Mellon, C. L. McNaughton and E. A. Reed.

OAKFIELD, WIS.—J. H. Beirne is the newly elected president of the Oakfield Telephone Co.; W. C. Ehrhardt is the vice-president; and W. E. Bristol, the secretary-treasurer. T. E. Worthing and W. E. Bristol were reelected to the board of directors for three years.

OCONOMOWOC, WIS.—Officers who will have charge of the Badger Telephone Co. for this year are: J. Steele, president; S. W. Counsell, vice-president; and H. E. Rosenow, secretary-treasurer. These men, together with H. Peterson, E. Erickson, D. Mountain and S. W. Reid, compose the board of directors.

Miscellaneous.

LITCHFIELD, ILL.—The city council recently passed an ordinance renewing the franchise of the Peoples Mutual Telephone Co., of Hillsboro, for a term of 20 years. The Litchfield exchange is now the largest operated by the company.

MOSCOW, IDAHO.—The Moscow Telephone & Telegraph Co. has purchased a \$15,000 building which will be used for an exchange.

WORLEY, IDAHO.—The Interstate Utilities Co. has purchased the plant in Worley, which had been jointly owned by the Pioneer Telephone Co., the Worley Telephone Co. and the Mountain View Telephone Association. It is planned to install a new switchboard and to rebuild the entire exchange plant.

NORTH LIBERTY, IOWA.—The North Liberty Mutual Telephone Co. has filed articles of reincorporation. The capital stock is \$10,000. The officers are: President, E. Myers; vice-president, C. W. Lininger, and secretary-treasurer, W. A. Potter.

HELP WANTED

WANTED—Accountant. Position open with telephone company having an annual gross revenue of \$600,000 for a thoroughly experienced and competent telephone accountant. Applicants will please give details as to their experience and qualifications, together with references and salary expected. Address applications to 5231, care of TELEPHONY.

WANTED—Lineman in north central Kansas. Town 400. R. I. R. R. Magneto System. Permanent, if suited. Must be competent to take care of switchboard and lines. Job open from April 1 to May 1, 1923. Prefer man with family. Don't come. Write. Formoso Telo. Co., Formoso, Kans.

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Volume 84
Number 12

CHICAGO, SATURDAY, MARCH 24, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

Receipt of a book-
et setting forth the
code of ethics—or

he "code of principles of professional
conduct", as it is officially described—of
the American Institute of Electrical Engi-
neers is a reminder that a similar propo-
sition is now pending before Independent
telephone men.

At the national convention last Novem-
ber a resolution was adopted authorizing
the president of the United States Inde-
pendent Telephone Association to appoint
a special committee to draft a code of
ethics to be submitted at a subsequent
meeting.

* * * *

That such a step is in the right direc-
tion is indicated by the fact that so many
industries are adopting the plan of formu-
lating codes, laying down general prin-
ciples governing their relations within their
own ranks and their relations with the
public.

Within recent weeks the American So-
ciety of Mechanical Engineers has adopt-
ed such a code of ethics. The National
Wholesale Men's Furnishers' Association
has taken similar action.

* * * *

Those who have given the matter con-
sideration, and have observed its work-
ing in other lines, believe that such a code
of ethics, or conduct, would prove most
beneficial to the telephone business. It
could crystallize in definite terms effective
ways and means to create and maintain
relations between the companies and their
employes that would produce the best re-
sults. Such a code also would contem-

CURRENT OPINIONS AND COMMENTS

plate improving the companies' relations
with the public.

In short, it would deal with every angle
that would help strengthen the position of
those engaged in supplying the people with
telephone service.

Such a declaration would be a platform
on which the industry could stand for mu-
tual benefit. It also would have an ex-
cellent effect on the general public as indi-
cating that telephone men have a sound,
well-defined plan and purpose of deserv-
ing, winning and holding the good opinion
of the public.

* * * *

A glance at the code of the American
Institute of Electrical Engineers shows
that it is wisely designed to command the
respect of the public. The keynote is
found in this one sentence under the sub-
ject of general principles: "In all of his
relations the engineer should be guided
by the highest principles of honor."

Living up to that rule, it would seem
that no one could go very far wrong in
any direction.

* * * *

Specifically, the A. I. E. E. code covers
principles of conduct regarding the engi-
neer's relations to his client or employer,
matters relating to records and data, the
engineer's relations to the public, and his
relations to the engineering fraternity.

Its whole purpose is to keep the pro-
fession on a high plane, and all agree that
it has been a helpful, steadying influence
during all the years since 1912, when the

first draft was
adopted. Its reaf-
firmation last year

showed how sincerely the engineers value
its inspiration.

Telephone men should draft a code that
would apply to their industry. If Presi-
dent MacKinnon appoints a committee
soon, it would be able to report to the
national convention to be held in Chicago
next October.

* * * *

Sleet storms and terrific gales have
played havoc with telephone plants in many
states within recent weeks. The South
suffered from unusually cold and boister-
ous weather in January; the Middle West
companies were damaged later, while an
unusually severe winter, with unprecedented
snows, has bothered the East steadily for
months.

Weather disturbances, like sleet storms,
are one of the big hazards of the tele-
phone business. They cannot be prevented,
nor anticipated, and guarded against only
to a limited extent.

* * * *

Of course, a line correctly constructed
and well maintained will resist a storm's
destruction better than a slipshod line
with worn-out, ill-set poles and sagging
wire, and for that reason good mainte-
nance pays, but it is not humanly possible
to escape entirely from storm damage.
And that storm damage often means the
expenditure of thousands of dollars for
new equipment, labor and repairs, and
much hard work to put the service back
to normal.

This weather hazard explains why tele-

phone rates must be adequate to cover such exigencies. A private business damaged by fire, flood or storm can close down and re-open when it is convenient or profitable to the owner. The telephone company, and other utilities, when visited by such disasters, immediately set to work to resume giving service regardless of cost, convenience or anything else. Their controlling motive is to give the public service at once.

* * * *

This determination to meet an emergency at once shoots holes into the company's reserve funds, but it wins the approval of the public.

For example, read the following from the Dayton (Wash.) Chronicle:

"In the recent fire which wiped out 30 blocks in the city of Astoria, what were the first businesses to re-establish service?"

"Public utilities.

"People were lost without electric light and telephone service, but before the smoke had cleared away these industries were stringing wires and giving the people service before any other line of industry had

CONVENTION DATES.

The dates and places of meeting for the various state conventions to be held in the near future are as follows:

Florida, Roberts Hotel, Miami, March 27-28; New York Up-State, Powers Hotel, Rochester, April 18-20; Iowa, Ft. Des Moines Hotel, Des Moines, April 24-26.

recovered from the shock of the fire.

"People take such conveniences as the telephone, power, light, gas and street railways as a matter of course. This is because these companies seldom fail to give service when the customer wants it."

* * * *

A large business concern in the East recently addressed a letter to its staff of salesmen, urging them to use the telephone more in their dealings with their customers. It emphasized the fact that the telephone provides a direct route to the attention of nearly every buyer, and offers fine opportunities to make friends and arrange for demonstrations or interviews—

"if the tone of voice and manner of speaking are pleasing."

The point is then made that "telephone calls will lose both friends and sales if the manner of talking over the wire is not pleasing."

The precaution is undoubtedly wise, as are all suggestions that will help to cultivate courtesy and develop friendly relations, but the same advice equally applies to all communications—telephone, letter or face to face. Under any circumstances the brusque, curt or chilly manner never wins as much favor as the pleasant, genial mood.

* * * *

It is true that some persons are less genial in a telephone conversation than when speaking in the actual presence of the other fellow, but those who know how to use the telephone effectively are seldom guilty of this error.

The pleasant, courteous voice of the exchange operator—who above all others knows how to use the telephone—has almost come to be a recognized institution. Her experience shows how much it pays.

Transmission Over Long Cables

Types of Toll Cable Circuits and Their Characteristic Echoes, Attenuations and Amplifications—Maintaining Stability of Transmission—Paper Presented at Milwaukee Meeting of the American Institute of Electrical Engineers

By Alva B. Clark

American Telephone & Telegraph Co.

This paper aims to present an idea of what is involved in the transmission of voice currents over long toll cable circuits. Because of the breadth of the subject covered, no attempt has been made to make the discussions of the various items complete, or to include many of the results of the experimental and theoretical work which contributed to a solution of the problems and which has involved the co-operative efforts of a large number of engineers and investigators. This paper should be considered merely as an introduction to the subject.

Different Types of Circuits.

The different types of circuits used in toll cables are illustrated in diagrammatic form in Fig. 1. Circuit *b* is a two-wire telephone circuit employing a 21-type telephone repeater. This type of circuit is employed only for handling connections on which but one telephone repeater is involved.

Circuit *c* is a typical two-wire circuit on which the familiar 22-type telephone repeaters are operated. Circuit *d* is of the four-wire type which employs two trans-

mission paths, one for each direction. The function of the pilot wire circuits *a*, will be taken up later.

With the exception of circuit *b*, which possesses the limitation that it cannot advantageously be connected to another circuit containing telephone repeaters, the circuits shown may be connected, when required, to circuits of the same or other types, such as open-wire circuits, to build up various telephone connections.

In general, circuits such as *c*, employing 22-type repeaters, are used for handling connections of moderate lengths, while circuits such as *d* of the four-wire type, are employed for the longer connections where the transmission requirements are more severe.

In addition to employing the cable conductors for furnishing telephone service, these may also be arranged to furnish d-c telegraph service. Apparatus for compositing the circuits so as to permit this superposition of the d-c telegraph is indicated on the drawing.

In general, the method of compositing the small gage cable circuits is the same

as that employed for compositing open-wire lines. The telegraph circuits in cable however, operate with a metallic instead of a grounded return and employ much weaker currents than those common on open wires. Telegraph currents employed in the cables are comparable in magnitude with the voice currents.

The two-wire circuits in toll cables employ conductors of No. 19 or No. 16 A. W. G. while for the four-wire circuits No. 19 wire conductors are usually employed. (No. 19 wire weighs 20½ pound per wire mile, or 5.8 kilograms per kilometer. No. 16 wire weighs twice as much.)

Loading Characteristics.

Two weights of loading are usually employed. These are commonly known as "medium heavy loading" and "extra long loading" and in this paper they will be referred to for brevity as "m. h. l." and "x. l. l." respectively.

The medium heavy loading employ coils having an inductance of about 0.17 henry in the side circuits, spaced 6,000 feet apart, (approximately 1.8 kilome-

ters); the extra light loading employs coils having an inductance of about 0.044 henry for the side circuits with the same spacing. The capacity per loading section for the side circuits is approximately 0.074 microfarad.

The medium heavy loaded side circuits have a characteristic impedance of about 1,600 ohms, and a cut-off frequency of about 2,800 cycles. The extra light loaded side circuits have an impedance of about 800 ohms and a cut-off frequency of about 5,600 cycles.

Fig. 2 shows the attenuation-frequency characteristics of No. 19 and No. 16 side circuits with the two types of loading.

It will be observed that the m. h. l. circuits have lower attenuation for frequencies below about 2,500 cycles, as should be expected from the fact that the inductance per mile introduced by the loading coils is greater. However, the attenuation is more nearly equal at different frequencies in the

Where V is the velocity in unit lengths per second, L is the inductance in henries per unit length and C is the capacity in farads per unit length, the unit of length for expressing velocity, inductance and capacity being the same.

The x. l. l. type of loading is best for the longer circuits, because of the more nearly equal attenuation of currents of different frequencies, its higher velocity of propagation which permits more efficient operation of telephone repeaters, and also its comparative freedom from transient effects, as will be explained in more detail later.

For the shorter circuits where these effects are not so important, the m. h. l. type is satisfactory electrically and is, therefore, employed, since fewer repeaters are required owing to lower attenuation.

As is well known, whenever points of discontinuity or unbalance occur in a telephone circuit, reflections of electrical en-

comparatively great time lags involved, the echo effects become of controlling importance. Consequently, it is, in general, necessary on such circuits to work the

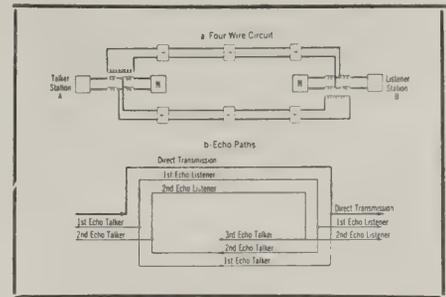


Fig. 3. Echo Paths in Four-Wire Circuit. repeaters at gains well below those at which "singing" or distortion due to "near-singing" is experienced.

The echo effects which occur in four-wire circuits will first be discussed, since the effects are simpler in this case than

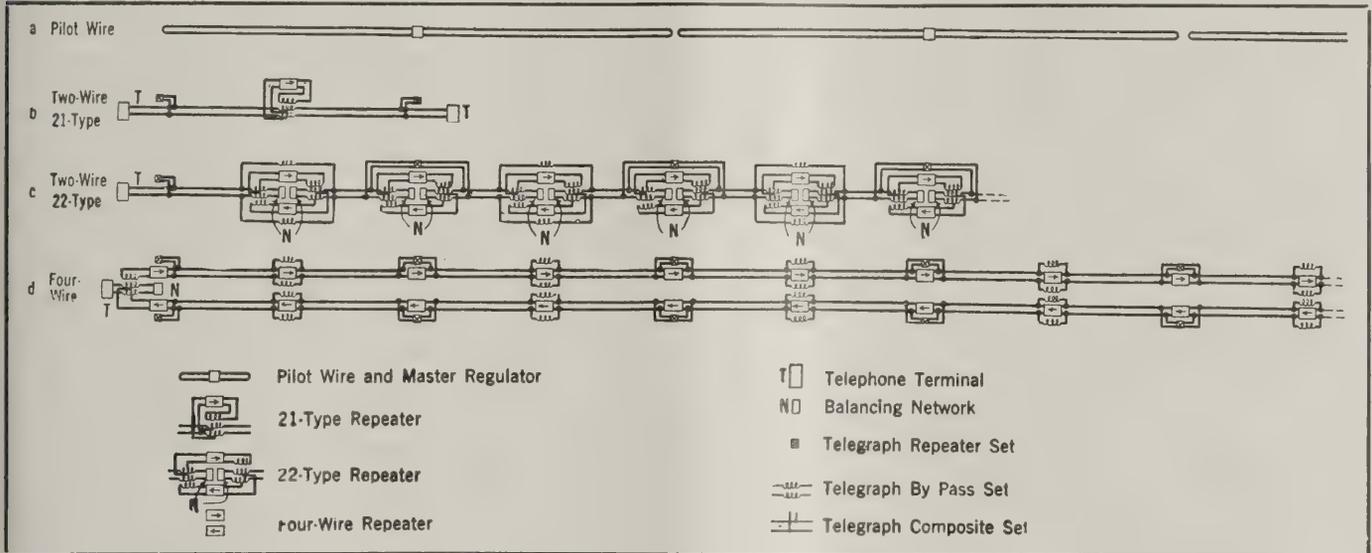


Fig. 1. Different Types of Cable Circuits.

case of the x. l. l. circuits, this being particularly true at the higher voice frequencies.

Another important characteristic of loaded circuits when repeaters are involved is their velocity of propagation.

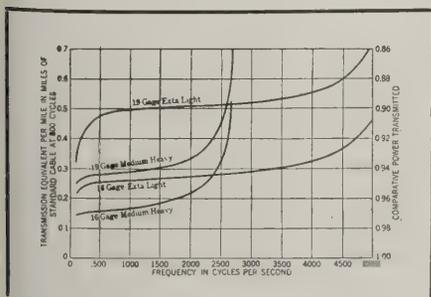


Fig. 2. Attenuation-Frequency Characteristics of Loaded Cable Side Circuits.

Since the inductance per mile of x. l. l. circuits is only one-fourth of that for m. h. l. circuits, the velocity of propagation is twice as great for the x. l. l. circuits as indicated by the well-known approximate formula $V = (LC)^{-1/2}$

ergy take place. If the circuit is long so that the time for transmission is appreciable and if also the losses are not so great as to cause the reflected energy to become inappreciably small before it reaches the ear of a listener, echo effects will be experienced.

While, in general, reflections take place in any telephone circuit actual echoes are never appreciable unless telephone repeaters are employed. In the case of circuits with repeaters, the electrical length is usually great enough so that an appreciable length of time is required for the voice currents to travel to some discontinuity and back again. Furthermore, the repeater gains keep the reflected voice currents large.

It should be understood that the echo effects which are experienced in long repeatered circuits are due to the same unbalances, which, on shorter circuits, bring the trouble due to "singing," or distortion of the voice waves due to "near-singing."

On electrically long circuits, due to the

they are in the case of a two-wire circuit.

Fig. 3-a shows a four-wire circuit in diagrammatic form, while Fig. 3-b shows the echoes which are caused by the unbalances at the terminals. When someone at terminal A talks to a person at terminal B, the heavy line in Fig. 3-b shows the direct transmission, which takes place over the top pair of wires in Fig. 3-a.

When this current reaches the distant terminal, part of it goes to the listener while another part, due to the imperfections of balance between the line and network at that terminal, travels back through the pair of wires at the bottom of Fig. 3-a toward terminal A. The talker at terminal A will hear this current as an echo if the four-wire circuit is long enough so that the time lag is appreciable.

This first echo heard by the talker divides at terminal A in the same way as did the direct transmission at terminal B, part of it taking the upper path of Fig. 3-a back toward the listener. The listener will, therefore, first receive the direct transmission and then a little later an

echo. This process is repeated, producing successive echoes which are received at both terminals *A* and *B* as indicated.

A four-wire circuit 1,000 miles (1,600 kilometers) long has been set up in which the balances at the two ends were deliberately made poor so as to exaggerate the

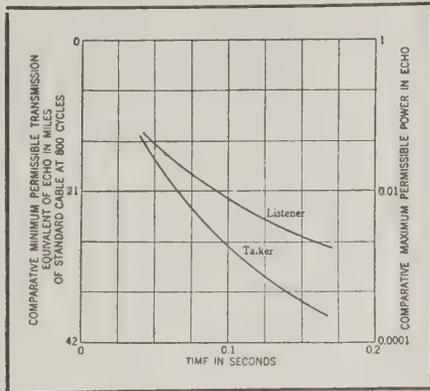


Fig. 5. Effect of Echoes on Talker and Listener.

effects. More than a dozen successive echoes could be heard before they became inaudible. Since for each echo the voice energy traveled 2,000 miles (3,200 kilometers) this energy must have traveled the distance around the world before becoming inaudible.

In order that a circuit will be satisfactory for regular telephone use, the echoes must be kept small as compared to the direct transmission. Evidently if the first echoes are small as compared to the direct transmission, the later echoes will be much smaller in magnitude. For example, if the power in the first echo, heard by the listener, is 1/10 as great as the directly transmitted power, the second echo will have only 1/100 as much power, the third echo 1/1000, etc.

The velocity of an x. l. l. circuit is approximately 20,000 miles (32,000 kilometers) per second, while the velocity with m. h. l. is only 10,000 miles (16,000 kilometers) per second. It is thus seen that the time required for voice energy to travel from one end to the other of an x. l. l. circuit 1,000 miles (1,600 kilometers) long is 0.05 second.

An echo traveling from one end of the circuit to the other and back again would, therefore, arrive 0.1 second behind the impulse which started the echo. With m. h. l. circuits these times are of course doubled.

Fig. 4 illustrates the condition existing in a two-wire circuit. For simplicity, the first echoes only are shown, the later echoes being less important owing to their comparative weakness as explained above. In such a circuit reflections occur not only at the terminals, but at a number of intermediate points in the circuit, the condition of balance between the networks associated with the telephone repeaters and the corresponding lines being necessarily imperfect.

This imperfection of balance is due in part to lack of perfect balance of the apparatus closely associated with the repeater, and in part to the small irregularities which exist in the make-up of any practical loaded line. A further cause is the reflection at the adjacent repeaters, due to the difference between the repeater impedance and the line impedance.

It will be noted that three sets of echoes are shown which affect the "talker." In addition to these which involve one or more repeaters, a comparatively small amount of power is reflected back to the "talker" from the various irregularities between the "talker" station and the nearest repeater. These reflections have not been indicated since their effects are of negligible importance.

Six sets of echoes affect the "listener." Both for the echoes affecting the "talker" and the "listener," the dotted lines indicate reflections from a number of different points where irregularities exist as explained above. In circuits containing a larger number of repeaters the numbers of sets of echoes affecting the talker and listener are, of course, greater.

The number of sets of first echoes affecting the talker is equal to the number of repeaters. The number affecting the

$$\text{listener is equal to } \frac{N(N+1)}{2}$$

where *N* is the number of repeaters.

It is, of course, obvious, that for either four-wire or two-wire circuits, if the circulating energies are large, they will have an adverse effect on the ability of two people to carry on a conversation over a telephone circuit. Not only will the transmission received by the listener be adversely affected, but the talker will be considerably distracted, particularly when the time of the transmission over the circuit is so long that he hears a distinct echo of his words.

Experiments have shown that the effects of the echoes both on the listener and talker become more serious as their time lag is increased. This means that, as telephone circuits are made longer it is necessary either to improve balances or to design the telephone circuits so that the velocity of propagation will be higher.

This necessity for making the velocity of propagation high on long circuits was one of the principal reasons which led to the selection of extra light loading for the longer circuits.

Fig. 5 shows very approximately how the effects of the echoes vary with the length of time by which they are delayed.

One curve is given for the effect on the "talker," another for the effect on the "listener."

Both curves indicate, for various time lags, the comparative magnitudes of any echoes which are small enough to be inappreciable when ordinary telephone conversations are carried on. The curve applying to the "listener" is referred to the direct power which he receives, while the curve for the "talker" is referred to the power which he puts into the circuit.

In Fig. 4 showing the condition existing in a two-wire circuit, the comparative magnitudes of the power in each echo are indicated, a typical condition of the lines being assumed. For the listener the echo power is expressed as a percentage of the directly transmitted power which he receives. In the case of the talker, it is expressed as a percentage of the power which he puts into the circuit.

In addition to the comparative amounts of power in each echo, "weighted" magnitudes are indicated. The "weighted" figures take account of the fact that the effects of a given amount of echo become more serious as the time lag is increased as indicated by the curves in Fig. 5. Referring to Fig. 4, it will be noted that the "weighted" magnitudes of the power in the echoes are largest for the long paths. In general, this condition exists in the case of the majority of long two-wire repeatered circuits in cable.

In order to compare the behavior of a four-wire circuit with a two-wire circuit, consider again Figs. 3 and 4. It will be observed that in Fig. 4, showing the two-wire circuit, there is one echo received by the talker which travels from one end of the circuit to the other. Referring to Fig. 3 showing a four-wire circuit, it will be seen that this echo corresponds to the one

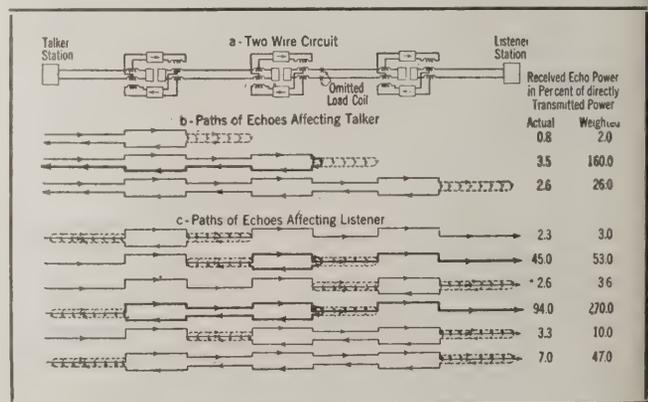


Fig. 4. Echo Paths in Two-Wire Repeatered Circuit.

labelled "1st echo, talker." Similarly for the echoes affecting the listener, the echo whose path is longest in the two-wire circuit corresponds to a similar echo in the four-wire circuit.

Since many additional echo paths are present in the two-wire circuit, it is evident that, other things being equal, the over-all transmission result obtainable

from the two-wire circuit cannot be made as good as that obtainable from the four-wire circuit.

In a two-wire circuit it is, of course, obvious that any defect in the lines which will cause a large irregularity will result in a considerable impairment of the circuit. Fig. 6 shows the effect of omitting a loading coil at an intermediate point in a circuit, the conditions in this circuit being assumed to be the same as those in Fig. 4 with the exception of the omitted loading coil.

The omitted loading coil introduces a large impedance irregularity which causes certain of the echoes to be made much greater in comparative magnitude as indicated. In order to reduce the echoes in the circuit with the omitted loading coil sufficiently to make the circuit satis-

the individual repeaters about or alternating their gains has no effect on the longest paths, provided the total gain in each direction is kept constant.

3. In the case of a two-wire circuit of a given length, the velocity of propagation and smoothness of the lines are of most importance in limiting the possible net equivalent, the line attenuation being of secondary importance.

For example, in the case of transcontinental (New York-San Francisco) open-wire line, the original circuit was loaded. (Although this paper deals particularly with repeaters on cable circuits this example was selected because it illustrates this point so well.) The velocity of propagation was such that voice currents required about 0.07 second to travel from one end of the circuit to the other. The

to load cables than it is to make up the increased attenuation by means of more repeaters. In the second place, the loading lessens the amount of distortion introduced by the cable circuits. In the case of the open-wire circuits, their series inductance is sufficient to keep the distortion small.

Owing to the fact that the weight of loading applied to the longest cable circuits is very light, the attenuation of such circuits is very great. A four-wire x. l. l. No. 19 gage circuit 1,000 miles long has the enormous line equivalent of 500 miles of standard cable.

The total power amplification applied to this circuit by the repeaters exceeds 10^{47} . This amount of amplification is more than enough to talk half-way around the world at the equator using non-loaded

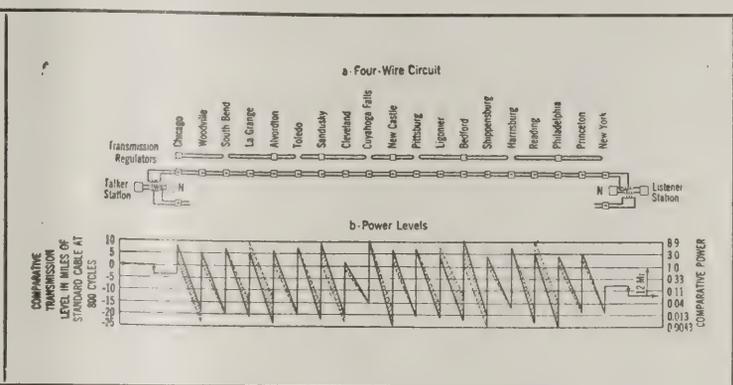
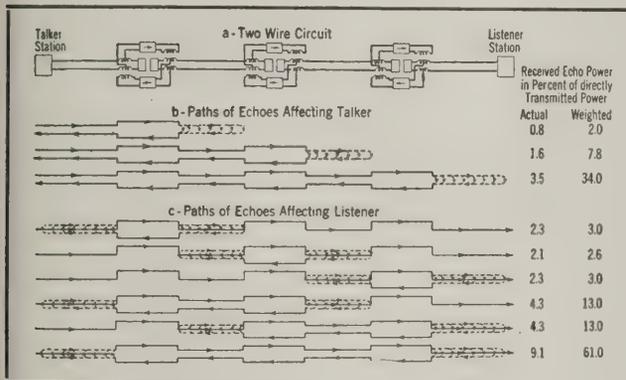


Fig. 6. Echo Paths in Two-Wire Repeatered Circuit With Omitted Loading Coil.—Fig. 7. Power Levels in New York-Chicago Extra Light Loaded Four-Wire Circuit.

factory for telephone use, it is necessary to reduce the repeater gains.

In this particular case it is necessary to lower the total gain about four miles, which increases the over-all transmission equivalent of the circuit from about 10 miles for the normal condition to about 14 miles for the condition with the omitted loading coil.

Before leaving the subject of "echoes" it is believed that it will be of interest to point out some of the important characteristics of two-way repeatered circuits which result from these effects:

1. The minimum permissible net equivalent (total loss minus total repeater gain in one direction) of a four-wire circuit of a given length depends only on the velocity of propagation and the balance conditions at the terminals of the circuit. When conditions are such that the balance conditions cannot be improved, increasing the velocity of propagation will enable a lower net equivalent to be obtained.

2. In the case of a two-wire circuit with reasonably smooth lines, the exact location of the repeaters and the gains at which individual repeaters are worked have little effect on the over-all result so far as echo effects are concerned.

This follows from the fact that the echo paths from end to end of such a circuit are usually of more importance than the shorter echo paths. Evidently, moving

total line equivalent was equal to about 56 miles of standard cable. By applying repeaters to this circuit it was possible to obtain a working net equivalent of about 21 miles.

The unloading of the circuit increased the velocity so that the time of transmission was reduced to 0.02 second, about 0.3 of the time required when the circuit was loaded. The attenuation was increased so that the total line equivalent without repeaters was equal to about 120 miles of standard cable, a little more than twice the equivalent of the loaded circuit.

By applying repeaters of an improved type to this circuit so as to keep the quality good in spite of the increased attenuation and correspondingly increased gain required, it was possible to obtain a working equivalent of only 12 miles of standard cable as compared to the original figure of 21 miles. This means that with the same amount of speech power applied at one end, the power received over the non-loaded circuit is seven times as large as that formerly received over the loaded circuit. A material improvement in the telephone quality was also effected by the unloading of the circuit.

The example of the transcontinental line, above, may well bring up the question as to why it is that cable circuits are loaded. This is done for two reasons:

In the first place, it is in general cheaper

No. 8 Birmingham wire gage open wire commonly employed for handling very long distance business (No. 8 B. w. g. copper weighs 435 pounds per wire mile, or 120 kilograms per kilometer).

In order to obtain an idea of how enormous this amplification is, assume that no repeaters were employed and an attempt were made to apply enough power at one end of the circuit to enable the normal amount of speech power to be received at the distant end. The power applied at the sending end would then have to be about 50 quadrillion times as great as the total power which it is estimated is radiated by the sun.

While the total amount of power amplification is very great, the amount of amplification put in at any one point is, of course, limited. The maximum amount of power at a repeater point is limited partly by the capacity of the vacuum tubes and partly by the power carrying capacity of the telephone circuit, including the loading coils. (By power carrying capacity is here meant the ability to carry voice waves without serious distortion.) It is also necessary to limit this power to avoid serious crosstalk into other circuits.

In addition to these limitations on the maximum power, it is necessary to insure that the power at any point in a circuit does not become too small. Otherwise

the normal voice power will not be sufficiently large as compared to the power of crosstalk from other circuits. It is, furthermore, evident that the ratio of power from extraneous sources, such as paralleling telegraphic circuits and power supply circuits, to the voice power should be as small as practicable in order to keep the circuits free from noise.

Fig. 7 will give an idea of how the telephone power attenuates and is amplified in a long circuit. The circuit shown is similar to those which it is proposed to employ between New York and Chicago, *i. e.*, it is a four-wire x.l.l. No. 19 wire circuit largely in aerial cable, equipped with automatic means for compensating for the changes in attenuation caused by the effects of varying temperatures on the resistance of the conductors. (These automatic devices are described in a later section of this paper).

For simplicity, the power levels for transmission in one direction only are shown. The solid lines show the power levels when the temperature is a maximum so that the attenuations are greatest while the dotted lines show the levels when the temperature is a minimum and the losses are, therefore, also a minimum. The shaded areas between the lines represent the changes which take place during the course of a year.

When the requirement is introduced that transmission must take place in both directions, it is found that at the points in the circuits going in one direction where the power is a maximum, the power going in the opposite direction in other circuits is a minimum. This represents a very bad condition for crosstalk from one four-wire circuit into another.

In order to overcome this the conductors carrying strong voice power are kept electrically separated or shielded from those carrying weak power as indicated schematically in Fig. 8. The conductors which carry strong voice power are shown heavy, while those carrying weak power are shown light.

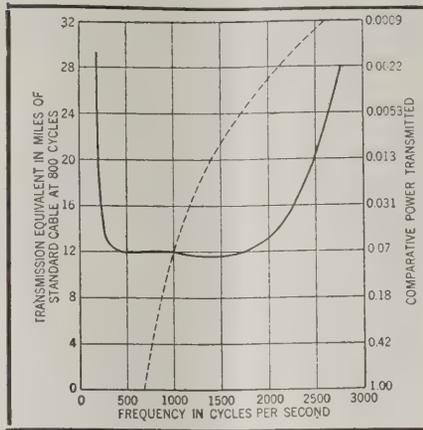


Fig. 9. Transmission-Frequency Characteristic of Long Extra Light Loaded Four-Wire Circuit.

In the cable proper the separation is effected by grouping the conductors in two bunches, one for transmission in one direction, the other for transmission in the opposite direction, taking care that these two bunches of conductors are separated electrically as far as possible. In the loading coil pots the coils employed on the circuits for transmission in the two directions are similarly kept separated. In the offices the separation is effected by arranging the repeaters and other apparatus as shown in the figure.

It will be observed that no special separation is shown between the repeaters transmitting in the two directions, since to keep the conductors carrying weak power separated from those carrying strong power, it is merely necessary to keep the apparatus and cabling connected to the inputs of the repeaters separated from the apparatus and the cabling connected to the repeater outputs.

Steady State Distortion.

The possible sources of distortion may be divided broadly into (1) repeaters and auxiliary apparatus and (2) the lines.

With reference to the distortion introduced by the repeaters, the vacuum tube is fortunately very nearly perfect, at least insofar as concerns practical telephony.

At one time, for purposes of test, a circuit was set up containing 32 vacuum tubes in tandem. On this circuit the distortion was so small that when listening to ordinary conversation it was difficult to detect any difference in the quality of transmission before and after traversing the 32 vacuum tubes.

It is beyond the limits of this paper to enter into the problems of design which were encountered in the development of the repeater circuits.

Considering next the lines, it is necessary to make the loading very regular so that balance difficulties will not cause an undue amount of trouble on two-wire circuits. Regularity of the loading is also essential in order to avoid irregular transmission of different frequencies.

In order to secure this regularity of loading, it is necessary that the spacing between loading points be made very uniform and that the cable be manufactured so that the electrostatic capacity of its circuits be held within close limits. The loading coils themselves must be closely alike in their electrical properties and furthermore, the coils must be stable, *i. e.* these electrical properties must not change appreciably due to the passage of voice currents or other currents required for cable operation through them. Next, it is necessary to design the repeaters and associated apparatus used on the longer circuits, particularly the four-wire circuits, so as to put in different amounts of gain at different frequencies, thereby making the overall transmission at different frequencies approximately constant in spite of the fact that the loss introduced by the cable circuits at different frequencies is not constant.

Fig. 9 shows the overall or net transmission equivalent plotted against frequency for an x. l. l. four-wire circuit 1,080 miles long (1,750 kilometers) which was set up for the purposes of test. The heavy line in this figure shows the overall result which was actually obtained with

(Please turn to page 27.)

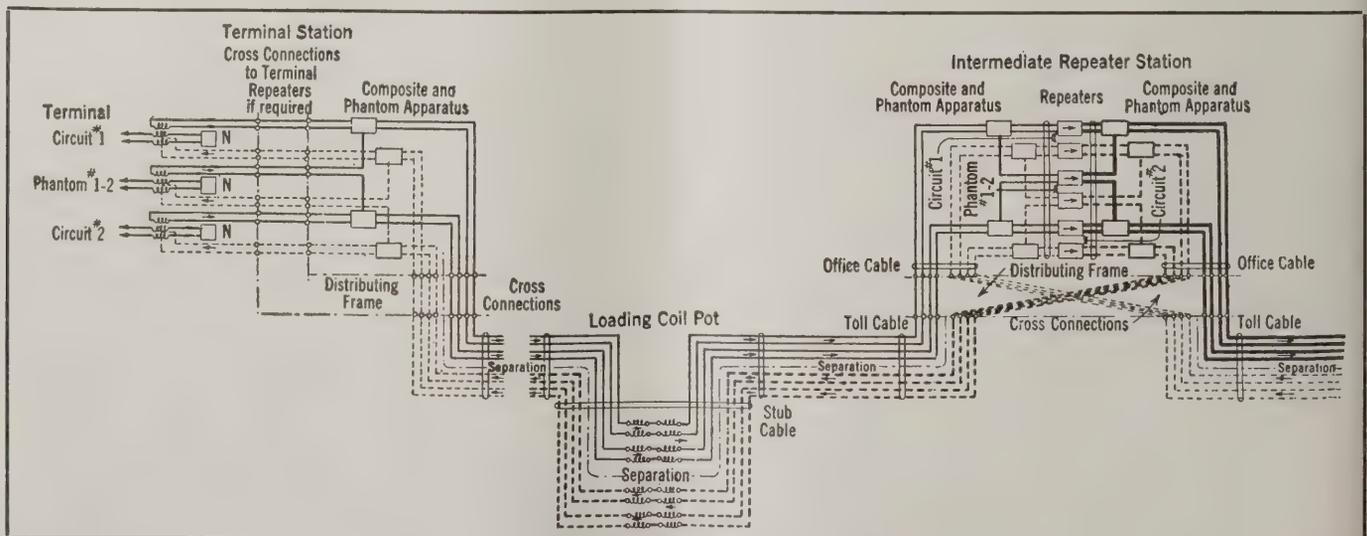


Fig. 8. Four-Wire System—Segregation Method to Reduce Cross-Talk.

North Dakota Men Hold Convention

Telephone Men Have Annual Meeting at Grand Forks—Variety of Interesting and Helpful Talks on Topics of Current Import—Members Urged to Work for Benefit of Each Other—"Public Program" One of the Features

The annual meeting of the North Dakota Telephone Association was held at Grand Forks, March 13, 14 and 15. The program was varied and many interesting and informative addresses were made. The operators' traffic conference was one of the interesting and valuable sections of the meeting.

M. M. Borman, of Abercrombie, was re-elected president at the Thursday morning's session. H. A. Brown, of Cooperstown, was re-elected vice-president, and F. R. Irons, of Starkweather, was named secretary-treasurer, succeeding A. J. McInnes, of Valley City.

Members of the executive board named include M. B. Richardson, Fargo; P. J. Smith, Beach, and A. T. Nicklawsky, Hillsboro.

The convention opened Tuesday afternoon at the Commercial Club. Mayor Henry O'Keefe gave an address of welcome in behalf of the city of Grand Forks, pointing out that as a public utility, the progress of the telephone as an indispensable aid to modern civilization is watched with interest by the people of today.

Response to Mayor O'Keefe's address was made by H. W. Wilson, of New Rockford, a member of the executive committee of the association.

M. M. Borman, of Abercrombie, presi-



M. M. Borman, of Abercrombie, Re-elected President, Is Strong for Co-operation Among the Members—and He Gets It.

dent of the association, made a short talk in which he lauded the interest of the members of the North Dakota association in the progress shown by the telephone

systems of the state in keeping up with the demand for service.

H. A. Brown, of Cooperstown, reported on the work of the taxation committee and Secretary A. J. McInnes, of Valley City, presented an extensive report for the past year in which he pointed out the work of the legislative committee and gave a resume of the work for the past year.

Julius F. Bacon, general manager of the Grand Forks Herald, delivered an address on "As Others See Us." He pointed out that the telephone is especially valuable as a time-saver in present-day business and eliminates the need for considerable travel and the time involved that would otherwise be necessary.

In giving what he termed the standpoint of telephone service as seen by the public, he emphasized the need for speed and accuracy on the part of the telephone service in the present day, adding that the service had kept pace with this need.

Radio vs. Telephone.

The telephone will never be displaced by the radio telephone, Jay Houghtaling, of St. Paul, declared during the course of an address given by him on "Radio Telephone and its Operation Commercially."

In explaining his assertion, Mr. Houghtaling said that there is a certain amount of business and even friendly conversation that is carried on over the telephone which could not possibly be sent through the air to be heard promiscuously, that the radio is all right in the capacity for which it is now used—for broadcasting programs, stock and market prices, etc.—but, for the carrying on of business transactions, the telephone is the logical means of transmission.

Following the talk by Mr. Houghtaling, a round-table discussion, lasting nearly an hour was conducted in which J. J. Lamb, manager of the Valley Radio of Grand Forks, and C. R. Sargent of the Western Electric Co., of Minneapolis, took part with several others.

Public Program.

During a public program at the Guild Hall on Tuesday night, given by telephone employes, Miss Doris Graham of the traffic department of the Grand Forks exchange gave a demonstration of the use of the telephone. A miniature switchboard was used by Miss Graham, in illustrating her talk. Among other things, it was shown that the irate patron of the telephone service, who wants to attract the operator's attention by rapidly flipping the receiver hook up and down is bothering the operator not at all, because only a slow flipping of the receiver causes a

change in the operator's light on the switchboard.

With the aid of the miniature switchboard, Miss Graham showed how calls are received and dealt with.

Demonstrations of proper and improper



H. A. Brown, of Cooperstown, Will Again Act as Vice-President.—He Did Some Good Work on the Legislative Committee.

use of the telephone were made and, in conjunction with a 45-minute talk, Miss Mildred Cadwell, Leigh Fuller and Carl Paine demonstrated what happens when a patron calls from memory, giving the wrong number, when he is late in answering a call and when the line is "busy."

Other numbers on the program included a reel of comic motion pictures and three reels of film showing the various phases of laying the submarine cable from Key West to Havana. There were also a number of musical selections.

A discussion and demonstration of first aid to accident victims, led by Oscar Bondelid, of Grand Forks, and a thorough discussion of collection methods, in which H. A. Brown of Cooperstown and R. H. Morris of Bismarck, chief engineer for the North Dakota Railroad Commission, were the leading spirits, formed the program for Wednesday morning.

Mr. Brown, Mr. Morris and others who participated in the discussion on collection methods and business affairs, agreed that telephone companies should operate on a strictly cash basis.

Mr. Brown told of some of the business methods employed by the company operating at Cooperstown, giving suggestions

that could be adapted elsewhere. A very general discussion of this topic, which was further taken up by Mr. Morris, was continued in the afternoon, after the noon recess.

Mr. Bondelid gave a comprehensive paper, covering the topic assigned to him from a number of angles that made it valuable. In connection with it, he gave three demonstrations, showing the proper methods of first aid to be adopted in the case of broken bones, severed arteries, burns, and artificial resuscitation in the case of drowning, electrocution, etc. The demonstrations were followed by a general discussion on the subject.

Radio telephony and its development was exhaustively described by Prof. Beyer, assistant professor of physics at the University of North Dakota. He used black-board drawings to show the construction of various parts of the radio receiving set and explained the principle of a set throughout.

In speaking of rates and regulations governing telephone companies in North Dakota, R. H. Morris explained that all such questions had to be settled through the state railroad commission as the laws of the state did not govern this matter.

He said that every case of this nature was handled on its own merits and that the commission did everything in its power to make an equitable decision whenever a case is presented.

Thomas Phalen, superintendent of traffic for the Dakota Central Telephone Co. at Aberdeen, S. D., read a paper on "Public Relations With Subscribers."

Mr. Phalen pointed out that nothing but a cordial relationship between the company and its subscribers will work for the best interests of both. He showed the advisability of taking the public into its confidence by the company on its problems and explaining any point of service to the subscribers that will prove of benefit to all concerned.

"Other Line Charge."

A round table discussion was held at the close of the afternoon's program on "Other Line Charge." There are cases in the state, it was pointed out, where a group of people get together and establish a private line which, although it does not belong to any of the companies of the state, yet is connected with the nearest company exchange through some agreement. A practice is in use among these exchanges wherein an extra charge of 10 or 15 cents is made for the privilege of connecting in for a call over long distance wires.

The Traffic Conference.

The point that received a great deal of attention at the traffic conference was the importance of the toll operator ticketing long distance calls with the greatest possible amount of precision. Tests were made at all sessions, in which those taking the instruction were asked to mark sample printed long distance talks, showing

where in the talk, the toll ticket should be punched, for the start and the end of the period for which a charge is made.

The point was taken at the meeting that, although the charge is smaller, the companies would rather handle station-to-station calls than calls for individuals, as faster service can be maintained in this way.

The long distance patron often feels, it was explained, that the "report charge" which is made where a party is not secured, is unreasonable. It was pointed out, however, that there is just as much work on the part of the operators in making the necessary connections where the party is not secured, as in cases where he answers the call.

Traffic sessions which were held in connection with the convention, were in charge of R. C. Bolsinger, of Fargo, division traffic supervisor of the Northwestern Bell Telephone Co.

On Wednesday evening a banquet for the convention visitors and invited guests was held in the Dacotah hotel, followed by a dance.

Speakers at the banquet were: Martin Colton, W. W. Blain, C. E. Ladd, Philip R. Bangs, Paul Bunce and Richard Wenzel, all of Grand Forks; R. H. Morris, chief engineer of the North Dakota Railroad Commission of Bismarck; Thomas Phalen, of the Dakota Telephone Co., of Aberdeen; J. A. Houghtaling of the Northwest Equipment Co., of St. Paul; Mr. Sargent, of Minneapolis; Ray Palmer of the Monarch Telephone Mfg. Co., of Chicago; S. G. Harris of Page & Hill Co., of Minneapolis. Charles E. Hall of Omaha acted as toastmaster and introduced the speakers.

Speakers on the Thursday morning's program were R. H. Morris, chief engineer for the North Dakota Railroad Commission; Philip Bangs, of Grand Forks; A. T. Nicklawsky, of Hillsboro, manager of the Traill County Telephone Co.; Thomas Phalen, secretary of the South Dakota Telephone Association, and J. P. Smith, of Beach, manager of the Golden Valley Telephone Co.

Mr. Morris spoke on the rules and regulations existing in the state, governing the construction of telephone lines along the highways. He said that these rules would be adhered to as strictly as possible.

In a discussion of legislation affecting telephone companies Mr. Bangs referred to the former control of public utilities through state legislation and traced the history of the matter to the present local community control of public utilities. The latter, Mr. Bangs said, is in the main effective and satisfactory.

Mr. Nicklawsky spoke on the construction of rural and toll lines for small companies, saying that the principles of construction for the small concern should be the same as that for the larger company, in order to provide the most effective maintenance and service.

Co-operation among members and officers is the outstanding feature of making a telephone association of benefit to its members. Mr. Phalen told the convention visitors. He urged support of the association officers by the general membership, if the association is to function properly. A system of accounting that is a help in the saving of labor, time, etc., was described by Mr. Smith.

Florida Association Looks Forward to Its Best Convention.

A large attendance of both members of the association and of visitors and manufacturers of telephone equipment from outside the state is assured for the annual convention of the Florida Telephone Association by the reservations that have already been made for space and rooms. The meeting will be held March 27 and 28, at the Roberts Hotel in Miami.

The purpose of the convention is to bring together the men of the telephone industry of Florida, in order that they may discuss the problems that confront them in the rapidly increasing demands for service, as required to meet the growth and development of the state.

An excellent program has been prepared with speakers of national reputation in the telephone field, including President MacKinnon of the U. S. Independent Telephone Association and Vice-President Reid of the Southern Bell Telephone & Telegraph Co.

Work Progressing on Chicago-Boston A. T. & T. Cable.

Some amazing figures in regard to toll line cable construction costs were presented in an article under the same head as the one above this item, relative to the Chicago-Boston A. T. & T. cable. The item appeared in TELEPHONY of March 3, on page 16.

To anyone familiar with the cost of cable and line construction work, the figures are startling and palpably in error.

It was stated that the cable line "is being constructed at a cost of \$200,000 a mile," when, of course, the figures should be very much smaller—the correct figure being \$20,000 a mile.

It was also said that "The line from Pittsburgh to Youngstown, now about completed, will cost \$125,000,000". This should have read \$1,250,000.

Gainesboro Company to Buy Additional Lines in Tennessee.

An announcement has been made that the Gainesboro Telephone Co., whose headquarters are at Cookeville, Tenn., has leased the Cumberland Telephone & Telegraph Co.'s lines in Smith county.

This deal has been contemplated since the exchange at Carthage burned about a year ago. The Gainesboro Telephone Co. bought the Home Telephone Co. exchange and lines.

Responsibility of Line Operator

Her Duty to the Company, the Patron, and the Other Operators—Six Points Which Will Help Her to Increase Her Efficiency—Some Modern Methods—Paper Presented at Annual Convention of the Pennsylvania Association

By Miss Helen Ardary

Chief Operator, Huntingdon & Clearfield Telephone Co., Clearfield, Penna.

When a line operator enters the operating room she must feel that the company which employs her has given to her, as its representative, an important responsibility, in that she is in charge of its toll business for the time she is at the switchboard. And to handle the company's business in an efficient manner she must:

First: Concentrate her mind and efforts to expedite all business entering, outgoing or passing through the central over the lines in her charge.

Second: Be thoroughly familiar with the several routings of all circuits in her charge.

Third: Ascertain if all circuits are clear. In case any go bad while operating, she must immediately report them to the supervisor, the wire chief, or whoever may be in charge at the time.

Fourth: She must not forget her smiling voice, whether to a subscriber or other line operators.

Fifth: Be familiar with operating rules and practices, and follow the instructions in handling the several classes of business that are offered.

Sixth: Realize her dependability. This matter is all-important. The company depends on her to answer calls promptly; make connections with the least possible delay; record, monitor and clear circuits promptly; assist other line operators in every way she can; report cut-offs, poor transmission, line trouble, key or cord trouble, etc.

However, there are certain important responsibilities and duties which are common to all offices, large and small, and which should receive careful thought, in order to have the work of a toll center handled promptly, courteously and with a minimum waste of valuable operator's time and circuit time.

We will, for the sake of brevity, group a line operator's responsibilities under three main divisions:

(a) Responsibilities and duties to the subscriber.

(b) Responsibilities and duties to other operators.

(c) Responsibilities and duties to the telephone company.

Consider first our subscriber, in relation to the line operator's work. It is by no means a small part that the line operator plays. She is primarily responsible to the subscriber for courteous, prompt and accurate service.

Of these, courtesy ranks very high, for no matter how prompt and accurate the

service may be, if it is accompanied by a discourteous act on the part of the line operator, our subscriber is very apt to feel that service we are rendering is not up to the high standard we are striving for.

A line operator must always remember that she is *the telephone company* in all of her dealings with her subscriber. I like to think of a line operator as being the "general manager" of the position she occupies while performing her work. The operator at this position should have her work well organized. She should know where to find her work, also the relative stage of completion of all of her calls, and furthermore keep it moving with the minimum of effort on her part. And by doing this she knows that almost automatically she will render a prompt and uniform speed of service over each circuit group.

A line operator, above all, must be accurate in everything she does. Consider the important feature of timing a long distance call. We surely do not want to overtime a connection and hence overcharge a subscriber for the service rendered. However, it is just as important that we do not undertime a connection. It is almost universally true that a subscriber will pay for the service if a connection runs into overtime, provided the service has been prompt and courteous.

Line Operator and Other Operators.

Consider next a line operator's duties and responsibilities to other operators. It is obvious that if service is to be given accurately, quickly and economically, all of the employes who may be required to participate in the establishment of a long distance connection must work in complete harmony and with full understanding of their respective duties and responsibilities.

To accomplish this purpose, instructions for toll operating employes, which have been found by experience to render the most satisfactory service to the company's patrons and to secure the most efficient use of the company's plant, have been developed.

In the application of these instructions it is of the utmost importance that a pleasant tone of voice and a courteous manner be exercised in dealing with other employes; friendly, courteous coöperation with operators in her own office and other offices, should be the watchword of every line operator, for this alone will smooth out the many difficulties, create good feeling, and make her work a source of pleasure.

When we consider a line operator's duties to her company, we find that she is responsible for conducting her work in such a way as to insure the least waste of her own efforts, or switchboard equipment, and of toll circuit time. And furthermore she must complete as much of the offered business as possible.

Line Operator's Duty to Her Company.

The time that the toll circuits are used in attempting to complete calls should be kept as short as possible, consistent with accuracy and thoroughness. Similarly, the time that a line operator works on a call should be kept at the minimum consistent with the proper effort to complete the call without making another attempt.

One of the chief ways a line operator can save time is to work on only *one* call, over *one* circuit, at *one* time. It is not at all unusual to see a line operator working over two or more circuits at one time. The argument advanced in defense of this method is that she can keep the business moving faster in this way. However, our experience has shown us that the "one circuit at one time" method moves the business just as fast, if not faster, and does it with considerably less circuit time.

There are three major calls that line operators are called upon every minute of the day to handle. They are: Incoming or "Received" calls; outgoing or "Sent" calls; and switching or "Through" calls.

Incoming or "Received" Calls.

Where does the line operator's responsibility begin and where does it end on an incoming message? It begins at the line signal, which she must answer promptly by plugging in on the jack corresponding to the line. She must always answer by saying "This is . . ." giving the name of her central in a clear, distinct voice. Therefore, she will expect the operator at the other end to reply in like manner by giving the name of her central, after which to proceed with the call, naming the class of service desired.

Upon receiving full information, she signals the party asked for at the address or number given, and, if that party responds, she makes the connection and notifies the calling operator, using the correct code. Of course, she must monitor the call until the parties are talking and then get off the line. At the end of the talking period she must continue supervising until the conversation ceases, at which time disconnections are made and her responsibility ceases.

In case the party called for is not in, she must try to locate him, giving full information to the calling operator. Special attention is given to "D. A.'s" (as they are a total loss) by calling the wire chief to ascertain whether the line is "O. D." If "O. D.", it is her duty to refer the matter to the supervisor who will try to locate the party elsewhere.

Outgoing or "Sent" Calls.

As a toll line operator, she receives the ticket of an originating or "Sent" call through the recording operator or the supervisor, although in smaller exchanges the toll line operator is also the recording operator. Her first duty is to examine the ticket thoroughly, thereby getting an imprint on her mind as to all its details.

Her next step is to pick out the most direct route known as "Route Number One." If the call is to be passed through one or more switching stations, she will say to the first switching operator. "This is . . . : let me have a line to", giving the name of the central which is the destination of the call, and if through another switching station, the words are repeated.

On arriving at the destination, she repeats the name of her central and (under the old rules) says, "A ticket", or, where no "In" tickets are recorded, tells the operator who is wanted, giving the telephone number, name or address. In giving this call, the details depend on the class of service desired by the subscriber.

After the connection is established the ticket is timed, and it is her duty to monitor the call in periods of one-half minute each, which can easily be done by simply throwing the cam on the cords connecting the parties.

Her responsibility is doubled after connection is made, because a line may go bad at any time during the conversation and I believe it is better to personally detect it before her attention is called to the fact by the patron. If, at the end of the standard talking period, the parties are still talking, it is her duty to "break in" and in a low but distinct tone of voice advise the parties that their time has expired, after which strict supervision must be maintained until conversation ceases and ticket timed accordingly and filed.

In case of storm trouble or some break in the circuits, all lines being "out", the supervisor consults with the wire chief and ascertains the duration of the "O. D.", then the operator must inform all patrons that "Call will be taken subject to 30 minutes' delay", or the time set by the wire chief as to the time he expects the lines to be O. K. But she must in all cases, when any delay occurs, advise the patron as to the reason therefor.

Through or "Switching" Calls.

The line operator should feel more of a responsibility on "switching" calls than on either "Sent" or "Received" messages.

She should feel that she is the guiding

BRIDGE WORK

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

"Oh dear me!" groaned Mollie Leaner, in the rest-room. "My dentist says that I must have some bridge work done, and that he will have to use two perfectly good teeth to fasten the bridge on to."

"Well, Mollie, I thought that we had heard the last of your troubles after you had your appendix and tonsils removed. Why, I have given those same organs of mine five more years of work than you have given yours, and I expect to keep them busy for some time to come."

"Oh, well, I'm not the workhorse type, Grace Goodspeed," flared Mollie, as she hurriedly left the room.

That last statement of Mollie's was quite true. She was not the workhorse type—nor any other type which might have the word "work" hitched to it. She had sat between Grace and me at the old Crystal City board for five years, and was usually more of a hindrance than a help. She no sooner got her board full of connections than she had to run to the booth to talk to her mother, brother, friend, or the doctor.

Mollie was popular with a number of people who were too lazy to read the paper or look up a number.

"Just a moment, Mrs. Waddle," she would say. "Girls! Poor Mrs. Waddle—the dear, old soul—has left her glasses upstairs again. What's the White Way grocery? Quick!"

"That little Mollie Leaner is surely accommodating," says Mrs. Waddle at club. "Those other girls just snip you right off short. They say, 'Refer to your directory, please.' If they knew all of the numbers like Mollie does, they wouldn't be asking the subscribers to do what they are paid for."

"Caroline, at least I am able to define Mollie Leaner," Grace said to me as we sat at lunch together the day that Mollie told us about her teeth. "She is the bridge work; and *we*—you and I—well, you know what she said about those two perfectly good teeth."

hand to both the send and receiving operator, and she must be sure that the destination is properly given, for we all know that operators on the smaller exchanges try to build up their own circuits, which in itself is all wrong, as they are not familiar with the standard routings, and they must be handled in a diplomatic manner so they won't take offense at being corrected.

She must not only set up the through circuit, but must see that the next switching station answers, or, if her circuit terminates in the destined point, that circuits are clear and transmission good.

At this point her responsibility becomes greater, as she must see that under no circumstances are the connecting cords disturbed; also, she must closely supervise at short intervals to see that the two terminal exchanges are kept in uninterrupted communication. This is one of the most important duties, as the two centrals are wholly dependent upon the continuity of the circuits through any central on giving service between subscribers at distant points.

If the proper supervision is given and circuits restored to normal conditions promptly, the company stands to lose no revenue through reported "N. C.'s" or "wait a minute", which answer is the "bugaboo" of any alert, snappy, aggressive, alive-to-the-company's-interest operator.

From the company's standpoint, it is the line operator's job to complete calls. A telephone company is not in business for the purpose of giving information as to the whereabouts of various persons, or to report on the condition of the plant, any more than a railroad is in business to post notices explaining why trains are not running or delayed. The railroad's business is to transport passengers and freight, and the telephone company's business is to establish telephone connections between persons in different cities; anything less than that is unsatisfactory to the public and to the company alike.

In conclusion, I believe that if all operators, both local and toll, when they enter the operating room, would accept and shoulder the responsibility placed on them by their companies, and forget their social duties while on duty and conduct themselves as any other business woman would in their several lines of endeavor, better results would be obtained. But it cannot be done if the operators insist on bringing their social duties with them.

Let us resolve that we will not discuss any matters other than our duties while in the operating room, and when the rest period comes, let us also resolve not to discuss business, but our social activities. Don't you think that if we do this, our rest period will be a real one, and will fit us to go back to our operating with more vim and pleasure?

Financial Statements and Reports

Tri-State Company, of St. Paul, Minn., Had a Good Year During 1922, Reports Public Relations Good—Illinois Bell Spent Large Sum on Improvements—Nebraska Company Sustained a Loss—Reports of Other Companies

Last Year Was a Good One for Tri-State Company of St. Paul.

Last year, the Tri-State Telephone & Telegraph Co., of St. Paul, Minn., paid the largest return on common stock that it has paid in six years—8 per cent. The usual 6 per cent dividend was paid on the preferred stock, but this good dividend on the common was made possible through economies effected in all departments.

The gross earnings during 1922 amounting to about \$4,500,000; maintenance, traffic, commercial and other expenses took some \$2,300,000 of this, and taxes took a good slice—\$219,000, or 4.88 per cent of the total receipts.

The condensed income statement for the year ending December 31 follows:

Gross earnings from all sources	\$4,481,027	
Maintenance, traffic, commercial, general and other expenses	\$2,339,545	
Federal, state and municipal taxes	218,689	
Reserve for depreciation of plant and equipment	798,597	3,356,831
Net earnings prior to interest	\$1,124,196	
Interest paid	433,234	
Net earnings after interest charges	\$690,972	

To the net earnings as shown there will be added \$212,163 to correct excess interest charges previously made on the amount estimated to be due for purchased property while it was being appraised.

In his letter accompanying the dividend checks, President G. W. Robinson makes this reference to the employe problem:

"The telephone industry gives employment to a large force of skilled men and women, and a small turnover is essential to an efficient public service.

"Through the stabilizing of wages and improved working conditions the turnover for the past year has been comparatively small and the management has been enabled to better use its judgment in the selection of employes.

While the year's net gain in stations was approximately 3,000 the average number of employes remained practically the same—an evidence of greater individual efficiency per employe.

For the year the amount paid for labor aggregated \$2,116,820 or 47 per cent of the total receipts for service rendered."

Regarding the maintenance and depreciation accounts, which aggregated \$1,436,757, or 32 per cent of the gross receipts, Mr. Robinson points out that a high standard of property upkeep is essen-

tial, not only to the giving of proper service, but for the protection of the invested capital.

The following condensed balance sheet shows that the capitalization of the Tri-State company is properly balanced as between preferred and common stocks and long term bonds; that the current assets of the corporation are approximately three times its current and accrued liabilities; and that it has available sufficient cash to liquidate all current indebtedness.

CONDENSED BALANCE SHEET.

Assets.	
Plant, equipment and supplies	\$16,815,334
Stock of system corporations	197,890
Due from subscribers, agents, etc.	252,365
Invested in marketable securities	423,602
Cash in banks	642,292
All other assets	82,848
	\$18,414,331
Liabilities.	
Common and preferred stocks	\$10,118,580
Bonds (direct and assumed)	5,245,000
Accounts payable (including accrued taxes and interest not due)	527,265
Service billed in advance	27,249
Miscellaneous credits	8,378
Reserve for employes' benefit fund	50,000
Reserved for renewal of physical properties	1,805,630
Other reserves	6,141
Surplus and undivided profits	626,088
	\$18,414,331

Included in the Tri-State funded debt is an outstanding bond issue of the Rochester Telephone Co. in the amount of \$125,000. The Tri-State took over that company and consolidated the accounts. The Tri-State holdings of stock of the Rochester company were surrendered in part payment for the physical properties and all of these changes are reflected in the balance sheet.

President Robinson comments on the fact that the company is free from any important litigation at the present time, and that its public relations remain most satisfactory.

Operating and Financial Data of Northwestern Bell.

The annual report of the Northwestern Bell Telephone Co., which operates in the states of Iowa, North and South Dakota, Minnesota and Nebraska, shows that it added 15,064 telephones to the number in service, making a total of 492,023. Much of the increase was in extension telephones. The company expects to add 18,000 during 1923, and its budget

calls for the investment of over four million dollars. The present book cost of the entire company is \$76,225,000.

The company operates 457 exchanges in the five states, giving service to 51,600 farm telephones in addition to the 492,023 on its own lines. To operate the plant required an average of 9,234 employes, with a payroll averaging \$875,000 a month or 10½ millions for the year.

Gross additions during the year represented nearly a million for central office equipment, a similar sum for exchange outside plant, and \$660,000 for toll lines and wires. The company employs 4,036 exchange operators and 1,536 toll operators.

In the five states served by the company there are 1,572 other companies serving 869,881 stations.

Wisconsin Rural Telephone Company in Prosperous Condition.

The annual statement of the Platteville, Rewey & Ellenboro Telephone Co., of Platteville, for the year 1922, shows a net return on the investment of over 6 per cent.

The income statement accounts for revenues for the year amounting to \$30,473; operating expense, \$22,101; taxes \$1,327, and miscellaneous charges to income \$73, leaving a balance of \$6,972 transferred to the credit of surplus.

The plant and equipment, cash on hand, notes receivable, due from subscribers, materials and supplies amounted to \$110,252 December 31, 1922.

The company paid a dividend to stockholders recently and is in shape to distribute profits—the best indication of the fact that the company has been well managed.

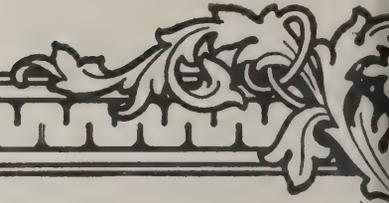
The line will be extended this summer to cover southern and western portions of the county.

Illinois Bell Improvements Cost 17 Millions Last Year.

Net income of the Illinois Bell Telephone Co. increased approximately \$700,000 in the last year, according to the company's annual report made public recently.

Operating revenue gained more than \$2,000,000, but expenses also advanced approximately \$1,275,000. Interest on the mortgage debt was cut more than \$1,000,000.

During the year \$17,190,694 was expended on construction, nearly one-third of the total telephone operating revenue. Improvements will cost about \$17,400,000



Strowger Automatic,
The Best Telephone
Equipment That Money
Can Buy



Why They Prefer Automatic

Many managers of automatic operating companies, although enthusiastic advocates of Strowger Automatic equipment, are often unable to express the reasons for their preference for Strowger equipment in definite terms. They know that there are so many valuable and essential features in a Strowger exchange that it is impossible to pick out any one and say, "This is the best."

Set back in the mind of all those who know Strowger Automatic through actual use is a deep-seated pride in the knowledge that the equipment they use is the very best that money can buy; that the service they render their subscribers is the very best that modern telephony has to offer.

When the time comes for you to replace your present equipment with Strowger Automatic this satisfaction will be yours, too. Why not begin to learn the facts about the Strowger system *now*—as applied to your own exchanges.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



for this year, according to the company's building program.

Financial statements compare as follows:

	Income Account.	
	1922	1921
Tel. oper. rev....	\$ 47,667,284	\$ 44,469,882
Tel. oper. exp....	35,401,645	33,141,840
Net. tel. op. rev.	\$ 12,265,638	\$ 11,328,042
Net other op. rv.	2,295	3,699
Tot. net op. rev.	\$ 12,267,934	\$ 11,331,741
Deduct—		
Uncoll. op. rev.	171,825	136,827
Taxes assign- able to oper..	3,967,434	3,620,604
Oper. income...\$	8,128,674	\$ 7,574,309
Non-op. rev.—net	500,218	274,810
Tot. gross inc..\$	8,628,893	\$ 7,849,119
Rent and miscel. deduc.	203,228	180,840
Int. on mort. debt	961,311	2,042,327
Other int.....	1,110,724	.....
Bal. net. inc...\$	6,353,628	\$ 5,625,951
Dividends	4,000,000	3,600,000
Amt. tran. to cred. of corp. surp...\$	2,353,628	\$ 2,025,951
Assets.	1922	1921
Intangible cap...\$	42,638	\$ 54,469
Total plant.....	130,554,375	117,884,221
Gen. equipment..	2,222,749	1,907,303
Other perma. and long term inv..	339,770	201,276
Cash and deposits	1,509,975	908,565
Marketable sec...\$	4,356	1,334
Bills receivable..	32,312	16,393
Accts. receivable.	5,157,659	4,953,834
Mater. and supp.	793,603	762,368
Accr. inc. not due	4,681	4,217
Deferred debits..	458,260	445,995
Total assets...\$	141,120,384	\$ 127,139,974
Liabilities.	1922	1921
Capital stock....\$	60,000,000	\$ 50,000,000
Prm. on cap. stk.	2,911	2,911
Funded debt....	34,884,179	35,087,179
Accts. payable...	2,754,294	4,860,970
Acc. liab. not due	4,114,610	4,860,970
Def. cred. items..	1,879,821	995,178
Res. for acc. dep.	33,522,899	29,512,750
Corp. surplus....	3,961,666	2,636,047
Total liabilities.	\$ 141,120,384	\$ 127,139,974

The net gain in the number of telephones last year was 45,387. At the close of the year the company's traffic reached a daily average of 4,500,000 calls, of which more than 3,000,000 were in Chicago.

In his report to stockholders, President W. R. Abbott points out the following:

"But little change has taken place during the last year in the matter of rates. An increase in rates was approved by the Illinois Commerce Commission, effective as of November 1, 1922, for the Galena exchange.

"In Chicago and other exchanges where the rates have been in controversy, hearings have been held, but no orders have been entered by the commissions. In certain cases which were before the courts, decisions have been handed down by the Supreme Court of Illinois remanding these cases to the commission for further action.

"During the year benefits were paid to 5,404 employes under the plan for employes' pensions, disability benefits and death benefits, totaling \$444,245."

Bloomfield, Neb., Company Loses Nearly \$1,700 in 11 Months.

The annual report of the Bloomfield Telephone Co., of Bloomfield, just filed with the Nebraska State Railway Commission, represents 11 months of operation under the schedule of rates fixed by a mass meeting of citizens, and also a loss of nearly \$1,700 without a cent of return on the investment. A. C. Grace, who with J. H. Gessler, bought the property from the Union Telephone Co., of Wausa, a year ago, after a strike of patrons that lasted for months, has retired from the company, having sold his interest to other parties.

The state railway commission, after the Union had rebuilt the Bloomfield exchange, increased rates 23 per cent over pre-war figures. An organization of bankers, business men and farmers called a strike and, after months of turmoil and a complete cutting off of the town from telephone service, a truce was reached, whereby the company passed into the hands of Bloomfield men.

The annual report shows that the company received during the 11 months, from exchange revenues, \$9,238.73; toll, \$679.55, and miscellaneous, \$954, a total of \$10,872.28. There were expended for current maintenance, \$2,923.21, and depreciation of plant and equipment was estimated at \$2,292.34, a total for these items of \$5,225.55.

To this are added \$1,674.45 for traffic expenses and \$3,159.59 for commercial expense, a total of \$10,068.59, leaving a net revenue of but \$802.69. Against this are to be charged taxes of \$569.06, interest of \$1,813.30 and miscellaneous expenses of \$107.80, a total of \$2,490.16, leaving the loss for the 11 months, \$1,687.47.

The company's report shows that the officers drew only \$627 in salaries, although it is presumed the \$1,800 each was supposed to draw, was cared for in part by the charges to maintenance, as both are experienced telephone men.

The company operates an exchange with 680 stations, which is larger than at the time the strike was called, and also switches 364 farmers' telephones.

The fixed investment of the company is \$72,883, upon which nothing was earned. There is also working capital of \$6,743 employed, which brings the total money involved in excess of \$79,000. The principal items in the assets account are: Central station equipment, \$15,954; city subscribers' stations, \$5,802; farmer line subscribers' stations, \$5,857; underground cable construction, \$10,688, and farm pole lines, \$17,252.

The property was secured by Grace and Gessler by the purchase of the \$25,000

worth of stock, and the giving of ten notes of \$3,000 each, payable yearly over a period of ten years, upon which the interest charge is \$1,800. The principal items in the liability column are: Common stock, \$25,444; notes payable, \$30,327; depreciation reserve, \$18,792.

Comparative Statement of Keystone (Pa.) Company Earnings.

With gross earnings about \$6,000 higher during February of this year than during the preceding February, and a slight decrease in operating expenses and taxes, the Keystone Telephone Co., of Philadelphia, Pa., had net earnings \$6,000 higher.

The balance available at the end of the month for dividends, surplus and reserve was some \$3,500 more than for February of 1922, and the balance for the two months showed an increase of \$9,000 over that for the first two months of last year.

The net earnings for January and February of this year were more than \$13,000 in excess of those for the same period in 1921, but interest charges—which were \$4,300 greater this year—brought the balance down somewhat.

	For Month Ended February 28, 1923	Year previous
Gross earnings	\$ 143,827	\$ 137,978
Operating expenses and taxes	79,796	80,052
Net earnings	\$ 64,031	\$ 57,926
Less interest charges	44,096	41,536
Balance available for dividends, sur- plus and reserve..	\$ 19,935	\$ 16,390
	For 2 Months Ended February 28, 1923	Year previous
Gross earnings	\$ 287,938	\$ 276,338
Operating expenses and taxes	161,738	163,270
Net earnings	\$ 126,200	\$ 113,068
Less interest charges	87,799	83,421
Balance available for dividends, sur- plus and reserve..	\$ 38,401	\$ 29,647

Pacific Bell Reports on Earnings in Bellingham, Wash.

The Pacific Telephone & Telegraph Co. will pay \$1,567 to the city of Bellingham, Wash., for the franchise rights which enabled it to operate in Bellingham during 1922. This fact was indicated in the report of the company filed January 31 with city comptroller.

According to the terms of the agreement arrived at when the franchise was granted, the company is to pay the city 1 per cent of the gross earnings for each year, exclusive of the tolls for long distance service. The report shows that the gross earnings of the company for 1922 totalled \$156,718.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

D. C. Phillips, president of the Marengo Telephone Co., Marengo, Iowa, chose the evening of St. Valentine's day to show his employes the fullness of his appreciation of their loyalty to him. A fine dinner, appropriate and in keeping with the spirit of the day, was served. This was followed by a short declaration of Mr. Phillips' kindly feeling towards his employes and the remainder of the evening was spent at the Strand, "Iowa's Finest Little Theatre."

The party was a result of loyalty displayed by the employes on last Thanksgiving day when the fire department was called to the Doose hotel.

One operator was on duty when the fire whistle sounded. Each operator started for the office so that if her services were required she should not be found missing. Some were at the football game, some were being entertained in the homes of friends and some were enjoying the day in their own homes, but with the loyalty to their work each one was soon at the office.

Those present on the happy occasion on Valentine Day were: Mr. and Mrs. P. H. Lyday, E. E. Wagner, Marcena Corcoran, Carrie Lutz, Sophia Kienele, Elsie Baldwin, Goldie Cooperider, Pearl McDonald, Mrs. Fannie Andrews, Martha Stevens, D. C. Phillips and the honor guests, Miss Dessa Weaver and Lem Nowlen.

At a recent meeting of the Kansas City Oil Men's Association, which has a membership of some 300, Mrs. C. Tobie of the Kansas City Telephone Co. told the oil men something about the telephone.

That her talk was well received is indicated by her election to honorary membership in the association. Mrs. Tobie's talk was made in connection with a program the Kansas City company has under way of showing the public through its new Telephone Building.

There are many things in Mrs. Tobie's talk that can be utilized by other companies, so it is reproduced here:

First thing, it is something entirely new to me, to stand up here and talk to you face to face. In the telephone office, operators have occasion to talk to most of the business men in our city some time during the day; in many cases, many times during the day. But we have the great misfortune of not being able to look them in the face, while we are carrying on our business dealings with them and see what

a splendid lot of men we are dealing with.

The telephone office is truly a business office—the busiest business office in any town. It is a strange thing how little you men know about the telephone company, yet it is more closely linked with your business organization than any other institution in your city.

I don't know how many people are

WHO WORKS FOR ALL.

Many people think of success as they think of a four-leaf clover. If they are the chosen favorites of fortune, they think they will find it. But success is not luck. Success is playing the game; playing on the team. Organized effort will produce a more far reaching brand of success than individual work.

It is a curious contradiction of nature that the greatest help towards the success of one's self is unselfishness, and he who works best for all certainly works best for himself.—L. M. Boomer.

waited upon in the mercantile establishments of Kansas City every day. I imagine some analytical advertising man has worked out that data, but I doubt if, in his analysis, he has compared that number with the number of subscribers waited on by the telephone company every day. If such a comparison were made I know, without a shadow of a doubt, that it would be found that the telephone company waits on as many people every hour as all the business establishments of Kansas City combined wait on in one day.

The strange part of it is that those same people who will stand in line to await their turn at a ticket office or at the counter of a store all expect to be waited on at once in the telephone office. They do not realize that at the telephone office there are only a given number of operators to handle the subscribers, just the same as in any store there are only a given number of clerks.

It is true that to an extent the telephone company is equipped in such a way that it can handle a great deal more business than a mercantile establishment, but that equipment is only valuable as long as the subscribers, as well as the operator in the central office, are willing to use it in the right way.

Men who treat the machinery in their motor cars and flivvers like a mother's first child, sometimes treat a telephone like a piece of junk. Perhaps they would not do it if they realized that the instrument is more delicate than a jewelled watch and nearly as expensive.

You would be surprised at the crazy questions we are asked every day.

The other day one woman asked "What are the parcel post rates in zone three?" One wanted to know how to spell as-a-fet-ida. Another wanted to know to whom to make checks payable at a laundry. But best of all was a woman who called and asked for the name of the driver of a bakery wagon drawn by a grey horse named "Chub." The driver had been whipping the horse and she wanted to report him to the Humane Society.

Mr. James has requested me to talk to you about the evolution of the telephone. With the help of my memoranda I will give you a few brief items. June 2, 1875, the telephone was born. Alexander Graham Bell was in his old workshop in Boston, Mass., which was similar to a blacksmith shop of today. His electrical mechanic, Thomas A. Watson, was in a sleeping room above and their telephone wire was carried down the banisters of the stairway. The first transmission of the human voice was over this short wire just 47 years ago.

October, 1876, was the first time the telephone was taken out of doors. The Walworth Mfg. Co. gave Dr. Bell permission to use its private telegraph wire from Boston to Cambridge, a distance of nearly two miles. Thomas Watson selected one of their best instruments, went to Cambridge, waited until Dr. Bell signaled him from Boston on the Morse sounder; then he cut out the sounder, cut in the telephone and listened. Plainly as one could wish, came Bell's "Ahoy, Ahoy."

April, 1877, the first out-of-door telephone line was run between Charles Williams' office, 109 Court street, Boston, and his home, in Somerville. The event was a headliner in the morning papers.

About this time Dr. Bell gave three lectures to a well-known scientific society at the Essex Institute, Salem, Mass., to members only. Each time the hall was packed to capacity, so that a written request was made that lectures be given at the city hall at Lawrence and that an admission be charged.

Among those signing this request were Oliver Wendell Holmes and Henry Wadsworth Longfellow. Cards were printed; try to picture how they looked. Telephone! Telephone! The Miracle—The Wonder of the Age. City Hall, Lawrence, Mass., May 28, 1877.

At this time there were only 27 miles of wire in the United States, and this had to be operated in conjunction with the telegraph, and only after laborious efforts

and many, many trials could they get transmission.

Forty-five years ago celebrated men were signing a request to be allowed to pay an admission fee just to hear that the human voice could be carried by means of a wire! Today we invite you to our new telephone building, 11th and Oak streets, where we have the largest automatic unit in the world; where you may see the completion and perfection of a life-time study of the greatest electrical engineers and scientists the world has ever known. Today from every foreign country in the universe, engineers are coming to see and study this wonderful equipment, almost everyone remarking, "I never thought such a thing could be possible."

In Kansas City we answer one million telephone calls a day; 97 per cent are in ten seconds, 98 per cent are established correctly.

Realizing that our local and long distance lines have to and do play a very great part in the development, transportation and distribution of the oil industry, it might interest you to know that Kansas City completes a higher percentage of her long distance calls than New York City, and she does a bigger toll business than St. Louis and many other larger cities of the United States.

I have given you this information not in a boastful spirit but because I have confidence in your civic pride. I know that I am very proud of the fact that the percentage of the oil distribution of Kansas City is the greatest in the United States. You may like to know, too, that we use from six to ten thousand gallons of your oil per week to heat our building.

According to statistics issued December 31, 1921, there were about 14 million telephones and about 32 million miles of wire in the United States. This is enough wire to circle around the world 12 thousand times and would make a two-wire line to the moon 53 times.

The telephone investment in the United States represents approximately two dollars a minute since the birth of Christ—2,020 million.

The maximum sized cable in Kansas City carries 24 hundred wires. This cable is only three inches in diameter. Each wire is insulated with wrappings of porous paper. A special paper has to be used, and so far nothing has been found that will answer the purpose except paper made from old manila rope.

To give you some conception of the number of wires that enter our building, if we used aerial lines instead of underground conduits, it would take a pole 35 hundred feet high or the equivalent in length to seven or eight city blocks, with an arm every foot, to carry this wire into the building at 11th and Oak.

I came over today to invite you over to visit our new building. Don't feel that you will have to depend on me to show you through the building, but we will have sufficient electrical engineers waiting to show you as completely and expeditiously as possible. A good motto is, "Do it now," so "let's go!"

I thank you.

The past few months the Chesapeake & Potomac Telephone Co. has been using newspaper advertising to fully and carefully inform the public as to its exact situation. In December a series of four advertisements were run in the newspapers in the company's territory.

The first one was entitled, "The Public's Interest in Telephone Earnings." In it was stated that the company had no desire to charge extortionate rates; that the public was entitled to just as low rates as possible, consistent with good service, and that that had always been the policy of the company.

When the company asked for increased rates in 1920, it did not ask for rates sufficient to earn an adequate return to its stockholders, because it felt that the public should not be asked to make up the entire amount of the increased cost; it stated that it was willing to do its part and by means of greater efficiency and economy, to co-operate with the public in bringing

The Cost of Telephone Service

Telephone service has become of such universal use as to justify it as one of the various items which go to make up the householder's budget.

That its cost has not mounted to the extent of the other items is shown by the following comparison of per cent increases in costs throughout the United States since the year 1914, taken from the reports of the National Industrial Conference Board.

	Per Cent Over 1914	
	1920	1922
House Rents	58	65
Clothing	166	53
Fuel	66	81
Sundries	85	72
Food	119	40
Telephone Rates in Virginia	37	37

This table shows that in 1920, the period of highest prices, the increase in the cost of telephone service over 1914 was slightly more than a third of the average increase in the cost of the other items; and now, with prices largely stabilized, the increase is slightly more than one-half of the increase in the other items.

The usefulness of the telephone service to the patron in a city, town or community depends largely upon the number of persons with whom he may communicate; in other words, the value of telephone service increases as the number of telephones increases.

In some places in Virginia since 1914, the number of telephones has increased as high as 75%; in the entire state the increase has been 56%. In other words, the increase in the value of the telephone service to the user in Virginia has greatly exceeded the increase in our rates.

The Chesapeake and Potomac Telephone Company of Virginia



This Ad. Presented Some Facts Which Are Not Usually Taken Into Consideration by the Telephone Using Public.

about the desired aims; namely, good service—the best that can be given and at a fair price.

Then it was stated what the company had been doing to effect greater efficiency and economies, and the advertisement concluded with the statement that for the first nine months of 1922 the company was earning only 5.7 per cent on the value of its property, so that the public would not think that it was attempting to earn upon anything else, thus answering the idea or suspicion that it was attempting to earn on other than the actual property.

In the second advertisement, which is reproduced on this page, a question was discussed which is vital from the standpoint of the employe and is also of considerable concern to the public. It was entitled "A Word About Wages."

In the third advertisement, also reproduced on this page, "The Cost of Telephone Service," was discussed. Facts were presented that it was felt were unfamiliar to the public.

Service charges were discussed in the fourth advertisement and the company explained that they were applied because it was felt they were equitable to the public.

A Word About Wages

This Company's largest item of expenditure is for wages; it constitutes about two-thirds of the total expense of the business. Our aim is to pay our employees a wage that will keep them loyal to their task and zealous in their efforts to furnish service that will satisfy our patrons.

In a system such as ours where the service is largely a personal service, an attempt to keep to the lowest possible point the wages paid the employees who furnish this service may be false economy, because to give good service there must be high morale, loyalty and enthusiasm.

During the period following the World War, it was this Company's policy to advance wages only to such levels as we expected to be able to maintain. This policy has been amply justified by the results. We have now a more permanent force working more efficiently than ever before, which has resulted in substantial economies for the benefit of our patrons.

In 1918, the Company had one employe for every 37 telephones; now we have one employe for every 49 telephones. While there has been a 20% increase in the number of telephones, there has been a slight decrease in the number of employees. Thus, with a smaller number of employees than in 1918, we are furnishing service to a greatly increased number of patrons.

This increase in the efficiency of our employees has also resulted in a greatly improved service to the public, and our records show that at no time in the history of the Company has the service we are furnishing been better than at present.

The Chesapeake and Potomac Telephone Company of Virginia



One of the Advertisements Used by the Chesapeake & Potomac to Inform the Public as to Its Exact Situation.

Transmission Over Long Cables

repeaters and associated apparatus designed to equalize the transmission, while the dotted line shows what the characteristic would have been had the repeaters introduced exactly the same amount of gain at all frequencies.

Transients.

In comparatively short telephone circuits, good quality will usually be assured if the transmission, as measured at different single frequencies within the voice range, is kept approximately constant. For electrically long circuits, however, this is not sufficient. Not only must the "echo" effects be kept within proper limits, but consideration must be given to the fact that when electrical impulses are applied to such circuits, peculiar transient phenomena are experienced.

These transient phenomena occur in equal degree in two-way circuits and in circuits arranged to transmit in one direction only; that is, they are not related to "echo" effects.

A large number of oscillograms have been taken in connection with the study of these transient effects. From these and theoretical considerations* it has been proved that the effects in a given circuit are much worse at high frequencies than at low frequencies, the severity of the effects, within certain limits, being a function of the ratio of the frequency being transmitted to the frequency of cut-off of the loaded circuit. The gage of the circuit has practically no effect.

Since in order to give good quality it is necessary to transmit fairly well all frequencies up to at least 2,000 cycles, it is obvious that on long circuits in order to keep the transient effects small, the frequency of cut-off must be kept high. In order to do this, it is necessary either to make the loading coils of very low in-

(Continued from page 16.)

duced that the inductance of the side circuit loading coils is only 0.044 henry and the spacing 6,000 feet.)

As has been pointed out, the magnitude of the line transmission loss in a repeated circuit is of comparatively small importance in determining its possible transmission equivalent, whether the circuit be worked on a four-wire or two-wire basis.

miles long (800 kilometers). Line equivalent 145 miles. Repeater gain exclusive of gain required to make up for loss in apparatus and office cabling 133 miles. Net equivalent 12 miles.

In order to maintain the necessary constancy of the overall or net transmission equivalent of long repeated circuits in cable, it is necessary first of all to maintain the gains of the individual repeaters

Variable Quantity	Prescribed Limits	Gain Variation
Plate Potential.....	130 ± 5 volts	± 0.2 mile
Grid Potential.....	9 ± 1 volt	± 0.3 mile
Filament Current.....	1.25 ± 0.05 ampere	very small for new tube—one mile for tube just before replacement.

Operating Limits of Currents and Potentials, With Gain Variations, for One Type of Tube

However, it is of extreme importance to be sure that the repeater gains are kept adjusted so as to compensate exactly for a large part of the transmission loss in the circuit, so that the difference between the total loss in the circuit and the total gain, which represents the net equivalent of the circuit, will be kept constant.

On certain of the long circuits this difference is very small as compared to the quantities which are subtracted. For example, in the case of a 1,000-mile four-wire circuit using x.l.l. No. 19 gage conductors, the total line transmission loss is about 500 miles. Not counting the gain required to make up for losses in apparatus and office cabling, the total gain is about 488 miles, the difference, 12 miles, representing the net equivalent.

Evidently only a very small percentage change in either the transmission losses or the gains will have a large effect on the net equivalent. This represents about

within close limits. In addition, periodic transmission measurements are required over the complete circuits, supplemented by suitable adjustment of certain of the individual repeaters whenever the overall equivalent falls outside of the prescribed limits.

Also, on the very long small gage circuits, the changes in attenuation, due to the resistance changes caused by temperature variations, become so large that it is practically essential to provide automatic means for overcoming these effects.

The methods employed in maintaining the gains of the individual repeaters and of the overall transmission equivalents within proper limits will first be described, after which the automatic transmission regulators will be discussed.

Important Tests and Adjustments.

In order to hold the repeater gains constant, close inspection limits are placed on the vacuum tubes during the course of manufacture to insure great uniformity of the product, as well as consistency of performance. In operating the repeaters, considerable care is taken to maintain constancy of operating currents and voltages.

The operating limits of currents and potentials together with the corresponding gain variations for one of the types of tube in common use are given in the accompanying table.

In addition to maintaining the tube currents and voltages within the required limits, the gains of the individual repeaters are checked periodically. Suitable adjustments are made when the repeater gains fall outside of the prescribed limits. When the filament emission of a tube becomes so low that the above specified variation in the filament current results in more than one mile gain variation, the tube is replaced.

A gain measuring device as indicated

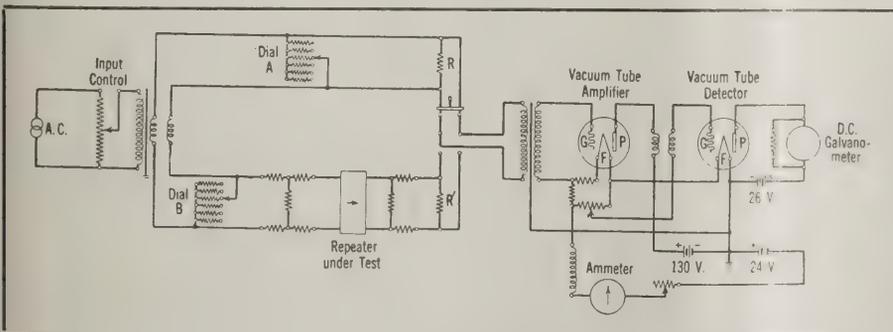


Fig. 10. Device for Measuring Telephone Repeater Gains.

ductance or to space them very close together.

This is another one of the reasons why extra light loading was adopted for the long cable circuits. (It will be remem-

bered that the inductance of the side circuit loading coils is only 0.044 henry and the spacing 6,000 feet.)

Two-wire No. 19 m. h. l. circuit 200 miles long (320 kilometers). Line equivalent 58 miles. Repeater gain exclusive of gain required to make up for loss in apparatus and office cabling 46 miles. Net equivalent 12 miles.

Four-wire No. 19 m. h. l. circuit 500

*John R. Carson—"Theory of the Transient Oscillations of Electrical Networks and Transmission Systems," Transactions of A. I. E. E. Vol. XXXVIII, page 407.

schematically in Fig. 10 is employed for this purpose. The measurement of gain is effected by comparison of the voltages across two resistances, one of which forms part of a circuit which includes the repeater, the other being simply a reference circuit.

An amplifier-detector combination amplifies the voltages across these resistances and then rectifies them so as to obtain an indication on a d-c galvanometer. Equality of voltages across the two resistances, which are designated as R and R' in the figure, is thus indicated by equal deflections of the galvanometer. When this condition is secured, the repeater gain is read directly from the dials A and B .

By means of this device, it is readily possible to measure the gain of a repeater within a few tenths of a mile. Owing to the fact that the measuring circuits are

a known resistance to one end of the circuit and receiving the current at the distant end with a suitable calibrated arrangement employing an indicating meter. Since this type of measurement is similar in principle to the method employed for measuring the gains of the individual repeaters, it will not be described.

Automatic Transmission Regulators.

Since the resistance of long cable circuits employing small gage conductors is comparatively large, it is, of course, evident that changes in this resistance caused by temperature changes to which the cable circuits are subject will have a large effect on transmission.

For example, in the case of an x. 1. 1. No. 19, 1,000 mile circuit (1,600 kilometers) in aerial cable, the total attenuation changes more than 110 transmission miles during the course of a year. This cor-

An automatic transmission regulator is shown schematically in Fig. 11. The device comprises a Wheatstone bridge arrangement. In one arm of the bridge, pilot wire pairs, extending in either direction in the cable, are included as indicated in the figure. The Wheatstone bridge has associated with it certain apparatus which will not be described here in detail, which functions in such a manner as to keep the bridge automatically balanced at all times.

In the process of maintaining balance of the bridge, angular motion is conveyed to a shaft which is proportional to the resistance variations which the cable circuits undergo. The movement of the shaft causes different contacts to be made and thus controls relays which in turn control the gains of the telephone repeaters, one way of doing this being indicated in the figure. The repeater gains are thus caused

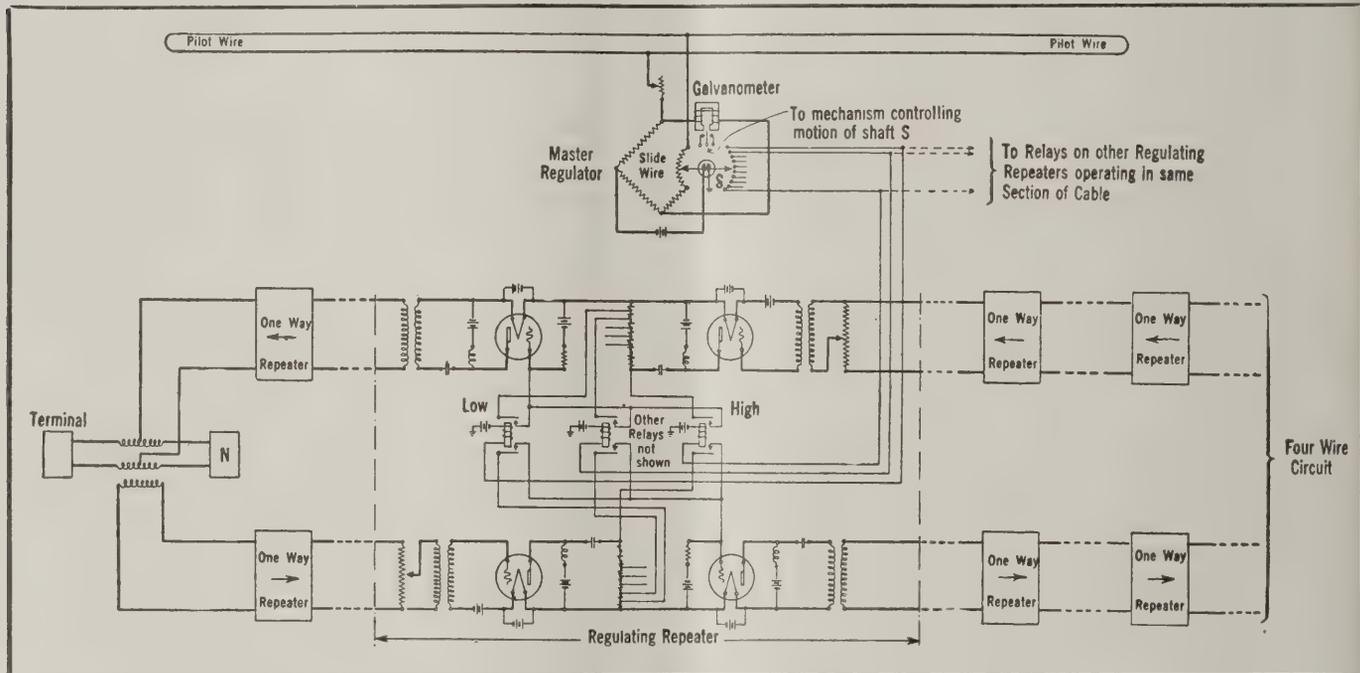


Fig. 11. Pilot Wire Automatic Transmission Regulator.

comprised entirely of resistances, the readings of the set are independent of the frequency, so that gains can be measured at all important telephone frequencies.

As pointed out, transmission measurements over the complete circuits including the telephone repeaters are required at periodic intervals in order to insure that proper transmission standards are being maintained.

By means of such measurements, the variations in the over-all equivalent of the circuits due to the cumulative effect of small gain variations, slight variations which remain after the automatic transmission regulators have compensated for the major variations in the conductors and variations from other causes including the effect of different conditions of humidity on the wiring in the offices, are determined and compensated for.

These measurements are made by applying a known electromotive force through

responds to a variation in the received power of more than 10^{10} or ten billion times.

It is, of course, essential to provide special means to counteract these effects. Furthermore, since the temperature changes which occur in an aerial cable are very rapid, it is practically essential to make these means automatic. In the case of x. 1. 1. No. 19 circuits whose variation is greatest, it is necessary to locate the automatic regulators, in general, at every third or fourth repeater station in order to keep the transmission levels within proper limits.

In Fig. 1-a, a typical method of locating the regulating devices along a cable is indicated. In this sketch each square indicates a master automatic transmission controlling device while the loops extending in either direction from the squares indicate the cable circuits which control the functioning of these devices.

to be raised and lowered automatically, and thereby overcome the differences in attenuation caused by the temperature changes in the cable conductors.

Minnesota Rural Company Reports That 1922 Was a Good Year.

The Hanska Rural Telephone Co., of Hanska, Minn., has made good progress in a financial way during the past year, according to the secretary's report. The directors recently declared a 10 per cent dividend.

The total resources of the company aggregate \$18,416, including \$13,755 worth of lines and equipment, and real estate and office equipment valued at \$1,956.

There is \$11,525 worth of capital stock outstanding, and \$3,485 represents the depreciation reserve.

Telephone rentals collected during the past year amounted to \$7,150, while the tolls collected aggregated \$1,284.

Operating Costs at Indiana Hearing

Service of Independent and Bell Exchanges Compared and Efficiency of Equipment Discussed by J. K. Johnston — Traffic Savings, Operating Efficiencies and Appraisals Gone Into at Length in Indiana Bell Hearing

Service of the Independent telephone companies in the state ranks just as good as, if not better than, the Indiana Bell company's service, according to J. K. Johnston, telephone engineer of Indianapolis, who testified last week as an expert witness for the Indiana Public Service Commission at the consolidated rate case hearing at Indianapolis.

Inasmuch as the rates of the Independents are generally less than rates of the Bell, it appeared that the commission was trying to show by Mr. Johnston's testimony that there is not a difference in service sufficient to account reasonably for the difference in rate. E. L. Cline, president of the Madison Telephone Co., testifying as an expert, told how traffic savings of \$115,209 a year could be effected in the Indianapolis exchange of the Bell company, and Earl Carter, chief engineer for the commission, submitted an appraisal of the total physical property of the Indiana Bell, which was about \$10,000,000 less than the appraisal of B. G. Halstead, engineer for the company. These were some of the high lights of the hearing during the week.

Mr. Johnston testified that he had found practically all of the Independent properties he had appraised in good condition with good equipment, all of them using harmonic or secret ringing for party lines, while he said the Bell semi-selective ringers are not secret. The number of subscribers of the Independents was nearly up to capacity, he said, and as a rule there were not many spare facilities.

In answer to questions by Commissioner Glenn Van Auken, he said he had appraised Independent telephone properties at Elkhart, Goshen, Greensburg, Wabash, Winchester, LaPorte, Greencastle, Noblesville, Liberty, Winona (including Plymouth and Knox), Franklin, Portland and Decatur and is now appraising the property at Richmond. The commissioner asked him about the per cent conditions he had found and about the kind of switchboards used.

Mr. Johnston and F. S. Chapman for the commission, visited LaCrosse, Wis., to study the Kellogg feature switchboard there and to make estimates on what it would cost to put in such features for the Bell plant at Muncie and what the traffic savings would be. They also visited Muncie.

Mr. Johnston testified that the feature switchboard if put in at Muncie, would reduce traffic costs of operators about 50 per cent. He testified that it would enable the Bell company at Muncie to reduce the number of operators from 52 to 25.

He estimated the net cost of capital additions for putting in the feature equipment at Muncie at \$89,337. A Bell company expert had estimated it at \$74,700, a lower figure, but Mr. Johnston testified that the company's expert study did not show just how much equipment was proposed, so the figures could not fairly be compared. He estimated the net decrease in traffic costs at Muncie, with the proposed changes put in, at \$7,933 a year.

W. H. Thompson, attorney for the Indiana Bell, in cross-examining Mr. John-

A CREED.

To do the right thing, at the right time, in the right way; to do some things better than they were ever done before; to eliminate errors; to know both sides of the question; to be courteous; to be an example; to work for the love of the working; to anticipate requirements; to develop resources; to recognize no impediments; to master circumstances; to act from reason rather than from rule; to be satisfied with nothing short of perfection.—The Marshall Field Creed.

ston, referred to an article written by Mr. Johnston a few years ago on depreciation based on a study of about 20 exchanges. He asked him whether it was true that he said the proper rate of depreciation on present or depreciated condition was $8\frac{1}{2}$ per cent.

Mr. Johnston said it was true but that without an explanation his position would not be understood. He said he had allowed for a low maintenance charge. If the maintenance charge is high, the depreciation rate should be correspondingly lower, he said.

In the earlier history of the telephone business there was more inadequacy than there is now and more obsolescence, he said. The territory has been more fully developed and inadequacy and obsolescence had been reduced, he said.

Mr. Johnston said he had found rural lines mixed on the Muncie switchboard with city lines. This was uneconomical, he believes, and he thought the company should put the rural lines on a separate board. He said rural calls were slower, talks longer, and the system of ringing for rural calls different.

Mr. Johnston was cross-examined by Mr. Thompson Friday afternoon. At that time he asserted that the Bell interests, after acquiring telephone plants of the Inde-

pendents, had maliciously destroyed property; that many of the inventions and improvements in the telephone business had been originated by Independents rather than by the general staff of the A. T. & T., and that the Bell interests were not fair enough and manly enough to give credit where credit was due; that because of prejudice against Independent equipment, and a policy of putting in their own, rather than because of a desire to improve service, Independent equipment had been thrown out, and that taking the state as a whole, the quality of service, if there is any difference between the Bell and the Independents, is better as given by the Independents.

His assertion that the Bell interests had maliciously destroyed property was stricken from the record, but he did not take back any of his statements.

As a witness for the commission, he said he had tested the service of the Bell company at Muncie, Anderson and Bloomington, and had found the service at Bloomington fully as good, if not better, than at Muncie and Anderson. At Bloomington many of the old Independent instruments are still in use. He said the Sterling switchboard at Bloomington is about 18 years old and about 1,000 of the original telephone sets are still in use and giving good service. This, he said, convinced him that the Bell policy followed in many places of throwing out Independent instruments was not right.

It was brought out by Frank B. Faris, of counsel for the commission, that there are six types of station instruments in use at Bloomington. Mr. Johnston replied that there was no impairment of service because of a difference in the make of the instruments.

In testifying in regard to traffic savings, Mr. Cline pointed out that a total saving of \$9,456 a year could be effected for 20 exchanges in the central district outside Indianapolis. He computed the savings on the assumption that the same central office equipment would be used as is now in use, and his calculations had nothing to do with proposed more economical central office equipment, or with savings in other traffic expenses than cost of operators.

He testified that in some of the exchanges he would use more operators, or operator hours, than the Indiana Bell. For exchanges studied outside Indianapolis, he did not regard the savings that could be effected as very considerable.

For 20 exchanges in the central district outside Indianapolis, he calculated a total

saving of 662 hours a week, or 34,437 hours a year, which at the average rate of wages, would amount to \$9,456 a year. The marked saving, which he testified could be made, would be in Indianapolis. The saving, by more efficient direction of operators, he said, would be 6,349 hours a week in Indianapolis, or 330,167 hours a year, or \$115,209 a year. As to the main exchange in Indianapolis, he said his set-up would not show a saving, but the contrary, but there would be a marked saving in the other Indianapolis exchanges.

He testified that he found at Shelbyville the rural lines were operated from the toll section of the switchboard. Answering a question of W. R. Myers, city attorney of Shelbyville, he said the effect of this was to slow down rural traffic about one-half. He also said a change could be made to correct this condition for about \$600.

Mr. Carter made two appraisals, which were submitted to the commission. His appraisal on the basis of unit prices for the five-year period 1913-1917, together with the actual book cost of net additions to capital for certain periods after 1918, is \$27,374,518 reproduction new, and \$24,635,600 present condition.

The \$24,635,000 present-condition value, as found by Mr. Carter, is comparable with the \$35,139,764 present-condition value as of October 31, 1922, found by Mr. Halstead, the company's appraisal engineer. It is \$10,504,164 less than the company's figure submitted to the commission a few weeks ago.

In this appraisal Mr. Carter allowed 12 per cent for structural overhead, which amounted to \$2,038,057. In the company's figure of \$35,139,764 as present condition value, the percentage claimed for structural overhead was nearly 20.

In his second appraisal Mr. Carter used average unit cost prices for a ten-year period, 1913-1922, with adjustments made by striking down abnormal peak prices of 1917 and 1920. Instead of using the peak prices of 1917, he used for 1917 the average prices for 1916 and 1918, and instead of using the peak for 1920, he used the average for 1919 and 1921 for 1920. On this basis his appraisal of the value of physical property is \$29,120,630. This appraisal is comparable with the company's figure of \$35,139,764 as present condition value. The commission engineer's appraisal in this case is \$9,018,914 less than the company's.

In the second appraisal Mr. Carter allowed 15 per cent for structural overhead.

The company engineer used average unit prices for the five-year period 1916-1920, plus actual cost of additions to capital for periods differing for the different exchanges. The period for unit prices used by the company was one of high prices. The periods used by the commission engineer included some years before the war had sent prices up.

In Mr. Carter's appraisals the actual cost of net additions used was about \$5,000,000, so it appears that of the total amounts of his appraisals about one-fifth was actual costs of additions to plants in recent years, and these were high-price years.

The present condition value of the Indianapolis exchange area under Mr. Carter's first appraisal is \$11,086,320 as against \$15,160,873 claimed by the company, or \$4,074,553 less than the company claims. Under Mr. Carter's second appraisal the present condition value of the Indianapolis exchange area is \$11,731,088, or \$3,429,785 less.

In the figures of Mr. Carter no deductions have been made for duplicated property either in the case of Indianapolis or other exchanges. At the direction of the commission Mr. Carter is now making a study of duplicated property and other property that may not be considered "used and useful" within the meaning of the law. His finding will be submitted to the commission later and it is believed that might operate to reduce the value considerably.

The company claims a total value for rate-making purposes of \$42,611,590. This includes the \$35,139,764 for physical value, present condition, \$7,027,952 for going value, which is 20 per cent of the former figure, and \$443,873 for working capital.

Mr. Carter's figures do not include anything for going value. They do include about \$607,000 for materials and supplies, but nothing for working cash capital, which presumably is represented by the company's figure of \$443,873 for working capital.

The company asks 20 per cent for going value. In the hearing, the commission has indicated an opinion that 20 per cent is much too high. Should 10 per cent be allowed in the Carter appraisals, it would appear that the commission would find a rate base of from \$28,000,000 to \$30,000,000, or not far from the book value of the company which is estimated at about \$30,000,000.

In that case the rate base found by the commission would be about \$12,000,000 less than that claimed by the company, or about 30 per cent less.

In a setup of revenues and expenses and estimated increased revenues under the proposed higher rates, the company calculated that it would earn 4.8 per cent on the basis of \$42,611,590. The company is asking for an annual depreciation allowance as an operating expense of \$1,781,133, or 6.08 per cent of the book cost of depreciable property, \$29,272,352.

Testimony of the commission's witnesses has been to the effect that 4 per cent is enough for depreciation, as shown by experience from the books. If 4 per cent were allowed the operating expenses would be reduced about \$600,000 below the amount claimed by the company.

How One Illinois Operator Regards Eight-Hour Day Bill.

Illinois telephone operators are taking an interest in the proposed eight-hour day bill now before the state legislature, as shown by the resolution of protest published in last week's issue. One of the operators of an Illinois exchange, under date of March 1, wrote to the members of the legislature in the district in which she resides as follows:

As a telephone operator, I emphatically protest the "Eight Hour Law on Telephone Service and Telephone Female Employees," as being detrimental to the public and company also. The situations with the telephone company are not comparable to those with which factories and merchantile businesses must cope. Our work is quite different and laws which might benefit factory employes are not applicable to telephone operators. The latter are not classed with the former and the same law cannot govern both.

The working hours of a telephone operator are so arranged as to give two minimum relief periods of 15 minutes each during a period of eight hours. With a two-hour luncheon period, any ordinary operator under ordinary conditions is fit in every way and quite willing, if necessary, to operate a period of overtime not to exceed two hours, making the maximum period ten hours.

In cases of emergency, the telephone is foremost in the mind of the public because of the rapid means of communication. Rapid and efficient service is required. In effecting the "Eight Hour Law" this valuable service would be greatly impaired. For instance, an unavoidable delay might detain the night operator, who relieves the day operator. An important call is being completed, transmitting the acceptance of an important contract. At the end of eight hours the day operator must release her circuit, suspend all work on the call and leave the exchange building immediately. The call is later completed by the night operator, when she arrives; but the contract has been closed with another. Lack of prompt and efficient service has lost the contract and, perhaps, thousands of dollars for the subscriber.

Constant demand and imperative need of telephone service by the public creates a situation not attainable by any other business. We operators do not declare a holiday and journey to the woods for a day's outing. That is utterly impossible. Our doors are always open and our lines are always ready to serve at any minute, day or night.

During special events, such as annual celebrations, conventions, meets, etc., our lines are pressed with heavy traffic, which requires more operating. It is impossible to retain extra operators, since the work is so small. One who does not work daily is not efficient. Enforcing the eight-hour law would impair the service to a great extent. During the year 1922, I was absent from the telephone office three weeks. My total overtime amounted to less than eight hours, and I worked each and every time I was asked and as much overtime as any other operator.

The working conditions of a telephone operator are not to be compared with a factory employe. The factory is a smudgy, dusty, noisy place with very little room. Our telephone office is a large, roomy building with windows all around and equipped with electric fans, which render

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the room cooler than the average place of business. Why is a telephone operator not fit in every way to operate for a period of overtime not to exceed two hours?

Traffic, as a whole, is not always steady and our schedules are arranged to best co-operate with all situations. It has and always will be the best policy for a telephone company to employ a regular number of operators and arrange the schedules with little or no overtime, to meet the demand of the public satisfactorily. Our situations are not governed by us; they are the result of conditions uncontrollable by us and the continuous demand of the public.

I, as an operator, for three years in the traffic department of one of the large telephone companies of Illinois, protest the proposed "Eight Hour Law on Telephone Service and Telephone Female Employees" as being detrimental to the public and all concerned.

Platte County Independent Sold to Lincoln, Neb., Men.

Control of the Platte County Independent Telephone Co., with headquarters at Columbus, Neb., has been sold to a group of telephone men who manage the destinies of the Lincoln Telephone & Telegraph Co. Frank H. Woods, R. E. Mattison, W. E. Bell and W. L. Lemon have purchased two-thirds of the stock from the controlling interest, owned by C. J. Garlow, president; R. Y. Lisco, vice-president; G. W. Phillips secretary-treasurer, and Charles Louis and Fred Kluck.

The transfer was effected at a conference of the five directors with Mr. Bell and Mr. Lemon. In its deal, the Colum-

bus men all resigned, and a new official list was named, with R. E. Mattison as president; W. E. Bell, vice-president; W. L. Lemon, secretary and treasurer, and Mr. Woods on the board, along with Mr. Phillips.

The Platte County company operates in that section of the state north of the Platte river in which the Bell company has been supreme since 1912, when the Lincoln company sold to it all of its exchanges north of the river and bought all of the Bell properties south of the river, as far west as Kearney county. Platte county, however, adjoins Polk and Butler, where the Lincoln company owns the principal exchanges.

Mr. Mattison said that the purchase was made as individuals and not as representatives of the telephone company, and that no plans were under consideration for joining the purchase with the operation of the Lincoln company. Mr. Garlow and his associates, he said, were anxious to sell and they made a price that was satisfactory. Clyde A. Burg, manager at Fairbury for the Lincoln company, succeeds Z. A. Kimbro, who resigned as manager of the Platte County company.

Mr. Garlow, who retires from the telephone industry, is a lawyer with a good practice, and has found the work of managing the company and keeping the legal ball in the air harder work at his age than he cares to undertake. He has been connected with the industry for a number of years, and was one of the active members of the state association for a lengthy

span, serving several terms as president.

The company was organized in 1904 by Iowa men, and in 1909 Mr. Garlow and his associates purchased it. Later the Bell company put in a competing exchange, but lost money from the start. Four years ago the Bell sold its exchange property to the Platte county company, but because of the city's business importance and its being a switching center, have kept a toll-board there.

Mr. Garlow has been desirous of selling for some time, but has refused to deal with the Bell. He sought to have the new purchasers contract not to sell to the Bell, but they declined to buy with that string attached.

The company has had several run-ins with the state railway commission over rates and control of operating and accounting practices, and last year suffered a \$10,000 loss by a sleet storm that put its year's operations in the red. No report for 1922 has yet been filed with the state railway commission.

The last report shows the company had about 2,000 stations. It operates exchanges at Columbus and Duncan, the latter a small town, and is a well-built and compact property. The commission's valuation of \$115,000, made two years ago, was taken as the basis of the price deal. The company has outstanding stock of \$56,000, a funded debt of \$24,000 and reserves and other liabilities that balance the figure given for the investment. About 200 farmers and other residents of the county hold the remainder of the stock.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Bill Fixes Minimum Compensation for Toll Commission.

The Nebraska state senate has amended the bill fixing the compensation toll companies shall pay telephone companies for handling toll messages to provide that the commission shall be at least 15 per cent on originating and 10 per cent on terminating calls, thus making it possible for companies to negotiate a higher commission. This was what former President Bruce Brown of the state association, who caused the introduction of the original bill, had in mind when he asked for the repeal of the law fixing commissions.

The senate agreed to an amendment asked for by several senators from Omaha that would have had the effect of eliminating the five-cent toll charge for messages originating in Omaha and terminating at the South Omaha exchange. Later it reversed its action on this and struck it out, when it became evident that

it would result in increased rates for local service in South Omaha.

One of the liveliest debates of the session was staged over the proposition. Those who favored it charged that it was a graft on the part of the Northwestern Bell, which operates both exchanges, and insisted that as South Omaha is now a part of Omaha the charge was unwarranted.

Senators who represent South Omaha said it was part of the annexation agreement that rates should not be raised. It was quite evident that if the company was deprived of revenue in one respect it would be entitled to have it made up in some other way, and that could be done only by increasing rates. It was pointed out that South Omaha has a much lower schedule of rates than greater Omaha, and that this was due to the large number of packing house employes who work only upon call and who must have telephone service in order that they may be called.

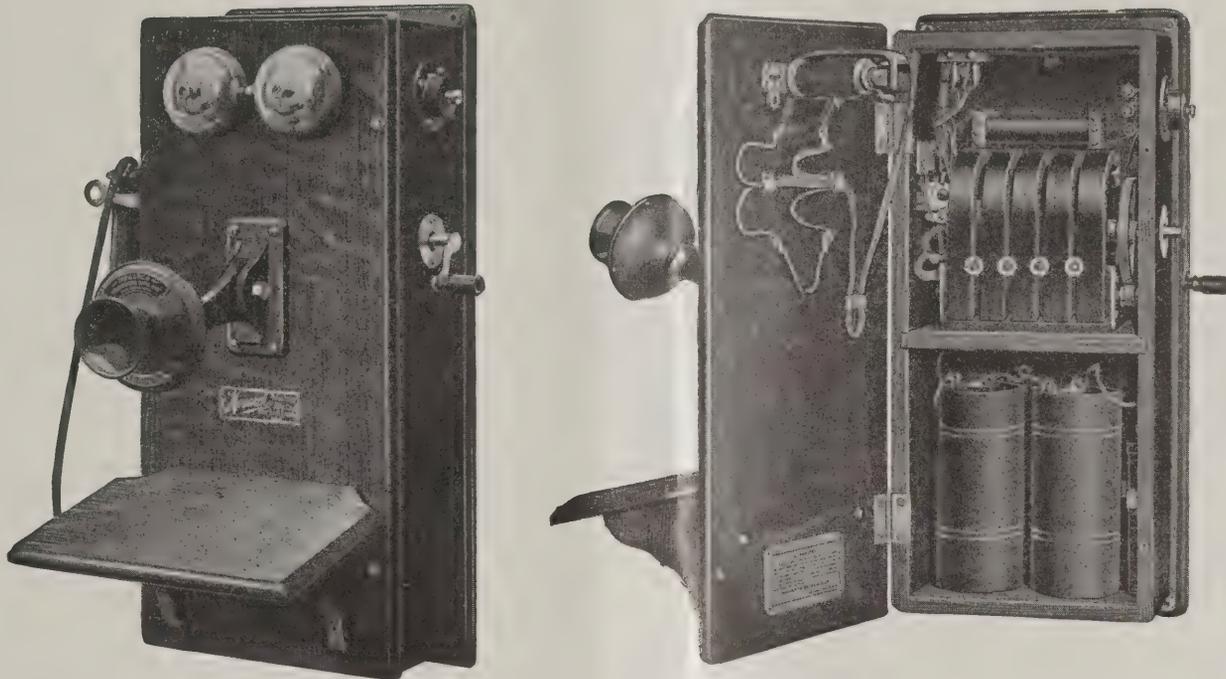
The amendment read that no tolls should be charged on messages between exchanges ten miles apart in the same metropolitan area. An effort was made to amend this by making it apply to all exchanges in the state. This was defeated after it was pointed out that many companies own only their town lines and that, if they had to give free service to every town ten miles distant, they would have to have higher rates to compensate them for the added cost.

Other senators contended that the matter was one for the railway commission to handle, and inquiry later developed that not a citizen of Omaha had ever filed a complaint against the rate with that body.

The Northwestern Bell schedule provides for a business rate of \$8.80 a month in greater Omaha and \$4.95 in South Omaha. It permits South Omaha to talk without expense to Omaha, largely because the messages go to the business section, but charges five cents if an Omaha

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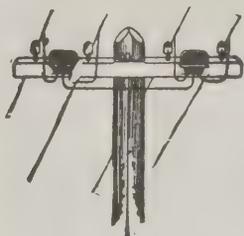
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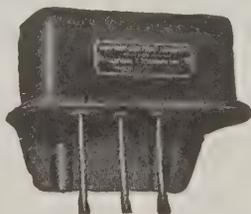
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man desires to talk with South Omaha. It defends this as better telephone practice because of the radically different business and social lives of the two communities, South Omaha being largely a packing house center.

The commission has permitted the rate for the reason that the Omaha zone rates are so constructed as to make a reasonable return, and if the message tolls were eliminated the \$20,000 revenue thus lost would have to be made up for that zone by increased rates, or, if South Omaha were included in the service area by an increase in these rates.

Reduced Rates Will Not Go into Effect in Fort Smith, Ark., Yet.

On March 6 Federal Judge Frank A. Youmans overruled a motion made by the city of Fort Smith, Ark., to dismiss a petition for a restraining order against the enforcement of the ordinance providing for a reduction in local rates of the Southwestern Bell Telephone Co.

The petition was filed by the Southwestern Bell February 24, when a temporary restraining order was granted, pending consideration of the matter by the court.

The order overruling the motion means that the case will be tried on its merits in federal court in September, according to a tentative agreement between attorneys and the court.

The city commission passed the ordinance February 20, effective March 1, providing for a reduction in rates, but because of the restraining order, the proposed rates did not go into effect. It was provided in the order that the company furnish \$25,000 bond to insure rebates to users in case the city should win.

The ordinance would reduce the rates on residence telephones from \$3.25 to \$2.90 per month, business rate from \$7 to \$6 per month and the rate for extension telephones from \$1 to 50 cents per month.

Mutual and Rural Lines Under Authority of Kansas Commission.

Mutual or rural telephone companies in Kansas are under jurisdiction of the public utilities commission, the state supreme court held on February 10.

Hundreds of farm and mutual lines in Kansas had been made exempt from operation of the law creating the utilities commission.

In a suit brought by the commission against the Trego Coöperative Telephone Co. and the Wakeeney Telephone Co., of Wakeeney, the court held that when these mutual lines were connected with a public system, they became utilities and subject to the commission's regulations. No changes in service connections or rates can be made by them without consent of the commission.

Nebraska Maximum Rate Bill Placed on "Waiting List."

The Nebraska house judiciary committee has reported, with a recommendation for indefinite postponement, the Osterman bill which provides for maximum rates only by public utilities and permits the companies to charge any rate below that that it chooses. Mr. Osterman, however, made a successful fight on the floor of the house to rescue the bill from the legislative junkpile, and it is now on the general file for consideration after 130 others have been acted upon.

The plea made by Mr. Osterman that won future consideration for his bill was that this provided the only method of competition in utility rates now open to the people. It was opposed on the ground that when the people adopted the regulatory system in 1907 they deliberately substituted it for competition and have made competition impossible by restricting the existing companies to only such returns as money ordinarily earns in the security market.

Would Not Be Allowed to Discontinue Service for Non-Payment.

A bill was recently introduced into the New York assembly to amend the public service commission law, in relation to discontinuance of service by certain corporations in case of disputed claims, by adding new Section 24-a:

Telephone companies, among others, would not be allowed to discontinue service rendered to a subscriber on account of the failure of such subscriber to pay the charges demanded, if the subscriber disputes the charge upon the ground that it is unreasonable and excessive and offers to pay into the court in an action instituted by the corporation, for the recovery of such charges a reasonable sum in payment for the services rendered.

U. S. Supreme Court Opinion Denying City Right to Intervene.

In the opinion written by Chief Justice Taft in connection with the decision rendered by the United States Supreme Court March 12—rejecting the intervention of New York City in the Bell rate case with the New York Public Service Commission—it was stated that there was no necessity for the city to enter the legal controversy between the commission and the New York Telephone Co. over telephone rates.

Dismissing an appeal by the city of New York and upholding the federal district court in New York City, the supreme court said very plainly that the commission was amply able to represent the public, especially as it had been said there was complete coöperation between the commission, the attorney general and the state, and the city.

The only interest the city had in rates, the Taft opinion added, was as a subscriber, and even in that respect it was



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in a peculiar attitude, for its own telephone rates were settled by a special contract.

Attention was called by the court to the fact that it had already decided in the same way in the case of New York City against the Consolidated Gas Co., and that not long ago it stated in another telephone case that one defendant was all that was necessary.

The opinion cited the case of Englehard, 231 United States 646—an action brought against the city of Louisville, Ky., to restrain the enforcing of an ordinance prescribing telephone rates.

One of the subscribers filed a petition in the district court asking to be made a party defendant. This was denied and the petitioner sought in United States Supreme Court a mandamus to compel the district judge to grant the petition.

It was pressed upon the court that the petitioner had a common interest with other subscribers in the rates under discussion and that under equity rule No. 38, when the question is one of general interest and it is impracticable to bring them all before the court, one may sue or defend for all.

The higher court held that the city was the proper defendant in the suit as the representative of all. The court said:

"It is the universal practice, sustained by authority, that the only mode of judicial relief against unreasonable rates is by suit against the governmental authority which

established them or is charged with the duty of enforcing them."

However, in the New York case, Justice Taft said in the opinion:

"There is nothing in this case to show that the public service commission will not fully and properly represent the subscribers resident in New York City."

Asks Leave to Take Over Thousand Islands (N. Y.) Company.

The Northern New York Telephone Corp., of Plattsburgh, petitioned the New York Public Service Commission on March 16 for authority to acquire the issued and outstanding stock of the Thousand Islands Telephone Co., of Clayton, and to merge the latter company with the Northern New York company.

Authority is also requested to issue \$55,400 in 6½ per cent cumulative preferred stock to be given to the stockholders of the Thousand Islands company in exchange for all of the common stock of the latter company.

Charge Ohio Bell with Extravagance in Dayton Building.

Charges of extravagance in rebuilding the Garfield exchange in Dayton were made against the Ohio Bell Telephone Co., at the hearing held March 9 before the Ohio Public Utilities Commission.

In splitting the business district on the Main and Garfield exchange, the company has shown extravagances which will never

be justified from a service standpoint, was the substance of one point brought out at the hearing.

The split exchange necessitates double equipment, witnesses for the city declared.

G. R. Johnston, one of the engineers employed by the city, testified that the company could increase its revenues by installing four-party lines at a rate of from \$15 to \$24 yearly.

The entire week of April 23 has been set aside to give the telephone company attorneys an opportunity to cross-examine witnesses produced by the city.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

March 5: Application filed by Chesapeake & Potomac Telephone Co. for approval of the acquisition by it of the property formerly operated by the Wellsburg Home Telephone Co. at Wellsburg, W. Va.

March 17: Hearing held in Washington on petition of Pacific Telephone & Telegraph Co. for authority to take over the Willamette Telephone Co., of Dallas, Ore.

CALIFORNIA.

March 12: Petition filed by C. W. and M. A. Forbes, owners of the Manteca Telephone Co., of Manteca, for authority to transfer to the company the plant and equipment used in the operation of the exchange, for 400 shares of the capital stock of the corporation.

The company asks authority to issue 15 shares of its stock of the par value of \$100 a share, to secure funds to purchase a lot and erect a building for the use of

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the company. Authority is also sought to issue 20 shares to finance construction necessary to enlarge the plant and system. The company wants, in addition, to borrow \$8,000 on its note, the funds to be used in meeting the cost of constructing its proposed new building.

March 13: Complaint filed by El Monte Chamber of Commerce, requesting that the Pacific Telephone & Telegraph Co. be required to grant free switching service between the Rosemead district and El Monte, alleging that there is a discrimination in favor of the city of Alhambra, which has free service with the Rosemead district.

ILLINOIS.
March 9: Order entered suspending until June 26 the proposed increased rates in Winchester of the Scott County Telephone Co.

March 20: Hearing held at Springfield in the matter of complaint of H. E. Ogle and others relative to increased rates, toll charges, service and discontinuance of service in Home Telephone Co. in Arenzville and vicinity; also hearing on complaint of C. Bliming and others against the same company, alleging insufficient service, etc., at Concord and vicinity.

March 22: Hearing held at Springfield in the matter of joint application of the Mt. Carroll Mutual Telephone Co., of Mt. Carroll, and Carroll County Independent Telephone Co., of Savanna, for approval of sale by former and purchase by latter of property in Mt. Carroll, for \$16,000; also application of the Carroll County company for authority to issue its first mortgage bonds in the amount of \$90,000.

KANSAS.
January 22: Complaint of the city of Liberal against the Liberal Telephone Co., regarding police-call system, dismissed without prejudice.

January 24: Application of the Lyndon Mutual Telephone Co. for permission to make certain changes in rates and service at Lyndon; dismissed.

January 31: Vermillion Valley Telephone Co. authorized to sell its plant and property in Mill Creek and Vienna townships to the American Telephone Co.

February 2: W. B. Rhodes given permission to sell his telephone plant and property at Lake City—known as the Ranchmen's Telephone Co.—to George H. Lockhart.

February 2: Application of G. H. Lockhart for a certificate of convenience and authority to transact business of a public utility, allowed.

February 19: Authority granted the Olsburg Telephone Co. to sell its plant and property at Olsburg to G. H. Hanson.

February 23: Permission issued to R. E. Young and M. F. McCune to sell their telephone plant and property at Zenda to R. E. Young.

February 23: Application of R. E. Young and M. F. McCune for permission to sell their telephone plant and property at Nashville to M. F. McCune, allowed.

February 23: Application of M. F. McCune of Nashville, for a certificate of convenience and authority to transact the business of a telephone utility, allowed.

February 26: Application of the city of Independence for a reduction of rates for local exchange and rural telephone service, and for the establishment of a fair and reasonable rate for such service; both parties to the above controversy agreed to accept the rates and rules filed with the commission on October 1, 1921, by the Kansas City Long Distance Telephone Co., of Independence, for a period of six months, beginning March 1, 1923, with the



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following change in its collection rules: A discount of 25 cents to be allowed on all residence rates paid on or before the 10th of the month. Allowed.

March 3: Circleville Independent Telephone Co. authorized to sell its plant and property at Circleville to C. Evey.

March 3: Crawford Telephone & Telegraph Co. granted a certificate relating to a proposed issue of its notes secured by mortgage in the amount of \$12,500.

March 5: Application of R. E. Young, of Zenda, for a certificate of convenience and authority to transact the business of a public utility, allowed.

March 7: Application of the United Telephone Co. for a certificate relating to a proposed issue of its preferred stock in the amount of \$19,800, allowed.

March 8: D. S. Forshee and J. A. Metcalf, partners doing business under the name F. & M. Telephone Co., granted a certificate of convenience and authority to transact the business of a public utility at Ullyses and other towns.

March 9: Application of the Cherryvale Telephone Co., of Cherryvale, for a certificate relating to a proposed issue of its preferred stock in the amount of \$45,000, allowed.

MICHIGAN.

March 9: Authority given Tecumseh Telephone Co., of Tecumseh, to increase its business rates 50 cents and its residence rates 25 cents a month.

MINNESOTA.

April 13: Hearing to be held at Mabel on application of the Mabel Telephone Exchange Co. for authority to increase its local and rural switching charges.

NEBRASKA.

March 12: Application filed by Hill Independent Telephone Co. of Niobrara for authority to assess shareholders for maintenance and to deny service to those who refuse to pay.

March 12: Application filed by Nordhous Bros. to require Northwestern Bell to give toll service on farmer lines operated by the Wareham Farmers Telephone Co.

March 12: Application filed by the Hay Springs Telephone Exchange for ruling as to what is proper charge for owners of telephone instruments who secure connection with company lines by being switched by farmers who pay monthly rental charges.

March 13: Complaint filed by A. J. Cook that the Farmers & Merchants Telephone Co., of Regan, is requiring payment of telephone service six months in advance, while refusing at the same time to better service, accompanying demand with the

threat to cut off all who refuse to obey the new rule.

March 13: Application filed by Havana Telephone Co. for a ruling as to whether a person who pays for business service has a right to use the residence telephone of neighbors.

March 14: Application of the Stanton Independent Telephone Co. for permission to destroy ancient records, held to be reasonable and granted.

March 14: Application filed by the Palisade Telephone Co. for permission to issue additional stock to cover the difference in property value between the present issue of \$3,050 and the value of the physical plant.

March 15: Request filed by George McKown, rural subscriber of Northwestern Bell Telephone Co., asking for a ruling as to whether a farmers' mutual company organized to take over the rural lines to which he is attached, can deny him continued service if he refuses to comply with the demand that he buy stock in the mutual company.

NEW YORK.

March 14: Hearing held in Albany on capitalization matters involved in the formation of the Rochester Telephone Corp.; Milo R. Maltbie, of New York City, cross-examined by Mr. Goodwin, representing the company, as to details of the valuation figures which he submitted; testimony of Harry Engh, of Rochester, engineer who prepared the appraisal of the company, also taken; adjournment taken to March 21 at Rochester.

March 16: Application filed by Northern New York Telephone Corp., of Plattsburgh, for authority to acquire stock of Thousand Islands Telephone Co., of Clayton, and to merge the two companies; also to issue stock in exchange for Thousand Island stock.

March 23: Hearing held at Buffalo on complaint of city of Jamestown and Jamestown chamber of commerce as to rates of Jamestown Telephone Corp.

OHIO.

March 9: Hearing held in Columbus on rates of Ohio Bell Telephone Co. for service in Dayton; adjourned to March 21 and 22 at Columbus.

April 23: This week set aside for cross-examination by attorneys for Ohio Bell Telephone Co. of witnesses for the city in the Dayton rate case.

OREGON.

March 15: Hearing resumed at Portland in rate case of Pacific Telephone & Telegraph Co.

PENNSYLVANIA.

March 5: New rate schedule, effective

April 1, filed by Wiconisco Telephone & Telegraph Co., of Elizabethville.

TENNESSEE.

March 22: Hearing held in Nashville on complaint of the town of Kingsport as to the rates of the Intermountain Telephone Co.

WEST VIRGINIA.

March 10: Application filed by Silver Hill Telephone Co., operating in Marshal and Wetzel counties, for authority to increase its rates.

March 30: Hearing to be held at Charleston on petition of Pocahontas Telephone Co., of Marlinton, for increased rates.

WISCONSIN.

March 13: Authority given Freeman Telephone Co., of Ferryville, to place in effect, as of April 1, increased rates.

March 13: Hampden Farmers Telephone Co.—which receives switching service from the Columbus exchange of the Wisconsin Telephone Co.—authorized to increase rate.

March 13: After a rehearing, held on petition of rural subscribers of the Edgerton exchange of the Commonwealth Telephone Co., of Madison, order entered reaffirming former order in favor of the company.

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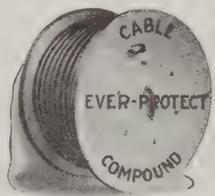
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Telephone companies and other public utilities that have been regulated within an inch of their lives by state commissions have more than once wished that other lines of business might be subjected to the same control. Then those industries would know what it means to have their prices fixed and their business methods strictly defined by an outside authority, and there would be more sympathy for the utilities.

Feeling thus, service corporations will be interested in a movement started in Illinois to have the coal business classed as a public utility and placed for rigid regulation under the jurisdiction of the state commission.

* * * *

A bill has been introduced in the legislature to achieve this purpose. It aims to fix reasonable prices for coal. Furthermore, it provides for the regulation of the mining and shipment, and contains other features calculated to prevent the profiteering and inadequate fuel supply which so frequently cause the public much needless worry and expense.

Probably this bill will not become a law at this session, for it is considered a radical step by many, but it is significant as showing the drift of opinion. Time and again, within the past few years, when the job of supplying the public with coal has been so shamefully bungled, the question has been asked: "Why not prevent coal shortages and extortionate prices by state regulation?"

Coal is as much a public necessity as gas, electric current, telephone service or

CURRENT OPINIONS AND COMMENTS

street railway facilities. If the coal deposits are no longer part and parcel of the public domain, at least the business of distributing coal to the people is plainly a phase of public service.

* * * *

Anyhow, other utilities, which have long worn the state regulation strait jacket, will smile to watch the coal industry fight against being placed under commission control.

They will fight, too, and fight hard, for the coal interests do not want their fat profits regulated out of existence. The "reasonable return" that the telephone, gas, electric and traction companies receive from the rate commission looks pretty small to the coal men.

At that, "what is sauce for the goose is sauce for the gander," and the chances are that commission regulation would straighten many kinks out of the coal situation.

* * * *

And now comes the theory that if people practiced the principles of telephone etiquette, they would be troubled less with "nerves," and they would be healthier and happier. It sounds reasonable, too.

Americans are noted for being an extremely nervous race. We live in a strenuous age, and the speed of our national life is usually blamed for our abrupt manners and lack of poise—not to say, lack of courtesy and consideration for the other fellow. The hurry and slam-bang of modern daily life is held responsible

for our reputation for being a nerve-ragged nation.

Reference was made in last week's issue to the tendency of telephone users to give free rein to this rough curtness while talking over the wire. By way of comparison the quiet, courteous manner of the professional telephone operator was cited as the effective, ideal practice of verbal communication over the line.

It is an interesting coincidence that at this time should come the suggestion that the way to reform this national tendency to rudeness and nervous disregard of politeness is to pattern after the telephone operator.

* * * *

The old proverb said: "Go to the ant, thou sluggard; consider her ways and be wise." The new rule of those who aspire to soothe the frazzled nerves of the modern Yankee is: "Go to the telephone switchboard girl, all ye of irritated nerves; copy her system and you and all your friends will be happier."

It is really a fine tribute to the general public reputation the telephone operator has acquired.

The subject is given serious attention by a special article in the Chicago Tribune which says, "if there is a point on the compass indicating the duality of humans, it would lead direct to the telephone instrument in the hands of a peevish, irritable, bad-tempered person."

As to the psychology of the conversion of an otherwise normal temperament into a "grouch" on picking up a receiver, the writer says it is simply a case of ragged

nerves awaiting an opportunity to explode. It is the logical result of an undisciplined mental state.

* * * *

The suggestion is made that if people generally were to conform to the system prescribed for the telephone operators, there would be such a reduction in the wasting of energy and the giving way to temper as to make this world a much pleasanter place to live in.

Furthermore, if carried into all lines of activity—if applied every hour of the day—the rules and practice of the telephone office would produce a placid frame of mind that would bring peace to shattered nerves and add materially to the mental comfort of everybody.

* * * *

The writer in the Tribune urges the public to repay the courtesy of the operator with equal courtesy and then adds:

"It is not so much in defense of the telephone girl I write this, but to try to point out the folly of a telephone temper, because it uses up energy that, applied to

legitimate things, would incur profit instead of total loss. To prove, further, that, by one's mental attitude in this daily habit of telephone using, you may school yourself to a better self-control in other things as well.

"If we are a nation living upon our nerves, here is a national opportunity to train those nerves. Let the telephone girl herself be your object lesson."

The argument proceeds along the line that the regulations followed by the switchboard operator provide excellent training for better mental poise which every one might adopt with much profit. It means that the telephone user is urged to co-operate with the operator.

By being such a "co-operator," the average person will add to his own efficiency and to his own mental and nervous health. It is a good idea that is worth broadcasting to the public generally.

* * * *

Politicians running for office are noted for indulging in foolish "bunk" to win votes, but for 100 per cent demagogery the

first prize should be awarded to William A. Cunnea, socialist candidate for mayor of Chicago. For proof of this assertion read what he said on the platform:

"If I were elected mayor, I'd take over the traction lines and give you good service. I'd take over the telephone company and give you a rate of one cent for each call. I'd squeeze the water out of street car stock. I'd give you decent gas rates, and I'd give you some low light rates. I'd make this town a real town, decent and fit for honest workers."

Chicago tax-payers who know that they would have to foot the bills of such a radical program do not warm up very much under this ranting, and the candidate, sensing the voters' coldness, added:

"But the solid ivory of the voters in this town prohibits any realization of these plans."

Ivory or not, the voters are at least hard-headed enough not to fall for such a raid on utility rates, knowing full well that wrecked service and increased taxes would be the principal results.

Texas Men Discuss Many Subjects

At Annual Convention of Texas Independent Telephone Association in Dallas Last Week, Legislation, General Business Conditions, Independent Telephony, Public Relations, Financing and Plant Maintenance Topics Were Debated

The 18th annual convention of the Texas Independent Telephone Association, representing 832 independent telephone companies in Texas, was called to order by President R. B. Still at 2 o'clock Wednesday afternoon, March 21, in the Adolphus Roof Gardens, Dallas.

Directors were elected at the closing session on Friday afternoon.

They met immediately following the adjournment of the last session and elected the following officers for the ensuing year:

President, R. B. Still, general manager, Gulf States Telephone Co., Tyler.

Vice-president, F. W. Greber, general manager, West Texas Telephone Co., Brownwood.

Vice-president, John Y. Rust, president San Angelo Telephone Co., San Angelo.

Vice-president, J. B. Earle, the Texas Long Distance Telephone Co., Waco.

Secretary, L. S. Gardner, the Texas Telephone Co., Waco.

Treasurer, J. C. Paxton, Grayson Telephone Co., Sherman.

Wednesday morning was taken up with registration, collection of dues and preliminary arrangements. A directors' meeting, called at one o'clock, was pre-

sided over by President Still. The minutes of the previous meeting were read and approved and other matters taken up.

There were approximately 225 delegates registered and when the convention opened the hall was well filled. After invocation by Rev. C. E. Snowden, rector, Church of the Incarnation, Dallas, an address of welcome was delivered by James J. Collins, city attorney, Dallas.

The response to the address of welcome was made by C. A. Shock, vice-president of the Grayson Telephone Co. Sherman. In his talk Mr. Shock recalled that it was in Dallas that the association was organized, and that there most of its conventions had been held.

The first meeting was held in Dallas on May 10, 1906, and while the conventions had upon a few occasions been held elsewhere, the members had logically turned to Dallas again this year, on account of its better facilities and because it is the Southwestern jobbing center of the independent telephone industry.

President Still's Address.

R. B. Still, president of the association then delivered his annual address, as follows:

You should all be happy as you really

have something to be happy for—you have just come through another session of legislature as sound as when you entered it. You have safely come through a year which at your last annual convention was one of doubt. At our last year's convention we were at a point, probably the turning point—the turn to be taken being almost entirely dependent on Texas crops and prices for 1922. We came out all right on both; consequently out of 1922 better off than when we entered it.

We should really be happy for these things and for the fairly prosperous condition in which most of the telephone companies find themselves now.

The telephone business, after all, is not such a hard one. It is true the profits are not great, but they are sure it's no "get rich quick" game and it is safe when conducted scientifically. More and more it is proven to us that the business must not be conducted in a "helter skelter," "catch-as-catch can" fashion. As a whole, the fraternity is improving; our men, our women are becoming more proficient, more specialized and are each year coming to the conclusion that we have an important work to do—that we are under obligations to efficiently serve.

The fact that the telephone exchange business this day and time is one almost a monopoly, and necessarily so, is the one big reason why we should do everything within our power to give real service to the telephone using public. To be able to do this means that we must have good plants, that they must be properly maintained, and our business conducted along a definite fixed plan that will result in our giving to our patrons that which they should really have—good service and fair treatment.

Texas is dependent upon us to a great extent for the service we have to sell. I say to a great extent because the best available, dependable statistics in the form of the government census of telephones of 1917 indicated that the Independents operated 53.4 per cent of the subscribers' telephones in this great state. There are

whether telephone or some other class, is not responsible for its failure because its hands are tied. Unless such handicap exists I can see only one other reason that should be an excuse for any telephone company not delivering to its patrons a grade of service such as should be supplied.

This reason is the inability of small telephone companies to finance themselves. Probably we do, and probably we do not, know why it is not possible for the small telephone plants to sell bonds or borrow money on their property. It is so easily explained that I will give you the reason:

People who loan money in Texas know nothing of the telephone business. They do not know whether it is hazardous, but they do know that the property is usually scattered over a wide area and that it looks unsafe to loan on such plants.

which loans are made are properly engineered, built and maintained, or otherwise the loans would not be safe either for the lender or the borrower.

Then, if the money is available and it carries with it the requirement that it be properly used, all is well so far; and, as I see it, the only other thing that could stand out as a real need is scientific operation—and you can bet your lives that if real telephone men loan money on your property, they will require proper engineering and construction. These two will almost automatically lead you into more businesslike and scientific management of your property and business.

Unless we do get these three, we will not survive but will be swallowed up from time to time until such a meeting as this one will be impossible because there will not be a corporal's guard of us left. As



The Annual Banquet of the Texas Independent Telephone Association is Always Looked Forward to, for Good Programs Are the Features—E. C. Blomeyer "Starred" as Toastmaster This Year.

3 states in the Union in which, according to this report, the Independents operate more than 50 per cent of the telephones.

It is true that the majority of our subscribers in Texas are in exchanges in small cities, towns and rural districts, but this fact only goes to prove the great obligation that we have to serve. The whole country is dependent upon the small towns, cities and rural districts; so likewise is it dependent upon the owners of telephone plants to serve in these.

The town or city without adequate utility plants, such as telephone and electric, is simply at a disadvantage in development, and will suffer for its lack of them. In some cases there exist situations in which it looks as if cities or towns are attempting commercial suicide by continually harassing their utilities and making it impossible for them to render the service at any growing town must have.

This is usually accomplished by forcing on the utility a rate so low that development and improvement is restricted. Financing improvements in such cases is impossibility—in these cases the utility,

That's a very good reason, looking at it from the money lender's standpoint.

However, the telephone business is really as safe as any under the sun, and there are less failures in it than in most any other business in which you can invest your money. We hear of railroads, banks, factories, mercantile establishments, oil companies and such being in bankruptcy and in receivership, but do we ever hear of a telephone company being in their hands? Rarely ever.

This almost proves that no safer loans could be made than on our property, but if we are ever to make others realize it, we must build a financing machine that will prove the safety to others.

There are three things of paramount need to Independent telephone companies today, and if we do not get them it is our own fault. These three are finance, proper engineering and scientific operation.

My idea is that if we get the first, that one will necessarily bring with it the other two. If money is loaned on telephone property, the lender, if he knows the business, will see to it that plants on

little as you may think of it, right here in Texas during the past ten years, more than 300 Independent telephone companies have expired or been bought up by others better qualified and organized for operating. Still, we have more than 700 companies, little, big, old and young.

The business is worth too much for us to let it crumble. It is only in its infancy and a few years from now the small telephone plant of today, which has been properly conducted, will be a really worthwhile business institution.

Your association strives to work out plans that will help all of you develop—12 months in the year the association is working to the interest of its members. Six district meetings are held each year and the annual convention, drawing together in all more than 700 telephone men and women in strictly business meetings, in which our problems are discussed and plans for our self-improvement are considered and adopted.

Judge G. N. Harrison, president, West Texas Telephone Co. Brownwood, was then introduced and delivered a very interesting address on "The Legislative

Menace." He expressed a doubt as to whether such a thing existed or not.

"If," he said, "we grant that it does exist, we must admit that there is either something wrong with the industry assumed to be menaced or with the reasoning power of the legislators."

Judge Harrison implied the conclusion that he was in agreement with the latter idea, for in a review of much of proposed regulatory legislation of the past he declared that he had found little that would not be destructive of the telephone industry. Fortunately, however, most of what had threatened from this source had not happened. He discussed the Gibson bill, the latest measure, and said that while this suggested law had been borrowed by its proponent from the Missouri law, additional vices had been added to it.

Much of the attitude of legislators toward the industry, he stated, grew out of the assumption that it was a monopoly. He admitted that it is an inescapable monopoly, but the effect of offered legislation would eventually amount to actual management. The legislature should be interested only in securing protection from extortion and inefficient service.

Nathan Adams, vice-president, American Exchange National Bank, Dallas, was the concluding speaker for the afternoon session.

In speaking on the subject of "General Business Conditions" he reviewed business conditions and forecasted what might reasonably be expected in the future. Mr. Adams declared that the greatest problem



L. S. Gardner, of the Texas Telephone Co., Waco, Was Continued as Secretary of the Texas Association.

for the business men of the state to solve is the iniquitous credit system, whereby a crop—cotton in particular—is mortgaged for nine months in the year and then dumped upon the markets of the world to be sold in two months.

"If," declared Mr. Adams, "I had backed a crop in the springtime, before it was even planted, I should show an equal interest in protecting that crop after it is harvested and to be sold."

Only, he said, after some system has been devised for the gradual marketing



R. B. Still, of Tyler, General Manager of Gulf States Telephone Co., Again Heads the Organization.

of crops can prosperity be assured for the South, and particularly for the cotton regions. He asked his hearers to use their influence in changing this condition, and also in bringing about an understanding at Austin that unless there is more economy in spending tax moneys there soon will be nothing to tax. He said the bank he represented paid 18 per cent of its gross earnings last year for taxes. He was especially aroused by the fact that 93 counties in the state draw more money from the state treasury than they put into it.

In conclusion, Mr. Adams predicted that this would be a banner year for cotton and with a crop of even as much as 4,000,000 bales in Texas, the price would be around 25 cents a pound.

At 7:30 o'clock Wednesday evening a dinner was given by the officers and directors of the association to the representatives of the manufacturers and dealers who were members of the association and had exhibits at the convention. The dinner was held in the English Room of the Adolphus Hotel. C. A. Shock, vice-president, Grayson Telephone Co., Sherman, was toastmaster and entertained the guests in his usual jovial manner.

The Thursday morning session was opened promptly at 9:30 o'clock by President R. B. Still. An unusually large number of delegates were in the convention hall when the meeting was opened.

The first speaker was H. M. Cox, vice-

president of the Texas Telephone Co., Waco, who spoke on the subject of "Telephone Management." Mr. Cox, in his talk, touched on the various phases of management of a telephone exchange dealing with modern methods of traffic supervision, accounting and commercial management.

F. B. MacKinnon, president, United States Independent Telephone Association, Chicago, was introduced and spoke on "Independent Telephony." He reviewed the organization and progress of the Independent telephone industry in the United States in his usual interesting manner.

He referred to the work of the national organization in bringing about better working arrangements between the Bell interests and the Independent companies that connect with them. He made a number of suggestions to the Independent people and complimented the Texas association on the splendid conventions they hold and the work they are doing.

Geo. McQuaid, of Dallas, director of the Texas Public Service Information Bureau, talked on "The Work of the State Public Service Bureau." He spoke as follows:

The public utility business is an indispensable ally of business. It is the one prerequisite for community building without which not even a start can be made. It is a necessity in every home where it is available. Its cost is less in proportion to the service afforded than any other item of cost in the home or in industry.



Treasurer J. C. Paxton, of Sherman, Is Another of the Association's Good Boosters.

The interests of the public utility service—of the telephone company, the electric power and light company, the gas company and the street railway company—are identical, in every community where

(Please turn to page 34.)

State vs. Federal Regulation Argued

Conflicts Between Federal and State Regulation of Companies—Facts and Figures Showing Federal Regulation Applied Regardless of Purely Local Character—Paper Presented at Convention of Wisconsin Telephone Association

By Geo. C. Mathews,

Statistician, Railroad Commission of Wisconsin.

State regulation of telephone companies in Wisconsin has been effective for more than 15 years. The growth of telephony during this period is generally familiar to all of you but the actual growth has probably been greater than most people realize.

In twelve years, from 1909 to 1921, the number of telephones in the state as reported to the commission increased from 206,378 in 1909 to 414,345 in 1921. The property and plant of telephone companies during the same period grew from \$14,909,000 to \$37,287,000. The total number of telephone companies of all classes now reporting to the railroad commission is approximately 950.

The growth of the telephone industry throughout the country generally has been comparable with its growth in the state of Wisconsin. The total number of telephone companies or organizations of which record has been obtained in this country is in the neighborhood of 50,000. Something like 65 per cent of all the telephones in the world are reported to be in the United States. The telephone was unknown for a hundred years after the signing of the Declaration of Independence. The development of telephony in this country may be dated approximately from the Philadelphia Exposition of 1876 at which Alexander Graham Bell exhibited a set of telephones.

The problems of state and local regulation, the question of the division of authority between state and federal government, and the question of the extent of authority of the federal government to regulate this industry are based upon provisions of the federal constitution which was adopted between 80 and 90 years before the telephone was heard of.

Extension of Federal Authority.

The telephone business is not the only one over which there has been a gradual but unrelenting extension of federal authority, particularly within the past generation. Despite the fact that the state governments have quite generally resisted the extension of federal jurisdiction, the same people who in smaller groups make up the individual states, through their representatives in Congress have enacted legislation taking the powers away from the states.

In one form of government organization people cry out against the centralization of authority in Washington and in another form they sanction its extension.

Unless there is a decided change in the tendencies of government in the United States, further centralization and further curtailment of state authority are inevitable, and more academic criticism of the theory and practice of federal centralization is only a waste of effort. The only means of effectively turning back the tide of federal encroachment and centralization is a legislative one.

Relief Through Legislation.

It accomplishes no purpose as a general thing to show to federal administrative agencies that the acts which command them to do certain things are fallacious in theory or cumbersome in actual operation. An administrative agency is merely an administrative agency. In its proper sphere it does only what the law commands it to do, and the federal administrative department can no more do its duty and at the same time fail to carry out the dictates of the statute under which it was created than the Railroad Commission of Wisconsin, for example, could do its duty without attempting to administer the public utilities law.

Relief from improper legislation cannot come by urging administrative authorities to do anything more or less than the law says that they should do. Relief must come, if at all, through changes in legislation, and whether there will be changes in the tendency of federal legislation, which now is drifting in the direction of centralization, will depend upon the public interest developed and expressed.

Had Only Delegated Power.

We are all familiar with the conditions out of which our federal government developed. Under the Articles of Confederation such central government as we had merely represented a greater or less degree of co-operative effort among a number of individual nations. At the time the Constitution was adopted the only existing bodies which had any power to form a central government were the individual states and the only powers which federal government could have were such powers as the states delegated to it.

The federal government could no more have or exercise other powers than a League of Nations, for example, could have powers not delegated to it by the component countries. Such was unquestionably the theory on which our national government was created and, to a considerable extent, practice and theory coincided for a long period of time. In case

of conflict between states and federal power it was always considered important to determine what powers the states had actually conferred upon the federal government.

The forces of evolution have, however, been at work in the relations between the states and the federal government, and the United States Supreme Court is the final authority in interpreting the provisions of the Constitution. Between the preservation of all the rights which the states reserved at the time of the formation of the national government and the assertion of the powers of the federal government to a degree sufficient to permit it to function properly, it has been difficult to strike a proper balance. The tendency seems to have been to interpret more liberally the grant of powers to the federal government until in some cases there can be no question that present powers go far beyond those contemplated by the framers of the Constitution.

Exercising More Power.

Part of the present conflict between state and federal authority has developed from this tendency in the interpretation of the extent of delegated powers. Part of it also has undoubtedly come from the fact that the exercise by the federal government of powers which were granted to it is becoming more and more complete. Even in many cases where there could be no question as to the federal government's possessing certain powers, those powers were not exercised during the earlier years of our history.

The general principle was that until the federal government undertook to exercise its powers in matters such as those of regulation, state authorities had the right to act. When the federal government by regulatory statute expressed its intention to exercise its delegated powers, that act necessarily conflicted to some extent with what the states had been doing, and the conflict was made more serious by what many people considered an unnecessary and unwarranted extension of federal jurisdiction far beyond anything necessary to accomplish its real purpose.

We have seen within the past few years the extension of the right of the Interstate Commerce Commission to interfere in matters of intrastate railroad rates to prevent discrimination against interstate traffic and to prevent the burdening of that traffic with losses in state service. For a great many years any such procedure

would have been considered an unwarranted violation of states' rights but the change in temper of the country as manifested in congressional action undoubtedly sustains the present procedure.

Federal control of telephone companies is based on the fact that some telephone business is interstate business, and that the federal government ought to regulate that business. Certain types of telephone service, such as a large part of the business conducted directly by the American Telephone & Telegraph Co., and some of the business done by Independent companies located near state border lines, is as properly subject to federal regulation as is the direct interstate shipment of goods. Telephone men as a class and the public generally would not favor the relinquishment of federal jurisdiction over this business nor the passage of a law which would deny the right to regulate interstate rates.

Interpretation of Federal Law.

Between this and the present form of federal regulation, however, there is a vast difference. The federal law has been interpreted to mean that any company which originates or terminates interstate messages—which, of course, means every company giving a real commercial telephone service—is an interstate company and is subject to control by the Interstate Commerce Commission.

There are interstate telephone companies in Wisconsin which do not derive enough revenue from interstate traffic to pay for the clerical time required to make out their reports to the federal government. So far the Interstate Commerce Commission has not attempted to fix local rates of these companies, but if the business of those companies is an interstate business, or if the failure to maintain proper local rates could be construed as a discrimination against interstate business, there is no telling at what point the power of the federal government to fix local rates may be asserted.

The fixing of local rates for the Independent telephone companies in Wisconsin by the federal government may strike you as ridiculous, but it is no more lacking in justification than is the fixing of the accounting standard for those companies, nor the provision which they must make for depreciation.

Revenues of Wisconsin Companies.

The secretary of your association has furnished me with figures for 53 companies operating in Wisconsin which show how much of the interstate toll revenue was retained by those companies. These 53 companies have revenues from all sources slightly in excess of \$1,150,000. Their proportion of interstate revenues, based on figures for one month which were completely analyzed, amounts to about \$11,000, or slightly less than 1 per cent of their total revenue.

Ninety-nine per cent of their revenue is derived from sources which have no

connection whatever with interstate business—and yet the federal government has already prescribed in detail the accounting classification which telephone companies in Wisconsin must use and it is now prepared to establish the provision which those companies must make for depreciation.

The effect of this upon the telephone companies is to subject you to regulation by a body which up to the present has nothing whatever to do with your rates, your service, or with the organization of your companies. The effect upon state administration is to deprive the state of all control over two of the most essential powers of a regulatory body—that is, the power to specify the classification of accounts which shall be kept and to specify the provision for depreciation which a company shall keep as part of its accounting system. Whether or not it would prevent the state from using some other provision for depreciation in a rate case I am not certain.

When the Interstate Commerce Commission got out its tentative classification for Class C telephone companies, a brief was presented on behalf of the Railroad Commission of Wisconsin calling attention to defects in that classification which we considered vital. No result whatever was secured from filing this brief. In no detail was any recognition given in the classification to the views which the Wisconsin commission expressed. Only recently we were told very plainly by the accounting section of the Interstate Commerce Commission that the Wisconsin commission has no authority to specify any accounting procedure differing in any way from the principles laid down in the classification, without first securing consent from the Interstate Commerce Commission.

If the reports which the Interstate Commerce Commission secures served any useful purpose in the regulation of telephone utilities, there would be less occasion to protest against the present system, but so far as I can see there is no possible use that can be made of most of these reports in connection with any function now exercised by that commission. If they serve any purpose it must be some anticipated future purpose, such as the fixing of intrastate rates, or else the federal government is compelling telephone companies to report when their reporting can satisfy no motive other than that of idle curiosity.

Basis of Toll Rates.

So far as I know, no telephone toll rate of any consequence in this country has ever been established on such a basis that it would carry more than the cost from toll board to toll board. None of these rates—at least certainly none of the general interstate toll schedules—is designed to provide a return upon exchange equipment beyond the toll switchboard. If a case were to come before the Interstate Commerce Commission for the fixing of

interstate rates it would come before it, in so far as affects Wisconsin, upon the application of the American Telephone & Telegraph Co., or upon complaint against that company, except in a very few instances where local companies have lines reaching into other states.

Purpose of Reports to I. C. C.

It is difficult to see what purpose would be served by the Interstate Commerce Commission having reports of all the activities of the telephone companies in this state when those telephone companies for the most part would not be parties to an interstate toll case. The rates to be fixed, except in those cases where some joint line operation is involved, would be the rates of the American Telephone & Telegraph Co. They would not be the rates of the local company which does nothing but originate or terminate the call and make the collection.

How ridiculous it seems then that the accounting procedure, the establishment of which is a vital part of the regulatory powers of the state, should be prescribed by the federal government which does not regulate the companies whose procedure it prescribes. How ridiculous also that the provision which a local Wisconsin company shall make for depreciation shall be prescribed by the Interstate Commerce Commission when the toll rates, which are the only rates involving interstate traffic, are not fixed on a basis to return anything to the local company for depreciation, except possibly a depreciation on its toll switchboard.

So far as the establishment of the classification of accounts is concerned, we have made our case before the Interstate Commerce Commission and failed completely. Now the Interstate Commerce Commission proposes to fix the provision for depreciation of all telephone companies reporting to it. It is of interest to note, however, that out of something like 50,000 telephone companies in the country, the circular which the Interstate Commerce Commission has issued relative to its tentative rules for depreciation states that there were 1,120 telephone companies reporting to the commission in 1921. The majority of the 50,000 companies are just as truly engaged in interstate commerce as are most of the 1,120 which reported to the commission.

Unable to Carry Out Work

The commission has been absolutely unable to administer a classification of accounts or a system of reports which would carry its construction of its powers under the transportation act to the logical extreme. If the commission has power to excuse 95 per cent of the telephone companies in this country from reporting what reason is there why other companies such as most of the Class C companies in Wisconsin, cannot be excused? One class of them is as much engaged in interstate business as the other, or perhaps it should

be put in a different way—that the interstate business of one class is as insignificant as that of the other.

Nevertheless, unless I am very much mistaken as to the intent of the Interstate Commerce Commission, that commission will proceed to prescribe the amounts which may be and must be provided for depreciation by every telephone company in Wisconsin, which under a forced construction of the act, is required to report to the Interstate Commerce Commission, although with toll rates made up on the basis now prevailing the local company is to all intents and purposes simply an agent of the toll line company. The needs of state regulation have been ignored to the extent that the state cannot prescribe any detail of accounting procedure.

Provision for Depreciation.

In a general way the provision for depreciation on telephone properties such as yours has in many cases been taken as requiring from one-seventh to one-fifth of your total revenues. If that provision is to be fixed by the Interstate Commerce Commission, the body which regulates your rates, which is the Railroad Commission of Wisconsin, will have no authority to say either that the provision which is fixed by the federal government is too low or that it is too high. Any right to use its judgment on items requiring from one-seventh to one-fifth of your total revenues is denied to the state commission and in the end to yourself also.

Correction of these conditions, unless the Interstate Commerce Commission will change its supreme ruling, must probably be a legislative correction. It is very doubtful whether the Interstate Commerce Commission would adopt any administrative ruling which would mean letting go of any of the companies from which it now requires reports.

However, the matter of fixing the provision to be made for depreciation is still in the administration stage. The final ruling of the Interstate Commerce Commission has not been issued, and every effort should be made to put the views of this association and of the Wisconsin commission before that body. From your point of view it is perhaps unfortunate that in the main your views do not coincide with those of the United States Independent Telephone Association but acquiescence in the principle and practice of federal control of provision for depreciation by that body I believe will not mean acquiescence on the part of your association.

Depreciation Charges.

To come to the details of the proposed ruling of the Interstate Commerce Commission, there are a number of things aside from the general proposal to fix rates of depreciation which can be criticised, although if one were prepared to accept the principle that the Interstate

Commerce Commission should fix these rates, there is in some particulars merit in the report of the depreciation section.

The tentative report proposes that the cost of removal should not be concluded as a charge against the depreciation reserve. Charging the cost of removal against the depreciation reserve is almost uniform public utility practice. It appears to have been favored by the Bell system and by the United States Independent Telephone Association.

A Serious Objection.

There is no sufficient showing in the report of the depreciation section of why this principle is abandoned. The property to be removed was used up in the service of people who were subscribers during the useful life of that property. It seems only reasonable that the cost of removing that property as nearly as it can be determined should be provided for in the depreciative reserve.

Another serious objection to the tentative report is that it proposes to make compulsory the provision for depreciation as an operating expense, regardless of the financial condition of the company. The Wisconsin public utility law contemplates that provision for depreciation shall be made compulsory only where it may reasonably be required.

To compel a company, regardless of its financial condition, to set up on its books an operating expense to provide for depreciation would in many cases seriously impair the credit of companies which are fundamentally sound and in some cases would probably result in receiverships which could be avoided by the exercise of reasonable discretion by the regulatory body.

The tentative report also contemplates that losses due to sleet storms should not be charged against the depreciation reserve, although it recognizes that provision for such storms should properly be made through some other account. The difficulty with this is that while that property was in service provision was made for its retirement for other causes than storm loss, through the depreciation reserve. If that property is retired because of storm damage, the depreciation reserve, which it is proposed to establish will have provided for part of its loss and in some cases for all.

The reason given for not charging such losses against the depreciation reserve is that the life of the property is subject to abrupt termination, but there is no gradual process of depreciation in connection with such happenings.

In this connection it should be noted that both the United States Independent Telephone Association and the Bell system called the attention of the Interstate Commerce Commission to the fact that relatively little telephone property is actually worn out in service; that elements, such as inadequacy, obsolescence, and municipal

requirement, are often the elements which make it necessary to retire property. It seems to me that in the case of municipal requirement or obsolescence of inadequacy—all of which the tentative report considers should be provided for by the creation of a depreciation reserve—there are conditions strictly analogous to those resulting from storm losses.

Municipal requirement is just as likely to require a change when that change has not been brought about by gradual wear and tear as in a sleet storm, and the same holds true of inadequacy and obsolescence. If the depreciation reserve is to provide for losses due to inadequacy and obsolescence and municipal requirement, it should also provide for losses due to storm damage, and I believe that all of these losses should properly be provided for through the depreciation reserve.

The Sinking Fund Method.

The tentative report criticises the sinking fund method of providing for depreciation and recommends the adoption of a straight-line method. The criticism of the sinking fund method in my opinion is unsound since the report states that the application of the sinking fund method "requires that the annual allowances shall be actually set aside in a special fund or invested in approved securities which with interest compounded shall during the life of the depreciating property accumulate a sum equal to the service value." We have public utilities in Wisconsin which are making their provision for depreciation on a sinking fund basis where the fund is not held or invested in securities but where it is reinvested in property.

All that is necessary with proper application of the sinking fund basis is that the interest credit be heard upon the amount of the reserve account regardless of whether the money has been placed in the property or is otherwise held. There are cases in which provision for depreciation for retirement losses on a sinking fund basis is economical, proper, and simple of administration and the definite and rigid rule that only a straight line basis can be followed is restrictive and unnecessary.

The proposal in the tentative report to require companies to make separate provision for depreciation on each class of property is unnecessary and is impossible of administration. Even if the Interstate Commerce Commission requires no company smaller than those in Class C to report to it, we think there can be no question that the attempt to enforce a provision for depreciation based upon each class of property separately will be a failure. The Interstate Commerce Commission has apparently not yet reached the point in its experience with telephone companies where it realizes the limitations upon the administration of accounting requirements.

Class Separation of Property.

Furthermore, it seems to me that even if the provision for depreciation could be

separated by classes of property, as it can be for some companies, a requirement that it should be so separated serves no useful purpose whatever. If we knew that the life of telephone property was to be a definite period of years, and if the provision for depreciation could be determined in advance with perfect accuracy, there might be something to commend the proposed procedure, but we do not know what the life of telephone property is going to be during the next 15, 20, or 30 years.

We have had enough experience to indicate that the lives, which were assumed in valuations made 10 to 12 years ago were very far from correct but we still do not know what the real life will be. That being the case, all that any means of providing for depreciation can be is a cut-and-dried method subject to adjustment from time to time, and all that is accomplished by attempting to require companies to separate their provisions for depreciation according to classes of property is to entail upon them a certain amount of accounting work that accomplishes no purpose whatever. It merely serves to give an appearance of great exactness to what is only a guess.

The purpose of the provision for depreciation as set out in the tentative report of the depreciation section "is to reserve from free surplus the expired service value of the property and provide in the assets amounts adequate to cover the investment in the property at the time of its retirement. . . ."

As I read this, it means that there must always be in the depreciation reserve an amount sufficient to represent on a straight-line basis the product of the expired life of the property multiplied by the estimated annual requirement. Nevertheless, unless I have misunderstood the method which it is proposed to have the companies use, that method will not provide such a reserve as is referred to above.

The provision for such reserve is to be based upon the ratio of retirements for a period of years past to the average investment in the class of property concerned. If a reserve is to be built up along the lines indicated in the report, it must be recognized that the average retirements over a period of years in a rapidly growing telephone property do not ordinarily bear such a ratio to the average investment in the class of property concerned as would be required to build up that reserve.

Whether or not such a reserve should be built up is another question which would require a long discussion in itself. However, it should be said that the new classifications of accounts for gas and electric corporations prescribed by the National Association of Railway & Utilities Commissioners do not contemplate that a reserve must be built up on any such basis. We have a situation in Wisconsin which I have in mind where a telephone company has built up a reserve strictly on life esti-

mates and now has something like 65 per cent or 70 per cent of its property represented in depreciation reserve although the property is still in fair condition.

Provision for depreciation under a rigid rule which contemplates in its proper application that there must always be a reserve proportionate to the expired life of the property is likely to be uneconomical and to provide reserves in excess of actual requirements. The more logical procedure in the matter of making a requirement for depreciation would be to leave the matter in the first instance to the utilities involved subject to review and correction by a regulatory body which has some purpose in view in making regulations regarding depreciation and not to have them fixed rigidly by a body which has no purpose to be served by them.

Hearing on this matter of the provision for depreciation is set for May 1 at Washington and I anticipate that both your association and the Wisconsin commission will be represented at that time. However, it seems to me that a more direct course of action should be taken in that efforts should be made to have the law, which makes possible the present ridiculous condition of affairs, modified to correct this condition.

A Letter and Reply Regarding Illinois 8-Hour Law.

In reply to the letter published in last week's issue, written by the telephone operator opposing the proposed Illinois 8-hour bill, Mrs. Lottie Holman O'Neill, member of the Illinois legislature, has made the following reply under date of March 15:

Mrs. J. S. Goldsmith,
569 N. Broad Street,
Galesburg, Illinois.

My dear Mrs. Goldsmith:

I have yours of March 1 relative to the eight-hour bill. I thank you for your friendly and frank discussion of this bill. My position regarding it is this: I believe that all such legislation is a step in the right direction. I realize that there is no law on our books that has the unanimous approval of all the people. I have letters from other sources that many factory girls are being cruelly exploited by greedy employers in the state of Illinois. It is for the protection of such that this bill was drawn. I believe that you will agree with me that the telephone girls have less to lose than the factory girls have to gain, and I ask you to give the matter consideration from the angle here presented before you oppose the bill.

The state of Illinois has been very generous to its big corporations. It seems to be entirely out of order for such favored groups to oppose legislation for the benefit of the people on the part of the state, such as the regulation of hours and effort to obtain for the workers a fair share of the earnings of the company. All the good that you receive from the company has come to you through the activities of people of the same type who are promoting and encouraging the passage of the eight-hour bill for women.

It is unbelievable that a working woman who understands fully the far-reaching effects of such bills as this would oppose

it and I believe, if you understand the bill as well as I do, you would agree with me that it is proper for me to continue in its defense. Will you show this letter to the other girls in your exchange who have written me, as it is impossible for me to reply to all of these letters.

Mrs. Goldsmith under date of March 26 replied to this letter of Mrs. O'Neill as follows:

My dear Mrs. O'Neill:

Yours of March 15 at hand. After deliberate consideration of your suggestion concerning the advisability of the proposed "Eight-Hour Law for Female Employees" my opinion remains unchanged. All the allusions to prevailing conditions do not apply to our situation in any way.

The eight-hour law is not a help to any telephone or telegraph operator. Our work is vastly different from that at any factory. The surroundings are more pleasant and sanitary in every way. After spending three consecutive years in the telephone work, I feel that I have a thorough knowledge of the working conditions prevailing in a telephone exchange.

Have you ever visited a telephone exchange to become thoroughly familiar with all situations which exist in one? If it is possible for you to arrange to visit our local exchange, you will be able to see for yourself why we maintain our opposition to the eight-hour law. There is absolutely no comparison between the conditions in our exchange and those in any factory.

It has been the endeavor of the officials of our company to better the working conditions for the operators. During the past five years the company has only required eight hours' duty during 24 hours and, with some evening operators, only 7½ hours. No outside influence brought about this. It was a voluntary movement on behalf of the company.

Why must telephone operators be included in the proposed law? It is agreed that factory conditions should be improved but how can the proposed law benefit us? It is against the rule of our company to work more than eight hours, except in cases of emergency, such as sickness, accident, fire and flood. Why do we need an eight-hour law?

The strict enforcement of the proposed law would seriously jeopardize the service rendered the public. Our duty is to serve the public at any and all times, rapidly and accurately. If we are compelled to cease our work for the day at the expiration of eight hours, it will be impossible to give the required service. An extra 15 or 30 minutes on duty may mean life or death or thousands of dollars to someone but adds little to the work of the operator, who is ever willing to meet this demand and for which she is amply compensated by the company.

Please do not misconstrue my meaning. An operator is *never* required to remain on duty a period of overtime; in other words, not longer than eight hours, except in cases of emergency, such as are mentioned above.

When proposing the new law, why were not female domestic employees included? If the working conditions of any female employees need adjustment it is those of household servants. Why should the public and telephone operators and other female employees lose that factory girls may gain. Allow the new law to include only those who gain.

The proposition is not fair to the women of the United States. Give your close attention and serious consideration to all facts of our situation.

Operating Costs at Indiana Hearing

Detailed Comparison of LaCrosse, Wis., and Muncie, Ind., Operating Costs Continues to Absorb Attention at Indiana Bell Hearings—Comparison Also Made with Chicago Construction Work Costs—Arguments to Be Heard Soon

The Indiana Bell Telephone Co. consolidated rate case, which has been before the Indiana Public Service Commission several weeks, will be argued orally April 18 and 19, under a tentative agreement reached last week when the hearing adjourned until the middle of this week when additional testimony was heard. Nearly all the evidence is completed, but it is understood that two or three exhibits affecting the question of whether the operating expenses of the Indiana Bell are unreasonably high in view of the service will be introduced.

At the hearing last week what has come to be known as the LaCrosse-Muncie problem bobbed up again. It involves the question of operating expenses, and particularly the question of whether traffic expenses of the Bell plant at Muncie could be cut down radically if switchboard features in use at LaCrosse, Wis., were put on the Muncie switchboard.

The witnesses of both the Indiana Bell and the commission agreed that the LaCrosse switchboard enables an operator to handle more calls, and reduce the number of operators and traffic expenses. But they disagreed as to how much saving could be effected. Witnesses on both sides visited LaCrosse and brought back various figures and made various calculations as to what Muncie could do in the way of cutting traffic expenses.

In a general way, the Indiana Bell witnesses took the position that while a saving in traffic expenses could be effected, it would not be nearly as large as the commission witnesses estimated, and that the saving in traffic expenses would be more than offset by new capital required to change the Muncie switchboard. The Bell witnesses said it would not "prove in."

The commission witnesses calculated a saving in expense of exchange operators at Muncie of about 50 per cent.

Fascination in Figuring Costs.

Scores of calculations on scores of bases were made pro and con. The arithmetical phases of the problem seemed to have a fascination for the lawyers and the commission as well as for the witnesses, for very frequently the lawyers and members of the commission would take their pencils and make calculations.

When a witness for one side submitted a calculation or a "study," as the experts call it, the lawyers on the other side, aided more or less by experts sitting near, proceeded to the best of their ability to knock the "study" into a cocked hat. Sundry flaws were found by both sides.

R. S. Bailey, equipment engineer of the

A. T. & T. Co. who testified on the LaCrosse-Muncie problem some time ago and who was on the witness stand Tuesday afternoon, evidently had just returned from another visit to LaCrosse. He offered in evidence work sheets prepared by employees on the company at LaCrosse showing a monthly saving in traffic expenses of operators of \$601 a month or \$7,200 a year, as compared with expenses before the feature switchboard was used.

Calls Per Operator at La Crosse.

He said the number of calls an hour handled by an operator at LaCrosse has been 435 for the main part of the day, but the management at LaCrosse had found the number too high for the best service and was arranging to reduce the load to 400 calls an hour. A letter from an official of the LaCrosse company was put in evidence to show this.

His evidence seemed to be somewhat of a blow to the position of commission witnesses that a 50 per cent saving could be effected in traffic costs at Muncie with the use of the LaCrosse switchboard features, inasmuch as the total cost of operators a year at LaCrosse is now about \$36,000, while the work sheet exhibit showed savings by the use of the switchboard at LaCrosse about \$7,200 a year.

Commissioner Glenn Van Auken then did some figuring. He considered the operator costs, the number of subscriber stations in LaCrosse, the calling rate a day of the average telephone patron, and other factors and reached the conclusion that the traffic operator expense a station in LaCrosse is \$3.03 a year as against a cost of \$6.67 at Muncie.

He asked Mr. Bailey how he would account for the difference in cost a station at LaCrosse and Muncie. Mr. Bailey said the number of operators, the number of calls a station a day and the comparative number of rural subscribers would be factors in accounting for it. It was brought out that Muncie has many more rural subscribers than LaCrosse and that it takes more time to handle a rural call.

A good deal of the evidence already introduced for the commission goes to show that Bell operating costs are higher than operating costs of Independents, and the LaCrosse-Muncie evidence, it appears, tends to establish it, whether or not the commission reaches the conclusion that traffic expenses at Muncie could be cut practically in two.

Frank B. Faris, of counsel for the commission, in cross-examining Mr. Bailey, brought out that LaCrosse has more subscribers than before the feature switch-

board was put in and that the calling rate is higher now.

John R. Turner, Chicago, appraisal engineer for the Illinois Bell Telephone Co. and witness for the Indiana Bell testified on the book costs of construction work of the Chicago division of the Illinois Bell from August, 1911 to July 31, 1919, and also gave index cost figures for the Chicago plant from 1911 to the end of 1921.

In effect, his testimony was that cost of construction for 1920 and 1921 was a little more than twice as much as in 1911, as shown by actual expenditures taken from the books of the Chicago division. At the end of 1921, he thought, the cost of construction was about 180, or 80 per cent higher than in 1911, and he gave it as his opinion that 180 would about hold good up to the present.

Commissioner Van Auken asked what reproduction costs would be on the basis of a ten-year average for 1912-1921. Mr. Turner said they would be about 75 per cent of the reproduction costs of the end of 1921. That would make reproduction costs on the ten-year basis about 135 or 75 per cent of 180. Mr. Turner said reproduction costs for a ten-year period ending with 1922 would be somewhat higher than for the ten-year period ending with 1921.

Construction and Operating Costs.

Commissioner Van Auken asked about the item of wages in Chicago as they affect construction costs. It has been asserted at the hearing that Chicago labor costs are a good deal higher than Indiana labor costs. Mr. Turner had not separated labor costs from other costs in the exhibits he had prepared, which were introduced in evidence. He said the Landis award in a Chicago labor dispute lowered labor costs the latter part of 1921.

Frank B. Faris, of counsel for the commission, brought out in the cross-examination of Mr. Turner that the percentage of aerial cable and pole lines is being reduced in Chicago, and the percentage of underground cable and conduit is being increased. Mr. Faris' purpose apparently was to show that more recent telephone construction is largely of a permanent character and hence telephone property does not depreciate as rapidly as formerly. This would have a bearing on the question of what rate of depreciation should be allowed as an addition to operating expenses.

Thomas R. Keyes, general auditor of the Indiana Bell, testified that the net total exchange operator's payroll for Muncie in 1922 was \$48,429.41. This figure was evidently presented to show that the figure of \$56,000 used by J. K. Johnston, expert

witness for the commission, was incorrect.

The book cost of plant and equipment a subscriber station of the Indiana Bell, excluding Indianapolis and South Bend, Mishawaka, and excluding outside toll plant, is \$105.12 as against a book cost of 12 Independent companies and one controlled company of \$92.49 a station, it was shown by an exhibit prepared by Mr. Keyes. For the Indiana Bell, excluding toll plant outside local exchange areas, the book cost was \$143.33 a station.

Interstate Commerce Commission's Regulations on Depreciation.

The United States Independent Telephone Association has sent its member companies a copy of Interstate Commerce Commission order No. 14,700 containing proposed regulations regarding depreciation procedure, and calling a hearing for May 1 in Washington, at which the companies will have opportunity to express their opinion of the proposed procedure.

In a letter to the companies, President

MacKinnon states that the association will be prepared to represent its members at the hearing in Washington on May 1. He asks that in order to do so with a clear idea of the attitude of the association members, they communicate with the Chicago office of the association at 19 South La Salle Street, and tell what they think about the procedure the commission proposes to put into effect. They are urged to give careful study and thought to the commission's order on depreciation.

Suggestions of the Radio Conference

Recommend Opening Up New Band of Waves from 222 to 545 Meters and Assignment of Wave Lengths, to Be Divided into Two Classes—Urge Extending the Field of Amateur Activity—Provisions for Use of Radio by Ships

Called by Secretary Hoover to deal with the problems presented by the enormous increase in the use of radio telephony, the Second National Radio Communication Conference opened its sessions in Washington March 20 and closed the meeting March 24 with announcement of its recommendations to Secretary of Commerce Hoover.

These it was said by Secretary Hoover on March 27 will be approved and transmitted to other departments of the government concerned. It is certain, Secretary Hoover stated, that the recommendations will be accepted by the government and by all classes of radio users.

It was recommended that the interference experienced by broadcasters and listeners be relieved by the opening up of a new wide band of waves by the government and a new assignment of individual wave lengths to broadcasting stations. This is made possible by the opening up of what was previously government-reserved waves, and the shifting of certain ship waves out of the broadcasting wave bands. The Department of Commerce, acting under its present authority, will be able to establish and enforce the new regulations, and thus bring order in the radio world.

A feature of the opening session was the promise by every interest represented of its cooperation in the endeavor to clear up the present aerial chaos. Representatives of government departments, manufacturing plants, broadcasting stations and amateurs all expressed willingness to enter into any plan that would relieve the existing clashes. The speakers were generally in favor of accepting a suggestion of Secretary Hoover that some wave lengths between 600 and 1,600 meters be turned over to the public by the government.

On March 21 J. C. Rosenthal, of New York, appearing for the Society of Authors, Composers and Publishers of America, told the conference that broadcasting stations throughout the country, unless they paid royalties to the writers of songs and other music used in the aerial programs, would be prosecuted

under the copyright law. He asked the government to refuse licenses to stations which would not comply with the demand for royalties.

The general radio committee appointed by Secretary Hoover took the request under consideration when it went into executive session after the public hearing was closed.

Part of the hearing on March 21 was taken up by a discussion between W. C. Haddock, representing the Wanamaker store in Philadelphia, and Leo Fitzgerald of the Kansas City Star over the composition of broadcasting programs. Mr. Haddock said that it was "silly twaddle" to telephone out to the country at large letters saying that Bobby Jones' teacher commended him for being on time at school.

Boiled down, the important recommendations of the conference are these:

Previously all broadcasting was concentrated on three wave lengths—360, 400, and 485 meters. Now a new field extending from 222 meters to 545 meters can be created for the purpose. Within that field stations can be assigned individual wave lengths and divided into two classes. The higher power Class A stations corresponding to the present Class B stations can use the wave lengths between 288 meters and 545 meters, while lower powered stations (new Class B stations) can use the waves from 222 to 286.

This will enable the higher power stations distributed in 50 localities and comprehensively covering the United States, to be within the reach of every listener. Suitable wave lengths are provided in the recommendations for the more than 500 existing lower power stations.

The report urges that the field of amateur activity be extended by allotting a band extending from 150 meters to 222 meters in place of the waves up to 200 meters now used. The band from 200 to 222 meters can be reserved for high grade continuous wave telegraph transmitting stations operating under special license. Technical and training school licenses can also occupy this band. The report con-

finer spark amateur radio telegraph stations to the band 175 meters to 200 meters.

It also includes the provision that ships using 450 meter waves keep silent between 7 and 11 p. m. and, as soon as possible, readjust their equipment for transmission on wave lengths above 600 meters.

Provision is made in the recommendations for a new field of ship telephone service, enabling persons on shore to talk to those aboard ship. This can be carried out on waves far above broadcasting waves, so that no interference can result.

The reading of telegrams or letters by broadcasting stations should be permitted, says the report, so long as the signer is not addressed in person and so long as the text matter is of general interest.

Another recommendation is that simultaneous rebroadcasting be permitted as a service only on a broadcasting wave length, and with the authorization of the original broadcaster and of the Department of Commerce.

The new regulations recommended are based on a plan submitted by the radio inspectors of the Department of Commerce, and include elements from other plans submitted by the radio section of the Associated Manufacturers of Electrical Supplies, the National Radio Chamber of Commerce, the Institute of Radio Engineers, and the American newspaper broadcasting stations and several other groups.

It is the unanimous opinion of the conference that the Secretary of Commerce in licensing stations has the authority, under the present law, to regulate hours and wave lengths of operation of stations, and to revoke or withhold licenses of stations when such action is necessary to prevent interference detrimental to the public good.

The committee also urged that the fullest cooperation be given by those who operate broadcasting stations and by the public with the Department of Commerce in the cooperative adjustment of local broadcasting problems in order to realize the fullest possibilities of the recommendations outlined.

Wisconsin's Good State Convention

Annual Meeting of State Organization Held in Milwaukee Last Week Had Many Good Features—Agitation for Legislation to Remove Companies from Federal Regulation—Finance, Public Relations, and Service Given Attention

By Stanley R. Edwards

The 14th annual convention of Wisconsin State Telephone Association, held at the Wisconsin Hotel, Milwaukee, March 21, 22 and 23, was one of the best meetings the association has had. Despite heavy snow due to storms a few days previous to the meeting, the attendance was good.

All sessions were unusually well attended and keen interest was evidenced in every address which was generally followed by a lively discussion.

At the election of directors on Thursday afternoon those whose terms had expired were re-elected. They are: Walter J. Gallon, of Antigo; J. A. Pratt, of Madison and W. F. Goodrich, of La Crosse.

At the organization of the board of directors held Thursday evening, H. A. Price, of Markesan, was selected as president; Arthur Taylor, of Rhinelander, vice-president; W. F. Goodrich, of La Crosse, Treasurer; and J. A. Pratt, of Madison, secretary.

Immediately after calling the convention to order on Wednesday afternoon, President Arthur Taylor, of Rhinelander, introduced ex-Governor E. L. Philipp, president of the Milwaukee Association of Commerce, who briefly extended a welcome to the city.

Declaring this to be the age of great invention he outlined the growth of transportation beginning with the reindeer as being selected as the speediest transportation when pictured as conveying Santa Claus on his journeys. The reindeer was displaced by the horse and then the steam engine came—and now the telephone is eliminating travel.

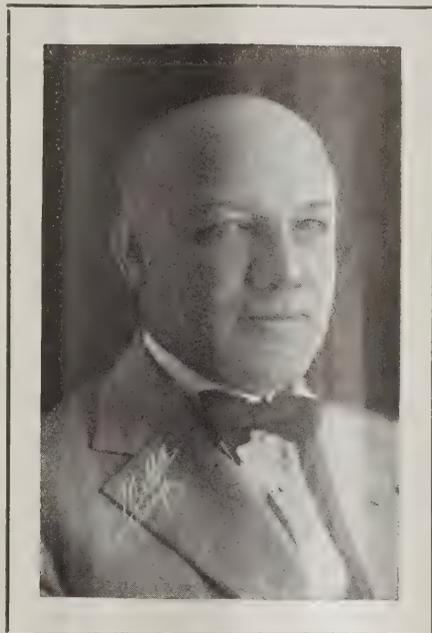
"What people want," declared Governor Philipp, "is good service. The local company is to be complimented; its employes are uniformly courteous and service is prompt. It is a utility that we hear little complaint of.

"The telephone system is the means of becoming acquainted with your state," he said. "The service you render the people is indispensable and it is within your power to say as to whether this service will bring you compliments or condemnation."

F. M. White, of Ellsworth, president of the Pierce County Telephone Co., gave the response. He stated that "We are all telephone men—yet I have never climbed a pole since I entered the business in 1896, and I have lived in the country too.

"The farmers," said Mr. White, "get the service that they need regardless of whether they have magneto or common battery equipment."

He referred to the devotion of telephone people to duty, pointing out that



John A. Pratt Was Re-elected Director and Secretary of the Association.

operators stay at the boards until the last moment and that everyone of the force is there to give service.

A plea for a stronger organization was voiced by President Taylor in his informal and brief address. "We are on a stationary basis," declared Mr. Taylor. "We must have the united support of every company in Wisconsin if we are to make forward strides."

He stressed the importance of association and working together in obtaining legislation and giving service to patrons. This requires great attention and only the highest type of service should be given, he stated.

"The association cannot exist," he declared in closing, "on the plain level of last year or this. It must be strengthened or else we should quit. Build up a stronger association. Give better service and we better ourselves in every way."

Morris F. Fox, of Milwaukee, president of Morris F. Fox & Co., spoke on "Increasing Interest of Investors in Public Utility Securities."

"Next to government or municipal bonds," said he, "public utility securities,

properly issued, constitute the safest form of investment.

"Frankly, if our cities do not pause in their mad rush to create debts bigger than posterity can and will patiently assume, this classification will soon be reversed and municipal bonds will have to take second place to utilities.

"The public has come to realize that the services performed by public utility companies in furnishing telephone, electric light and power, gas, transportation and water services, constitute public necessities which operate in a monopolistic market and are in demand day and night, year in and year out, whether times are good or bad and without which it would be practically impossible to conduct the business of the day or to live in the comfort required by our modern civilization.

Promotes Wide Interest.

"Inasmuch as life insurance companies are reported to have invested approximately one-eighth of their total assets in utility enterprises, practically every man, woman and child in the state is directly or indirectly interested in the securities of public utility companies.

Customer ownership, which the utilities are promoting, is a logical, rational, progressive and sane development of a community of interest and partnership which is fundamental and should exist between the utility and the community which it serves.

It is a true way to democratize capital which is far preferable to socializing industry. It permits the maintenance of the utility business in the hands of highly schooled, conscientious men who have spent their lives in the business who should be better capable than any one else to operate the utilities.

By including employes in customer ownership, an interest and a loyalty to the company and a courtesy to the other customer owners and eventually to all customers is developed automatically. Just complaints in regard to service are promptly recorded and usually heeded. A valuable education in business methods, finance and investments is afforded many customer owners. Their sense of proprietorship and pride in ownership is developed. The politician's ammunition is gone.

\$30,000,000 to Be Spent.

"A great partnership of interest in the progress and upbuilding of the entire community is established. Every holder of public utility securities becomes a true

capitalist of the right kind. A capitalist is one who spends a little less than he receives and puts that surplus to work at interest against the rainy day.

It is estimated that the utility companies of the state will expend more than \$30,000,000 during 1923. Practically all of this money must be secured from the person of average or small means.

There does not seem to be any such a thing as a point of saturation for public utility service. This is clearly shown by the almost unbelievable progress that these industries have made in the last few years.

The electric industry is only 40 years old. The capital invested in the industry is close to \$5,000,000,000, with securities held by more than 1,600,000 investors.

The telephone industry started in 1875. The total investments in the telephone business is roundly estimated at \$3,000,000,000.

The first gas company was formed in 1812, but it was not before 1865 that any real progress was made. The total investment in gas properties is placed at \$4,000,000,000.

Cites Big Outlays.

"Electric railway and interurban systems of this country involve an investment stated at close to \$5,000,000,000. While securities of this branch of public service are not in as great favor today as are the securities of other utilities, largely because these companies have been political footballs, it is greatly becoming apparent to the public and to politicians that street railways perform a vital service without which the cities will not grow, and that municipally owned traction systems are a terrific burden to the cities that own them.

There is invested today in public utilities other than water works probably not less than \$16,000,000,000, and 1,750,000 persons are employed in these industries and if the demand continues to increase at anything like the present rate, these utilities will be requiring not less than \$1,000,000,000 a year for a long time to come.

It is estimated that of the \$650,000,000 of public utility securities sold in 1922, \$473,000,000 were handled by investment houses and \$177,000,000 were sold by the companies direct to their own customers.

This sale of securities to the people has done a great deal to stimulate thrift. It has done much and will continue to do much to educate all classes of people on how business in general and utilities in particular are conducted.

It has taken much of the mystery out of big business. From the standpoint of national contentment, there is no movement that can have a more powerful effect than for every man, woman and child in the nation to own shares or bonds in public utilities and other industries.

Fears Effect of State Taxes.

"It is fortunate that along with the rapid increase in the demand for public utility securities, there should have become an almost unbelievable increase in the absorbing capacity of the public for investment securities. In spite of the narrow margin of profit allowed the public utilities under regulation, they stand high in the favor of the average investor.

It is believed that at least \$250,000,000 of Wisconsin money went into bonds other than United States securities and a very large percentage of this amount was raised for Wisconsin companies and stayed right in the state.

I am frank to say, however, that this condition whereby Wisconsin money is



Walter J. Gallon, of Antigo, Was Re-elected Director of the Wisconsin Association.

being kept within the state, and for the good of Wisconsin industries, will not continue if tax bills now before the legislature are passed.

These proposed laws will place the securities of Wisconsin industries on an unfavorable basis as compared with those issued in other states. Already many investors have disposed of their holding of Wisconsin securities and are buying outside securities."

In closing, Mr. Fox warned against too large amounts of preferred stock issues which lie between bonds and common stock in security. "Keep a balance between the funded debt, preferred and common stock," said he, "and the public will have confidence in you and your securities."

M. W. Torkelson of the Wisconsin Highway Commission, Madison, was the next speaker on the subject, "Wisconsin's Road Building Program and Its Relation to Telephone Development."

Mr. Torkelson outlined the development of Wisconsin's system of roads since 1907.

So far, there have been no serious conflicts between the highway department and the public utilities. In permits issued for the building of pole lines, it is stipulated that they must be close to the edge of the road and that there is to be no unnecessary cutting of trees and brush; the brush cut must be taken away.

When a company is ready to build, Mr. Torkelson recommended that the highway commission be notified so an engineer may be sent to the locality and thrash out any questionable points. This procedure has worked satisfactorily and probably will not be changed.

The increased population, Mr. Torkelson pointed out brings a demand for the widening of highways so the companies should build these leads as if in the cities. He declared that roadside planting to beautify the roads was bound to come as the people will demand it. "That should be borne in mind, for it is coming," said Mr. Torkelson, "whether we want it or not."

A lively discussion followed Mr. Torkelson's address and many questions were asked him regarding pole locations and customs of road contractors.

Among the suggestions offered regarding roadside planting was that fruit trees and shrubs be planted instead of ordinary shade trees. Cherry and plum trees, for instance, are trimmed so as not to grow beyond reach of a step ladder and they spread out giving a great deal of shade. Apple and other fruit trees are likewise trimmed so that the fruit bearing branches are kept near the ground. If roadside planting must come, this suggestion may offer an excellent solution satisfactory to both public and utilities.

A practical demonstration of the "prone pressure" system of resuscitating electrocuted persons was given by E. J. Kallevang, engineer, Wisconsin River Power Co., who stated that his company had brought back to life scores of people who otherwise would have succumbed to the shock.

He urged the members of the association to hold safety meetings and to educate their employes in this method of saving lives. The demonstration created a profound impression upon all who witnessed it.

The following committees were named by President Taylor: Registration, A. H. Bowden, George Beyer; credentials, J. L. Farrington, D. E. Paterson, W. H. Phelps; resolutions, P. J. Weirich, H. A. Price, R. S. Kratz; legislation, S. L. Odegard, J. F. Krizek, E. B. Smart; constitution and by-laws, S. M. Pedrich, Henry Suelflow, John Spangler; service, P. J. Weirich, F. E. Chandler, W. F. Goodrich, H. D. Currier, H. I. Crawford, inductive interference, F. H. Runkel; auditing and finance, H. E. Horel, J. M. Starkman.

The session then adjourned.

Immediately upon the opening of the Thursday morning session, President Taylor called upon S. L. Odegard, of the Commonwealth Telephone Co., Madison, to lead the discussion, "What Constitutes a Permanent Telephone Investment."

Mr. Odegard, in opening his discussion, declared that not enough attention is given to planning for the future, and patchwork construction results, with rebuilding of the plant necessary in time. He recommended that surveys be made when it is necessary to extend the plant so that building will be properly planned for the future.

Taking up the matter of public relations, he stated that prompt attention should be given to subscribers when they come into the exchange. "Give them attention, and they will listen to you when you want attention," said he.

Mr. Odegard discussed proper financing, stating that in the past financing was done from earnings and no dividends were paid. In recent years it has been impossible to do this, because there has not been enough excess earnings to take care of additional construction.

He declared attempt should be made to bring in additional money on long terms of not less than 10 years and 20 years, if possible. Money could be borrowed from banks on mortgages or obtained through the issuance of bonds or preferred stock. "Sell securities," said Mr. Odegard, "that are in the nature of an investment rather than a minority interest. Planning can then be done for the future and patchwork construction avoided. Wholesome public relations will help in obtaining the money."

Speaking of adequate rates, he presented figures to show the expenditure for rural equipment at present prices as compared with the investment for local exchange subscribers. Mr. Odegard showed that rates based on these figures are too low, as \$36.50 per year is the carrying charge.

He contended that the companies should have at least a \$3 a month rate, but they are still suffering from the dollar-a-month telephone service era.

"Telephone men," the speaker declared, "have not gone out and sold their services like other merchants. If you can't make it pay, you should get out of the business."

Mr. Odegard's statement that rural service cannot be furnished for less than \$3 a month, if the company owns the equipment, was the cause of a lively discussion.

H. E. Rosenow, Oconowoc, of the Badger Telephone Co., gave the figures of his company and declared that with a rate of \$1.33 a month in advance, the company paid a 10 per cent dividend last year. He stated that it figured depreciation at 6 per cent generally, and has 730 subscribers, mostly rural.

Mr. Rosenow was asked a number of questions by F. H. Runkel, of Portage, P. J. Weirich, of Monroe, Chas Wiswell, of Elkhorn, and others, as to details of management and operation. It was brought out that there were a number of items



W. F. Goodrich, of LaCrosse, Re-elected Treasurer, Has Held Office for Many Years.

not included in the figures that have to be taken care of by the commercial companies, such as salaries and the number of hours which the manager and maintenance men put in.

"State and Federal Regulation of Telephone Companies," was the subject of an address, by George C. Mathews, of Madison, chief statistician of the Wisconsin Railroad Commission. Mr. Mathews discussed the conflict between state and federal authorities and declared it due to a tendency to misinterpret the extent of delegated power.

He decried the Interstate Commerce Commission regulation which requires practically every telephone company to report to the commission and scored the commission's action in dictating the accounting procedure of the companies and the amount of depreciation which it is proposed shall be set aside by the companies.

Mr. Mathews' paper is presented in full on other pages of this issue.

The morning session then adjourned.

Thursday Afternoon Session.

The first number on the Thursday afternoon program was a short address by F. M. McEniry of Milwaukee, general commercial superintendent of the Wisconsin Telephone Co., introductory to a demonstration of practical switchboard operating such as is now being used by the Bell and other telephone companies throughout the country to show the public how telephone service is handled.

The demonstration was well presented

and made a great impression upon telephone men as an excellent means for acquainting the public with the actual connection of subscribers as well as removing many false impressions of the service.

"On Wisconsin," was the subject of a most interesting address by Burt Williams, of Milwaukee. He extolled the potential, recreational possibilities of Wisconsin so as to become the greatest of the state's activities, surpassing even the monetary value of manufacturing and agricultural industries. He presented many statistics showing the standing of Wisconsin in agriculture, manufacturing and recreational possibilities.

"Wisconsin is the land of the sky-blue lakes. We have but just started to capitalize on our wonderful natural beauties, while California and Colorado have made the question of attracting tourist trade one of the paramount issues of their states," declared Mr. Williams. "We have the most wonderful scenery and the most easily accessible of any of the midwestern states. Business men, financiers, all are flocking to Wisconsin, building wonderful summer homes and enjoying the outdoor advantages that are lacking in their home states."

Walter J. Gallon, of Antigo, was the next speaker, leading a discussion on "Famous Sleet Storms and Their Lessons." Mr. Gallon, after declaring the extraordinary hazard one of the most important subjects in the industry said in part:

"We hear much about depreciation charges to take care of our current going business, but when we attempt to lay aside funds to meet something which might wipe our plant off the earth, we have struck a snag; however, it's a condition that we are forced to meet. The sleet storm of last year was, as far as my knowledge goes, the worst that ever happened and it taught us some interesting lessons.

Let us review for a few moments what happened. The larger companies, on account of their business volume, made it possible for them to go to their various banks and financial institutions with which they were doing business and immediately they were supplied with the necessary credit and money to start the rebuilding operations.

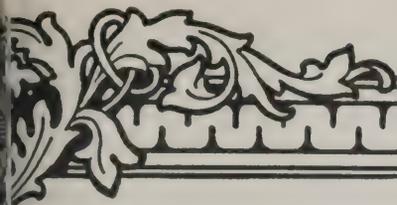
But what about the smaller companies that have just been living from hand to mouth? As you know, many of them were forced out of business and even today a year after, we find in the state of Wisconsin, miles of pole line never restored and hundreds of silent instruments. Why? Because they, in the furtherance of their industry, didn't recognize the importance of a financing organization to help them in a time of need.

The time has come, however, when our industry cannot allow a condition like that to exist because it is just as necessary for those companies that have organized to meet such disaster, to reach those silent instruments or vice-versa. There is no



The city of Basra, Mesopotamia, lies some 300 miles to the south-east of the ancient Persian city of Baghdad, sacred to fairy lore. Three of its five telephone exchanges are now equipped for Strowger Automatic working.





Strowger Automatic in the Foreign Field

It is not only in the United States that the economy and good service of Strowger Automatic telephone equipment has found favor.

In England, France and other European countries, Strowger equipment has been used for years. In many cities in Canada, South America, Australia and New Zealand, the conversion of the telephone system to Strowger Automatic working is rapidly becoming an accomplished fact.

Among the Oriental cities, near and far, in which Strowger equipment has been or is being installed, are Simla, Bombay and Poona, India; Harbin, Manchuria; Basra, Mesopotamia; and others.

The satisfactory application of Strowger equipment in such remote and different places as Southern France and Northwest Canada, Hawaii and New Zealand, Argentina and the Orient, while resulting primarily from the wide success of this equipment in the United States, is also evidence of its remarkable flexibility in meeting unusual traffic and service conditions.

Automatic Electric Company

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Automatic Telephone Mfg. Co., Ltd., Liverpool.
Automatic Telephones, Australasia, Ltd., Sydney



such thing as isolation in the telephone industry today. The telephone, both business and personal, is linked in with our daily lives just as much as our food, clothing, etc.

The first question to consider is the building up of an organization so that our employes have the initiative to immediately take hold in such disasters. I was surprised in watching the work of some of the larger companies during the disaster, to find the number of men who fell down on the job.

Unfortunately the average employe is so used to taking orders that when he becomes isolated he is somewhat at a loss as to know what to do. This, I believe, is peculiar to our industry on account of the nature of the business; that is, the access to one another by telephone. However this is offset by the marvelous exhibition, in a large number of cases, of the extreme loyalty to the calling.

Emergency apparatus, such as is used for our plant, so the temporary service can be given, should be kept on hand and watched just as carefully as the apparatus used in fire prevention. The time has come when the financial and scientific minds should get together and work out some means and ways for the smaller organizations.

During the last three years I have talked and attended conferences with the thought of working out some financial methods to help the small companies. About a year ago a movement was started in Wisconsin to work out some means and ways in the form of a financial organization so that the smaller companies would have access to genius to help them in such a time of stress, but what has happened? We find, due to unholy legislation, the operating costs make the handling of the business almost prohibitive.

One of the most astonishing things to me, in our industry, is how little thought has been given to simple apparatus which will reduce the operating costs for the isolated districts by the large operating companies and the manufacturing corporations; however, we find in some of the Independent manufacturing companies at the present time, efforts are being made in the line of remote control.

I believe if the great Bell organization would only stop for a short while its efforts to link nations by telephone and turn back and work out some means and ways to link up the isolated districts within the limit of the purse of those patrons who live in these districts, this great country of ours would be benefited much more than by the vast research work relative to the linking of nations, etc.

There are times when we are inclined to ask, "Why the farmer?" But living as I have in the past five years in a developing district, I have learned the extreme necessity of working out some methods of really helping the man who is the real

pioneer of our land—that is, the farmer.

The time has come when our government is just beginning to recognize that if the American farmer and the small community centers where he does his trading, is not taken care of better by the larger communities and the financial houses, the danger of communism and sovietism will gradually get into the hearts and the lives of those so situated. We have already had a demonstration of that in this state of ours. I believe that the telephone industry should be one of the pioneers to offset that possible pending disaster."

Following Mr. Gallon's remarks, there was an extended discussion, participated in by President Taylor, F. H. Runkel, of Portage; S. L. Odegard, of Madison; Secretary J. A. Pratt, and Charles Wiswell, of Elkhorn.

In this discussion it was brought out that both the commission and the state supreme court have passed on the matter of a liquid reserve for extraordinary contingencies as a reasonable operating expense.

Resolutions Adopted.

A report of the resolutions committee was presented by P. J. Wierich, of Monroe, and each resolution was adopted separately. The resolutions included one on the death of Nathan Heineman, of Wausau, which was adopted by a rising vote. Another resolution provided for the appointment of a special committee to confer with the state highway commission as to the relocation of roads. Daylight saving in Milwaukee was unfavorably looked upon in a resolution that was carried by a close vote.

The following resolution was unanimously carried:

"Whereas, the federal transportation act classifies telephone companies engaged in interstate business as common carriers, and makes them subject to control by the Interstate Commerce Commission, and

"Whereas, the Interstate Commerce Commission by administrative ruling has so interpreted the act as to include all local telephone companies which originate or terminate interstate messages, even though they have no toll lines and obtain no return on their property from interstate business, and

"Whereas, in the case of such companies there are no rates effective for interstate business, except rates of toll companies, which are not in any sense joint rates or rates of the local companies, and

"Whereas, control by the Interstate Commerce Commission of such companies serves no useful purpose, but unnecessarily duplicates regulation and imposes a useless burden upon the companies and through them upon the telephone using public.

"Therefore Be It Resolved: That the directors of this association present the views of the association to the Wisconsin delegates in Congress, and take such further action as may be proper to secure the

modification of the transportation act, so that it shall not include telephone companies except interstate toll companies.

"Be It Further Resolved, that the directors be authorized to take such action as they may deem proper to have the association represented at the hearing before the Intrstate Commerce Commission on the matter of rates and method of accounting for depreciation."

There was some discussion of the proposed labor law and pending legislation, which resulted in the appointment of a committee to confer with the legislative committee.

F. H. Runkel presented the report of the committee on safety rules, which was adopted and filed.

The nominating committee then presented its report recommending the re-election as directors of J. A. Pratt, W. F. Goodrich, and Walter J. Gallon. Upon a motion the rules were suspended and F. H. Runkel cast the ballot for the election of the nominees.

Secretary Pratt then briefly told of the work done by the association during the past year, and presented a financial report, which was adopted.

A long discussion then ensued regarding financing of the association and a motion was finally adopted that the directors be instructed to work out a plan for financing the association and send it out to the members for consideration at the next regular meeting.

After some more informal discussion, the convention adjourned.

Telephone Transmission Over Long Cable Circuits.

The original paper from which the article published in last week's issue of "TELEPHONY" under the caption, "Transmission Over Long Cables," was taken, was presented at the midwinter meeting of the American Institute of Electrical Engineers in New York City and not at the Milwaukee meeting as reported in the subhead of the article.

The paper, of which Alva B. Clark, of the American Telephone & Telegraph Co., is the author, was not published in "TELEPHONY" in full, but very liberal abstracts were made of it.

East-Central Indiana Telephone Men Meet at Muncie.

Representatives of the East-Central Indiana Telephone Association, in convention at Muncie, Wednesday, March 21, voted to hold their next quarterly meeting in Knightstown on June 20. The convention was largely attended, both by officials of telephone companies in the territory and by operators, who were pupils in the "operators' school," held both morning and afternoon.

William M. Kendrick, toll supervisor of the Indiana Bell Telephone Co., conducted the operators' school, which was in ses-

sion both morning and afternoon. The visiting operators were guests at a luncheon at the Hotel Roberts at noon.

John W. Dragoo, president of the Muncie Chamber of Commerce, in his address stressed the need of co-operation and urged that the patrons and employes unite in an effort to put the telephone service on the highest plane. In the response, Henry A. Barnhart, president of the Indiana Telephone Association, described the work of the association in assisting the member companies.

At noon, the visitors met at a luncheon with the Muncie Kiwanis Club. The luncheon speakers were John W. McCardle, chairman of the Indiana Public Service Commission, and Mr. Barnhart.

The afternoon session was taken up with discussions on "Simplified Bookkeeping for C and D Companies," led by Max Hosea, treasurer of the state association, and on "Foreign Wire Relations," led by Louis B. Johnson, engineer of the Indiana Bell Telephone Co. Mr. Hosea took the place on the program which was assigned to Harry Boggs, chief accountant of the public service commission, who was unable to attend.

In his address at the joint luncheon meeting with the Kiwanians at noon, Mr. McCardle quoted statistics in answer to persons who unduly criticize the rate increases granted telephone companies during the past several years and explained the efforts of the public service commission to see that adequate service was given the public by all utilities at the lowest reasonable cost.

"The next time a telephone company comes before the commission and asks for increased rates, I shall wish to know whether the girl telephone operators are going to benefit by increased wages," he said. "I know who has the hardest job in the telephone business—it is the telephone operator, and I wish to go on record as saying that I believe any woman who does a man's work ought to be paid a man's wages."

Mr. McCardle said that the average increase in telephone rates in Indiana since 1917 had been only 23 per cent, and that other costs had been much higher. He regarded it as remarkable that, in spite of the fact that in the years 1917, 1918 and 1919, "many a manager of a public utility in Indiana went to bed at night without knowing where he could get a dollar the next day with which to pay operating expenses," not a single public utility in Indiana had gone into the hands of a receiver.

"In that time, no telephone company has been permitted to make more than 8 per cent on its capital," said he. "Another thing you may not know is that Indiana has the lowest electric light, telephone, gas and water rates of any state in the Union."

Mr. Barnhart, made a plea for co-operation of all companies in giving service to

MAIN STREET'S TRAGEDY

By Miss Anne Barnes

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

"Every day is alike," muses Agnes as she sits listlessly at her little switchboard, pushing the levers open with the tips of her fingers now and then to see if people are talking.

"Old Ma Jones always calls her daughter just as soon as she gets her pie made for dinner. She never fails to say, 'Well, Lizzie, I got my pie for dinner made, so I thought I'd call you.'"

"Mrs. Toostout wheezes her usual number into my ear at the same hour every day.

"If something different only would happen. I'm so tired of this monotonous old job; I feel about as useless as if I were a broken crutch."

Just then, Agnes hears a commotion down on the street. She steps over to the window. What has happened? Main Street is filling with excited looking people. Not a signal on the board. People are too excited to tele- phone.

Agnes rushes down the stairway to discover the cause of the trouble. Just as she is about to step out into the street, she hears excited voices mention her name. She instinctively withdraws into the darkness. Somehow, she is oppressed with fear. What has she done? What do people think she has done?

The woman near the doorway continues speaking:

"Oh, if we only could have gotten Agnes, this terrible tragedy would never have happened. Poor old Burton held the burglars at bay while my boy tried to get Agnes to answer. Finally, one of the burglars whisked out his gun and said, 'I told her not to answer.' Before poor old Burton could fire that burglar shot him dead.

"She hasn't answered a ring since, but you can see her settin' at the board. I suppose she's readin'. Let's go upstairs and see."

"My, them steps is enough to kill a person," wheezes Mrs. Toostout, as she opens the door of the operating room.

Agnes leaps from her chair covering her face with her hands.

"Why, what's the matter Agnes, are you ill?"

"No—I—I, oh—I got a shock, Mrs. Toostout. I'm all right now."

After Mrs. Toostout has paid her bill and gone, Agnes slides into her chair whispering to herself:

"My, but that's enough excitement for one day. What a horrible nightmare!! I'm going to call Old Man Burton on some pretext. I just want to hear his dear, old cranky voice again. After all, my job's about the most important one in town."

the public and advocated that the companies should voluntarily take up with the public service commission, the state association, or some proper body, any important questions, and should not wait for complaints or objections on the part of patrons or outsiders.

He also urged that all telephone companies strive to inform the public about the methods and costs of maintaining telephone service, in order that the public would feel that it is being dealt with fairly. Every public utility company should "put all its cards on the table" when dealing with the public.

"We should exhibit absolute candor with our patrons and ask for a just, fair and constructive criticism on the part of the public," Mr. Barnhart said. "Most of the difficulty between public utility corporations and those they serve is due to misunderstanding. I haven't a word of defense for any public utility that takes

advantage of the public. I only plead for understanding and fairness on both sides.

"I know that it would lead to better relations if the people could be led to a knowledge of our expenses that never cease. The manufacturer can shut down his plant, the merchant can turn off his clerks when business becomes bad—but the telephone company must continue serving."

Changes in Managers of Lincoln, Neb., Company.

The appointment of Clyde O. Burge as manager of the Platte County Telephone Co. at Columbus, recently purchased by officers of the Lincoln Telephone & Telegraph Co., has left a vacancy at Fairbury, which has been filled by the naming of Charles Dickenman, transferred from Tecumseh. L. O. McClintock, manager at Humboldt, has been sent to Tecumseh, and A. E. Lamberson of Cook takes the vacancy at Humboldt.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Telephone Toll Commission Bill Passes Nebraska Senate.

The Nebraska senate has passed S. F. 200, the telephone toll commission bill that caused a real battle of words at the state convention recently. No opposition developed to it. The bill, as amended, fixes commissions at 10 and 15 per cent, but makes these the minimum charges, with the opportunity open for telephone companies to negotiate a better contract if they can.

Considerable sentiment existed among telephone men in favor of wiping out the law because the division of commissions on the incoming and outgoing basis does not fit present conditions. The single-ticket method in vogue with the big companies and a number of others, adopted as a measure of economy, makes it impossible to follow the law exactly. As a result, most settlements are made on a 25 per cent basis for the one-way calls that are listed, the out-going.

The original bill repealed the section fixing commission percentages, while still leaving the compulsory physical connection feature of the law. It was felt that a bill compelling connections ought also define the division of toll earnings, and that if the matter was entirely reopened, something more distasteful to the industry would follow.

It is doubtful if the bill will see the light in the house, as adjournment is only a few weeks off and big issues of the session have not yet been settled nor have the appropriation bills been brought out of committees in the house, where they originate.

The telephone companies do not favor the bill. One like it was killed in the senate two years ago because it was felt that if commissions were made a matter of agreement, the result would be higher commissions and necessarily greater toll rates.

California Company Operating at a Loss—Wants to Quit.

The San Joaquin Valley Telephone Co. made application on March 21 to the California Railroad Commission for authority to suspend operation, abandon its lines and dispose of its property in the city of San Joaquin and the town of Tranquillity.

The system has been operated in connection with the San Joaquin Valley Farm Lands Co., which owns practically all of the stock, and the latter company has been forced to make repeated loans to the telephone company to maintain service, which has been conducted at a loss.

The Pacific Telephone & Telegraph Co. has refused to consider taking over the system, holding that it would be impossible to conduct the system at a profit.

Commercial Company Authorized to Buy Albion, Ill., Company.

On March 13, the Illinois Commerce Commission issued an order authorizing the Commercial Telephone & Telegraph Co., of Olney, to purchase from Arch Bassett, owner, all of the plant and property of the Albion Telephone Co. in Albion. The consideration mentioned in the order is \$2,000 par amount of preferred capital stock of the Commercial company, and \$10,000 in cash.

The Commercial Telephone & Telegraph Co. was also granted a certificate of convenience and necessity to operate a telephone exchange in Albion, and authority to issue and dispose of \$2,000 par amount of its preferred capital stock and \$10,500 principal amount of its first mortgage, ten-year, coupon, gold bonds, dated July 1, 1920, bearing 7 per cent interest per annum.

Cicero, Ill., Mayor Complains of Telephone Service.

Mayor Joseph Z. Klenha of Cicero, Ill., has filed a service complaint against the Illinois Bell Telephone Co. with the Illinois Commerce Commission, charging impertinent abuse by the Cicero operators.

"Here's the crab on the wire again," he declares to be the customary greeting he receives when he attempts to telephone. Mayor Klenha, however, declares this is only one of his complaints. It took eight months to secure the installation of a telephone, he says, and there are delays on calls.

Montana Commission Going Ahead With State-Wide Inquiry.

Seventy-six independent telephone companies in Montana, serving 86 towns, and 78 exchanges in the state owned by the Mountain States Telephone & Telegraph Co. are under investigation by the Montana Public Service Commission.

The investigation will meet the request made in a resolution introduced in the lower house of the legislature for a thorough investigation into the matter of telephone rates and charges in Montana.

In a communication to the legislature the commission said that it had already started an inquiry into the reasonableness of the rates of the Mountain States company.

The company is now compiling figures

for the commission and as soon as the reports are completed, the commission's engineers will get busy.

Having in mind the length of time consumed by investigations made in other states, the Montana commission plans to shorten its inquiry by making inventories at certain representative points in the state and then applying the results obtained to communities served under identical or similar conditions, making allowances for disparities and variations.

Files Test Suit on Cumberland Rates in Mississippi Town.

A petition for a writ of mandamus against the Cumberland Telephone & Telegraph Co., was recently filed in the Circuit Court of Harrison County, Miss., by a subscriber in Biloxi. The petition claims refusal on the part of the company to accept payment under an original contract with the city.

Several cities and towns in Mississippi have contracts with the Cumberland company, wherein a maximum rate is specified, and the state's attorney general has written mayors of all municipalities in the state that he will assist them in proving the validity of the contracts. The rate the company seeks to collect was recently fixed by the Mississippi Railroad Commission.

Complaint that Ringing Subscribers Interferes With Radio.

Radio has grown in Nebraska to such an extent that it has been necessary for the state commission to take action, or rather refuse to take action, where complaint was made that the operation of a pole changer or ringer interferes with the use of radio receiving sets.

The complaint was filed by J. H. Polly, of Lebanon, on behalf of himself and users of radio apparatus at Danbury, served by the Beaver Valley Telephone Co. Polly said that he gets the market reports daily and is located about 1,200 feet from the central telephone office, where the ringing apparatus is operated. He says that the current of electricity set in motion by it makes it impossible, until the person at the other end takes off his receiver, to hear anything coming over the wireless. He says it causes a popping noise that effectually interferes with radio receiving.

This was an entirely new question for the commission, and it had to do some head scratching before ruling on it. It informed Mr. Polly that it has legal juris-

diction only over telephone service. As his was a complaint against radio service and not that of the wire company, it could do nothing for him.

It pointed out that if a hospital should complain to the commission that the location of a telephone wire close to the windows resulted in annoyance to patients, the commission would be without power to order its removal or transfer because of that fact. It was suggested that the courts are open to any who can prove that the operation of any device constitutes a nuisance and an undue interference with others.

Nebraska Farmers Mutual Company in Trouble Over Tolls.

The troubles of farmers' mutual telephone companies have multiplied under the stress of the tight times in Nebraska. The Wareham Farmers Telephone Co. operates three lines out of Randolph, where the exchange is owned by the Northwestern Bell. The latter has been collecting the toll charges by presenting the bills to a local bank, but because the Wareham company has refused to guarantee the payment of other tolls, it has refused any toll service whatever.

This has led to the application by several business houses to the state railway commission for an order permitting the deposit of sufficient money to cover toll charges for a reasonable period and to prevent the Bell from refusing individuals service because others do not pay tolls.

Wants to 'Refuse Shareholders Service if Assessments Are Unpaid.

The Hill Independent Telephone Co., of Niobrara, has asked the Nebraska State Railway Commission for authority to cease giving service to those of its shareholders who refuse to pay the assessments levied

against them for purposes of maintenance.

The company was organized by the issuance of 10,000 shares of \$1 each, and the proceeds of the sales were used in installing service at an average cost of \$50 per station. It has been assessing shareholders and renters whatever sum was necessary to keep the lines in order and maintain service, at a cost of from \$10 to \$15 a year each, and, because some shareholders have refused to pay, the company is compelled to ask authority to deal with them.

It asks a lowering of the \$6 a year switching rate charged by the Northwestern Bell at Niobrara.

New York Commissioner Explains Rate Order to Governor.

Chairman Prendergast of the New York Public Service Commission has made public a letter sent March 6 to Governor Smith in justification of the order recently issued fixing rates for the New York Bell.

In his letter, Chairman Prendergast said the attorney general, representing the municipalities, had not raised any objection to the commission's order, that the only objection made by the city of New York was to the change made in the so-called monthly settlement arrangement, whereby calls not used in one month may not be carried over to another month.

"The complainants argue that they should be entitled to a rebate for unused messages during the months in the year when they do not use their minimum allotment," the chairman wrote.

"All subscribers in the city of New York are not able to take a summer vacation of from one to two months. Yet these persons are apparently the ones who complain. If they are to have free telephone service during their vacation periods the increased cost must necessarily be

borne by other subscribers," declared Mr. Prendergast.

Another adjustment made, the chairman said, was to require subscribers to pay for their switchboard equipment in accordance with its extent. Previously switchboards worth \$10,000 to \$60,000 were used at the nominal rental of \$2.20 a month.

"The commission, in its consideration of these cases, examined and made such estimates of annual telephone bills of many large users in the city of New York, and the new rates show that the increases to the largest users on an annual basis are in the neighborhood of from 12 to 14 per cent."

On March 13, the board of aldermen of New York City, after debate, adopted a resolution calling the attention of Governor Smith to the increase in telephone rates and asking that the state legislature take action to give relief to telephone users.

The report of the aldermanic committee condemned the attitude of Chairman Prendergast in the matter.

Service Is Bad, Yet Patrons Plead Against Abandonment.

Fifteen months of waiting for a telephone; 35 days out of 76 in which the subscriber was unable to arouse Central; wires fastened into a receiver with a thread that contact with the outer world might be maintained; broken wires tied up with strings; that was the picture painted at the March 14 hearing before Commissioner Autenrieth of the New Jersey Public Utilities Commission. Patrons of the Glen Gardner and Wood Glen line—which the New Jersey Telephone Co. seeks permission to abandon—were testifying as to service conditions.

But while patrons declared that their

Name of Company.	City or Town.	Population.	Type of equipment.	Total No. of tele-phones.	Net rate per annum—				Rural busi-ness.	Rural resi-dence.	switch-ing ser-vice.
					1-party busi-ness.	2-party busi-ness.	3-party busi-ness.	4-party resi-dence.			
Harmony Telo., Minn.....	Harmony	718	Mag.	504	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$ 4.20
Shaw Telo., Wis.....	Eau Claire	20,906	.....	.....	.....	.....	.....	.....	.....	.....	27.00
Sherman Co., Kans.....	Goodland	2,664	Mag.	.....	.....	.....	.....	.....	.....	.....	18.00
Shawnee Ind., Kans.....	Silver Lake	260	Mag.	.....	.....	.....	.....	.....	.....	.....	21.00
	Rossville	664	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kans. C. L. D., Kans.....	Lenexa	472	.....	.....	31.00	.....	.....	18.00	.....	.....	18.00
*Peck Mut., Kans.....	Peck	150	.....	.....	.....	.....	.....	.....	.....	.....	16.00
Home T. & T., Ky.....	Owensboro	17,424	Mag. and C. B.	1,840	51.00	.....	.....	30.00	.....	.....	.....
Backus Rural, Minn.....	Backus	297	Mag.	200	.....	24.00	.....	18.00	15.00	.....	18.00
Horseshoe, Wis.....	Kewanee	1,865	.....	.....	.....	.....	.....	.....	.....	.....	*15.00
			Mag.	.....	.....	.....	.....	.....	.....	.....	*7.50
Princeton Telo., Ind.....	Princeton	7,132	Mag. and C. B.	.....	*39.00	.....	.....	*24.00	.....	.....	.....
	Ft. Branch	1,339	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Patoka	673	.....	.....	36.00	.....	.....	*21.00	.....	.....	.....
	Oakland City	2,270	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Streator	14,779	Mag.	.....	48.00	36.00	.....	24.00	21.00	.....	16.20
Streator Telo., Ill.....			Mag. and C. B.	.....	.....	.....	.....	.....	.....	.....	36.00
	Grand Ridge	389	.....	.....	36.00	27.00	.....	.....	21.00	.....	*15.00
Richmond Telo., Wis.....	Richmond	22	.....	80	.....	.....	.....	.....	.....	.....	21.00
Siren Telo., Wis.....	Siren	643	Mag.	122	24.00	18.00	.....	24.00	.....	.....	18.00
Farmers Mut., Wis.....	Baraboo	5,538	Mag.	.....	.....	.....	.....	.....	.....	.....	6.00
	Mt. Hope	215	Mag.	.....	.....	.....	.....	.....	.....	.....	20.60
Peoples Telo., Wis.....	Mt. Ida	100	Mag.	1,312	.....	.....	.....	.....	.....	.....	15.00
	Millville	100	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Reduced rates. ¹Metallic. ²Grounded. ³More than one mile from exchange, \$4.80 extra. ⁴For each quarter mile beyond base rate extra: One-party, \$6; two-party, \$3.60; four-party, \$2.40. ⁵Ten-party. ⁶Beyond city limits, \$6 extra per quarter mile.

statements of the condition of the line were not exaggerated, they protested against abandonment. Bad as the service is, they want the line continued.

The company admits all of the charges of the dilapidated state of the line—in fact, it paints it a blacker hue than the patrons, who total five.

E. W. Sutton, general manager for the company, testified that in 1910 the company entered into an agreement with residents of the Wood Glen section to install telephones if the applicants for service would provide poles and the right of way and guarantee seven subscribers.

Deaths, movings, the destruction of a house by fire and discontinuance of service for other causes resulted in a dwindling to three of the original ten subscribers, the manager recited.

Two others were added by the tying in of an extension. The company asserts that the equipment is in such bad shape that it will have to be replaced almost entirely and that the income does not justify the expense.

The commission took the case under advisement.

Another New York City "Home Rule" Bill Is Introduced.

One of the latest measures introduced into the New York legislature would grant the city of New York, acting through the board of estimate and apportionment, without the consent of any other board or body, power to establish, construct, acquire by purchase or otherwise, operate or lease to another to operate, various utilities including telephone lines and plants.

The city would also be empowered to supervise and regulate the rates charged, the service, and the franchises of all such existing privately owned utility companies.

The bill would also establish a department of public utilities, subject only to the control of the board of estimate—which would be given power and jurisdiction over public utilities, except transit facilities, wholly within the city, including the power to fix schedules of rates for service furnished by the corporations under its jurisdiction, which rates must be based upon the reasonable cost of service.

Submit Bill to Investigate Affairs of New York Bell Company.

There was introduced into the New York Assembly on March 15 a bill to create a legislative commission to investigate the New York Telephone Co. in the city of New York. The commission would report back to the legislature of 1924.

The commission would include five assemblymen, three senators and three citizens to be appointed by the governor.

Their investigation would be carried into the capital, plants, employes, revenues and rates, and they would be required to report on a proper maximum and minimum rate. They would also be required to decide if the A. T. & T. is a monopoly

in violation of the federal and state laws.

An appropriation of \$50,000 would be provided for the use of the commission.

Increase in Value Allowable for Rate-Making Purposes.

A telephone company is entitled to the benefit of the increase in value of property since it was acquired in fixing the value of such property as the basis for ascertaining proper rates. (Per Marshall, C. J.) *City of Cincinnati vs. Ohio Public Utilities Commission*; Supreme Court of Ohio, 137 Northeastern, 36.

Bondholders Buy Lines of United Company, of Lancaster, Pa.

Lines, franchises, and equipment of the United Telephone & Telegraph Co., of Lancaster, Pa., were sold at a receiver's sale in the Northumberland County courthouse on March 15, in three plots.

Plot No. 1, including all lines south and east of the city of Sunbury, was sold subject to mortgages totaling \$173,500, also subject to a receivers' certificate of November 30, 1922, amounting to \$12,209, and estimated federal and state taxes of \$3,135.

This plot was sold to Attorney W. W. Ryon of Shamokin, representing five-sixths of the bondholders, at a bid of \$180,000.

Tract No. 2, which includes the north and west branch lines, extending from Sunbury into Lycoming, Union and Center counties, and east to Loyalsock Creek, was sold to the bondholders' committee at a bid of \$50, made by W. W. Ryon. This property was sold subject to a mortgage of \$100,000 and is free of other liens, except municipal, state and federal taxes which are due.

Part No. 3, which includes the lines east of Loyalsock Creek, north to Columbia, Northumberland and Montour counties, was sold to Mr. Ryon for the bondholders' committee at his bid of \$50. This is subject to bondholders' mortgages of \$50,000, of which \$40,000 is outstanding, with \$10,000 still in the hands of the trustees for the bondholders. It is free of all other liens, including federal and state taxes.

The receiver in charge of the sale was W. B. McCaleb, of Lancaster, who was represented by Attorney J. Fred Schaffer.

The company has been in the receivers' hands for several years past. The bondholders, it is understood, plan to reorganize and will make a number of improvements and extensions to the property.

Toll Rates Continue—Rates at One Exchange Reduced.

District service, as between telephone exchanges in Salt Lake county, Utah, outside of Salt Lake City, must remain eliminated, according to a decision of the Utah Public Utilities Commission, rendered on March 14.

This means that the five-cent toll for "A-B" service between two cities or exchanges continues; the lower base rates for service within each of the exchange areas, as reduced last July, must stand at the reduced level in Murray and Midvale; but a still further reduction of 50 cents a month is allowed for business telephones and 25 cents a month for residence telephones in the Holliday exchange. The reductions at Holliday exchange are effective April 1.

The case is an offshoot of the general telephone rate case, instituted about the time the government ceased its control of telephone companies.

The Mountain States company asked for the retention in Utah of rates inaugurated several years ago.

A decision was rendered last July, in which the former free inter-exchange service between certain communities was discontinued, and patrons of these exchanges were required to pay a five-cent charge for "station to station" calls to Salt Lake, just as Salt Lake had been a long time paying for calls to these exchanges. At the same time the monthly or "base" charges for service on these exchanges were reduced somewhat.

Users on the three exchanges and other users protested, entering the claim that, economically and otherwise, the communities were essentially one and should, as such, have free interchange of telephone service.

The commission granted a rehearing, which was held December 18 to 22. In the meantime, it was ordered that the rates as fixed in the former order should continue in effect.

In its decision of March 14 the commission finds that the "district service," such as formerly prevailed in Salt Lake county, "is contrary to the law, resulting in constituting discrimination and preferential rates."

It quotes from its July order:

"Where communities are self-contained, are separately built up, maintain industries, stores, etc., and generally speaking, are communities in and of themselves, there should be a telephone rate schedule for that community, with rates commensurate with the value of that service and a toll or long distance service from that locality or town to all other localities or towns."

These conditions were found to apply to Murray and Midvale, but not to Holliday, which has few business stations, the majority being residence.

The commission was of the opinion that the rates for the Holliday base rate area should be lowered as compared with those at the Midvale and Murray base rate areas.

Accordingly, the one-party business rate for Holliday was reduced to \$4 per month; the two-party business service to \$3.50 a month; the one-party residence

to \$2 a month; the two-party residence to \$1.75 a month and the four-party residence service to \$1.50 a month. These are 50 cents lower than the present rates on business telephones and 25 cents a month lower on residence telephones.

Council Refuses to Renew Charter Because of Rate Increase.

Application for renewal of the charter of the Georgetown Telephone Co., of Georgetown, Texas, of which Mrs. J. M. Daniel is president, was refused by the city council on March 10, because the proposed new charter embodied an advance in rates.

The company proposed to install an automatic system, to be in operation within two years.

Houston, Tex., Ordinance Must Work Both Ways or Not at All.

An ordinance of Houston, Tex., permitted a merger of telephone companies, on condition the company accepting it agrees that the rates shall be based on the capital invested in the city.

If the city is not bound by the ordinance, the agreement is not binding on the company, and does not estop it from claiming a right to a rate which will yield a fair return on the actual value of its property used in the service, though that exceeds the amount invested.

Whether "going concern value" of a telephone company should be considered and allowed in determining the base for rate-making, and, if allowed, what the amount should be, depends on the financial history of the company.—*Southwestern Bell Telephone Co. vs. City of Houston*; Supreme Court of the United States, 42 Supplemental Court Reporter, 486.

Authorized to Issue Stock to Pay for Improvements.

On March 15 the Wisconsin Railroad Commission authorized the Midway Telephone Co., of Stetesonville, to issue 200 shares of its capital stock of the par value of \$100 per share—making an issuance of \$20,000.

The issue is for the purpose of securing funds with which to pay for the installation of a new system of automatic telephones and equipment in the city of Medford, for the purpose of paying for the erection of a central office building, and to pay for telephone cables—all for purposes properly chargeable to capital account.

When Virginia Commission May Require Companies to Connect.

Whether the Virginia Corporation Commission has jurisdiction to require two telephone companies to make physical connection between their respective systems, depends upon whether the companies are public utilities or public service corporations operating for public use.

A county telephone company operating a system of telephone lines was declared public utility, although organized and chartered as a mutual company for the benefit of members who own such lines and the instruments attached. As such, it was within the jurisdiction of the state commission under Code 1919, sections 4046 and 4067, notwithstanding constitution of 1902, section 156, subsection b. *Augusta County Mutual Telephone Co. vs. Staunton Mutual Telephone Co.*; Supreme Court of Appeals of Virginia, 114 South-eastern, 600.

Want New Rate Inquiry from Different Angle in Washington.

Demand for reopening the Pacific Bell rate hearings and an entirely new line of inquiry was made on March 16 by the Seattle Chamber of Commerce in a petition to the Washington Department of Public Works. The chamber asks the department to keep the existing rates in effect until the whole matter has been reviewed in the light of evidence on behalf of the telephone users.

The petition declares that the people of the city and of the state have had no chance to present their side of the case, while all the discussions at the hearings thus far held have related to a proposed average increase of 31 per cent in service rates in Seattle, Spokane and Tacoma.

It also states that increases in those cities will actually run up to 127 per cent and that toll rates affecting every city and every part of the state will be increased more than 25 per cent.

"The general public," says the petition, "and business houses in particular, understood during the progress of the recent hearings that the department of public works was investigating the question with a view to a revision downward and hence did not realize the necessity of presenting evidence to meet the company's contention for a revision upward."

The petition further declares that the proposed rate schedule contemplates "an unreasonable and almost prohibitive increase in trunk line service, which is certain to reflect adversely to the convenience of other classes of subscribers."

Wisconsin Rural Company Granted Raise of \$3 Per Year.

The Freeman Telephone Co., Ferryville, was authorized on March 13 by the Wisconsin Railroad Commission to place into effect as of April 1, the following rates:

Where the company owns and maintains the instruments and furnishes the batteries, whether the subscriber be a stockholder or a non-stockholder, \$18 per year.

Where the subscriber, whether a stockholder or a non-stockholder, furnishes the instruments and carries the cost of maintenance and of furnishing the batteries, \$15 per year.

This is an increase of \$3 per year over the old rates.

The company operates a system with exchanges at Ferryville, Mount Sterling and Rising Sun, serving 136 stockholding subscribers and 13 non-stockholding subscribers.

The company's report for 1922 gave the value of the property at \$4,400, with the expenses at \$1,486. The wages of the central office operators totaled \$1,192, leaving a little less than \$300 for all other operating expenses.

This probably does not represent the full cost of furnishing service since it would be practically impossible to keep up a telephone system with this amount. The fact that it is a rural company in which most of the subscribers are stockholders probably accounts for the low operating expenses.

In all probability the company as an organization is relieved from the cost of certain work usually falling upon a telephone company.

After a Rehearing, Commission Again Rules for the Company.

The Wisconsin Railroad Commission, in an order of March 13, authorized the Commonwealth Telephone Co., of Madison, to continue the present rate schedule at its Edgerton exchange.

This schedule was approved by the commission in an order of October 14, 1922, but upon petition of 325 subscribers, who received service from 31 of the rural lines of the Edgerton exchange, a rehearing of the case was held.

The net monthly rates are as follows:

Business:	
One-party	\$3.50
Two-party	3.00
Extension	1.00
Residence:	
One-party	2.50
Two-party	2.00
Four-party	1.50
Extension .....	.75
Rural:	
Company owned	2.00
Switched .....	.75

Immediately following the effective date of these rates a petition was sent to the commission asking a rehearing of the case. An order was also sent to the Commonwealth Telephone Co., in which was stated that unless telephone service could be furnished at the old rate, the company should sever all telephone connections between the subscribers signing it and the exchange at Edgerton. This was signed by 325 subscribers.

The petitioners, in purporting to show that this rate schedule was inequitable and unjust, directed criticism:

First, at the book value claimed by the company; second, the value used by the commission for determining the fixed charges in the decision of October 14, 1922; third, the 1921 operating expenses of the company; fourth, the depreciation

allowance made by the commission; fifth, the services rendered by the company, and sixth, the value of the service.

All these matters were taken up in detail, but it could not be found that the criticism of these points was justified, as no evidence was introduced to show any errors in the reports used for the decision of October 14, 1922.

The company furnishes service to 4,345 subscribers—1,043 of which are served from the Edgerton exchange. The fair value of the property and plant is given as \$63,144.

High Cost Per Station, but Lines New—Increase Granted.

In an order of March 13, the Hampden Farmers Telephone Co. was granted permission, by the Wisconsin Railroad Commission, to increase its rate. The new rate, effective April 1, is \$6 net per quarter, an increase of \$1.85.

The company operates five rural lines, all of metallic construction, which receive switching service from the Wisconsin Telephone Co.'s exchange at Columbus. The switching rate amounts to \$7.50 per telephone per year.

The company's records show the cost of the plant at the end of 1922 was \$4,945, which is equivalent to \$92 per station. This is a very high average cost, due, no doubt, to the prevailing prices during 1922.

The system was purchased in 1922, and since then the lines have been completely reconstructed. The wire and pole plant are, at the present time, practically new.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

March 19: Complaint filed by E. Herald, a chiropractor, doing business in the city of Burlingame, charging that the Pacific Telephone & Telegraph Co. has refused and neglected to supply complainant with two telephones—one a business instrument and the other a residence instrument—although both were applied for on January 26.

March 19: Lindsay Home Telephone & Telegraph Co., of Lindsay, authorized to issue a 7 per cent note, payable on or before three years after date, for the principal sum of \$10,000, for the purpose of paying or refunding indebtedness incurred through making extensions and improvements to plant, or to reimburse its treasury on account of earnings invested in plant and equipment.

March 21: Application filed by San Joaquin Valley Telephone Co. for authority to suspend operation, abandon its lines and dispose of its property in San Joaquin.

IDAHO.

March 10: Interstate Utilities Co., of Spokane, Wash., authorized to establish evening rates on long distance messages between the hours of 4 and 8:30 p. m. on Sundays.

ILLINOIS.

February 7: Order entered dismissing application of the Kinloch Long Distance Telephone Co. for authority to issue \$500,000 aggregate principle amount of first mortgage bonds.

February 7: Order entered dismissing

citation order dated October 4, 1922, concerning unauthorized practices of the Illinois Telephone Co., of Jacksonville, the practices having been discontinued.

February 7: Approval given to intercorporate agreements dated November 1, 1922, between Illinois Bell Telephone Co. and the Alexander County Telephone Co. for the connection of toll circuits for the joint handling of toll messages.

February 7: Approval given to the supplemental agreement dated January 1, 1923, between the Illinois Bell Telephone Co. and the National Telephone & Electric Co., of Clinton, being a modification of an intercorporate agreement approved May 3, 1921, and including in the toll line traffic agreement the exchange at Wapella together with three iron metallic circuits between Clinton and Wapella.

February 7: Proposed rates of Jasper County Telephone Co. for service in Newman, Bogota and other towns in Jasper county, resuspended until August 22, 1923.

February 7: Greenup Telephone Co. authorized to establish in the city of Greenup the rates set forth in its schedule IPUC 3, authorized in provisional order of December 20, 1920, to remain in effect as the legal rates for Greenup and vicinity until otherwise ordered.

February 7: Westfield-Kansas Telephone Co. permitted to file schedule ICC 3 for service in Kansas, effective March 1.

February 20: Order entered striking from the docket the application of the Melvin Telephone Co. for increased rates, as the record shows that the suspension order has expired and that the rates became effective May 1, 1920, and no objection had been filed by the patrons.

February 20: Schedule ICC 2 filed by Williamsville Telephone Co., of Williamsville, increasing rural telephone rates.

February 20: Order entered approving lease by the C. B. & Q. R. R. Co. to the Illinois Bell Telephone Co. of certain premises in Chicago, for five years from March 1, 1922, at a rental of \$9 per year.

February 20: Approval given to lease by C. B. & Q. R. R. Co. to the Illinois Bell Telephone Co. of certain premises in Moline, for five years from January 1, 1923, at a rental of \$180 per year.

February 21: Order entered dismissing the complaint of the Dorchester Telephone Co. against the Southern Illinois Light & Power Co., cause of complaint having been satisfied.

February 21: In the matter of agreement dated January 1, 1923, between C. C. & St. L. Ry. Co. and the Brownsville Telephone Co. relating to the construction and maintenance of a telephone wire crossing near Brownsville; approved.

February 21: Petition of the Vermilion County Telephone Co. for a rehearing in proposed advance in rates for service in Danville and vicinity, as set forth in schedule ICC 4; granted.

February 21: Hume Telephone Co. authorized to purchase from F. K. Page, administrator of the estate of G. W. Hughes, deceased, and M. Hughes Page, and others, the entire telephone property owned by them and operated under the name of the Hume Telephone Co. in the villages of Hume and Brocton, for \$40,000; Hume Telephone Co. granted a certificate of convenience and necessity, and authority to issue and sell \$40,000 aggregate par amount of its capital stock.

February 21: Illiopolis Telephone Co., of Illiopolis, permitted to execute and deliver its first mortgage or deed of trust, dated October 1, 1922, to W. C. Durkee, of Dixon, as trustee; also to issue and sell \$12,500 aggregate principal amount of its first mortgage gold bonds, dated Octo-

ber 1, 1922, maturing October 1, 1932, bearing interest at 6½ per cent.

March 7: Rate schedule ICC 3 for service in Brimfield, filed by the Brimfield Telephone Co., effective November 1, 1920.

March 7: Commercial Telephone & Telegraph Co., of Olney, authorized to purchase from A. Bassett, owner of the Albion Telephone Co., for \$2,000 par amount of preferred capital stock of the Commercial company and \$10,000 in cash, all of the plant and property of the Albion company; Commercial company also granted a certificate of convenience and necessity to operate the Albion exchange; also authorized to issue and dispose of \$2,000 par amount of its preferred capital stock and \$10,500 principal amount of its first mortgage, ten-year, coupon, gold bonds, dated July 1, 1920, bearing 7 per cent interest per annum.

MINNESOTA.

April 18: Hearing to be held at Blackduck on application of the Blackduck Telephone Co. for authority to increase its local and rural rates.

April 27: Hearing to be held at Lakefield on petition of the Lakefield Telephone Co. for an increased rate schedule.

NEBRASKA.

March 22: Application filed by Lincoln Telephone & Telegraph Co. for permission to increase rates on University Place exchange to Lincoln zone rate.

March 23: Application filed by the Northwestern Bell Telephone Co. for permission to close exchange at Antioch and maintain toll station only.

NEW JERSEY.

March 14: Hearing held in Newark on petition of the New Jersey Telephone Co., of Lebanon, for authority to abandon the Glen Gardner and Wood Glen line; case taken under advisement.

NEW YORK.

March 26: Hearing held at Binghamton on complaint of the village and chamber of commerce of Walton against the Walton People's Telephone Co. as to increased rates.

TENNESSEE.

March 22: Hearing held at Nashville on complaints as to rates and service of the Intermountain Telephone Co., of Kingsport.

UTAH.

March 14: Order entered continuing the present toll rates in Salt Lake County; reductions made in schedule of rates for Holliday exchange.

WISCONSIN.

March 15: Midway Telephone Co., of Stetsonville, authorized to issue 200 shares of capital stock of \$100 par value, proceeds to be used to pay for improvements.

March 26: Hearing held at Madison on the application of the Farmers Independent Telephone Co., of Grantsburg, for authority to increase its rates. U-2838.

March 26: Hearing held at Barneveld on the investigation on motion of the commission of the service and practices of the West Line Telephone Co., of Barneveld. U-2822.

March 28: Hearing held at Madison on the application of the Annaton-Preston Telephone Co., of Montfort, for authority to increase its rates. U-2834.

March 28: Hearing held at Madison on the investigation on motion of the commission of the terms and conditions of the operation of Foley's switch between the lines of the Annaton-Preston Telephone Co., of Montfort, and the Muscoda Telephone Co., of Muscoda. U-2840.

March 28: Hearing held at Madison on the application of the Bristol Telephone Co., of Bristol, for authority to increase its rates. U-2844.



The Prest-O-Flame stays on the job with you

With the flame of your Prest-O-Torch you don't have to worry about heat—up on the line—or on underground work. No irons to cool off—or to preheat. No brazier to keep going in order to heat extra irons. All that fussing is done away with.

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Texas Men Discuss Many Subjects

they serve, with the common interests of the people of that community.

But these startling facts are not understood by all the people served by these utilities—nor by all the utility operators.

It is in the interest of sound business, happy homes, prosperous and progressive communities, and good government that this interrelation of the public utilities and their customers and communities be fully understood and appreciated.

Progressive men who have charge of the public utilities in Texas recognize the necessity of bringing about and maintaining an enlightened public opinion toward the utilities. Beside this problem other questions of public utility management and operation present little difficulty.

The utility business is so affected with a public interest that it is regulated as to its rates, either by law or by public opinion. The interest of the people served by a public utility lies in adequate service at a reasonable rate. In order that such service may be rendered it is necessary that a public utility shall be permitted to earn sufficient returns on its invested capital to make the investment attractive and thus induce new capital to engage in the business.

The utility industry requires a very large capital investment in proportion to the amount of business done. In this it is the very opposite of the business of



Vice-President F. W. Greber, of Brownwood, Has Been Active in the Texas Association for Several Years.

the public as a whole, where a large volume of business is done in proportion to the amount of capital invested in it.

The average business man can hardly comprehend a business that requires the investment of five dollars for every dollar

(Continued from page 14.)

of income. His mind is running on his own business that he expects will amount to five dollars on each dollar employed. Yet the public utility business requires an investment of about five dollars for every dollar of annual gross income.

The average business man has little thought for a business that has to provide the necessary equipment to care for the maximum demands that are made upon it at the moment they are made, and which cannot be equalized over a considerable period. Yet that is the case with the public utility business.

It is along the lines of these fundamental problems of the public utilities that the people must be educated in order that there may be enlightened and sympathetic public feeling toward the utilities. This education is under way. The effect is already to be seen. It must go on a great deal farther if the public are to receive all the benefits that they can receive from the utilities of Texas.

Utility managers and operators in a large number of states, including Texas, have undertaken to bring about understanding among the people who are customers for their service of the fundamental facts mentioned and scores of others of similar import.

Among the agencies that they have set up to this end are committees of public service information which operate in every way to promote this understanding—through the newspapers with news articles and paid advertisements placed by the several utilities, through public addresses by utility men, through educational courses in the colleges and schools whereby the science of government is made clear to students, by encouraging the study of their domestic problems by the people generally of the state, through the publication of pamphlets, and largely through the education of utility men themselves to establish proper public relations with the people of their communities who are their customers.

The Texas Public Service Information Bureau is a department of public relations for the telephone, electric light and power, electric railway and gas industry of Texas. Its purpose is to promote better relations between the utilities companies and their customers by bringing about a more complete understanding of the utility business by the general public and a more complete understanding of the general public by the men who manage the public utilities.

The committee exists to furnish accurate information and facts about the utility business to any citizen or group of citizens. The committee is endeavoring to establish a condition where each utility

company will cultivate its public and establish friendly relations with the people who are served by it, taking them fully into its confidence.

A very interesting talk was made by J. C. Paxton, of Sherman, assistant gener-



Vice-President John Y. Rust, of San Angelo, Texas, Is Good Association Booster When Work Is to Be Done.

al manager, Grayson Telephone Co., on the subject of "Are You Making or Losing Money." He used a number of charts to illustrate his points. He made a number of suggestions concerning the increasing of the revenues of telephone companies and also a number concerning the curtailing of expenses, touching, of course, upon economic management, satisfactory service and efficiency.

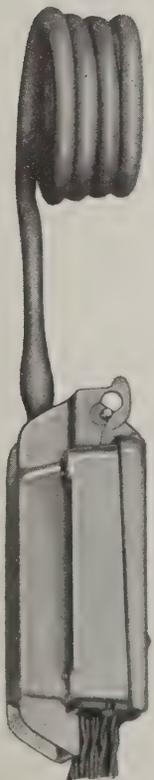
The afternoon session was opened with an address by E. C. Blomeyer, Chicago, vice-president, Automatic Electric Co. on the subject "Times Do Change." Mr. Blomeyer is a former Texan and is past president of the Texas association and also past president of the Texas Telephone Co. He related the former hostility that existed between the Independent telephone interests and the Bell people and expressed a confidence that conditions were changing for the better. Problems there were, of course, he said, but progress was to be found in this solution.

An address that appealed to practically every telephone man present and one that was very interesting was made by Judge S. A. Lindsay, of Tyler, president of the Gulf States Telephone Co., on the subject of "Financing Problems of Independent Telephony." He proposed a plan of financing the smaller Independent telephone companies on the basis of time loans with an amortization feature, the plan

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being based on one similar to that now used by building and loan associations.

The loan plan would be supervised entirely by the association through its officers and directors and a board of trustees. He asked that the plan be organized by the members present by appointing the necessary number of trustees. This matter was then taken up and discussed.

"Developing the Toll Business," by Sam H. Shutt, of Waco, general superintendent, the Texas Long Distance Telephone Co., was a technical discussion of methods of bettering revenues in this branch of the business. He suggested ways and means whereby every Independent telephone company could not only improve its long distance service but also increase the revenue therefrom.

This was followed by a discussion of the relations between the Bell system and the Independents in the handling of long distance calls, by V. E. Cooley, Dallas, general traffic superintendent, Southwestern Bell Telephone Co. Mr. Cooley said the local telephone business in Texas was split about 50-50 between the Independents and the Bell and that public interest was best served by careful and conscientious handling of all long distance telephone traffic.

C. A. Shock, of Sherman, vice-president and secretary of the Grayson Telephone Co., addressed the convention on the subject of "The Value of Vision in Business." Mr. Shock, being one of the veterans in the Independent telephone business in Texas, told of many experiences in his past career in this business, the lessons he had learned from them, and how they had taught him to better serve his patrons and the public.

The president then named the following convention committees:

Auditing: Fred Moore, Waco; V. E. Shipman, Pecan Gap; and T. P. Bearden, Baird.

Nominations: H. M. Cox, Waco; F. W. Greber, Brownwood; and J. F. Dixon, Mount Calm.

Resolutions and by-laws: J. B. Earle, Waco; J. Y. Rust, San Angelo; and C. A. Shock, Sherman.

A resolution was presented and duly carried amending the by-laws so that the members of the convention elect 17 directors and that the directors then elect the officers. This changed the by-laws from the former method of electing the officers by nominations from the floor or by a nominating committee.

A resolution was also presented and passed to enlarge the bulletin service of the association and that the officers be authorized to put into effect such plans as would accomplish this end.

The annual banquet of the association was held in the Palm Garden of the Adolphus Hotel, at 7:30 o'clock, Thursday evening. There were 241 people present. E. C. Blomeyer, of Chicago, was toastmaster

and it is unnecessary to add that "all had a pleasant evening."

Special features of the program were vocal solos by Mrs. Lester Lacy, of Dallas, who sang "Smiling Thru," in splendid voice, giving as an encore, "All the World's Waiting for Sunrise"; an Oriental dance by Miss Gladys Mintz and tango and Apache dance numbers by Miss Doris Mansfield and Rolf Belmont. A saxophone solo by Ulessa de Capua, saxophone virtuoso, was entitled "Saxophobia" which is one of Rudy Wiedoft's numbers. Impromptu dances by little Mary Jane Eldridge, daughter of Mr. and Mrs. F. L. Eldridge, of Chicago, won much applause. Little Miss Eldridge presented Mrs. Lacy with a bouquet of roses.

Among those who responded to toasts were John Y. Rust, San Angelo; Judge S. A. Lindsay, Tyler; W. H. Walters, McGregor; C. A. Shock, Sherman; H. M. Cox, Waco; and R. B. Still, Tyler.

The Friday morning session was taken up with technical talks on various subjects. The first speaker was F. W. Greber, Brownwood, general manager, West Texas Telephone Co., whose subject was "Standard Engineering Practices."

Mr. Greber explained the importance of having a standard way of installing and constructing a telephone plant in order to get the best service, the longest life and the lowest maintenance. He cited cases and gave examples where the lack of standard practices had worked to the detriment of the plant, the service and the stockholders' profits.

C. D. Kinne, Texas representative of Stromberg-Carlson Telephone Mfg. Co., talked on "Storage Batteries, Installation and Maintenance." He covered the ground thoroughly, giving much detail information on the construction of batteries, their installation and the proper care.

"Underground Cable Construction," was the subject of a talk on the construction of underground cable for small exchanges, by R. W. Garner, of Waco, plant superintendent, Texas Telephone Co.

"Most telephone men are short lived, due to much worry caused by kicks from every side, efforts to properly maintain the system, to cut cost and still maintain service," he said. "Years are knocked off his life by worry over fires, ice, wind, housemovers, pole rot, woodpeckers, and small boys shooting sparrows."

Mr. Garner declared that the telephone manager should never lose sight of the fact that the public is entitled to the very best service it is possible to give.

Herrick Johnson, of Texarkana, plant superintendent, Two States Telephone Co. gave a very interesting and instructive talk on "Outside Plant Construction and Maintenance." His talk dealt with the construction and upkeep of pole leads, open-wire and rural lines. He made many good suggestions regarding the proper methods to use in this work.

The problems of the switchboard were dealt with in the talk on "Switchboards: Their Installation and Care," by Sam B. Dibble, of Waco, equipment engineer of the Texas Telephone Co. While his talk covered the installation and maintenance problems connected with magneto boards, he also referred to the common battery type of board and explained some of the problems that usually arise from that type of board. He explained the cause of many common troubles in switchboards and the methods that should be used to correct them.

The afternoon session of Friday was taken up with the business affairs of the association.

The report of the treasurer was received and filed. The report showed that the association is in better financial condition than it has ever been before.

The report of the secretary showed that the membership is about the same as last year; that the association had held six very successful meetings during the year past at Houston, Austin, Brownwood, Fort Worth, Waco and Tyler. He also reported that the legislative committee had done some excellent work during the past session of the legislature, during which time there had not been passed any bills that were detrimental to the telephone industry in Texas.

The reports of the standing and convention committees were then received and filed.

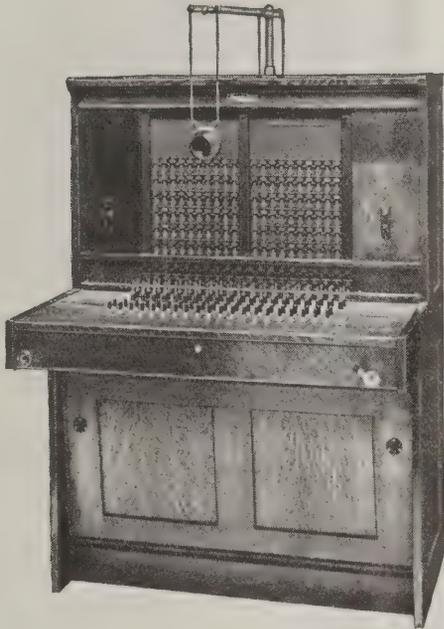
The nominating committee made its report, recommending that the following 17 members of the association be elected as directors for the ensuing year:

J. C. Paxton, Grayson Telephone Co. Sherman; L. S. Gardner, Texas Telephone Co., Waco; R. B. Still, Gulf States Telephone Co., Tyler; F. W. Greber, West Texas Telephone Co., Brownwood; J. B. Earle, Texas Long Distance Telephone Co., Waco; John Y. Rust, San Angelo Telephone Co., San Angelo; John W. Pace, Haskell Telephone Co., Haskell; C. A. Shock, Grayson Telephone Co., Sherman; C. D. Longserre, Bardwell Telephone Co., Bardwell; John W. Kibler, McLean Telephone Co., McLean; John A. Stratton, Kellogg Switchboard & Supply Co., Dallas; C. D. Kinne, Stromberg-Carlson Telephone Mfg. Co., Dallas; T. P. Bearden, Home Telephone & Electric Co., Baird; V. E. Shipman, A. T. Shipman & Sons Telephone Co., Pecan Gap; A. L. Robb, Electra Telephone Co., Electra; Mrs. J. M. Daniel, George town Telephone Co., Georgetown; and J. F. Dixon, Mount Calm Telephone Co., Mount Calm.

Upon motion the secretary was directed to cast the ballot of the convention for the unanimous election of the nominees. This was done and the directors were declared elected.

Following this the convention adjourned.

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Making Telephones Talk Easy and Convenient.

"When I was a little boy," said a well-known engineer one day, "I thought that telephone wires were hollow so that the sound could go through them from one end to the other. My father explained to me, as best he could, the way the telephone worked, but the process of transmitting speech over a wire remained a mystery to me for a long time.

"In those days, telephones were a luxury and, while they were a convenience, they were an annoyance too," he went on. "Sometimes you could get the person you wished to speak to, and sometimes not; and when a connection was established,

there was often great difficulty in understanding what was said. Then, too, so few people had telephones 25 years ago that you might not be able to reach the man you most desired to talk to, while neighbors were apt to track up the house to borrow the use of the telephone, both for incoming and outgoing calls. I tell you, the telephone service was very different then from what it is today."

Indeed, it is different. The perfecting, growth and development of telephone service reads like a fairy story. A few years ago there were not nearly enough telephones in the cities to render an adequate service, while a telephone on the farm was almost unknown. Today the farmer and his family are no longer isolated from their friends and neighbors, and a man can sit in his office and do business, practically anywhere he likes over the telephone, so universal has its use become.

With this extension of use has come great improvement in operation. And why? Because ideals of service entered the business and continuously lifted the business

higher. Ideals and vision, that were beyond and above the commonly accepted performance, constantly pushed telephone progress forward.

And what were these ideals? First, to give every man who should have one a telephone, for the production of telephones



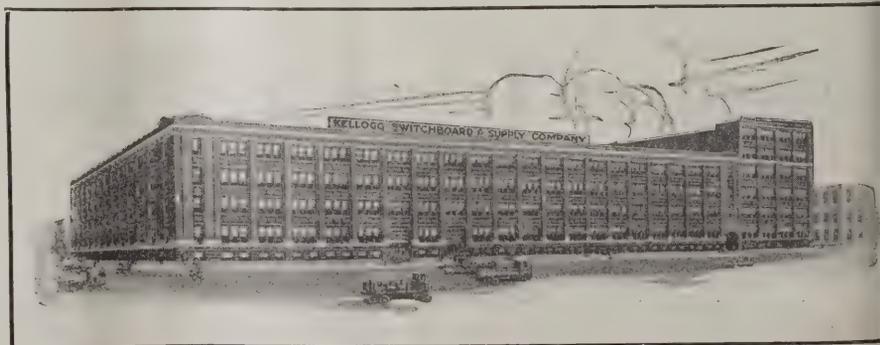
The First Kellogg Factory Was in An Old School Building.

was far behind the demand for them; and second, to give the public the clearest, most convenient and inexpensive transmission of speech that ingenuity and hard work could devise.

In pursuance of these ideals, groups of men, about 30 years ago, started to make and distribute the Independent telephone. Today their systems are found throughout the world. The early obstacles encountered and the difficulties to be overcome might well have discouraged men who were less firm of purpose, but these men had seen an ideal to be attained, and they were not to be diverted from its accomplishment.

As these Independent manufacturers began to supply their telephones and switchboards, they found a co-operative spirit among Independent system managers who believed in giving a service to their communities for which they alone should be responsible—one which would embody their ideals of service to the public and which would be independent of any other organization.

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The Present Modern Chicago Factory of the Kellogg Switchboard & Supply Co.

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Uniform in construction Hazard Insulated Wires and Cables give uniform service. Made of the best of materials and by highly skilled workmen. Experience, knowledge and honesty of purpose insure long life and ultimate economy.



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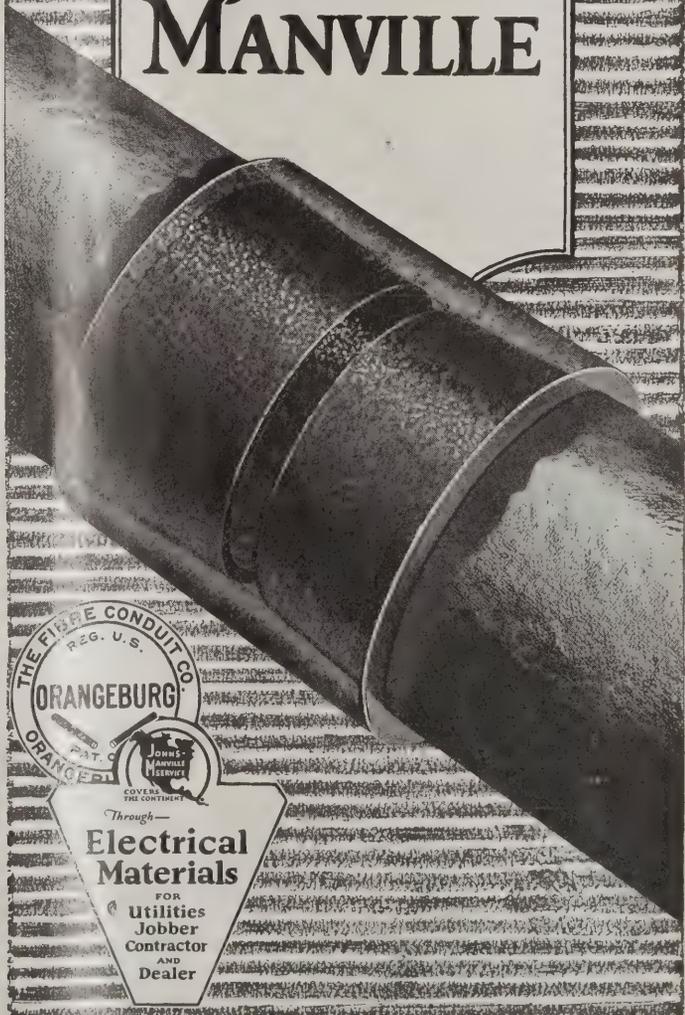
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MACHINED joints contribute to the reliability of Orangeburg Fibre Conduit. They are easily coupled, yet tight. Cement edges cannot intrude at the joints to injure the cable when drawing in. The joints have a high resistance to water and gas seepage—a protection against electrolysis and manhole explosions. The protection of Fibre Conduit is the greatest argument for its use—the fact that it is inexpensive is incidental.

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Co., starting in an old school building near Chicago with just a few men, building for real public service, inevitably grew larger and larger. One factory after another was outgrown, until in 1915 the present building on the west side of Chicago was called for by the growth of the company. This factory contains over 14 acres of floor space, and ranks among the largest and most up-to-date factories in the world for the production of telephone equipment.

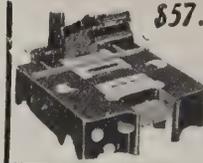
Since the first shipment of telephones by this company, the name "Kellogg" has had much to do with the progress of the telephone industry. Being free to develop telephone engineering along the lines that the public's demand indicated as the best type of telephone service, and aided by constant research and experiment, the Kellogg company has been of great assistance to telephone men who are striving to give a better service, not only in the larger cities but in small towns and villages throughout the world.

Largely through its continuous and dependable efforts, telephone managers have been able to secure equipment of the most modern type, and thus have been enabled to serve telephone subscribers in the most efficient manner. One has only to recall the crude and limited telephone service offered to the public after 20 years of development, before Kellogg entered the field prior to 1897, to appreciate the service rendered telephone users the world over by this and other manufacturing companies.

In line with its policy of improving and extending the use of telephone service, the Kellogg company originated and made available economical party-line systems for the small-town telephone users, as well as for the larger city exchanges.

Twenty years ago the Kellogg transmitter was produced, and today, practically unchanged, is considered a standard instrument. There are now said to be more than 3,000,000 Kellogg transmitters in service. Other advances in telephone design are shown in the production of the unbreakable desk telephone, the receiver without the outside connections from which people received electric shocks, and the Kellogg receiver shells which are now practically unbreakable.

Today there are, it is stated, over 20,000 Kellogg switchboards in use in the larger cities and in the smaller towns and villages all over the world, giving a service that is acknowledged to be of the best, with



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LIGHTNING ARRESTERS**

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A policy of furnishing the very best apparatus at the lowest cost consistent with sound business principles is largely responsible for the rapid growth and outstanding success of the Kellogg company.

P. A. Collins with North Electric Mfg. Co., Galion, Ohio.

Paul A. Collins, formerly Washington representative of the Automatic Electric Co., has been appointed assistant manager of the P. A. X. department of the North Electric Mfg. Co., Galion, Ohio, manufacturer of private automatic exchanges for inter-office communication and machine switching systems for city telephone exchanges. Mr. Collins comes to his new work with a broad experience in the telephone business.

In 1902, after a course at the School of Applied Science, Harvard University, he entered the traffic engineering department of the American Telephone & Telegraph Co. and was engaged for several years, first on fundamental development plans, checking of traffic data and special investigations, for studies of telephone operating methods and practices.

In 1909 he was made assistant super-



Paul A. Collins, New Assistant Manager of P.A.X. Department of North Electric Mfg. Co.

visor of traffic for the Southwestern Telegraph & Telephone Co. of Dallas, Texas. A year later the Bell Telephone Co. of Missouri appointed him manager of traffic inspection at St. Louis; a few months later assistant superintendent of traffic, and in May, 1911, superintendent of traffic for the company.

In the fall of 1911 F. L. Gilman, then general manager of the Missouri & Kansas Telephone Co., transferred Mr. Collins to Kansas City to assist the general traffic superintendent in the standardization of traffic methods in accordance with the

methods and routines originated by the engineering department of the American Telephone & Telegraph Co. Returning to St. Louis, 17 months later, he was placed in charge of all traffic methods, instruction and standards, including the operation of the telephone-telegraph service for the Southwestern Bell Telephone System, which then included the group of companies operating in Missouri, Kansas, Arkansas, Oklahoma and Texas.

On account of temporary ill health the first of 1914, Mr. Collins resigned from the service of the Southwestern Bell System and returned to Boston. Shortly after the Automatic Electric Co. requested him to take charge of sales work in the New England states, and he was acting in the capacity of New England manager just prior to accepting a commission in the U. S. Signal Corps May 2, 1918. After three months' service in the United States and a year as telephone and telegraph traffic officer, intermediate section S. O., A. E. F., he returned to the United States. He was discharged on August 4, 1919, and resumed his former position in Boston at the request of Automatic Electric Co.

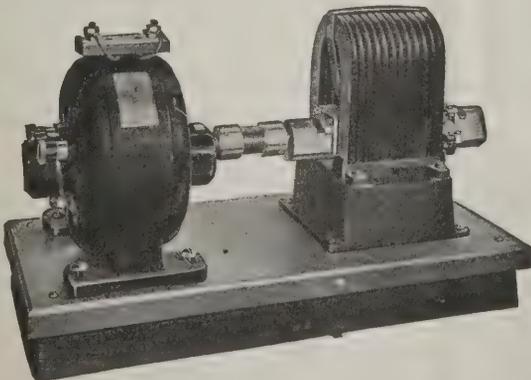
During 1919-1921 Mr. Collins handled sales and engineering methods in the New York office of that company and for the past year conducted all negotiations for Automatic Electric Co. with the United States government as its Washington representative, from which position he re-

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Grounded Lines
Metallic Lines
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OSHKOSH
Construction Tools

signed March 1 to become associated with the North Electric Mfg. Co.

Stromberg-Carlson Exhibit at the Kansas Convention.

The Stromberg-Carlson Telephone Mfg. Co. had an interesting exhibit at the recent convention of the Kansas Independent Telephone Association at Ottawa. The exhibit was in charge of C. A. Sweet, Kansas representative of the Stromberg-Carlson. J. E. Wilkins and P. Wine-miller of the company's engineering department were also in attendance.

Radio headsets were presented to J. O.



Exhibit of Stromberg-Carlson Telephone Mfg. Co. at the Kansas Convention.

Gustafson, of Fredonia, and H. L. Zegen-bein, of Osage City.

Standard Underground Cable Co. to Move its General Offices.

The Standard Underground Cable Co. will, on April 2, move its general offices and Pittsburgh sales office from the West-inghouse building, where they have been located for many years, to the company's new factory and office building at 100-108 Seventeenth street, Pittsburgh, Pa.

The new building is a four-story brick and steel structure just completed and occupying the entire block between Sixteenth and Seventeenth streets. This block

was the site of the company's first factory erected in 1883.

The company also announces the opening of a branch of its St. Louis sales office in the Scarritt Arcade building, 817-819 Wal-nut street, Kansas City, Mo. E. H. Shutt, who has been with the company for several years, will be in charge of the new office as district sales agent.

Prices in the Metal Markets.

New York, March 26.—Copper—Easier. Spot and futures, 17 $\frac{3}{8}$ cents. Tin—Weak; spot and futures, \$47.62. Iron—Steady; No. 1 northern, \$31.00@32.00; No. 2 north-

ern, \$30.00@31.00; No. 2 southern, \$27.00 @28.00. Lead—Easier; spot, 8.25 cents. Zinc—Steady; East St. Louis spot and nearby delivery, \$7.90@8.60. Antimony—Spot, 8.75 cents.

City Council of Oswego, Kans., Votes to Build Line.

The Oswego, Kans., Chamber of Commerce voted on March 12 to proceed with the organization of a mutual telephone line within the city to join with the other mutual systems which are already at the city limits.

A committee of five was appointed by President W. A. Blair to handle the

matter and to work with the mutual com-mittee in linking up the two systems.

HELP WANTED

WANTED—Man who has had expe-rience rebuilding telephones and small switchboards, preferably one also hav-ing had experience in an operating tele-phone exchange. Central Illinois. Ad-dress P. O. Box 997, Joliet, Ill.

POSITIONS WANTED

WANTED—Position by Automatic switchman and P. B. X. man of wide experience. Address 5241, care of TELEPHONY.

WANTED—Position as manager of a telephone exchange. 20 years' prac-tical and technical experience, working up a thorough organization of co-opera-tion between employes and public. My system of collections brings results. Address 5239, care of TELEPHONY.

WANTED—Job with growing com-pany. Practical and technical training in telephony and years of practical management of exchange. Experience in commission and income tax reports. What have you? Address 5254, care of TELEPHONY.

FOR SALE

FOR SALE—Telephone plant in southwest Missouri. Net income \$500 per month. For quick sale \$15,000. Reason for selling, poor health. Ad-dress 5260, care of TELEPHONY.

FOR SALE—Local telephone ex-change with 395 subscribers. Equip-ment includes Kellogg switchboard, 500 capacity, two-positions; one Frank C. Cook retaining rack, 500 capacity. All in first-class condition. Aerial cables and transmission lines in good shape. Handle 11 rural lines. Connect with Citizens and Bell lines with town of 1,200. 34 miles north of Grand Rapids on Pennsylvania R. R. and Pere Marquette R. R. Because of failing health will sell below value. Terms to right parties. Address Citizens Telo Co., Howard City, Mich.

WANTED TO BUY

WANTED—One position Western Electric switchboard type No. 10 fully equipped. Address Southern Indiana Telephone & Telegraph Co., Sey-mour, Ind.

NORTH

Dial-equipped telephones (North P. A. X. for private exchange subscribers.

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FEDERAL TELEPHONE REGULATION

Nine out of ten telephone men will say a fervent

"Amen!" to the protest of the Wisconsin State Telephone Association against the unnecessary and vexatious regulation of local service companies by federal authority.

The resolutions adopted by the Wisconsin association express a grievance that no doubt is shared by business men everywhere in the country, for telephone men are not the only ones who are becoming weary of the growing centralization of authority at Washington. There is a general belief, growing stronger every day, that the federal government is "butting in" too much on everyday affairs.

By the time the average business concern gets through making out the various reports, questionnaires and schedules asked for by the many bureaus, boards and commissions in Washington, the rest of the day is spent in wondering "what in sixty" they do with them after they get them. No wonder they are constantly short of vault space at the capital, though why they should preserve the tons of reports passes comprehension, for no use seems to be made of them.

* * * *

Attention is directed to this "over-regulation" at this time by the action of the Interstate Commerce Commission calling a hearing for May 1 in Washington, at which telephone companies are invited to express their views on the depreciation procedure which the commission is preparing to formulate for governing the telephone industry.

For many months the commission has been agitating the telephone field on the subject. Companies have been urged to fill out questionnaires, and telephone associations have been asked to submit briefs outlining their views. Reports, reports and more reports!

* * * *

Because some telephone service is interstate, federal legislation defines telephone companies as common carriers, and places them under the jurisdiction of the Interstate Commerce Commission. In 1921 there were 1,120 companies which reported to that commission which prescribes their accounting methods and is now planning to set up a depreciation system for them.

The overwhelming bulk of any company's business, however, is entirely local and has no relation to the Interstate Commerce Commission nor any other branch of the federal government. It is plainly a matter for state regulation, and that alone.

* * * *

In Wisconsin, the figures show that more than 99 per cent of the revenues of a number of average companies, taken as a basis, is derived from sources which have no connection with interstate business. Yet under the present system the federal government claims jurisdiction over these companies, and, because of the 1 per cent that has a tinge of interstate color, calls for reports and more reports, to feed the files at Washington.

The federal transportation act should

be amended so as to not apply to telephone companies

when not engaged in interstate traffic. The control which the Interstate Commerce Commission now exercises over such operations simply adds—and unnecessarily—to the regulation by the state commission. It imposes an unnecessary burden on most companies and serves no useful purpose.

In fact, its only result is to compel the making of endless reports that add to the constantly growing mass of similar stuff which finds oblivion at Washington.

* * * *

One of the speakers at the Wisconsin convention described the situation as "a ridiculous condition of affairs"—and those who have come in contact with its practical working agree with the statement.

Congress should be asked to exclude from the operation of the federal transportation act all telephone companies except interstate toll companies.

As a matter of fact, the Interstate Commerce Commission's regulation of the railways has not been such a shining success as to justify it in extending its control to other utilities. It has a long, hard job ahead of it in setting up a depreciation procedure that will be satisfactory.

* * * *

That the commission suspects it is tackling a difficult task is indicated by the report of the depreciation section, extracts from which appear in this issue. The establishment of one standard rate for depreciation to apply to all telephone companies, operating under widely different conditions, is conceded to be impracticable.

Attention is also called to the fact that it has been found impossible to get complete information from the companies, particularly the Class C, or smaller, companies. In fact, it is intimated that the Class C units will be excused from the depreciation requirements for the present at least.

This will be welcome news to the Class C companies, but it is amusing to note that the passion of Washington to compel the making of reports leads the commission to advise these companies, nevertheless, to keep up records and collect data, so that, if in the future the commission should include Class C, the reports from year to year would be available.

According to the Interstate Commerce Commission, a Class C company is one whose annual operating revenues run between \$10,000 and \$50,000.

* * * *

As governmental bodies move slowly, the hearing on May 1 is probably only the start for a long, tedious proceeding. Besides the matters discussed in the current report of the depreciation section, the commission desires companies to give consideration to the following questions:

"1. Has a depreciation reserve any other purpose than to provide a means

of equalizing the effect of property requirements, so that the disproportionate burden may not fall upon the operations of any one year? If so, what other purpose has it?

2. If a depreciation reserve has no other purpose than that stated, will the method of determining depreciation charges, which is recommended by the depreciation section, provide a reserve which is no larger than is necessary for such purpose?

3. Should amounts reserved as the result of depreciation charges from what would otherwise be surplus earnings be segregated in a special fund, to be invested in whole or in part in liquid assets, so that companies may be in a position to make necessary or desirable replacements of property even when not in a position to market new securities on advantageous terms?

4. Does the straight-line method of determining depreciation charges, as compared with a sinking fund or annuity method, result in larger charges than the public served can equitably be asked to pay?"

* * * *

In passing, it may be noted that in its report of the preliminary investigation, the commission appears to consider the straight-line method the most feasible.

* * * *

Outspoken criticism of a government body by individuals subject to its con-

trol is seldom uttered, for no one likes to "get in bad" with the powers that be. Major General Goethals, the famous engineer who built the Panama canal, however, does not hesitate to express his opinion of the Interstate Commerce Commission.

April 1 General Goethals retired as New York state fuel administrator and he was interviewed on his experience in trying to supply the public with coal. Without any mincing of words he blamed the Interstate Commerce Commission for the coal trust getting away with profiteering prices and shortage of supply during the winter. Goethals considers the commission a "haven for lame ducks," and that it is, consequently, dominated by politics.

* * * *

The general doesn't think much of the average government board anyway, when it comes to business results. He came close to recording an epigram when he said: "I have always defined a board as something narrow, flat and wooden, and that definition fits the I. C. C."

He might have added that a board can sustain only a certain amount of weight, and that many believe the Interstate Commerce Commission has more work than it can properly handle.

Stay Out of the Banking Business

The "Why" of Good Collections—Many Companies Borrow Money from the Banks and Pay Interest on It; Then They Turn Around and Loan This Money to a Group of Telephone Subscribers Without Any Interest Whatsoever

By J. C. Paxton

Assistant General Manager, Grayson Telephone Co., Sherman, Tex.

If you should read in the morning paper that your local banker had opened a small telephone exchange for the convenience of his customers and was giving telephone service absolutely free, what would you do about it?

You would probably get out the family shotgun, march straight up to his office, read the riot act to him and demand that he stay in his bank and keep out of the telephone business.

If he did not seem inclined to follow your suggestion, you would call his attention to the fact that the telephone business is performing a useful service in the world, for which it is entitled to compensation, and that by furnishing free telephone service, he was ruining your business without doing himself any real good.

You would point out the difference between the telephone business and the banking business, and state that he should

confine his efforts to carrying on the business of a bank and let you look after the telephone business.

What if the shoe were on the other foot? Suppose the banker came down to your office and demanded that you stay out of the banking business and confine your efforts to running the telephone business. What would you think about that?

What is the difference between the telephone business and the banking business?

The main object in the telephone business is to furnish telephone service. That is how a telephone man makes his money, and if he cannot furnish telephone service to a sufficient number of people and induce them to pay for it, he has to go out of business.

The main object in the banking business is to loan money. That is how a banker makes his living, and any time that he cannot loan a reasonable amount

of money at the current interest rates, he has to close his doors.

For a banker to furnish telephone service, would be to invade the telephone field, and if he furnished it absolutely free, it would be only adding insult to injury. If a telephone company loans money, it is invading the banking field, and if it loans money without interest, it is doing the banker as great a wrong as he would do to furnish free telephone service.

But why all the discussion about loaning money and about the banking business? Who ever heard of a telephone company's having any money—much less loaning it out, either with or without interest?

It is a notorious fact that the majority of telephone companies permit their subscribers to become delinquent on their telephone accounts, and that many telephone companies are carrying large bal-

ances in unpaid accounts against subscribers who are still receiving service.

If a telephone company carries a subscriber's unpaid account for several weeks or months after it is due, it is doing exactly the same thing as loaning the subscriber money without charging him any interest.

Perhaps it seems a small item, and in the case of many individual accounts it is a small item, but there are thousands of telephone exchanges which are carrying on their books balances amounting to hundreds and even thousands of dollars; and who, at the same time, are paying interest to some bank for money which they have borrowed from it.

The idea never seems to occur to the managers of these exchanges that in reality they are posing as public benefactors by borrowing money on their own credit from the bank and paying interest on it, and then turning around and loaning this money to a group of telephone subscribers without any interest whatsoever.

Many a telephone manager would feel insulted if some subscriber whom he scarcely knew should ask him for the loan of \$10 without security, without interest, and for an indefinite time.

But the same manager will let the account of almost any subscriber run until it amounts to \$10, and will go to the bank himself and borrow money to pay his obligations when he has outstanding a sufficient amount to cover all his indebtedness if he would only collect it.

The main trouble with collections is that most telephone companies started out on the wrong principle, and have never had their mental attitude straightened out.

Most telephone exchanges were started under some form of actual or threat of possible competition, and the managers thought it necessary to use every possible means to secure and retain patrons for their company.

Because of these conditions, there grew up among many telephone men the idea that subscribers should not be disconnected for non-payment except in very extreme circumstances, and that a tele-



What Would You Do If Your Local Banker Opened a Small Exchange for His Customers' Convenience?

phone manager could safely run his credit system on the same basis as the manager of a store.

Within recent years, there have come about many changes in the telephone busi-

ness. New conditions have arisen and many operating practices which were successful a few years ago, will not prove successful today.

With the phenomenal growth of telephone exchanges and the great increase in the number of subscribers, collections have assumed a new phase. They can no longer be handled upon the "hit or miss" policy of the corner grocery man, but must be placed upon a definite business basis.

The older utilities have long since gone out of the credit business, and have been out for so long that no one thinks of asking for credit at one of their offices.

If you go to a post office for stamps, you pay cash for them and do not feel insulted if the postmaster refuses to take your personal check.

If you go to the railway depot, you pay cash for a ticket and if you make a freight shipment, you pay the freight before the goods are shipped, or else the railroad company has a lien on the goods until all the freight charges are paid. The same condition prevails with regard to express shipments.

The power and light, the gas, and the water utilities have adopted the general practice of requiring a deposit to be made before service is given, and of discontinuing service on a definite date if the monthly charges are not paid.

The two utilities which are the least strict in their collection policy, are the telegraph and the telephone systems, the latest to enter the field, and these are rapidly taking the necessary steps to place their houses in order.

There are definite reasons why a utility should collect its charges under a more strict system than is required of the ordinary business:

In the first place, a utility cannot vary its charges to suit changing conditions as an ordinary business can do.

In the second place, a utility cannot charge one price to a man who is good pay, and a higher price to the man who is poor pay, as an ordinary business can and does do.

In the third place, a utility has a larger group of customers, does business with each customer for a smaller amount and upon a smaller margin of profit, and thus proportionally has a greater expense of collection and a larger loss if its collection methods are lax.

Telephone men, whose collections are in bad shape, often excuse their delinquency by saying that the subscribers will not stand for a strict collection policy, and that if they tried to make everyone pay it, they would be sure to

lose 90 per cent of their subscribers.

If the service at a telephone exchange is so wretched or the subscribers so exceedingly poor that the only reason they retain their telephones is that the manager



Long Articles Are Written on Various Methods for Painlessly Extracting Money from Telephone Subscribers.

permits them to do so without making payment, the sooner 90 per cent of the telephones are taken out and the exchange is closed up and junked, the better for all concerned. The telephone manager may be able to make an honest living in some other business, and the subscribers certainly will not lose anything.

The question is often asked, "What is the best way to collect?" and long articles are written on various methods for painlessly extracting money from telephone subscribers.

The one secret of successful collections is that the telephone company must get a backbone instead of a wishbone, and get firmly fixed in its mind the fact that it is entitled to its money promptly each month, and that it has no earthly excuse for not getting it.

Of course, the ideal collection system is one in which each subscriber actually makes a deposit sufficient to cover all his charges, for a considerable period, and is required to make monthly payments under the penalty of losing his telephone at any time these payments are not made by a given date.

This policy is in force at many telephone exchanges, and if it is strictly carried out, there is no possibility for loss except through clerical error or other mistake.

For the telephone company that does not require advance deposits, there is a plan which will reduce collection losses to the minimum.

It is to require payment during each current month and to disconnect all subscribers who have not paid their bills by a set day of the current month, usually the 15th or 20th day.

Where this plan is followed, there can never be a greater loss on rent than a fraction of a month, nor a greater loss on toll than the toll bill for two months.

An advance deposit is often required from large toll users, even if no deposit is required for rent.

Under either of these two collection plans, there will be but little, if any, loss.

Under any plan which permits accounts to be carried in arrears, there will always be losses for bad accounts, with the possibility of a heavy loss at any time.

No telephone manager will dispute the fact that it is desirable to place his collections on a 100 per cent basis, and to eliminate carrying unpaid balances.

There can be but one reason why he does not adopt a strict cut-off policy, and that is the theory that it is not good business, which usually means that the public will not stand for it.

The public will stand for it. Hundreds of exchanges have tried the plan and found it successful.

No man whose telephone service is worth anything to him is going to do without it permanently because of the requirement that he pay his bill promptly. Of course, if he doesn't really need a telephone, he won't pay promptly, or any other way, and the sooner that fact is found out, the better.

The real fact is that the average subscriber will have more respect for a telephone company which requires him to pay promptly each month, than he will for a company which permits him to run in arrears until his account becomes so large that it is like pulling an eyetooth to pay it.

A telephone company, with which the writer is familiar, recently instituted a strict cut-off policy for its 10,000 subscribers. Many of these subscribers had balances, and some were at exchanges which had always paid "in arrears."

What was the result? The first month the outstanding balances were reduced 65 per cent, and the second month they were practically wiped out. Less than 50 telephones had to be removed, and most of these had always been poor pay.

This company went at its new policy in the right way. It took the subscribers into its confidence and told them just why collections had to be enforced.

It placed in the hands of every subscriber a statement showing just how much had been lost on collections, and what the loss would be for the future if the old system was followed. It ran advertisements in the newspapers laying the facts before the public.

The result was that when cut-off day came around, only a few bills were unpaid, and no opposition was encountered. What this telephone company did can be done by any telephone company.

The average telephone company needs every cent of money that it can lay its hands upon. If it is furnishing service to its patrons, it can justly claim payment for these services each month.

It has the right, it has the power, it has the duty, of enforcing prompt payment from its subscribers. The sooner all telephone companies quit carrying balances for their subscribers, the better for all concerned.

Let's get out of the banking business, and stay out of it.

THE SHUTTER DOWN IN THE CORNER

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

One blizzardy, cold night I arrived in a small town in Iowa which was blanketed with a heavy snow. As the brakeman deposited my two grips on the platform, I looked for someone to grab them, as is the usual occurrence, but this night was an exception to the rule.

"A cold reception," I reflected, as I looked around for a means of conveyance to the hotel.

Just then a voice at my side said, "I beg your pardon. Are you Miss Barnes?"

"Yes, I am Miss Barnes," I answered eagerly. It seemed so good to be met on a wild night like this and to be called by name.

Out of that wild night started a friendship which I treasure. I am glad of one cold night in Iowa. I am so thankful that I did not miss this experience.

The lady then introduced herself as Mrs. Brooks, at whose home the manager of the telephone company had arranged for me to stay, as there were no hotel accommodations.

Mr. and Mrs. Brooks lived in a small cottage on the outskirts of the town. Mr. Brooks was the banker. Regarding these two people I will briefly say that I have never met a married couple so happily mated.

Mr. Brooks was away from home a great deal in the evenings; thus, Mrs. Brooks and I spent many hours together. She seemed to enjoy all that I could tell her about telephone work.

One evening she said to me, "I wonder if you have any idea why I enjoy hearing your experiences in telephone work. I am going to tell you. Twelve years ago I was a telephone operator at Crystal City.

"In fact," she shyly added, "that is how I came to meet my husband. How well I remember hearing his voice for the first time! I was a student operator and that day I was having my initial experience in answering calls. Strange to say, too, my husband's signal was the first one I ever answered.

"Answer that shutter down in the corner," said my teacher.

"I did. The answering of 'that shutter down in the corner' marked a new epoch in my life.

"Hasn't he a fine voice? He always speaks in that courteous manner, and he never fails to say 'Good morning!' to us. He is our banker," said my teacher.

"And so it fell to my lot, along with my other work, of course, to answer 'that shutter down in the corner.' In the course of time I met John, and then the whirr of the 'shutter down in the corner' was like music to my ears.

"Just one thing more, and please don't think this silly; only John knows, and how he laughs at me."

She took a key from her little work basket and stepped over to the dresser. She unlocked a drawer and took out a small package wrapped in white tissue paper. She returned to her chair and sat down, holding the little package between the palms of her hands, without speaking for a few minutes.

Then she said softly, "I heard that they were installing a new, up-to-date board in Crystal City. While I was over there visiting my folks a few weeks ago, I had a great desire to see the old board once more.

"I went up to the office and was disappointed, as the old board was gone. The operators, who were all strange to me, told me that the cut-over had taken place two weeks before. I asked what they did with the old board.

"Oh, that is out in the shed back of the building. They are junking it."

"I thanked the girls, and commented on their fine new equipment, and then stole down the stairway to the shed back of the building. Back in the corner stood the old board. The work of dismantling it had started. But down in the corner hung my beloved old shutter, hanging down, waiting for my answer. I took a screw driver and—"—she commenced unwrapping the little white package—"here it is! I answered the shutter 'down in the corner' the last time it ever dropped.

"There is John honking his car. That is our signal now to put a light in the window."

Recommendations on Depreciation

Extracts from Order of Interstate Commerce Commission Giving Recommendations of the Depreciation Section as to Procedure for Setting Up Depreciation on Telephone Properties—Hearing to Be Held in Washington on May 1

In the consideration of this question it is important to remember from the outset that depreciation, as an accounting requirement, has a twofold purpose:

First, that the charges representing depreciation shall be included as a part of current operating expenses so distributed that each month or year shall bear its proportionate share of the cost of the property being consumed in operation during its service life; and second, that concurrently with the inclusion of such charges in operating expenses there shall be accumulated a depreciation reserve to which shall be charged the loss represented in the retirement of each class or unit of property.

In other words, the object is to reserve from free surplus the expired service value of the property and provide in the assets amounts adequate to cover the investment in such property at the time of its retirement; or, where the company is not earning a surplus which can be so used, to show by the accounts the real extent of the deficit.

The telephone companies, collectively and individually, urge that all property used in telephone service, with the exception of land, should be considered depreciable, and have classified such property according to the groupings enumerated under fixed-capital accounts in the uniform system of accounts which became effective January 1, 1913. This includes intangible property, such as franchises, patent rights, and other intangible investment, and also right of way.

The classes of property for which depreciation charges may properly be included in operating expenses should embrace only physical property that is subject to wear and tear from usage and to the effects of age and decay, or whose usefulness or economical operation may come to an end because of obsolescence, inadequacy, changes in the art, or public requirements.

It is obvious that the disappearance of property, such as is represented by franchises, patent rights, and other intangible items, is not brought about by the effects of these factors. This is also true with respect to right-of-way, so far as telephone companies are concerned, inasmuch as this property item represents the cost merely of rights and privileges to place poles and string wires on private property, public highways, and buildings and other structures owned by private or public interests. The effectiveness of such rights and privileges is limited, just as the

service life of tangible property is limited, but the limitation is controlled by entirely different conditions.

The tangible property of a telephone company is gradually consumed in the operations of the property by any or all of the elements previously mentioned; and, if the operating expenses are to truly reflect the cost of operation, there must be currently included therein the

The Wrong Kind of Critic.

Some critics are like chimney sweepers; they put out the fire below, and frighten the swallows from their nests above; they scrape a long time in the chimney, cover themselves with soot, and bring nothing away but a bag of cinders, and then sing from the top of the house as if they had built it.—Longfellow.

monthly or yearly proportions of such consumption, so that when the property has been entirely consumed or when its usefulness has reached an end, the operating expenses during its useful life will, in the aggregate, have borne the cost of the property or such proportion of the cost as may be represented by the exhausted service value.

On the other hand, intangible property such as franchises, patent rights, and right of way, is not consumed in the operation of the property. There is no gradual diminution in the effectiveness of such items, because they convey a right to do certain things, a right which is uniform and constant throughout its life although it may have a limited period of effectiveness.

It is recognized that the cost of such rights is not fairly chargeable against the month or year in which the right may expire, and that it is proper that this cost be amortized over the period of effectiveness by charges to the current appropriate expense or income accounts; but since there is no gradual diminution of effectiveness in operation, it is not believed that intangible property items of this character comprise a class of property subject to depreciation as the term is used in the act.

The telephone companies' suggestion that the term "service life" should be construed to mean the period which elapses between the date the property is installed and the date of its retirement, and the further suggestion that the average of such period should be determined separately for each class of property by

each individual company based upon its past experience in retirements is believed to be sound in principle and the most practicable manner of ascertaining an equitable service life.

As to their contention that storms and casualties are elements of depreciation which should be considered in the determination of the service life along with physical deterioration from use, obsolescence, inadequacy, public requirements, and changes in the art, it is not believed that such an element comes within the meaning of the term "depreciation" as used in the act.

It is recognized that the life of a relatively large proportion of a telephone plant is subject to abrupt termination by storms and casualties and that it is proper and reasonable to provide, through charges to operating expenses, for the cost of property so destroyed, but there is no gradual process of depreciation in connection with such happenings, and no effect upon property which can be forecast with an approximate degree of accuracy.

The telephone companies' suggestion that the term "salvage value" should mean the fair or secondhand value of the property retired plus the cost of removal if suitable for re-use, or the junk value less the cost of removal if unfit for further use, injects an element of expense into the determination of depreciation charges which is not a depreciation expense. Removal costs incident to the retirement of property neither increase nor decrease the residual value of the property and should not be used as a factor in the ascertainment of salvage values.

In the case of telephone companies the cost of removing property retired, particularly pole lines, aerial wires, and cables, often involves relatively large expenditures which, if charged to operating expenses at one time, might unduly distort them, and consequently there may be justification for anticipating and equalizing such charges. There is no question as to the propriety of charging expenditures of this kind to operating expenses, but they do not represent any part of losses includible in depreciation. They should be charged to a separate appropriate primary account having a distinctive title which would indicate the character of the charges to be included therein, such as "cost of removing property" or "property-removal cost."

While the telephone companies are unanimous in their opinion that the percentage of depreciation estimated for each class of property be such for each year as

will reach a total of 100 at the expiration of the estimated service life, they strongly urge that no percentage can be estimated by any rule or principle which will be fairly applicable to all telephone companies. They, therefore, argue that each company should be permitted to ascertain for itself the percentage to be applied to each class of its property.

This argument is sustained by our investigation, which has proven quite conclusively that it is wholly impracticable to estimate a percentage of depreciation for the same class of property that would be justly applicable to all companies.

Climatic conditions, methods of construction, demands due to growth, and changes in different communities and in requirements of state, county, and municipal authorities in the interest of public safety and convenience are all factors which vary widely. They vary to such an extent in the different sections of the country as to render a percentage determined to be proper for one section inadequate or excessive in another.

It is practicable, however, to establish a rule or formula under the provisions of which each company shall be required to determine the percentages necessary to meet its requirements and thus insure uniformity in the methods employed, and such a formula is submitted for consideration under the recommendations presented with this report.

The percentages so determined should be submitted to the commission for examination and approval before being made effective and should be accompanied by sworn statements showing in detail the methods and compilations used in their ascertainment.

The original cost of the depreciable property less its salvage value is believed to be a sound basis for the computation of depreciation charges. As aforesaid, it is not believed that cost of removal should enter into the determination of salvage value.

It is axiomatic that depreciation is an essential part of operating expenses. The actual amount of such proportion of the expenses can not be accurately forecast, but it is inevitable that unless some estimate of the current depreciation loss is included in the expenses they will be understated and the net income correspondingly overstated.

Hence there should be determined, preferably on an actuarial basis, the service life of the property comprised in the plant, and provisions should be made in the current operating expenses to record charges, as nearly accurate as may be, representing the loss from depreciation, apportioned to each month during the service life of the property so that at the end of such life there will have been accumulated a reserve equal to the service value or the cost of the expired service value when the property is retired.

As a means of accomplishing this end, various methods have been advocated from time to time. Mention will be made here of only three of these methods, namely, the annuity and sinking-fund methods and the straight-line method.

The annuity method provides for a uniform annual charge to operating ex-

of the property correspondingly increases.

An illustration of the operation of the annuity method is set forth in the accompanying paradigm. It is based on an assumed investment of \$1,000 in property having an estimated service life of 10 years. Interest at 5 per cent compounded annually is allowed on the diminishing value of the investment. Consideration of salvage value is eliminated for the sake of simplicity.

It will be noted that the annual charge to operating expenses during the 10 years aggregates \$1,295, or \$295 more than the cost of the property.

The part covering depreciation, or loss of property consumed in operation, increases from \$79.50 in the first year to \$123.33 in the tenth year, but the aggregate is \$1,000, which equals the cost of the property. Hence it is apparent that the use of this method results in not only an unfair distribution of depreciation charges but also in an annual excessive charge to operating expenses.

Furthermore, it involves accounting that is misleading, because to give effect to its provisions it is necessary, by book entries, to pass a credit to income account with a corresponding charge to investment account for items representing interest which is wholly hypothetical. Such a procedure is really a manipulation of accounts and should not be permitted.

The sinking-fund method, like the annuity method, involves complicated interest computations. It also recognizes a uniform annual charge to operating expenses, but its application requires that the annual allowances shall be actually set aside in a special fund or invested in approved securities which, with interest compounded, shall during the life of the depreciating property accumulate a sum equal to the service value.

As in the annuity method, the rate of interest is one of the controlling factors in determining the annual charge. It is necessary to find a sum which will, when added to the interest accumulations, equal the service value at the expiration of the life period. It should be remembered, however, that under the annuity method the interest is hypothetical, while under the sinking-fund method the interest may be actually earned. A sinking fund increases not merely by the direct contributions but also by the interest accumulations of these contributions, and it therefore follows that the longer the sinking fund is in operation, the larger the interest accumulations will be.

At first thought it may appear that the direct cost of maintaining such a fund grows smaller with the increase in the number of years, but the fallacy of this is apparent when it is remembered that the contributions to the fund are wholly withdrawn from the business where they might be employed at a greater profit

End of	Value of investment end of each year.	Annual charge to operating expenses.	Proportion of annual charge representing interest.	Proportion of annual charge representing depreciation.
1 year	\$920.50	\$ 129.50	50.00	79.50
2 years	837.02	129.50	46.02	83.48
3 years	749.36	129.50	41.84	87.66
4 years	657.33	129.50	37.47	92.03
5 years	560.69	129.50	32.86	96.64
6 years	459.22	129.50	28.03	101.47
7 years	352.67	129.50	22.95	106.55
8 years	240.80	129.50	17.63	111.87
9 years	123.33	129.50	12.03	117.47
10 years	.....	129.50	6.17	123.33
Total	.....	\$1,295.00	\$ 295.00	\$1,000.00

Illustration of Operation of the Annuity Method of Setting Up Depreciation Charges.

penses, which is composed of an amount representing the loss of property consumed in operation and an allowance for interest, at a fixed rate on the investment successively diminished by the accrued depreciation.

It assumes that such interest allowances should be made because, theoretically, the cost of the property is the principal sum invested, plus the interest thereon. It justifies this assumption on the theory that if such sum had not been invested in the property it might have been employed elsewhere to actually earn interest. Upon this basis the total amount which must be provided for through the annual charges to operating expenses is the amount of the investment itself and the interest allowance. Therefore, it is evident that the annual charge must necessarily be more than is required for depreciation representing loss of the actual property investment.

Since the annual charge must include both interest and depreciation, it is necessary in determination of such a charge to find a sum, combining the two, which will through successive credits to the investment account concurrent with depreciation charged operating expenses result in writing out the investment at the end of its service life.

Under this plan the annual charge is in part dependent on the interest allowances. Consequently the rate of interest is one of the controlling factors, and since the interest is allowed on the diminishing value of the investment, it follows that the portion of the annual charge representing interest is gradually reduced, while that part covering the depreciation

than could reasonably be expected from the sinking fund.

However, under the sinking-fund method the interest accrued is applied to reduce the loss of property consumed in operation which otherwise is chargeable to operating expenses. The accompanying table illustrates the working of the sinking-fund method.

It will be noted that the total equal annual charges for depreciation for the life period is \$795, or \$205 less than is actually required to retire the property, and that the total interest accumulations for the same period are \$205, which if added to the direct contributions represented by the annual charges will equal the amount of the property investment. It will be noted that as the proportion of the annual charges representing interest gradually increases from \$3.98 to \$43.83, that part covering depreciation correspondingly increases from \$79.50 to \$123.33.

Under the sinking-fund method interest is applied to reduce the depreciation charges, while under the annuity method interest is added to the depreciation charges. Thus under the sinking-fund method operating expenses are undercharged while under the annuity method they are overcharged.

The straight-line method provides for an equal and constant annual charge representing depreciation, or the loss of property consumed in operation, to operating expenses which in the aggregate is equivalent to the service value of the property or to as much of that value as has expired when the property is retired.

It is the simplest of all suggested methods. It is based on the principle that each year of life of the depreciating property should bear its pro rata share of the loss in service value. The resultant charge to operating expenses in each year of the

the accounts are depreciation charges in fact.

The illustration contained in the table shows the details of the charges under the straight-line method. No comments are necessary, but the table is given merely to make comparison with those submitted under the annuity and sinking-fund methods.

Consideration of interest in connection with the determination of methods for ascertaining annual depreciation charges aggravates an already complicated situation and to a considerable extent is misleading.

Under the annuity method it is shown that the inclusion of interest as a part of the annual depreciation charge actually results in an excessive charge to operating expenses, and requires accounting for a charge to operating expenses for an expense not incurred.

Under the sinking-fund method it is shown that the use of interest as an element of the annual depreciation charge actually results in an insufficient charge to operating expenses.

If the interest is actually earned from the moneys, representing the annual allowances, set aside in a special fund, such interest is a legitimate income, but it should not be applied to reduce the amount of depreciation properly chargeable to operating expenses. Moreover, if a sinking fund is created, it is obvious that its use should be restricted to the restoration of the equivalent of the cost of the property depreciated, since the direct contributions to the fund represent such depreciation.

To enforce this restriction the fund should be administered by the Interstate Commerce Commission, in the case of common carriers subject to its jurisdiction, otherwise the carriers would be free to use the fund whenever and for whatever purposes they might deem advisable. If the use of the fund is restricted, carriers desiring to extend or improve their properties might be obliged to borrow money for that purpose at a greater rate of interest than the fund would normally earn and consequently be subjected to a condition contrary to sound economic principles.

The complexity of depreciation accruals on the diversified properties of common carriers, which involves different amounts maturing at irregular intervals, together with the fact that the annuity and sinking-fund methods do not afford a true measurement of the annual loss of property consumed in operation would seem to justify the recommendation that they be not adopted for use in accounting for such loss on the property of the common carriers subject to the jurisdiction of the Interstate Commerce Commission.

In contrast to the methods which involve interest consideration, the straight-line method is clear cut, practicable, and simple in its application. Under its provision operating expenses may be charged with

the accrued loss representing consumption of property in operation or with the accrued depreciation, representing the loss of service value, in equal annual installments. No questionable accounting is in-

Assumptions:			
Investment	.....	\$1,000.	
Service life	.....	10 years.	
		Value of investment at end of each year.	Depreciation charged to operating expenses.
1 year	.....	\$900	\$ 100
2 years	.....	800	100
3 years	.....	700	100
4 years	.....	600	100
5 years	.....	500	100
6 years	.....	400	100
7 years	.....	300	100
8 years	.....	200	100
9 years	.....	100	100
10 years	.....	100	100
Total	.....		\$1,000

Details of the Charges Under the Straight-Line Method of Depreciation Accounting.

involved and no restrictions are placed upon the use of the carriers' funds.

The method has been indorsed by leading accountants, courts, and regulatory bodies that have been called upon to determine a plan for depreciation accounting. It is the plan which underlies the commission's present accounting regulations with respect to depreciation. Therefore, it is recommended that the straight-line method be adopted.

The present accounting regulations, as aforesaid, require telephone companies to include depreciation charges in their operating expenses, but the method of ascertaining the amount of such charges and the rules upon which they should be based are left for each company to determine for itself.

The responses filed in answer to our questionnaire indicate lack of uniformity in the methods applied. Of the total number of companies filing responses, 55 per cent base their charges on individual plant observation, 16 per cent on financial necessities, and 13 per cent on orders or instructions of state authorities, while 11 per cent are unable to state the basis used.

In the compilation of these data the information received from class C companies (those having less than \$50,000 average annual operating revenues) was found to be of doubtful value, due principally to the inadequate records of such companies and the lack of any systematic basis of determining actual depreciation requirements.

Many were influenced by methods adopted by larger companies operating in the same or contiguous territory; others used estimates of service life, salvage values, and depreciation percentages suggested or recommended by public accountants employed to audit their accounts; others submitted data based solely upon the judgment of the managing or operating officer;

Assumptions:
Investment\$1,000.
Service life10 years.
Interest5 per cent.

End of—	Value of investment at end of each year.	Annual charges to operating expenses.	Interest accumulations.	Depreciation accruals.
1 year ..	\$920.50	\$ 79.50	.....	\$ 79.50
2 years..	837.02	79.50	3.98	83.48
3 years..	749.36	79.50	8.16	87.66
4 years..	657.33	79.50	12.53	92.03
5 years..	560.69	79.50	17.14	96.64
6 years..	459.22	79.50	21.97	101.47
7 years..	352.67	79.50	27.05	106.55
8 years..	240.80	79.50	32.37	111.87
9 years..	123.33	79.50	37.97	117.47
10 years.	.....	79.50	43.83	123.33
Total	.....	\$795.00	\$205.00	\$1,000.00

Illustration of Working of the Sinking-Fund Method of Providing for Depreciation.

service life of the property, therefore, represents its theoretical proportion of the accruing depreciation. Its freedom from interest complications renders it easily understood and its results as they appear in

and still others merely expressed their judgment without due regard for the importance of the subject.

The information furnished by this class of telephone companies is of little value and, therefore, the conclusions reached must be based upon the data submitted by the larger companies.

In view of the absence of necessary records and the lack of adequate accounting organizations it is not practicable to apply to class C companies the formula for ascertaining percentages of depreciation hereinafter proposed, and it is therefore recommended that such companies be relieved from the provisions thereof and be permitted to continue their present practices in this particular respect until otherwise ordered by the commission.

It is recommended, however, that these companies be required to conform to all other proposed rules in order that from and after the effective date of the regulations, records may be maintained which will make practicable the determination of reasonable and adequate percentages of depreciation for class C companies.

It is obvious that the most valuable data submitted in our investigation have been derived from the past experience and practices of those companies that have used the plant-observation method of determining depreciation charges, yet even these data are conflicting.

A reasonable and systematic determination of service life, service value, and salvage value of depreciable property is essential before a fair rate of depreciation can be ascertained, and this must be based upon the records of the past or upon specific engineering studies which necessarily involve such records. Observations upon any other basis are largely a matter of individual judgment productive of many varied conclusions.

This is evident from the data filed with the depreciation section, which show a wide range of service life of the principal classes of property. For example, a service life of from 10 to 100 years is shown for buildings, 4 to 35 years on central-office and subscribers-station apparatus; 3 to 75 years on continuous structures, such as pole lines, aerial wires, and cables; 5 to 200 years on underground cables and conduits; and 1 to 40 years on general equipment. Salvage value per cents are shown to be of practically the same relative range.

Probably the most scientific and comprehensive studies of these two factors have been made by the telephone companies comprising the Bell system, but the percentages of depreciation which have been obtained as a result of these studies have not been directly applied in the computation of depreciation charges to be made to operating expenses, but they have been weighted into a single composite average and such average has been applied to the cost of property as a whole.

While this method has resulted in the building up of a depreciation reserve, the adequacy or inadequacy of such a reserve with respect to any class or unit of property is difficult, if not impossible, of determination.

Notwithstanding the almost unanimous contention of the telephone companies that the depreciation reserve underlies the investment in depreciable property as a whole and, therefore, should not be divided for any class or units of property, such a division is not only desirable but necessary to determine whether or not the amounts included in the reserve represent proper depreciation charges to operating expenses for the property affected and furthermore to determine the necessity, from time to time, for a modification of the underlying percentage rates.

Conclusions.

In reaching the conclusions submitted in this report, careful consideration has been given to the principles underlying the suggestions offered and the practicability of their application, the fulfillment of the requirements of the amendment of February 28, 1920, and the simplest means of building up adequate data for the commission's future guidance.

After a careful study and analysis of the results of the preliminary investigation, the depreciation section has reached the following conclusions:

1. That charges to operating expenses to offset depreciation should be confined to tangible property.

2. That such property should be divided into classes for depreciation purposes as indicated later in this report.

3. That the cost of the property to the accounting company, plus the cost of additions and betterments, less the salvage value should be the basis for depreciation charges.

4. That depreciation charges should be assessed during the service life of the property depreciated.

5. That no service lives or percentages of depreciation applicable to the various classes of property can be determined that will be equitable or reasonable for all telephone companies or for such companies by groups, states, sections, or territorial divisions.

6. That the straight-line method of distributing depreciation charges should be adopted, because of the simplicity and practicability of its application to all classes of property and its equitable distribution of such charges.

7. That uniform rules for the regulation of depreciation charges which will be applicable to all telephone companies can and should be promulgated.

Based upon these conclusions the following recommendations are submitted for the consideration of the commission:

General Rules.

1. For the purpose of these regulations the term "depreciation charges" shall be

construed to mean the estimated loss in physical tangible property due to wear and tear not restored by current maintenance, the effects of age and decay, and the decrease in the service value due to obsolescence, inadequacy, changes in the art, and public requirements.

They shall not include any charges representing the removal costs incident to or in connection with the retirement of property (whether replaced or not), storm casualties, or extraordinary repairs of any character, or any other similar charge.

2. The term "service life" shall be construed to mean the period of time between the installation of the property affected and the date of its retirement.

3. The term "salvage value" shall be construed to mean the amount received for the property retired and disposed of, or the amount representing the secondhand value if suitable for re-use. No allowance shall be made in determining the amount representing the salvage value for the cost of removing property retired or abandoned, or for recovering the salvage.

4. The term "service value" shall be construed to mean the difference between the original cost of the property involved plus the additions and betterments thereto, including the applicable proportion of interest during construction, and the estimated salvage value at the time of retirement.

It is the cost of the investment which must be provided for through depreciation charges. If the original cost can not be ascertained, then an amount estimated by the accounting company to represent a reasonable cost of the property when acquired shall be used.

5. Depreciation charges shall be based upon the service value of the class of property, as above defined.

6. Depreciation charges shall be computed separately for each class of property at the percentage rates which shall hereafter be prescribed therefor and shall be distributed under the straight-line method to operating expenses during the estimated service life of the property or as much thereof as may be consumed at retirement, if such retirement takes place prior to the expiration of the estimated service life.

7. Telephone companies shall not charge to their operating expenses or otherwise depreciation charges in any form on any class of property other than that prescribed herein or charge to any class of property a percentage of depreciation other than that prescribed therefor.

8. Depreciation charges shall be accounted for in accordance with the requirements of the accounting regulations in effect at the time these regulations shall become effective or any amendments or other accounting regulations with respect thereto which hereafter may be promulgated.

9. If after six months from the date

these regulations become effective, any telephone company shall find the percentages of depreciation which have been prescribed to be at variance with its requirements or necessities, as nearly as may be ascertained, it may apply to the commission for a modification of the percentages so prescribed. Such applications, however, must in each case be accompanied by sworn statements of the facts, and by the expert opinions and estimates upon which are based the application for a modification of the percentage rates.

10. Each telephone company shall keep its records in sufficient detail to show fully all facts pertaining to all depreciation charges, the cost or estimated value of the classes or units of property named herein, the cost of all additions and betterments made thereto, and the application of the percentages of depreciation prescribed therefor.

If full information is not recorded in the controlling records, such records shall contain sufficient references to the details to permit ready identification and shall be filed in such a manner as to be readily accessible for examination by representatives of the Interstate Commerce Commission.

Classes of Property.

Telephone companies shall include in operating expenses charges representing depreciation on the following classes of property:

- Booths and special fittings.
- Buildings frame.
- Buildings, brick.
- Buildings, concrete, stone, or other masonry.
- Cables, aerial, exchange.
- Cables, aerial, toll.
- Cables, underground, exchange.
- Cables, underground, toll.
- Cables, submarine, exchange.
- Cables, submarine, toll.
- Central office telephone equipment.
- Central office other equipment.
- Conduits, exchange.
- Conduits, toll.
- General shop equipment.
- General stable and garage equipment.
- General store equipment.
- General tools and implements.
- Interior block wires.
- Office furniture and fixtures.
- Pole lines, exchange.
- Pole lines, toll.
- Private branch exchanges.
- Station apparatus.
- Station installations.
- Wire, aerial, exchange.
- Wire, aerial, toll.

These classes may be further subdivided by any company for its individual purposes, provided a list of such subdivisions be first filed in the office of the depreciation section, Bureau of Accounts, subject to disapproval by the commission.

Percentages of Depreciation.

The accounting company shall submit to the commission the percentages of depreciation which the company deems applicable to each of such classes of property

herein prescribed as may be included in its plant. Such percentages shall be based upon a study of the company's history and experience.

The commission upon consideration and analysis of the companies' proposals will

A Good Word for the Telephone Lineman.

The strenuous work made necessary by the recent sleet storms inspired an editorial writer in *Colliers* to pay a tribute to the telephone lineman recently. Here is what the editor had to say:

"Man can stand up under anything but a wounded spirit. This is the time of the year when lots of us grow boils on our own souls. The job we live by is all wrong, so we hate it and fear it and shirk it, and make it that much more cruel and hard to do. Strength and freedom lie on quite the other tack.

"Mac of the telephone engineers helped a lot of men beat ice and the north wind last winter with these rough verses:

The wind and sleet have done their trick;
We're moggin' out o' town—
We're goin' to put the copper back—
There's twenty miles gone down.

Roll out! Roll out, ye climbin' bucks!
And show 'em where we shine;
Get on your spurs and safety belts—
There's trouble on the line!

"They went and did it with a lift and a drive, and were glad all the way through. Try that record on the phonograph of your own heart."

classify the companies and determine the classes of depreciable property and the percentages of depreciation applicable thereto for each class of companies and these shall remain in effect as thus determined until changed or modified by the commission.

Each company shall submit with its proposed percentages sworn statements showing the bases therefor and the method employed in ascertaining the percentage for each class or unit of property.

The annual percentage of depreciation shall be ascertained as to each year by the following formula:

After the service life of each class of property has been estimated, ascertain by classes of property the total amount of actual retirements and the total amount of salvage for a period immediately preceding the effective date of these regulations which shall contain the same number of years as is embraced within the estimated service life of each class. Obtain therefrom the average amount of annual retirements and the average amount of annual salvage by classes.

The ratio which the average annual amount of retirements, less the average an-

nual amount of salvage, bears to the original or estimated cost of the class of property affected plus the cost of additions and betterments thereto, shall be the percentage of depreciation applicable to that class of property for the first year subsequent to the effective date of these regulations.

Thereafter ascertain the percentage of depreciation for each class of property, for each year, by the same process, but in so doing deduct from the totals of the original basic period the amount of actual retirements and the amount of actual salvage for the earliest year included in such period and add to the remainders the amount of actual retirements and the amount of actual salvage for the year next preceding the current year.

The percentages thus obtained for each class of property shall be the percentages of depreciation for the current year, unless, otherwise ordered by the commission.

At no time shall the number of years in the basic period exceed or be less than the number of years covered by the estimated service life.

The Iowa Operators Have Started Their "Spring Training."

The spring schools for operators in Iowa which are conducted each year by the engineering extension department of the Iowa State College, started with the one held at Fort Dodge April 6, under the direction of Miss Anne Barnes, traveling chief operator of the Iowa Independent Telephone Association. Miss Barnes was assisted by Miss Margaret Grace, chief operator of the Fort Dodge Telephone Co.

The operators put in a full day, the program beginning at 9 a. m. and closing with a dinner dance which started at 7 p. m. The program follows:

"We Are Glad to Meet You," address of welcome, by Miss Margaret Grace.

"Qualifications Necessary in the Selection of Operators," Miss Julia Dwyer, supervisor of employment, Northwestern Bell Telephone Co., Des Moines.

"Sundry Snapshots along the Telephone Trail," Miss Nellie Roberts, Central Mutual Telephone Co., Rockwell City.

"Relation of the Operator to the Public," Miss Maude Messer, chief operator, Northwestern Bell Telephone Co., Eagle Grove.

2:00 p. m.

"Value of System and Coöperation," Miss Gertrude Merrill, chief operator, Northwestern Bell, Webster City.

"Industrial Iowa," R. H. Holbrook, engineering extension department, Iowa State College.

"An Average Operator's Problems," Mrs. Minnie Francis, toll chief operator, Fort Dodge Telephone Co., Fort Dodge.

Opening the question box.

General discussion.

Florida Men Have Their Best Meeting

Meeting Held March 27-28 at Miami Brought Forth Active Interest in Discussions—Development of Good Relationship with Community, Keynote—Bureau Established to Assist Companies with Public Relations' Problems

The Florida Telephone Association convention was held in Miami March 27 and 28, and there were present representatives from all sections of the state, several visitors from other states, and a number of manufacturers with exhibits of modern telephone equipment.

The convention was one of the most successful ever held. The subjects discussed were of unusual interest and were followed by active general discussion.

The officers were reelected as follows: W. G. Brorein, of Tampa, president; Dr. W. L. Moor, of Tallahassee, vice-president, and Frank D. Moor, of Tallahassee, secretary-treasurer.

The South Atlantic Telephone & Telegraph Co. arranged very pleasing entertainment for those in attendance, the features including a dinner on Tuesday evening and an automobile trip over the city Wednesday afternoon.

The first session on Tuesday opened with an address of welcome by Mayor C. D. Leffler. He spoke of the dependence of a city's development and prosperity on telephone service, and emphasized the necessity for adequate rates for service rendered by public utilities, to enable them to meet the community's requirements.



W. G. Brorein, of Tampa, Re-elected President, Has Served the Association for Many Years.

Mayor Leffler said communities should be favorable to requests for increased rates when they are necessary to enable companies rendering satisfactory service to receive fair earnings. His address illustrates

the growing tendency on the part of community representatives to understand the importance to the community of properly functioning public utilities.

In the absence of Dr. W. L. Moor, President Brorein responded on behalf of the association, expressing its appreciation of the statements of Mayor Leffler. He pointed out the intimate relationship the telephone industry has to the development of each industry in the community and to the prosperity of the community at large.

President Brorein spoke of the growth of the Florida association and the fact that it was one of the pioneers in opening meetings to all operating companies, including the Bell, which policy has now been accepted by almost all state associations and the national association.

W. D. Adkins, general contract agent of the Southern Bell Telephone & Telegraph Co., followed with a discussion on connecting company relations. He spoke of the dependence of the Bell and A. T. & T. Co. toll lines on Independent company business and of the Independent companies' dependence on the toll outlet provided by the Bell facilities. The necessity for coöperation is obvious, he said, and such coöperation should be given by both organizations.

Frank B. Shutts, president of the South Atlantic Telephone & Telegraph Co., of Miami, welcomed the visitors on behalf of the local company. He dealt with the wonderful growth of that territory and the financing problems confronted by the local company when rebuilding its plant and installing automatic service.

He also referred to the coöperation received from the community when increased rates for service were requested and obtained.

At the afternoon session, A. B. Steuart, general auditor of the Peninsular Telephone Co., of Tampa, gave an address on plant accounting.

He pointed out the need of keeping complete plant accounts so that not only information required by commissions in rate matters may be readily available, but also that these accounts are required to show actual profit or loss in operation and afford a means of tracing unusual or unnecessary expenditures.

The use of statistics in forecasting service requirements was dealt with in a talk by A. B. Greene, engineer of the Florida Railroad Commission. From statistics compiled by the government in Florida and California, he prepared charts showing the stages of development and forecasting a remarkable development in Florida during the next decade.

The plank pole was discussed in a practical way by Leland Hume, vice-president of the Southern Bell Telephone & Telegraph Co. Mr. Hume and his engineers have constructed a pole of this type, having



Frank D. Moor, of Tallahassee, Continues as Secretary-Treasurer of the Florida Association.

as advantages light weight for shipping and handling, perfect penetration of creosote, and firm standing in the ground on account of its angular shape.

The entire association and visitors were the guests of the South Atlantic company at dinner in the evening. A spirit of good fellowship was demonstrated throughout the affair and many pleasant recollections were brought up by the older members.

Wednesday morning's session opened with an address by President F. B. MacKinnon, of the United States Independent Telephone Association.

He spoke of management in the telephone industry and of the importance of considering it in making rates, in order that it—management—might be properly remunerated.

In this respect, declared Mr. MacKinnon the problems confronting the Class C and D companies afford great concern, for with them the matters of financing and personnel are constant problems.

He said that, after much thought and discussion, the national association had concluded that the state associations should render great assistance in solving these problems. Personnel, proper salaries, financing and fair rates are matters of the

utmost concern to state associations, President MacKinnon said, especially as related to the smaller companies.

C. H. Galloway, manager of the Winter Park Telephone Co., of Winter Park, discussed from a practical viewpoint the advantage of developing on the part of the community an understanding of the telephone plant and problems. When this is done in a tactful manner, Mr. Galloway stated, much of the friction between subscribers and company will be avoided.

At the request of the association, A. B. Greene delivered a second address—and it proved one of the most inspirational and beneficial talks of the meeting. He stressed the importance of placing one's house in order before criticizing others.

J. R. Porter, of Henderson, N. C., a visitor, spoke of the industrial development in his state, reminding the members of the Florida association that their state's rapid development was being approached by other states in the south.

The resolutions committee then reported, which was followed by the report of the public relations committee. The latter committee will act as a bureau during the coming year to assist Florida companies with their problems, especially with regard to public relations.

A committee to secure uniform practice among companies, wherever possible, was also appointed. This was followed by the election of officers, after which the convention adjourned.

Financial Statements and Reports

Healthy Progress Reported by Keystone Company of Philadelphia, Outlook Good—Pacific Bell Had Year of Extensive Building, Gained 27 Per Cent in Subscriber Stations—Year of Expansion for the Pomona, Calif. Company

Keystone Company Reports Good Progress Made Last Year.

The combined financial statement for 1922 of the several properties owned or controlled by the Keystone Telephone Co., of Philadelphia, Pa., shows that a gratifying progress has been made, both as to operating and financial results.

"The gross revenue," states President N. T. Folwell, in a letter to the stockholders, "increased from month to month during the year and the many measures of economy adopted resulted in a steady downward course in operating costs."

The properties consist of the Keystone company, which holds a perpetual charter from the state and a perpetual franchise from the city of Philadelphia, as well as perpetual franchises in 41 boroughs and townships in three counties; the Eastern Telephone & Telegraph Co., which holds unrestricted franchises in Camden, N. J., and in desirable points in the counties of Camden, Gloucester and Cape May, N. J.; and the Camden & Atlantic Telephone Co., which the Keystone company controls through ownership of a majority of the capital stock.

The policy of building up a renewal reserve to meet the necessities of depreciation and obsolescence in the plant has been unflinchingly pursued since the company was organized. The 1922 quota for this reserve was \$107,600, bringing the total to more than \$2,100,000.

There was charged to the fund during the year \$653,000 to provide for the replacement in Philadelphia of the manual central office switchboards with automatic equipment. The entire system has been freshly adjusted to the highest standards of efficiency and the company has today practically a new plant throughout. There still remains in the renewal reserve fund for future replacements approximately \$1,500,000.

President Folwell pays this tribute to the employes who are maintaining and operating the Keystone system:

"Their untiring eagerness to well serve the public and their constant loyalty to the company have contributed a very large share toward the progress we are now making."

The combined balance sheet of the Keystone Telephone Co. of Philadelphia, the Keystone Telephone Co. (of New Jersey) and the Eastern Telephone & Telegraph Co., as of December 31, 1922, is as follows:

Assets.	
Cost of property, including stock	\$17,840,212
Investments	2,962
Materials and supplies on hand	80,143
Cash at banks and on hand....	189,784
Accounts receivable	161,193
Reserve fund, cash.....	17,500
Prepaid accounts, etc.....	303,524
Automatic equipment account..	1,017,569
<hr/>	
Total assets	\$19,612,887
Liabilities.	
First mortgage 5 per cent bonds, issued by the Keystone Telephone Co. of Philadelphia..\$	6,725,000
Equipment and first mortgage collateral ten-year sinking fund 6 per cent bonds issued by the Keystone Telephone Co. of Philadelphia.....	1,496,000
First mortgage 5 per cent bonds issued by the Eastern Telephone & Telegraph Co.....	250,000
Interest on bonds.....	184,335
Current accounts, reserves, and other current liabilities.....	1,638,144
<hr/>	
Total liabilities	\$10,293,479
Capital stock issued:	
6 per cent preferred by the Keystone Telephone Co. of N. J..\$	1,936,850
Common by the Keystone Telephone Co. of N. J.....	5,000,000
<hr/>	
	\$6,936,850
Surplus and reserve:	
Renewal reserve	1,466,795
Surplus, December 31, 1922	915,763
<hr/>	
	\$2,382,558
<hr/>	
	\$19,612,887

The combined profit and loss account of the three companies shows a profit of

about a quarter of a million dollars before allowing for depreciation. The statement shows these figures:

Gross earnings	\$ 1,703,274
Operating and maintenance charges, including taxes and provisions for doubtful accounts	977,681
<hr/>	
Balance available for interest and reserve, etc.....	725,593
Interest charges	501,235
<hr/>	
Profit for year before reserve for depreciation, etc.....\$	224,358
Distribution:	
Discount on bonds....\$	32,765
Added to renewal reserve	170,595
Added to surplus.....	20,998
<hr/>	
	\$224,358

Pacific Bell System Reports on Operations for 1922.

The combined statement of the Pacific Telephone & Telegraph Co., the Southern California Telephone Co., The Home Telephone & Telegraph Co. of Spokane (Wash.), and the Bell Telephone Co. of Nevada, shows operating revenues for the year ended December 31, 1922, of well over \$46,000,000, and expenses of about \$36,000,000. The net income was \$3,800,000, and deducting from this dividends of \$2,670,000 left a balance of \$1,130,000 for the corporate surplus.

In a letter to the stockholders, H. T. Scott, chairman of the directors, stated that the net gain in stations for the year was 76,597, bringing the total number of stations to 1,165,002—made up of 917,437 company stations and 247,585 service, private line and connecting stations. The total gain for the last three years amounted to an increase of 27 per cent.

Extensions, additions and betterments of the plant to keep pace with the demand for telephones have made necessary construction programs of record magnitude. The net additions to plant and equipment during the year amounted to almost \$26,-

500,000, and for the three-year period they amounted to \$52,100,000—so that 1922 had about half of the construction for the three years. A large amount is also planned for this year.

Building construction for the year consisted of major additions and extensions to existing buildings in San Francisco, Stockton and Los Angeles, Calif. Land for new buildings was purchased at Seattle, Wash., The Dalles, Ore., and at Berkeley, Oakland, Santa Rosa and Los Angeles, Calif.

Toll cables were placed during the year between Seattle and Renton, Wash., approximately 12½ miles underground, and between San Francisco and Oakland, approximately nine miles. The extension of existing cables between Los Angeles and Long Beach, allows for the handling of this service on an all-cable basis over a distance of approximately 24 miles.

The company also reports the purchase during 1922 of the Mason Valley Telephone & Telegraph Co., operating toll lines in Nevada; the exchanges of former connecting companies at Placerville and Tulare, Calif.; and the leasing of the property of the Northwestern Long Distance Telephone Co.

Bonds to the extent of \$25,000,000 and preferred capital stock in the same amount were issued during the year, in accordance with the action of the stockholders at the April 19 meeting. The stock issue was only a portion of that authorized—it having been voted to increase the capital stock from \$50,000,000 to \$100,000,000, made up of \$18,000,000 common and \$82,000,000 preferred.

Benefits were paid to 4,148 employes during the year, the payments including: Pensions, \$14,180; accident disability, \$51,570; accident disability expenses, \$39,230; sickness disability, \$170,710; death benefits, including expenses, \$54,187; state insurance, \$558.

The total number of employes December 31, 1922, was 23,383 male and 14,805 female.

The consolidated balance sheet as of December 31 last—duplications excluded—is as follows:

Assets.	
Intangible capital..	\$ 12,150,842
Plant—	
Land and build-	
ings	\$ 12,637,730
Other telephone	
plant	141,625,704
	154,263,434
General equipment	3,259,119
Other permanent	
Investments—	
Invest. securities	\$ 4,956,379
Advances to sys-	
tem corp.....	2,444,746
Misc. invest..	1,303,394
	8,704,519
	162,967,953
Total permanent	
and long term	
investments ..	\$178,377,914
Cash and deposits..	776,827

Bills receivable....	183,474
Accounts receivable	3,106,221
Materials and sup.	3,391,177
	7,457,699
Total working	
assets	7,457,699
Accrued income	
not due	118,618
Sinking fund assets	\$ 316,950
Prepayments	608,597
Unamortized debt	
discount and ex-	
pense	4,139,019
Other deferred	
debit items.....	3,763,834
	8,828,400
Total deferred	
debit items....	8,828,400
	194,782,631
Total assets.....	\$194,782,631
Liabilities.	
Common stock....	\$ 18,000,000
Preferred stock..	57,000,000
	\$ 75,000,000
Tot. cap. stock..	\$ 75,000,000
Funded debt.....	\$ 73,693,400
Advances from	
system corpora-	
tions	300,000
	74,263,400
Total long term	
debt	74,263,400
Bills payable.....	\$ 20,000
Accounts payable..	4,283,417
	4,303,417
Total working	
liabilities	4,303,417
Accrued liabilities	
not due.....	2,991,934
Liability for em-	
ployees' benefit	
fund	\$ 500,000
Other deferred	
credit items.....	365,046
	865,046
Total deferred	
credit items...	865,046
Reserve for ac-	
crued deprecia-	
tion	\$ 35,712,539
Reserve for amor-	
tization intangi-	
ble capital.....	32,457
	35,794,996
Total reserves...	35,794,996
Corporate surplus	
unappropriated	1,563,838
	194,782,631
Total liabilities..	\$194,782,631

The condensed income statement reflects the following condition:

Telephone operating revenues..	\$46,577,858
Telephone operating expenses..	35,827,108
	\$10,750,750
Total net operating revenues..	\$10,750,750
Deductions—	
Uncollectible operating rev-	
enues	205,900
Taxes assignable to opera-	
tions	3,121,912
	\$ 7,422,938
Operating income.....	\$ 7,422,938
Net non-operating revenues..	1,036,591
	\$ 8,459,529
Total gross income.....	\$ 8,459,529
Rent and miscel. deductions...	490,982
Interest deductions—	
Bond interest	3,259,893
Other interest	908,502
	\$ 3,800,152
Balance net income.....	\$ 3,800,152
Deduct dividends	2,670,000
	\$ 1,130,152
Bal. for corporate surplus..	\$ 1,130,152

Pomona, Calif., Company Had a Good Year—Expects Better One.

In the annual report of the Pomona Valley Telephone & Telegraph Union, of Pomona, Calif., it was shown that the company has spent during the past year approximately \$62,000 for improvements, making the greatest period of expansion the company has known since it was founded 21 years ago.

The report set forth that the finances of the company are in excellent condition, with all bills paid and 5½ per cent set aside for depreciation.

The company has a total of 6,361 telephones in use—212 in Pomona, 690 in Claremont, 639 in Chino, 378 in San Dimas and 412 in La Verne—giving the company an increase of 233 during the fiscal year just closed.

Manager C. H. Lorbeer said that a large amount of outside construction has been done during the past 12 months—a larger amount, in fact, than ever before. The main leads have been rebuilt in great part, underground cables have been placed in certain sections, and there has been a complete change in the central office equipment of the outside exchanges, most of the installation being of the semi-automatic type.

Out of every dollar the company earned during the past year, Manager Lorbeer stated, 7½ cents were paid for taxes, 26½ cents for operators, 24½ cents for maintenance, 15 cents for depreciation, 13 cents for commercial office and general expense, 13 cents for interest charges, and six and a fraction cents average return to investors, making 61 cents out of every dollar going for labor directly.

Mr. Lorbeer said that the company is anticipating one of its most prosperous years.

New England Bell Has Six Million Available for Dividends.

The New England Telephone & Telegraph Co. for the year ended December 31, 1922, shows net income available for dividends of \$6,193,168, equivalent to \$9.31 a share on the \$66,476,200 stock, compared with \$9.01 a share on the \$66,472,700 stock outstanding at the end of the previous year.

Operating revenues for last year amounted to \$41,437,407, compared with \$36,702,497 in 1921; net after taxes, \$7,656,077, against \$6,768,812; gross income of \$8,539,347, against \$7,379,103; balance after charges of \$6,193,168 against \$5,986,395 and a surplus of \$875,282, compared with \$688,579 in 1921.

The report says that during the year the company spent \$23,400,000 for construction work.

An extensive construction program to meet the unabated demand for new installations in the New England district is reported by President Jones in his statement.

A Financing Plan for Independents

Summary of Plan for Financing Small Properties Using Building and Loan Idea with Addition of Amortization Scheme of Federal Land Bank Plan—Loans Returned on Monthly Basis—Address Before Texas Convention

By Judge S. A. Lindsey

President, Gulf States Telephone Co., Tyler, Texas

In the telephone business almost all demand for capital is for permanent investment. Hence any credit should be on a long enough term to repay the loan from net earnings.

The telephone business requires the setting aside annually a sum equal to at least 6 per cent of the replacement value of the plant for reconstruction. It often, if not always, happens that much of this reconstruction fund together with all net earnings go into extensions and improvements required by the tastes of subscribers for better telephone service and growth of the business.

When the time for reconstruction comes, credit of longer term than banks should extend is highly desirable if not absolutely essential. Moreover, the business is such that the telephone owner can, should, and does know several years in advance his requirements for reconstruction, and he can usually figure the earnings from additional constructions or purchases which he may contemplate making.

For these reasons the finance plan proposed combines a plan of savings for the day of needed expenditures, with an earning upon the savings while cumulating equal to that of a like sum invested in telephone property, and a loan plan amortizing the debt with net earnings in about eight years, but which may be paid off in whole or in part at any earlier date if the borrower may so desire.

The plan may be employed with profit to all participating by:

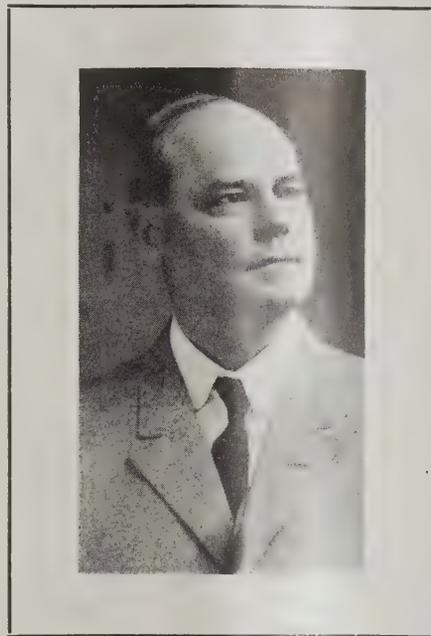
1. Those who may desire to *borrow* all.
2. Those who may desire to *save* a part and *borrow* a part.
3. Those who may desire to *save* but borrow nothing.

It is thought that the earnings upon savings will be so attractive as to assemble ample funds to meet all demands for safe loans. In brief, the plan follows that of building and loan associations as to terms and interest rates and methods of procedure in both accumulation and lendings of funds; since we have the experience of hundreds of these associations, we are able to forecast results with practical certainty.

Under the plan proposed, there will be two funds—a loan fund and an operating fund. These will be kept entirely distinct and separate so that every cent that is paid by the members to the loan fund will be loaned at interest. No part of this fund, nor the interest accruing thereon,

can ever be used for operating expenses, except taxes as will be paid from the earnings.

The operating expenses will be contributed by the members in proportion to their subscriptions to the loan funds, say a contract fee of 50 cents to be paid once and a fee of 25 cents per month for each \$1,000 subscribed and paid by installments. Those paying a flat sum at entrance will



Judge Lindsey is in the Banking Business and Until Recently Was Head of a Farm Loan Bank.

be charged 50 cents per \$1,000 once and about 10 per cent of annual earnings.

Any surplus above demands for loans may be invested in approved quick securities for which there may be a ready and steady market.

The membership will consist of those who have paid, or are paying, to the loan fund. Each shall be entitled to one vote at all membership meetings for each \$100 and fraction over \$50 of the cash surrender value of his contract; the cash surrender value of any contract shall be its pro rata share of the loan fund and earnings as ascertained at the last annual or semi-annual computation.

According to experience of building and loan associations, the following would be the cash surrender value of each contract for payment of \$5 per month to the loan fund:

End of first year.....	\$ 63.00
End of second year.....	132.70

End of third year.....	208.53
End of fourth year.....	292.38
End of fifth year.....	386.61
End of sixth year.....	486.07
End of seventh year.....	597.67
End of eighth year.....	720.43
End of ninth year.....	855.47
End of tenth year.....	1,000.00

Ten per cent upon investments or savings, secured by first mortgages on going and earning telephone properties in Texas, Oklahoma and Arkansas by—

Lump Sum Deposit or Investment Contract.

By an investment of a lump sum, the amount is doubled in approximately 7½ years on a basis of dividends of 10 per cent compounded annually or semi-annually under proposed plan.

Deposit	Matures	Total Cost or Membership Fee
\$ 1,000	\$ 2,000	\$ 15
2,000	4,000	30
3,000	6,000	45
4,000	8,000	60
5,000	10,000	75
6,000	12,000	90
7,500	15,000	110
10,000	20,000	150
15,000	30,000	225

Installment Payment Contract Plan.

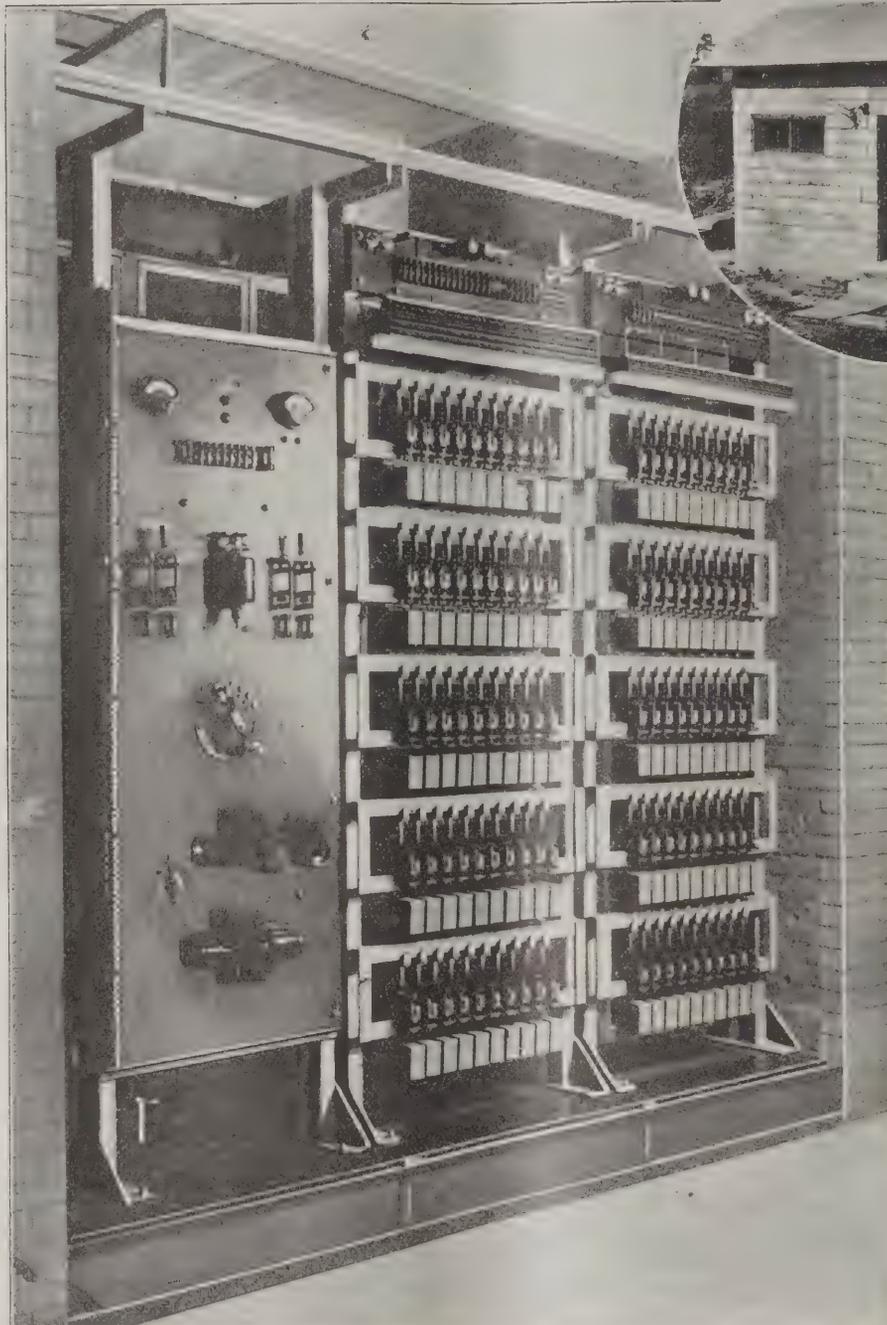
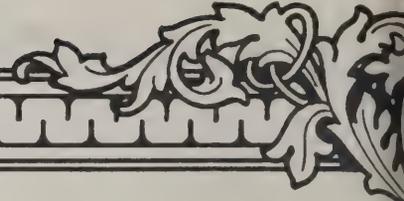
Payment Per Mo.	No. Mos.	Total Payment	Total Cost or Membership Fee	Matures
\$ 5	120	\$ 600	\$ 35	\$ 1,000
10	120	1,200	70	2,000
15	120	1,800	105	3,000
25	120	3,000	175	5,000
50	120	6,000	350	10,000
100	120	12,000	420	20,000
150	120	18,000	630	30,000

Lump Sum Deposit or Options Upon Investment Contract.

1. Dividends may be allowed to accumulate or withdraw semi-annually.
2. May borrow temporarily 90 per cent of the total credit of principal and dividends.
3. Entire credit may be withdrawn upon 60 days' notice.

Option on Installment Contract.

1. Increase amount of monthly payments.
2. May borrow temporarily 90 per cent of the total credit of principal and dividends.
3. In case of financial reverses, the association may consider requests for suspension of future payments for as long as six months.



These illustrations show a typical 100 line C.A.X. switchboard and a typical C.A.X. building. However it is not necessary to erect a special building for housing the C.A.X. The equipment is so flexible and takes up so small a space that it can easily be installed in one or two rooms of a private dwelling, in the rear of a store, or in a similar location.



Small Exchange Operation Made Profitable

THE success of Strowger Automatic equipment in dozens of small exchanges in various parts of the country shows that there is at least one permanent solution to the small exchange operating problem—the elimination of the operator.

The C.A.X. (Community Automatic Exchange) switchboard is rapidly increasing in popularity in exchanges ranging in size from a few dozen lines to two or three hundred or more.

The reasons for its popularity are many. In the first place, the service is automatic, which means it is as pleasing and adequate as automatic service in large-city systems. Second, service is continuous,—just as prompt and accurate at midnight as at noon. Third, no operators are required at any time. Weekly or bi-weekly visits by your maintenance man will keep the equipment continuously in first class operating condition.

The C.A.X. is a profit earner. It reduces operating costs to a negligible point, requires no operators or other attendants, saves dry cell costs, improves service, operates 24 hours a day, simplifies maintenance, and offers many other proven advantages. The C.A.X. can be operated in connection with either manual or automatic central toll points.

WRITE US FOR FURTHER DETAILS.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., London
Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



4. May withdraw entire credit upon 60 days' notice.

Equally Attractive Is the Loan Plan.

The borrower, who must be or become a member, will pay \$15.83 per month for each \$1,000 borrowed, to cover the interest and provide an amortization fund that will satisfy the debt in about 7½ years.

The monthly payment is applied as follows:

To the interest on the loan of \$1,000. \$ 8.33
To amortizing fund. 7.50

Total \$15.83

How this sum will pay the interest and reduce the debt is shown in the table following:

At end of—	Amortization Fund.	Bal. to Pay Debt.
First year.	\$ 94.50	\$905.50
Second year.	198.45	801.55
Third year.	312.79	687.21
Fourth year.	438.57	561.43
Fifth year.	576.92	423.08
Sixth year.	729.12	270.88
Seventh year.	896.53	103.47

At end of 7 years and 7 month, amortization fund, \$1,015.27; overpaid by \$15.27.

Total amount paid in 91 months. \$1,437.80
Deduct loan received of \$1,000
and excess of \$15.27 to be returned 1,015.27

Net cost of loan for 91 months. \$ 422.53
Actual payments upon amortizing contract, 91 months at \$7.50 per month 682.50
Interest earned on basis of 10 per cent 332.77

Total used to pay principal (and excess returned) \$1,015.27

It will be noted that only \$682.50 of the principal was paid by the borrower. The balance of \$317.50 came from interest earned upon payments upon the amortizing contract of \$7.50 per month.

Comparison:

Actual interest paid on a straight loan of \$1,000 for 91 months at 8 per cent. \$606.60
Cost under amortized plan. 422.53

Saving under proposed plan. \$184.07

Borrower's Option.

The borrower may pay the whole or any part of balance of his debt at any interest payment date.

Following the plans of building and loan associations from which the figures are in part taken, we can be assured of the foregoing results.

Security: All funds paid in on contracts are loaned upon telephone properties going and earning ample to meet monthly payments at 65 per cent of replacement value. Surety bond will be required of every one handling money or securities.

Returns: The cost of operation being taken care of by the membership fees,

dividends can be expected at 10 per cent because loans are made on a basis providing for that rate of return.

Supervision: This association should suggest and secure five capable and trustworthy men interested in the telephone business to prepare details of the plan following the methods of building and loan associations, to execute proper trust instruments and to act as trustees of said funds, supervise the making and approve loans; three of whom shall be contributors to but not borrowers from the loan funds; to employ the secretary-manager, the attorney, and a chief appraiser, and exercise the authority of directors, electing from their number a president, and other officers of the telephone finance association and carry on the business until the annual meeting of this association, at which time and place the first annual report of said finance association should be made to its members.

Chicago Agitating Improved Police and Fire Electric Lines.

Fire Commissioner John F. Cullerton, of Chicago, is now working on plans to modernly electrify the fire fighting equipment to bring about the best possible co-operation throughout the department.

To formulate plans for adopting to the greatest extent practicable and economical the many vast improvements and inventions made in the telephone and electrical industry since the present system was installed years ago, Mr. Cullerton has engaged as consulting engineer, N. Banks Cregier. Mr. Cregier planned and directed the installation of the new fire alarm system in Los Angeles and is the inventor of the instant control patrolmen-call and intercommunicating system.

That an ultimate duplication of cost to the city may be avoided, an effort is being made by Fire Commissioner Cullerton to have the city police department, the drainage board, the county commission and sheriff and the park commissions join the fire department to coordinate in formulating plans for a modern unified police and fire alarm system throughout the city, parks, boulevards and county at the same time that the fire alarm system is being modernized and enlarged, which is absolutely necessary to meet present-day requirements.

In a report to former Commissioner of Gas and Electricity Wm. G. Keith on the latest electrical inventions adaptable for the protection of life and property and the enforcement of law and order, Henry Shafer, well known telephone engineer, after an extensive study of local conditions, stated that the electrical department of Chicago is mostly responsible for much of the crime and outlawry by not supplying to the police department the latest electrical developments to speed up intercommunication and cooperation between patrolmen out on duty and headquarters.

In the report it is stated that the present patrol box telephones are connected with as high as 25 on one circuit and are more unreliable than the old-fashioned fence-wire farmer telephone lines, owing to the great inductive disturbances from other electrical circuits in the city. It is also said that there are no means for calling the patrolmen after they leave headquarters. While it costs the city over a half million dollars annually to operate and maintain this antiquated communication system, it is of very little service in directing the police out on duty.

Mr. Shafer's report states that if the city and county would provide its police departments with modern police intercommunicating equipment, it should effect at least a 50 per cent reduction in holdup and burglary hazard. Also that with the present improved means for rapid escape employed by criminals, the police department as now compelled to do its work can not attain over 20 per cent efficiency in cases of greatest emergency, regardless of the number of patrolmen in the service—as over 80 per cent of the patrolmen on duty can not be directed from headquarters except at the long intervals when they report.

Notwithstanding the facilities afforded by the public telephone system, the police commissioner and captains are isolated at headquarters with usually less than 20 per cent of the force at their instant command, and the balance of the force can only do independent scout duty. The sheriff and park system police chiefs are completely isolated from their police force, and the motorcycle is practically the only means available for the chiefs to give orders to their army of men scattered throughout the city and county.

It is Mr. Shafer's contention that the constantly improving means of rapid escape employed by criminals, and the rapidly increasing tendency to lawlessness could be combatted far better with the present police force, if it were provided with modern electrical inventions for instant intercommunication between headquarters and the patrolmen on duty, than could be accomplished with an additional annual outlay of \$5,000,000, or more, for additional patrolmen scattered throughout the city on scout duty under the present antiquated system of intercommunication.

Quick Service on Telephone Regarding Lost Purse.

A guest leaving the Pennsylvania Hotel, New York City, left her purse in the taxi which took her to the station. The taxi driver who is stationed at the hotel, turned it over to the doorman, and the doorman reported it to the hotel's telephone department.

It so happened that just as his call came in, the guest telephoned from Philadelphia. Without any delay, without even the charge for another call, she was informed that her purse was safe.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

When you're laid up in a hospital,
From a painful operation,
With not a soul around you know,
Not even a relation;
With not a thing to do all day
But to look up at the ceiling,
It ain't much fun, I'll tell the world,
No grand and glorious feeling.
The minutes drag so slowly by,
And endless seem the hours,
Until one day a nurse comes in
With a bunch of lovely flowers,
And with them is a little card
With a cheerful message on it.
It makes you feel so chokey like—dog-
gone it,

But all the same it cheers a lot
And you forget the pains which fret you,
When you know that even though you're
gone
Your friends will not forget you.

You may get the notion by the above
that I have recently been in a hospital.
The notion is correct, but don't get dis-
couraged—I am not going to tell you
about my operation; instead, I will say
that even in a hospital a telephone man
can learn something which will help him
in his business.

In the long days and longer nights one
can think of many things and by observa-
tion of the routine in the establishment get
an idea of "Service" as it is expressed and
understood from a little different angle
than we understand it. Service means the
same in a hospital as it does in a tele-
phone office, and by the manner in which
the employes exemplify their understand-
ing of it do we judge them as to ex-
cellence.

There are just as many different kinds
of nurses as there are operators, and the
sunshine voice is a thing of value and
help in both places. The cheerful, smil-
ing, quiet-moving but efficient nurse,



Even in a Hospital a Telephone Man Can Learn Some-
thing Which Will Help Him in His Business.

who is always on the lookout to anticipate
your needs and attend to your expressed
wants, like the same class of operators, is
of a type which stands at the head for des-
irability and credit to the institution.

Below her are many grades, some of
whom should never be employed in any
position of service where they are called
upon to serve the public; especially the
public who are unfortunate enough to be
patients in a hospital.

The one big thing which they do in a
hospital that we might emu-
late with profit and satisfac-
tion, is the system of chart
keeping. For every patient
there is a chart on which is
kept a detailed account of
his daily and hourly condi-
tion from the time he is ad-
mitted until he is discharged.
Every change in temperature
is noted and written down,
the state of mind, of appe-
tite, and condition of in-
cisions are all there, if it is
an operative case.

When a doctor comes in he consults the
chart at once before seeing the patient;
a change of nurses and the chart is
brought up-to-date by the one going off
duty and inspected by the oncoming nurse.
It is a wonderful record for those who
are responsible for the well being of the
patient.

It seems to me we could adopt some
such system in the telephone business. Let
us have a chart for each station. On it
enter the items necessary to give us a
good idea of its general condition to
start with; its make and type and how it
is installed, and where. As each visit is
made to the telephone, or to the vicinity
if the trouble is outside the house, the
fact can be noted down.

Each change of batteries, or any other
operation, when written down from day
to day and the chart kept as
a card index close to the
hand of the manager in the
business office, will be of the
greatest aid to him in keep-
ing the station in good
working order and keeping
him informed as to the cost
of operation of this particu-
lar station. When complaints
come in, the manager can at
a glance post himself up-to-
date and be ready to handle
the matter or give an intel-
ligent order as to its looking
after by others.

All costs could be charged from day to
day, and such accumulated evidence will
give the management a real knowledge of
whether that station is paying a profit or
not. Constant requests for new bat-

teries can be countered with the evidence
on the card, and the patron making the
request can be shown a most convincing
statement.

In the case of rural telephones, particu-
larly, which do not pay at all, usually,
such a mass of evidence would be in-



Let Us Have a Chart for Each Station—Write Down
Each Change of Batteries or Other Operation.

valuable should trouble arise regarding
a raise in rates, or to supply figures for
a state commission preparatory to asking
for more money.

It seems to me that until the cost of
telephone service can be ascertained to an
acceptable degree, we will never have
proper arguments with which to confront
a commission.

In no other way can we glean the
required information except by care-
fully noting down from day to day all
the care, attentions and expense which a
station requires, that it may be kept in
good service-giving condition.

Specific and truthful information is the
only kind a doctor or nurse can use safe-
ly in looking after the welfare of a patient.
They not only get all the information they
can as to present conditions but go back
to the grandparents if possible to get ad-
ditional items which may have a bearing
on the case.

Like in a telephone plant, there is
only one kind of service satisfactory in
a hospital—that is the kind which serves
to keep the patient cheerful and in an im-
proving state of health.

APHORISM: A truthful diagnosis is
half the battle.

Prices in the Metal Markets.

New York, April 3.—Copper—Steady;
electrolytic, spot and futures, 17½ cents.
Tin—Easier; spot and futures, \$47.87.
Iron—Steady; No. 2 northern, \$31@32;
No. 2 southern, \$30@31; No. 2 southern,
\$27@28. Lead—Steady; spot, 8.25 cents.
Zinc—Easier; East St. Louis spot and near-
by delivery, \$7.65@7.75. Antimony—
Spot, 9 cents.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

"I am enclosing a copy of a letter received from a satisfied toll patron which explains itself," writes E. J. Calendine, district manager of the Dakota Central Telephone Co., at Huron, S. D.

Sioux Falls, S. D.

The Dakota Central Telephone Co.,
Huron, S. D.

Gentlemen:

This is to express to your efficient operators the hearty appreciation of the writer, together with Mr. Larson whom you were successful in locating last Friday evening between Chamberlin and Pierre on the Missouri River, whom you will remember had a little boy eight years old run over by an automobile and badly crushed and not expected to live last Friday p. m. at his home at Brandon, S. D.

Mr. Larson, as well as ourselves, wish you to know that we appreciate very much the persistency and efficiency of your operators in locating Mr. Larson who was on a duck and chicken hunt somewhere in the western part of the state.

We are pleased to advise that the little boy is getting along nicely but, due to the severe accident, a bad case of pneumonia has developed and a nurse and a doctor are fighting for his life.

As you know, Mr. Larson was located at 7 a. m. Saturday morning and arrived at 4 p. m. Saturday.

Yours very truly,
Manchester Biscuit Company.
(Signed) H. E. Doolittle,
Sales Manager.

In commenting upon the letter, Mr. Calendine says:

"We telephone companies of the woolley Northwest have to resort at times to many trying and strenuous means to reach our patrons. In this country there are many places where there is no telephone service for many miles, as ranches and small inland towns are few and sometimes far apart, without telephone communication.

"These were the circumstances surrounding the case in question. When it is understood that it cost a \$12 messenger fee to get this message to this man regarding the misfortune of his little son, you can understand why such service is appreciated.

"Unfortunately for the party in this case, he had missed his train. As there is only one train a day in each direction, he was compelled to make a 250-mile trip by automobile which got him home many hours sooner than if he had waited for a train to bring him."

W. R. McGovern, president of the Wisconsin Telephone Co., announces that everyone of the 2,600 employes of the Mil-

waukee exchange has been authorized to consider himself or herself as a personal representative of the company to the public, with the object of more intimately acquainting telephone users with its service.

As such representatives, Mr. McGovern said, all employes have been asked to report formally any suggestions or criticisms they may receive from telephone

COMMON ERRORS



What's Wrong Here?

Answer at bottom of this page.

users and to consider themselves directly responsible for the adjustment of the particular case they have registered.

"Under what we call our Service Booster Ticket Plan," said Mr. McGovern, "all our employes are given the opportunity to continuously seek to satisfy the public and to help us provide as near perfect telephone service as is practicable.

"We believe this plan will be of benefit to the public; that being so, it will be of benefit to us. We want the suggestions, as well as the criticisms, of our customers; and with all our employes authorized to receive, as well as equipped to report them, we believe telephone users will have better opportunity to acquaint us with their opinions.

"When any employe hears or receives a suggestion or grievance, he or she will fill out a ticket containing all the details. The ticket will be sent directly to the department concerned.

"After adjustment of the case, the person originating it as well as the employe registering it will be informed of the details of its disposition."

Under the heading, "Common Errors," of its etiquette column, the Chicago Tribune recently published the drawing reproduced on this page. We hope the little lesson in courtesy to the operator made some impression upon the readers of

the "World's Greatest Newspaper," as the Tribune terms itself.

The Capital Telephone Co., of Jefferson City, Mo., received a nice little write-up recently in one of the daily newspapers. The personnel, too, came in for its share of the complimentary things which the paper said about the organization.

News items of this type contain information in which the public is really interested—it is news of a good, clean sort, that appeals to the average reader. It helps the paper and helps the company.

The item pointed out that the company "is owned, operated and controlled by home people who have their interests in the future growth of the city." It was formed in 1900 and there has been no material change in management since that time.

"Rotarian Lester S. Parker," it was stated in the article, "retired manufacturer and one of the Capital City's best known and most highly respected citizens, is president, and Rotarian Houck McHenry, known far and wide as one of Jefferson City's most incessant boosters, is secretary-treasurer."

The company has a total of 3,033 stations in the city and "renders most excellent service, having just recently installed a new switchboard of the very latest design to care for the ever increasing business."

Don Daso is superintendent, and the company employs 24 people with an annual payroll of \$27,625. The capital stock is \$100,000.

The article closed with the statement that "growth of the company in the 23 years of its existence has kept pace with the increase in population of the city."

"A telephone central office will be brought to you at Convention Hall, Wednesday, February 14, 1923, at 8:15 p. m.

Free to subscribers. Get your tickets now.

Learn the WHY of things you've wondered at. See Harold Lloyd in one of his funniest comedies. Enjoy an evening of entertainment and fun with us. See an actual telephone switchboard in operation. You'll enjoy it."

These are a few sentences from an attractive invitation printed in a three-page

ANSWER TO COMMON ERRORS

Don't forget to say, "please." An easy little word to say, but a powerful one in smooth running of the things of life.

folder form and issued by the Rochester Telephone Corp., Rochester, N. Y. Approximately 9,000 tickets were requested in advance for the demonstration.

The same demonstration was presented at a luncheon of the Rotary Club, February 13, at which members of the Kiwanis and Ad Clubs and other organizations of business men were guests. It was given under the supervision of William J. O'Hea, assistant to the president of the Rochester Telephone Corp.

For the purpose of the demonstration a replica of an actual telephone central office was shown in a special portable apparatus; in other words, a central office in miniature. The demonstration board was arranged so as to present three scenes.

The audience first saw a large panorama of a city with two buildings in the center panel described as telephone buildings; one side panel showed a residence and the other a business office in the same town. The second set of scenery showed a cross-section of a typical central office building with its locker room, retiring room, dining room, operating room, business office, terminal room, cable vault and battery room.

The third scene showed a room in the residence and the interior of a business office flanking a center panel containing actual central office switchboard equipment for handling calls between the residence and the business office. By opening the lower portion of the demonstration board Mr. O'Hea was able to show the audience much of the intricate equipment required when the telephone connections were made before their eyes.

President Eugene Raines of the Rotary Club, turned the meeting over to Mr. O'Hea after luncheon had been served and Mr. O'Hea made a brief address pointing out that the telephone corporation is one of the city's largest business institutions having 1,300 employes and an annual payroll of \$1,700,000, the bulk of which is spent in Rochester.

Data was given as to the future telephonic development of Rochester and the money required for making the necessary improvements this year.

"We also recognize," said Mr. O'Hea, "the need and responsibility for educating our employes and the public in the efficient use of the telephone so that everyone will get the most out of the service."

Two young women operators described in a general way the equipment of the switchboard. They completed actual calls made by two men employes of the company who were seated at telephones on either side of the stage.

The operators brought out clearly some errors which are thoughtlessly made by subscribers and which cause difficulty in the service. Among such errors are:

• Giving numbers from memory instead of looking them up in the directory, which frequently results in wrong number calls;

hanging up the receiver after calling a number, which often results in called party being answered by the operator asking "Number, please?"; failure to announce your name when answering the telephone, causing delays and annoyance to calling party; failure to speak directly into the transmitter making it difficult for the other person to hear you easily; and failure to answer a call promptly, which sometimes makes the calling party believe the operator is giving very slow service.

The operators brought out very clearly the desire of all operators to give good service and the lengths to which the company has gone to perfect them in their profession. They pointed out that operators are not infallible and explained some of the causes of the difficulties experienced by subscribers.

They further explained in detail just how they handled calls between subscribers served by the same central office and by different central offices, how they know lines are busy, how they supervise calls and the proper and improper methods of flashing or moving the receiver hook so as to attract the operator's attention.

At the close of the demonstration the operators invited those present to come up and look at the apparatus and to ask such questions as might occur to them, and a great many took advantage of the opportunity to learn more about the proper method of using the telephone.

J. A. Van Wagenen, secretary Temple Rural Telephone Co., Temple, N. D., in a recent letter says:

"I have received so many valuable suggestions in articles you have published from operators and others that I am wondering if there is someone in some far-off corner of the telephone world who would like to know of my experience in managing collections.

When I started in the telephone business some years ago and began to superintend the construction of small town plants, like many others, my mind was more on other departments and I sort of took it for granted the subscribers would see to paying their accounts.

As time went on, I found that the best of them would let their accounts accumulate; then, when urged to settle a large bill, they would kick on the service and the items. A generally disagreeable time was had and the company was blamed for the very thing that the subscriber was the cause of. I have had many people frankly tell me that it made them mad for me to let their account run until it seemed a big amount to pay for telephone service.

Where a company has allowed collections to get behind, our experience of the past year serves to show one scheme that has worked perfectly. At the annual stockholders' meeting in March, 1922, there were 35 subscribers delinquent out of a total of 46—and they owed \$473.33 collectively. A resolution was passed saying

a collector would call on the subscriber on April 1, 1922, and three months' rent would be collected in *cash*, which would pay the subscriber to July 1, 1922, in advance. All amounts due prior to April 1 could be settled either in cash or a note due October 1, 1922.

Every one could and had to settle that way or suffer the removal of their telephone. The secretary's report at the annual meeting last month showed every dollar on both notes and accounts paid into the treasury and every one pleased with the regulations.

This plan gave subscribers time to be prepared to meet their obligations, and they were given to understand it would be necessary for them to meet them.

Give them service, then see to it that they pay in advance, and both company and subscriber will get along fine."

The United Telephone Co., of West Concord, Minn., of which E. C. Kaiser is manager, has sent a circular letter to all the school teachers in its territory, regarding the breaking of glass insulators by school children. Mr. Kaiser believes that telephone companies would be saved a great deal of trouble and expense if a general campaign along the lines of destruction of telephone property were made among the school children.

In his letter, individually addressed to the school teacher, Mr. Kaiser says:

"In our endeavor to give the best of telephone service, we earnestly solicit your co-operation in the matter of admonishing children relative to the destruction of telephone property.

We believe that the breaking of glass insulators on telephone poles by boys throwing stones, or by shooting, would be less if they were properly cautioned as to the penalty involved. Therefore, we request that you read the 'warning' of this letter to your pupils; any additional warning that you will extend to them will be appreciated. The purpose of this letter has the approval of County Superintendent H. A. Way.

May we thank you in advance for your coöperation?

Yours for better telephone service."

The warning which the teachers are requested to read to pupils is:

"Do you know that when you break glass insulators on telephone poles by throwing stones, shooting, or in any other way, you are breaking the state law and are subject to a fine?

When you break a glass, not only do you destroy someone's property, but in a great many cases the telephone line is put out of order. Just think what you would be responsible for if someone wanted a doctor in a hurry at that time!

From now on, any one breaking glass insulators on telephone poles will be arrested and prosecuted to the full extent of the law."

Personal and Biographical Notes

Henry Brock, an experienced telephone man and for many years connected with the Tri-State Telephone & Telegraph Co., Northwestern Bell Telephone Co. and other telephone companies, has been named



A Wide Experience Gives Henry Brock a Good Foundation for His New Position as Commercial Manager of the Tri-State at Rochester, Minn.

acting commercial manager for the eastern district of the Tri-State company, and will take charge about May 1, according to an announcement just issued through the office of R. F. Wilder, commercial superintendent of the Tri-State Telephone company, St. Paul, Minn.

Mr. Brock, who takes over the duties relinquished by Geo. F. Beatty, first entered the telephone business as a solicitor for the Pacific Telephone & Telegraph Co. at San Francisco, Cal., in 1901. Three years later he became manager of the Sunset Telephone & Telegraph Co. at Marysville, Cal., remaining there until 1910 when he resigned and located in St. Paul, Minn. He became a commercial agent for the Tri-State company in 1911 and was transferred to the Minneapolis office four years later where he specialized in automatic P. A. X. demonstrations and development.

When the Tri-State and Northwestern Minneapolis systems were consolidated in 1918, Mr. Brock continued with the Northwestern Bell as special P. B. X. and P. A. X. man until 1920 when he returned to the Tri-State in St. Paul and was placed in charge of commercial work connected with the consolidation of the two St. Paul systems.

This work completed, Mr. Brock be-

came engaged in the work of helping to compile an extensive commercial survey, which had not been fully completed at the time he was named to assume the position of district commercial manager for the Rochester district. He will remain in St. Paul until the survey is completed before removing to Rochester.

Philip O. Coffin, general auditor of the Chesapeake & Potomac Telephone Co. at Washington, D. C., is another who was made a vice-president of the company a few weeks ago.

He is a young man with veteran experience in the Bell system. His first work was in New York. In 1904 he went to Washington, and a year later he was transferred to Baltimore.

His next post was in Philadelphia, and in 1911 he was made auditor of receipts for the New York Telephone Co., Bell Telephone Co. of Pennsylvania, and the Chesapeake & Potomac Telephone Co. He became auditor of the New York Telephone Co. in 1913, and general auditor of the Chesapeake & Potomac Telephone Co. in November, 1919.

H. S. Johnston, of Milwaukee, was recently elected a member of the board of directors of the Wisconsin Telephone Co. to fill the vacancy caused by the death of the late Edward A. Uhrig. Mr. Johnston is a native of Milwaukee and an outstanding executive of the younger type in industrial enterprises and an active worker in civic activities. He is president and treasurer of the R. A. Johnston Co., biscuit and candy manufacturers.

Wm. G. Turpin, manager of the Henderson Telephone & Telegraph Co., of Henderson, Ky., is another telephone man who has been recommended for postmaster of his town. His name was submitted by Senator R. Ernst.

Mr. Turpin is well known in Henderson and his many friends there hope that he will receive the appointment.

Geo. F. Beatty, after 18 years as a telephone man, has resigned as district commercial manager (eastern district) Tri-State Telephone & Telegraph Co., with headquarters at Rochester, Minn., to become secretary and an active member of the Geo. E. Thompson Lightning Rod Co., Owatonna, Minn. Mr. Beatty assumed his new duties April 2.

Mr. Beatty began his telephone career in 1904 as a member of a construction crew employed by the Steele County Telephone Co., Blooming Prairie, Minn. One year later he located at Glenville, Minn., as manager of the Freeborn County Telephone Co.

In December, 1905, purchase of the Freeborn company by the Northwestern

Bell Telephone Co. resulted in his remaining as manager at Glenville only until October, 1908, at which time he was transferred to Chisholm as manager of the Mesaba Telephone Co. A few months later he was transferred to Hibbing, Minn., as manager for the entire Hibbing area.

In April, 1910, Mr. Beatty found himself in Minneapolis, a special agent for the Northwestern Bell Telephone Co. and in October of the same year was made manager of the Fergus Falls area of that company. In March, 1912, he went to Grand Forks as manager of the Grand Forks area for the same company where he remained until June, 1915, at which time he was appointed district commercial manager for the Bell company in the Owatonna district, an area comprising practically the entire southern portion of the state of Minnesota.

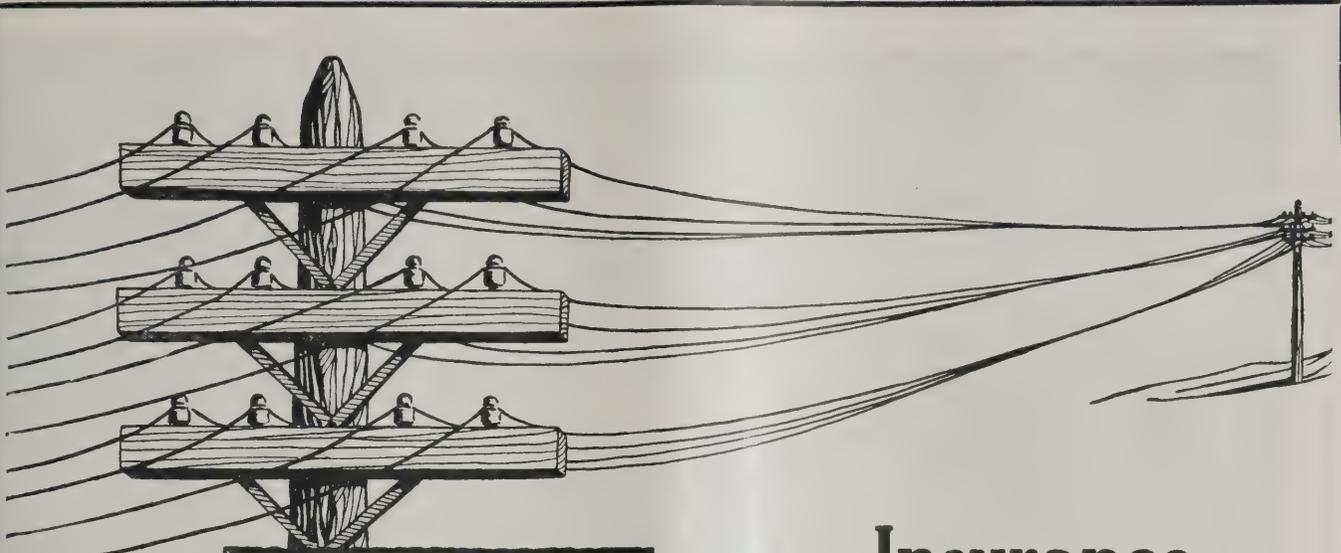
In July, 1918, when the Tri-State Telephone & Telegraph Co. absorbed the Bell interests in southern Minnesota Mr. Beatty continued as district commercial manager of the same district. In 1922, when the Tri-State company divided the area into three districts, he was made commercial manager of the Rochester district with headquarters at Rochester, a position he held at the time of his resignation.

During the years that Mr. Beatty resided at Owatonna he became interested



After a Long Period of Service in the Telephone World, Geo. F. Beatty, of Rochester, Minn., Goes Into the Lightning Rod Business.

and very active in local community affairs. He is a prominent member of the Owatonna Commercial club, a past president of the Owatonna Rotary club and belongs to the Scottish Rite and Shrine.



The Policy

Of Lynton T. Block & Co. is to issue the most satisfactory and comprehensive insurance to be had anywhere—

Furnishing absolute protection at cost

Embodying all the standard features and more

Covering special classes and selected risks

Selling at established rates

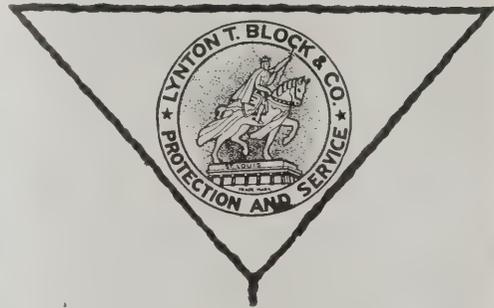
Returning savings at the end of the policy period, depending upon the individual experience of the risk.

Giving a claims service that is not equalled elsewhere

It is an honest policy, carried out in an honest way and gives a square deal under all conditions.

This forms the creed of every member of the organization and has built up the reputation of Lynton T. Block & Co. until it is one of the best and most favorably known in the Mississippi Valley.

Insurance at Cost



*WORKMEN'S COMPENSATION
EMPLOYERS' LIABILITY
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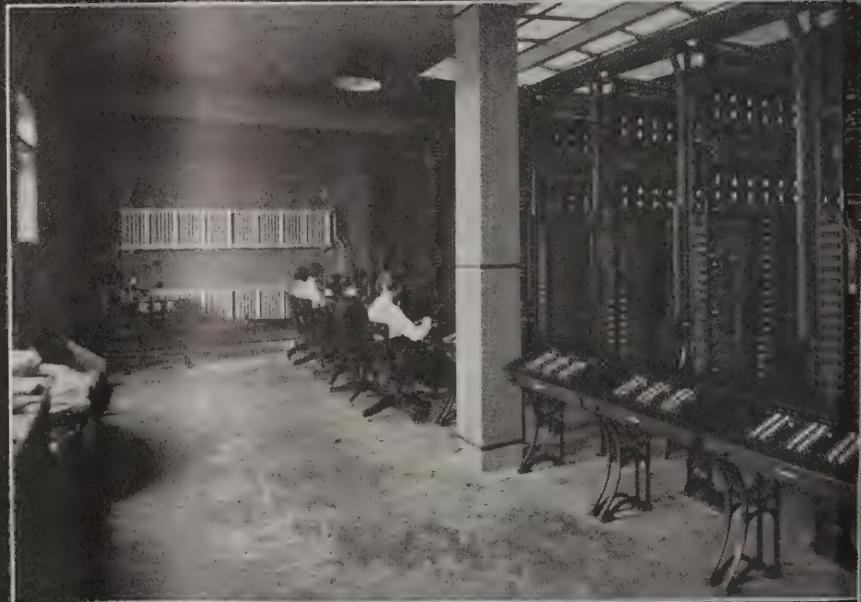
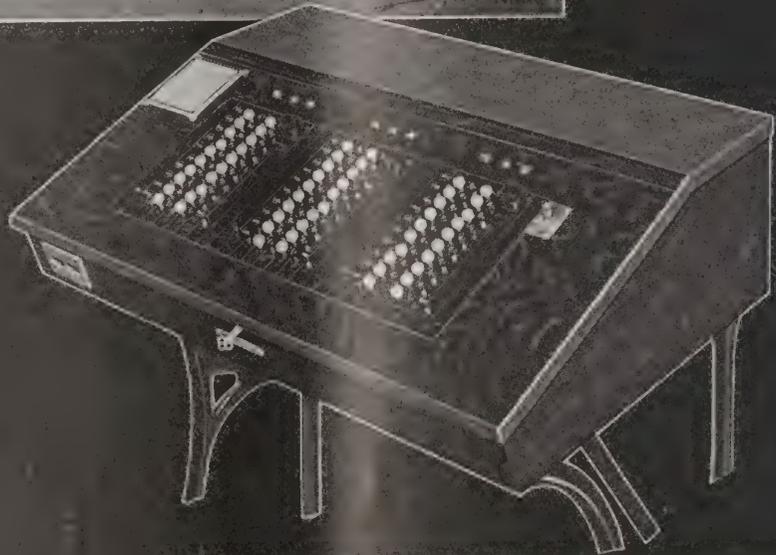


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Underwriters of Insurance at Cost

**Utilities Indemnity and Fire Exchanges
Employers Indemnity Corporation**

**Chamber of Commerce Bldg.
ST. LOUIS, MO.**



One Operator Instead of Four

No trick at all to tell which of these two exchanges costs less to operate.

The North desk, with its simple sets of keys, makes telephone switching as easy as running an electric adding machine.

And because it's so *easy* it's bound to be *speedy*. That's why operators easily *average* 750 calls per hour with North Automanual. That's why the operating room economies are so apparent at a glance. That's why a *new* girl in the morning is *expert* in two or three days and handles actual calls from the start.

Too good to be true you say?

Tell you what let's do! *You* ask us for a list of companies using North Automanual. Then ask *them* what *they* think of North Machine Switching. See if they'll back up our claims for

Better Service

Greater Profit

Instant recall. Automatic disconnect. Short answering time. Uniform distribution of calls to idle operators. Impartial service. Less tiresome operation. Operators can't listen in.

Low maintenance and depreciation. More calls per hour per operator. Quick training. Distribution of switching centers. Remote control of small exchanges. Rate raises with public approval.

With

NORTH MACHINE SWITCHING

The North Bulletin describes North Automanual, explains remote control of outlying exchanges, and describes the equipment. We'd like to send you a copy.

The
**NORTH ELECTRIC
MANUFACTURING COMPANY
GALION, O.**

The NORTH line offers every variation of automatic telephone service, including the Automanual System for local and toll service, Automanual remote control of small exchanges, and Dial Automatic for exchanges too small for Automanual. Manufacturers of telephone equipment since 1884.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Hearing in Northwestern Bell Nebraska Injunction Case.

The hearing of the federal court injunction brought by the Northwestern Bell Telephone Co. to prevent the Nebraska State Railway Commission eliminating the existing 10 per cent surcharge on exchange rates, will be begun late in April or early in May. The master who is to take the testimony will be consulted before the date is definitely fixed.

Representatives of the company and of the commission are agreed that the hearing may be started late in April, the commissioners being undecided as to the date because of hearings in Washington that necessitate their presence, set for the month, but which are uncertain in the matter of duration.

Considerable testimony has been eliminated by an agreement between the commission and the company as to the valuation of the company property. This will save the substantial cost of making and verifying a detailed inventory, inspection and appraisal of the telephone property, which would take months of time, delay the trial and be burdensome to both sides.

For the purposes of the case only and not binding on any party in any other proceeding, it has been stipulated that the cost of the telephone plant and other property of the company in the state used in the rendition of its intrastate and interstate toll and exchange service, was as shown on its books to be \$15,599,623 on January 1, 1921. On January 31, \$15,658,082; February 28, \$15,684,279, and each month thereafter until December 31, 1922. On June 30, 1921, it was \$16,049,673; on January 1, 1922, it was \$17,671,448; on June 30, 1922, \$18,180,000, and on December 31, 1922, \$18,392,647.

It is also agreed that to the amounts specified for each month respectively, there shall be added 3.55 per cent to cover working capital, material and supplies; that plaintiff will not claim larger property values in this case than are specified at the time set forth; that these figures, arrived at by the consultation of the accounting departments, plus 3.55 per cent, shall be deemed and regarded, for the purposes of the case, as the fair and reasonable value of the company's property on the respective dates.

It is further stipulated that proper allowance shall be made for all additions and betterments made subsequent to December 31, 1922; that the value thereof shall be ascertained and fixed for each month by the same method followed in arriving at the figures previously agreed.

The commission reserves the right to show that the plaintiff's machine-switching equipment should not be included in the values set forth, but that in the absence of such showing, it is agreed that the fair value of the equipment is the cost shown on the plaintiff's books, plus the working capital stated.

The point made in this respect is that the commission insists upon a showing that the machine-switching equipment is economical and therefore, justified. A large part of this expense was for replacement, but the cost of machine switching in place is much greater than that for manual. The commission is calling for proof that this substitution, which added very heavily to the investment without increasing the number of subscribers, is justified by economical management. Thus it will be necessary to show that the saving in traffic expense is equal to the added cost of maintenance and added return necessary.

The stipulation also sets out that it is understood that the company still contends that the property is fairly worth at least the amounts set forth in its bill of complaint and that it enters into this agreement evidenced by this instrument only for the purposes of this case, prompted by the large economies in time, labor and money to be effectuated thereby.

An effort was also made to agree on what the net return should be. The company asked for 8 per cent, but was willing to compromise on $7\frac{1}{2}$ per cent, but the commission declined to concede more than 7 per cent. This failure to agree calls for the taking of testimony on this point.

The stipulation is signed by Edgar M. Morsman, jr., and Frank E. Randall for the company, and O. S. Spillman, attorney general, and Hugh Lamaster, counsel for the commission and assistant attorney general.

Comparative Operating Figures Before Indiana Commission.

Independent telephone exchanges of Indiana are making more money than the Bell exchanges, and they are accomplishing it with lower telephone rates, according to the testimony of Harry M. Boggs, chief accountant of the Indiana Public Service Commission, at the hearing on the Indiana Bell Telephone Co. consolidated rate case. Mr. Boggs testified in relation to a series of exhibits which he had prepared or were prepared under his direction.

Some of the conclusions that may be drawn from the exhibits, which were

compiled from annual reports on file with the commission and from exhibits the Indiana Bell has introduced in the pending rate case, are the following:

Operating revenues a subscriber station of the Bell exchanges are, as a rule, considerably higher than revenues of the Independent companies, inasmuch as the rates of the Bell exchanges are generally higher.

Operating expenses a station of the Bell exchanges are much higher than such expenses of the Independents.

The result is that the gross revenue of a station for the Independent exchanges is greater than that of the Bell exchanges, though the telephone rates charged by the Independents are lower than those charged by the Bell.

In cities and towns having Independent companies the average number of persons of a subscriber station is much smaller than in cities and towns with Bell exchanges. In other words, the Independents have more stations in proportion to population than the Bell exchanges. The "saturation" of the Independents is greater than that of the Bell exchanges.

Bell rates have risen from 1913 to 1922 to a degree that the average increase for all classes for 1922 over 1923 is almost 45 per cent.

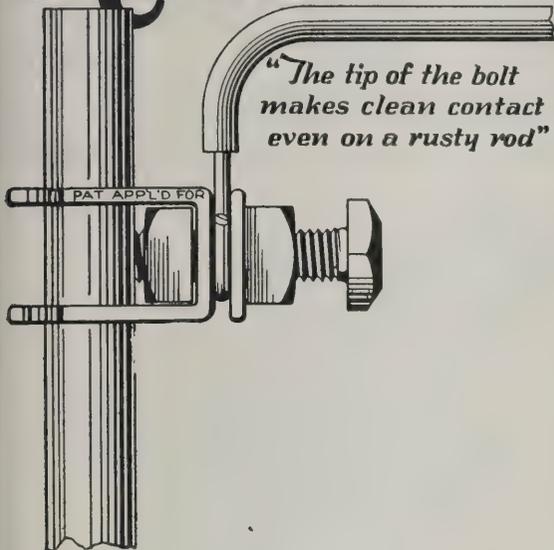
In the various tables of the exhibits it appears that the higher operating expenses of the Bell exchanges are due in a considerable measure to traffic expenses, including wages. The expenses a station for operators' wages are usually less for the Independents than the Bell exchanges. The Independents spend less for schools to train operators, and it appears, generally, that the Independents are highly organized.

The commission has indicated several times in the course of the long hearing, which is now drawing to a close, that the Bell system is "super-organized" and that it should find some way of reducing operating expenses. It has been asserted by witnesses for the commission that the Bell form of organization is not adapted to the smaller communities, especially, and that the Indiana Bell has been subject to too many orders from the American Telephone & Telegraph Co. of New York.

One of the exhibits on which Mr. Boggs testified was a group summarization of unit costs, giving the expenses a subscriber station for the ten months ending October 31, 1922, excluding depreciation.

In a group of cities and towns where the number of stations is from 501 to 600

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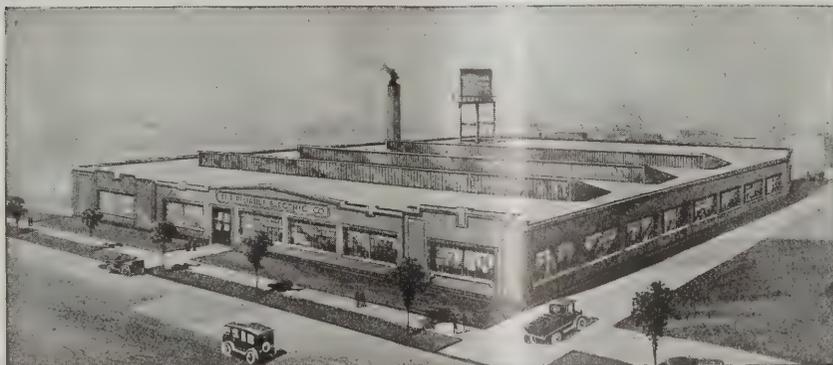


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it was shown there were four Bell exchanges with an average operating unit cost a station of \$24.12; one company partly owned by the Indiana Bell with a unit operating cost of \$18.33; and 27 Independents with an average of unit cost of operation a station of \$12.77. The cost a station of the Bell companies in this group was shown to be 88.88 per cent higher than the Independents.

In a group of exchanges with from 2,001 to 3,000 subscriber stations, there were seven Bell and seven Independent. The following was shown by an exhibit:

Average operating cost a station for the seven Bell exchanges, \$21.33; same for the seven Independents, \$13.85; Bell costs higher by percentage of 54.01.

In the group of exchanges from 1,401 to 2,000 stations, the Bell operating costs a station were \$23.28 as against \$15.92 for the Independents, the Bell costs being 46.23 per cent higher.

The figures indicate that the biggest difference in operating costs was in the small exchanges. In 19 Bell exchanges with the number of stations ranging from 40 to 100, the operating costs were \$36.84 a station as compared with \$16.41 a station for 14 Independent companies. The Bell operating expenses were 124.50 per cent higher.

Lower Rates Established by Bell Company at Lowell, Ind.

Instructions contained in an order of the Indiana Public Service Commission directed the Illinois Bell Telephone Co., Indiana division, to put in effect at Lowell a lower schedule of rates for business and residence service. The order was issued March 23 and became effective April 1.

The individual business rate is reduced from \$5 to \$4 a month and two-party business from \$4 to \$3.50 a month. Individual residence is reduced from \$3 to \$2.75 a month, two-party residence from \$2.50 to \$2.25 and four-party residence from \$2.25 to \$2.

An investigation was made by the commission some time ago, and the company has agreed that rates for Lowell have been somewhat out of line with other towns of similar size.

Iowa House Is Against Regulation of Telephone Companies.

By a vote of 72 to 27, the Iowa house of representatives defeated the Saunders-Clarke bill, which provided for regulation of telephone business by the state railway commission. This action was taken on March 27. On March 23 the bill to place telephone companies under the jurisdiction of city councils was thrown into the discard by the substitution of the Saunders-Clarke bill.

This probably disposes of all telephone regulation bills for this session, although senate file No. 436 by Buser—which pro-

vides for city council regulation of town rates, board of supervisors regulation of rural rates, and railway commission regulation of long distance rates, is still pending.

Senate file No. 552 by Bowman, providing for municipal ownership, is also on the calendar.

Illinois Bell Takes Over Kinloch Properties in Illinois.

The Interstate Commerce Commission gave its approval on March 26 to the application of the Illinois Bell Telephone Co. to acquire the properties owned by the Southwestern Bell Telephone Co. in southern Illinois.

Recently a decision was handed down by the commission granting the Southwestern Bell permission to purchase all of the properties of the Kinloch Telephone Co., of St. Louis. Part of this property is located in southern Illinois and it is this property that the Illinois Bell is purchasing from the Southwestern Bell.

Hopkinsville, Ky., Rate War in the U. S. District Court.

An injunction suit to prevent authorities of Hopkinsville, Ky., from forcing a return to pre-war telephone rates was filed March 30 in the United States District Court by the Christian Todd Telephone Co.

Contention is made in the petition that continued operation of the lines can not be done profitably on the old rate basis.

The wartime rates, under which the company has been operating for several years, are 50 cents higher a month than the pre-war rates. The Hopkinsville city council recently ordered the old rates restored.

Kansas Commission Authorizes New Rate Schedule for Paola.

On March 23 the Paola Telephone Co. was granted the permission of the Kansas Public Utilities Commission to file and put into effect a new schedule of rates at Paola. The rates allowed by the commission are:

Business, one-party	\$2.75
Residence, one-party	2.00
Residence, two-party	1.65
Residence, three-party	1.35
Rural, multi-party	1.25
Rural switching service.....	.50
Business extension sets.....	1.00
Residence extension sets.....	.50
Desk sets .....	.25

Expect Politics Will Rule Louisville, Ky., Utilities Bureau.

The city council of Louisville, Ky., passed, on March 30, the bills for creation of a utilities bureau, and the personnel of the bureau is to be announced soon.

There are many candidates for appointment, which means, perhaps, that politics will rule for the choice of candidates,

with the result that men of little ability will be chosen to fill important positions.

The cost of the bureau is being borne by three of the local utilities, the Louisville Railway Co., Louisville Gas & Electric Co., and Louisville Home Telephone Co., each of which will contribute \$10,000 a year to pay the wages of the employees of the bureau.

The purpose of establishing the bureau was to have an organization which would be in position to furnish facts and figures as a basis for rates which may be used by utilities giving public service.

New Rate Schedule for Service in Carbondale, Kans.

The application of the Carbondale Telephone Co. for permission to make certain changes in the rates for service at Carbondale, was granted by the Kansas Public Utilities Commission on March 20. The new rates are:

Business, one-party	\$2.00
Residence, one-party	1.50
Residence, two-party	1.25
Rural switching service.....	.50
Business extension sets.....	.75
Residence extension sets.....	.50
Desk sets .....	.25

Town's Boom Ended With Close of War—Close Exchange.

The Northwestern Bell Telephone Co. has asked that it be allowed to close its exchange at Antioch, Neb. This was the center of the potash brine industry during the war, and at one time it had a population of 2,500.

With the industry killed by low tariffs and German competition, the town has dwindled to 200 persons, and the company is now serving but 11 business and eight residence subscribers. Some of these, the company says, have been continuing service out of courtesy to the company. Their consent to close the exchange has been obtained. A toll station will be maintained in a store, and those who wish local service will be served from stations at Alliance.

Otis, Kans., Company Is Granted a New Rate Schedule.

Effective April 1, the Otis Telephone Exchange was authorized by the Kansas Public Utilities Commission—in its order of March 21—to establish the following rates in Otis:

Business, one-party	\$1.75
Residence, one-party	1.25
Rural switching service.....	.50
Wall extension sets.....	.75
Desk extension sets.....	1.00
Desk sets .....	.25

Cassville, Mo. Company Authorized to Buy Mutual Company.

The Cassville Telephone Co. was given authority by the Missouri Public Service Commission on March 22 to purchase the

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exchange and plant of the Farmers Mutual Telephone Co., of Cassville, for the sum of \$1,200.

Permission was also granted the Cassville company to increase the rate for Class A switching service from 25 cents to 33 cents per month.

Unusual Case—Subscriber Transfers Messages of Two Lines.

The Nebraska State Railway Commission has ruled, upon request of the Hay Springs Telephone Exchange for a decision, that where a telephone subscriber is willing to act as a messenger between two telephone lines and there is no monetary loss to the company, it cannot prevent him from doing so.

Hay Springs has a subscriber who also has in his house an instrument connected with a rural line, but which is not connected with the town exchange. The company has learned that it is his frequent practice to take messages from men on the farm line for men on the telephone company's line, and otherwise act as central for both parties to a conversation. So far as the commission is informed, he receives no pay for this service. The result is to deprive the company, it claims, of the revenue that it would get if the farm lines were connected and switched on its exchange.

Years ago the same question came up in the days of competition. One of the Independent companies which could not get a physical connection with the Bell had one of the latter's telephones installed in its rival local exchanges. Operators, by taking messages from one telephone to the other, were then able to serve subscribers who had only the Independent service.

The Bell company wanted to take the telephone out, but by a two to one decision, the commission decided that it could not refuse the service. Commissioner Clarke, who dissented, claimed that it was compelling the Bell to contribute to its own undoing.

The present commissioners decided to follow this precedent, but with some reluctance. They were of the opinion that if the Hay Springs company had toll lines at the ends of the neighborhood rural line, it could maintain its complaint, but that the claim of damage from lost switching opportunities was too remote to be considered.

Nebraska Bill for Fixing Maximum Rate Still Alive.

The Nebraska house has advanced to third reading, by a vote sufficiently decisive to indicate its passage, the Osterman bill providing that rate fixing bodies shall fix only maximum rates for public utilities. It had been killed by the house committee, but Osterman, who is Democratic floor leader, was able to rescue it.

One of the most vigorous debates of the session followed its presentation. Opponents said that it was impossible to restore competition in the industry in Nebraska, where only a small proportion of the smaller companies are making money at the present schedules, and that at any rate the state definitely abandoned the theory of competition in utility service when it adopted the policy of regulation 16 years ago.

Others urged that the commission has this power now if it deems wise to use it. Others said that the company that slashed rates was simply squandering the money of the investors, and that this was an economic wrong even where higher rates, after competition had been eliminated, did not eventually put the cost of the fight on the back of the patron. Others said that two telephone companies mean added cost to those who must use both companies' service in its business. It was also urged that the railway commission, not being advised to cut rates, would not be able to check up and thus prevent discrimination as between patrons of the same company.

Mr. Osterman said that if the commission has never denied the request of a company to reduce rates it will not be affected by the bill. He insisted that cut-throat competition is preferable to no competition, which drew the retort that in cut-throat competition the little fellow would have no chance with the big fellow with the long purse.

Commission Cites Hotels for Charging 10 Cents a Call.

Show cause orders were issued on March 27 by the Minnesota Railroad & Warehouse Commission requiring various hotels in St. Paul and Minneapolis, the Tri-State Telephone & Telegraph Co., and the Northwestern Bell Telephone Co. to show why certain provisions in the commission's orders of December 28, 1922, have not been complied with.

Some of the hotels are charged with collecting 10 cents a call for local service, when the authorized rate is five cents.

The hearing is set for April 10 in St. Paul.

Asks Increase of Rates Account of Discrimination.

The Lincoln Telephone & Telegraph Co. has applied to the Nebraska State Railway Commission for permission to bring the rates on its University Place exchange equal to those charged for other recipients of zone rates. The company has just completed a new building in University Place, a 3,500 population suburb of Lincoln, and is installing automatic equipment. The exchange serves 1,100 subscribers, and the increase will be a dollar a month for business service and 25 cents for residence.

A manual exchange has been operated at University Place, but it has been a part

of the Lincoln zone, although favored in rates. R. E. Mattison, general manager, says that for some reason the rates got out of line some time ago, and that as the subscribers have been getting service, for which other zone patrons have had to pay the higher rate, it has been subject to a complaint for exercising discrimination.

The Lincoln zone fundamental plan includes a complete interchange of service and the establishment of a multi-automatic service on such lines where it is necessary to change or enlarge the facilities. A large part of the contiguous territory of northeast Lincoln will be served from the new exchange, which will be designated as the "M" exchange. A year ago the company enlarged its facilities in South Lincoln and serves it from an "F" exchange. With the new one cut-over, the burden will be lifted in part from the main exchange and permit it to take care of new business facilities.

Nebraska Farm Line Officials Demand Free Service.

The Northwestern Bell Telephone Co. has applied to the Nebraska State Railway Commission for advice on how to handle a situation at Laurel. The company has the exchange there and switches a number of farm lines.

These formerly enjoyed free service to other towns, but this was eliminated two years ago. Since that date, while the officials of the mutual farm line companies have been collecting the switching charges from members, they refuse to pay it over to the Bell and demand the return of the free service of the past.

Walton, N. Y., Company Allowed to Establish Four-Party Rate.

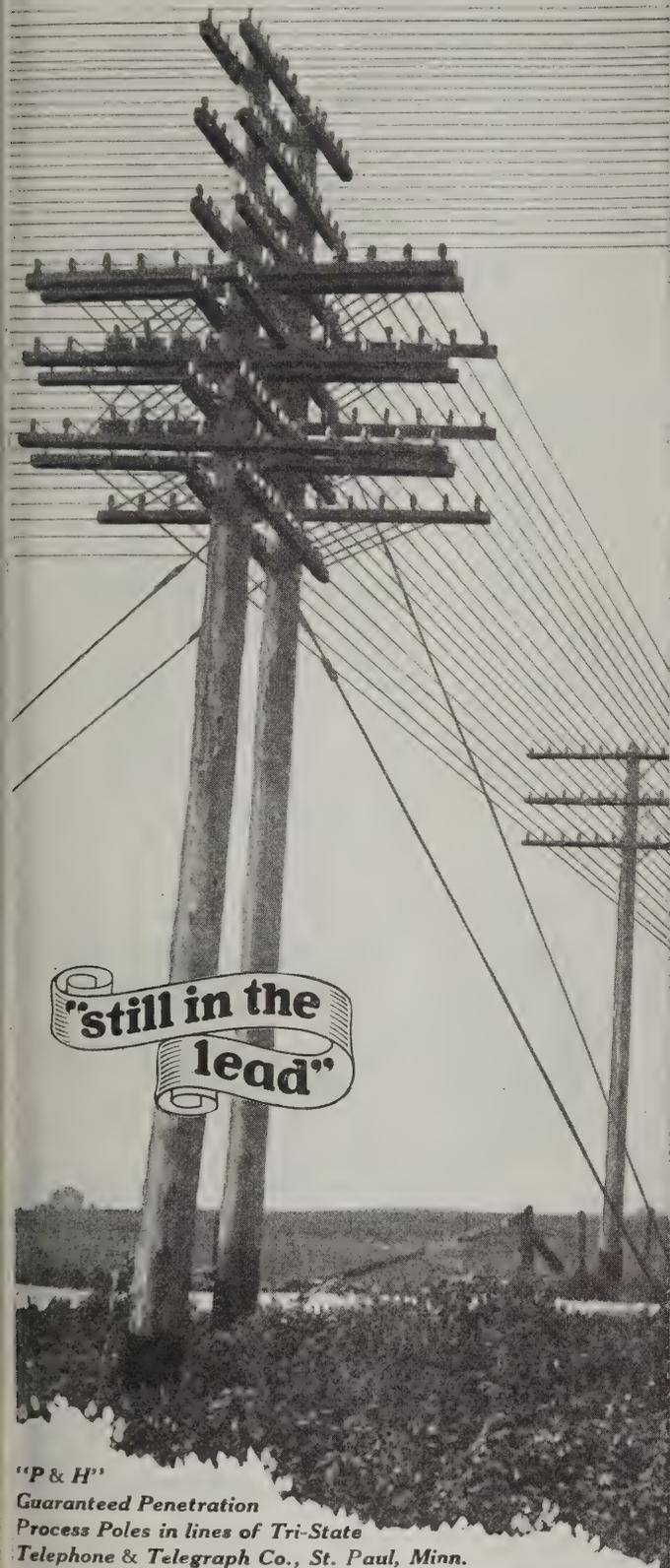
The New York Public Service Commission on March 30 amended its order suspending rates of the Walton Peoples Telephone Co. in Walton and vicinity—which were proposed as effective on March 1—to permit the establishment of a charge for a new service, four-party line residence.

The company filed a new tariff increasing its rates generally, on March 1, and providing for the establishment of a four party line residence rate which had not been in existence heretofore.

Because of complaints the commission suspended the entire schedule pending hearing and determination, but at a hearing before Commissioner Blakeslee in Binghamton on March 26 request was made by the company for authority to establish the four-party line service. All other rates proposed to be increased on March 1 still remain under suspension.

Dissolve Injunction Granted Ohio Bell Against Power Company.

Holding that a common pleas court may not interfere with the state utility commission in the latter's performance of



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its duties, Judge Kinhead on March 20 dissolved the temporary injunction granted the Ohio Bell Telephone Co. restraining the Columbus Rail-Light Co. from erecting high tension wires in East Columbus.

In so doing the court held that the telephone company had not applied for strictly equitable relief, but had alleged a violation of the orders of the Ohio Public Utilities Commission.

He declared that execution of orders issued by the commission is an issue for the commission to settle, and that judicial relief may be obtained only through the supreme court.

Revokes Rate Increase Because Service Is Not Improved.

On March 27 the Wisconsin Railroad Commission issued an order revoking the commission's previous order, dated January 24, wherein it had authorized the Shaw Telephone Co., of Cleghorn, to increase its rates to \$7.50 gross and \$6.75 net, quarterly, for rural telephone service from the Eau Claire exchange.

The installation of these rates was conditioned upon the company rendering the same type of service as that given by the Wisconsin Telephone Co. at its Eau Claire exchange.

Since the original order was issued, a complaint was filed with the commission showing in detail the defects in the construction and maintenance of the lines. A

check-up was made by the commission's service department and this indicated that the service conditions were much worse than were apparent at the time the original order was issued.

The commission, therefore, considered it unjust to subscribers to require them to pay the increased rate until the company has done the necessary reconstruction work to place its lines in a condition to give service equivalent to that furnished by the Wisconsin Telephone Co. at Eau Claire.

The former rate of the Shaw Telephone Co. for rural telephone service was \$1.75 per month.

Rates Established by State Commission Presumed Reasonable.

Telephone rates established by a state commission are presumed just and reasonable, and the burden of proving the contrary rests on the company affected, it was held recently in a case brought by the Cumberland Bell against the Louisiana commission.

That the commission granted an increase in rates did not establish that the rates previously in force were unjust, unreasonable, and confiscatory, when restored by the commission more than a year later, after business conditions had changed.

A telephone company is entitled to a fair return on the value of the property used and useful in its business, and the court held that in determining the value

of such property, as affecting the reasonableness of intrastate rates, the property used in its intrastate business should be considered separately from that used in interstate business. *Cumberland Telephone & Telegraph Co. vs. Louisiana Public Service Commission*; 283 Federal, 215

Summary of Commission Ruling and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

March 26: Authority given Illinois Bell Telephone Co. to purchase the property of the Southwestern Bell Telephone Co. in southern Illinois.

ILLINOIS.

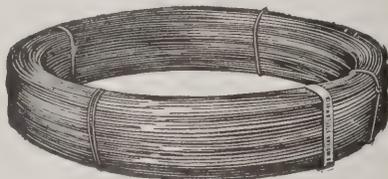
February 21: Logan Telephone Co. authorized to purchase from J. Cabeen the telephone property known as the Seaton Telephone Exchange, of Seaton, for \$9,250; Logan company given a certificate of convenience and necessity, also give authority to issue and sell \$10,000 aggregate par amount of its capital stock, consisting of 100 shares of the par value of \$100 per share.

February 28: Cornell Telephone Co. and Automatic Home Telephone Co. ordered to continue the operation of circuits between Cornell and Pontiac, upon terms set forth in the order.

February 28: Order entered approving sale by the Illinois Bell Telephone Co. to the Fayette Home Telephone Co., Fayette, of the Brownstown exchange property of the Bell company, for the sum of \$1,500.

February 28: Complaint of Dr. W. C. Blaine against the Atwood Mutual Telephone Co., of Atwood, for refusal to furnish service in Tuscola, dismissed, complainant not having appeared at either of the hearings.

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March 1: DesPlaines Telephone Co., of DesPlaines, authorized to issue \$110,000 principal amount of bonds, authorized by supplemental order of October 4, 1922, as its first mortgage gold bonds; and to sell the bonds at not less than 92 per cent of their face value.

March 1: Increased rate schedule ICC 3 of the Scott County Telephone Co. for service in Winchester, suspended until June 26, 1923.

March 7: Approval given to lease by the C. B. & Q. R. R. Co. to the American Telephone & Telegraph Co. of certain premises in Larchland, from September 1, 1922, to March 31, 1923, at a rental of \$5 per year.

March 7: Order entered approving lease by the C. B. & Q. R. R. Co. to the Illinois Bell Telephone Co. of certain premises at Camp Grant, from February 9, 1923, to April 7, 1923, at a rental of \$50.

March 7: Fayette Home Telephone Co., of Fayette, granted permission to issue and sell \$3,000 par amount of its common capital stock, consisting of 30 shares of the par value of \$100 each.

March 14: Petition of the city of Streator for a rehearing in the matter of rates of the Streator Telephone Co. in Streator, Grand Ridge and vicinities, denied.

March 14: Proposed advanced rates of Illinois Local Telephone Co. for service from Donovan to Iroquois and from Iroquois to Donovan and Sheldon, resuspended to October 9, 1923.

March 14: Order entered resuspending until September 30, 1923, proposed increased rates of LaHarpe Telephone Co. for service in LaHarpe.

March 14: Order entered resuspending until September 30, 1923, advanced rates proposed in schedule ICC 4 of the Vermilion County Telephone Co. for service in Danville.

April 4: Hearing held at Springfield on application of the Illinois Bell Telephone Co. for advanced rates for service in Beardstown and vicinity.

April 5: Hearing held in Springfield on petition of the Buckley Telephone Co. for an increased rate schedule for service in Buckley.

April 5: Hearing held in Springfield on proposed advance in rates of the Scott County Telephone Co. for service in Winchester.

INDIANA.

March 23: Illinois Bell Telephone Co., Indiana division, instructed to place a schedule of lower rates in effect at Lowell.

KANSAS.

March 6: Pretty Prairie Telephone Co. granted permission to sell its plant and property at Pretty Prairie and Castleton to J. A. Krehbiel.

March 9: Oketo Mutual Telephone Co., of Oketo, authorized to reduce the rates for the service 25 cents per month, effective April 1. The new rates are: Subscribers owning and maintaining instrument, 75 cents; company owning and maintaining all equipment, \$1.00.

March 13: Authority given Farmers Mutual Telephone Co. to reduce its rates for service at Beattie for the period of one year, as follows: Instruments owned and maintained by subscribers, 85 cents; equipment owned and maintained by company, \$1.25.

March 13: Supplemental order issued correcting clerical error in certificate previously issued to the Crawford Telephone & Telegraph Co. relating to a proposed issue of its notes secured by mortgages, in the amount of \$12,500.

March 20: Carbondale Telephone Co.



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Telephone Engineer
GARRISON BABCOCK

800—20 East Jackson Blvd., Chicago, Ill.
Telephone Wabash 5212

permitted to make certain changes in the rates for service at Carbondale.

March 21: Permission given the Otis Telephone Exchange to make certain changes in the rates at Otis.

March 21: Farmers Telephone Co. of Rush County authorized to charge a rate of \$1.25 per month for all city party-line residence telephones and to make all collections the first of each month, instead of quarterly; all other rates and regulations to remain as now in force.

March 22: Permission granted G. L. Smelser to sell his telephone plant and property at Geneva to Mr. and Mrs. W. L. Stutz.

March 23: New rate schedule authorized the Paola Telephone Co. for service at Paola, effective May 1.

March 27: United Telephone Co. given permission to file and put into effect the following schedule of rates at Belleville: One-party business, \$2.75; one-party residence, \$1.75. All other rates to remain as at present and no changes of rates to apply to rural lines.

March 27: In the matter of application of the Peoples Telephone Co., of Lebanon, for a certificate relating to a proposed issue of its capital stock; as company did not have authority under its charter to issue the stock prayed-for, application dismissed.

March 29: In the matter of petition of the Hiawatha Mutual Telephone Co. for authority to sell additional stock; supplemental certificate issued correcting error in original certificate.

MINNESOTA.

April 10: Hearing to be held in St. Paul on show cause orders issued to various hotels in St. Paul and Minneapolis, to the Tri-State Telephone & Telegraph Co. and to the Northwestern Bell Telephone Co.

MISSOURI.

March 16: F. T. Staton and P. J. Dean, owners of the Palmyra Telephone Exchange, of Palmyra, authorized to execute a new mortgage and issue new notes to take the place of the existing mortgage and notes: the new notes to be issued and disposed of on or before December 31, 1923.

March 19: James Edelen Telephone & Electric Co. authorized to withdraw its application for increased rates for service in Shelbyville.

March 22: Cassville Telephone Co. authorized to purchase the property of the Farmers Mutual Telephone Co. in Cassville and to increase rates for Class A switching service from 25 cents to 33 cents per month.

March 28: Order entered approving the sale of the Sarcocix exchange of the Mt. Vernon Telephone Co., of Mt. Vernon, to R. M. Snow, of Kansas City.

March 29: Kinloch Long Distance Telephone Co., of St. Louis, authorized to sell the pole line which extends from a certain junction point about six miles south of the city of Lamar, westward to the Kansas state line in the direction of Pittsburg, Kans., to the Kansas City Long Distance Telephone Co.; effective April 7.

NEW YORK.

March 30: Walton Peoples Telephone Co. authorized to establish a four-party rate in Walton.

WISCONSIN.

March 27: Order entered revoking rate increase previously allowed Shaw Telephone Co., of Cleghorn.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,

of TELEPHONY, published weekly at Chicago, Ill., for April 1, 1923.

State of Illinois, County of Cook, ss.
Before me, a notary public in and for the state and county aforesaid, personally appeared S. R. Edwards, who, having been duly sworn according to law, deposes and says that he is the editor of Telephony, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 443, postal laws and regulations; printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher—Telephony Publishing Corp., 608 So. Dearborn St., Chicago.

Editor—S. R. Edwards, 608 So. Dearborn St., Chicago.

Managing Editor—S. R. Edwards, 608 So. Dearborn St., Chicago.

Business Manager—H. D. Fargo, 608 So. Dearborn St., Chicago.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.) H. D. Fargo, 608 So. Dearborn St., Chicago; J. R. Hastie, 608 So. Dearborn St., Chicago; S. R. Edwards, 608 So. Dearborn St., Chicago.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) H. D. Fargo, 608 So. Dearborn St., Chicago; J. R. Hastie, 608 So. Dearborn St., Chicago; S. R. Edwards, 608 So. Dearborn St., Chicago.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders

and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

S. R. EDWARDS,

Editor.

Sworn to and subscribed before me this 26th day of March, 1923.

(Seal)

JULIA C. O'BRIEN.

(My commission expires June 12, 1924.)

HELP WANTED

HELP WANTED—Experienced telephone man for a magneto system of 500 phones. Town 600. Traction and steam Ry. Central Indiana. Must understand construction and maintenance in detail. Permanent position. Ready for work May 1st. Man with family preferred. Write LaFontaine Telo. Co., LaFontaine, Ind.

POSITION WANTED

POSITION WANTED—By cableman, five years with Bell and A. T. & T., with Independent company. Reason: To be located in one place. State wages and hours. Address 5262, care of TELEPHONY.

WANTED TO BUY

WANTED—One position Western Electric switchboard type No. 10 fully equipped. Address Southern Indiana Telephone & Telegraph Co., Seymour, Ind.

WANTED TO BUY—Telephone plant in California. 500 or more stations. Address Henry Harris, Whittier, Calif.

WANT TO BUY—Telephone Exchange of 300 to 500 subscribers where only small down payment required. Can furnish best references, have had over 17 years' experience with Bell company. Address 5268, care of TELEPHONY.

WANTED TO BUY—One cross connecting rack, 100 to 600 lines. Address Farmers Telo. Co., Milan, Mo.



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TRENTON, NEW JERSEY

Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
608 S. Dearborn St., Chicago

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R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

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THE WAR ON RATE COMMISSIONS

Whether due to improving business conditions, or be-

cause the public is growing tired of the situation, so far, at least, the movement to destroy state regulation of public utilities does not seem to be making so much headway as was expected a few months ago.

At that time the prospect was threatening in several states. It looked then as though the "home rulers" and the advocates of municipal or government ownership might succeed in tearing down in some states what has been so painfully constructed in the past years of regulation experience.

* * * *

A casual survey of the situation indicates, however, that few tangible results have thus far developed from all the noise and outcry against the rate commissions and the service corporations.

Chicago has elected a mayor who was an "immediate municipal ownership" man when he was in the city council 16 years ago, but the utility issue had little to do with his election.

* * * *

While the Hearst press, which supported Judge Dever in the Chicago mayoralty fight, at the same time loudly demanded public ownership of utilities, the general opinion is held that the Hearst interests prefer the support of a Democratic mayor in Chicago in a presidential year—when Mr. Hearst hopes to be a candidate for the White House—than even the advancement of the public ownership cause.

In other words, the Illinois delegation

in the national convention of 1924 is more important than public ownership.

* * * *

The transfer of utility regulation from state commissions to municipal authorities continues to be discussed in various sections of the country where the politicians are up to their old tricks. An interesting feature of the New York situation is that one organization, while favoring home rule for utilities as a general proposition, says the telephone service is the one utility that should be retained under state regulation.

This is the conclusion of the City Club of New York which has always supported the broad principle that municipalities should have the power to acquire, construct and operate their public utilities. It adds, however:

"Telephone regulation by a local commission is not practicable. The system covers the entire state and there must be a consistent state policy as to the apportionment of valuation and rates between various communities. Control should remain with the state commission."

* * * *

While the City Club declares itself in favor of local regulation of all utilities except the telephone, it considers the present home rule bill before the New York legislature objectionable in many particulars. A canvass of 2,000 New York business men showed that only 4 per cent of them are in favor of municipal regulation of the utilities.

Three bills devised by Governor Smith

and Mayor Hylan to reorganize the New York Public

Service Commission and give cities control of utilities have recently passed the New York senate, but no effort was made to oppose them there, as the real fight against their final enactment will be made in the assembly.

The bill to revamp the commission reduces the members from five to three, and gives the governor the right of removal.

* * * *

The effort to abolish the utility commission in Missouri has failed. A number of bills were introduced in the legislature to hamper the commission, either by reducing its personnel or by curtailing its powers by giving the larger cities more control over the service companies, but none of these measures was passed.

A law was enacted, however, making the attorney of the commission the legal counsel of the people, and requiring him to appear in all rate cases as the public counsel.

* * * *

A favorite method of the enemies of state regulation is to cut down the commissions' appropriations, so as to obstruct their efficient work. Not daring to annihilate them in cold blood, the politicians have tried to starve the commissions by cutting down their revenue.

In Missouri, for instance, while appropriations were made to cover the salaries of the commissioners, the secretary and counsel—amounting to \$71,000—the working fund of the board was fixed at \$250,000, one-half of which was apportioned from

the general state funds, and the other half to come from the earnings of the commission. In the past the commission has not earned any such amount as \$125,000, so it is likely to find itself short of money before the year is out.

* * * *

An unfortunate incident of the political campaign against the commission is that during the last three months, while the commission has been under fire in the legislature, its work was at a practical standstill, and cases involving rate adjustments were held up.

Of course, this seriously interfered with utility companies, and in the end injures the public. The public, by the way, should be informed where the blame for the delay should be placed—on the politicians responsible for the attacks.

* * * *

In Kansas when Governor Davis was elected last fall, he declared war to the death on the state utility commission, and the fight continued throughout the session of the legislature but without definite injury to the rate-makers. Not only was the commission not abolished as the radicals threatened, but neither its powers nor its appropriations were curtailed.

The political contest over the places on the commission, however, has upset things more or less and produced confusion. Being a Democrat, Governor Davis appointed

a Democrat—C. E. Rugh—to succeed Commissioner Russell, whose time expired, and the Republican senate was good-natured and confirmed the appointment.

Commissioner Greenleaf, who has been handling all the telephone rate cases, had been re-appointed by former Governor Allen, during the interim, but had not been confirmed. Governor Davis made another appointment in place of Greenleaf, but the senate, on the advice of the attorney general, rejected it and confirmed Greenleaf's interim appointment.

This has produced a dispute in which the governor threatens to go to the supreme court to oust Commissioner Greenleaf and have his own man seated.

In the new line-up it is said that Commissioner Greenleaf will be taken off telephone matters and assigned to electric light, power, gas and water cases. This means a new man in charge of telephone rate hearings, and more time consumed in both commissioners becoming familiar with their new duties. It is another unfortunate result of political tampering with state regulation machinery.

* * * *

Strong efforts have been made to enact drastic laws against the Texas utility companies in the legislative session, but they have not been successful. The radicals seemed to work at cross purposes. For instance, the League of Municipalities,

composed of the representatives from the larger cities, sought to pass a bill to retain home rule of the utilities within the corporate limits of cities and put all utilities not within such limits, or having property without such limits, under a state utilities commission.

Such a division of authority would have led to dire confusion, and utterly wrecked service conditions. Very sensibly, neither house passed this proposed destructive legislation.

Another Texas bill proposed to place all utilities under the existing Texas railroad commission and on such terms as to seriously encroach on the company's management of its own affairs. As its own pet measure was beaten, the League of Municipalities opposed the railroad commission proposition, and it never reached the floor.

* * * *

Developments show that state regulation has not been fatally injured by the attack of the politicians and radical reformer in the various legislative sessions, but it was inevitable that the constructive work of the commissions has been seriously retarded while they fought for their existence.

Some day, it is hoped, the public will realize that they are the real victims of such political attacks on service companies, although demagogues pretend they are acting in the people's behalf.

“What Is News?”---Its Application

Definition of News in a Technical Sense—Various Ways Managers Can Co-Operate With Local News-Gatherers—Suggestions of What Constitutes News in Telephone Business—Address at Convention of Nebraska Association

By H. T. Dobbins

Associate Editor, Nebraska State Journal, Lincoln

What is news? I take it that you are not interested in any technical discussion of this question as it appeals to the newspaper writer and as he would present it to his fellow-workers, but rather in its practical application to your own business.

There have been many definitions given for “news,” but perhaps the shortest one that will appeal to you would be: “That which refers to or covers any phase of human activity that interests and informs, and which has recently happened.” Please note the “recently happened.” That is the vital element of news.

If there is one thing that marks average human beings alike, it is the possession of an insatiable curiosity about other people—what they are saying, what they are doing,

what they are thinking. It is to satisfy this natural and usually very healthy element of existence that newspapers are printed.

Very young editors think they can anticipate and correctly gauge what the public wants to read, and very serious-minded editors make a determined effort to tell and to give the public what it ought to read. Editors who have long experience are constantly trying experiments to find out what it is that the public does want to read, and none of them is quite sure that he knows the answer.

This much can be said, however, that the great majority of persons are interested most in those things that happen closest to them. Thus it is that the locally-printed newspaper has the largest cir-

ulation in a town or city, even if it be but a shadow of a newspaper. An elopement is all the more interesting to you if you happened to have known the girl or the fellow, or if they lived in the next block or the same town with you, even though it might not be as exciting or well written as an elopement in metropolitan high society.

News stories may be divided in three general divisions—spot news, time stories and human interest stories.

Spot news is something big, recent occurrence, important in its character and which must needs be told, i. e., printed once if a newspaper is to reap a proper reward for diligence and to perform its duty to its subscribers.

A time story is a news story that wi

not suffer much if not used in the next edition or until next day or next week.

Human interest stories are those in which the dominant feature is one that carries a special appeal to the heart because it touches upon one of those springs of conduct common to all of us or parallels some experience or expresses some common desire.

News stories come from every direction into the editorial office. Most of them are led in by reporters who are expressly sent out for them or who gather them up in the course of their regular rounds. Contrary to the general notion, the only way in which a news writer gets hold of a news story is by somebody telling him the skeleton of the details.

Only on rare occasions does he stumble into it, or that it happens while he is on the spot. Even at the ports of regular call, the courts, the public offices, and the business and professional men, he needs must rely usually upon being told it by someone who knows.

In the larger cities the pressure for space is great, and this means that only the more important—that is, the spot news stories in which a larger number of persons are interested—find their way into the newspaper columns. Each of the big dailies, however, has a Sunday supplement or an enlarged Sunday issue, where the human interest story and the time story find ready havens.

In the smaller cities and in the towns and villages, the newspaper man's problem is to find enough live stuff to fill his columns. There the news gatherer has a more or less regular route that he travels in pursuit of news, and everything that can possibly interest even a part of his readers is welcome grist to him.

Of what interest is this to you men of the telephone industry? Of what benefit to the business in which you are engaged on this outline, brief and hurried, of news gathering possibly be?

Just this: These things lie at the bottom of your public relations. In every

How many of you realize this opportunity is yours, and how many of you make it a point to help the editor in your home town get out a better newspaper than he does? I shall not embarrass you by calling for a showing of hands, but I will say this that during most of the year my duties and my pleasure cause me to read almost every copy of the dailies and important weeklies printed in Nebraska—and one of the rarest things found in them is a news item about the local telephone company.

Now I take it that these omissions are not due to the possession on the part of any of the telephone managers or officials of the qualities of the shrinking violet, or to an abhorrence on their part to having limelight directed towards them, because they are just like every other normal person with respect to the connection of their names with proper news stories.

The truth undoubtedly is that telephone managers are just like 90 per cent of the people generally—they have little conception of what constitutes a news story, or have the more or less nebulous notion that the newspaper man will gather it in out of the air anyway, without being told by anybody in particular. It is the 10 per cent who know better that makes newspapers possible.

My particular reason for being on your program today is traceable to this exact condition of things, and the message I bring to you from the newspaper fraternity in general is that they need your help in getting out a complete, readable newspaper just as much as, if not more than, you need the help of the newspaper in bettering your business. How are we going to get together? Well, let me submit a few suggestions.

Although a city newspaper man, I know the problems and the needs of the smaller publications, and it is with them, of course, that most of you have to deal.

Big news stories do not "break" often in the smaller communities, so that each week's issue is more nearly a mirror of the social, religious and fraternal activities of the community. To this symposium the telephone man ought to be a regular contributor.

Let us take the question of spot news. Who first hears of a big story when it breaks in the average community outside of the immediate neighborhood of its occurrence? The telephone manager or his aids at the central office.

There is an accident somewhere in the town or a neighboring town, a bank bur-

glary, a murder, a flood, a railroad wreck—any one of a number of things that a newspaper man wants to know about right away so that he may get his news-collecting forces in motion. Give him the tip



"An Elopement Is All the More Interesting If You Happen to Have Known the Girl, or the Fellow."

by telephone at once, tell him all you know, and he'll dig the rest. If you do not wish to be known as his informant, tell him and he will respect your confidence. He'll take the responsibility for whatever he prints.

Every community, big and little, is made up of little circles of persons drawn together by some common interest or by some tie of friendship and liking. These are sources of personal and social news to the newspapers, because each likes to hear what others are doing. Your employes and their intimates form one of these little circles. The editor would like to print what they are doing—telephone it in to him, or drop in and tell him about it.

There are a hundred or two of you present at this convention. I wonder how many of you took the trouble to give the local newspaper man the information that you were coming to Lincoln to a three days' gathering, and why this meeting is being held. If you did not, let me advise you that when you get back you tell him what you heard here that will interest persons outside your business; give him an idea of what the industry is seeking to accomplish in the state and a notion of its importance. Don't wait for him to hunt you up.

But remember this, what he wants is news, not editorial opinion or propaganda. Write it out and hand it to him. It is but human nature that a newspaper man will use more of your story, if you have one worth telling at any time, if you jot it down yourself than if he has to write it himself.

Sleet and snow storms hit you hard sometimes. Tell your local newspaper man about it. It may save you a lot of explaining over the wires when they are restored, and its publication will serve to ward off unfounded criticism by the hasty but uninformed.

In most communities the companies are expanding in one way or another. When you have your plans made, tell the news-



"In Every Community Where You Operate, There Is a Newspaper Anxious to Get Whatever News Is Ground Out by Your Little Grist Mill."

community where you operate there is a newspaper that is anxious to get whatever news is ground out by your little grist mill, and it is willing to print it without any cost to you.

paper men what you propose to do. If you add any new devices, new lines, new persons to your staff, if there is any change in the ownership or personnel of the company, tell him about that. Make yourself a source of news in your community, and you will have the newspaper men making regular calls on you.

Radio is attracting a great deal of attention just now, and everybody is interested. Undoubtedly a number of your patrons have wondered what effect it will have upon the future of the telephone. The round table held at this convention ought to give you a fairly good idea of just what it will or will not do to the business. When you get back home, give the editor an interview about it.

From its nature the telephone company central is in the very center of news exchange. Much of what you hear is, of course, confidential, but there is much of it also that is not and which may be legitimately employed in making the editor's task easier and his paper better. Many human interest stories originate in and about central.

The operators are called on now and then to perform unusual services, and they have many curious experiences. The Bell company yearly awards a large number of medals and cash prizes for heroism performed and quick wit shown. These are human interest stories of the highest type, and they will serve to illustrate what I mean. Troublemen, linemen and installers are in lines of work that ought to produce human interest stories.

The public thinks only of Central when it thinks of a telephone exchange. For this reason it has become popular in various cities and towns to invite the patrons to visit the exchange on a certain day and learn about this and all the other departments. A human interest story along these same lines will be acceptable in any well-edited newspaper.

How many calls a day are handled by the operators in your exchange? What time of day do the people in your town talk most? How many miles of poles and wires are necessary to carry on the community conversation? What happens when Jones puts in a call for Smith at some outside point?

How are your operators trained for their jobs? Has some girl been on the board for five years or some other extended period? She's worth a little human interest story. What are the various duties of the different employees?

These are only a few suggestions; others will occur more readily to you. If they possess the human element, the human touch, they make good time stories for the smaller papers, because they also have the local news flavor.

I have an idea that telephone owners and managers do not, somehow, manage to impress upon the people of the communi-

ties they serve their real importance as a commercial enterprise. Most of the companies have invested in each town as large a sum as most of the other businesses that one often sees mentioned in the newspapers—and yet they are not looked upon with the same degree of favor when it comes to listing a town's advantages.

Certainly a telephone company serves as many persons as the banker, the merchant, the hardware man or the professional man; yet they do not loom up in the news of the town as do these men. There may be other reasons, but one reason, I believe, lies in the fact that the telephone man does not take advantage of the opportunities open to him, along the lines that I have briefly and yet, I feel, insufficiently outlined.

It is a foolish pride if the reason is that the telephone man doesn't care for "newspaper notoriety." It is poor business in these days when publicity is the determining factor in the success of many business and professional men to overlook such opportunities as I have suggested for legitimate publicity.

For one thing, this identification of telephone company news with other community news has an excellent psychological effect; it leaves the people with a feeling that you are one of them, not one apart. For another thing, it opens the way for you, when rate readjustments are necessary, to secure what you are entitled to with much of the usual opposition and friction eliminated.

Although it is not necessary in order to get telephone company news into the columns of your newspapers, it is good business, if your revenues will permit, to buy regularly or frequently, space in the pa-

pers in which you may discuss pending service or rate problems or tell, in your own way, what you are doing and what you are offering.

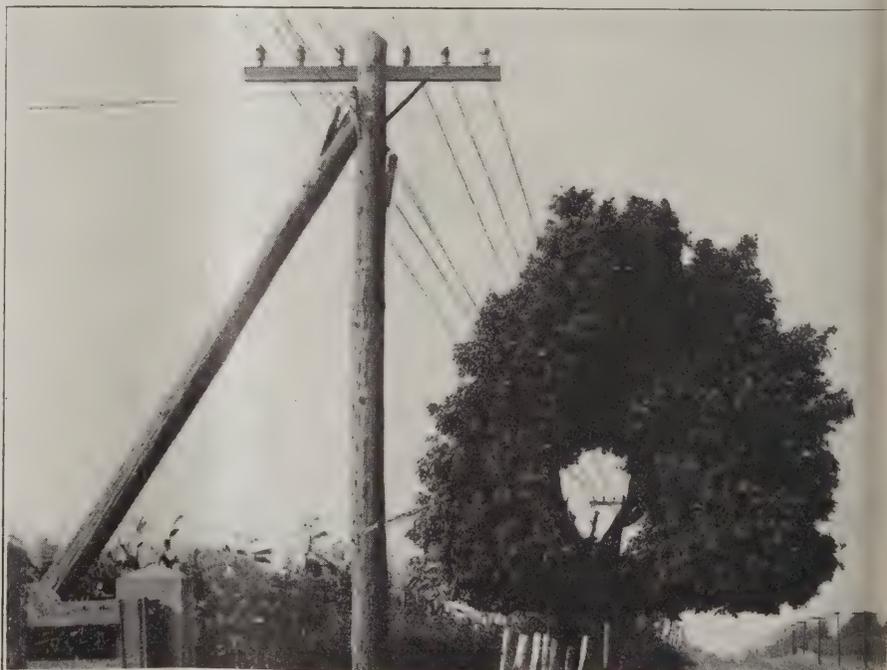
But I trespass upon your time. I have sought, in a brief but succinct way to point out to you the possibilities of publicity that I feel sure most of you are overlooking. It is true that newspapers are deluged with the offerings of press agents who want to trumpet the praises of this or that article, policy or person through their columns without pay, but it is equally true that they are looking for real news, real human interest stories, such as you and your enterprise can yield, in order to interest and hold their readers, and if somebody is advertised for nothing in the telling it is regarded as but an incident to the whole.

Omaha Operators Introduce Telephone "Voice Culture."

A system of instruction and drills designed to develop proper methods of speech, voice placement and enunciation, was inaugurated by the Omaha local operators' school of the Northwestern Bell Telephone Co. on January 22, according to a recent item in the Northwestern Bell.

While the instruction work is still in the experimental stage, it is anticipated that important results will be obtained. The particular benefits which the operators hope to obtain are the elimination of unpleasant, discourteous or monotonous voices, as well as a reduction in operator room noise, due to the lowering of voices.

It is proposed to gradually introduce the drills among the older operators in all of the company's important offices by means of special courses of instruction.



A Lead of Eight Telephone Wires Passes Directly Through This Tree Near Bloomington, Ill., the Branches of Which Are Trimmed to Form a Hole.

Depreciation Order of the I. C. C.

Executive Committee of United States Independent Telephone Association
Take Issue With a Number of Points in the Suggested Rules for Fixing the
Rate of Depreciation—C. B. Randall Presents Brief for Basis of Discussion

At a meeting of the executive committee of the United States Independent Telephone Association held in Chicago, April 7, the matter of depreciation was thoroughly discussed.

An analysis of the recent order of the Interstate Commerce Commission relative to depreciation charges of telephone companies indicates that the Class D telephone companies are not concerned with the order and the Class C companies only to the extent of keeping their accounts more strictly in accordance with the accounting system of the Interstate Commerce Commission, so that when their growth places them into the Class B group, records will be available for setting up the depreciation charges. Hence, only the Class A and B companies are intimately concerned with the order of the Interstate commission relative to depreciation.

The executive committee take issue with the general rules of the Interstate Commerce Commission in that they believe that the removal costs incident to or in connection with the retirement of property, whether replaced or not, storm casualties or extraordinary repairs of any character, or any other similar charges, and intangibles should be included in the depreciation charges. The committee also believe that the cost of removing the property retired or abandoned, or for recovering the salvage, should have an allowance in determining the amount representing the salvage value.

It was also the opinion of the committee that the formula set forth by the commission is impracticable of application. They believe a composite depreciation percentage is preferable to a depreciation percentage for each class of property.

The committee stands by its statement of June 1, 1921, which states that the reserve must cover those items that from the beginning constantly operate to lessen the value of a telephone plant, namely, physical deterioration, hazards and unforeseen emergencies, inadequacy and obsolescence.

C. B. Randall, general counsel of the Tri-State Telephone & Telegraph Co., St. Paul, Minn., presented a brief on depreciation as a basis for discussion, but which he stated might not be his final opinion on the matter.

In his discussion, Mr. Randall said:

By paragraph 5 of Section 20, interstate commerce act as amended by the Transportation Act of 1920, the Interstate Commerce Commission is directed, as soon as practicable, to "prescribe for carriers sub-

ject to this act the classes of property for which depreciation charges may properly be included under operating expenses, and the percentages of depreciation which shall be charged with respect to each of such classes of property, etc."

The report of the depreciation section of the Bureau of Accounts of said commission in its report attached to Order 14700 of the commission suggests that, in the annual charges for depreciation, certain things heretofore considered as proper charges against the reserve so established be now handled in other ways. This gives rise to the question: Are they properly items for which the depreciation reserve is provided?

In consideration of the question it must be remembered that its application to the telephone business only is considered. Other classes of carriers work under different conditions and may have entirely different situations.

What is a depreciation reserve for?

Depreciation is defined by Webster's New International Dictionary as "act of depreciating, or state of being depreciated, a falling of value."

The word "depreciate" is defined as "to lower the worth of; to become depreciated, to fall in value."

One investing in a telephone property knows in advance that, in the service of the public, that property will disappear—some immediately, some at future dates—but ultimately all will disappear, except lands. This disappearance will be from several causes, viz:

1. Physical deterioration due to wear and tear;
2. Obsolescence, including governmental requirements.
3. Inadequacy.
4. Hazards such as fire and storm and accident.

Some of these causes are continuous in their operation, beginning with the placing of the property and continuing throughout its life, whether in regular progression or not, such as (1) deterioration and (3) inadequacy. Others there are that appear and work their destructive effect with no regularity or continuity, but, as demonstrated by past experience, are more deadly than the first, such as (2) obsolescence, including governmental requirements, and (4) hazards.

Whatever the cause, and whether it be gradual and continual, or irregular, sudden, and without warning, each takes its toll and each destroys property thus devoted to public service. In taking this property

it destroys investment therein, culminating at the end of its useful or service life with the time of removal or replacement.

Thus it is that the owner must see that his investment is kept intact, and that, as property thus disappears in public use, the investment therein shall be repaid that replacements may take place, and that the public service be maintained, and the investment of the owner be not dissolved.

He who subscribes for telephone service immediately imposes two costs on the utility. First, there is the immediate cost of current operations; secondly, that cost which is deferred. This deferred cost is that occasioned by the causes above enumerated.

This latter is a charge against the immediate user, not against a future user. The immediate use necessitates its installation, and that installation subjects it to these costs. But a very small percentage of telephone property is installed for future users. The present user should, therefore, pay all costs as time progresses.

To this the report of the depreciation section agrees, but they say a part should be handled other than through depreciation.

Depreciation may include all items of lessening in value. Cause is not a factor; neither is time, whether continual or immediate. Anything which results in a lessening in value, and not such as is a part of current maintenance, is depreciation. All of the causes enumerated—deterioration, obsolescence, inadequacy, and hazards—result in lessening of value, hence are properly considered as depreciation.

Intangible Property.

Certain intangibles, such as some franchises, for which no consideration has been paid, or which are indefinite or perpetual in character, and hence may not be chargeable to the public in rates, do not lessen in value as time progresses; hence, no investment disappears and no charge for depreciation is possible.

With some rights of way a different situation exists. Many are purchased for a definite period of time for a definite cash sum. Assume for illustration a right of way for 20 years for which \$1,000 is paid. With the lapse of time a necessary diminution of value occurs therein. At the end of 17 years, certainly the same value does not exist as at the beginning of the term. A lessening of value has, therefore, occurred, and occurred because of that investment for public service. Lessening of value is depreciation. The value therein disappears just as surely as interest inci-

dental to any construction disappears with such construction.

In some states franchises are sold for a definite period for a definite cash sum. The consideration paid with cost of acquirement is a capital item. That item, like right of way, disappears with time.

In other words, no class of intangibles should be eliminated as such, but rather, in considering amounts, much, if not all, of certain classes, need not be included.

The depreciation section eliminates this from depreciation because there is not gradual diminution of effectiveness of operation. Effectiveness of operation is not the criterion in depreciation question; value alone is the criterion. To illustrate: A pole with a life of 20 years performs all its functions up to the moment of removal. Its value disappears as rot progresses; yet it still stands carrying its load at 100 per cent effectiveness. Its efficiency in operation nowhere fails. Tested by value, investment has disappeared. A buyer, finding considerable rot, will not pay cost new regardless of proof that the pole is 10 per cent efficient; nor will he pay cost of a 20-year right of way where but three years of life remain.

Hazards.

The depreciation section likewise recommends elimination of storms and casualties from depreciation computations, although recognizing that a relatively large proportion of plant is subject to abrupt termination by storms and casualties, and that the resultant loss is a proper charge to operating expense. They eliminate the item because its happening is abrupt and there is no gradual process of depreciation.

Depreciation covers lessening in value. Nowhere in any definition does it appear that this lessening in value must be gradual or long drawn out. Such seems not the case. How or when it occurs is not the question. The question is: Does a lessening of value occur, and is it a proper charge to operating expenses? If so, is it proper to charge through depreciation?

Occurrences of this kind happen just as obsolescence, or governmental requirements. A governmental agency orders property removed from a highway. Nothing gradual occurs. Suddenly an ordinance or resolution is introduced, passed, and obsolescence becomes an accomplished fact. A new factory locates in a residential district; immediately the character of the adjoining blocks changes for better or worse, and the resulting obsolescence is an accomplished fact. So with these hazards—one being a proper charge, the other is also.

From past experience it is possible to determine within reasonable limits, the expectancies as to loss by hazard, and, being susceptible to computation, the cost should be evenly spread with the balance of depreciation charges.

Removal charges have always been considered by telephone companies as a part

of the charges taken care of by the depreciation reserve.

Removal Charges.

Unlike many utilities, telephone plant to a great degree is located upon and in property of others, viz. public highways, business places and residences. The telephone company knows when placing the same that it must be removed when use ceases or replacement becomes necessary. Poles and manholes, overhead wires and cables can not be abandoned in the public highways.

Installations other than concealed wiring cannot be left in buildings. The owner, if his investment remains intact, must foresee this event, and, when removal day comes, have collected in rates sufficient to defray this cost. Such cost is as certain as is the rot in poles or rust in iron wire.

Like other factors, this cost is incurred by the present user, not the future, since it is the present user who occasions the property being put in place. The cost should be spread rather than thrown into the month of occurrence and, more particularly so, since you can not effectively back-bill a subscriber, it must be collected in advance of occurrence.

Aside from its being properly chargeable to depreciation, the depreciation section further recommends that it be not deducted from salvage value, but that gross salvage be credited. If one has a pile of junk to sell and his best price is given upon delivery—whereupon cost of delivery to sales place is incurred—certainly the total sales price is not the owner's but only the net after delivery cost.

So with material or plant to be removed from its place in service. As there located, it has no salvage or any other value. It obtains this value only when removed ready for delivery to the buyer. Salvage value, therefore, does not appear until removal charges have been incurred. The salvage value to be credited to reserve should be only such value as remains after payment of removal charges.

The question of economy of operation should also be considered before the recommendation of the depreciation section should be adopted requiring removal charges to be treated as current expenses. Under present practices, a crew need account for but two items—either the removal of property from plant, or the addition of plant when out on a reconstruction job.

Under the plan, as now suggested, it would be necessary for these crews to take care of another account—cost of removal—which would inject an additional element of accounting of every job, both in the field, plant accountant's office, and the general auditor's office. While this cost in itself may be small on any particular job, it is only in the saving of these small costs which cumulate to a large total that reasonable rates are made possible.

In considering these questions, weight

may well be given to the opinion of various state commissions which have had jurisdiction of this matter for years, which have given careful consideration to the question, and have, by order, established practices which have been conformed to by telephone companies for years. Change in such plans would now necessitate the breaking up of depreciation reserves already established into several reserves to meet the various items into which, if adopted, the report of the depreciation section will necessitate.

"It (depreciation) means a lessening in value, which may be due to one of a great many causes, a few of which are use wear and tear, storms and obsolescence. Birmingham vs. So. Bell T. & T. Co. (Ala.) P. U. R. 1919B, 791; San Jose vs. Pac. T. & T. Co. Vol. 3, opinions and orders Cal. R. R. Com. 1919, P. 720 No. 1008; Peoria vs. Central Union Tel. Co. P. U. R. 1918 E, 74.

The commission in its order 14700 requested discussion of our questions. Taking them in the order stated, the first question is:

"1. Has a depreciation reserve any other purpose than to provide a means of equalizing the effect of property retirements, so that the disproportionate burden may not fall upon the operations of any one year? If so, what other purpose or purpose has it?"

The method of establishing the reserve is secondary to the main question that the reserve shall exist. The reserve for depreciation is maintained for a two-fold purpose: First, as a matter of right, and secondly, as a necessary essential of management of a telephone property to insure first, that public use shall not consume the property without compensation: i.e. that it shall pay such sum as will return investment intact at the end of service life; and secondly, that the telephone utility manager, without question, meet its legal obligation to at all times furnish reasonably adequate service which includes as a corollary the obligation to make necessary replacement when essential to maintain that standard of service.

If a reserve be not maintained for these purposes, large demands may occur at a time when, for other reasons—economic financial, or what not—the company may be unable to lay its hands on funds necessary to meet such demands without serious impairment of capital, or may, by reason of such difficulties, be unable to maintain its service.

The reserve is necessary and for the purposes stated. The manner of accrual is secondary. The purpose of the act is to insure this public interest—the maintenance of service—and to insure that such reserve be surely adequate.

There is such a continuing change in demands of subscribers and so many short-lived subscribers as such, that the charge must be evenly spread over the period

nolved, if each is to pay his equitable share, in addition to which there is the accounting requirement, that only by spreading equally over the period in monthly charges can fair comparative income statements be secured.

Reserve Will Be Inadequate.

The second question of the commission is:

"2. If a depreciation reserve has no other purpose than that above stated, will the method of determining depreciation charges which is recommended by the depreciation section provide a reserve which is no larger than is necessary for such purpose?"

The method outlined by the depreciation section will not only prevent the setting up of a reserve greater than is necessary for such purpose, but will fail of setting up a sufficient reserve unless extraordinary charges be made in given years.

Applying the depreciation section's method to the item or account classification of buildings, the cost of a building is a comparatively large item usually of the district plant it serves. It is seldom, if ever, retired except in toto. Under the formula proposed, therefore, no reserve would be set up until the year of retirement, whereupon the whole sum would fall due and be charged to operating expense in one year. This expense should be spread evenly through the years.

If cost is to be spread evenly over the period of service life, no changes in basic percentage rates should occur; yet, under the proposed formula, a new exchange would set up no depreciation reserves during the first years of life, but would begin only with first retirements, resulting in higher charges later in life, and also greatly fluctuating charges from year to year since, under the proposed formula, the percentage for a given year depends solely upon retirements for that year, and not upon total investment and total service life.

If it be accepted as a primary factor—accounting and economic—that charges shall be evenly spread year by year, then retirements for given years must be disregarded. Under present methods in practice, definite percentages are obtained applicable over several years, such that charges remain constant in percentage year after year, the resultant dollars varying only as investment increases or decreases. Only thus may charges be evenly spread and the public be assured of equitable costs of service.

It has been shown that the methods or formula proposed by the depreciation section will result in varying percentages and charges from year to year. With a Class B company operating a single exchange unit, as an example, the year in which a total change in central office equipment was necessary would, under the method or formula of the depreciation section necessitate an exceedingly high percentage and

resultant charge to depreciation during the year the change took place.

This might easily be so great as to wipe out the net earnings for that particular year and, in the absence of a sizeable surplus, might prevent the payment of dividends. With such a condition confronting owners, a change otherwise necessary might be delayed from year to year in the hopes that a year of large enough profits would occur wherein the change could be taken care of without loss of dividends.

Under the present method of setting up the reserve, the company would, at the time, have already in the reserve a sufficient amount to take care of the necessary change without any unusual effect upon the current year's operations. This same argument might also apply to the rule requiring removal charges to be taken care of out of current maintenance. As they might reach such an item to affect the net earnings in any given year, it would seem advisable to avoid such a condition, both in the interest of the public and in the interest of the investor, which can only be done by spreading the charges evenly from year to year, beginning with the first year the property is in place, and not with the year when retirement first began.

Regulation Should Not Increase Costs.

In this connection it seems well to consider that the cost of depreciation accounting by account or plant classification seems unnecessary and results in greatly increased accounting costs to the utility with resultant higher rates to the public. Regulation to be successful should, where possible, effect savings rather than increase costs of service. With the necessary accounting practices now in effect, and the numerous and varied reports now necessary to regulatory or examining authorities, further intricacies should be avoided unless absolute proof of necessity appears.

Depreciation rates are necessarily fixed by classes of property, but, when once fixed, there seems no valid reason why the resultant class percentage can not be composed into a percentage to apply to the whole property, so that but one entry need be made at any time instead of from 34 to 38. The accuracy of the composite rate can be tested at stated intervals and the same end accomplished as though separate class accounts were kept month by month. The necessity for additional cost seems not proven.

Under any system of establishment of a depreciation reserve, there is always a possibility of calculations being upset by reason of inadequacy, obsolescence, or hazards occurring within a given cycle at an earlier period, or in greater or less amounts than experience leads the company to believe may happen when the depreciation plan was set up and decided upon.

Under the present method of accumulation of this reserve by means of a composite percentage applied against the prop-

erty as a whole, if unexpected demands occur because of retirements in any class of property which were unexpected or which occurred at an earlier date than expected, they will be offset by other classes of account not being retired as quickly, or in as large amount as expected. In other words, the composite method of setting up a reserve permits the balancing of the unexpected as between accounts.

If, under the plan of the depreciation section, individual accounts must be set up for each classification of property, there will no longer be the possibility of offsetting excess demands in one account as against lesser demands in another account, and a percentage or factor of safety must be added to each unless a proviso be inserted permitting the transfer of amounts from one account to the other.

Should It Be a Separate Fund?

The commission's third question is:

"3. Should amounts reserved as the result of depreciation charges from what would otherwise be surplus earnings be segregated in a special fund, to be invested in whole or in part in liquid assets, so that companies may be in a position to make necessary or desirable replacements of property even when not in a position to market new securities on advantageous terms?"

Undoubtedly any telephone company needs current assets at all times available to meet emergency demands. These assets may be marketable securities, cash or credit. The amount varies with the size of the company.

With the large company, such as Class A, the company invariably would have current assets or credit, or both, sufficient to meet any required expenditures from depreciation reserve, since unforeseen demands upon the fund in any one year are generally such a small percentage of its total assets. No requirement as to use or disposal of funds, the result of charges for depreciation, seems necessary.

As to Class B or Class C companies, unforeseen demands may be comparatively large, and, as to these companies, it may be advisable to restrict the use, requiring some definite percentage to be kept in current assets. It must be remembered, however, that this fund is the absolute property of the owners of the plant, and cannot be interfered with unless the owners fail in their public obligation to render service, or there is reasonable ground to anticipate such failure. Any such regulations can only be based on this legal basis and could hardly be made to apply, other than as a recommendation, to prosperous companies with well maintained plants.

The fourth and last question is:

"4. Does the straight-line method of determining depreciation charges, as compared with a sinking fund or annuity method, result in larger charges than the public served can equitably be asked to pay?"

The purpose of either the straight-line method or sinking fund or annuity method of acquiring a depreciation reserve, is to build up a fund equal to the investment in a given item of property at the time of the retirement of that property.

The straight-line method, if properly computed as to term of service life and resultant percentages, must produce the answer aimed at, and neither more nor less; hence the question of overcharge cannot be involved.

The same thing is true of the annuity or sinking fund method. However, the sinking fund or annuity method is less apt to be accurate in that obsolescence, inadequacy, or hazards may occur at different periods than expected in the mortality table, thus taking from the fund amounts earlier than expected, resulting in decreased subsequent interest earnings thereon necessary to bring the annuity to the correct total.

In the straight-line method, there being no dependency upon interest, the percentage charge will continue to be applied and would restore any deficits.

The arguments against the sinking fund or annuity method are best stated by the depreciation section in its report.

Summaries of Reports of Class A Companies for December.

The operating revenues of the Class A companies for December—according to information compiled by the bureau of statistics of the Interstate Commerce Commission—amounted to \$51,985,097, an increase of 11.7 per cent over the revenues for the same month in 1921. Of this sum 10.4 per cent was due to greater subscribers' station revenues.

Expenses increased \$1,489,735 or 4.2 per cent over those for December, 1921, and the net operating revenues increased

\$3,968,930. The increase in this item for the whole of last year was \$26,805,434—or 18.3 per cent over the net revenues for 1921.

The operating income increased 41.8 per cent for the month and 17.8 per cent for the year. Taxes assignable to operations were about 20 per cent higher during last December than during the preceding one, and the average for the year was 17.5 per cent higher.

The ratio of expenses to revenues decreased about 6 per cent for the month and 2.27 per cent for the year.

Up-State Annual Meet Will Be a Good Time and a Busy One.

If the program is any indication, the second annual convention of the Up-State Telephone Association of New York—which occurs April 18, 19 and 20, at the Powers Hotel in Rochester—is going to be the best meeting that association has ever held. Considering the meetings in the past which have brought fame to the New York men, the prospect is not remarkable.

Here is what they are going to do:

Wednesday, April 18, 10:00 A. M.

Registration.—Members and guests.

Social gathering of members and guests to renew old acquaintances and make new ones, convention room.

Manufacturers of telephones, supplies, accessories and specialties will receive members and guests during the entire morning session. Exhibits will be closed from 2 to 5 P. M.

2:00 P. M.

Annual address, Geo. R. Fuller, president.

Purpose of an Operators' Conference, Lillian A. Vavasour, chief traffic inspector Friendship Telephone Co., Albany.

Switchboard operating demonstration by

the local traffic and plant employes of the Rochester Telephone Corp., Rochester.

Lubricating Traffic Action, C. A. Vickery, traffic superintendent Rochester Telephone Corp.

Appointment of resolutions, nominating and entertainment committees.

Announcements.

Meeting adjourned to visit exhibits.

7:00 P. M.

Eastman Theater—motion pictures and musical program, compliments of the Stromberg-Carlson Telephone Mfg. Co., Rochester.

Thursday, 10:00 A. M.

Report of General Manager J. G. Ihmsen.

The Two Groups in the Telephone Industry, F. B. MacKinnon, president United States Independent Telephone Association.

Origin and Effect of Class Legislation, John B. Maling, New Haven, Ind.

Accounting and Its Application to Telephone Properties, Seaborn N. Vines, public utilities accountant, Syracuse.

2:00 P. M.

Training school for plant employes, R. M. Bruce, plant superintendent, Rochester Telephone Corp.

General discussion.

Results of an Intensive Drive for New Business, Frank T. Byrne, commercial superintendent, Rochester Telephone Corp.

Radio and Its Application to Telephone Companies, Prof. E. F. Potter, formerly officer in charge of United States Navy radio schools.

8:00 P. M.

Convention hall, musical revue, Rochester Telephone Corp. employes.

Friday, 10:00 A. M.

Exhibitors' day.

A representative of each exhibitor will talk upon the products and policies of the company.

Item.	—For the month of December—				For twelve months ending		with December	
	1922.	1921.	Amount.	Increase or decrease (*). Ratio, Pct.	1922.	1921.	Amount.	Increase or decrease (*). Ratio, Pct.
Number of company stations in service at end of month	10,456,648	9,826,763	629,885	6.4	.....	.....	.....	.....
Revenues:								
Subscribers' station revenues	\$33,015,011	\$29,903,159	\$3,111,852	10.4	\$378,714,414	\$349,102,411	\$29,612,003	8.5
Public pay station revenues	2,364,473	2,188,712	175,761	8.0	25,854,265	24,355,591	1,498,674	6.2
Miscellaneous exchange service revenues ..	440,029	438,033	1,996	.5	5,029,465	5,022,308	7,157	.1
Message tolls	13,628,124	11,818,256	1,809,868	15.3	154,072,860	138,657,790	15,415,070	11.1
Miscellaneous toll line revenues	1,555,775	1,373,950	181,825	13.2	16,990,993	15,610,509	1,380,484	8.8
Sundry miscellaneous revenues	980,959	803,289	177,670	22.1	10,046,411	8,434,518	1,611,893	19.1
Licensee revenue—Cr.	1,928,382	1,740,281	188,101	10.8	21,812,572	20,098,394	1,714,178	8.6
Licensee revenue—Dr.	1,927,656	1,739,248	188,408	10.8	21,804,226	20,085,104	1,719,122	8.5
Telephone operating revenues	\$51,985,097	\$46,526,432	\$5,458,665	11.7	\$590,716,754	\$541,196,417	\$49,520,337	9.2
Expenses:								
Depreciation of plant and equipment	\$ 7,767,399	\$ 6,836,717	\$ 930,682	13.6	\$ 86,458,602	\$ 77,019,089	\$ 9,439,513	12.3
All other maintenance	7,849,369	6,827,308	1,022,061	15.0	86,695,618	81,084,956	5,610,662	6.9
Traffic expenses	14,244,712	13,545,954	698,758	5.2	162,589,776	158,896,025	3,693,751	2.3
Commercial expenses	4,574,127	4,544,932	29,195	.6	53,198,693	51,760,979	1,437,714	2.8
General and miscellaneous expenses	2,740,500	3,931,461	*1,190,961	*30.3	28,614,904	26,081,641	2,533,263	9.7
Telephone operating expenses	\$37,176,107	\$35,686,372	\$1,489,735	4.2	\$417,557,593	\$394,842,690	\$22,714,903	5.8
Net telephone operating revenues	\$14,808,990	\$10,840,060	\$3,968,930	36.6	\$173,159,161	\$146,353,727	\$26,805,434	18.3
Other operating revenues	589	1,219	*640	*52.5	8,960	44,291	*35,331	*79.8
Other operating expenses	1,212	2,039	*827	*40.6	13,761	30,904	*17,143	*55.5
Uncollectible operating revenues	560,373	346,540	213,833	61.7	3,440,364	2,219,233	1,221,131	55.0
Operating income before deducting taxes ..	14,247,984	10,492,700	3,755,284	35.8	169,713,996	144,147,881	25,566,115	17.7
Taxes assignable to operations	3,453,773	2,881,925	571,848	19.8	43,875,022	37,340,878	6,534,144	17.5
Operating income	\$10,794,211	\$ 7,610,775	\$3,183,436	41.8	\$125,838,974	\$106,807,003	\$19,031,971	17.8
Ratio of expenses to revenue, per cent	71.51	76.70	*5.19	....	70.69	72.96	*2.27	....

Operating Statistics of Class A Telephone Companies for December, Compiled by Interstate Commerce Commission.



The Annual Convention of the Florida Telephone Association, Held at Miami, March 27 and 28, Was One of Its Best Meetings.

Luncheon will be served at the factory of the Stromberg-Carlson Telephone Mfg. Co.

3:30 P. M.

Annual reports of Treasurer Chas. M. Beattie, Secretary G. G. W. Green, legislative committee, nominating committee, election of directors and officers.

Meeting of board of directors.

The operators' meeting will begin at 8:30 on each day and the papers will be taken up in this order:

"Benefits to Be Derived from a Traffic Conference," Lillian A. Vavasour, chief traffic inspector, Friendship Telephone Co.

"The Operator's Problems and Necessary Qualifications," Miss R. C. Spier, supervisor of traffic methods, Rochester Telephone Corp.

"The Tributary Office Operator and Her Duties," Harriett Van Denpoel, toll supervisor Glen Telephone Co., Johnstown.

"Duties of the Recording Operator," Miss Sidney McCarthy, chief operator, Anandaigua.

"Responsibility of the Toll Center Operator," Zella M. Hayes, assistant general traffic supervisor, Northern New York Telephone Corp., Plattsburgh.

"Proper Method of Training Student Operators at Small Exchanges," Eleanor McGann, general traffic supervisor, Northern New York Telephone Corp., Aramac Lake.

"The Necessity of Ticket Detail in Handling Calls and Reports in Proper Order," Katherine Murphy, chief operator, Henango & Unadilla Telephone Co., Norwich.

"Overlapping, Team Work and Coöperation," Margaret Gonter, supervisor of traffic, Allegany County Telephone Co., Wellsville.

"Responsibility and Duties of the A Operator," Bertha Eckard, chief operator

Oswego County Independent Telephone Co., Fulton.

"Responsibility and Duties of the B Operator," Mabel Pearson, chief operator Jamestown Telephone Corp., Jamestown.

"Value of Switchboard Markings and Designations," Sara E. Neary, traffic supervisor, Wayne Telephone Co., Newark.

"The Importance of Service Observations," Miss Jane Younger, special service observer, Rochester Telephone Corp.

"Report Charges and Accurate Timing of Toll Tickets," Miss E. M. Hoxie, chief operator, Cayuga Southern Telephone Co., Poplar Ridge.

Helpful Talks and Good Attendance at Operators' Schools.

The operators' schools in Iowa have been drawing a good attendance, the one at Ida Grove having 39 persons registered, including six directors of the local company. Incidentally, this was the first school held this year, instead of the one at Fort Dodge, as reported in last week's issue.

The Ida County Telephone Co. was the host at a dinner served in the evening, and furnished a delightful program of entertainment.

Among the interesting and helpful talks made at the meeting were: "Industrial Iowa," by R. H. Holbrook, of the engineering extension department, Iowa State College, Ames; "Qualifications Necessary in the Selection of Operators," by Miss Anne Barnes; and "Relations of the Operator to the Public," Florence Anthony, chief operator, Mapleton.

Another school was held on April 10, at Belmond, and it also brought forth some papers of merit, including these: "Responsibilities of Operators in Small Towns," Miss Louise Jergensen, Thornton; "Value of System and Coöperation," Miss Gaynor, chief operator, Mason City;

"Use and Care of Switchboard Equipment," Clyde Hendricks, manager, Western Electric Telephone System, Clarion; "How Correct Tickets Aid the Commercial Department," J. W. High, commercial and traffic superintendent, Mason City, and several others.

Indiana Company Furnishes Radio Service to Its Patrons.

"The utmost in service" is the motto of the Windfall Telephone Co., of Windfall, Ind.

The company's wire chief, Burch Graves, was interested in radiophone experiments long before the radio was so widely known as it is now, and he and Guy D. Dean, of Windfall, have built an exceptionally good wireless receiving set.

The Windfall exchange closes for the night at 9 o'clock, after which—by a special arrangement of audio frequency amplifiers, condensers and repeating coils—the entire telephone system is energized, making each instrument of the system a radio receiver, depending upon the master set constructed by Mr. Graves and Mr. Dean. This arrangement is furnishing entertainment for practically all of the company's 350 subscribers.

Sometimes the program is relayed so that more persons may enjoy it. This happened a few weeks ago when the company's lines were connected with the private lines of the P. C. C. & St. L. Railroad. The entertainment was enjoyed by all the telegraph operators from Logansport, Ind., to Cincinnati, Ohio, from which place it was sent over other railroad lines to Dayton and Columbus.

The Windfall company received favorable comment in the local press for its public-spiritedness in spreading the pleasures of the radio.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

There's many a memory which brings us joy

And others, alas, deep grief.
There's many a scene of the by-gone days
Still clear, beyond belief.
But the dearest memory of time or tide
Which through my mind doth trace,
From the dear dead past of by-gone days,
Is the smile on mother's face.

There were a good many reasons in the old days why mothers could be excused from smiling all the while, but the fact that they did shows that they made the best of what they had to contend with and felt lucky they did not have the hard tasks to contend with which their mothers and grandmothers had.

That they did not have to weave and spin and work in the fields seemed to them a blessed emancipation for woman-kind. That they had to make their own soap and wash by hand on a corrugated washboard, without the aid of a wringer, and clean lamps and tack down carpets, which they made by sewing rags together and weaving in a hand loom, seemed a matter of course. They milked cows, of course, and set the milk in pans for the cream to rise and afterwards made butter and cottage cheese—all women did that.

They also ironed with heavy old irons which were heated on the old cook stove—even in the hottest weather of summertime. It's a wonder they didn't melt in the little, hot old kitchens. Mind you, they had lots more white clothes and fancy ruffles to iron than now, too. They never dreamed of telephones, nor radio, nor moving picture shows. When they wanted a little recreation, they would go visiting—and that was about all—perhaps once a year.

Think of all we have nowadays, even



The Bugbear of Lonesomeness Is Gone, Except from Very Few Isolated Farmhouses.

for the poor down-trodden women! The old bugbear of lonesomeness is gone, except from very few isolated farmhouses; and if the family is up to date, they can hear all that's going on all over the coun-

try. The wife has her telephone over which to visit with her neighbors; her electric washing machine with the power wringer attached. She buys her soap ready-made and her ironing is done without the aid of a fire at all.

The family bath no longer is taken in the kitchen in the washtub, and toast for breakfast is made conveniently right on the table as it is wanted. The automobile takes the place of the horse and widens the scope of the family travels.

Mothers ought to smile in these days, if there is any virtue in modern conveniences. Perhaps, however, we are getting like children who never have had to work for a living; everything we seem to want is ready to our hands, and we may be getting to take them as a matter of course without thinking of how they came about, or what operates them.

We take a telephone in a home as a matter of course now—just as they used to take a hitching post in front of the gate. A farmer who does not have a telephone in his home—if he is able to have one—is looked upon as a little queer and a family that still lingers over the old style method of doing the family washing and ironing is classed as out of date or as paupers.

It is all right for us if folks take a telephone as a matter of course, if they have been educated up to the idea of adequate rates also as a matter of course. If their education has been complete along both lines, there is not much to kick about, especially if, in addition to these two points, they have been educated in the correct and proper method of using the service.

To have cheap rates in the minds of the patrons as a matter of course because they used to have them, or because some neighboring town has them, is a bad thing. If father drives a thousand-dollar car and mother is still using the old washboard, there is something wrong which should be righted.

The public believe what it has been educated to believe; and when I say educated, I mean that to cover what they have been taught; what subsequent experience has shown them to be true and just; not what they merely have been told by cheap politicians

and demagogues, who cry out false doctrines which do not stand up in actual practice.

Are we doing what we should to educate the public to properly use and adequately



To Have Cheap Rates in the Minds of Patrons Because Some Neighboring Town Has Them, Is a Bad Thing.

appreciate the right kind of telephone service? That is our line of endeavor and as we govern our conduct along these lines so shall we in a like manner receive compensation for our efforts.

If we be ever so faithful about delivering the goods and slack about seeing that they are being paid for to their reasonable worth, we shall be remiss. We know we can not continue to collect good prices unless we do deliver the goods, so it seems there is but one course, if we are to succeed.

APHORISM: A good start is essential—but we also must win the race to get the prize.

Peninsular Company Improving the Service in Bradentown, Fla.

The Peninsular Telephone Co., of Tampa, Fla., has begun extension of telephone facilities in Bradentown, a proposition that will involve an outlay of approximately \$30,000, and which will provide for future growth to take care of the normal telephone demands of a city of 15,000 to 20,000 population.

According to W. U. Lathrop, manager of the Manatee River exchange, which has its headquarters in Bradentown, the Peninsular company is making what it considers ample provision for five years.

It will take about three months to install the underground conduits with their miles of cables. Mr. Lathrop states that there will be some five miles of the larger cable and a great quantity of smaller cable placed in the new conduits.

About 1,800 telephones are now served by the Manatee River exchange. Of the approximately 1,200 are in Bradentown.

Service and the Operating Costs

Testimony Presented at Hearings Last Week Before Indiana Commission in Indiana Bell Consolidated Rate Case Considered Service Classifications and Facilities and Station Operating Costs—Independent and Bell Expenses

Notice was sent out by the Indiana Public Service Commission some time ago to utilities having Bell exchanges that they might appear Monday, April 2, and submit anything they desired in the Indiana Bell state-wide case. W. R. Myers, city attorney, and C. R. Henry, an attorney, appeared for Shelbyville. Mr. Myers said about 85 orders for service in Shelbyville were unfilled, some of six months' standing. He also submitted a report of inquiry into service made of subscribers in Shelbyville.

D. F. Walker, secretary of the Clinton Chamber of Commerce, submitted a letter from the chamber of that city signed by W. Pierce, president, and himself as secretary, in which it was set forth that 103 applications for service are on file and unfilled.

The letter further said that there should be from 200 to 500 more telephone users in Clinton. The letter also complained that \$3 is too great a service charge for moving a telephone a few feet in an office. J. H. Arnett, secretary of the Kokomo Chamber of Commerce, and Taylor Groninger, corporation counsel of Indianapolis, appeared but made no statements.

An exhibit presented by Harry M. Bogg, the commission's chief accountant, at the hearing on April 2, compared unit costs a station of the Lincoln Telephone

and Telegraph Co., Lincoln, Neb., for 1921, with unit costs in Indianapolis for twelve months, ending April 30, 1922. It showed a profit for the Lincoln company and a loss for the Indianapolis company, though rates as indicated by subscribers' station revenues, were lower in Lincoln than in Indianapolis. Among the figures given are the following on a station basis:

	Lincoln, Indiana-Neb.	Indianapolis.
Average number of stations	66,045	75,777
Subscriber's station revenue	\$24.84	\$35.66
Total operating revenues	35.67	40.68
Total operating expenses, including taxes and depreciation	28.64	42.33
Gross income	7.41	* 1.62
*Deficit.		

An exhibit on "saturation" showed the Independents have more subscribers in proportion to population than have the Bell exchanges. The Independents in many places use a ringing device by which any subscriber on a four-party line can be called without disturbing other subscribers on the line.

The "saturation" exhibit showed that 63 independent companies serving a population of 452,163, as shown by the 1920 cen-

sus, have an average number of stations of 134,816, and an average number of persons a station of 3.35, while 30 Bell exchanges serving a population of 483,577 have an average of 91,678 stations with the average number of persons a station of 5.27.

In the 30 Bell exchanges Indianapolis was excluded in the foregoing figures. With Indianapolis included the population served by the 31 exchanges was 802,638, the average number of stations 165,667, and the average number of persons a station was 4.84. Fifteen "interest companies" (meaning companies in which the Bell holds stock but which are not absolutely controlled by the Bell) served a population of 168,218, had an average of 35,501 stations and 4.74 persons to the station.

The "saturation" of interest companies is greater than that of the Bell proper, while the "saturation" of the Independent is greater than either, the exhibit showed. The exhibit represented a study of population and stations in what are known as Classes A and B companies and did not include C and D companies which are in some cases in towns and territory not incorporated, for which population figures were not available.

The amount of revenue of Bell exchanges, as a whole in Indiana, has been going up, it was shown by another exhibit but operating expenses have increased so much that recent years, as shown by the Bell annual report, have been less successful financially than earlier years.

The average revenue a subscriber station in 1914 was \$19.46 a year and in 1922 it was \$32.70 a year. The exhibit also showed that total operating expenses have risen from \$24.92 a year in 1914 to \$40.04 in 1922.

The average percentage of increase in rates for all classes of service of the Indiana Bell for 1922 over 1913 is 44.07, another exhibit showed.

Carl Wilde, director of service for the public service commission, to whom complaints are referred, and who keeps in touch with service conditions, testified that service in a number of cities having Independent exchanges is good. These cities had been mentioned in the Bogg's exhibits, showing lower rates than Bell rates.

J. G. Wray, consulting engineer, appearing as a witness for the Indiana Bell Telephone Co., testified on March 27 on several phases of the case in a way tending to discredit evidence given previously by witnesses for the commission and to sustain evidence of other Bell witnesses.

With a view to meeting the evidence

before the commission that the book cost of a station of Bell exchanges is much higher than that of Independent companies in Indiana, the Indiana Bell has sought to show that the difference is due largely to the alleged fact that the Independents lack spare facilities while the Bell exchanges have such facilities.

Mr. Wray, who is consulting engineer for the Home Telephone & Telegraph Co., of Ft. Wayne, testified that he made an estimate of \$531,500 as the cost of providing spare facilities needed at Ft. Wayne at the end of 1921, which would have amounted to \$26.28 a station. O. C. Herd- rich, witness for the commission, had shown the book cost a station of the Ft. Wayne plant at the end of 1921, was \$94.36.

Mr. Wray testified that if the plant had at that time needed spare facilities, according to his estimate, the book cost a station would have been \$120. He said he was familiar with the plant and that it was using its facilities close to 100 per cent and had practically no spare facilities. The switchboards were congested, he said and the plant was "underbuilt to an extreme degree."

As to cost of labor for the next year or two Mr. Wray said there is now a "gradual stiffening of the labor market" and that the tendency of labor costs in the telephone business will be upward.

He testified that the allocation of book costs to branches of the Central Union in 1912 was made under his direction as chief engineer and that the apportionment was made "for administrative purposes only." The book costs of the Central Union, acquired by the Indiana Bell were a little more than \$15,000,000. The Indiana Bell paid \$18,000,000.

W. H. Thompson, attorney for the Indiana Bell, asked him whether book costs represented actual costs. Mr. Wray said that while he had never made an audit, his familiarity with the practices of the Bell people prior to 1912 led him to believe the book costs understate rather than overstate the cost of the property.

He prepared five studies introduced as exhibits designed to discredit a public utility curve graph, which had been prepared by Earl Carter, chief engineer for the commission. The Carter graph demonstrated costs of physical plant. Mr. Wray based his studies on an examination of \$18,000,000 analyzed accounts of the New York Telephone Co. and on costs to the Indiana Bell, as shown by studies of B. G. Halstead, appraisal engineer for the Indiana Bell. The upshot of his testimony was that Mr. Carter's public utility curve

showed costs from 20 to 25 per cent lower than they actually were because of an erroneous ratio adopted.

Mr. Carter's appraisal of the value of the physical property of the Indiana Bell was about \$10,000,000 less than the appraisal of Mr. Halstead, which was about \$35,000,000. Mr. Wray said Mr. Carter's public utility curve was a "rough approximation method liable to considerable inaccuracy." He went into much detail explaining five exhibits he had prepared.

Four-party telephone service with selective (secret) ringing is not desirable for the Indiana Bell Telephone Co. because it would cause many two-party patrons to take the four-party service, unbalance the rate schedule and make it necessary to increase the four-party rate to supply the necessary revenue, was substantially the testimony of C. O. Bickelhaupt, of New York, commercial engineer of the American Telephone & Telegraph Co., on April 4. After the testimony of several witnesses had been heard, the hearing was adjourned until April 16.

The Indiana Bell is proposing for Indianapolis and some other exchanges the introduction of a four-party, semi-selective service, which would not have entirely secret ringing, and is proposing to do away with the two-party measured service. The four-party rate proposed for Indianapolis is \$2.75 a month, or the same as the present two-party flat rate.

The commission some time ago asked the Indiana Bell for information about selective, or secret, ringing. Several of the Independent companies have a harmonic ringer, which gives secret ringing on four-party lines. The intimation that the commission leaned favorably toward selective, as against the proposed semi-selective ringing, for four-party service, led to the testimony of Mr. Bickelhaupt.

Harmonic Ringing Party Lines.

He testified that four-party service with secret ringing would be so near the same grade of service as two-party, which the Bell now has with secret ringing, that many subscribers would go over from the two-party to the four-party to avail themselves of a lower rate. He estimated that about 65 per cent of the residence subscribers in Indianapolis would take the four-party service if there were secret ringing. This, he said, would have the effect of reducing the revenue estimated by the proposed new rates.

He estimated that four-party secret ringing would result in reducing revenues for Indiana \$120,000 to \$150,000 below those expected from proposed rates. He said it was desirable for a company to have a low rate in order to increase the number of subscribers and give value of the service as a whole, but he argued that the rate schedule and classification would be unbalanced and total revenues would be reduced, because there would be no great difference between two-party secret ringing and four-party secret ring-

ing. Besides, he said, secret ringing for four-party lines would require an investment that would send up the expense a station about 40 or 50 cents a year.

"We don't see how we could give as low a rate for selective as for semi-selective, four-party service," he said.

He admitted that with four-party service a given number of cables would accommodate more subscribers and that also something might be saved by a lower calling rate a station, but this difference, he thought, would not offset increased costs of secret four-party service.

Two-Party Measured Service.

The present classification of service in Indianapolis includes a two-party measured service, with a limit of 90 calls a month for a rate of \$2.25 a month and 3 cents a call for each call in excess of 90. The company has never established a complete system of counting calls in this service, it was brought out when Thomas R. Keyes, general auditor and vice-president of the Indiana Bell, was on the witness stand.

He testified that in January of this year there were 18,938 two-party measured service subscribers on a rate of \$2.25 a month where not more than 90 calls were made, and that the company had kept a record of the calls of only 5,649 such subscribers.

Separate positions on the switchboard were required for two-party measured service and the expense in January of the auditing department in looking after the 321,218 tickets was \$312, while the revenue from excess calls over 90 a month was only \$299.91. If the commission had authorized the rate of \$2.75 a month for two-party measured service and a limit of 60 calls without extra charge, the financial results might have been different. He said it would cost \$70,000 to \$80,000 to increase switchboard space to look after the two-party measured service subscribers.

It appeared from his testimony that about 13,000 subscribers in Indianapolis have been receiving for the \$2.25 rate for two-party measured service the same service as regular two-party subscribers have been paying \$2.75 a month for, inasmuch as the company has counted the calls of not more than about 5,600 of 18,938 two-party measured service subscribers.

Mr. Keyes also testified to a number of exhibits he had prepared to meet the exhibits that Harry M. Boggs, chief accountant for the commission, had introduced showing operating expenses of Independent telephone exchanges lower than those of Bell exchanges of similar size.

Bell and Independent Expenses.

To make a fair comparison, Mr. Keyes said certain deductions should be made from the expenses of both the Independents and the Bell. The deductions he made were for station removals, directory expenses, toll operators' wages, pensions, taxes, uncollectables and rents. He showed that generally Bell wages for exchange

operators are higher, and a deduction was made on that account.

By his process, the operating expenses of a station of Indiana Bell exchanges were brought down nearer to those of the Independents, although in most cases the Independents were nevertheless lower.

Max F. Hosea, of Indianapolis, who controls and operates Independent telephoning companies, was put on as a witness by the Indiana Bell. He testified that the standard of maintenance of the Indiana Bell is as a whole better than that of the Independents, and that the Indiana Bell as a whole renders a better service to the public than the Independents.

On cross-examination he admitted that he knew nothing about the maintenance or standard of service of Rushville, Connersville, Winchester, Lafayette, Logansport, Laporte and other Independent exchanges and did not know whether Bell standards were better than Independent standards in those cities.

He said the Independents generally lacked the money to maintain desired standards of service. He attributed inferior maintenance of Independents to lack of sufficiently high rates for service. He said hundreds of local companies were being offered to him for sale.

C. R. Woods, general traffic superintendent of the Indiana Bell, was put on the witness stand by the company to show that a fair comparison of expenses of a station of Bell exchanges and Independent exchanges can not be made without a knowledge of local conditions in each case. Harry M. Boggs, chief accountant for the public service commission, had introduced several exhibits showing Independent expenses a station much lower than Bell expenses. Mr. Woods said traffic expenses are affected by the number of calls a station, amount of toll and rural business, average wages and varying efficiency in operating forces.

Frank A. Montrose, general superintendent of plant and chief engineer of the Indiana Bell, who had under his direction construction and maintenance, and Mr. Woods both testified that wage costs for 1923 would not be less than for 1922.

Mr. Montrose said the budget of the Indiana Bell for 1923 for gross construction additions to capital is \$3,400,000, or was \$3,000,000 in 1922. The chief additions and betterments this year, he said will be made in Indianapolis, South Ben Kokomo, Evansville, Muncie and Peru and on the toll lines.

Prices in the Metal Market.

New York, April 10.—Copper steady; electrolytic, spot and futures 17¼@17 cents. Tin easy; spot and futures, \$46. Iron steady: No. 1 northern \$31@32; No. 2 northern, \$30@31; No. 2 southern, \$28. Lead steady; spot 8.25 cents. Zinc steady; East St. Louis, spot and near delivery, 7.45 cents. Antimony, spot, 8.75@8.75 cents.

Washington Rates Remain the Same

Bell Loses Petition for Increases and Cities Lose Petition for Decreases in Seattle, Tacoma and Spokane — Depreciation Allowance Reduced to 3½ Per Cent — A. T. & T. Compensation Changed to 90 Cents Per Station

Increased telephone rates in Seattle, Tacoma and Spokane were denied by the Washington Department of Public Works March 31. The proposed schedules of the Pacific Telephone & Telegraph Co. for Seattle and Tacoma, and of the Home Telephone & Telegraph Co. carrying similar increases for Spokane, were ordered permanently suspended and the present rates continued in effect.

The department also ordered a reduction of 3½ per cent in the allowance for depreciation, for a period of two years beginning April 1, 1923. The Pacific and Home companies have been setting aside 6 per cent for depreciation and the 2½ per cent which is deducted from depreciation is added to earnings.

It further ordered that compensation of the American Telephone & Telegraph Co. be computed on a per station basis instead of on the basis of 4½ per cent of gross operating revenue, the new basis of computation to be 90 cents a station.

The amount paid the parent company on this basis will be approximately 2 per cent of gross operating revenue instead of 4½ per cent as called for by the contract between the A. T. & T. Co. and its subsidiaries.

The majority order is signed by E. V. Rykendall, director of the department of public works, and Frank R. Spinning, assistant director and supervisor of transportation.

In a minority opinion Hance H. Cleland, supervisor of utilities, disagrees in some particulars with the majority order and contends that some increases in rates are justifiable.

The department fixes the value of the telephone properties of the Pacific Bell in the state of Washington, including the Spokane exchange at \$32,108,854 as of June 30, 1922, that amount being used as the rate base as of that date.

Material economies in operation, to be brought about by the installation of machine switching in Seattle exchanges, justify the expense of such installation, the department finds.

The petition of the city of Seattle for a reduction in rates was also dismissed, as were various petitions by civic organizations for a reopening of the case.

In computing an operating income and rate return statement for the year 1923 from present rates and those proposed by the company, the department finds that on the rate base of \$34,789,635, which is the estimated average plant value for the year 1923, plus working capital, the company would earn 6.01 per cent at the present

rates and 11.73 per cent on the proposed rates.

Its total telephone operating revenue at present rates would be \$9,300,441, and at the proposed rates \$11,474,615. These fig-

Even the Poets Roast Tax-Exempt Securities.

In these days of high taxes the public is growing more and more restless under the situation which enables tax-exempt securities to go scot-free.

Public utilities that suffer from the unfair competition of tax-free bonds will be interested in the following jingle that Don Lupton wrote for the Denver Post:

Tax Exempt Securities.

Tax the people, tax with care,
Tax to help the millionaire,
Tax the farmer, tax his fowl,
Tax the dog and tax his howl,
Tax his hen and tax her egg,
And let the bloomin' mud sill beg.
Tax his pig, and tax his squeal,
Tax his boots, run down at heel;
Tax his horses, tax his lands,
Tax his blisters on his hands,
Tax his plow and tax his clothes,
Tax his rag that wipes his nose;
Tax his house, and tax his bed,
Tax the bald spot on his head.
Tax the ox, and tax the ass,
Tax his "Henry," tax the gas;
Tax the road that he must pass
And make him travel o'er the grass.
Tax his cow and tax the calf,
Tax him if he dares to laugh.
He is but a common man,
So tax the cuss, just all you can.
Tax the lab'rer, but be discreet,
Tax him for walking on the street.
Tax his bread, and tax his meat,
Tax the shoes clear off his feet.
Tax the pay roll, tax the sale,
Tax all his hard-earned paper-kale.
Tax his pipe, and tax his smoke,
Teach him government is no joke.
Tax their coffins, tax their shrouds,
Tax their souls beyond the clouds.
Tax all business, tax the shop;
Tax their incomes, tax their stocks;
Tax the living, tax the dead,
Tax the unborn, before they're fed.
Tax the water, tax the air,
Tax the sunlight, if you dare,
Tax them all and tax them well,
But close your eyes, so you can't see
The tax-exempt coupon-clipper go tax free.

ures are computed without consideration of any saving by virtue of the machine switching installations.

Discussing the rate base valuation of \$32,108,854 the order declares that the companies have not justified their valuation of \$40,000,000.

Two items listed by the company as "construction work in progress" and "due

from subscribers and agents" are included in the rate base. The latter item represents balances due from subscribers and agents for services rendered previous to the dates of the balances and do not contain any advance billing.

The account "construction work in progress," on which there was a wide variance between the department's engineers and those of the telephone company in the earlier hearing, is finally included because the department finds that "funds employed in construction work are as fully devoted to public service as are funds invested in completed plants, in materials and supplies or in the cash required to meet current expenditures."

"There is, however," the order recites, "a further factor in this consideration, which is 'interest during construction.' Funds employed in construction work are entitled to a fair earning. If the funds be borrowed, the creditor is receiving an earning and the utility is suffering no loss, since it is permitted to capitalize the interest it pays out. This capitalization creates a value upon which the utility is permitted to earn and which presumably can be sold if the plant changes owners. If the utility capitalizes interest on its own funds there is an actual increase in its surplus. These facts must be recognized when considering the propriety of including 'construction work in progress' in the rate base."

Finding that the annual depreciation charge should be reduced from 6 per cent to 3½ per cent for the period of two years from April 1, the department points out that charges to depreciation reserve in the future should be less than in the past because modern telephone equipment is more durable than that of earlier periods.

Buildings, pole lines and other construction will depreciate more slowly than earlier construction and the cost of these high-grade units materially increases the rate base.

Regarding the A. T. & T. contract, the department says:

"Under this so-called 4½ per cent contract the respondents are obligated to pay the American Telephone & Telegraph Co. 4½ per cent of substantially all of their gross operating revenue for certain rights and services. We have no power to prevent any public utility from entering into a contract with a parent company to share with it any portion of its profits. We have the right, however, to say whether such share or any part thereof shall be treated as an operating expense.

"If the parent company performs any service or furnishes any equipment for



The central office equipment of the Cambridge Home Telephone Company, serving 3600 subscribers is maintained by one switchman and one girl assistant. This record is not exceptional; it is duplicated in many exchanges in various parts of the country.



Some Interesting Maintenance Records

One employe per 1000 lines is the recommendation of Automatic Electric Company's Operating Department for the proper maintenance of Strowger Automatic central office equipment. Although this sets a high standard of efficiency, it is found to be inexpensive and does *not* require exceptional ability or intensive study on the part of the employe concerned.

It is interesting, too, to find that remarkable results are being obtained in various Strowger exchanges with *fewer* employes than the number indicated above. At Cambridge, Ohio, for instance, one man and a girl maintain all equipment (including toll, rural, etc.,) serving about 3600 stations on 1600 lines. At St. Mary's, Ohio, in an exchange serving 1700 subscribers on 900 lines, one man is trouble shooter, wire chief, switchman and repairman,—with central office equipment *twenty years old*. At Columbus, four sub-exchanges aggregating 2700 lines are maintained by one man. Service is good, and the equipment is *fifteen years old*.

Think of these facts if, when you begin to plan new central office equipment, the alleged "complexity" of Strowger Equipment causes you to doubt the economy of automatic.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston

London

Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



which payment should be made, such compensation should be based on the value of the service rendered or the reasonable rental of the equipment furnished rather than upon a percentage of operating revenue. We are opposed to an expense item that arbitrarily increases as the revenue increases.

"If an increase in rates is allowed in this case, it means that 4½ per cent of the increase will accrue to the American Telephone & Telegraph Co. and there is no evidence that such company is in need of additional revenue, and the local company will receive no more from the parent company than it is now receiving.

"Not having power to annul it, we believe the respondents owe it to the public to wipe it out and put their dealings with the parent company on the basis of actual value of the service rendered and on a plan than is understandable to the average citizen.

"We believe that a utility that has a proper appreciation of the elements that establish wholesome public relations should take steps to remove such a proven source of discord."

Giving its approval to the installation of machine switching in Seattle, the department says:

"Machine switching has been installed to replace manual operation in three of the offices in the city of Seattle. Three other offices will be converted to machine switching in the near future.

"The testimony of the respondents' experts is not clear as to what saving in expense, if any, will be made by the substitution of automatic for manual operation. We are satisfied, however, that a material economy will be brought about by the installation of machine switching."

In the minority opinion Supervisor Cleland prescribes sets of new rates for Seattle, Tacoma and Spokane providing increases averaging about half those asked by the company in its suspended tariffs.

The main points of difference between the majority and minority opinions are found in the depreciation allowances and the A. T. & T. contract. Mr. Cleland would permit both of these to stand—the depreciation reserve at approximately 6 per cent and the contract at 4½ per cent.

New and uniform farmer line schedules were prescribed by Mr. Cleland's order for the purpose, he said, of removing existing discriminations in this class of schedules.

No changes were made in any exchange rate schedules outside of Seattle, Tacoma and Spokane.

Indiana Company Pays First Cash Dividend—100 Per Cent.

The Rushville Co-operative Telephone Co., of Rushville, Ind., organized in 1894, has just declared its first cash dividend to the stockholders, and checks amounting to 100 per cent on the stock are being mailed out to owners of stock on record March 1.

Although the dividend is the first cash

THE FIVE-STRINGED HARP.

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Did you ever stop to ponder
When you use the telephone,
Of the many kinds of voices
And all different in their tone?

There are voices that are cheery,
There are voices that are sad,
There are voices that are weary
There are voices that are glad.

But the voice that lingers longest,
Yes, forever and a day,
Is the voice that carries *Service*
Along the 'phone highway.

"There are voices that are cheery."

Lizzie Dolittle always spoke in a cheery manner to her tributaries, but they soon learned that there was little action behind her words. And so, you see, Lizzie Dolittle's cheeriness was really exasperating.

MORAL: It is easier to eat a piece of bread without butter than to eat a piece of butter without bread, but they taste better together.

* * *

"There are voices that are sad."

It was surely a good thing that few people ever took Myrtle Myrthless seriously—not after the first time, anyway. Somehow, those sad tones of Myrtle's always struck a funny bone in your system, and you had to muffle your mirth with your handkerchief while she was talking.

MORAL: Laugh and the world laughs with you; weep and it muffles its joy until it can get out of your presence.

* * *

"There are voices that are weary."

When you heard Winnie Nasaltone's whining voice on the telephone for the first time, you had a struggle with yourself to keep from saying to her, "Stand up! Speak up! And shut up!"

MORAL: Whining is one way a dog expresses his wants. If you must whine, study your dog. Do it right!

* * *

"There are voices that are glad."

Little Gladys Gladbrook—the girl with the smile in her voice—who would not go out of the way to give her service?

MORAL: The smile in the voice *wins*.

* * *

But the one that lingers longest,
Yes, forever and a day,
Is the voice that carries *Service*
Along the 'phone highway.

Service—we feel the assurance in her tones. She knows what we want and she knows just how to give that service we want, *right*.

MORAL: Service is usefulness.

benefit that the stockholders have ever received, yet in all of the years gone by the stockholders have received a reduction on their telephone service.

The company was organized in 1894 with 400 shares of stock available, at par value of \$25. Today the stock is owned by 245 individuals, as the charter of the organization sets out that no one person shall own more than three shares of stock.

In explaining the dividend at this time, George H. Davis, manager, stated that the company had accumulated \$30,000 and had expected to make an additional pur-

chase of some county system this spring, but there is none for sale now, and the directors decided to give the stockholders the benefit of the surplus.

"The Voice With the Smile Wins" —Remembered in Will.

The will of Geneva A. Storer of Portland, Me., filed for probate recently, gives \$25 each to the Misses Blanche Downing, Geneva Longfellow, Blanche Burnham, Ruth Johnson, Ruth A. Ridley and Catharine T. Ryan, telephone girls in that city.

The Telephone Development in India

Activity in Installation of Automatic Equipment in India and Burma—
Operating and Plant Construction Methods—Packing of Equipment
Shipped from U. S. to India—Details of Equipment Installed in Exchanges

By G. E. Thompson

It falls to the lot of only a few of us to make a trip to the Far East, travel extensively over India, direct the erection of a group of automatic telephone exchanges, study the actual local conditions in the East—including operating, traffic, and effects of climate on apparatus—lay out the traffic scheme for a new large automatic plant for the Imperial Capital of India, draw up the specifications and plans which resulted in procuring the order for the equipment, and return to this country within one year. Such has been the fortunate experience of the writer, who went to India to represent The North Electric Mfg. Co. of Galion, Ohio, and its associated house, The Peel-Conner Telephone Works, of Coventry, England.

The insistent public demand during recent years for the highest procurable class of telephone service, which has resulted in a general trend on the part of exchange managers and engineers in favor of automatic switching systems, is not confined to this country alone but is voiced throughout the entire world where the telephone is used; and today the telephone can be found in almost every remote corner of the globe.

The telephone subscriber, whether he is an American business man from one of our large cities or a Hindu trader from the bazaar quarters of an Indian village, wants to get a number when he wants it—and American or Hindu, he wants it "quick." Indeed, the Eastern tolerance for poor service is little better than the Western.

It would be amusing, if it were not pathetic, to see the proverbial patience of the Oriental dissolve and spontaneously explode when he is



Typical Indian Street Scene of the Bazaar Quarters—Street View in Lahore, Showing Aerial Telephone Cable.

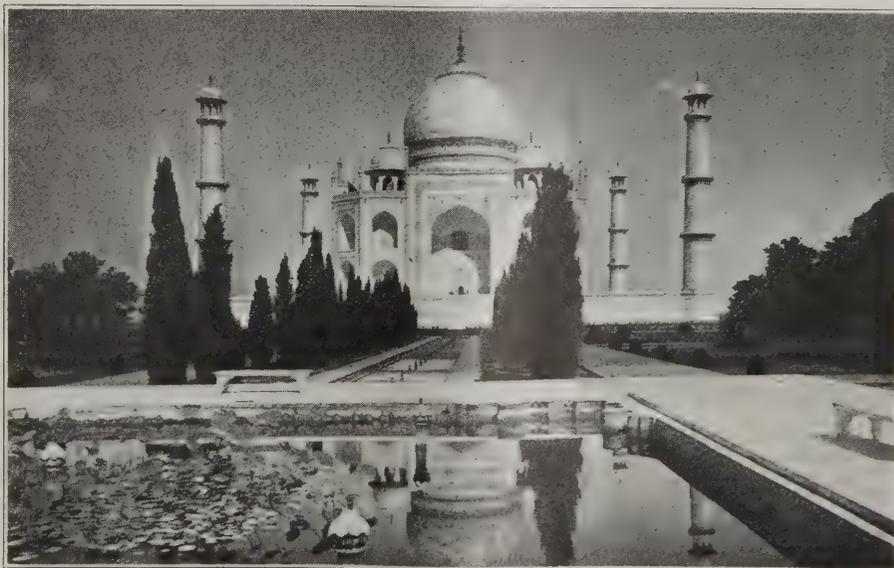
unable to obtain telephone connection with the party he desires. It is then well that one's knowledge of Hindustani is only superficial, or he might be tempted to defend the poor unfortunate god who becomes the recipient of so much wrath; and all of this means there's a call from the

the right type.

Automatic exchanges suitable for service in the tropics must be solid in construction, the circuits comparatively simple, and the apparatus, wires and cable specially treated so they will resist the deteriorating effects of the climate. For

example, all wood, where used, must be of teak, because all other kinds of wood such as are used in this country are quickly attacked by white ants.

All wires must be enameled in addition to being silk and cotton covered, and the insulation must be thoroughly impregnated in wax, so as to render it impervious to moisture. The metal parts of the apparatus, comprising switches, relays and coils, have to



The Famous Taj Mahal in Agra, India, Is Known as the World's Greatest "Dream in Marble." It is the "Mecca" for All Travelers in the Far East.

be treated with a special tropical finish, such as Parkerizing; nickel plating is useless, for it peels off like so much lead foil after a few months' time. Fibre and other hygroscopic material cannot be used and must be replaced by hard rubber or bakelite.

In the outside plant, all poles are of iron or reinforced concrete. The life of a wooden pole would be far too short to make its use commercial. The type of telephone pole now adopted by the Indian government is built up in sections of a number of slightly conical iron cylinders approximately four feet in length and varying from three to six inches in diameter, which slip into the ends of one another in a sort of telescopic manner, until a pole of the desired height is made.

These poles are solid and durable; some, which have been in service for over 30 years, show no appreciable deterioration. Incidentally, this unique method of assembly makes them very convenient for transport. The electric light and power companies favor poles made of reinforced concrete while the railroads have ingeniously utilized their disused rails as telegraph poles.

In the fall of 1920 the Indian government sent two of its English engineers from Calcutta to this country to purchase a group of automatic telephone equipments best adapted to suit the special requirements and climatic conditions of India and Burma. They traveled extensively over the United States, visiting many of the

large automatic exchanges and manufacturing companies.

In the early part of 1921 an order was placed with the North Electric Mfg. Co. for ten "all-relay" exchanges to be manufactured and shipped with the least possible delay. An order for a switch type of equipment had been previously placed with this firm, some months earlier. The engineering and manufacturing work was immediately started and the first exchange actually left this country towards the latter part of 1921 for its final destination in the Punjab. The material was shipped direct from New York to Calcutta by steamer and then reshipped by rail into the interior of India—taking over three months in transit!

Particular attention has to be given to the method of packing for overseas shipments. Special precautions have to be taken to guard against "sweating" in the hold of the ship and to effectually protect the units and apparatus against excessive humidity while passing through the tropical seas. The facilities for handling heavy shipments in the Far East are generally very "Oriental," and often the last stage of the journey has to be made in the crude Indian ox wagon, still of the B. C. model, over the roughest of roads.

This means that protective measures have also to be taken to render the units harmless from mechanical shocks and occasional falls of a few feet or more. All of the units shipped by the North Electric Mfg. Co. were packed in double cases. Each unit was first placed in an

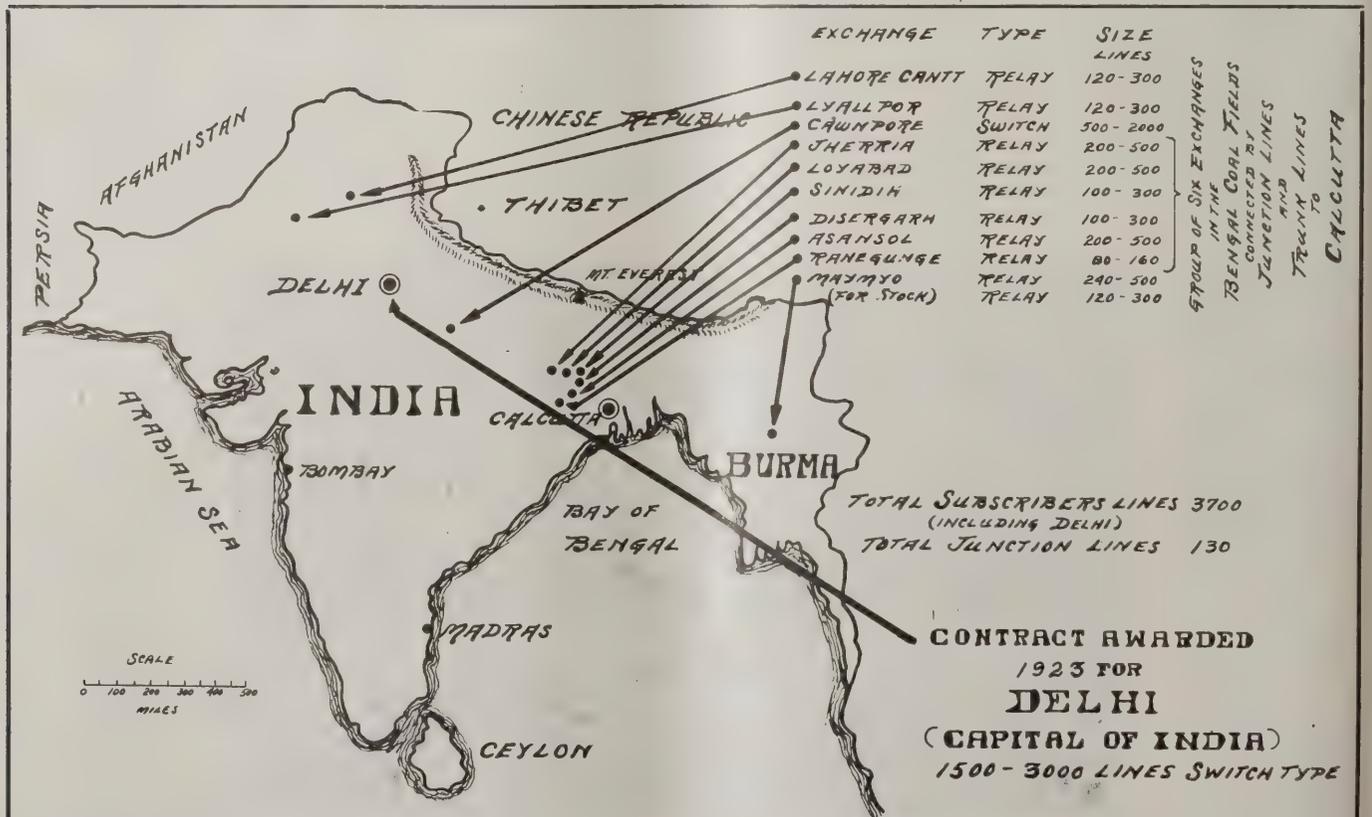
inner case made of well-seasoned lumber. This was then covered with tinned iron sheeting, and all joints hermetically sealed by soldering. This case was next placed in a second, having inside dimensions about four inches larger than the first; the intervening space was then tightly packed with excelsior, which acted as a shock absorber.

This method of packing, though costly, resulted in the material arriving at its final destination in exactly the same condition as it left the shops.

The Indian government undertook to install these exchanges with its own personnel, the North company agreeing to furnish supervising engineers. The accompanying map of India and Burma shows the location of these exchanges, and their present equipment and capacity.

Just over a year ago, the writer sailed from New York for India to direct the erection of the first few exchanges. He was last summer aided by his confrere, A. W. Clement, who is still in India carrying on the work in hand. Recently the writer returned to Galion, after having successfully demonstrated the operation of the equipment to the complete satisfaction of the telephone officials. All of the equipment is actually in India and the exchanges are being erected as quickly as the installing staff can handle the work.

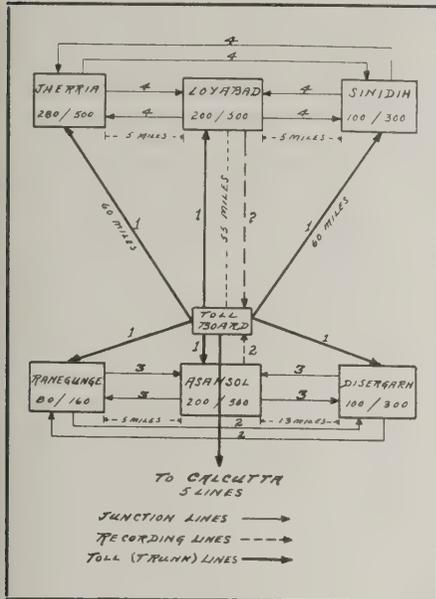
The first equipment was installed in India at Lahore Cantonments, a big military depot, and one of the most important military bases in northwestern India. It is of the unattended all-relay type, having



Map Showing Location of Exchanges in India and Burma, the Equipment of Which Was Furnished by the North Electric Mfg. Co.

an equipment and capacity of 120—300 lines, and is linked up and operates in connection with the Strowger exchange at Lahore main office, six miles distant, by means of six junction lines. The dialing through each way is entirely automatic.

The exchange is being maintained on the basis of a satellite office, the equipment



Trunking Scheme for Intercommunicating Exchanges in the Bengal Coal Fields.

being left practically unattended except for periodical inspection visits by a member of the main office staff. A Hindu line-man is left in charge at the office to take care of all outside trouble, and to make changes and removals of telephones that are frequently requested at military stations. There are two batteries, each sufficiently large to carry the load for a period of two weeks. The ringing current is furnished from a small battery driven dynamotor, which is only cut into service during the progress of a call.

A similar equipment was installed at Lyallpur, about 100 miles from Lahore. In respect to India, Lyallpur may be rightly called the "West of the East."

The large territory, of which this town is the gateway, was until comparatively a few years ago a big barren waste land, a desert whose rainfall was so small and uncertain that it could render only the most precarious living to its poorest of farmers. Today it is a rich and fertile land, producing two bountiful crops each year, watered by the melted snows from the distant Himalayas—all of which has been made possible by an elaborate system of irrigation.

The government decided to open up a telephone exchange in this city with automatic equipment. It is connected to Lahore by means of a dialed trunk line to the toll board and is being maintained on the basis of an isolated plant. A lineman, only, looks after the office to charge batteries and attend the line faults. The automatic equipment is maintained by the

exchange inspector from the main office on his periodic visits.

Six of the exchanges are being installed way up in the Bengal district, that province renowned as the home of the royal tiger and from where within a day's journey the wild elephant still roams as the undisputed monarch of the jungles. These exchanges form a network of a new and important industrial area which has recently been opened up in the Bengal coal fields. They are linked together by means of junction and trunk lines, and are connected to Calcutta over toll lines from Asansol.

The accompanying diagram of the "Bengal Coal Fields Trunking Scheme" shows the equipment and capacity of these exchanges and the way in which they are interconnected. The present layout is for 990 local lines and 40 junctions, equipped, with a capacity of 2,160 and 120 lines respectively.

Three of the exchanges, Jherria, Loyabab and Sinidih, which form the northern group, are each five miles apart, and local connections may be made automatically by dialing "7" for Jherria, "8" for Loyabab, and "9" for Sinidih. Connections to the Southeastern group, Ranegunge, Disergarh and Asansol, will be made through the toll board at Asansol which is 55 miles from Loyabab, by dialing "0" for record. Local connections between this group will be dialed automatically as in the northern group. These exchanges will be maintained

center of the woolen and leather industry. It is situated on the banks of the famous Ganges in whose sacred waters every good Hindu should bathe at least once in a lifetime.

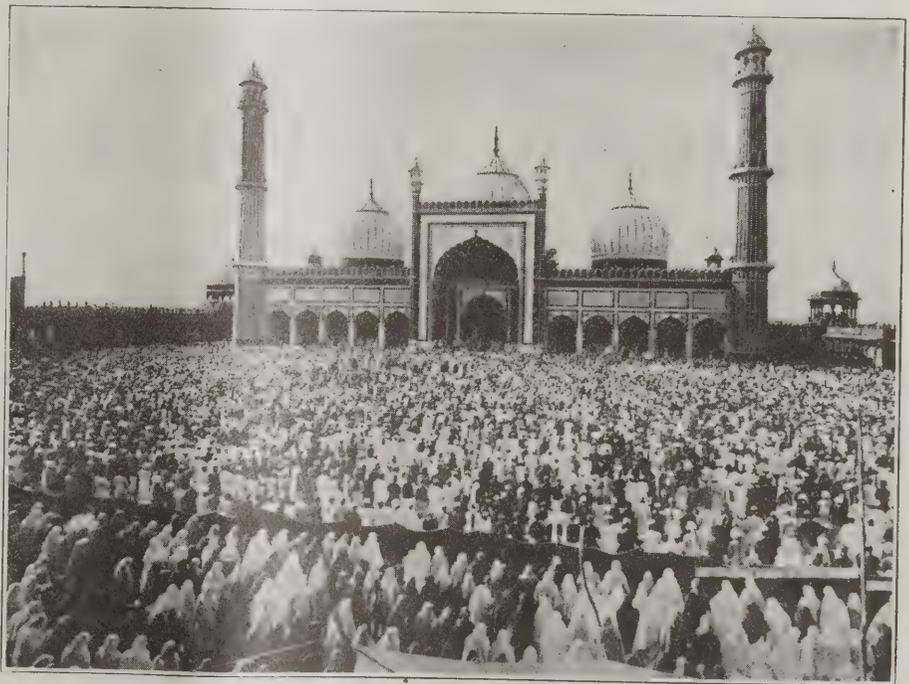
The present automatic equipment is for 500 lines with an ultimate capacity of 2,000. The line-finder control circuits are of the all-relay type, the calling line being immediately seized by an idle line finder without any hunting or selecting device. The group selector and connector circuits are of the two-way switch selection type.

The general design of the apparatus, equipment and circuits is very similar to the well known automanual system manufactured by the North company.

Far off in Burma, within a few hours' ride of Mandalay, an automatic exchange is to be installed in the Burmese Hill station of Maymyo. This equipment will also be of the North all-relay type. It will have a present equipment of 240 lines and an ultimate capacity of 500 lines.

A North dial controlled machine-switching system will also be installed at Delhi, the ancient capital and government seat of India, which is a large, cosmopolitan city. The great Mogul emperors ever made it their capital, and it has always played an important role in the history of the Indian empire.

Owing to continual development of the country and the increasing needs of the government for more accommodations, a new Delhi was conceived some years ago,



"Juma Masjid," the Cathedral Mosque of India, Showing Thousands of Mohammedans Praying—This City Is Being Equipped With North Automatic Apparatus.

by a lineman at each office and one or two inspectors in charge of the area.

The North company's dial controlled machine-switching system is at present being installed at Cawnpore. Cawnpore is an important manufacturing town located in the central provinces and is the

the plans drawn up and work started for a most elaborate new capital with its many secretariats artistically laid out on an entirely new site, ten miles from the ancient capital.

It was to be a great new capital of splendid government buildings and majes-

tic palaces for maharajahs and princes, of costly residences and magnificent homes, of parks and gardens, and boulevards and drives; and a rich and costly retail section with the most up-to-date modern hotels.

a system that will insure the very highest class of service that is procurable today. That the contract for furnishing the automatic equipment should have been awarded to the North company is a splendid

to learn that the progress which has been made in the United States is being heeded abroad, even as far as India.

Max Hosea Obtains Interest in Another Indiana Company.

Control of the Mooresville Telephone Co., at Mooresville, Ind., said to be a \$35,000 to \$40,000 company with about 600 subscribers, has passed to Max F. Hosea, of Indianapolis. Mr. Hosea owns a controlling interest and operates also the Home Telephone Co., of Noblesville, and the Central Indiana Telephone Co., of Sheridan. He is treasurer of the Indiana Telephone Association.

Mr. Hosea acquired control of the Mooresville company through purchase of a part of the stocks held by John Albertson, R. D. Sellers, John Keller and E. R. Shields, all of Mooresville. They will continue as stockholders, he said. The company was reorganized with Mr. Hosea as secretary and general manager; Oscar Robbins, president; Mr. Sellers, vice-president, and William McCrea, treasurer. Mr. Sellers formerly was secretary. Mr. McCrea lives in Attica, and is connected with other companies of Mr. Hosea's operations.

The three Hosea companies are to operate under one auditing system, which includes four companies owned principally by John P. Detchon, of New Richmond, with whom Mr. Hosea is affiliated. The Detchon companies are the Greenfield Telephone Co., Attica Telephone Co., Waynetown Telephone Co. and Greentown Telephone Co.



A Typical Indian Ox-Cart in Which Telephone Equipment Was Hauled Miles Over Rough Roads to the Exchanges Where Installations Are Being Made.

This project was to cost a hundred and fifty million dollars, a gigantic sum! The work was halted during the war but has since been re-started and will be completed with certain curtailments in the expense, by the end of 1924.

The laying out of an entirely new capital means, among many other things, that it must have a modern telephone system,

testimony to the efficiency and reliability of its apparatus. The government exchange will have a present equipment of 1,500 lines with a capacity of 3,000. It will be North company's machine-switching type, full dial control.

It will be gratifying to all telephone men who are interested in the development of telephone equipment for telephony's sake

Expansion in Telephone Facilities

Plans Announced for New Building and Extensions to Existing Plants in This Country and Abroad—International Telephone & Telegraph Co. Has Plans for Development of Properties in South America—Russia Wants Financing

Details of the Wisconsin Bell Building Program for 1923.

Extensive building, additions and replacements to the amount of more than \$2,000,000 and the laying of approximately 89,781 miles of wire are included in the 1923 building program of the Wisconsin Telephone Co.

A contract has been let for an addition to the Edgewood exchange in Milwaukee to cost \$50,000.

An addition to the Lakeside office, started in 1922, will be completed this spring. It will cost \$35,000.

Contracts have been let for a garage and warehouse building in Milwaukee which will cost approximately \$300,000.

Improvements and changes will be made in the Grand office at a cost of about \$20,000 and an addition is proposed for the Orchard building to cost \$50,000.

This construction program is in addi-

tion to the five-story addition to the Broadway office which will cost \$500,000.

Additions will be made to the switchboards in the various offices of the Milwaukee exchange at a cost of about \$429,000.

Various extensive additions and replacements amounting to \$735,000 will be made to the outside plant in the exchange.

New Exchange Building for Mutual of Erie, Pa.

Announcement was made April 5 by John Z. Miller, general manager of the Mutual Telephone Co., of Erie, Pa., that a new exchange and office building will be constructed immediately on the north side of Tenth street between State and French, at a cost to exceed \$400,000.

The property fronts 100 feet on Tenth street, with a depth of 165 feet and a French street outlet 40 feet wide. A

garage will be built on French street.

The building will be 75 ft. by 165 ft., but its height has not yet been determined. The new structure will be of bank construction and will be modern and fireproof in all details. Mr. Miller said that construction will be started at the earliest moment possible. The new building is necessitated by increasing business, requiring more apparatus and extended facilities, Mr. Miller said.

The announcement of the intention to construct a new exchange and office building follows a growth of business probably unparalleled in the history of Erie. The need of additional quarters became apparent some time ago, Mr. Miller declared, and at a recent meeting of the board of directors of the company purchase of the Tenth street property and the erection of a new structure was authorized.

It is estimated that about a year will be

required to complete the structure. The estimate of cost of \$400,000 includes the expense which will be attached to the moving of the exchange equipment.

The present quarters of the telephone company was erected 22 years ago and consisted of a building measuring 40 ft. by 60 ft. At that time the company had 1,000 subscribers.

Four years later a 60-foot addition was erected to the building and in 1917 a lot was purchased on French street in the rear of the old quarters. A garage was erected on that property and the old structure was continued to the south to a depth of 165 feet, while the front of the building was raised to a height of three stories. That year also saw the installation of the automatic system.

Since then three branch exchanges have been erected by the company. One is located in Wesleyville, another in the West Lake road and the third at Twenty-ninth and Cherry street. Recently a lot was purchased at Twenty-sixth and Ash streets and some time within the next year another exchange will be erected there.

The company now lists about 15,000 subscribers.

Plans Revealed for South American Telephone Expansion.

Details have been completed between New York bankers and the International Telephone & Telegraph Co. to raise funds through the sale of common stock of the corporation for the extension of the company's service into South America, according to information which was disclosed last week.

The new financing will mark the beginning of a program which contemplates the eventual linking up of North and South American countries through an international telephone and radiograph system, the radio supplementing the telephone. It will also serve, it is said, as a prelude to new financing within the next few months to take the French telephone system from government control. Funds will be raised by French and American bankers.

The first financing in the Latin-American program is now under way, as 50,000 shares of the International Telephone & Telegraph Co.'s common stock were placed on sale this week. This is a part of the corporation's authorized capitalization of \$25,000,000 of \$100 par value stock, \$16,322,800 of which will be outstanding at the completion of this financing. The offering price is \$68.50 per share.

Officials indicated that the offering is restricted to immediate requirements in view of the telephone company's desire to follow "pay as you go" policy. As a consequence the company now plans to concentrate primarily on its properties in the West Indies, which already are connected with telephone service in the United States through the cable laid between Key West and Havana.

The next step will be to develop prop-

erties in those South American countries from which concessions may be gained and eventually to develop those properties into one great system patterned after the American Telephone & Telegraph Co. The development, bankers pointed out, is still left to the future, but the headway already made in negotiations for the systems of Uruguay, Argentina and Chile have already impressed underwriters with the eventual possibilities.

Officers of the International Telephone & Telegraph Co. were guarded in their comment on developments in the European field, but admitted that negotiations were being carried on with the governments of France, Spain and Italy with a view to bringing their systems up to the American standard. Bankers, however, were less reticent and said that in France, particularly, negotiations had been carried to a point where a final settlement of details might be expected at any time.

In renovating and new construction, it was learned, American-made equipment will be used almost exclusively. The International corporation formed in 1920 to take over Cuban and Porto Rican properties has a close working relationship with the Western Electric Co. Through its working agreement the International also receives the benefit of advice as to American methods of the Western Electric Co.'s technical staff. There is said to be, however, no relationship between the Western Electric or the American Telephone & Telegraph Co. and the Latin-American concern in point of stock ownership.

The International Telephone & Telegraph Co. at present has a half interest in the Key West-Havana cables by means of which it is now possible to telephone from New York City to Havana direct. This service, in times of jumping sugar prices, is particularly valuable to sugar growers of Cuba, who wish to keep in touch with the New York market.

The International company, of which Sosthenes Behn, a Cuban capitalist, is president, owns 91 per cent of the common stock of the Porto Rico Telephone Co. and 88 per cent of the common stock of the Cuban Telephone Co. The consolidated earnings statement of the corporation and its subsidiaries for 1921 showed net earnings of \$924,889 applicable to dividends and for 1922, \$1,083,548.

President Behn is endeavoring to sign up one of several pending contracts for the expansion of the corporation. The following statement was, however, authorized by him via long distance from Cuba to the company's New York City office at 41 Broad Street:

"The policy of the International corporation in both existing and proposed operations has been to organize each subsidiary telephone system on a thoroughly national basis, with local directorates and operating officials of which a large majority shall be citizens of the countries in which service is rendered. Through this plan of organi-

zation the corporation has already established a distinct advantage in its negotiations for the taking over and modernization of existing telephone companies in the areas in which it proposes to conduct its principal operations."

Russian Telephone Systems to Be United in One Organization.

According to Moscow newspapers, it is impossible to utilize the telephone service in Russia in the desired manner. The service taken over from the pre-revolutionary period is said to have been very defective.

In January, 1916, there were 660 telephone networks in Russia. Of these 178 belonged to the state; 124 were held under concessions; and 149 were private, the total number of subscribers being 335,347. Owing to the war and the revolution, the number of telephone subscribers on January 1, 1922, only amounted to 113,000, whereas if the pre-war rate of development had continued there would have been 600,000 by the beginning of last year.

Beginning with 1919, the whole of the telephone system was nationalized as an indivisible whole and handed over to the national post office department, which was left to administer the service. The National Commission of Posts and Telephones now proposes to amalgamate all the telephone networks under a single administrative organization, and the development program is estimated at an expenditure of 20,000,000 gold roubles.

Out of 305 existing networks in towns, only 11 per cent have underground cables, and 67 per cent of the 89 overhead networks are equipped with single-wire lines. The main question now is, seeing that the state itself is unable to provide the funds, how to raise the money needed for improvements and expansion.

Valuation of Indiana Bell Property for Tax Purposes.

The Indiana state board of tax commissioners announced April 5 that it has fixed \$20,251,000 as the tentative appraisal of the Indiana Bell Telephone Co.'s property in Indiana, on which taxes will be paid next year. That sum represents an increase of \$548,400 over the \$19,702,600 appraisalment last year.

It was estimated in the tax board office that the company's property appraised in Indianapolis amounts to about \$1,300,000.

C. & P. Bell Takes Over Wellsburg, W. Va., Company.

The Interstate Commerce Commission gave its approval on April 5 to the sale of the Wellsburg Home Telephone Co., of Wellsburg, W. Va., by Claude Wyant, to the Chesapeake & Potomac Telephone Co. The deal was closed on the same day.

The company was organized November 1, 1902, by Mr. Wyant, who has operated it ever since, with the exception of a three-year period.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Nebraska Commission Gets Legislature to Support Appropriation.

The Nebraska State Railway Commission has won the first round of the battle between it and Governor Bryan over the size of its appropriations. The commission asked for \$181,500 for the biennium. The retiring governor recommended \$158,000, but the new governor said the commission had no particular power over railroads any more, treated telephone companies as preferred applicants and cut the amount to \$80,000.

The commission succeeded in getting from the house a raise of the latter figure to \$140,000, which will enable it to make a fight against the various utilities it now has in court on one side or the other and, while not all that is needed, will make it possible to continue along present lines. The senate is expected to agree. The governor is also expected to veto, although originally he pledged the commissioners that if they could induce the legislature to raise the amount he would not interfere. Members explained their vote in favor of the increase that it was useless to appropriate money for the salaries and then not give any opportunity to earn them.

"I made ample provision in the budget," says the governor, in indicating his intention to wield the veto, "to carry on all investigations of matters over which the commission had authority. I am in favor of the railway commission reducing the number of its employes to meet its reduced powers. I expect the commission to justify its existence to meet a growing sentiment in the state that it ought to be abolished. The Interstate Commerce Commission has control of railway rates.

"The past record of the state commission shows a constant increase in rates in practically every utility over which it has been attempting to exercise control, and not a corresponding increase in municipally-owned utilities over which the commission has no control.

"The action taken by the commission about the first of the year provided an increase in telephone rates of one class and service and a reduction in rates in another class. The telephone company adopted the increase, which will cost patrons \$350,000 a year, and the companies that had the reduction of rates enjoined the rates, so there was no reduction. Such increases as this have raised the question of the advisability of continuing the railway commission in existence."

The commission made prompt reply, pointing out that for two years it has been making all railroad rates in the state, and that the railroads have been obeying them. On telephone matters it said:

"No doubt the commission could have, by the use of the very great power of the state, bankrupted most of the 200 independent telephone companies in the state. The larger companies know fully their constitutional rights and can defend them; the smaller ones have not the capacity to fight no matter how severe the commission might be.

"The commission has no apologies to make for treating all equitably who must rely upon this body for permission to do that which both the constitution and the law give them the ultimate right to do. Even so, economic conditions are such that a large number of telephone companies of this state are earning nothing on their investments.

"Unorganized shippers have no other place to seek relief than the commission, which handles both state and interstate matters without cost to complainants. That is the intent of the law. It cannot be done without resources.

"The legislature has repealed none of the laws which the commission has to enforce, nor has it restricted the duties. The proposal to strike down the working machinery of the commission will serve only to congest business and render it impossible to give citizens the prompt consideration their matters deserve.

"There is food for thought that in the sister states in this section increasing financial support is being given regulatory commissions, and in none other has the theory been advanced that efficiency can be increased by reducing appropriations and destroying the operating machinery."

Number Wrong in Directory Brings \$10,000 Suit.

The New York Telephone Co. was made defendant in a suit for \$10,000 damages in an unusual action instituted in Passaic Circuit Court April 6 by Edward O. Lucas, an undertaker of 265 Main avenue, Passaic, N. J. The suit is based on a wrong number being printed in a telephone book. Lucas alleges in his complaint that for three months last year the telephone book for Passaic and vicinity showed his telephone number to be that of his brother, Timothy C. Lucas, a rival undertaker.

Lucas sets forth in his affidavit and complaint that he entered into a contract with the telephone company on October 1, 1919, for telephone No. Passaic 1603 to be installed at his undertaking establishment, 46 Bloomfield avenue. In February of last year Lucas moved from Bloomfield avenue to 265 Main avenue. His contract with the company, he alleges, called for the retention of his telephone number.

When the new books were circulated on May 15, 1922, the plaintiff alleges, the number appearing opposite his name was Passaic 461, which, he claims, is the number of the telephone of his brother, Timothy C. Lucas, also an undertaker, at 23 Bloomfield avenue. The plaintiff alleges that the telephone company made no correction of the error, despite his protests, until the new books were issued in October, 1922.

Telephone subscribers in Passaic and vicinity who had known the Lucas brothers for many years were surprised to find last summer that both had the same telephone number and believed that the long business fight between them had at last ended. The brothers, it is said, have not spoken to each other for 12 years or more.

The plaintiff contends that business which should have come to him went to his brother by reason of the confusion of numbers.

Gas and Electric Company to Take Over Telephone Company.

Authority has been granted by the California Railroad Commission to the Pacific Gas & Electric Co. to acquire the outstanding stock of the California Telephone & Light Co., operating an electric distributing and telephone system in the counties of Lake, Sonoma and Mendocino. The order was issued April 2.

The Pacific company was also given permission to issue not exceeding \$550,032 of 6 per cent, first preferred stock, and \$254,950 of common stock, in exchange for the securities of the purchased company.

The preferred stock of the two companies will be exchanged on a share for share basis, while one share of Pacific Gas & Electric common stock will be issued for every three shares of common stock of the California Telephone & Light Co.

Restore Rates Which Were Completely Suspended for a Month.

Rates on the Hartsville line of the Citizens Telephone Co., of Columbus, Ind., suspended on January 12 by special order of the Indiana Public Service Commission because the condition of the lines made adequate service impossible, have been restored as of date February 12, according to an order issued by the commission on March 23.

The order for the suspension of rates provided for total suspension of payment by subscribers from January 12 to March 1, and ordered that in the meantime the company should place its lines in first class condition and report such fact to the commission.

INTERNATIONAL DATING NAILS *Permanently Identify* INTERNATIONAL *Creosoted Pine Poles*

EVERY International Pole, before it leaves our plant, bears the stamp of approval of this company in the form of the I. C. C. Co. dating nail. This nail, located about 10 feet from the butt of the pole has our monogram and the date the pole leaves our plant. We are doing this because we are proud of the quality of our poles and the remarkable records they are making in different localities and in all classes of service.

This nail demonstrates our willingness to stand behind our products and assures the purchaser that he is receiving only the best. *It serves as an identification for all time.*

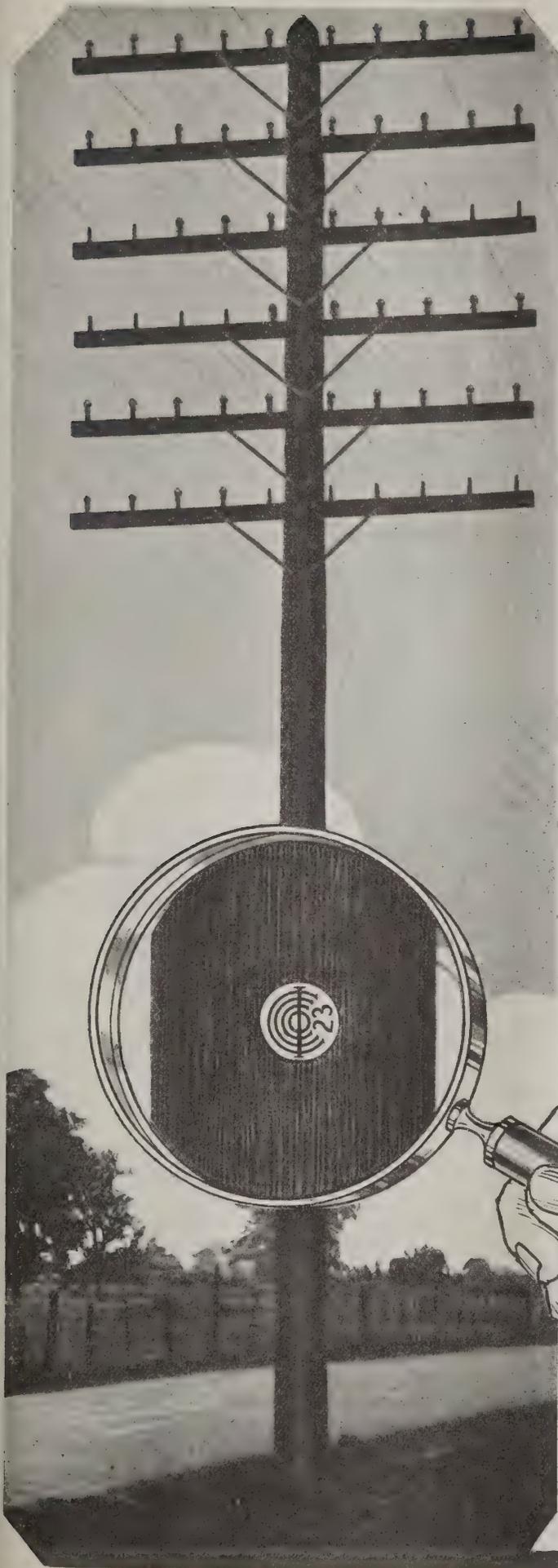
In future years we want you to identify the poles which are rendering exceptionally fine service. The I. C. C. Co. dating nail will tell the story because International poles are strong, they are carefully supervised through every phase of manufacture, and they are thoroughly treated to give the desired long life.

Send us your requirements—We will quote prices and delivery.

International Creosoting & Construction Co.

General Office: Galveston, Texas

Plants: Texarkana, Texas Beaumont, Texas
Galveston, Texas



The statement of the commission, authorizing the resumption of rates as of February 12, says that the company made such repairs before January 30. Investigation by the commission supported the company's declaration of condition, and the restoration of rates was recommended.

City Submits Its Schedule for Rates in Grand Rapids, Mich.

A schedule for Grand Rapids, to become effective when the Citizens Telephone Co. and Michigan State Telephone Co. properties are merged was proposed in an exhibit submitted March 26 to the Michigan Public Utilities Commission by G. J. Wagner, the city's consultant, and City Attorney Taggart.

The proposed schedule is the same as the present one, except that business telephones would be 50 cents a month higher.

One new feature proposed is the measured business rate under which the subscriber guarantees 15 cents a day or \$4.50 a month, and the rate of four cents a call for all over 90 calls a month. This is optional with the \$4.50 two-party business telephone or a \$5 individual business telephone.

This schedule is much lower than that asked by the Michigan State company.

Nebraska House Passes Maximum Rate Bill.

The Nebraska house, by a vote of 58 to 23 finally passed the Osterman bill providing that maximum rates and maximum rates only shall be fixed by rate-making bodies in connection with public utilities.

At present rates thus fixed are both maximum and minimum, but the commission has always reduced rates at the request of utilities. The members have opposed the bill, however, as likely to lead to discrimination that would never come to their notice unless specific complaint were made.

Object to Having Directory Listing Merged with City.

The Nebraska State Railway Commission has been appealed to by a committee of business men from University Place asking that the Lincoln Telephone & Telegraph Co. be restrained from causing the suburb to lose its identity by dropping its subscribers there from the directory listing for University Place and including them in the Lincoln list.

The company is about to cut over a new automatic office that is to take care of University Place and a part of north-east Lincoln. Originally a little college suburb four miles from Lincoln, the two cities have grown together in 30 years, until now only a political line divides them. The city has tried several plans to induce the college town to join in one government and one school district, but the majority of its people have objected so vigorously each time that it was dropped.

The business men say that they have a

pride in retaining the name of their city so long as it remains unswallowed up by Lincoln, and that to scatter their 800 subscribers among the many thousands of Lincoln names would greatly inconvenience all of them because the most of their social calls are inside their own limits, while business calls only are with the city.

The telephone company showed that 60 per cent of the calls were with Lincoln subscribers, and was so sure that the service would be greatly bettered by the new method that it was willing to give a separate listing later if a trial did not prove this.

The committee was willing to compromise on a separate listing as well as a Lincoln listing, but it developed that it took eight pages of names for the University Place patrons, and the cost is \$35 a page. The company also insisted that considerable clerical expense would be involved in keeping duplicate records.

Commission Cannot Re-establish Old Rates Without a Hearing.

The Ohio Supreme Court remanded to the Ohio Public Utilities Commission on March 27 the rate case of the Cincinnati & Suburban Bell Telephone Co. The supreme court reversed the order of the commission which had reestablished, without a hearing, the rates existing prior to August 1, 1920.

On August 20, 1920, the company filed a schedule of increased rates. The city objected to the new rates, but they remained in effect while the company gave bond to refund if they were found to be invalid. The commission held that the rates were not excessive.

Then the supreme court, by a vote of 4 to 3, reversed the commission, but did not agree on the grounds of reversal, and therefore rendered no opinion.

The commission ordered the reestablishment of the old rates, and now the supreme court holds that the commission had no right to fix rates without a hearing, and this means that the commission will order a valuation of the company's property and then fix new rates.

Small Nebraska Company Authorized to Reduce Its Rates.

The Campbell Telephone Co. upon application to the Nebraska State Railway Commission, has been granted permission to reduce its rates. In the past it has been charging on a gross and net basis, with a spread of 25 cents, which additional sum is collected above the regular rate if payment for the month is not made in advance by the tenth of the month.

The company told the commission that it had been able to reduce its operating expenses the current year, and it desired to have the saving reflected in reduced rates. The net rate for business after April 1 will be \$1.75 instead of \$2, while party line business is cut from \$1.75 to \$1.50; residence from \$1.50 to \$1.30 and

farm and party line residence, from \$1.40 to \$1.25.

The company is a small one operating in a rather compact territory in Franklin county.

Ohio Bell Offers Evidence to Support Akron Valuation.

A valuation of almost \$7,500,000 was placed on the telephone property and plant in Akron by the Ohio Bell Telephone Co. at the hearing March 8 in Columbus before the Ohio Public Utilities Commission. This figure represents the company's valuation of the entire property, after the unification of service, and is the basis on which the company requests increases.

W. G. Schneider, appraisal engineer of the Ohio Bell, offered testimony substantiating the company's claims and justifying the inclusion in the valuation of \$1,276,586 for the cost of establishing business.

M. P. Tucker, city administrator of Akron, and H. M. Hagelberger, law director, protested against the item being included in the valuation, arguing that the company is setting up a hypothetical case and that the sum is mainly for the promotion of business in the event the company should have to start over again. The commission admitted the item in evidence, but the city is to be given a further opportunity to present arguments against its inclusion.

Total revenue of \$1,150,421, and total expenses and deductions of \$1,082,679, with a balance for net income of \$67,742, were shown in the company's financial statement.

The next hearing will be held May 9 and 10, at which time the city will begin its cross-examination of the company's witnesses.

Collections Difficult — Authorized to Establish Discount.

Because of the difficulty which the Bear Valley Telephone Co., of Bear Valley, Wis., has had in collecting rentals payable at the end of the year, the Wisconsin Railroad Commission gave the company permission, on March 31, to bill semi-annually and to establish a charge of 25 cents a month extra for rentals not paid within the first two months of the half-year period. The rental rate, which is \$1.00 a month, remains the same.

There is also a charge of 10 cents per call for non-subscribers, but this sum being retained by the subscriber whose telephone is used, the company derives no revenue from it.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

April 5: Approval given to the acquisition by the Chesapeake & Potomac Telephone Co. of the property and plant of the Wellsburg Home Telephone Co., of Wellsburg, W. Va.

CALIFORNIA.

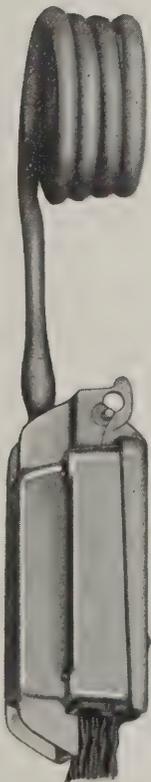
March 31: C. W. and M. A. Forbes granted permission to sell to the Manteca Telephone Co., all of the plant, equip-

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pole cable ter-
minal of unusual



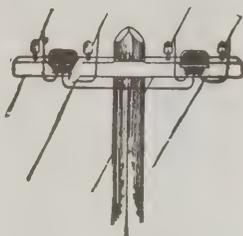
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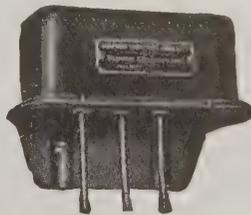
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ment and other property owned and used by them in the operation of the Manteca Telephone System. Authority given the Manteca Telephone Co. to acquire the property, and to issue \$38,500 of stock and not exceeding \$18,000 face value of notes.

April 2: Dalidio, Tognini & Ghezzi Telephone Co., operating in the town of Cayucos, authorized to transfer its telephone property to J. R. Fort.

April 2: California Telephone & Light Co., authorized to place in effect at its central office exchanges at Guerneville, Healdsburg, Calistoga, Potter Valley, Sonoma, Middletown and Lakeport, messenger charges for delivery of telephone and telegraph messages, amounting to 25 cents for delivery within one-mile area, and the actual cost of delivery outside the one-mile zone.

April 3: Application filed by Huntington Beach Telephone Co. for authority to issue and sell \$25,000 of its capital stock of a par value of \$1.00 per share, for the purpose of reimbursing its treasury for money actually expended for capital disbursements, and to liquidate an indebtedness of \$18,000; also for authority to issue \$50,000 in bonds for the purpose of financing construction of an office building and equipment, and to acquire the property of the Smeltzer Home Telephone & Telegraph Co.

ILLINOIS.

April 10: Hearing held at Chicago on application of the Capron Home Telephone Co. for advanced rates in Capron.

April 10: Hearing held at Chicago on petition of Amos Haverstick and others for an order requiring the Illinois Bell Telephone Co. to install and furnish telephone service in or near the city of Rock Falls.

April 11: Hearing held at Chicago on application of the Pitcher Telephone Co. for authority to issue notes in the aggregate amount of \$9,700.

April 12: Hearing held at Chicago on citation to the Illinois Bell Telephone Co. to show cause why rates for service in the city of Chicago and adjacent territory should not be reduced.

INDIANA.

March 23: Citizens Telephone Co. of Columbus, authorized to reestablish rates which were suspended on its Hartsville line.

April 16: Hearing on Indiana Bell consolidated rate case, continued from April 4.

MISSOURI.

March 31: Johnson County Home Telephone Co., of Warrensburg, permitted to sell to the Holden Home Telephone Co., of Holden, a line of poles and two wires heretofore used exclusively as a toll line between Chilhowee and Leeton, with a short spur extending to the town of Post Oak, at an agreed price of \$500.

March 31: Order entered vacating the order of October 25, 1922, which had suspended the effective date of the increased rate schedule of the Andrew County Mutual Telephone Co., of Savannah; authority given to make the higher rates effective on and after April 10.

NEBRASKA.

April 2: Application filed by Arcadia Light & Telephone Co. for permission to destroy ancient records.

April 2: Complaint filed by the Dawson-Nemaha company against Lincoln Telephone & Telegraph Co., alleging unsatisfactory handling of calls.

April 3: Complaint filed by Palmer Knudson, of Fremont, against Northwestern Bell Telephone Co., alleging refusal to furnish individual service.

April 3: Complaint filed by Dr. C. B. Foltz, of Omaha, alleging that Northwestern Bell is making unauthorized charge for listing in physicians' and surgeons' exchange, where doctors are called when their own telephones are unattended.

April 4: Complaint filed by C. D. Armstrong, in charge of building new hotel at Grand Island, that Northwestern Bell is demanding an excessive price for putting in conduits and asking permission to make construction himself; submitted to company and satisfaction reported.

April 4: In the matter of the application of the Northern Antelope Telephone Co. for permission to reduce percentage set aside for maintenance and depreciation from 12 per cent to 10 per cent per annum; order issued holding that deduction asked for is not justified by the financial condition of the company, and fixing the percentage for the future, until otherwise ordered, at 11 per cent.

April 4: In the matter of the application of the Campbell Telephone Co. for permission to reduce gross and net rates, the present net rates being in the future the gross rates; order issued granting decrease asked for, with permission to make it effective April 1.

April 5: In the matter of the application of the Indian Creek Telephone Co. for validation of stock issued, by mistake, in excess of the amount granted by the commission; ordered that the request be granted.

NORTH DAKOTA.

March 16: Petition filed by Fullerton Telephone Co., of Fullerton, for an order requiring payment of "other line" charge by the Dakota Central Telephone Co., of Aberdeen, S. D.

April 3: Knife River Telephone Co. authorized to sell its Beulah exchange to R. K. Hafner, of Zap.

April 4: Petition of Sheyenne Telephone Co., of Pekin, to reduce its rural rates, approved.

April 18: Hearing to be held at Center on petition of the Oliver-Mercer Telephone Co., of Center, for a decrease in the switching rate charged by the Mercer County Telephone Co., of Stanton.

April 18: Hearing to be held at Center on joint petition of Oliver-Mercer Telephone Co., Spring Brook Telephone Co., and Hanover Mutual Telephone Co. for an inquiry into switching charges.

OHIO.

March 28: Hearing held in Columbus on application of Ohio Bell Telephone Co. for increased rates in Akron. Next hearings to be held May 7 and 8.

SOUTH DAKOTA.

April 4: Increased rate schedule allowed Garretson Coöperative Telephone Co. for service from its Garretson exchange.

WASHINGTON.

March 31: Proposed tariffs of Pacific Telephone & Telegraph Co. to increase rates in Seattle and Tacoma, and of the Home Telephone & Telegraph Co. carrying similar increases for Spokane, were ordered permanently suspended and the present rates continued in effect until further order of the department of public works.

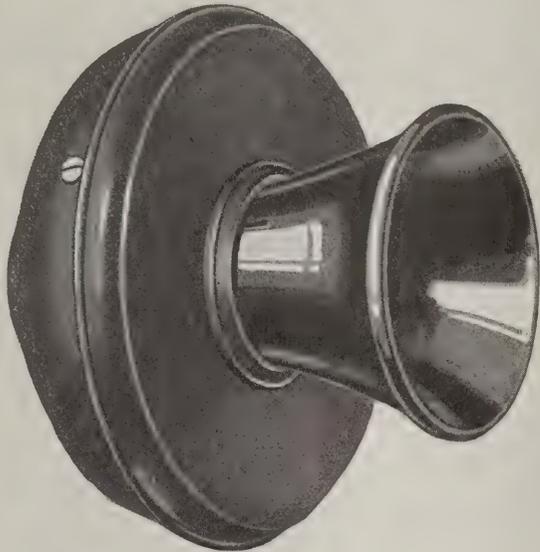
WISCONSIN.

March 31: Bear Valley Telephone Co., of Bear Valley, authorized to establish a discount rule.

March 31: Permission given the Eastern Wisconsin Telephone Co. to increase the rates for service from its exchange at Mt. Calvary.

March 31: Stockholder-subscriber rate of the Lima Telephone Co. increased from \$9 to \$13 per year.

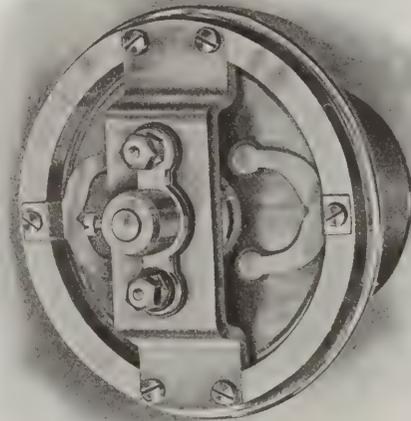
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Officers of Companies Are Requested to Forward to Us Promptly All Financial and Other Statements Issued and Any Items Relating to Construction, Rebuilding and Other Changes

New Telephone Companies and Incorporations.

LANESVILLE, IND.—The Lanesville Telephone Co. has been incorporated with a capital of \$5,000. The directors are B. J. Teaford, C. Stilger, G. Deitrich, C. Gleitz and W. Richert.

RIVER JUNCTION, IOWA—Incorporating for a period of 20 years, the River Junction Telephone Co. announces that its capital stock is \$9,000. It is a rural line, with farmers and others controlling and owning it. The charter president is J. Zimmerman; vice-president, J. Magruder; and secretary-treasurer, J. Sims. These officials and J. R. Musser and E. D. Porter are the incorporators.

SPRING LICK, KY.—C. W. Wilkins, J. H. Wortham, A. M. Ingram and others have incorporated the Spring Lick & Caneyville Telephone Co., with \$135 capital stock.

BRAMAN, OKLA.—With a capital of \$30,000, the Mutual Telephone Co. has been organized by F. S. LeValley and W. L. Rosenbery.

BEDFORD, PA.—Application for a charter for the Clear Telephone Co. has been made by J. H. Claar, M. E. Claar, F. M. Warner, G. M. Warner and H. B. Coder. F. E. Colvin, of Bedford, is acting as solicitor. The company plans to install a system in the southern section of Blair County and the townships of Kimmell, Union, Lincoln, West and East St. Clair and Bedford, and in the boroughs of St. Clairsville and Pleasantville.

SUMMITVILLE, TENN.—Articles of incorporation of the Home Telephone Co. have been filed by C. E. Smith, A. Fletcher, J. Robertson, W. A. Kennedy and T. Worde. It is capitalized at \$10,000.

PALOUSE, WASH.—S. W. Edmiston, E. A. Thayer, W. A. Nichols, J. J. Shanks and J. A. Twitbeyer have organized the Palouse & Fallons Telephone Co. There is no capital stock, the company being a membership affair.

BIG ISAAC, W. VA.—The Doddridge & Harrison Telephone Co. has been incorporated by H. L. Moore, S. E. Bennett and A. C. Darnold, of Big Isaac; S. L. Smith, of West Union, and O. Moore, of Bristol. The authorized capital stock is \$20,000. The new company has taken over the lines of the Peoples Telephone Co. in Doddridge, Harrison and Tyler counties, which was recently sold by a receiver.

BEAR CREEK, WIS.—The Matteson Telephone Co. has been reorganized and will be known as the Farmers Telephone Co. A. Klemm, of Bear Creek, is the president, and J. Spengler, of Marion, the general manager.

Construction.

MANTECA, CALIF.—The Manteca Telephone Co. plans to issue \$1,500 in stock to secure funds to pay for a lot on which to erect a building, the latter to cost about \$8,000. An issue is also planned to finance construction necessary to enlarge the plant and system, which will cost about \$2,000.

COAL VALLEY, ILL.—The Coal Valley Telephone Co. has purchased a new switchboard. B. McElwain will handle it, succeeding J. Sommerson, who has resigned after 11 years' service.

HARTFORD CITY, IND.—The Indiana Bell Telephone Co. has completed the installa-

tion of a new switchboard and associated apparatus. Considerable work has been done in the last few months in and around the city by the company's crew, replacing cables, resetting poles, and placing the plant in good condition.

ELDON, MO.—The Eldon Local & Long Distance Telephone Co. is putting all cables in the town underground and arranging terminals at alleys to provide for distribution, using duplex drops.

The company is under the management of P. K. Higgins, of the Telephone Service Bureau, of St. Louis, which is operating plants over different sections of the state and a few exchanges in Oklahoma.

KALISPELL, MONT.—A telephone line from Kalispell into the stock country known as the Big Draw, will soon be built upon the community plan. Construction of the line, which entails about 35 miles of poles and wire, is provided for by pledges of labor of those who will benefit by it. The cost of the materials, wire and instruments will be defrayed by popular subscription. Funds of approximately \$700 have been paid and work will start as soon as weather permits.

BROWNWOOD, TEX.—Extensive improvements in several of the cities served by the West Texas Telephone Co. have been started, to be completed during the year.

GROESBECK, TEX.—The Gulf States Telephone Co. is completing an exchange construction job that will add 50 per cent to its cable and other outside plant in the city.

WENATCHEE, WASH.—The Pacific Telephone & Telegraph Co. has purchased a lot and will start construction of a modern brick building to house the long distance offices of the company. The estimated cost is between \$40,000 and \$50,000.

MARSHFIELD, WIS.—New equipment, including a switchboard, is being installed in the exchange rooms of the Marshfield Telephone Exchange.

WATERTOWN, WIS.—The Wisconsin Telephone Co. plans to extend its aerial and underground wires and cables and to do some reconstruction work on existing lines, the whole job to cost about \$90,000.

Financial.

PORT LAVACA, TEX.—The Coast Telephone Co. has increased its capital stock from \$35,000 to \$50,000 and changed its place of business from Palacios to Port Lavaca.

Elections.

POMONA, CALIF.—E. E. Jones was elected to the board of directors of the Pomona Valley Telephone & Telegraph Union at the annual meeting of the company, taking the place of C. E. Walker. All other members were reelected as follows: J. A. Dole, president; R. K. Pitzer, vice-president; A. M. Dole, secretary; C. H. Lorbeer, manager; L. A. Lorbeer and J. W. Fulton.

SWAN CREEK, ILL.—At the recent annual meeting of the Farmers Telephone Co., C. Bacon was elected president for the ensuing year, to succeed A. F. Breiner.

GARRETT, IND.—The annual election of the Garrett Telephone Co. resulted in L. D. Mager being selected as president; D. B. Van Fleit as vice-president and general manager; H. E. Wert, secretary and audi-

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tor; C. N. McCully, treasurer, and W. W. Sharpless, assistant treasurer.

The executive committee consists of the president and assistant treasurer and D. H. Whitham, of Indianapolis. These officers, together with A. D. Lewis and C. H. Rottger, compose the board of directors.

HUNTINGTON, IND.—The officers of the Majenica Telephone Co. for the coming year are: E. Beaver, president, and D. W. Paul, secretary-treasurer. W. E. Rogers is the reelected director from the Markel district, and J. Groff the director from Mt. Etna district.

MILFORD, IND.—The following officers were elected at the annual meeting of the Royal Telephone Co.: President, J. B. Neff; secretary, M. Geyer, and treasurer, W. Noss. The directors are G. Krull, M. D. Neff, J. DeFries and H. Phend.

GRINNELL, IOWA.—At the adjourned annual meeting of the stockholders of the Interior Telephone Co. the following board of directors was elected: H. L. Beyer, A. E. Fraser, C. W. Manatt, C. M. Manly, J. C. Martin, W. S. Sanders and G. L. Saunders. The old officers were reelected as follows: President, H. L. Beyer; vice-president, W. S. Sanders; secretary-treasurer and general manager, G. L. Edgerton, secretary-treasurer, and E. M. Saunders.

COLUMBUS, KANS.—The officers of the Cherokee County Mutual Telephone Association for this year are: President, W. H. Shaffer; secretary, P. Jarrett, and treasurer, J. H. Ellis.

LEXINGTON, KY.—The officers of the Fayette Home Telephone Co. were all reelected to serve again this year. They are: T. A. Combs, president; R. L. Northcutt, vice-president, and J. W. Porter, secretary-treasurer.

GUILFORD, MO.—The Bristle Ridge Telephone Co. has elected H. H. Griggs president for the coming year and J. W. Griggs, secretary-treasurer. D. L. Joslin is the lineman.

LAUREL, MONT.—M. S. Shay was elected president; J. O. Wold, secretary-treasurer, and J. W. Coombs, C. Oswald and M. H. Shay, trustees, of the Laurel Mutual Telephone Co. at the annual meeting a few weeks ago.

MILES, MONT.—The Eastern Montana Telephone Co. will have the following officers for this year: C. Snell, president; E. C. McCarthy, vice-president, and A. J. Rowland, secretary-treasurer. J. Hudson, J. DeCarle and A. W. Heidell are the directors.

COLUMBIANA, OHIO.—The directors of the Fairfield Township Telephone Co. for 1923 are: H. C. Cope, E. M. Holloway, A. Wisler, A. F. Poulton, M. Brinker, E. M. Farmer, C. Smith, J. Harmon and J. H. Edgerton. After the stockholders' annual meeting the board elected H. C. Cope, president; A. Wisler, vice-president; J. H. Holloway, manager.

ELMORE, OHIO.—The New Ottawa County Telephone Co. reelected J. G. Steinkamp, president and general manager; T. Fuller, vice-president; J. A. Gossman, secretary-treasurer, and F. H. Williams, auditor. The company declared a 10 per cent dividend.

LYONS, OHIO.—The Lyons Mutual Telephone Co. elected the following officers at its annual business meeting recently: President, W. S. Evers; vice-president, F. Meeker; secretary, P. Whaley, and treasurer, E. Frantz. The directors are H. H. Robinson, R. Miller and W. A. Gunn.

CALIFORNIA, PA.—The officers of the Union Telephone Co. for this year include H. L. Lamb, president and general manager; Mrs. V. Anderson, treasurer, and R. Hazlett, secretary.

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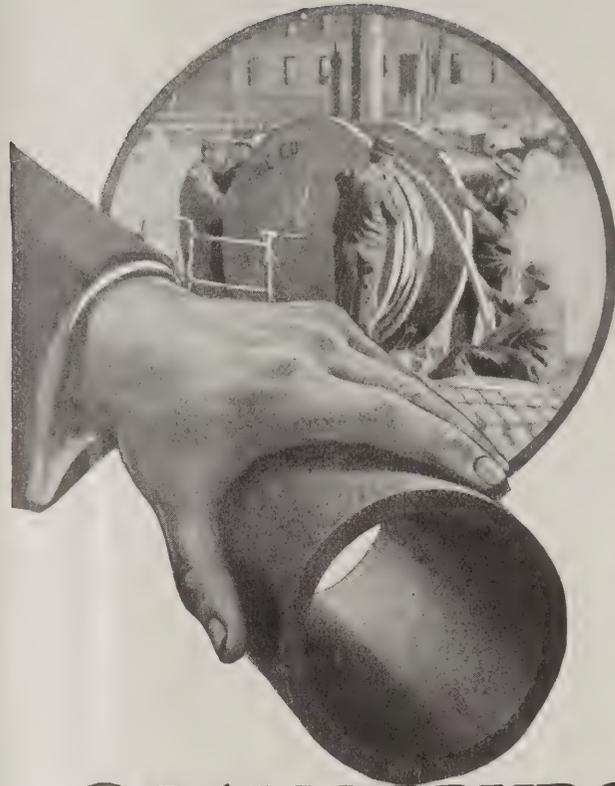
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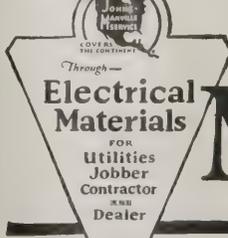
THE greater protection which fibre conduit gives its cables starts at the time when they are being drawn in.

Investigation shows that a large number of cable failures are the direct result of damage done in drawing.

Hence, the importance of the smooth bore of Orangeburg Fibre Conduit—cables can be drawn in with the minimum amount of pull, and with no danger from burrs, fragments, or intruding edges of cement.

There is a big ultimate economy in the protection of fibre conduit, not only from this protection in drawing, but in the greater protection it gives after the cables are installed. Replacements are costly in both material and labor, but after all, service interruption is the big cost—and service interruption is far less frequent where fibre conduit is used.

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Time and the aid of America's foremost engineers, have enabled us to develop and manufacture the highest grade wire known to the trade. It is greatest in conductivity and lasting qualities, due to the superior quality of material from which it is made, as well as its *Extra Double Galvanizing*, which insures longest life.



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Single and Double Galvanized, Standard, Siemens-Martin, High Strength and Extra High Strength Grades.

HANDLED BY MOST JOBBERS

MANUFACTURED BY

INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

MOAB, UTAH.—At the annual meeting of the Midland Telephone Co., J. N. Corbin was elected president and manager; M. N. Due, vice-president; F. C. Merrill, secretary-treasurer, and W. J. Moyer and H. Stommel, directors.

OCONTO, WIS.—At the annual meeting of the stockholders of the Oconto Rural Telephone Co., F. Lingelbach was elected to the directorate to fill the vacancy caused by the death of George Beyers. D. H. Barker and F. Schedler were also elected members. The officers chosen are: President, J. B. Chase; vice-president, F. J. Lingelbach; secretary and manager, C. Hermsen; and treasurer, F. Schedler.

PRINCETON, WIS.—The stockholders of the Princeton Telephone Co. have chosen as their directors for this year: F. Spooner, A. Kohnke, W. Merge, J. Lese, and W. Krebe. E. Westfield was elected secretary-treasurer, and the president will be elected later.

Miscellaneous.

BRISTOW, IND.—The Bristow and St. Meinrad exchanges of the Indiana Bell Telephone Co. have been sold to E. R. Cooper.

HERINGTON, KANS.—The directors of the Herington Mutual Telephone Association have been authorized to sell the exchange and plant to the United Telephone Co., of Abilene.

CRYSTAL, MICH.—The exchange of the Crystal Telephone Co. was damaged by a fire which swept the business district recently.

LEBANON, MO.—The lines of the La Clede County Telephone Co. were put out of commission during the early part of February because of damage to the exchange and plant by fire.

MORRISTOWN, TENN.—The Peoples Telephone & Telegraph Co., of Knoxville, has purchased the Home Telephone Co.

ELGIN, TEX.—E. W. Felter, of Austin, has leased the Elgin Independent Telephone Co. and has taken active charge.

POWELL, TEX.—J. B. Germany has sold the Powell telephone exchange to Mr. Weir, of Mt. Pleasant, who will make extensive improvements.

BIG ISAAC, W. VA.—The property of the Peoples Telephone Co. in Doddridge County was purchased by Henry Moore at a receiver's sale for \$5,000.

CLARKSBURG, W. VA.—J. R. Watson and some associates have purchased the property of the Peoples Telephone Co. in Harrison County.

MILTON JUNCTION, WIS.—The Milton & Milton Junction Telephone Co. has purchased a residence, which it will use as an exchange.

PRAIRIE DU CHIEN, WIS.—Some damage was sustained by the Union Telephone Co. because of fire a few weeks ago.

HELP WANTED

HELP WANTED—Experienced telephone man for a magneto system of 500 phones. Town 600. Traction and steam Ry. Central Indiana. Must understand construction and maintenance in detail. Permanent position. Ready for work May 1st. Man with family preferred. Write LaFontaine Telo. Co., LaFontaine, Ind.

WANTED—First-class cable man, under work, for about three or four weeks. Wire salary and when you can come. Winnebago County Telo. Co., 311 Trust Bldg., Rockford, Ill.

WANTED—Telephone man to take charge of magneto system of 350 phones. Must be capable to stretch wire, take care of switchboards, and shoot trouble. Furnish own conveyance. Salary \$150 per month. Address Medina County Farmers Telo. Co., Wadsworth, Ohio.

WANTED—Telephone linemen and troublemen. Permanent if satisfactory. References required. Address Manager, West Coast Telo. Co., St. Petersburg, Fla.

WANTED TO BUY

WANTED TO BUY—One cross connecting rack, 100 to 600 lines. Address Farmers Telo. Co., Milan, Mo.

WANTED TO BUY—Telephone plant in California. 500 or more stations. Address Henry Harris, Whittier, Calif.

WANTED TO BUY—Telephone plant in Northern Wisconsin or west of Mississippi river. Not to exceed \$10,000. Address Box 78, Wyocena, Wis.

POSITIONS WANTED

POSITION WANTED—By all around telephone man. Married. Age 38. Supervisor or mechanic. Good reference. Prefer Middle West. Address 5277, care of TELEPHONY.

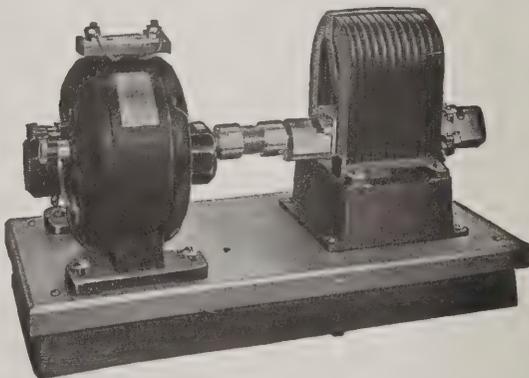
POSITION WANTED—To learn and as helper of some telephone exchange. Age 23. One and one-half year's experience. Address Felix A. Riehle Athens, Wis.

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eye peeled
for our



The

**NORTH ELECTRIC
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Manufacturers of telephone equipment since 1884

Two-page
Announcement
APRIL 21

The last one was in the April 7th issue

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of efficient modern equipment.
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Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
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CURRENT OPINIONS AND COMMENTS

The prediction was made at the Wisconsin telephone

convention last month that, with the development of the nation-wide good roads movement, it would not be long before public agitation would begin for the planting of shade trees along the improved highways.

As this is likely to prove a serious matter to telephone companies, the suggestion was made that definite steps be taken to urge the planting of fruit trees, or low-growing shrubs, so that in the ordinary course of events they would be kept trimmed down to proportions that would not interfere with telephone lines.

* * * *

That this suggestion is most timely is indicated by the recent announcement of the Highways Information Service—the good roads movement propaganda bureau—that the building of paved highways in the rural districts of many states is to be followed by the planting of shade trees along such roads.

Pennsylvania and Minnesota are states where the matter is being encouraged especially. It is said that arrangements are being made to plant 30,000 trees in Minnesota alone.

* * * *

As was pointed out in the Wisconsin convention, this tree-planting along country roads is liable to cause telephone companies a vast amount of trouble. As it seems sure to come, the only thing the telephone interests can do is to try to direct it so the least amount of embarrassment to service will result.

Fruit trees—apple, cherry, plum, etc.—are usually kept trimmed comparatively low, so stepladders may be used in picking the fruit, and they spread out rather than grow in height. This would furnish the shade the traveling public will demand along state roads, and yet not seriously interfere with the telephone lines that parallel the highway.

* * * *

As roadside planting seems inevitable, this suggestion promises a solution that will be more favorable to telephone and other utility men. They should watch the situation and exert their influence in guiding the state tree-planting development in that direction.

Paved roads radiate much more heat on summer days than do dirt or gravel roads, which fact will induce people to demand shade trees. The old objection that spreading tree roots would crack the asphalt surface—and that, therefore, no trees should border the highways—no longer holds good, as this rarely happens on city streets, and the same precautionary measures will be taken.

* * * *

Highway builders say it is only a question of time when every state will have an extensive system of paved roads lined with shade trees. The Wisconsin suggestion of encouraging the planting of low-growing fruit trees that will not interfere with overhead wires should appeal to telephone interests as a useful idea to get behind and popularize.

Besides, there is a good talking point that the public

would doubtless prefer to ride between rows of trees that might furnish the passing traveler a snack of fruit.

* * * *

Because of their female operators, telephone companies will have a peculiar interest in the United States Supreme Court decision declaring unconstitutional the law fixing a minimum wage for women in the District of Columbia.

Minimum wage laws are now in effect in Kansas, Arkansas, Minnesota, Wisconsin, North Dakota, Colorado, Utah, Arizona, Oregon, Washington, California and Massachusetts. Bills are also pending before the legislatures of New York, Ohio and New Jersey for a minimum wage act, and in Illinois a strong effort is being made to establish an eight-hour day for women, in which telephone operators are taking a keen interest.

Just what bearing this decree of the highest court in the land will have on existing state laws is problematical. Women's organizations fear it will injure women's status in the working world, possibly lowering their wage or increasing their hours of labor.

* * * *

Broadly speaking, the court holds that under the Constitution employer and employe must be left free to make contracts with each other. Liberty of contract is guaranteed under the Constitution. Furthermore, the act under discussion was considered discriminatory, in that it favored women who, the opinion stated, are

today as fully able to make contracts as are men.

* * * *

The annual report of the Western Union Telegraph Co., issued April 1 indicates that this corporation is growing restive under government restrictions of its cable business. The radio is cutting in on the cable tolls, making rates 30 per cent less than the cable rates, and is not subject to the same restrictions which the government places on telegraph companies under the Kellogg act.

In its complaint of government interference the Western Union's report finds it hard to understand the bureaucratic viewpoint of the average government official who sticks to a written rule or tradition no matter what the consequences.

* * * *

The report says one good thing in this connection, when it remarks: "The training of government employes dealing with foreign affairs is the result of habit and tradition. Both the habit and the tradition of government tend towards inertia—that property of matter by which it tends when at rest to remain so, and when in motion to resist change of direction. This is probably good diplomatic practice, but business becomes pale and anæmic under such procedure."

That is one way of saying that too much government interference stunts business development. "Pale and anæmic" are mild terms to describe the blight that befalls business hampered by too much government restraint, but probably the Western Union did not care to go too far in criticizing the government department which regulates its toll business.

Apparently, the disposition to have the government interfere with business and personal affairs is beginning to attract general attention—not to say hostility. Citizens in the East are organizing a league for the general betterment of national conditions, and two of the six planks in its tentative platform deal with this subject.

These sections in the declaration of principles assert the time has come "to halt the tendency of governmental interference in every domain of life," and, furthermore, "to maintain individualism."

* * *

Laws which give the government the right to take a hand in the affairs of a class of citizens frequently result from an effort of that class to obtain government aid. An appeal is made to Congress to help a certain class, and, if the appeal is granted, Congress provides that there shall be regulations to be lived up to, in charge

of a bureau of office-holders, which, of course, means more political patronage—more jobs to be handed out.

This, of course, is truly characteristic of the political system of never granting a favor without getting something in return.

* * * *

It will be interesting to observe the development of this organization which bears the somewhat indefinite name of "The Liberal League." The Chicago Tribune already has adopted three of its principles and carries them daily on its editorial mast-head. They are:

"To renew and build up respect for the law. To halt the tendency of government interference in every domain of life. To prevent the destructive waste in government administration by the use of scientific methods, illustrated by the national budget."

All are excellent principles. The trouble is we have too many laws now. The second plank will receive general support. Taxpayers will welcome the third principle with a cheer, and for all the more reason that the more the government "regulates" individuals, the more money it takes to run the governmental machine.

That is the same as saying that the less regulation the less will be the taxes.

Special Transportation Equipment

Interesting Description of the Development and Application of Motor Vehicles and Their Associated Apparatus to Outside Plant Construction and Maintenance Work—Published Through Courtesy of the Bell System Technical Journal

By J. N. Kirk

Outside Plant Engineer, Department of Operation and Engineering, American Telephone & Telegraph Co.

In this paper is described in a general way the interesting application of motor vehicles and their associated apparatus in connection with outside plant construction and maintenance work, outlining through the successive stages of development what has been accomplished in this respect up to the present time.

In order to present a comprehensive picture covering this field of activity, the more primitive types of equipment, together with the manual methods of doing work, are shown in comparison with representative instances of higher development during the past few years in which this phase of the work has been given particular consideration.

The telephone system is different from most public utilities in that it is responsible for a universal service throughout the United States. Wherever the high-

ways and byways may lead, and in many instances where no traveled way could well exist, will be found the familiar and indispensable telephone, with the wire and cable on pole line and in underground conduit. Irrespective of the remoteness of the territory, of the subsurface or the climatic conditions involved, there must always be found a way to construct and maintain the telephone plant.

To install this widely-distributed plant and continuously safeguard the service in response to the ever increasing public demands, it is essential that facilities be provided for the prompt and safe transportation of quantities of heavy, bulky materials and gangs of men to any point in the telephone system during emergencies as well as under normal conditions, and that provision also be made to supplement the necessary manual operations

in every way possible by the proper adaptation of mechanical apparatus.

It might be helpful in this consideration to compare the construction problems of the telephone companies with the production problems of any large manufacturing concern. The transportation of raw materials, of the products during manufacture, and of the finished products, together with the application of labor saving machinery in this connection, unquestionably constitute a very real problem to the manufacturer. In this case, however, all of the activities are so completely concentrated and under his control to such an extent as to greatly simplify the efficient and economical operation of all units involved.

Let us consider this large, self-contained manufacturing plant completely dismembered, with the various machines

and manufacturing processes widely scattered over distances of many miles instead of a few feet, and we have a very fair comparative picture of the relative importance of the telephone companies' transportation and construction apparatus problems in providing and maintaining efficient service. Because of this fundamental condition which obtains in the telephone industry, all outside plant machinery units must be portable, of comparatively small capacity and yet of high efficiency.

To meet these exacting requirements the Bell system is ever on the alert to avail itself of every possible advantage in the development, adaptation and application of transportation equipment, machinery and methods. By means of this mechanical equipment the heavy units of material are handled with ease, safety and dispatch by the gangs, leaving them fresh for the lighter detail work requiring dexterity but practically no heavy, straining effort.

When one speaks of automotive and construction apparatus or machinery developments as applied to the telephone business, such development must naturally appeal to many as being foreign to and rather difficult to closely associate with the furnishing of telephone service. We are, however, in the midst of a truly mechanical age, and the more we study and experiment with the adaptation of mechanical equipment to the new lines of telephone activity, the broader seem to be the fields of applicability and the more evident becomes the necessity of closely coordinating the various phases of adapting commercial equipment and developing new types of apparatus for telephone use.

It is the intention in the following to outline a number of the more important developments associated with the adaptation of mechanical methods to outside plant construction and maintenance work. In presenting the picture contrasting the construction methods of today with the earlier practices, one cannot but note the



Fig. 1. Horse-Drawn Vehicle in Telephone Service—Courtesy "Telephone Review."

remarkable developments and improvements which have come about.

Transportation Equipment.

It is reported that some 40 years ago, after deliberating for an entire day the directors of one of the now large associated Bell companies decided that the volume and nature of the company's business warranted the purchase of a horse and buggy. Fig. 1 represents such an outfit as was probably purchased and which, in connection with the telephone business of today, is about as rare as the motor vehicle is common-place.

As representative of some 15 years later we have illustrated in Fig. 2 the one-horse, light construction wagon, the predecessor of the three-quarter and one-ton-motor vehicles which now handle light construction, certain classes of station installation work, section line work, etc. It is interesting to note the improvised reel on the rear wheel of the wagon and also the warning "Be Careful of Accidents" which is printed on the side of the



Fig. 2. Light Construction Truck of About 1896.

body. These features are indicative of the fact that the labor-saving equipment and "safety first" movements which have now reached such broad proportions in the telephone system were germinating at least as far back as 1896.

The heavy construction gang unit of 1896 shown in Fig. 3, brings to mind the original method of employing large gangs which, with practically no labor-saving equipment available, necessarily had to handle the heavy features of outside construction work by "main strength."

In the interval between the advent of the horse-drawn vehicle and that of the motor vehicle into the telephone business, bicycles were used to some extent. These comparatively slow, energy-consuming vehicles, however, soon were superseded by the motorcycles which for a few years, principally the period between 1914 and 1920, were considered a very necessary factor and played an important part in connection with the maintenance and, to a lesser extent, the construction of the telephone plant.

Several hundred machines of these types



Fig. 3. Heavy Construction Truck Carrying Gang, Tools and Materials, 1896.

were at one time used by the various companies, but experience has indicated that their use results in high maintenance, that they present many features hazardous to the employes and general public, and that they are more or less detrimental to the health of those who use them to any great extent.

While the motorcycles have the advan-

tage that they can generally worm their way through traffic more readily than an automobile, this advantage is completely overbalanced by the universal tendency to speed in riding motorcycle, by the many serious accidents from skidding on wet pavements, the difficulty in riding over roads having deep wheel tracks, the entire lack of weather protection for the rider, and the instability of the sidecar outfits when turning corners. The use of motorcycles by the telephone companies is now practically, if not entirely obsolete.

The many adaptations of the Ford car have proven in over the motorcycle by a large margin from practically every viewpoint. There are now more than 5,000 Fords in the service of the associated companies. This group of cars is often referred to in telephone parlance as the "mosquito fleet" and it is interesting to note that the building up of this fleet had its inception as late as about 1914.

Approximately 80 per cent of these Fords are equipped with various types of boxes and specially designed bodies

which permit the carrying of light loads of materials and tools. On account of their large numbers, low operating costs and remarkable ability to negotiate almost impassable roads, they go far toward coordinating the operation of the widely scattered units of the telephone system.

In telephone work the Ford runabouts average approximately 9,000 miles per car per year. Normally, their net loads vary from 150 pounds to 750 pounds, although in emergencies they are sometimes seriously overloaded.

Fig. 6 shows a telephone company Ford seriously overloaded while transporting splicers' equipment. In fact, the net load carried by this particular car, including the four men, was about 1,300 pounds. This illustrates a case where the service for which the vehicle was originally supplied, has outgrown the load-carrying and space capacity of the unit. Of course, if this practice were permitted to continue or become general, it would be expensive, both from a motor vehicle operating and gang service viewpoint, not to mention the hazard presented in carrying two of the men in such a precarious position.

It is apparent that in order to find a particular item of tools or material on this car it might be necessary to completely unload.

As regards the effect upon the car, the tires frequently blow out, the front construction requires constant attention to keep it tight, the springs depress to the extent that the fenders are permitted to ride upon the tires, the steering is difficult, etc.

As soon as it was recognized that this particular service was outgrowing the transportation unit, a special side box body upon a high-speed, one-ton Ford truck was developed and is now undergoing service trials in order to properly provide a unit having ample space and load-carrying capacity. Fig. 7 shows some of the latest ideas in the design of such an outfit. Note the ample kerosene tank slung under the rear end of the body with a convenient filler pipe on the rear end of the left side box and a faucet under the tank with hose connection for filling the splicers' furnaces with oil.

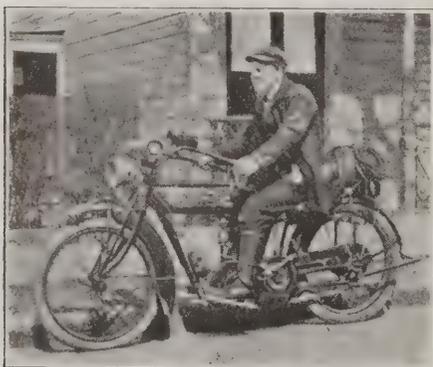


Fig. 4. Motorcycle Which Was Used for Maintenance Work—Courtesy "Telephone Review."



Fig. 5. Motorcycle with Sidecar Used for Instrument Installation Work—Courtesy "Telephone Review."

As an illustration of a Ford runabout especially adapted for the work of serving an installer and helper in placing telephone sets together with the inside wiring and the drop wires from pole to house, Fig. 8 is presented.

It will be noted that in this design the body extension back of the seat is limited in order that only a small weight over-hang back of the rear axle is possible. This is important in order not to



Fig. 6. A Seriously Overloaded Ford Carrying Splicers and Their Supplies.

overstrain the rear spring. The body design is made as light in weight as practicable in order to provide ample net load carrying capacity.

There are now on the market innumerable Ford accessories which are claimed to correct all of the ills to which the Ford is subject. Careful studies and field trials, however, indicate that by far the greater portion of these devices are of no advantage and many are actually detrimental to the efficiency and safety of operation. However, through careful selection and in some cases modification of certain of these accessories to meet specific telephone service requirements, it now seems probable that somewhat more efficient, economical and safer operation will be realized.

About 1910, carefully prepared studies indicated the practicability and economy of utilizing gasoline driven motor trucks for the transportation of men, supplies and construction equipment of various kinds.

The first automobile trucks were proven

in over horse-drawn vehicles on the basis of using the trucks as purely transportation units. However, it soon developed that there were many possible economical applications of the motor truck in connection with the placing, moving and removal of pole lines, aerial cables, underground cables, wires, etc., bringing into use the many accessory devices such as winches, derricks, earth-boring machines, various types of trailers, pumps and other safety and labor-saving apparatus. The importance of some of these devices in telephone construction work will later be described.

The motorizing of the Bell system has been very rapid since 1910. Because of the widely scattered distribution of outside telephone plant it is necessary, in transporting the workmen, together with their tools and materials, to employ in the Bell system approximately 3,000 trucks and tractor-trucks of from $\frac{1}{2}$ ton to 15 tons capacity.

These together with the "Mosquito Fleet" and the relatively small number of supervisory passenger cars of a better class, make a total motor vehicle strength of over 8,000 units in the Bell system. In addition to this company-owned equipment, there are employed annually by the associated companies several hundred hired motor vehicles.

In the neighborhood of 25,000 employees depend upon the system's transportation equipment as an indispensable part of their daily work—that is, in its capacity of labor-saving machinery as well as in moving the men, together with their tools and materials, from their bases of operation to the job and back, and also between jobs.

The annual cost of providing this transportation service for the Bell system is in the neighborhood of 12 to 14 million dollars. Although this total is a sizable amount, it is actually small when compared with the service rendered and when considered upon the basis of slightly less than \$6 average cost per car per day used, including all units from 750 to 30,000 pounds net carrying capacities.

Studies are constantly being made in connection with the opportunities presented along the line of increasing the mechanical efficiencies and lowering the main-



Fig. 7. Ford Truck Equipped with Modern Side Box Body.



Fig. 8. Ford Runabout of the Latest Type in Telephone Installation Service.



Fig. 9. Heavy Construction Gang Truck, 1910. One of the First in Telephone Service.

tenances costs of the various units. As the result of this work much is being accomplished in conserving the working time and energy of the men by employing proper labor-saving facilities with the motor vehicles in order to do practically all of the slow, heavy work by proper application of power from the motor vehicle engines. The continuation of this field of study should tend toward offsetting the constantly increasing construction costs.

The realization of the most important savings in the motor vehicle field—that is by making the truck units serve the gangs as labor-saving machines in addition to their use as transportation equipment—involves the use of winches driven from the truck engines, derricks for all kinds of pole work, for handling loading pots, etc., suitable trailers for transporting poles, reels of cable and other materials, the use of quick-acting safe drawbars for trailing loads behind the trucks, the use of the truck equipment for pulling the proper tension into aerial cable strand and for pulling in the aerial cable, the use of the power equipment with suitable accessory appliances for pulling-in or remov-

ing underground cable of power-driven collapsible reels for quickly pulling down and coiling up open wire, employing improved methods with the assistance of the power equipment for the handling of all heavy loads (such as reels of cable on and off trucks), and for numerous other uses.

In addition to these savings, important economies can be realized by equipping

the units it would be necessary to equip them with special side box bodies, winches, derricks, etc. Designs for these various items of equipment were prepared in accordance with the best information at hand and the resulting units of about 1914-1916 were so heavy and bulky that some of the three-ton trucks carrying this equipment were loaded practically to capacity exclusive of their complement of material, tools and men.

This led to the introduction of five-ton truck units in heavy construction work. Fig. 10 shows an old type of body equipment in which the arrangement and size of the side box compartments are such that practically no free load capacity was available. A rear view of this outfit would more clearly indicate the absolute lack of space for carrying materials such as reels of strand and cable, etc.

In the past few years and at the present time the developments are toward lighter weight, more efficient bodies and labor-saving equipment as is illustrated in Fig. 11 and later in this paper under the discussion of winches.

The use of this equipment is permitting a material reduction in gang sizes which

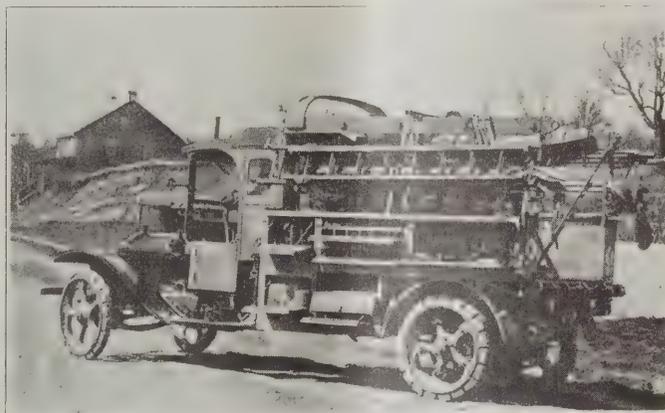


Fig. 12. Latest Type Two-Ton Heavy Construction Unit Showing Tool, Material and Locker Compartments Open.

the construction units with suitable bodies to meet the various construction requirements.

In reviewing the progress in the use of motor vehicles it is interesting to note that in the first few years it became apparent that in order to properly utilize



Fig. 10. An Old Type of Side Box Body Construction.



Fig. 11. Latest Type Two-Ton Heavy Construction Unit.



Fig. 13. Side Boxes Opened Showing Arrangement of Tools and Materials.

in itself further reduces the weight to be carried on the truck. The net result is that instead of a three or five-ton unit weighing loaded 18,000 or 25,000 pounds, it is possible to handle the work more satisfactorily with 2 or 2½-ton units weighing in the neighborhood of 12,000 pounds.

The advantages gained by this reduction in truck size are large. Not only is the initial and operating cost of the equipment much less but the more important feature is that these two-ton trucks can penetrate and economically operate in territories where a heavier unit could not negotiate the roads. Many country bridges will not carry more than six tons.

Also, on the narrow country roads, the comparatively shorter wheel base of the two-ton truck permits easier turning around or maneuvering.

Figs. 11, 12, 13 and 18 present illustrations of some of the latest developments in line construction truck design and associated equipment. The particular type of body shown has been selected as an example from the various types employed by the telephone companies because of its broad use and because it so well illustrates the general development which is taking place.

The outfits shown, except that in Fig. 13, are of 2 to 2½-ton capacity.

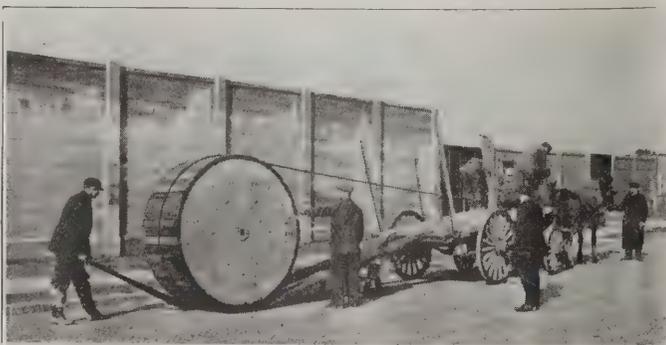


Fig. 14. Loading Cable Reel on Horse-Drawn Truck by Means of Two-Man Power Hand Winch.

manner, and the truck power plant, through the introduction of suitable winch equipment, is available for the heaviest



Fig. 16. Old Type Gasoline Engine Driven Winch on Horse-Drawn Truck.

duty, slow speed work as well as the lightest duty, high speed work which may be encountered.

A more complete description of some of the principal features embodied in this combination

material distributing, tool and gang delivering unit, power plant and general work shop, may be of interest.

With regard to some of the more important points incorporated in the body: Every construction crew must carry a large number of different comparatively small materials and tools. The old method of piling the mixed tools and materials, in large boxes carried in the truck body led to much lost time on the job in looking for particular items as required in the course of the day's work. The foreman could never be quite sure as to just what he had on his truck, which resulted in two unsatisfactory and uneconomical conditions:

First, otherwise unnecessary extra trips were made between the job and the storeroom to secure materials thought to be on the truck but which could not be located when needed.

Second, due to the lack of orderly arrangement, much more material was generally carried than was actually needed,

which resulted in excessive loads upon the trucks and, in the aggregate, an unnecessary large material supply balance for the company.

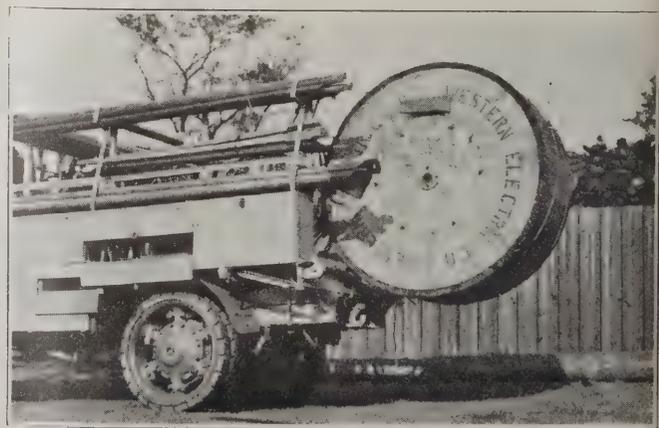


Fig. 15. Loading Cable Reel, by Use of Sheave and Spindle with Rope Sling, Without Skids.

The new type of body is the result of careful field study. In this particular one, of the several designs necessary to meet the requirements of the subdivisions into which the construction work naturally divides itself, it will be noted that side boxes are provided of such sizes as to satisfactorily house in an orderly manner the small tools and materials, suitable hangers and racks are arranged to carry the larger tools and materials, space is available for chauffeur's chains, tools, grease, etc., and compartments are also provided for the extra clothing and lunches of the men.

Safe and readily accessible locations are provided for the heavier equipment, such as members of the pole derrick, digging bars, shovels, ladders, etc. Fig. 13 shows a close-up view of the orderly and readily accessible arrangement of tools and materials.

It should be particularly noted in this connection that the truck body arrange-

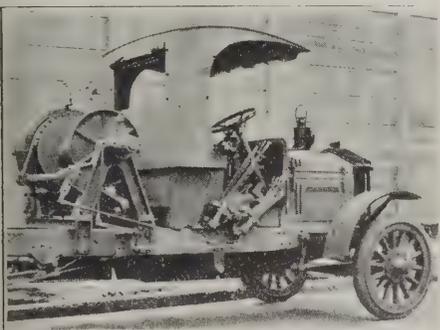


Fig. 17. Old Type Heavy Winch on Five-Ton Truck Chassis.

ment is such that with its full complement of tools and materials there is available a maximum of free load space.

With the further thought of conserving the health of the crew when operating in sections where suitable drinking water cannot be obtained, a sanitary keg is provided for carrying an ample supply of pure water. Paper drinking cups are used. A safe, clean, dry, convenient location for the "First Aid" kit is built into the top of the cab.

A small vise for the use of the gang and chauffeur is attached to one of the running boards. The cab also incorporates every possible feature of safety and protection to the driver, and a tarpaulin is so arranged as to provide maximum protection for the men in case of bad weather.

As may be noted in Fig. 12, a spindle and sheave have been provided which can be mounted across the top body rails either at the rear end or the middle of the truck in order to permit the use of the winch rope for loading and unloading cable reels or reels of strand without the use of skids.

Fig. 14 shows the old manual method of loading a reel of cable on a horse-drawn truck. This operation involves the slow

and laborious method of rolling a two or three-ton load up an inclined plane by means of a hand winch. It should be noted that six men are engaged in handling this reel and that at least two of them must of necessity occupy positions which present more or less hazard in the event that the winch rope should break or some part of the mechanism otherwise fail to hold the suspended load.

This familiar method of winch operation by means of a manila rope, laboriously wound upon a ratchet stop drum by two men, was limited entirely to loading and unloading heavy items of material from the truck platform. For this purpose it was, however, a great improvement upon former methods even though it was very slow and not entirely free from danger.

In Fig. 15 a similar reel of cable is being loaded on a motor truck by means of the engine operated winch in conjunction with the sheave and spindle feature previously mentioned. In this case the possibility of hazard to the workman is completely removed.

The reel is loaded in a fraction of the time required by the old manual method and the entire operation, after adjusting the winch line, is completed by the chauffeur from his position in the cab. In the event that the winch rope or other parts of the mechanism should fail, the result would be a vertical drop of the reel of cable, perhaps slightly damaging the reel, but the employees are not required to take positions where they are in any danger.

Fig. 16 shows the first type of power winch application to telephone construction work. This unit consisted of a slow speed, heavy duty, single cylinder, gasoline engine unit permanently mounted on a horse-drawn truck. It was used princi-

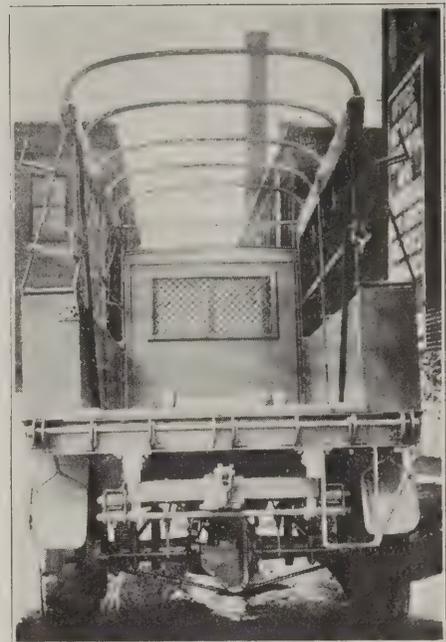


Fig. 18. Rear View of Latest Type Two-Ton Construction Truck Showing Winch Below Cab Window. General Clear Body Platform Space Is Evident.

pally for pulling in underground cable and was a great improvement over the former method of pulling by means of horses. It will be noted that on this winch steel rope was used.

With the engine-propelled truck came the possibility of utilizing the truck power through a special power take-off to drive a winch which would not only be more powerful, but also much more rapid in action and distinctly superior with regard to the important feature of control.

Fig. 17 illustrates one of the original types of power winch on a five-ton chassis.

(Please turn to page 30.)

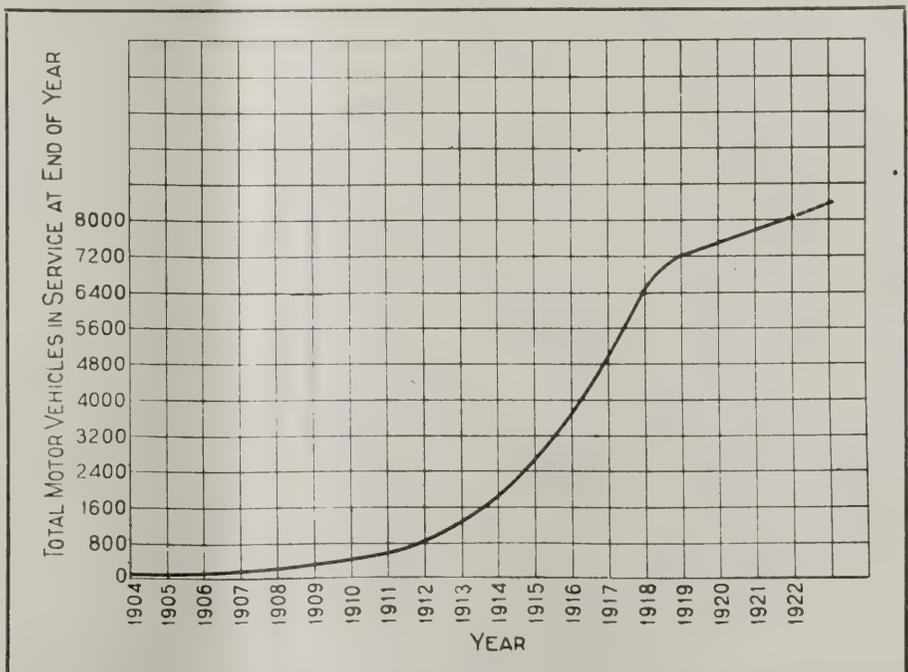


Fig. 19. Curve Showing Growth of Motor Vehicle Fleet in Bell System.

Commercial Service Bureau Work

Plan for Increasing Use of Toll Facilities by Business Houses—Survey of Subscriber's Equipment for Providing More Efficient Service—Paper Presented at District Meeting of New York Up-State Association at Syracuse

By L. E. Williams

District Commercial Representative, New York Telephone Co., Syracuse, N. Y.

It is my purpose to outline briefly commercial service bureau work, how it has already been tried out and its results in our territory, and how it may be successfully used in the territories of your respective companies.

The work was first conceived as a medium for increasing the use of toll facilities; this greater use of toll facilities to be brought about by suggested telephone selling methods that might be applied to advantage by the sales or distribution branches of the larger commercial organizations.

Later it was realized that in order to make this toll stimulation work of a lasting effect, it would be necessary to obtain, not only the co-operation of the subscribers, but also the subscribers' utmost confidence. It was believed that this confidence would be more readily forthcoming if a direct, tangible service was rendered to them. With this in mind, the telephone service survey of the subscribers' equipment had its conception.

This telephone survey consists of looking over the existing telephone equipment of a subscriber, ascertaining if it is conveniently and properly located and if it is efficiently and properly used. Considerable attention is given to the quality of maintenance, and of the operating service furnished to the subscriber by the telephone company. Providing it is found that the maintenance is faulty, immediate action is taken to remedy this difficulty. Also if traffic difficulties are being experienced by the subscriber, the necessary attention to this fault is given immediately.

Definite recommendations are outlined to the subscriber to remedy any faulty operation of his service caused by his own employes. Suggestions are also offered which, if put into effect by the subscriber, will result in economies and greater efficiency being realized in the handling of certain phases of his business.

The results of the survey are compiled in a written report and are presented to the head of the concern whose service has been observed. In securing the details and data for this report, numerous contacts are made with different employes and officials of the subscriber's "business family," which offer excellent opportunities for creating good will and establishing in the minds of these people a more correct and better understanding of the telephone company as a whole.

Soon after this survey work was established, it became evident that the commercial service bureau work was comprised of two general phases; toll stimulation and the establishing and maintaining of proper relations with subscribers.

The toll stimulation results can be measured more or less accurately by an immediate increase in toll usage, which is usually evident soon after the commercial service work is applied. The results that can be accomplished in cementing good public relations are not always immediately apparent but oftentimes outcrop advantageously in the most unexpected places and at the most opportune times.

A few cases taken at random from Syracuse and the surrounding territories

AN EXECUTIVE'S WORK.

It is the business of every executive to know his men and, knowing them, to place them so that they can use their abilities with the most effective results. Executives mistake their duties or fail in their purpose if they do not so place their men that they rouse all their dormant power and bring the best that is in them to the surface.

The duty of the executive is to plan, to adjust; but the organization does the work. Improperly placed men do not reach their highest points of endeavor. Where an organization fails, it is more often the fault of the executive than of the men.—W. H. Woodin, President, American Car & Foundry Co.

are cited to indicate the possibilities of accomplishment along parallel lines awaiting you in your exchanges.

We have a branch of a wholesale rubber company, whose telephone equipment consists of an individual and auxiliary line, that, during one month recently, made telephone sales amounting to \$22,686 at a distribution cost of approximately 1 per cent. The monthly toll revenue received was \$260.

A wholesale seed house whose telephone equipment consists of an individual and auxiliary line formerly handled its sales in the suburban districts by two field salesmen working upon a commission basis. This year it handled these sales from the home office by telephone with better results than had been experienced in

the past by having the salesman in the field.

This manner of handling its business resulted in a toll revenue increase of 150 per cent, yet the cost to the subscriber was considerably less than the commissions formerly paid to the field representatives.

A flour milling concern, which is an individual line subscriber, accepted suggestions that we offered relative to supplementing its eight field salesmen's efforts throughout New York state by telephone selling from its Syracuse office.

It is interesting to note in this particular case that the manager of the company called at the Syracuse office and registered a complaint relative to a proposed change of its telephone number. This number change was necessary in connection with the establishing of the machine switching central office in Syracuse. At the time that the complaint was made it was believed that this subscriber could make greater use of toll facilities in connection with increasing and stimulating its own business and for this reason the complaint was handled by the commercial service bureau.

The necessity of the number change was explained satisfactorily to the subscriber and at the same time a definite selling plan was also offered. The manager of the flour milling company thought so well of the plan presented that immediate steps were taken to establish it.

This subscriber started its telephone selling on August 8 by filing 64 long distance calls. Fifty-eight of these calls were completed and 45 per cent, or 26 calls, resulted in sales. The 26 sales involved 4,750 barrels of flour, two orders being of 1,000 barrels each. The total orders secured on this one day through telephone selling amounted to approximately \$40,000. The toll service cost to the subscriber was \$78.40, the percentage of toll cost to sales being 1/10th of 1 per cent.

A local retail hardware company, a subscriber to a private branch exchange of medium size, was using under five dollars' worth of toll service per month. A service survey was made for this subscriber during the spring months, and the suggestions and recommendations relative to improving its service generally, which were brought out in the survey, were so acceptable that it was readily interested in a plan for increasing sales by the methodical use of the telephone.

At our suggestion this retail store created a telephone department to handle the sales of its "electrical hardware," not only in Syracuse but throughout the surrounding suburban towns. This hardware company, up to this time, had never made any definite effort to make sales other than "over the counter."

After creating the telephone department, it engaged four outside salesmen to handle the sales of vacuum cleaners, electrical washers, mangle irons, dish washers, fans and other electrical household appliances. In order to obtain the benefits of the full time of these outside salesmen, the head of the telephone department called the residence subscribers in the different suburban towns and secured, through the medium of these telephone calls, live prospects which later turned over to the salesmen, resulted in a higher percentage of actual sales. Incidentally this subscriber's toll service immediately increased to an average of \$40 per month.

We have in mind another small private branch exchange subscriber, selling investment securities who, at our suggestion and in order to give telephone selling a thorough trial in connection with the sale of securities, called in from his territory his six field salesmen and had them cover their territory by telephone calls instead of in person in connection with the marketing of a certain bond issue.

This subscriber filed in one day a total of approximately 250 calls. Of these calls, one list of 100 calls was filed for completion to his customers' residences at about 8 o'clock in the morning. A second list of about the same number of calls was filed for completion at about 9 o'clock in the morning to different business and banking houses in this territory. After these two lists had been completed, a third list was compiled by the subscriber, made up of his customers that his salesmen had not talked with previously and was filed for completion later in the day.

It is understood that \$100,000 worth of bonds were sold before noon of the day in question and over \$200,000 worth of securities were distributed before the end of the day. Of his entire list of customers, this subscriber reached all but one. The failure to reach this one customer was caused by the party being away from home the entire day.

All of the calls placed were "short haul" to nearby points. The toll revenue secured for this one day's calls amounted to \$81.80. This particular subscriber has increased his monthly toll usage by telephone selling over 100 per cent each month this year compared with his toll usage over similar periods of time since he started business in 1918.

From the foregoing, it can readily be seen that commercial service bureau work can be applied to the smaller subscribers with outstanding results. Along this same

line of thought I will outline hereinafter some of the accomplishments that have been realized with a few of the larger users of telephone service. In this connection the case of a state-wide milk and ice cream producing industry with headquarters located in a nearby city is cited.

The work for this particular subscriber was started by making a survey of its equipment which made possible sugges-

A CHANGING PERIOD.

This is a day of rapid change in the lives of the American people. Within a few years revolutionary things have happened in our religion and social attitudes. They are happening even more vigorously in our economic laws.

Yesterday was the day of the Warrior. Today is the day of the Capitalist. Tomorrow will be the day of the Thinker.—D. W. Griffith.

tions and recommendations for improving its service. A telephone selling plan was suggested and was put into effect by this concern in connection with the wholesale distribution of its ice cream products to different retail dealers in the outlying towns.

On the first morning that this subscriber started the wholesale distribution of its ice cream by telephone selling, 700 gallons of ice cream were sold in a period of one hour at a cost to the subscriber of 4 per cent. This subscriber's toll usage has increased from approximately \$1,000 per month at the time the telephone service survey was made, to an amount greater than \$2,000 per month at present.

A large manufacturer of electrical specialties was experiencing considerable equipment trouble with his service, caused entirely by the improper location of his private branch exchange switchboard. Since this subscriber's private branch exchange was installed, heavy machinery had been placed on the floor directly underneath the switchboard which, because of excessive vibration, interfered with the proper operating of it. This, coupled with the fact that the subscriber's private branch exchange operator was somewhat hostile to the telephone company and unduly critical, proved unnecessarily burdensome to our plant department in maintaining the service in a satisfactory manner.

Efforts had been made to convince this subscriber that its service could be greatly improved if the location of the board was changed, but were unavailing. At the time the survey was made this service interference was outlined to the subscriber in detail along with many other things of vital importance to his service. The officials of the concern called in their plant engineer and gave the commercial service bureau's representative authority to

choose, from the telephone company's standpoint, the best location for the switchboard and instructed their plant engineer to prepare that location as would be outlined by the telephone company's representative.

It developed that the best location in this subscriber's establishment was the private office occupied by its attorney. This office was taken for a switchboard room; sound-proof walls were erected, the lighting arrangement changed and the board was relocated in the new space. Since that time there has been no equipment difficulty experienced and the subscriber has admitted that his service has been wonderfully improved. This subscriber has increased his toll usage, brought about primarily by suggestions made in the survey, approximately 50 per cent over what was used in a corresponding period of last year.

An interesting incident happened some time after the survey work had been completed for this concern. One of the telephone company's officials was at a prominent club in this city at which time a number of the club's members were criticizing the telephone company. The president of this electrical company happened to be there when this occurred. His attitude toward the telephone company in contrast with that of the others was so favorable that some of them inquired in a joking way, if he was in the employ of the telephone company.

Of course, the stand taken by the president of the electrical company, could not be traced directly to the survey, but it is believed that his position was influenced to an extent by the work already done in his plant and offices by the commercial service bureau.

Recently a survey was made at Syracuse for one of the larger department store corporations which operate stores at Syracuse, Rochester and Buffalo. The head of this corporation had made considerable adverse criticism of the telephone company at the time of one of our rate increases. At that time he had established a rule in his store that no toll service could be used by his department managers unless his personal approval was first obtained.

The survey developed that the store was losing business through the inefficient handling of telephone inquiries and through lack of sufficient facilities in certain departments to care for telephone sales. It was also brought out that on account of the improper location of some 16 stations, the general public was making excessive use and abuse of this service and that the public telephones that had been installed by the telephone company for this traffic were not being used on this account.

All of the recommendations outlined in the survey were carried out by the subscriber. They involved, among other things, the removing of the 16 stations.

to points where they could not be used by the public and the relocation of the public telephones where they were more readily available for the public's use.

The original order that had been issued that toll service had to have the approval of the president was countermanded and a store "shopper" was established to care for incoming telephone inquiries. The store shopper in her spare time is to reach out in the surrounding suburban villages by telephone in an endeavor to secure more business.

The management of this concern stated, after the findings of the survey had been presented and inaugurated, that they had obtained, without expense to them, a service that would have cost at least \$300 if they had been compelled to hire a merchandising engineer to point out certain difficulties in the handling of their telephone work. A request was made at that time by the management of this department store company that similar surveys be made at their stores in Rochester and Buffalo. The results of this survey from a public relation standpoint are obvious.

I would like to give you a brief sketch of one more case, which deals with an entirely different type of business than has already been outlined. A request was received in the early part of January from a large steel concern with its executive offices and plant located in Syracuse and its sales offices in New York City, relative to securing assistance in solving some difficulty that it had been experiencing in connection with communicating by telephone between the two points. From investigation it developed that the trouble seemed to lie within the organization of the steel company as it was found that our traffic department was handling this company's traffic, both local and long distance, in an efficient manner.

It developed that calls between this concern's Syracuse and New York City offices were oftentimes duplicated; that is, a call would be filed by an official in the Syracuse plant for an official in the New York City office at about the same time a similar call was placed from the New York City office for the Syracuse representative, both calls oftentimes being completed before it was known that one of the calls duplicated the other.

It was pointed out to this subscriber that this difficulty could be overcome by the grouping of calls between Syracuse and New York and by handling them on a "dispatching" service. Furthermore, that this method would allow the majority of the calls to be handled upon a station-to-station basis. The general manager of this steel company readily grasped the idea and requested that the commercial service bureau's representative remain in his office while he dictated a letter to this company's New York office outlining the scheme and authorizing its inauguration, in order that

the service bureau's man could suggest any points that might be overlooked.

The plan actually adopted by the steel company was for each official or employe at the Syracuse and New York offices to register their calls with their respective private branch exchange operator every morning as soon as it was found neces-

WORK HARD.

Work hard and work conscientiously. There is no achievement in life that is possible without work. When work goes out of style we may expect to see civilization totter and fall.—John D. Rockefeller, Jr.

sary to talk with the distant office. The private exchange operator would take the name of the party requesting the call and the name of the party he desired to reach. Each request was listed in the sequence in which it was received by the branch exchange operator.

About 10 o'clock each morning the private branch exchange operator of the Syracuse office would place a station-to-station call for the New York office and, after the connection had been established, the different calls placed with her were completed over the one connection; also any calls listed at the New York City office with its private branch exchange operator, that were not duplicated on the Syracuse operator's list, were completed at this time over this same connection. A similar procedure was followed again in the afternoon if conditions warranted. A recent analysis of this company's toll service for one month indicated that it had used over 18 hours of circuit time to New York.

At the time this subscriber was interviewed, its toll usage averaged \$270 a month. Its toll usage since this plan was inaugurated is as follows:

February	\$ 350
March	495
April	540
May	700
June	1,275
July	770
August	811
September	1,041

Now, you may believe that commercial service bureau work can be applied with success in the larger cities and communities but that in the smaller towns of your respective territories, it would not be feasible. In this connection, I wish to call your attention to the produce business. Toll stimulation can be applied, and it will not only produce gratifying results to the toll user but also increased toll revenues to a considerable magnitude for you. Furthermore, I dare say there are one or more produce dealers located in the territory of most every company represented here to-

day. Is there any reason why your companies should not obtain their share of this potential toll business that is merely waiting for you to develop it?

There are many cases that may be producers of toll revenues. For example, I believe it would be possible, Mr. Wilcox, for the West Winfield Telephone Co. to interest the Hiteman Leather Co. in stimulating its business by the judicial use of toll service, especially, if you could show it that by using toll service in marketing its products it would reduce its distribution cost anywhere from 50 to 75 per cent.

You have, Mr. Seeley, at Norwich the Maydole Hammer Co. and the Norwich Pharmaceutical Co. that no doubt could be interested in this method of merchandising. If either one of these corporations realized that the use of toll service at certain times would help to solve some of their distribution problems, it should not be difficult to interest them in this service.

There is a branch of a large road machinery manufacturing company located at Marathon with its home office at Kennett Square, Pa. There must be continuous occasions when it is necessary for this concern to communicate between the branch and the main plant. It would seem, Mr. Carter, that you could present them with a scheme somewhat similar to the plan being used by the steel company as outlined previously in this paper which would bring additional toll revenues to the Killawog Telephone Co.

The Oswego County Independent Telephone Co., Mr. Sheahan, has an exceptional opportunity to apply this work. I recall only a few of the many industries that you have in your territory; such as, the Arrowheads Mills, Inc., manufacturers of paper; McHenry-Milhouse Manufacturing Co., asphalt roofers; Massaro Macaroni Co., macaroni manufacturers; Nestle Food Company, malted milk and milk products; Sealright Paper Container Co., makers of milk bottle caps and paper receptacles; and also a great many market gardeners who are compelled to seek their markets in New York, Philadelphia, Pittsburgh and other of the larger distant cities.

Mr. Smith of the Vernon Telephone Co. has two industries that it would seem could be approached in connection with telephone selling. The first is the Uehler Milking Machine Co. and the second is the Dairymen's League Condensary.

No hard and fast rule can be laid down as to just what plan or scheme of telephone selling should be presented to any concern as no two commercial companies are exactly alike, nor are their sales problems or the sales resistance experienced by each the same. For these reasons it is necessary to obtain some insight into their respective organizations in order to be able to suggest a telephone scheme that would be applicable.

Conferences and State Conventions

West Texas Telephone Co. Holds Fine Two-Day Chief Operators' Conference at Brownwood—Fifteen Independent Exchanges at Meeting—Excellent Programs for Meeting of Iowa Independent Association and Chief Operators' Conference

Fine Chief Operators' Conference at Brownwood, Texas.

West Texas Telephone Co. called a chief operators' meeting to be held in Brownwood on April 4 and 5, 1923. After thoroughly considering the matter, it was decided to invite all the connecting line companies operating exchanges surrounding West Texas Telephone Co. The result of this invitation was that there were representatives at this meeting from the Gulf States Telephone Co., San Angelo Telephone Co., Comanche Telephone Co., Southwestern Bell Telephone Co., Santa Anna Telephone Co., and Shields Tele-

different classes of service, the application of report charges and the overlapping ringing method, all of which would be discussed at the proper time.

F. W. Greber, general manager of West Texas Telephone Co., extended a cordial welcome to the visitors and explained the purpose of the meeting. P. A. Glanville, president of the Brownwood Chamber of Commerce, cordially welcomed the visitors in behalf of the Chamber of Commerce and the citizens of Brownwood. Following Mr. Glanville's address the chairman introduced G. N. Harrison, president of the West Texas Telephone Co., who

(b) The necessity of accurately recording the proper information on toll tickets and the reasons for furnishing the calling party with the proper information on the different classes of service furnished.

(c) Why the recording operator should pass all tickets to the proper outward operator.

"Duties of Inward Operators," led by Miss Ila Wells, Hamilton, and Miss Della Harris, San Angelo. This discussion took up in detail the duties of the inward operator in assisting the incoming operator in completing or getting the necessary in-



The West Texas Telephone Company Recently Sponsored a Most Interesting Operators' Conference Held at Brownwood.

phone Co. On account of a fire at Cross Plains the Home Telephone & Electric Co. was unable to have representatives attend this meeting. The register showed that 21 exchanges were represented, 15 of which were Independent exchanges and six Southwestern Bell Telephone Co. The territory represented covered 18 counties with a population of approximately 340,000 people.

The entire morning of April 4 was spent in the telephone building in a general get-acquainted meeting. The net result was that each young lady attending the conference became very much attached to the other and this is bound to result in a closer coöperation in the handling of business in the future.

The first business session was called to order at the Southern Hotel at 2 p. m. by D. J. Johnson, general superintendent single-ticket method, the establishment of

announced that several radical changes have been made in the operating practice and methods in the last three years, such as the establishment of toll centers, the West Texas Telephone Co., who gave a short history of West Texas Telephone Co. and spoke on the subject of "Service and Coöperation" These talks were very much appreciated by all.

The following subjects were then taken up and discussed in detail:

"Duties of Chief Operators and Their Assistants," led by Mrs. J. N. Hopper, Gatesville, and Miss Norma Ford, Brownwood.

(a) Treatment accorded the public in small offices.

(b) The proper coöperation of chief operators and wire chiefs in testing and locating switchboard trouble, first and lasting impression left with the public.

formation before the incoming operator releases the circuit.

"Duties of Through Operators," led by Miss Hattie Vorbeck, Ballinger, and Mrs. Lena Nabors, Lampasas. This discussion took up in detail the duties of the through or switching operators in assisting in the completion of all through connections.

"Duties of Outward Operators," led by Miss Ruby Garrett, Coleman, and Miss Nan Harris, Sweetwater.

(a) The outward operator should prop- and their responsibility in handling switchboard equipment by the operators.

(c) Selection, training and treatment of all employes under the supervision of the chief operator.

"Duties of Recording Operators," led by Miss Mary Withers, Comanche, and Mrs. J. M. Bates, Winters.



The Strowger equipment in the main exchange at Columbus, Ohio, has remained practically unchanged from the time it was installed in 1905. The cabinet in the foreground contains the only new equipment in the switchroom. The service is still good and maintenance simple and easy.



What Is the Life of Strowger Automatic Equipment?

A frequent and very natural question to be asked by the prospective purchaser of Strowger equipment,—but frankly, we don't know the answer.

We can only point to the many exchanges that have been and are still operating with Strowger equipment successfully and economically in all parts of the country—for periods varying from seven to twenty years. To mention but a few: St. Mary's and Dayton, in Ohio; Sioux City and Manchester, in Iowa; Lincoln, Nebraska; Wausau, Wisconsin; Grand Rapids, Michigan; Richmond, Indiana; Allentown, Pa.

Add to these records the years of experience gained in operating and maintaining the equipment, the better materials and improved manufacturing methods now available; and the physical life of Strowger switches lengthens indefinitely.

When considering the purchase of new central office equipment, compare the average length of life of the typical manual switchboard with that of Strowger equipment.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York
 International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
 London Paris
 Automatic Telephone Mfg. Co., Ltd., Liverpool Automatic Telephones, Australasia, Ltd., Sydney



- (a) The attitude of the recorder in the early inform herself with reference to the directions of the ticket and route before starting to build up a circuit to the called station.
- (b) The necessity of properly passing the ticket to the called station and reaching the called party or station.
- (c) Properly announcing the call to the distant operator and called party or called station and securing complete information from the distant operator or called party or station.
- (d) Timing, supervising, disconnecting and clearing toll circuits.
- (e) Chargeable reports.

"General Discussion." Under this heading came all matters of a general character with reference to operating problems and the necessity of applying standard operating methods.

"Local Operating Practice and Methods," led by Miss Pauline Maday, San Angelo, and Miss Tot Wood, Hico. Under this heading was discussed the matter of properly furnishing local telephone service, the necessity of a standard practice of ringing called stations and the watching of disconnect signals.

Each leader showed much interest in the subject assigned and handled her subject in a very capable manner.

Among the social features of the meeting was an invitation by West Texas Telephone Co. to all visitors to be its guests at the concert given by the St. Louis Symphony Orchestra on Wednesday evening, after which the party was entertained by H. R. Barlow, proprietor of the Southern Hotel dining room, with refreshments and a delightful social hour.

The visitors were entertained by West Texas Telephone Co. at the Southern Hotel with a banquet Thursday at noon and refreshments were furnished by the Alamo Mfg. Co. immediately after adjournment Thursday afternoon.

Iowa Association Has a Good Program for Its Convention.

That the convention of the Iowa Independent Telephone Association next week will be a big success is evidenced by the widespread interest which is being taken in it.

The manufacturers' exhibits promise to be better than usual, and there are so many that every inch of space available is being taxed to the limit.

Secretary Chas. C. Deering, of the association, announces that the Western Passenger Association has granted rates on the certificate plan, conditioned on the presentation of 250 certificates and applying to Iowa points. Everyone who goes to the convention should take advantage of this by procuring a certificate when he purchases his ticket to Des Moines.

The program for the meeting, which will be held at the Fort Des Moines Hotel, has this alluring prospectus:

TUESDAY AFTERNOON, APRIL 24.

President's annual address, J. M. Plaister, Fort Dodge.
Secretary-treasurer's report, Chas. C. Deering.
Legislative report.

Appointment of committees.

WEDNESDAY, APRIL 25, 10 A. M.

"Maintaining Telephone Cable," by M. T. Caster, Lincoln, Neb., plant superintendent, Lincoln Telephone & Telegraph Co.
"Industrial Iowa," by R. H. Holbrook, engineering extension department, Iowa State College, Ames.

WEDNESDAY, 2 P. M.

"Two Groups in the Industry," by F. B. MacKinnon, Chicago, president, United States Independent Telephone Association.
"Fundamentals of Americanism," by M. B. Pitt, Des Moines, former state senator.
"Managers' Problems," by P. M. Ferguson, Mankato, Minn.
Election of officers.
Committee reports.
Revision of constitution.
New business.

WEDNESDAY, 6:30 P. M.

Banquet—Entertainment features, dancing, initiation into Independent Pioneers' Association.

THURSDAY, 10 A. M.

"The Northwest Iowa Association, Its Work and Its Accomplishments," by W. H. Daubendiek, West Bend.

Round table conference:

Collection methods.
Underground cable.
High line interference.
Accounting practices.
Depreciation.

An opportunity for discussion of any problem managers want to raise.

THURSDAY, 2 P. M.

Continuation of round table conference.
Question box.

The chief operators, too, have several things to talk over regarding the service furnished their patrons and the advancement of their companies' interests. Their sessions will be held on the last two days of the convention and will include:

WEDNESDAY, APRIL 25, 9 A. M.

Address of welcome, by J. M. Plaister, president, Iowa Independent Telephone Association.

"Qualifications Necessary in the Selection of Operators," by Miss Julia Dwyer, supervisor of employment, Des Moines.

"Industrial Iowa," by R. H. Holbrook, engineering extension department, Iowa State College, Ames.

WEDNESDAY, 2 P. M.

"The Patron, The Operator, The Company," by Miss Fay Johnston, chief operator, Marion County Electric Co., Pleasantville.

"Correct Ticket Detail and the Effect It Has on the Commercial Department," by Mrs. Gladys Pierce, Marion County Electric Co., Knoxville.

"Operator Problems," by Miss Nelle Roberts, Central Mutual Telephone Co., Rockwell City.

Opening the question box, Miss Marie Hanny, district instructor, Des Moines.

THURSDAY, APRIL 26, 9 A. M.

"Coöperation," by C. C. Deering, secretary, Iowa Independent Telephone Association.

"Classified Toll Calls and Report Charge Interpretation," by Miss Bess Peterson,

chief operator, Marshall Telephone Co., Marshalltown.

"Value of System in Operating," by Miss Grace Coan, chief operator, Crawford County Telephone Co., Denison.

"Peg Counts and Schedules," by H. G. Sandy, Northwestern Bell Telephone Co., Des Moines.

THURSDAY, 2 P. M.

"Public Relations," by Robert L. Parker, manager, Traer Mutual Telephone Co., Traer.

"Routing and Its Relation to Service," by Mrs. Lena Jones, chief operator, long distance, Des Moines.

"A Good Hand to Hold," by Stanley R. Edwards, editor, TELEPHONY.

Opening the question box, Miss Marie Hanny.

A. T. & T. Co. Now a Billion-Dollar Corporation.

The American Telephone & Telegraph Co. stepped into the front rank as America's greatest corporation in point of size, and possibly the largest in the world, when stockholders at a special meeting on March 27 ratified the proposal of the company's directors calling for an increase in authorized capital stock from \$750,000,000 to \$1,000,000,000.

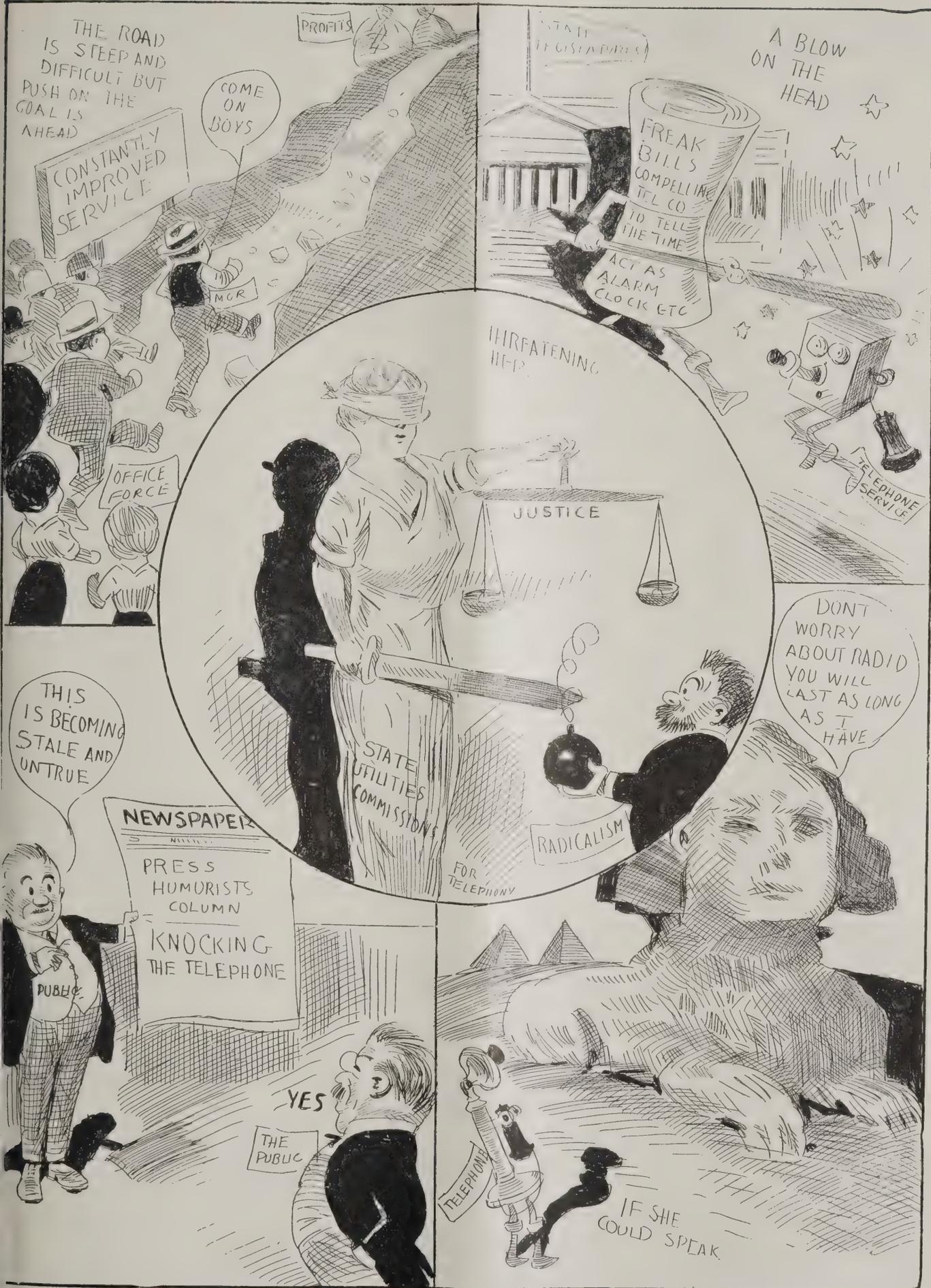
The corporations nearest in size are the United States Steel Corp. and the Standard Oil Co. of New Jersey. The General Motors Corp. has also been mentioned as one of the near-billion-dollar concerns, but in view of the fact that only a small percentage of its authorized capital stock of \$1,347,500,000—based on the current price of General Motors common stock—has been actually issued, it is generally rated as below both American Telephone & Telegraph and the United States Steel Corp. in point of actual size.

According to President H. B. Thayer the company will not make any new offering of stock during 1923, in which case the outstanding total of the United States Steel Corp. will continue for at least another year ahead of the actual outstanding stock of the telephone corporation.

Through the action on March 27, the American Telephone & Telegraph Co. has doubled its capital structure since March 1920, when the authorized capital was increased from \$500,000,000 to \$750,000,000. The purpose was to have available an instrumentality for the raising of funds without increasing bonded indebtedness of the company, and through means of which the company has been able to show steady expansion.

Prices in the Metal Markets.

New York, April 17.—Copper—Steady electrolytic, spot and futures, 17@17½. Tin—easier; spot and futures, \$45.50. Iron—steady; No. 1 northern, \$31.00@32.00; No. 2 northern, \$30.00@31.00. No. 2 southern, \$27.00@28.00. Lead—steady; spot, \$8.20@8.25. Zinc—easy East St. Louis, spot and nearby deliver 7.35@7.42c. Antimony—spot, 8.37c.



THE ROAD IS STEEP AND DIFFICULT BUT PUSH ON THE GOAL IS AHEAD

CONSTANTLY IMPROVED SERVICE

COME ON BOYS

PROFITS

MCR

OFFICE FORCE

THIS IS BECOMING STALE AND UNTRUE

NEWSPAPER

PRESS HUMORISTS COLUMN

KNOCKING THE TELEPHONE

PUBIC

YES

THE PUBLIC

STATE LEGISLATURES

A BLOW ON THE HEAD

FREAK BILLS COMPELLING TEL CO TO TELL THE TIME ACT AS ALARM CLOCK ETC

THREATENING HER

JUSTICE

STATE UTILITIES COMMISSION'S

RADICALISM

FOR TELEPHONY

DONT WORRY ABOUT RADIO YOU WILL LAST AS LONG AS I HAVE

TELEPHONE SERVICE

TELEPHONE

IF SHE COULD SPEAK

Financial Reports and Activities

Balance Sheet of Southwestern Bell Compiled so as to Show What Each Account Covers, Operating Economies Due to Increased Efficiency—Grand Rapids, Mich., Company Shows Good Progress—C. & P. Increases Capital Stock

Southwestern Bell Compiles Annual Report in New Manner.

A review of the financial operations of the Southwestern Bell Telephone Co. for the year ended December 31, 1922, shows that considerable progress was made during last year along constructive lines.

The company operates 673,202 exchange telephones in Missouri, Kansas, Oklahoma, Texas and Arkansas, and the territory is constantly growing, bringing an increased demand for service. Last year \$11,759,699 were spent for plant extensions, and the program for 1923 will require the expenditure of approximately \$13,700,000. During 1922 42,930 stations were added, and the estimated gain for 1923 is 45,000.

In a letter to the stockholders, President E. D. Nims stated that the quality of exchange and toll service in the territory served by the Southwestern Bell steadily improved during 1922, and that the efficiency of the operating force is continuously increasing.

President Nims referred to the plan of offering the company's cumulative preferred stock to its customers, declaring that it had proved eminently successful. During the year a further issue of \$17,500,000 of the 7 per cent cumulative preferred was approved in addition to that already authorized.

None of the stock was offered outside of the territory served by the company, and only a small amount is held elsewhere than in those states.

Accompanying the report was a map which showed the location of the 864 cities and towns where the stockholders reside. This was intended to bring out forcibly the wide distribution and interest of the customers in their company.

The report mentions the purchase of the Kinloch system—the contract for which was made February 21, 1922—and states that approval of this contract has been given by the state regulatory bodies of Missouri and Illinois and recently the Interstate Commerce Commission.

Work on unification of this plant with the Bell system has begun and should be completed in 18 months.

The stockholders of the Kinloch company have elected to take Southwestern Bell 7 per cent cumulative preferred stock for their holdings.

During 1922 mechanical switchboards were introduced at Austin, Texas; Oklahoma City, Okla.; St. Joseph, Mo.; Little Rock, Ark., and Topeka, Kans.

Through the opening of these exchanges the company increased its machine switching stations during the year

by 33,127, so that at the present time a little more than 5 per cent of its total stations are served from mechanical switchboards.

The employes come in for their share of honorable mention.

"Economies in operation," declares Mr. Nims, "were effected during the year, and were largely due to the increased interest and earnest coöperation that we have had from our employes."

During the year 1922 there were 732 em-

The Most Precious Realization.

Men, including our richest men, are coming more and more to realize that the most precious, the most worthwhile riches of all are not bank deposits, but the deposits of affection and friendliness and esteem laid up by them in the hearts of their brother men.—B. C. Forbes.

ploye accident cases on which payments were made, this being 175 less than in 1921. There were 1,927 sickness cases in which payments were made, an increase of 565, which is largely accounted for by the epidemic of dengue fever in Texas. There were 22 death payments made, of which 4 were caused by accidents and 18 by sickness.

At the end of 1922 there were 30 employes on the pension roll who had seen 30 years' service or more in the Bell system.

A summary of the statistics as of December 31, 1922, follows:

Exchanges	650
Subscribers' stations	673,202
Connecting stations	1,041,317
Total stations	1,714,519
Miles of exchange and toll wire.	2,124,264
Underground wire, mileage....	892,980
Miles of toll wire.....	321,766
Miles of toll wire, connecting..	74,919
Average number of exchange messages daily	4,815,946
Number of outward toll messages for year.....	33,682,585
Total pay roll for year 1922...\$	18,145,620
Average number of employes during year	18,293

A departure was taken from the usual manner of making out a balance sheet and presenting financial data to the stockholders.

In order that the figures might mean something to the stockholder who is unfamiliar with accounting methods and terms, the balance sheet and income statement were so compiled that the reader

can easily comprehend what is covered by each account.

The statements, prepared in this fashion, carry to the stockholder a real message of what the company is doing and will enable them to visualize what is back of the balance sheet and income statement.

The descriptive balance sheet follows:

ASSETS.	
Land and buildings.....\$	8,536,847
(Represents actual investment in real estate for telephone purposes. There are 155 buildings, principally in larger cities.)	
Telephone plant	104,779,654
(Represents actual expenditures for facilities for furnishing service, principally poles, wire, cable, underground conduits, central offices and subscribers' station equipment for both exchange and toll service.)	
General equipment	1,763,117
(Represents cost of office furniture and fixtures, machinery, etc., in repair shops, store equipment, automobiles, tools and implements.)	
Investment securities	26,597,340
(Represents cost of stocks, bonds and notes of other telephone companies affiliated with our system, in which we own a large or controlling interest.)	
Advances to system corporations	10,564,577
(Represents funds advanced to affiliated, controlled and subsidiary telephone corporations for construction, equipment and betterments.)	
Miscellaneous investments	223
(Represents real estate, formerly held for telephone purposes, now held for sale.)	
Cash and deposits	1,929,678
(Represents cash working capital on hand and in banks and includes \$611,767.01 deposited under court order, awaiting settlement of litigation, pending.)	
Bills receivable	393,145
(Represents collectible obligations in the form of notes payable on demand or within one year.)	
Accounts receivable	7,093,018
(Represents accounts due from subscribers and others of a current nature.)	
Materials and supplies.....	1,006,807
(Represents investment in telephone supplies held for use in giving service.)	
Marketable securities	31,103
(Investment of a miscellaneous nature not now necessary, and held for sale.)	
Accrued income not due	411,101
(Represents unmatured interest, dividends and rents receivable accrued in our accounts monthly, but not payable until some future day.)	
Sinking fund assets	19,246
(Represents cash and securities deposited with trustees under provisions of trust indentures.)	
Prepayments	171,699
(Represents rents, insurance, cost of printing directories and other expenses paid in advance.)	
Unamortized debt discount and expense	754,754
(Represents remaining amount of discount and expense in connection with issue of \$25,000,000 five-year convertible gold notes sold April 1, 1920.)	
Other deferred debit items.....	94,810
(Represents small miscellaneous items, some of which are temporarily in suspense.)	
Total assets	\$164,147,111

LIABILITIES.

Common stock	\$ 75,000,000
(Represents, dollar for dollar, the money invested by common stock holders. There has never been a share of the company's stock sold for less than par.)	
Preferred stock (cumulative)...	10,212,000
(Represents cash paid at par by preferred stockholders who receive 7 per cent per annum in dividends before any dividends can be paid on common stock.)	
Funded debt	26,034,700
(Represents principally our \$25,000,000 five-year convertible gold notes called for redemption, April 1, 1923.)	
Advances from system corporations	16,274,761
(Represents cash loaned to us by the American Telephone & Telegraph Co. for construction, equipment and betterments.)	
Bills payable	7,500
(Represents bills payable on demand or within a time not exceeding one year.)	
Accounts payable	1,461,037
(Represents current accounts of miscellaneous nature most of which are paid the following month.)	
Accrued liabilities not due.....	3,689,193
(Represents liabilities, estimated if not known, such as taxes, interest, rents, etc., for which bills have not been received, principally taxes, amounting in this instance, to over \$2,000,000.)	
Insurance and casualty reserves	156,064
(Represents amount set aside to assume a part of risks on account of fire and automobile casualty.)	
Liability for employes' benefit fund	859,500
(Represents appropriation for employes' benefit fund, to provide pensions, accident and sickness disability benefits, death benefits and disability expenses.)	
Other deferred credit items....	801
(Represents deferred credit items of a miscellaneous nature.)	
Reserve for accrued depreciation	25,245,820
(Represents reserve to cover expenses of depreciation currently accruing in telephone plant and other property. This amount provides for the losses in property through rot, rust and decay, storms, floods and fires, and losses due to property becoming obsolete or inadequate resulting from age, new inventions and discoveries. The greater part of this fund is invested in telephone plant and this reduces the cost of our service to the public as we do not pay interest or dividends on this money.)	
Reserve for amortization of intangible capital	81,921
(Represents reserve set up to care for losses incident to abandonment of rights-of-way for the company's lines.)	
Appropriated surplus	862,987
(Represents amount to meet our obligations should certain pending litigation be decided against the company. When court decisions in favor of the company are received, this amount will be returned to the unappropriated corporate surplus account.)	
Corporate surplus unappropriated	4,230,835
(Represents surplus unappropriated since the company began business. It is approximately the difference between net income and dividends that have been declared. The amount represented herein is invested in property.)	
Total liabilities	\$164,147,119

Below is the descriptive income statement:

Telephone operating revenue...	\$ 37,952,765
(Represents revenues from exchange and toll service, advertising in telephone directories and other miscellaneous telephone operations.)	
Telephone operating expenses..	25,089,236
(Represents principally operators' wages; cost of repairs	

and depreciation, billing and collecting subscribers accounts, issuing directories and other miscellaneous expense.)

Net telephone operating revenues	\$ 12,863,529
Uncollectible operating revenues (Represents revenues earned but not collectible.)	291,526
Taxes assignable to operations.. (Represents federal, state and local taxes assessed for 1922.)	3,283,560
Operating income	9,288,443
Net non-operating revenues.... (Represents principally interest and dividends from stocks, bonds and notes of connecting telephone companies in our territory.)	2,062,725
Total gross income.....	11,351,168
Rents and miscellaneous deductions	714,432
(Represents principally rents paid in places where company does not own quarters.)	
Interest deductions—bonds and convertible notes	1,799,599
(Represents interest on funded debt, principally the five-year 7 per cent convertible gold notes called for redemption April 1, 1923.)	
Other interest deductions.....	1,818,471
(Represents principally interest on advances from the American Telephone & Telegraph Co. for construction, equipment and betterments.)	
Balance net income	7,018,666
Appropriations of net income for sinking and other reserve funds	335,877
(Represents amount of operating revenues set aside pending final court decisions.)	
Appropriations or net income for dividends	5,636,167
(Represents payments to owners of outstanding preferred and common stock from net income.)	
Appropriation of net income for employes' benefit fund reserve. (Represents amount appropriated to increase the reserve for payment to employes and their beneficiaries of accident and sickness disability benefits, pensions and death benefits, in accord with the employes' benefit plan.)	400,000
Balance for corporate surplus.. (Represents undivided profits transferred to corporate surplus.)	646,622

Grand Rapids, Mich., Company Earned \$1,600,000 Last Year.

The stockholders of the Citizens Telephone Co., of Grand Rapids, Mich., had their final annual meeting on March 27. President Robert D. Graham, in opening the meeting, said that the approval of the Michigan Public Utilities Commission to the purchase of the Citizens company by the Michigan State company was expected any day.

The financial statement showed the operating earnings for the year to have been \$1,597,614, an increase of \$93,509 over the earnings for 1921; operating expenses \$805,150, a decrease of \$31,574; and depreciation \$302,385, leaving \$490,070 as the net operating revenue.

After taxes, interest and other deductions were made a balance of \$252,128 remained, from which \$231,104 was paid in dividends and \$21,024 carried to surplus.

The balance sheet shows total assets of \$6,541,481, an increase of \$219,761. The plant is listed at \$5,421,415; investments in subsidiary companies, \$837,319; construction work in progress, \$87,119; and cash, \$23,253.

The liabilities include \$3,851,735 stock, \$1,453,800 bonds, \$248,504 bills payable, reserves \$463,574, and surplus \$370,345.

The company had a net gain of 2,174 subscribers during the year, the largest gain for a single year on record, and the total now is 21,980.

The extension and improvement work of the year includes 20,280 feet of aerial cable and 34,197 feet of underground cable.

There are 2,882 stockholders in the company, of whom 1,267 live in Grand Rapids, 967 in Michigan outside of Grand Rapids and 648 in 40 different states and five foreign countries. The average holding is less than \$1,350, and only six holdings are more than \$20,000 each.

C. & P. Company Increases Capital Stock to 12 Millions.

The Chesapeake & Potomac Telephone Co., of West Virginia, filed a certificate with the secretary of state on March 20, increasing its capital stock from \$7,500,000 to \$12,000,000. This increase was authorized at meetings of the board of directors and stockholders, held in New York March 16.

In connection with the increase in the authorized stock of the company, W. T. Williamson, vice-president, stated that of the present authorized capital only \$6,825,400 had been issued and that \$10,500,000 of the \$12,000,000 just authorized would be issued and will be used to take up advances from the system corporations, amounting to nearly \$4,000,000, all of which has been used for the construction of new plants in the various sections of West Virginia during the last four or five years.

The Chesapeake & Potomac Telephone Co. of West Virginia was organized on January 1, 1917, to take over the Bell properties in West Virginia.

Since then there has been a continued increase, there being 52,599 stations on January 1, 1918, and 77,335 on March 1, 1923, in addition to which, the company has connection with nearly 35,000 telephones owned and operated by Independent companies in different sections of the state.

Extensive additions to plants are being made over the state, consisting of cable, additional central office equipment, toll circuits, and the opening of three or four new exchanges. During this year over \$1,500,000 of new money will be put into the plant in West Virginia.

Exchange at Bellflower, Ill., Burns to the Ground.

Fire originating from a defective flue in the telephone exchange at Bellflower, Ill., on March 31, burned that building and several adjacent buildings to the ground, the loss being estimated at about \$20,000. The buildings were all frame buildings and burned rapidly.

As a result, the town was without telephone service for several days.

SPECIAL TRANSPORTATION EQUIPMENT.

(Concluded from page 19.)

This was an adaptation of one of the best hoisting winches then available, and some ingenious controls were developed at the time in order to facilitate, or in fact, even permit of, its operation on the trucks.

While this unit was a wonderful labor-saving device and opened up the possibilities of the broad field of usefulness for truck operated winches, its size and weight were such that it could not well be used on trucks of less than five-tons capacity. It will be noted that the winch extends well up to the cab window and would practically fill the front end of the body. Its net weight exclusive of the truck power take-off was 2,300 pounds.

The desirability, and in fact the indispensable need, of using winches on the smaller trucks has led to the development of a very compact light weight unit which will handle about 900 feet of 7/16 inch

steel rope and withstand a pull of 10,000 pounds on a single line. Experience indicates, that this winch is capable of meeting the maximum requirements generally encountered in construction work.

The compactness of this winch is illustrated by Fig. 18 which shows it below the cab window with only the upper half of the drum projecting above the floor line in order to give the rope proper clearance in winding and unwinding. This winch weighs slightly less than 500 pounds.

In closing this discussion of motor vehicle application to telephone work it might be of interest to examine the curve in Fig. 19, which shows the rate of growth of the motor vehicle fleet in the Bell system.

This curve prepared from such information as now available presents a reasonably accurate picture of the motor vehicle development which began in the Bell system as early as 1904.

As explanatory of this curve it may be noted that previous to 1910 very few cars

and no trucks were purchased. From 1910 to 1913 various types of equipment were placed in service largely upon an experimental basis.

The results of these experimental installations were so favorable that from 1913 to 1919 the growth was very rapid due to superseding the large number of horse-drawn trucks with motor vehicles as well as providing additional motor vehicles to keep pace with the growth of the telephone industry. From 1919 to 1922 the slope of the curve indicates a slow, steady growth which corresponds with the growth in requirements of the telephone construction and maintenance organizations in handling their steadily increasing activities.

From the foregoing it will be noted that a period of 40 years has witnessed a striking development in transportation and associated equipment as applied to telephone construction work, and studies now under way indicate that there is yet much to be accomplished.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

City Officials of Fort Smith, Ark., to Have Half Rates.

The Southwestern Bell Telephone Co. has reduced the rental on the telephones 50 per cent to all city employes of Fort Smith, Ark., effective April 1.

It was announced on March 30 that the company had added facilities for extension of telephones to North Little Rock, and would begin installing instruments at once.

Illinois Company Will Sell Bonds to Cover Storm Repairs.

Permission was given the Winnebago County Telephone Co., of Rockford, by the Illinois Commerce Commission on April 6, to issue and sell \$40,000 first mortgage bonds to cover repairs made necessary by damage to lines within the county during the March snow and sleet storms.

The company suffered a severe storm loss during the month and miles of pole lines are still down. Service to county subscribers is being restored rapidly.

The bonds are to net 96 per cent of their face value.

Voids City Ordinance Which Would Tax Telephone Poles.

The Indiana Public Service Commission on April 3 set aside the Decatur city ordinance which would have required the Citizens' Telephone Co., of Decatur, to pay a fee of 25 cents a year for each telephone pole in the city.

The commission said in its order it could find no authority in law for such a tax for the benefit of the whole city at the expense of the telephone patrons. It granted the company's petition to set aside the ordinance on the grounds of unreasonableness and unlawfulness.

Illinois Bell Asks Capital Stock Increase for Expansion.

Application was made April 16 by the Illinois Bell Telephone Co. to the secretary of state and the Illinois Commerce Commission for authority to increase its capital stock \$10,000,000.

The telephone company is carrying out an extensive construction program. It plans to spend about \$18,000,000 for new construction work in the territory served by it this year. In the next five years it is estimated these expenditures will total more than \$100,000,000. All parts of the state are affected by the new construction work.

An idea of the company's efforts to keep pace with the public's demand for telephone service is given in the fact that last year the increase in the number of stations was 56,935 in the territory served by the company.

Michigan Bell Authorized to Pay A. T. & T. in Securities.

The Michigan Public Utilities Commission gave the Michigan State Telephone Co. authority to issue \$19,000,000 of stock for the purpose of paying up that amount

on about \$25,000,000 of outstanding notes. The order was issued April 7.

For years the company has been making its extensions by issuing notes for money loaned it by the American Telephone & Telegraph Co. and the A. T. & T. is now taking the stock in payment for \$19,000,000 it has loaned the Michigan State.

In such cases as this the commission realizes one-tenth of one per cent of the amount of the stock involved. In this particular case, \$19,000 is realized by the commission.

In Big City Directory and Has Local Directory Also.

The Lincoln Telephone & Telegraph Co. has made its peace with the business men of University Place, Neb., who entered a protest to the state railway commission against the threatened loss of that city's identity through a merger of the plant with that of northeast Lincoln. The company proposed to take the University Place subscribers and scatter their names alphabetically in the big Lincoln list, as the University Place exchange is to be made a branch office of the Lincoln office.

The business men wanted a special group listing of all University Place subscribers inserted in the big directory, but this entailed a large expense, as this directory costs \$35 a page to print and distribute.

The matter was finally arranged by listing all University Place subscribers in the Lincoln list and providing a special direc-



Are You Looking For Profit Making Equipment?

*Cook Pole Cable Terminals
is the Answer to one of
Your Problems.*

We Will Be Glad To
Qualify This Statement

Cook Electric Company

900 W. Van Buren St.

CHICAGO

tory for the use of the people in that suburb. The business men agreed to take enough advertising in it to pay the expense, after the company had waived this and offered to fill the special directory with Lincoln advertisers.

Nebraska Commission Appropriation Bill in Danger.

The effort of Governor Bryan to hamstring the Nebraska State Railway Commission by refusing to include in his budget a sufficient sum to enable that body to continue its present force of accountants and rate men will probably be successful.

When the general maintenance bill was before the house, the commission found enough Democratic friends to get the necessary votes to restore a large part of the left out appropriation, but when it came on third reading, to vote on the bill as a whole, the governor mustered practically the full Democratic strength in opposition. The total cast for the bill was but 54, and the speaker ruling that as the constitution requires a three-fifths vote, or 60, to override the governor's budget, the entire bill was lost.

This forced the Republicans to substitute another bill, with the commission and other raised appropriations, omitted. This has passed the house and is now in the senate. That body is expected to restore the appropriation, and the one hope the commission now has is that by the time the house and senate try to reach an agreement, the Democratic friends of the commission will be free to support conference committee reports favoring the increase.

The commission just now is made the victim of partisan politics. The governor is trying to have the Republican legislature adopt a reorganization of the civil administration portion of the state government, which gives him complete power of appointment and removal, and the Republicans have turned this down for plans of their own.

In the hope of forcing them to accept his code plan, the governor was able to mass the entire Democratic strength in the house against the maintenance appropriation bill as a whole, and this was the reason why the Democrats who had voted in committee of the whole to give the commission an adequate fund voted against the bill as a whole on third reading.

Newark, Ohio, Company Accepts Rates Allowed by City.

The Newark Telephone Co., of Newark, Ohio, has filed its acceptance of the increased rate ordinance passed by the city council March 5.

Petitions were circulated recently asking for a referendum vote on the rates but city officials reported that no such petition was filed with the city within the 30-day period and that the proposal to submit

the matter to a vote of the people was abandoned.

The city's lawyers united in a published statement approving the action of the city council in fixing the new rates, which range from \$1.75 to \$6 a month, according to the character of the service.

Cincinnati Bell Submits Schedule Making Zoning Optional.

Taking advantage of the order of the Ohio Supreme Court, which ruled that the Ohio Public Utilities Commission could not restore old rates without a hearing, the Cincinnati & Suburban Bell Telephone Co., on April 5 filed another proposal with the commission for new rates in the city and environs.

The proposal follows the schedule which the supreme court threw out after it had been approved by the commission. The zoning system would be retained, but instead of being made mandatory it would be optional to subscribers to say whether they would take a low rate and pay tolls for service outside their zones or pay a higher rate and have a universal service throughout the county.

It seems likely that the schedule will go through this time, as an agreement approving it has been made by City Solicitor Saul Zielonka and Alfred Bettman, representing suburban patrons of the company, with Joseph W. Heintzman, attorney for the company.

Higher Rates Allowed for Garretson, S. D., Company.

A schedule of rates somewhat higher than the old ones, but considerably lower than those requested, was approved by the South Dakota Railroad Commissioners on April 4, for the Garretson Coöperative Telephone Co., of Garretson. It is effective as of April 1.

The company furnishes service for the town of Garretson, operates one rural party line out of the exchange, and performs switching service for a number of Independent farm lines radiating out from Garretson. The stock of the company is practically all owned by persons who are subscribers on these Independent lines.

During the past year the company has undertaken to replace the aerial plant with underground cable and has made considerable progress on the work. The switchboard now in use is inadequate and it was brought out at the hearing that the management contemplates the installation of a new and larger board.

The commission placed a value of \$7,000 on the company's plant, for the purpose of rate-making, and found its income for 1922 to have been \$4,466. The expenses for this year were estimated at \$4,933—including a 7 per cent return on the valuation. The requested rates would have brought an income of \$5,624.

There was some complaint as to the inadequacy of the company's night service,

but as the estimated expenses provided for three operators, the commission believed this service could be improved.

The commission found fault with the company for unlawfully having as its directors persons who were not stockholders, and said that it expected this condition to be rectified.

The old and new rates are as follows:

	Old rates.	New rates
Business	\$1.50	\$1.75
Residence	1.00	1.25
Rural, party-line	1.00	1.00

Desk sets are 25 cents a month extra. The rates are payable quarterly in advance, and the company is authorized to bill subscribers 25 cents a month above the net rates, this sum to be allowed as a discount for payment on or before the last day of the current quarter.

The Garretson company has 173 stations, including nine on its rural line.

Ordered to Take Peg Counts and Make Rules Effective.

The Johnstown Telephone Co., of Johnstown, was ordered by the Pennsylvania Public Service Commission, on April 5 to "take peg counts monthly at its Moxham and Main exchanges, and from the data thus acquired place a sufficient number of operators at these exchanges to meet operating necessities."

The company also was ordered to file, post and make effective all rules and regulations regarding the use of its service.

In analyzing the complaints made against the service, the commission found that the patrons were hypercritical; that the company had "unquestionably developed a very exceptional telephone system in Johnstown"; and that the company had been arbitrary in enforcing its rules.

Mountain States Asks Permission to Acquire Wyoming Company.

The Mountain States Telephone & Telegraph Co. has asked authority from the Interstate Commerce Commission to purchase the Peoples Mutual Telephone Co., which operates 100 stations in Laramie county, Wyo.

For some time the Mountain States company has virtually maintained the Peoples company and there is no competition between the two companies. The deal will involve about \$8,000.

Equalizes Rate for Stockholders and Non-Stockholders.

In order to avoid discrimination against non-stockholding subscribers, the Lima Telephone Co. was authorized on March 31 by the Wisconsin Railroad Commission to establish a rate of \$13 per year for stockholders and non-stockholders. The previous rates were \$9 for the former class and \$13 for the latter.

The company has 192 subscribers, 131 owning stock and 61 having no stock. The revenues for last year were \$2,085



*Like the Steel
of Damascus*

The Built-in Quality of French Telephone Batteries Counts in Heavy Service

The cavaliers prided themselves upon their swords and rapiers of finest Damascus steel, because the skill and experienced care put into the making of those blades were a guarantee of dependability, of instant response in time of need.

Just as the sword makers of Damascus had to uphold the reputation of their blades, so French shoulders responsibility for keeping its Telephone Batteries up to the standard which has made it profitable for thousands of companies to standardize on French Telephone Batteries. Every cell that leaves the factory can be counted on for a longer life of ready reliability.

FRENCH BATTERY & CARBON COMPANY, *Madison, Wis.*
Atlanta Dallas Denver Kansas City Chicago New York Minneapolis



For years French Telephone Batteries have stood for the highest development of practical battery efficiency.

FRENCH

TELEPHONE BATTERIES

and the expenses, before providing for depreciation, were \$2,412, leaving a deficit of \$327. The new rate will not permit of an adequate reserve for depreciation, but as the lines are overloaded the commission felt that a higher rate than that paid by the non-stockholders should not be allowed at present.

Sleet Storm Meant Reconstruction —Increased Rates Allowed.

An order issued March 31 by the Wisconsin Railroad Commission, and effective April 1, permits the Eastern Wisconsin Telephone Co. to establish increased rates for service from its exchange at Mt. Calvary.

The Eastern Wisconsin company was one of the worst sufferers from the sleet storm of February, 1922, and has expended a large sum in rehabilitating the property, which rehabilitation amounted to almost complete reconstruction.

The company reports a total of 58 telephones of its own and 49 switched telephones receiving service from the exchange.

The rates which the company has been using and those which it now uses are:

	Old rates.	New rates.
Business	\$1.25	\$1.75
Residence	1.00	1.50
Rural business		1.75
Rural residence		1.50
Rural switching service .....	.625	.625

Under the new schedule the rural business circuits are limited to eight telephones. All the circuits are of metallic construction.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

April 6: Pacific Telephone & Telegraph Co. authorized to assume control of the Willamette Telephone Co., of Dallas, Ore.

April 6: Application filed by the Mountain States Telephone & Telegraph Co. for authority to purchase the property of the Peoples Telephone Co., operating in Laramie county, Wyo.

CALIFORNIA.

April 5: Authority given the Sunland Rural Telephone Co. to increase its rates approximately 15 per cent.

ILLINOIS.

March 20: Order entered suspending until July 27 proposed rates for service by the Capron Home Telephone Co. in Capron.

March 20: Proposed rate schedule of the Elmwood Telephone Co., for service in Elmwood, suspended until July 27.

March 20: Order issued suspending until July 27 proposed rate schedule of Millstadt Telephone Co. for service in Millstadt.

March 22: Winnebago County Telephone Co., of Rockford, authorized to issue and sell \$40,000 of its first mortgage bonds so as to net the company not less than 95 per cent of their face value.

March 22: Approval given to agreement dated January 17, 1923, between the C. B. & Q. R. R. Co. and the Bureau County Independent Telephone Co., of Princeton,

as relates to an undergrade telephone cable crossing at Walnut.

March 22: Order entered extending until May 22 period of suspension of the proposed rates of the Belvidere Telephone Co. for service in Belvidere.

March 27: Murdock Mutual Telephone Co. authorized to purchase from W. F. Murdock and others, copartners under the firm name of Murdock Mutual Telephone Co., the entire property owned and operated by them in and adjacent to the village of Murdock, for \$1,500 of the par amount of the capital stock of the corporation; Murdock Mutual Telephone Co. granted a certificate of convenience and necessity to construct, maintain, and operate a telephone system in the territory served by the existing company; also permitted to issue \$1,500 aggregate par amount of its capital stock.

March 27: Order entered permitting to remain in effect until further order rate schedule IPUC 4 of the Macoupin County Telephone Co. for service in Carlinville and vicinity; company not required to make reparation to its subscribers under the present rate schedule; directed to provide a reserve against depreciation.

March 27: Supplemental agreement dated January 15, 1923, between the Illinois Bell Telephone Co. and the Pike County Telephone Co., of Pittsfield, modifying toll line traffic agreement, approved.

March 29: In the matter of suggestion of M. K. Guyton that citation be issued relative to the rates of the Northern Illinois Telephone Co. for service in Compton and West Brooklyn; ordered that accounting department investigate and report, before a citation is issued.

April 3: Application filed by the Sangamon County Telephone Co., of Pawnee, for authority to issue \$25,000 par value of its first mortgage gold bonds, and to execute a trust deed to Eli Weber as trustee.

April 16: Application filed by the Illinois Bell Telephone Co. for authority to increase its capital stock to \$10,000,000.

April 18: Hearing held in Springfield on complaint of J. Frost and others as to service furnished by the Murphysboro Telephone Co. in the vicinity of Cypress.

April 18: Hearing held in Springfield on proposed rates of Illinois Bell Telephone Co. for service in Beardstown and vicinity.

April 18: Hearing held in Springfield on petition of the Elmwood Telephone Exchange, of Elmwood, for new toll rates and connection charges, rules and regulations.

April 19: Hearing held at Springfield on application of the Young Telephone System for authority to borrow \$800 for a period of four years at a rate not exceeding 6 per cent, secured by a mortgage on its telephone property.

INDIANA.

March 31: Zenas Telephone Co., of Nebraska, authorized to increase its rates to \$1.00 a month for business and 75 cents for residence. The company has 174 subscribers.

April 3: Order entered setting aside ordinance of the city of Decatur which required the Citizens Telephone Co. to pay a fee of 25 cents a year for each telephone pole in the city.

MICHIGAN.

April 7: Michigan State Telephone Co. authorized to issue \$19,000,000 of stock for the purpose of reimbursing the American Telephone & Telegraph Co.

MISSOURI.

April 9: In the matter of petition of the Mt. Vernon Telephone Co. for authority to increase the rates at its Sarcoxie ex-

change; it appearing that the Sarcoxie exchange has been sold to R. M. Snow—which action automatically closes the case—petition dismissed.

NEBRASKA.

April 9: In the matter of the application of the Wehn Telephone Co. for permission to make a desk set charge; ordered that the company be authorized, after May 1, to make an additional charge of 25 cents a month for such service with the proviso that where a subscriber desires to take a cheaper service there shall be no charge for installation.

April 9: In the matter of the application of the Kinkaiders' Mutual Telephone Co., of Tryon, for the discontinuance of a ten-cent charge for connections with the Sutherland Telephone Co.; found reasonable and granted.

April 9: Complaint filed by Otto Gurth, of New York, against the American Telephone & Telegraph Co., alleging that he had been refused service because of failure to pay report charge.

April 10: Complaint filed by C. B. Cox of the Mullen Telephone Co. against the Virginia Telephone Co. and connecting farm mutuals that they refuse to pay charges for service rendered.

April 10: Complaint filed by Frank Lovelace, of Meadow Grove, against Monroe Telephone Co., alleging improper rental collection charge.

April 10: Complaint filed by Riverton-Franklin Township Telephone Co. against Republican Valley Telephone Co., of Franklin, alleging unauthorized charge had been made for switching service.

April 11: Complaint filed by Lyman H. Andrews, of Scottsbluff, against the Platte Valley Telephone Co., alleging that it insists upon collecting a business rate for telephones in the residences of field men for beet sugar factory company.

April 11: Complaint filed by Charles H. Merrill against Lincoln Telephone & Telegraph Co., asking for flat rate charge for service between Edgar and Clay Center.

April 12: Application filed by the Ames Creek Telephone Co., of Obert, asking for an increase in rates averaging 15 per cent.

April 12: Application filed by the Skeedee Telephone Co., of St. Edwards, asking for increases in certain rates, following the consolidation of its property with that recently purchased by it from the Northwestern Bell Telephone Co.

OREGON.

April 7: Hearings in rate case of the Pacific Telephone & Telegraph Co. to be resumed June 4 in Portland.

PENNSYLVANIA.

March 31: Supplement to its tariff, affecting summer cottage rates, filed by the Cochran Telephone Co., of Cochran.

April 5: Johnstown Telephone Co., of Johnstown, ordered to take peg counts monthly at two of its exchanges, to hire enough operators to care for traffic, and to make effective all rules regarding the use of service.

TENNESSEE.

April 7: Hearing held in Nashville on temporary rates previously allowed the Cumberland Telephone & Telegraph Co.

WISCONSIN.

April 11: Pewaukee-Sussex Telephone Co., of Pewaukee, granted schedule of increased rates for service to summer resorts.

April 11: Annaton-Preston Telephone Co. authorized to establish as of May 1 its proposed increased rate schedule; also to discontinue the so-called Herrod switch upon provision of facilities for connecting subscribers on that line to the switchboard at Stitzer.

Supervision Similar to That of Common Battery for Magneto Boards



PROSPEROUS and up-to-date operating men know that positive and dependable supervision is conducive of the best service.

During the past three years numerous telephone companies have adopted Lamp Supervision as *one* means of speeding up their service. That is, companies operating magneto boards with clearing out drop supervision, have found it advisable to remove the clear out drops entirely, and install Lamp Supervision to enable the giving of more speedy and efficient service.

Space does not permit of lengthy descriptions, but we may touch upon one or two advantages of Lamp Supervision. When subscribers ring off in the usual manner, they actuate the armature of a relay, which lights a supervisory lamp in the key shelf. This lamp remains lighted until the operator opens the listening key to monitor the call.

Lamp Supervision has features that will appeal to you, if investigated. Our engineering department is at your disposal, without obligation on your part.

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Coker Electric Supply Co., Los Angeles, Cal.

Personal and Biographical Notes

A. F. Adams, of Kansas City, Mo., widely known in the telephone field, has been elected to the directorate of the Missouri-Kansas-Texas Railroad Co., the reorganized company which took over the lines of the K. T. company on April 1.



A. F. Adams, Banker, and One of the Big Telephone Men of the Country, is Now a Railroad Director.

Although it is one of the system's most important traffic gateways, Kansas City has not previously had representation on the directorate.

Through Mr. Adams' service on the board of directors the railroad company anticipates keeping more closely in touch with Kansas City's traffic needs and participating more actively in its commercial development.

Mr. Adams is president of the Kansas City Telephone Co.; of the Automatic Electric Co., Chicago; chairman of the board of directors of the Commerce Trust Co., of Kansas City, one of the largest banking institutions in the Middle West; and is interested in and holds office in many other business enterprises of Theodore Gary & Co., of which organization he is president.

A. L. Wilson, who has been in charge of the division of telephone and telegraph engineering of the California Railroad Commission, resigned on March 31, to engage in general private practice in consulting and engineering work in the telephone field.

Mr. Wilson, who graduated from the University of the Pacific, now the College of the Pacific, was connected with various telephone companies on the Pacific Coast for 15 years, and entered the service of the commission as assistant rate expert

when the late John M. Eshleman was its president.

He became head of the division in 1913 and served as a member of the joint committee on inductive interference from 1913 to 1917.

W. J. Dodge has been appointed telephone and telegraph engineer of the California Railroad Commission to take the place of A. L. Wilson, who has resigned to take up private practice.

Mr. Dodge graduated from Stanford University in the class of 1913 in electrical engineering. After graduation he spent five years with the American Telephone & Telegraph Co. in New York City and in California in connection with the inductive interference investigation carried on under the auspices of the California Railroad Commission.

Since 1918 Mr. Dodge has been employed by the California commission as assistant engineer in the gas and electrical division, specializing on public utility service and rate matters.

Charles F. Smith, of Skowhegan, Me., has been appointed manager of the Somerset Farmers' Coöperative Telephone Co. to fill the office for the balance of the year, succeeding the late A. M. Danforth.

Mr. Smith is a graduate of the University of Maine, electrical engineering course, class of 1910. He is well fitted to assume his new duties, having since his graduation been employed for two and one-half years with the Western Electric Co. at Chicago, for two years with the Manhattan Electric Co. in Chicago, and for two and one-half years with the Northern Electric Co. in Montreal.

He was also for two years with the Signal Corps of the Army in the World War, having the rank of captain.

G. N. Anderson, transmission engineer for the Northwestern Bell in the Minnesota division engineer's office, has been transferred to Omaha to become Nebraska division transmission engineer. **V. C. Frazell** has been transferred from the position of chief clerk of the employes' benefit fund committee to chief clerk of the general superintendent of plant at Omaha, and has been succeeded by **James C. Peterson**, a committee supervisor. **E. A. White** has been made office manager, general auditor of receipts office, Omaha.

Milton Barratt, former commercial engineer for the Lincoln Telephone & Telegraph Co. has been made assistant plant superintendent, and has been succeeded by H. S. McCulla.

M. W. Smith, wire chief, Tri-State Telephone & Telegraph Co., Rochester, Minn., has been transferred to the staff of the chief engineer, St. Paul.

J. B. Holton, formerly local commercial manager of the Tri-State exchange, Northfield, Minn., will become wire chief at Rochester. **Everett Phelps**, toll line troubleman, St. Paul, has been transferred to Northfield as local manager, succeeding Mr. Holton.

Mr. Smith has been associated with the Tri-State Telephone & Telegraph Co. since 1906, entering the service at Minneapolis. At the time of the division of telephone territory in July, 1918, he was transferred to St. Paul as service chief of the Garfield exchange. Three years later he was made automatic supervisor and continued in that position until appointed wire chief at Rochester.

L. O. Painter, acting chief engineer during the past six months for the Tri-State Telephone & Telegraph Co., St. Paul, Minn., became chief engineer, April 16, in accordance with an announcement issued by Geo. K. Gann, general superintendent.

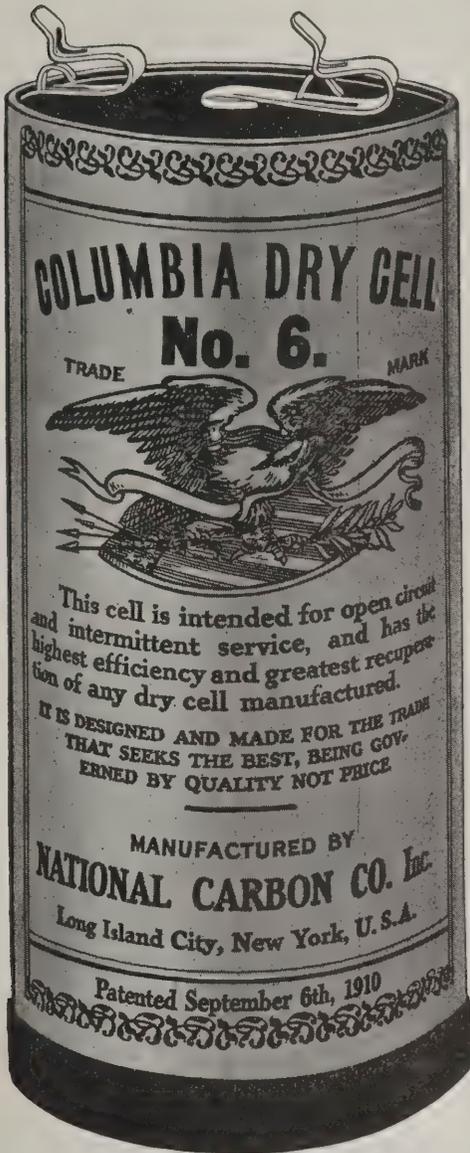
Mr. Painter has been a very thorough student of telephony throughout the 15 years he has been occupied in this field. His earlier efforts were directed towards the construction of telephone plants in various cities throughout the United States and at least two in Canada.

Among those in the building of which he took an active part, are included plants



L. O. Painter, Chief Engineer of the Tri-State, St. Paul, Has a Wide Experience in Plant Construction Work.

at Lincoln, Neb., Houston, Tex., Dallas, Tex., Buffalo, N. Y., Indianapolis, Ind., Lorain, Ohio, Hazelton, Ia., St. Paul and Minneapolis, Minn., Edmonton, Alta, and Regina, Sask., Canada. For two years he



Columbia Telephone Batteries are unlike humans—these Gray Labels, for example, eat only while they work. While the receiver's hung up, they quit. The net result is that they conserve their stock of food—and cost less per month of service. Fahnstock Spring Clip Binding Posts at no extra charge.

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Long Island City, N. Y.

Atlanta Chicago Cleveland
Kansas City San Francisco

Columbia Telephone Batteries

“less cost per month of service”

was engaged in general maintenance work at Van Wert, Ohio, and was, for 11 years, with the Automatic Electric Co., Chicago.

While with the Automatic Electric Co., Mr. Painter spent several years on installation work in various capacities from assistant installer to installer in charge;

about two years in efficiency engineering work and conducting the factory training school for student installers and engineers.

For two years he was engaged in engineering the unification of the manual and automatic exchanges in St. Paul and Minneapolis and about an equal amount

of time as superintendent of installation in the Twin Cities carrying the unification work in those two cities through to a successful completion. This task behind him, he was engaged as equipment engineer for the Tri-State for about 2½ years and until named acting chief engineer.

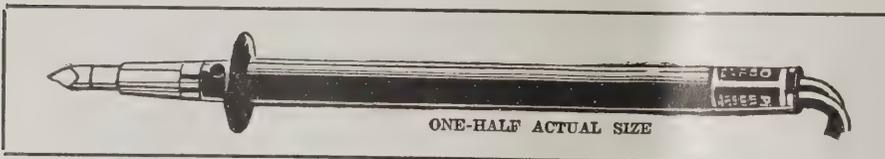
From Factory and Salesroom

Convention: Iowa, Des Moines, April 24-25

Small Electric Soldering Iron for Fine Work.

An electric soldering iron for fine work, said to be the smallest electric soldering tool on the market, is that shown in the accompanying illustration. It is used by many leading manufacturers and governmental departments and weighs about two ounces.

It is supplied with large and small tips,



The Post Electric Soldering Iron, Excellent for Fine Work.

both of which are interchangeable, and composed of german silver. The heating element is of platinum, which is considered the best obtainable and used only in the finest instruments.

The handle is of bakelite, about the size of a fountain pen, and is said to be always cool.

In operation, this soldering tool consumes about one-half to three-fourths of an ampere. The cost of operation is about 6 cents per day, based on continual eight hours' use of electric current. The upkeep of the tool is a minimum.

This electric soldering iron may be used with any current or a 12-volt battery, a series current tap being provided which uses a standard electric light bulb for the resistance.

Complete information may be obtained regarding this soldering iron upon application to the manufacturers, the Post Electric Co., department G, 30 East 42nd street, New York.

Iowa Telephone Men Operate Radio Station 9-ZAA.

F. M. Lantz, manager of the Farmers' Mutual Telephone Co., Clarinda, Iowa, and R. E. Ward, also of that company, have designed, constructed and are now operating the radio station shown in the accompanying illustration. The outfit was built for efficiency, for compactness and for neatness.

The transmitting apparatus is contained

as far as possible in the cabinet shown at the right, however the motor generator and the filament storage batteries are located under the operating table.

Mr. Lantz states that the feature of this 50-watt outfit is the circuit, which does not depend on the antenna capacity for operation. The benefit derived from such a construction is that there is no variation due to antenna swinging. The radiation

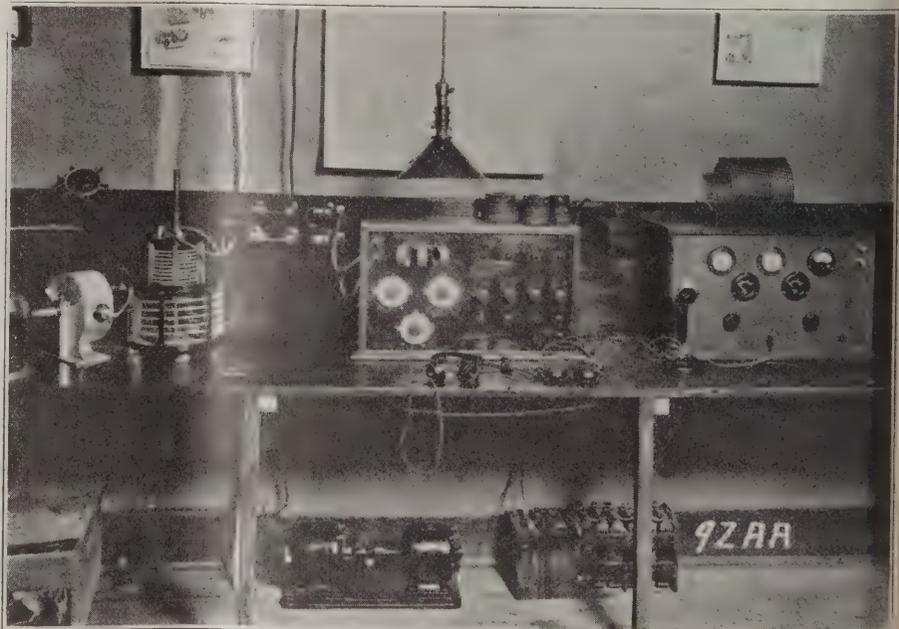
ometers for controlling the regenerative action when tuning, but depends on the amount of bypass through the condenser, which is bridged across the "B" battery and the head set.

A detector and a three-stage amplifier are used in connection with DeForest honey-comb coils and DeForest condensers. Satisfactory listening is generally accomplished with one stage of amplification, connected to a Western Electric loud speaker. The head sets shown in the foreground are the Stromberg-Carlson Nos. 1-A and 2-A.

Learning to Build and Buy Radio Equipment.

"Get rich quick." How easy it sounds! And how many people have tried it—always without success! The latest field for the "get-rich-quick" artists appears to be in radio, judging from the large number who have gone into it. What do most of these newcomers in the field know about design? About production? About service? Very little. They know that a demand exists and they are seeking a quick and profitable harvest.

Meanwhile other companies, the stand-



Radio Sending and Receiving Equipment of F. M. Lantz and R. E. Ward, of Clarinda, Ia.

Practical Economical Efficient

EVERHOT

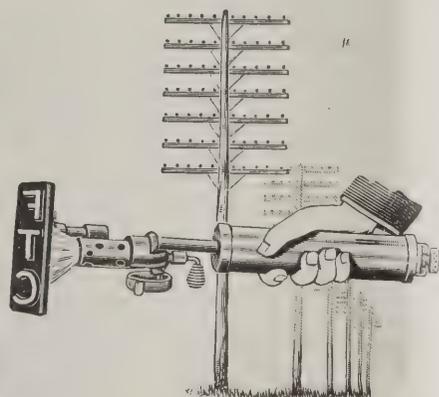
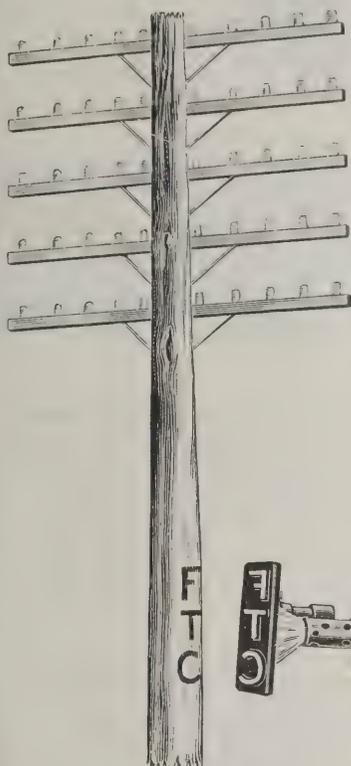
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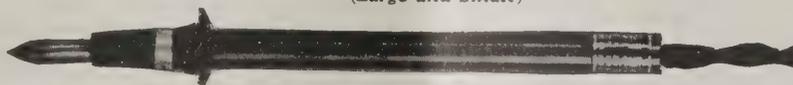


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	Diam.	Breaking Weight	Weight per Mile	Relative Factor of Safety	
				With 3/4" Ice and 8 lb. Wind Pressure	With 15 lb. Wind Pressure. No Ice.
10 B&S hard-drawn Copper.....	.102"	528 lb.	166 lb.	98%	80%
12 BWG BB Galvanized Iron.....	.109"	476 "	170 "	88%	68%
12 B&S Copperweld .....	.081"	520 "	96 "	100%	100%

Copperweld does not rust. It stays up under sleet loads and wind pressure when other wires would be wrecked.

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ard producers, are studying, designing, planning. Their products are being thought out before they are manufactured. Their radio apparatus is designed to look as far into the future as possible, so rapid are developments in this new science and pastime. And back of all these organizations of thinkers and workers is the sound element of service, of dependability of product, which means solid satisfaction to purchasers and sure performance of the apparatus. Whether you are entertaining guests with a concert, or listening to an important news message, lecture, or address, you want dependable results.

Never before the coming of radio has the public in general been so prone to build at least a part of their own apparatus, for any purpose. Never before have Tom, Dick and Mary realized so well what manual skill and dexterity mean, nor have they so thoroughly appreciated the value of experience in production.

Thousands of radio enthusiasts have gotten acquainted with a soldering iron, for example, who never before knew that such a thing existed. Boys, men and even women have wired coils, and assembled sets.

Men from ordinary walks of life have become bench hands in a degree. The man from the office, as well as the shop, talks glibly of "hook-ups" and complicated circuits, connecting strangely named pieces of apparatus with even stranger parts to play in this wonderful new field of science.

The bookkeeper on his homeward journey talks to his friend about wave lengths in astonishing dimensions, and his friend can usually reply in equally mysterious terms of capacity and inductance.

Those who have gone so far as not only to wind coils, but make complete set assemblies, have learned another lesson besides that of radio terminology, and have learned it well. "What lesson?" you may say. The chorus of radio fans the world over might reply: "The lesson of experience in production." Men, women and children never tried to make wagons, sewing machines or automobiles for their own use (or, at least, very few of them did), but many, indeed many, have tried to build radio sets, and they now recognize a piece of properly made apparatus when they see it.

They have learned that to make an efficient product requires experience—experience in designing, in the selection of raw materials in manufacturing, assembling and inspecting; in fact, experience in all stages of production clear through to the ultimate consumer.

So we can better appreciate why some radio sets are good, some bad and some indifferent. Their value varies with the experience and the materials that have gone into them. The poor product fails to satisfy, and so the "get-rich-quick"

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Tells you if your line is short, crosses, or grounded and how many miles it is from you. So simple the operator can use it as easily as the men. Reads direct.

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bought 330 more cells than actually required.

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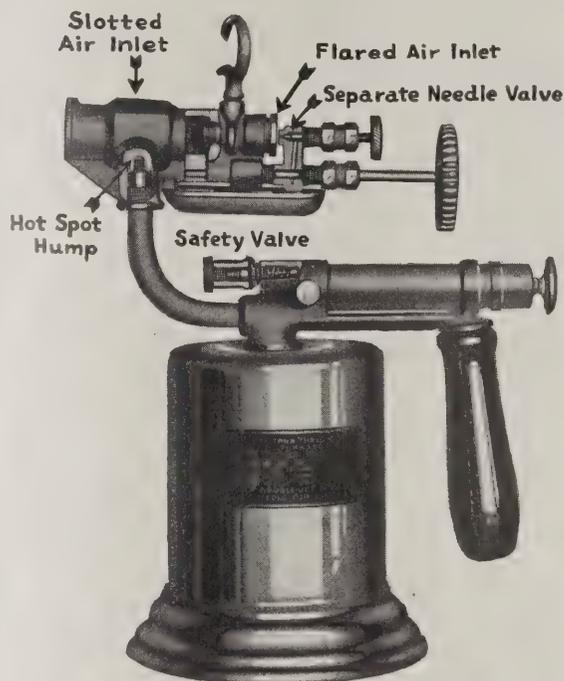
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A. H. Dvency & Co., 4th National Bank Bldg., Atlanta, Ga.

manufacturer is singled in his own flame.

And that is the reason why the Kellogg Switchboard & Supply Co. with many years of high reputation in the Independent telephone field, has been working steadily perfecting a line of radio equipment which can be absolutely depended upon. Its long experience in production, its wide research facilities, its laboratories and skilled engineering department, and above all its intent of thoroughness, have been bent upon these radio parts, with the result that the public can be certain that each and every piece of Kellogg radio equipment will give satisfaction. Kellogg has long said of its telephones: "Use is the test." This holds true equally of Kellogg radio.

A Small, Handy, Efficient Torch and Iron—The Everhot.

One of the many products which the Everhot Mfg. Co., of Maywood, Ill., has placed on the market as an aid for telephone construction work is the Everhot self-heating soldering iron, blow torch and branding iron.

The brands are made to any special design or trade mark. When it is to be used as a soldering iron, the brand is simply detached and one of the tips or attachments inserted. Another easily made adjustment, and the iron becomes a blow torch.

The burners are made of the best materials obtainable and are of heavy type, designed to stand hard use. The iron has a patented self-cleaning needle valve and a needle valve seat to take the strain off the valve. The makers claim that the valve will outlast the torch.

The pre-heating chamber runs on both sides of the flame tube, giving a dry gas—



The "Everhot" Self-heating Soldering Iron.

thus vaporizing each drop of gasoline and delivering the maximum heat units. A special alloy steel tube connects the fuel tank with the burner, in order to keep the tank cool at all times.

The tool is of a handy size, light weight and embodies many new features that facilitate the work of the lineman and

enable him to complete more soldering jobs in a day. The lineman can carry it in his belt or put it in his pocket, and it can be used in any position and in any wind, state the manufacturers.

A method suggested by one telephone man for increasing the efficiency of the torch is to use a 5-lb. ladle to catch the drip when the molten lead is poured onto a joint, and to pour the lead back into a 2-lb. ladle, which is constantly heated by the flame against it.

There are a number of attachments to the instrument which give variety to its usefulness and make it a general utility tool.

The Everhot standard blow torch presents many exclusive features and is another Everhot product which is finding favor among the telephone men.

Concerning these and other labor-saving devices for telephone construction work, the Everhot Mfg. Co. will be glad to give complete information.

Stromberg-Carlson Report Shows Good Business Last Year.

The annual report of the Stromberg-Carlson Telephone Mfg. Co., of Rochester, N. Y., for 1922, shows the company to be in a sound condition, with a surplus of about \$800,000 as of December 31. The net profit for the year was \$317,400 and four cash and a stock dividend were declared during the year.

The balance sheet as of December 31, 1921, follows:

ASSETS.	
Fixed assets:	
Machinery, factory equipment, tools, etc., less reserves.	\$ 332,658
Current assets:	
Raw materials, supplies, work in process and finished product at cost or market whichever is lower.....	\$1,177,223
Accounts receivable, less reserve.....	557,285
Notes receivable....	204,207
United States and Canadian government bonds (market value \$447,154)	440,637
Cash on hand and in banks.....	105,664
	2,485,016
Deferred charges.....	22,704
	\$2,840,378

LIABILITIES	
Capital stock:	
Authorized..\$2,000,000	
Issued	1,680,000
Less—Held in company's treasury...	10,000
	\$1,670,000
Current liabilities:	
Accounts payable including accrued wages and taxes..	90,978
Provision for federal income tax..	40,000
	130,978
Reserves:	
For contingencies..	50,000
For market fluctuations in inventory values	200,000
	250,000
Surplus	789,400
	\$2,840,378

The profit and loss and surplus account statement reflects this condition:

Surplus at December 31, 1921...	\$1,440,584
Net income for the year, after deducting depreciation, but before interest and federal tax..	\$359,872
Deduct—Interest paid.	2,492
	\$357,380
Deduct—Provision for federal income tax..	40,000
Net profit for year 1922	317,380
	\$1,757,964

POSITION WANTED

POSITION WANTED—All around telephone man with five years' experience and wife (five years' experience) wish to connect with good up-to-date telephone company starting May 20th. State full particulars in first letter. Address 5269, care of TELEPHONY.

WANTED TO TRADE

WANTED TO TRADE—160 acres all in wheat, new three-wire fence, located three miles from Horace, Kans., for telephone exchange or controlling interest in same. In answering, state price per telephone in use. Address B. W. Ammerman, Scotia, Neb.

WILL TRADE—160 acres improved dairy farm, one-half mile from concrete Victory Highway, 28 miles from Kansas City, for small telephone plant located in northeastern Kansas or near Kansas City in Missouri—two or three hundred telephones. Address Foster Laming, Tonganoxie, Kans.

Switchboard Plugs, All Types, U. S. Patent 1302471
INSULATION IN ONE UNIT. IN USE IN FIVE CONTINENTS
TELEFON FABRIK AUTOMATIC
7 AMALIEGADE, COPENHAGEN, DENMARK

Hot Galvanized Pole Line Hardware
M. LANZ BOLT CO. PITTSBURGH, PA.

NORTHERN POLE and LUMBER COMPANY
POLE SERVICE
DULUTH MINNESOTA

To insure delivery on time order your poles as early as possible.

Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
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S. R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

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Time and again TELEPHONY has urged telephone companies to increase their publicity efforts, to get on the right side of the local newspaper with a view to getting space in its columns. Probably, more than one reader has asked himself the question: "What particular sort of reading matter will appeal to the editor and find its way into print?"

It so happens that the Illinois Committee on Public Utility Information has been checking up on this very point, and the result of its investigation answers that query.

* * * *

Copies of the February issues of several hundred newspapers were examined, and the amount of matter clipped from the committee's weekly bulletins was measured in column inches and classified. This analysis was divided into these groupings and the percentage for each group figured, with these results:

Statistical (matter relating to production, number of customers, etc.), 23.4 per cent.

Historical, 9.2 per cent.

Anecdotes, 0.82 per cent.

Jokes, 4.7 per cent.

Problems of the industry, 61.9 per cent.

* * * *

An analysis of the matter published during the six months ending December 31, 1922, gave approximately the same results. It is encouraging to note that the figures show that press matter explaining the problems of the utility was given more attention by the editors than were the

CURRENT OPINIONS AND COMMENTS

other subjects discussed, which indicates that the newspapers appreciate the situation and are willing to give the service companies an opportunity to give the public the facts.

The Illinois committee's records show that the principal topics touched upon, under the heading "Problems of the Industry" were taxation, tax-exempt securities, right of industries to fair rates, association conventions, and the like.

* * * *

News items of local telephone development, service improvements, and changes in the company organization, if properly handled, always find a ready welcome in the columns of the local newspaper. Matter reminding the public of the peculiar problems of the telephone utility is doubly useful in creating good will, and, according to the figures quoted, editors are willing to give it space.

As showing what can be accomplished along the publicity line when intelligent, systematic attention is given the matter, it is said that during the 47 months the Illinois committee has been operating, approximately 108,000 column inches of space has been given its utility news by the papers of the state.

* * * *

Committees on public utility information are doing a valuable work in placing before students in high schools interesting facts and information relating to the public service industry. In Missouri and Illinois, for instance, the state committees

have prepared a "public welfare and public utility educational service" which has been offered to every high school in these states. Out of 636 schools in Missouri, 228 have requested the service to be supplied for use among the pupils. In Illinois 570 high schools have asked for the service.

Such efforts to broadcast information regarding the utility business are certain to bear fruit and smooth the path of service companies in the next generation, when these high school students are graduated into the active business and social life of men and women.

It is a good thing to remember that the school children of today will be the utility customers tomorrow.

* * * *

A letter from a telephone man who was interested in the reference to a code of ethics for the telephone industry calls attention to the fact that the agricultural interests are now preparing such a code. Representatives of the farm implement, agricultural press and rural equipment companies held a conference, and adopted six articles of faith, the first of which is a fine example of the ideals which will help straighten out many of present day troubles. This article says:

"Our industry, being basic in character, affords us a distinct opportunity of serving society and should justify the exchange of ideas. Our ambitions should encourage us to perform our duties in a dignified and honorable manner; our endeavors should be to elevate the standard of our vocation.

"Our business should be conducted in such a manner that others will find it profitable and conducive to happiness to emulate our example; and furthermore, that truth, honesty and courtesy shall prevail in all our dealings."

* * * *

The committee to draft a code of ethics for the United States Independent Telephone Association consists of: John Z. Miller, Erie, Pa., chairman; John H. Wright, Jamestown, N. Y.; E. L. Chase, Kansas City, Mo.; P. J. Weirich, Monroe, Wis., and F. H. Gardinier, Oberlin, Ohio.

Mr. Miller was the author of the resolution before the last convention which started the movement for a code of ethics for the telephone business. He and his

colleagues are well qualified to draft a declaration of principles which will command the respect of the public and strengthen the telephone industry in every way.

* * * *

Anything that encourages the investment of local capital in local telephone companies is in the right direction and should be given the widest publicity. That is why the following editorial from the Santa Cruz (Calif.) Sentinel is quoted, and why managers should have it printed in the home papers:

"Investments in public utilities are becoming the most popular form of savings. We must use electric light, gas, telephone, street railway or interurban service un-

der modern living conditions. We can not eliminate charges for these services or at least some of them, any more than we can eliminate the grocer's bill.

"The thrifty individual has found how he can turn these charges into a dividend. Public utility companies have made the sale of their securities in such small denominations or on the easy payment plan a feature of their financing.

"A family that buys \$1,000 worth of stock or bonds of the local electric light, gas, telephone company or other utility becomes an interested owner in the enterprise, and from the return on the investment turns its monthly bill into a profit to itself.

"As the people become the real owners of public utilities in this manner, a co-operative enterprise is built up on the highest plan of development."

"Telephone Talks" to the Public

A Successful Publicity Campaign Consisted of a Series of Short Telephone Talks Run as Advertisements in the Newspapers, a New One Each Day—Purpose of the Talks Was to Make the Public Realize Its Relation to Company

By Chas. S. Norton

Foreword.

As manager of your telephone system and knowing that you want first-class service, I feel that I would be neglectful in my duty to you if I did not advise you of what is necessary in order to give that service, and at the same time set forth the relation of the company to the community which it serves.

As you furnish the money, it is proper and right that you should know what it costs to maintain and operate the plant and what efforts have been, and are being made, to give you dependable service.

You should also know that the only purpose of the management is to give you the service which you desire and to earn a fair and reasonable return upon the property "used and useful," in the conduct of the business.

We will endeavor to give you this by means of a series of short "Telephone Talks" which will appear in your local papers. I hope you will read them as they are published and that, if the subject matter treated is not made perfectly clear, or if any question arises in your mind that is not answered, you will give me the opportunity of going into the matter fully with you personally. The light of day can not harm any worthy cause.

How the Company Started.

In 1894 ten timorous townsmen of yours decided to put in a few telephones as sort of side issue to their other business. They did not even dream nor imagine the future of their simple venture. Unexpected cost and difficulties in finding reliable appar-

"TELEPHONE TALKS."

Here is a series of "Telephone Talks" which were prepared by Chas. S. Norton and used over the manager's signature in what was seemingly a very successful publicity campaign at Lebanon, Ind. The purpose of these talks was to set before the community its true relation to the telephone company and its service.

The talks first appeared in 12 installments in the daily papers for two successive weeks, and then were combined in pamphlet form and mailed to each subscriber. They were published as paid advertisements, using a quarter of a page, set in large type to a width of five inches. The paragraphs were divided as nearly equal as possible each day into talks No. 1, No. 2, etc.

These talks form an excellent outline or guide for a publicity campaign that other companies might have under consideration.

atus and equipment confronted them at the very beginning.

Seven of the ten soon became discouraged and got from under, but three of them—Phil Adler, W. J. DeVol and William Buntin—stuck to the venture and, being joined later by Dr. L. W. Kirtley, are still financially interested and directors of the affairs of the company.

When the first pole was set in the alley running past Castle Hall, a crowd gath-

ered to see the beginning of the new enterprise. Comments were freely offered by the onlookers. "It's only a plaything," "I wouldn't put my money in it," "Lebanon is not big enough a place for a telephone company," "What good will it do I would like to know," "I'll bet they will wish they hadn't started this thing," and such remarks greeted these original and pioneer telephone men of the present Lebanon Telephone Co. 28 years ago on a Friday afternoon as they watched the setting of that first pole.

Great encouragement, wasn't it, for these ten men who laid then the foundation of this institution which today is essential to community life and reaches almost every home and business house and office. It is also an integral part of the county, state and nation-wide telephone system of 13,000,000 telephones and one of the heaviest tax paying corporations in your county.

Trouble Ahead.

The pathway of the organizers of the Lebanon Telephone Co. was not strewn with roses by any means. Difficulties developed thick and fast. There were only two or three manufacturers of telephones and switchboards in the United States from which equipment could be purchased. These factories were just beginning, their apparatus was primitive and hardly dependable, for telephony was then new.

The company planned for 50 subscribers and built accordingly. At that time all lines were single wire or of the

grounded line type. The outside construction was all open-wire work, no aerial or underground cables being used.

Cross-talk between lines was apparent and inductive disturbance (buzzing and roaring in the receiver) was so bad at night when the electric light was turned on that many telephones could not be used for conversation. Some of you remember how it was, and your complaints about the service.

To overcome cross-talk and inductive disturbance, the company had to change to full metallic or two wires for each individual subscriber and party-line telephone. This necessitated doubling the wire mileage and other additional construction at a heavy expense adding nothing to the net income.

A Radical Change.

When the Lebanon Telephone Co. was formed, it was organized purely as a commercial or industrial concern. It was in the same class as farming, manufacturing or merchandising, and was free from regulation or restrictions as to earnings.

It was free to manage its own affairs and, like the farmer, the manufacturer or the merchant, could make much or little, according to business conditions and good or bad management. If the company could make 10, 20, or 50 per cent upon its investment, it was no one's business but its own, just as today there is no law preventing the farmer, a merchant or a manufacturer from making 10, 20, 50 or even 100 per cent upon his investment if he is able to do so.

The enactment of the public utility law in 1913 and the advent of commission regulation for utilities practically took the Lebanon Telephone Co. out of the commercial and industrial class of business and made of it a functional institution. That is, it can no longer make more than a "fair return"—7 or 8 per cent upon its capital. Although organized to make money, it is now prohibited from making money above a fair return and must operate for the sole purpose of giving service. It has no other reason for existing and is in business for no other purpose.

Rebuilding.

Within a few years the growth of the company made it physically impossible for the pole lines to carry all of the open wires needed on the main leads in the city and the company had to do away with its open-wire plant many years before the life in it was used up, junk the wire and crossarms and substitute aerial and underground cables at a heavy expense, thus greatly increasing its capital cost per station.

The heavy open-wire lead that once figured your main streets and was a menace to fire protection was junked and new cables were put underground to take their place. The first telephone instruments

had to be remodeled or new ones purchased to take their place. Constant rebuilding in order to suit new conditions was the order of the day.

Three New Switchboards.

The first switchboard was a one-position type built to accommodate 50 lines. Developments within three years rendered this board inadequate and, as it could not be added to, it had to be junked and a 900-line board installed. By 1912 this switchboard also became inadequate. Although it was not worn out and the company had paid several thousand dollars for it, nobody wanted that type of second-hand board and the company got less than \$300 for it as junk.

At this time the present 2,000-line multiple board was installed which cost four times as much per line as the first board cost. This junking of switchboards and killing property investment was in the interest of better service and to meet the increasing demand for service.

Buying the Bell.

For a number of years the citizens of Lebanon and Boone County were served by two opposing telephone systems—our own and the Central Union Telephone Co. This meant dual service for many, two telephones—or half service, one telephone.

There was a constantly-growing demand on the part of the public that the two systems be combined. To meet the public wish this was done in 1912 by our company buying the Central Union company. This resulted in the duplication of such property as pole lines, cables, switchboard and terminals, much of which could not be used but had to be junked or sold as second-hand material at considerable loss.

Magneto to Common Battery.

Many of you remember when it was necessary for you to ring Central by vigorously turning a crank, and that frequently an inspector had to come into your home or place of business to replace worn-out batteries. Your telephone instruments were large and unsightly. This was the magneto system.

At the time of the merging of the two plants, and the installation of the present switchboard, a change was made to common battery such as you now have. This necessitated changing all the telephone instruments and the installation of a complete new central office equipment, resulting again in a heavy loss of property and junking of equipment.

Why These Changes?

These changes were for the good of the service and to take care of the increasing list of subscribers. When we began operating, the science, art and business of telephony was young. The best apparatus was primitive. The art and business of telephony as we know it today was unknown and unimagined.

Inventions and new devices have followed one another in rapid succession. The toy and luxury of twenty-five years

ago has become a business and social necessity. From 50 to 2,000 subscribers has been the growth.

In order that you might have the best possible service, the company has had to repeatedly change equipment and tear out and rebuild, until today its investment represents the cost, not only of the present plant as it is, but of two former plants that have been largely scrapped. The demands of the public for service compelled it.

This is why these changes have been made. Is it any wonder a telephone property costs far more than what a casual observer realizes?

A County System.

The original exchange of about 50 subscribers in Lebanon has been expanded until it covers not only the city but reaches into the county for a distance of six or seven miles. The company has operating agreements with exchanges at Thorntown, Hazelrigg, Advance, Jamestown, New Brunswick, Mechanicsburg, Whitestown, Elizaville and Big Springs. There are over 5,000 telephones included in the county system.

It also has traffic agreements with long distance companies for toll line service, thereby making it possible for you to talk to "anyone anywhere" in the United States and nearby islands of the sea. The vast telephone system of the entire country is at your service the same as if we owned it in its entirety.

While the development and extension of this vast telephone system of the United States has been wonderful, it is relatively no more wonderful than the development and extension of our own system in our own local field, for we have kept pace with the larger system.

Where the Money Goes.

Many a man has asked himself this question without being able to answer it with any degree of satisfaction. We know where the money goes, for the Uniform System of Accounts issued by both the Interstate Commerce Commission and the Public Service Commission of Indiana prescribe how we shall classify our income and expense.

We will not burden you with details but every dollar we take in is divided up and spent for taxes, interest, insurance, rents, fuel, light, power, repairs, materials, management, office force, bookkeepers, office supplies, operators, repairmen, inspectors, "trouble-shooters," wire chiefs, and then if anything is left out of the dollar, the stockholder can have his 7 per cent or 8 per cent. In the case of your company there is nothing left.

Our Business Is Different.

The telephone business is different from merchandising or manufacturing in that the merchant and manufacturer conduct their business free from regulation as to profits and output, while we are regulated by law as to rates and service.

The merchant fixes the price he wants for his goods and, whether just or unjust, reasonable or unreasonable, the price he fixes is purely his own affair. We, however, are "required to furnish reasonably adequate service and facilities." The charge made by us for any service rendered "*shall be reasonable and just, and every unjust or unreasonable charge for such service is prohibited and declared unlawful.*"

The Public Service Commission of Indiana passes upon the reasonableness and justness of the rates which we charge with power to reduce any rate which we may fix if it is found unreasonable. The law, while it prohibits an unjust and unreasonable rate, clearly contemplates on the other hand that we are entitled to a rate for service that is just and reasonable.

As a heavy taxpayer, and one of your essential institutions, we ought to get a rate for service that would yield as much as if we had invested our money in real estate mortgages. Does anyone object to the groceryman, the butcher, the department store owner, the manufacturer, the banker or the farmer earning a fair return upon his investment and enough to pay living wages to employes?

Let us be fair with each other. As we are not permitted to make big profits in "fat" years with which to tide over our losses in "lean" years, it is reasonable that we should be allowed a rate of return that in all years is equitable and just.

Cost Increases With Subscribers.

You doubtless have heard or read that the more subscribers a telephone company has the more it costs per subscriber to give service. This is true! Operators' wages are a heavy expense with us. When we had 50 subscribers, you could talk to anyone of the 49. Now that we have 2,000 subscribers you can talk to anyone of the 1,999, as well as 3,000 additional subscribers of other companies to which we furnish service.

Is it not reasonable that you will talk more, and that more people will talk to you by telephone? More calls over your line mean more operating work, hence more operating expense. The average operating expense on each line is more than double what it was not many years ago, yet no more is paid for service.

Then too, the bigger the exchange, the longer the average subscriber line. As cities grow the telephone company must extend its lines. The longer the lines, the greater the investment and the more it costs to keep up the lines. It costs more to knock out a cross or repair a telephone in the country than it does in town because it takes more time.

As an exchange grows larger, the calling rate per station increases and the upkeep per line is larger. This is why expenses increase more rapidly than income in a growing exchange.

Telephones and Automobiles.

The human being is a queer animal. He does not seem to object to the price he pays for luxuries, but is eternally fighting the price of the necessities of life. There are almost 4,000 automobiles in Boone County and 5,000 telephones.

Your county has as large, if not the largest telephone development per unit of population of any county in the state—one telephone to each five of population—yet Boone County last year paid ten times as much for gasoline and oil with which to run its automobiles as it paid for exchange and toll line telephone service combined.

If the upkeep, repair, depreciation and running expense, including tires, gasoline and oil, of each automobile is one dollar per day, the people of this county spend annually \$1,460,000 on automobiles not including the purchase price. This is 20 times as much as is spent for telephone service.

If it were a question of doing without automobiles altogether, or telephone service altogether, we believe the public would give up the automobile in preference to its telephone system. The truth of the case is that no modern invention fills the absolute needs of community life so much as the telephone and costs as little.

Depreciation.

Depreciation is the destructive force of the elements upon our poles, wires, cables and other equipment. The minute a pole is set in the ground, it starts to decay; as soon as a wire is strung, it begins to rust; no sooner is a cable strung than the sheath begins to crystalize and eventually cracks, thus rendering it useless. Nothing that we use grows better with age but everything gradually goes to pieces and sooner or later must be replaced.

There is no escaping the action of the elements. A company that does not charge a rate that permits of a proper reserve for depreciation will finally find its plant rotted down and rusted out and no money with which to replace it. And then, too, we have to contend with fires, storms, sleet and floods which destroy parts of our property all at once.

If any community desires good and continuous telephone service, the rate which it pays must be sufficient to provide for replacement as fast as the elements and daily wear tear it down. In addition to this, equipment becomes out of date and must be junked and discarded and replaced with new in the interest of better and more modern service. This expense must be met from the income of the company.

Telephones and Good Roads.

Just as roads, houses, fences and farms go to pieces if not kept up, so does telephone property. We would be very negligent, indeed, if we did not call your attention to the necessity of keeping up the property in order to give good service.

Your telephone system is similar to your highway system. Each is a means of keeping you in touch with your neighbor. The fee simple (ownership) of your highways belong to the abutting property owner, yet you have the use of these highways and pay to keep them in repair. Still you do not own the roads.

The property ownership of your telephone system belongs to the stockholders yet it is dedicated to public use, wholly governed and regulated by the public which uses it.

Your avenues of communication—roads and telephones—are absolutely essential to community life. Just as the dirt roads of a few years ago no longer meet the public need and are being replaced by good gravel and concrete highways so your former grounded line, open-wire, magneto telephone system has had to be replaced by a full metallic cable-constructed, common battery plant in order to meet the demands for service.

Like your roads, telephone service is good, bad or indifferent just in proportion as you pay to make it so.

Good Telephone Service.

While telephone companies have standards as to what constitutes good service, the nature of the business does not permit a fixed standard as in the case of water, gas or electric current. What one subscriber considers good or fair service, another vociferously condemns, depending largely upon the temperament of the party using the service. The human element both as to company employes and subscribers enters into giving service, and so long as the human element is a part of the service, there will be occasional errors.

The service of your grocery, garage, department store, postoffice, etc. is not 100 per cent perfect and never will be—but it can not be said you do not get good service from these concerns. So with your telephone company; as long as your telephone service is comparable with other services rendered you into which the human element enters, your service is good.

Remember that interference with our lines by other wire-using companies and that lightning, winds, snow, sleet or rain, falling branches and trees, through no fault of our own, often interrupts your service. Also that your telephone instrument and switchboard are composed of very delicately-made and finely-adjusted electrical apparatus which is easily thrown out of order and your service for the time being is broken down.

And also remember that our clerks, operators, inspectors and linemen are human beings like yourself and sometimes unintentionally make a mistake. But unlike you they work for hundreds and thousands—not for one or a few persons—who pass judgment upon their actions.

With all this we believe our service compares favorably with any other class
(Concluded on page 30.)

Efficiency Among the Operators

Some of the Toll Operator's Problems and How She Solves Them—The Importance of Accurate Ticket Detail—Recording Operator Must Have Courtesy, Accuracy and Speed—Papers Presented at Pennsylvania Convention

Operators' Problems and Qualifications.

Miss Florence Ringling,
Assistant Chief Toll Operator, Keystone Telephone Co. of Philadelphia.

In preparing this paper on the subject, "Problems and Qualifications of a Toll Operator," and taking up the problems first, the natural question would be, "What are a toll operator's problems?" and having found out, enumerate each and every one of them.

One might say that anything which occurs that has a tendency to delay or prevent call from being completed at all, becomes a toll operator's problem. Generally speaking, the ordinary problems a toll operator meets from day to day are, as a rule, pretty well covered by the rules and regulations governing her work.

The operator's first duty—or shall we say problem?—is to complete a call as soon as possible. We all know, however, that there are causes resulting in delayed or cancelled calls of which she has no control. A subscriber who is in the habit of calling certain toll or long distance points daily and whose calls the toll operator is familiar with presents no problem to her, for in many cases she knows number and name of party wanted and, as a usual result the call is completed very promptly.

It is, however, a different proposition on a call where subscribers calling are hard to understand or cannot give complete information as to the name of firm, party wanted, number of telephone or address, as the case may be.

Her problem then is to help such subscribers as much as possible by, in the first case where the subscriber is hard to understand, being unusually careful in repeating back, and emphasizing that part of the information given that she is in doubt of having understood; in the second case, on calls where information is incomplete, to ask such questions, the answers of which, if the subscriber can give them, when passed to the distant toll operator, will be a help in completing the call.

For example, a call is received for a Mr. Blake who is a salesman and who will be in a certain town today; the firm for whom he works is anxious to get in touch with him. The only information given on the call is name of party wanted and name of town where this party is supposed to be on a certain day.

The problem of the toll operator in this case is to ascertain by questioning the party placing the call, at what hotel he would be most likely to stop; if this information can not be given, what busi-

ness concerns would Mr. Blake most likely call on in this town. Any information in either case would be of great help to the distant toll operator in locating the party wanted.

True, calls of this nature are few when compared with total calls handled, but unless the toll operator receiving this call meets and solves the problem presented, a lost call and, therefore, lost revenue as well as a disappointed subscriber are the result. And so one might give various examples of calls in which problems present themselves; but it is safe to say that a toll operator when encountering what one might say are out of the ordinary problems will, if keen about completing calls, complete a good percentage that would otherwise be cancelled, if she uses judgment in questioning the party placing the call, and takes advantage of every available course to get the call completed.

Every operator, whether she is what is known as a local operator or a toll operator, must be courteous. Too much cannot be said about this one thing of courtesy, for no matter what happens either on a local, toll or long distance call, whether it is completed or not, courtesy in its handling is of the very first importance. This is especially true in the handling of toll or long distance calls where the party calling is hard to understand or the information given is incomplete. The courteous and intelligent way a call of this kind is handled very often gets the results desired, and is a means of establishing calls that would otherwise be lost.

A toll operator should be of such a disposition that she will not be easily upset or, as one might put it, have "nerves" in the handling of her work; for if she does, it will be reflected in her work and can not help but be noticed by subscribers she receives calls from and toll operators she has occasion to pass calls to. This, it goes without saying, is not productive of good toll or long distance service.

The operator must be familiar with the rules and regulations governing toll and long distance work. This also applies to the various routings. If there is a choice of routes, she should know from experience what the best routings are and always use them when placing calls involving these routings, unless the trunks should be busy or out of order. She should be keen about reporting to her supervisor anything of any nature which she experiences in the handling of her work, that delays the rapid and accurate handling of the calls.

In short, to summarize "the qualifica-

tions of a toll operator," she must be courteous; she should have a pleasing voice, she should have adaptability to meet and solve out-of-the-ordinary operating problems when presented. She must be thoroughly familiar with rules and regulations governing toll and long distance work; she must be thoroughly familiar with the best routings; and last but by no means least she must conduct herself in such a manner both with her associates and the public, that she will be well thought of by all with whom she comes in contact.

The Necessity of Ticket Detail in Handling Calls and Reports in Proper Order.

Miss Edna Bateman, *Chief Operator, Cumberland Valley Telephone Co. of Penna., Harrisburg, Penna.*

Telephone calls come under two classes—local and long distance. All telephone work is very important, but there is one part more important than the rest and that is long distance work, because usually where long distance service is used, it is for business purposes; therefore, it is very essential that the long distance operator be very efficient in handling long distance calls.

In answering long distance calls the operator should introduce herself by saying: "This is Long Distance." While the call is being recorded, or before the party hangs up, the operator should repeat the ticket in case there should be any chance of being misunderstood. When this is done, the operator should use the phrase, "Thank you, Mr. Parkenheimer. The operator will call you."

In recording a ticket, the operator should have the filing time on her ticket—in other words, the time she received the call—the number of the telephone the party is using; his name, if he will give it, if not, the name of the firm, or party, whose telephone he is using; the place that he wants, and the name of the party to whom he wishes to speak.

If he should give the name of a firm, or a number, then the operator should ask him if he wants to talk to any particular party. If he wants to talk to any one that answers the telephone, the operator should use the correct code, AY, which means anyone, on the face of her ticket.

When the ticket is made out, there should be enough information on the call that will enable her to pass her call without trouble.

When the operator rings for the termi-

nating operator, she should immediately announce her station by saying, "Hbg. a ticket." If it should be a collect call, the operator should say, "Hbg. a K1" which means a collect ticket, so that the operator receiving the ticket will know at once what to do.

After announcing to the operator that she has a ticket for her, she should in a very clear voice pass her the ticket, giving her number and the name of the party called for.

If the party calling does not happen to know the number of the party he is calling, the originating operator should get all the information concerning the call, and then ask the operator at the terminating office for I. B., which means information, and she, in turn, will give the number desired.

The record on a ticket should be sufficiently complete that the various steps taken in handling the call may be followed and understood. For instance, if an operator takes a ticket, and does not get enough information on it so that the operator who relieves her will understand the ticket, then she will have to call the party and ask him again for the information. This not only causes delay but does not have a very good effect upon the party calling.

If, after the operator gets the ticket, the circuit is busy, she should use the code "N C" which means "no circuit". If the circuit is out of order, she should use the code "O D" which means "out of order"; in either case, the time should be put on the ticket with the correct codes. Then the operator should try other ways to complete her call.

If the party called for does not have a telephone, the proper code "N F" which means "No Telephone" should be placed on the back of the ticket.

Every effort should be made to complete the connection before canceling the call.

Codes should be memorized and used between operators. They are not used, however, in giving reports to the public or any one except operating employees.

All tickets canceled should bear the reason for their cancelation as learned by the operator during the time of her instruction period.

If there is a telephone near to the party called for, the operator should inquire whether they will send for the party called. If this method cannot be used, the operator should inquire of the party calling whether he wishes to send a messenger for which an extra charge will be made.

Each morning, the chief operator should examine the tickets of the preceding day in the expectation that among them will be some, which, from the nature of the reports, will appear to justify an effort to establish the connection.

Reports on all calls should be promptly given to the subscriber.

Summarizing briefly, the following

points should be observed: First, filing time, the time at which the calling party gives the details of the call; second, recording trunk number; third, recording operator's personal number.

Tickets as received should be given prompt attention. The filing time should govern the order in which the calls are passed.

Incompleted tickets should be retained at the position so as to be found promptly and acted upon in proper order at the proper time and without waste of circuit time or delay to the subscriber.

In establishing a connection to a distant office, if the first route should not be available and an alternate route is available, it should be used immediately.

When the delay is due to "no circuit" or "out-of-order" circuits, a suitable report should be made to the subscriber. The report of "no circuit" should not be given until ten minutes have elapsed from time of filing.

A report of circuits "O D" should not be given until the operator has found that no suitable circuit is available, and she has tried every way available to get her call through.

In ringing for operators, especially a circuit running east and west—or in other words, a combination circuit—the operator should listen on the line before ringing. If an operator is using the line, she must come in on the line and tell the operator the line is in use, that she will call when not busy.

When the originating operator has passed her call and the subscriber is through talking, the operator at the originating station must clear her line so that the line is o.k. when the next operator has a call on the same line.

Let me again emphasize that we must try to be very efficient in this service of handling long distance calls as the general public gains either a good or bad impression from the service it receives on its long distance calls.

Things the Recording Operator Should Know and Do.

Miss Rosella Shiber,
Chief Toll Operator, Johnstown Telephone Co., Johnstown, Penna.

We all know that the operator who takes calls from the patron is called the recording operator. As she is the first representative of the long distance department with whom he comes in contact, it is from her he receives his impression of the company and the service. An efficient recorder is at all times businesslike and courteous in her dealings with the public.

The requirements of a recorder are many, but the most important are: Courtesy, accuracy, interest, speed and pleasing tone of voice.

Every line operator knows only too well what it means in waste of circuit time to handle tickets written by inaccurate and

careless recorders. On the other hand, there is nothing in my estimation that causes the patron to lose confidence in the service more than the knowledge that he is connected with a recorder who is careless in recording the information necessary to complete his call.

Interest is a requisite that enables a recorder to like her work and, if she takes an interest in her work, her tickets are bound to show the result.

Speed is a very important requisite for this reason: During the rush of business hours the majority of calls received are from business houses, and it stands to reason that they expect their calls handled with accuracy and dispatch, and with as little annoyance to them as possible. The recording operator can assist very much in accomplishing the latter by taking the information rapidly and correctly the first time it is given, and complete enough in detail to enable the line operator to complete the ticket without a recall of the patron.

What constitutes sufficient information is often a matter of judgment to which the recorder should give careful attention. If the patron appears unfamiliar with the placing of a long distance call, the recorder should assist by asking such questions as will give the greatest aid in locating the called party. If he appears familiar, she should allow him to give the call in his own way, thereby avoiding needless interruption.

Of the first and last requisites named—courtesy and pleasing tone of voice—too much cannot be said. The public has every right to expect the highest standard of courtesy from all persons representing a public utility, and it is largely from the operator's voice and manner that he receives his impression of her and the service.

We should at all times use our very best voice or, as it has been well expressed "The Voice With a Smile." A displeasing tone of voice antagonizes the listener, while a pleasing tone of voice has the opposite effect.

It is not always what we say, but the tone and manner in which we say it. A courteous manner seldom gives the impression of courtesy unless accompanied by a pleasing tone of voice. It, therefore, behooves all of us to remember these words, "The girl worth while is the girl who can smile when everything's gone dead wrong."

Prices in the Metal Markets.

New York, April 23.—Copper—steady; electrolytic, spot and futures, 17c. Tin—firm; spot and nearby, \$45.37; futures, \$45.62. Iron—steady; No. 1 northern, \$31.00@32.00; No. 2 northern, \$30.00@31.00; No. 2 southern, \$27.00@28.00. Lead—steady; spot, 8c. Zinc—easy; East St. Louis spot and nearby delivery, 7.10@7.15c. Antimony—spot, 8.12@8.25c.

Public Relations—Who Is at Fault?

Utilities' Sins of Omission and Commission—Courtesy, "A" of Telephone's "A, B, C's"—Public's Faults Include Discourtesy, Waste of Service, Lack of Appreciation—Paper Read at Rushville Meet of East Central Indiana Association

By Carl Wilde

Director of Service, Indiana Public Service Commission

It is generally admitted that unless the proper relationship exists between the public utilities and the general public, the service rendered to the public by the utilities can not be satisfactory. It is also quite as generally admitted that such relationship, as it at present exists, leaves much to be desired.

With your permission, I should like to discuss the reasons why the public relations of the utilities leave much to be desired, and whether the fault lies with the utilities or with the public. I have the idea that, perhaps, the fault lies not wholly with either side, but a little with both.

Ordinarily, when I am trying to bring two disputants to terms, I find fault with each one separately and endeavor to convince him that he is wrong, and thus bring about the proper mood for accommodation. I have always believed that this plan would probably be equally efficacious in bringing about an improved understanding between the utilities and the public. Whether, however, it will work when one party is present while unpleasant truths are being told the other, is highly problematical. The best way of testing the plan is to try it out.

Let us take, first, the sins of commission and omission of the utilities, especially of the telephone companies.

Problems of the Company.

Telephone companies have perhaps the most difficult task which falls to any class of utilities. Perfect service does not exist in telephone operation. Those who aim highest realize that if nine calls out of ten are properly consummated, the service is nearly perfect as it can be made. It is difficult for the public to forgive the uncompleted 10 per cent.

The telephone is, in itself, an instrument of irritation. It is as some cynic has said of woman: "There is no living with or without her." So with the telephone—we could no longer live and transact business without it under present conditions of civilization; but its use is a constant source of annoyance.

To find the line busy when we wish urgently to speak to some party is as irritating as though the operator were deliberately refusing to complete our call. To be called out of bed in the darkest middle of the chilly night arouses our antagonism to the telephone—and our irritation is increased if the news we receive is unpleasant. The bearer of unwelcome tidings

is always unwelcome, and night calls usually bring bad news. Seldom does any one call us at 2 a. m. to inform us that we have fallen heir to a million dollars. At least, that has been my experience.

Another misfortune in telephony is the fact that the cost per subscriber, of operating a telephone system increases as the system enlarges.

This is difficult for a layman to believe, and by the time that he has become convinced of it he has acquired so great a



Carl Wilde, of the Indiana Commission, Looks at the Telephone Situation From the Viewpoint of Company and Public.

knowledge of telephone practice that he can no longer be considered a layman. This intrinsic fact also militates against proper public relations because it is not realized by the ordinary subscriber and because he doubts the good faith of those who tell him that it is a fact.

Patience and Courtesy Necessary.

For these reasons, telephone men must be even more patient and more painstaking in their endeavors to establish and maintain proper public relations than those who conduct other utilities.

The essentiality of courtesy has been preached at every meeting of this kind since telephone associations have been in existence. It is the "A" of the ABC's of telephone practice. And yet, occasionally, representatives of telephone companies are guilty of impatience and discourtesy. A man who can not refrain from discourtesy

under the extremest provocation, would better leave the telephone business and engage in some occupation where contact with the public is not constant and intimate.

Public Unaware of the Difficulties.

Telephone men sometimes fail to make proper allowances for the general public's lack of knowledge of the difficulties of telephone operation. After a storm, which causes nine-tenths of their telephones to go out, they become annoyed if some subscriber thinks his service should be restored in 15 minutes. They consider a subscriber unreasonable who insists in complaining that central tells him "the line is busy" just because she is, too indolent to ring his number for him.

They know what a heart-breaking job it is to get things going after a severe storm; they know that no operator will ever report a line busy to avoid completing a call—but they forget that the general public does not know these things. They forget that there are thousands of telephone subscribers who still harbor a vague idea that telephone wires are hollow and are used somewhat in the manner of speaking tubes; and that to even the most intelligent subscriber the intricacies of telephone operation, which to you who operate telephone companies seem so simple, are as mysterious and obscure as the most occult psychic phenomena.

Forbearance and patience, and a constant putting of yourself in the place of your subscriber, must be exercised or your public relations will inevitably suffer.

A few telephone men in this state, none of whom, I trust, are located in the east central portion, have an exalted idea of the necessity of insisting on their rights and on the observance of the very letter of their rules and regulations. They are like the late lamented Amos Hay whose epitaph is said to read something like this:

Here lies the body of Amos Hay,
Who died disputing the right of way;
He was right as he sped along,
But he's just as dead as if he were wrong.

Men of this stamp insist on resolving every doubt in the favor of their company. They believe it wrong ever to concede a point to a customer and insist that such concessions constitute unlawful discrimination.

When they finally concede a point, they do so grudgingly and unwillingly, leaving the subscriber as dissatisfied as before. They have the delusion that they are

always right and everybody else is always wrong. As a general rule these men finally become insolvent and make way in the telephone business for men who realize that other people are as prone to be right as they are.

These are a few of the sins some telephone men commit. Mistakes of this character have nothing to do with the physical operation of the plant or its condition, which should, of course, be as highly developed as the nature of the community in which it is located will permit.

Good Plant Is Not Enough.

But the man with a plant in perfect physical condition who tolerates discourtesy in his employe—who insists constantly and unswervingly on his rights, and who makes no allowance for public misconceptions of telephone operation—will lose out more quickly and more completely than one whose plant is antiquated and whose equipment is obsolete but whose employes wear the genial smile that won't come off and who occasionally concedes a point to a public which always foot the bills.

We must remember that the utilities of today have fallen heir to an unpleasant inheritance consisting of public mistrust and skepticism. A generation or two ago, when profits were plentiful and there was no regulation in the land, a few railroads and a few of the other public utilities adopted the attitude that the rights of the public need not be considered. This attitude is generally summarized in the famous phrase of the railroad magnate who said: "The public be damned."

In the present day, this attitude among utilities is remarkable for its scarcity. But the public distrust engendered by it in days gone by still persists, and we can not wonder that this is so.

It is a good deal like the story of the villain and the heroine in the melodrama: In the first act, he sent her a box of poisoned candy; in the second, he set fire to the house in which she lay asleep; in the third act, he tied her to the rails just before the limited was due; in the fourth act, he scuttled the boat in which she was escaping from the ship he had set on fire; and in the fifth act, when she repulsed his advances, he reproachfully said, "Why do you mistrust me, Mabel?"

The public's attitude is a little like that, and, while it is not justified in these days, it exists and must be reckoned with. Frankness and absolute good faith are the antidotes which in time will counteract this poison of the past.

And now let us consider for a few moments whether the public has failed to do its share in bringing about a proper relationship with the utilities which serve it. In speaking of the public, I may use the plural personal pronoun which I can not use in referring to the telephone companies, because I am not a telephone man, but am a member of the public which buys the wares of the utilities.

It is generally agreed that unless a public understands some of the elementary features of telephone operation, its misconceptions and misunderstandings must constantly bar the way to the establishment of a proper relationship. Many thousands of dollars are being expended by telephone companies in conducting campaigns of education.

Have the Public Done Their Share?

Have we, who constitute the telephone public, met these utilities half way? Have we endeavored to understand some of the first principles of telephony? Or have we totally ignored all the difficulties which confront those who operate telephone plants and simply demanded service although we have not acquired the knowledge we must possess in order intelligently to co-operate in rendering such service satisfactorily?

Every telephone subscriber should have an idea of the process a telephone call goes through. There is no magic about the matter. The simple elements involved in the completion of a telephone call are quite understandable, although the mind of the layman must always be astounded by the wonders of the telephone.

Knowledge Brings Forbearance.

It seems to me that it is the duty of every member of the telephone-using public to acquire sufficient knowledge of telephone operation that he may know the course a call takes, and that he may understand how a connection is set up. If he will acquire this knowledge, he will be more patient and forbearing toward the operator when occasionally and very rarely a call goes wrong because of her fault.

I have emphasized the need of courtesy on the part of telephone employes. I am afraid, however, that greater reproach lies with us than with the telephone people. Because we do not see the operator, we frequently forget that it is a woman, wholly entitled to our respect, whom we are addressing, and we employ language and emphasis we would never think of using towards a lady to whom we are speaking face to face.

To our fellow patrons we are often equally discourteous, and when we are given the wrong number—usually through our own fault—we often address the unfortunate we are disturbing as though he were purposely spoiling our call. You would be surprised to know how high a percentage of wrong numbers is caused by the subscriber's mistake—by transposition of numbers—reliance on imperfect memory—want of plain enunciation. The percentage caused by the telephone operator is very small indeed.

We sometimes fail to pay our bills promptly and our service is occasionally discontinued for this reason. When this occurs, we feel a decided grievance toward the telephone company. We forget that telephone companies operate under a constant expense which must be met; that

operators' wages must be paid when they are due; and that linemen will not work in sleet and snow unless their wages are forthcoming.

We forget, too, that the loss due to bad accounts goes to make up the operating expenses of a company, and that a company that is careless about enforcing its collections is, therefore, penalizing the subscribers who pay promptly.

Another question we must ask ourselves is: "Do we use the telephone prudently and considerately, or do we waste the service by making unnecessary calls?"

Many subscribers do not realize that every call costs money to complete. If the members of a community do a great deal of unnecessary telephoning, they make the cost of rendering service inordinately high, and this cost must be reflected in the rates, which must be paid equally by the prudent user as well as by the wasteful user.

The cost of each individual unnecessary call is small; the cost of the aggregate unnecessary calls is enormous. The number of calling subscribers one operator can serve must be largely determined by the calling rate per subscriber—and the smaller the number each can serve, the larger the number of operators and the greater the cost of operation.

The length of our calls is also an important factor. When a line is tied up by a lengthy conversation, persons calling parties on that line get the busy signal and hence must keep calling. Such calls must then be considered in the class of unnecessary calls. Protracted conversations also entail the necessity of increased trunk facilities, and hence add to the cost of the service.

Then, and Now.

Perhaps our greatest sin is a lack of appreciation. Having become accustomed to the marvels, we no longer appreciate the wonder of instantaneous communication. Our ancestors, at no remote period, when they wished to send a message, sent a boy on horseback, and if the distance were 20 miles, they considered themselves fortunate to have an answer in six or seven hours. Now we call a party 20 miles away by telephone and if the call is not completed in five minutes, we feel aggrieved, and we find fault and condemn the service.

To be able to converse with a friend a mile away is only in degree less marvelous than to have it in our power to carry on conversations with persons at San Francisco or New York. Of all modern inventions, none is more wonderful than the telephone. Every man in our community, no matter how large it may be, is our neighbor. Men thousands of miles distant from us are more easily accessible than were those who lived on neighboring farms to our grandparents.

It may be seriously doubted whether the cohesion and unity of a nation as tremendous as ours could exist in the degree

in which they exist today, without the telephone. No other agency, with the possible exception of the railroads, can take greater credit for this condition than the telephone.

For these reasons we must never forget that those who operate our telephones are engaged in a great public work in which they are entitled to our loyal co-operation. We must not forget that by doing our share we become participants in this work and may, with them, take some degree of credit for its development and perfection. Of all the important activities in which the Indiana Public Service Commission is engaged, I believe that there is none more important than this business of establishing a proper public relation. It affects every other activity of the commission. Without the existence of such a relation, the service of no utility can be satisfactory; and no utility can receive rates adequate for its proper operation unless its service is satisfactory.

The willingness of the public to pay an adequate rate depends directly upon the relation of the public to the utilities.

Poor public relations—unsatisfactory service, inadequate rates grudgingly paid, deterioration of the plant, eventual insolvency.

Proper public relations—satisfactory service, adequate rates, constant development and modernization of plant, continuation of usefulness to the public.

The confidence of the public in its utilities is the very foundation upon which the future of the utilities must be built. It is the duty of every utility operator to do his share to build this proper public relation; it is the duty of every member of the public to do his share. The members of an organization like the Kiwanis Club, representative as they are of the highest ideals of citizenship, may do much in this work.

Leadership entails responsibilities. Members of organizations like this, whether they seek it or not, are inevitably leaders of public opinion and upon them rests the heavy responsibility of guiding that opinion aright. Such leadership, insofar as the establishment of proper relationship between telephone companies and the public is concerned, can only be intelligently exercised by an acquaintanceship with the simple elements of telephony.

Every member of the Kiwanis Club should acquire a knowledge of the elements of telephone practice, which will enable him intelligently to co-operate with the telephone utility in his community when it is making an honest endeavor to serve the people, and be able to recognize when such endeavor is not being honestly made.

It is commonly said that the utilities are servants of the people. If that is true—and it should be—it follows that we must understand the work our servants are doing; that we may punish if they do their

THE VALUE OF SYSTEM IN OPERATING.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

While I talk to you regarding the value of system, consider that I am discussing your office as it is, or as it should be conducted.

What is system? System is method, order, routine, uniformity.

Where does system start in your office, operators? Should it not start with clean, neat, orderly surroundings? Yes, for one-third of your day is spent in these surroundings. When system starts at the front door, it filters like sunshine into every department.

What is the result of the absence of system? Disorder, irregularity, untidiness, confusion, discord, want of method. If the responsibility of putting things into order does not fall to your lot, the responsibility of keeping things in order does.

Some operators say, "I don't have to scrub, sweep and dust at home, and I won't do it here." So they sit with their feet in a clutter and wonder what is more dreary than telephone work. After awhile they get married—I wonder what kind of housekeepers they make.

MORAL: If the feet are in a clutter, the mind is also in a clutter.

* * * *

We often hear an operator say: "My tickets are so stacked up that I don't know where to begin." It is evident that such an operator does not handle her work systematically. If she did, she would have the tickets in their proper compartments, or arranged on the key shelf according to the stage they had reached.

For instance, all tickets on which she is holding her subscriber's line, or a line to another operator, are spread out in the order of the precedence, with the earliest nearest to the calculagraph. Any ticket on which she is not holding the subscriber's line may be included if she is about to make an attempt.

If she is timing a ticket "out" or "in," such ticket is in the spiral of her ticket holder which corresponds to the cord in use.

The farthest spirals of the ticket holder are reserved for tickets on which she has left an "nc" call order at some intermediate office and released her subscriber's line.

She keeps all tickets on which an attempt is due in 15 minutes, except those already mentioned, in a pack on her key shelf, with the earliest on top.

If she has any tickets on which the next attempt is due later than 15 minutes, these tickets will be placed in the "awaiting completion" compartment.

Some other good pointers are:

Start to work with a good point on your pencil;

Keep a supply of blank tickets in the proper compartment; and

See that your calculagraph is in good working order.

These are a few of the essential details which should be observed if you wish to work systematically and thus prevent irregularity, untidiness, confusion, muddle, discord, and want of method.

The tributary operator has various responsibilities of a different nature. She has more than a toll operator responsibility.

To begin the day right, the rooms must be swept and dusted. The fire must be kept burning in winter. The toll collections and telephone rentals must be handled; some commercial work in connection with these collections must be recorded. Local service must be promptly and efficiently given.

All the links of a chain should be of one size and of equal strength. In telephone work every office which interchanges business is a link in a great chain of service; each link is equal in size of responsibility and strength. But like the iron chain, the chain of service is no stronger than its weakest link.

Your link of service is interwoven with mine.

work ill and also that we may reward when their tasks are well and faithfully performed.

Annual Meeting of Telephone Pioneers October 19 and 20.

The annual meeting of the Telephone Pioneers of America and the second meet-

ing of the general assembly of the Pioneers will be held at Atlantic City, N. J., on Friday and Saturday, October 19 and 20.

The announcement sent out by President L. H. Kinnard and Secretary R. H. Starrett states that complete details will be furnished as soon as possible.

Ideas of Plant and Exchange People

Cable, "Buried" Without Conduit, Simplifies Locating Trouble.

Louis Pitcher, manager of the Dixon Home Telephone Co., located at Dixon, Ill., claims to be the originator of a new idea in connection with the construction of "buried" cable, applying the term to cable to be buried in the ground without the protection of conduit.

Many companies desiring to install "buried" cable have refrained from doing so because of the difficulty of locating trouble which might be caused by moisture but the Pitcher scheme, seemingly would overcome that difficulty to a great extent.

To locate trouble with the Murray or Varley loop tests, using a Wheatstone bridge, requires a good wire. The Pitcher type of cable has a good wire always available, by reason of a pair of enamel insulated wires being installed in the cable during its manufacture, the pair being also insulated with paper in the regular manner.

On branches from the main cable the enameled pair is spliced to a regular pair in the main cable giving an enameled pair for testing purposes in any given run.

After securing an approximate location with the bridge, the exact location may be determined by digging up the cable and using a wireless tester to get the exact location.

One great advantage of the Pitcher type cable is that the added cost is only about two dollars per thousand feet of cable.

All the larger manufacturers of cable are familiar with the Pitcher scheme and several operating telephone companies have already adopted it.

Giving a "Busy" Signal Without "Busy Back" Attachments.

"We are enclosing copy of a mimeograph letter recently mailed our subscribers, together with a sketch of the circuit mentioned," says M. L. Golladay, secretary and general manager of the Holden Home Telephone Co., Holden, Mo. "We thought probably this might be of interest to a good many plants that do not have rotary ringing machines with busy-back attachments. The letter is self-explanatory."

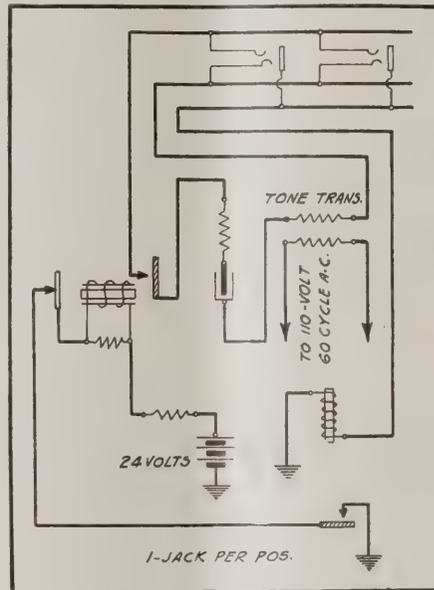
To our Subscribers on the Holden exchange:

For more than 20 years, it has been the policy of this company to give the best telephone service possible; to this end, no expense has been spared.

In line with this policy, our operators have for years been attempting to do something no other company ever attempted, viz., give the answer "The line is busy. Shall I call you?"

With our constantly-increasing subscriber list, this has been getting increasingly hard to do, until finally the time consumed in giving this reply has slowed up the service to the point where it is actually a detriment to the service; if the operator was very busy and forgot to call the subscriber, it caused dissatisfaction also.

At considerable expense we have installed apparatus in our Holden switchboard identical with that used in the large-



Circuit of the Busy, Back Arrangement.

est cities, which operates as follows: When the line the subscriber calls for is busy, the subscriber hears the hum of the busy signal at once; the time the operator formerly consumed in telling the subscriber, "The line is busy," is used in answering the next subscriber.

Accordingly, on and after Monday, the 19th, the practice of giving the reply, "The line is busy. Shall I call you?" will be discontinued. If the line or number called for is busy, you will hear the busy signal immediately and will hang up and call again. When you call for a number, you will get quicker response from the operator as she will not be engaged in telling some other subscriber, "The line is busy."

Trusting our efforts to improve our service will meet with your approval, we beg leave to remain,

Yours for the best service always,

The Holden Home Telephone Co.

"By means of a stepdown transformer, the hum of the 60-cycle 110-volt lighting current, which is generally available, is utilized. A slow-acting relay is used for the interrupter.

"We are again getting out a directory, which this year shows a profit, from advertising, of over \$250.

"It looks like things move in cycles in the telephone business as well as others. The farm mutual pest is starting again in some quarters, helped by some manufac-

turers, I am sorry to say. These latter should be boycotted by all real honest-to-goodness telephone companies. This is a matter that should be discussed in our state associations."

Getting the Public to the Exchange Through the Children.

"Would you like to hear about our 'Mother's Day' reception?" asks Manta J. Elder, chief operator, the Kansas Telephone Co., Ottawa, Kans.

"There were 40 invitations sent out to our mothers and a few friends. The operators who board in town were allowed to invite the lady of the house where they boarded. There were 26 guests accepted our invitation and all the others sent sincere regrets that they could not attend.

In order to handle the affair efficiently, committees were appointed as follows:

Two of the operators were stationed at the street door to receive the guests. These operators presented each visitor with a lovely little buttonhole bouquet of sweet peas. One of the girls then escorted the mothers to the upper landing of stairs.

There, two other operators received them and escorted them to the rest room, where four girls were busy serving punch and wafers. Other operators saw that each guest was introduced to all others and assigned a comfortable seat. Another operator presided over the phonograph.

Our mothers were soon chatting easily and pleasantly. Our restroom, although very cozy and 'homey,' is not large and we could not put on a very elaborate entertainment. However, our friends and mothers were very much interested in our work and we spent a great deal of our time in showing them over the different departments.

The traffic room was, of course, the main object of their interest as most of them had daughters working there. The information desk, with our new up-to-date Acme file in book form with celluloid tubes came in for a great deal of their admiration, as most of them had never seen anything of this kind.

When our guests left, each expressed their appreciation of our reception and interest in our work. As they were leaving, each was presented with a folder containing pictures of our different departments.

This is the second time we have given the 'Mother's Day' reception, and it is such a success we expect to make it an annual affair. We want our mothers to feel a deep interest in their daughter's share of this wonderful work of ours.

We are making a special effort to get our subscribers to visit us. A few weeks ago we sent an invitation to each of our physicians.

To date, none of them has called, but some have acknowledged the invitation and thanked us, so we live in hopes that they will come when they find it convenient.

Our manager, Mrs. E. C. Ricketts, is a strong believer in subscribers' visits. Feeling that it would be a good thing to interest the children, she extended, through her little daughter who is a member of the fourth grade, at one of our city schools, an invitation to them to visit us. There were 27 in the class accompanied by their teacher. What an excited little group it was! They wanted to know the why and wherefore of everything, and it kept the manager and myself busy explaining.

First the manager took them through the commercial department showing them how their parents' names and telephone numbers appeared on the ledger and how the bills were made out. The adding machine was very interesting to them and that afternoon, in class, when the teacher asked one little boy why he was frowning, he said: 'If I had an adding machine like Catherine's Mamma (Mrs. Ricketts), I would not have to frown so.'

After they had been shown the commercial department, they were brought upstairs, filing up two and two, but they failed to stay 'two and two.'

You should have heard and seen them. We let them get up close to the board, right back of the operators, and they asked questions as fast as they could—and much faster than we could answer. The incoming signals, the cord signals, the ringing and answering keys, the headsets the operators wore, and many other things claimed their attention and prompted their questions. We allowed them to listen a few seconds through the headset and their eyes shone with interest.

The toll calculagraphs were explained to them. One little fellow, watching an operator insert a ticket and wait for the subscriber to begin conversation, said to her, 'Hurry up there or you will lose a minute.'

The terminal room was especially interesting to the boys. One of the linemen, very ably explained it to them and it was almost impossible for their teacher to coax them out of this department.

The manager presented each child with a 'dead' line lamp, giving them a little talk about the use of the lamp, and telling them to tell their mothers and fathers how it was used. She also told them to extend her cordial invitation to them to visit us. No doubt many of these little folks will tease their parents about coming until they will accompany them to call on us.

Children are very observing and we find

it a real pleasure to tell them about our work. While it is necessary to explain the work in more simple way than it is with grown people, they seem to grasp ideas just as quickly as our adult visitors."

Tri-State's District Managers and Toll Instructors Talk Service.

Various phases of local and long distance telephone service and methods whereby those services could be improved in line with the constant aim of the company for better service, was the chief topic of discussion at a convention of district managers and toll instructors of The Tri-State Telephone & Telegraph Co. held April 14 at Mankato, Minn.

Miss Gertrude Sheldon, Rochester, toll instructor for the eastern district, officiated as chairman of the session. All present were asked to express themselves on the question of improved service and these various short talks brought out many interesting and valuable tips regarding all angles of telephone operation. These meetings are being held regularly throughout southern Minnesota for the benefit of those employed by the Tri-State company and have been found very beneficial. The next gathering will convene at Rochester or Owatonna late this month or early in May.

Those attending the Mankato convention included: Miss Gertrude Sheldon, Rochester, and Miss Adelaide Thiemer, Owatonna, toll instructors, eastern district; Miss Elsie Mueller, Albert Lea, toll instructor, southern district; Miss Edith Yust, Mankato, toll instructor, western district; Miss Etta Schendel, Olivia, toll instructor, northern district; Miss Ruby Rutherford, St. Paul, toll instructor, St. Paul district; W. I. Howard, traffic superintendent, and W. P. Kimball, district traffic chief, both from the general offices, St. Paul; Chas. D. Ellsworth, Rochester, district traffic chief, eastern district; H. M. Heenan, Olivia, district manager, northern district, and O. A. Beliveau, Mankato, district manager, western district.

The Telephone Cord Has Had an Interesting Development.

The present cords used for connecting telephone desk stands and receivers have several notable improvements over the original silk tinsel cord used as far back as about 1879 near the beginning of the telephone industry.

The original silk cords, however, were remarkably well adapted for telephone use.

The conductors, instead of being made of stranded copper wire like electric light cords were constructed by winding a thin copper ribbon spirally around a cotton thread and then braiding several of these threads together to form the tinsel conductor. This made the conductor very flexible and enabled it to withstand re-

peated bending without injury. The use of silk for the outside braid was also particularly advantageous because, being an animal fiber, it resists absorption of moisture from the air and thus affords good electrical insulating properties not obtainable with cotton or other vegetable fiber braids.

Studies were made to obtain improvements which would increase the life of instrument cords and make them less liable to cause interruptions to service. Metal alloys were investigated as substitutes for the pure copper ribbons used to make the tinsel conductor.

As a result, an alloy was adopted which has the effect of largely increasing the period of service of the cord to the time when the conductor begins to disintegrate from being continually bent back and forth.

Although it did not readily absorb moisture from the air, one difficulty experienced with the original silk cord, which was particularly troublesome during continued rainy weather, was its lack of resistance to excessive moisture.

If, for instance, an instrument was left near an open window, and the cord became wet during a shower, the moisture would soak in and short-circuit the conductors so as to put the station out of service. The same trouble occurred if wet umbrellas were left against cords, where cords were wet from mopping floors, etc.

It was not feasible to apply the ordinary water-proofing processes because this would make the cords too stiff for telephone use.

Development work on the problem resulted in the adoption during 1918 of a special process which has been applied to instrument cords manufactured since that time. This treatment gives them the property of resisting excessive moisture, and at the same time does not appreciably affect their flexibility.

The present desk stand cord may be soaked in water for several hours without any effect on the service, whereas the plain silk cords would under such conditions put the station completely out of service in less than five minutes.

This improvement eliminates a large number of interruptions to telephone service which would otherwise be caused by accidental wetting of cords by subscribers.

The new type of cord is being used by the Bell system for new installations and replacements as needed, but it is impractical—on account of the enormous quantities which would be required—immediately to substitute it for all cords now in use throughout the system, and the change will be made gradually.

Until a few years ago, all instrument cords were green in color. A study of various colors resulted in the adoption of the brown cord which has less tendency to soil and fade and consequently presents a better appearance while in service.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

To grow as a tree is grown—
Sprung from a seed, wind-blown,
Far from the parent stock;
Rooting in a kindly soil
Far from the mad turmoil,
Beside a moss-brown rock.

Deep in the woodland glade
Tempered by sun and shade,
Watching the years roll by;
'Til blustering winter's blast
Weakens our hold at last,
And, crashing to earth, we die.

In Nature there is a seeming half-hazardness which baffles the mind of man to explain. True, the seasons come and go with proper regularity and with but little change in length or condition.

The sun and all the heavenly planets swing in their appointed circles without deviating a hair or lagging a second from their appointed orbit or schedule. But in the scattering of seed it seems that a great deal is left to chance—not that chance fails in the long run, because it does not, but if seed falls on sterile or stony soil, it is apparently wasted.

The mind of man is not great enough to figure out a scheme for earthly endeavor, and have it succeed, with much left to chance. We must plan, definitely, and follow those plans in detail to their final completing, if we are to realize our wishes. *We must leave very little to chance, and nothing at all that we can avoid.* We must go over the field carefully in arranging for our plants, or rebuilding old ones, and must figure every little thing.

The prospective growth of the city; the chances for telephone patronage in its different suburbs; the class of that service;



We Must Leave Very Little to Chance. We must Carefully Arrange for Our Plants and Figure Everything.

the type of construction, must be figured out in advance, and all these estimates must be so reconciled, one with the rest of the parts, that in the end we still have a plant that fits the needs of the commu-

nity; is adequate for all demands on it, and yet one in which there is not a surplus of dead plant lying idle waiting to serve patrons who never subscribe for the service.

The usual fault is in estimating too low and in not providing enough facilities to meet the growth which is usual in many of our American cities.

This is in part due to the fact that in estimates we are apt to follow too closely the rule which governs that class of speculation for certain classes of cities, averaging the United States as a whole. Experience may teach us that this plan is not always safe because certain cities, surrounded by different types of industry, grow more swiftly or more slowly than the average; that, in certain communities, telephone service far outstrips its use in others.

Salesmen from electrical supply houses can tell you that their sales are governed by the nature of their districts; that when they leave a dairy country, for instance, where business is good, they may run into an exclusive wheat-growing country where their jumps are long and their list of orders are extremely short.

The reason for this is, of course, that in a dairy country farms are smaller and the farmers have money weekly or monthly, from the sales of their eggs, butter and meat animals, and by paying their service charges oftener find it less of a burden. They also need service more, as they sell their output oftener than does the wheat farmer, who only has one crop a year to sell and who is careless of market conditions the balance of the year.

The wheat farmer, too, having all his money, so to speak, come in one bunch finds it goes out the same way, and the wait between paydays is long and wearisome. In a mining country for instance the rank and file of the workers having nothing to sell but their labor, do not need service daily like the dairy farmer.

Then, too, there is liability of long shut-downs when he receives no pay and that means hard times for the public service corporations that may be trying to serve that community.

Only a small growth may then be looked

for in such a community, whereas, in a city in the center of a dairy and mixed farming country the growth in telephones is sure and great, for it is the custom in such a community for farmers to retire to town when they have gained a compe-



The Usual Fault Is Estimating Too Low and Not Providing for the Growth Usual to American Cities.

tence. Quite generally they leave either a son on the farm, or at least a renter, with whom they find it advantageous to have telephone service.

It is necessary that all of these things be taken into consideration when looking ahead in our business.

The sure and steady growth is the desirable condition in all commercial business. In the telephone business where a mistake has been made in estimating future conditions, it quite frequently happens that there is little chance for profit in subsequent operation.

If the overhead is too great in idle plant, it will reflect in the dividends or lack of them. If on the other hand the estimate has been too low and one must continually overload circuits, poles, arms and leads to take care of the requirements the maintenance will be high, as a matter of course, as a result of following that style of construction.

The sturdy tree, deep in the forest, grows slowly but surely and makes a fine tree. A telephone plant should be the same.

APHORISM: Moss is not necessarily a sign of weakness.

Plans of National Association at Hearing on Depreciation.

In a letter sent out last week to A, B and C member companies, the United States Independent Telephone Association tells of its proposed procedure relative to the hearing in Washington, D. C., on the Interstate Commerce Commission's proposed depreciation accounting rules. President MacKinnon in this letter says:

"An analysis of the commission's proposed rules discloses that the commission excludes D class companies entirely from being required to follow any specific depreciation procedure at this time. C class companies also will not be required to comply with the order but will be expected to keep their accounts so that when the commission shall deem it advisable to make the order applicable to C class companies, the records of those companies will be in such condition that their compliance with the order will not be difficult.

Therefore, those companies that are immediately interested in the proposed rules are the A and B class companies and to those companies especially we desire to say that the association's executive committee has given the commission's order very careful attention and that at a meeting held in Chicago, April 7, decided not to vary from the position the association

took in its statement to the commission in June, 1921, and to oppose various features of the commission's proposed rules.

The executive committee's position is well set forth in the statement published in TELEPHONY for April 14. On page 15 of that number of TELEPHONY, you will find printed a copy of a brief presented to the executive committee by C. B. Randall, general counsel of the Tri-State Telephone & Telegraph Co. of St. Paul, Minn., which brief the committee approved, and along the general lines of Mr. Randall's statement the committee will present the attitude of the association at Washington before the Interstate Commerce Commission on May 1.

The board of directors is to have a meeting at Washington on April 30, to complete plans for the association's representation on the following day.

It has been arranged for C. B. Randall

of St. Paul, Minn., and H. L. Beyer of Grinnell, Iowa, to discuss the legal phases of the matter in behalf of the association and for C. A. Bennett, vice-president of the Kansas City Telephone Co. to discuss the commission's proposal from the accounting standpoint and W. I. Polk, of Kansas City, to discuss the procedure from the engineering standpoint.

The association will be glad to have the co-operation and assistance of representatives of other companies and it is hoped that there will be a representative attendance of Independent companies at the Interstate Commerce Commission's hearing which will be held at 10 o'clock on the morning of Tuesday, May 1, in the hearing room of the commission, 18th and Pennsylvania avenue, Washington, D. C. The headquarters of the directors during the session will be at the Hotel Powhatan."

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Compare Lincoln, Neb., Company with Indianapolis.

From the item which appeared in TELEPHONY of April 14 on page 21, under the heading, "Service and the Operating Costs," it might appear that the testimony of Harry M. Boggs, chief accountant of the Indiana Public Service Commission, compared the operations of the Indiana Bell at Indianapolis with the Lincoln, Neb., exchange of the Lincoln Telephone & Telegraph Co.

Obviously, this was not so, for in TELEPHONY of June 17, 1922, O. E. Johnson, of the accounting department of the Nebraska Railway Commission, was quoted as giving evidence before the Nebraska commission to the effect that the Lincoln company had 16,063 stations in Lincoln and 49,982 outside of Lincoln, a total of 66,045.

The annual report of the Lincoln company for 1922—which was published in the issue of January 20, 1923—shows the total number of stations of the Lincoln company to be 67,481 at the end of 1922.

Cancel Citation to St. Paul and Minneapolis Hotels.

On April 12, the Minnesota Railroad & Warehouse Commission canceled the citation which it had issued March 27, to various hotels in St. Paul and Minneapolis, it appearing that the hotels cited are now complying with the commission's order of December 28, 1922.

It was ruled on December 28, that Class Two hotels should charge only five cents per message, on which the telephone company should pay the hotel not to ex-

ceed one cent commission; also that 60 cents a month was a reasonable rate per station for room telephones in hotels.

Hotels charging other than these rates were ordered to maintain in the lobby, or other place convenient to guests, one or more public booths at which the five cent rate would be charged.

Higher Rates for 13 Exchanges in Andrew County, Mo.

An order entered March 31 by the Missouri Public Service Commission granted the petition of the Andrew County Mutual Telephone Co. to raise its rates in the several towns of the county outside of the county seat. The exchanges in many of these towns had been operated at a loss for some time, and the management felt that the burden of expense was not equitably distributed.

Application to revise the rates was made in October, but protests from the affected towns served to hold up the decision. The new rates became effective April 10.

The old and new rates at the 13 affected exchanges are as follows:

	Old rates.	New rates.
Business—		
One-party	\$1.25	\$1.50
Extension .....	.50	.50
Residence—		
One-party	1.00	1.25
Two-party .....	...	1.15
Four-party .....	...	1.00
Extension .....	.50	.50

The rate for business subscribers furnishing their own instruments is \$1.25; and for residence, \$1.00. All rentals are payable quarterly in advance. The new

rates will add about \$1,500 to the annual income of the company.

In rendering its decision, the commission took occasion to compliment the management on its showing.

Missouri Company Authorized to Issue \$45,000 Common Stock.

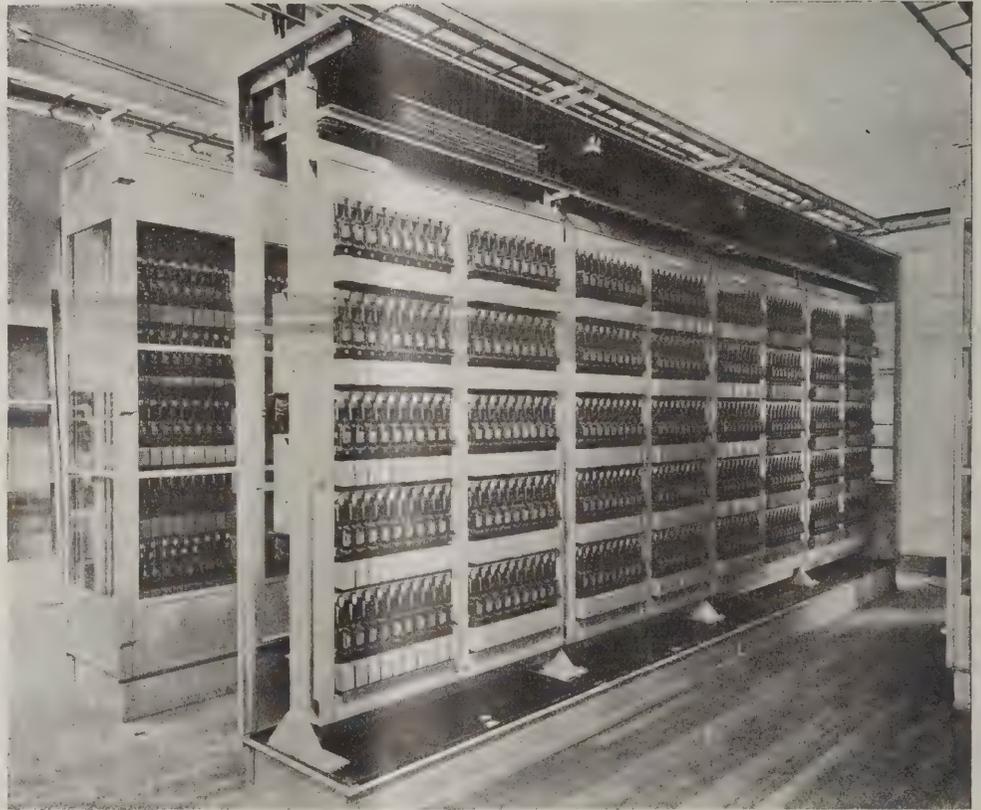
A common stock issue of \$45,000 was authorized for the Kahoka Telephone & Construction Co., of Kahoka, by the Missouri Public Service Commission on April 12.

Exhibits introduced at the hearing showed the value of the property to be \$74,247, and there is an outstanding indebtedness of \$9,000. As the present capital stock of the company is only \$6,000, it was desired to have it more nearly reflect the equity of the property.

Nebraska Bill for Maximum Rates Killed.

A. W. Forbes, legislative agent of the Nebraska Telephone Association, is given credit for the killing, finally, of the Osterman bill, before the Nebraska legislature. This bill was an attempt to limit the present rate-making power of the state railway commission by providing that it could make maximum rates only for public utilities, leaving the latter free to make any other rates that it pleased, conditioned only that they were not in excess of those fixed by the commission.

The house passed the bill in the face of strong opposition, but Mr. Forbes was able to convince the senate committee that it was unwise and unnecessary legisla-



The telephone exchange at Elyria, Ohio, is an example of what good service will do for growth. Since the installation of Stowger Automatic equipment in February, 1919, the number of telephones served by the Elyria Telephone Co. has grown from 4000 to 5500.



Encouraging New Business With Strowger Automatic

It is one of the many merits of the Strowger Automatic telephone system that it not only permits the rendering of telephone service at a cost that subscribers are able and willing to pay, but it also sets up service standards so high that increased demand for service is a natural result.

A further advantage, peculiar to Strowger Automatic, is that as the number of subscribers increases, the operating cost per subscriber decreases, enabling a company to handle increased business with a larger margin of profit.

If the equipment you are now using does not provide the kind of service that encourages new business at adequate rates, we suggest that you let us tell you about Strowger equipment,—as applied to your own exchanges.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS
BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



tion. While the railway commission did not take an active part in opposing the measure, the members informed inquiring legislators that the bill would accomplish no good purpose, since the commission has never refused to reduce rates whenever asked by utilities and that its policy was to see that the companies got whatever rates they were fairly entitled to, but that if, for any reason, they desired to charge less, they would be given the privilege.

This bill had its origin in the famous Bloomfield case, where 600 subscribers to the Bloomfield exchange of the Union Telephone Co., of Wausa, struck against a 22 per cent increase in rates during the peak period of prices, and did without service for nine months. The company finally sold the exchange to two Bloomfield men, one of whom is still operating it. They asked the commission to restore the old rate schedule, and the next day the permission was granted.

The impression got out that the railway commission had refused to allow the Union company to reduce the rates during the strike period, and when the Osterman bill came before the senate committee, Representative Keck demanded to know why, if it was true the commission always granted reductions when asked, it had not done so in the Bloomfield case.

"It was because such half-baked fellows as you—" began Mr. Forbes, when Keck interrupted him with:

"I am just as well-baked as you are," and started for him. Mr. Forbes met him halfway, but hostilities ended there.

The senate committee reported the bill for indefinite postponement, and the senate concurred.

Only One Telephone Bill Passed in Nebraska Legislature.

The Nebraska legislature is expected to wind up its session by the first of May. The only bill affecting the telephone interests of the state that passed both houses and became a law was introduced to relieve the citizens of Endicott, Jefferson county, of a situation that threatened the loss of its exchange.

The Lincoln company operates this exchange and had made application for its discontinuance because it could not be made to pay. It was arranging for service from two other exchanges at Steele City and Fairbury. The new law prohibits the discontinuance of an exchange in any town unless 60 per cent of the subscribers so petition. The Lincoln company will ask for an increase in rates to meet the new situation.

Senate file 200 is now in the house. As originally introduced it repealed the section of the physical connection law fixing the commissions on toll messages, a bill fathered by Bruce Brown, until recently president of the state association. Opposition to it arose, and the senate took the matter in its own hands and amended

it so as to make the 10 and 15 per cent charges the minimum and left the companies free to negotiate their own contracts for more.

In its present form the bill is not satisfactory to any of the companies, and it is likely that it will die in the house files.

Supreme Court Sustains Injunction Against Temporary Rates.

The Federal District Court in New York City was right in granting an interlocutory injunction restraining the New York Public Service Commission from imposing temporary rates upon the New York Telephone Co., the United States Supreme Court stated in an opinion handed down by Chief Justice Taft on April 16.

The actual issue in the long controversy—the rates—has been disposed of by the final order of the commission. Nevertheless, the opinion rendered by the supreme court is looked upon as a precedent worthy of attention.

Through its decision, the supreme court sustained the finding of the lower court that the temporary rates were confiscatory, as they did not furnish a sufficient return on the capital invested. Chief Justice Taft said in the opinion:

"The company could only be protected from loss by injunction; while on the other hand, its subscribers were protected by the bond which was required for the return of the excess charges collected if the injunction should be thereafter dissolved. There was no necessity for any test period of the new rates as the court had before it evidence as to the revenues yielded by the previous higher rates."

When the injunction was granted the company put up a \$6,000,000 bond to cover rebates in case the temporary rates were sustained. The appeal to the supreme court was taken by the commission on the ground that instead of applying to the United States court for an injunction, the company should first have asked the commission to reopen the hearings, and in case of a refusal an appeal should have been taken to the state courts.

New York City attempted to become a party to this suit, but the supreme court rejected its application with the declaration that the attorney general of New York State was amply able to protect all the people in the state, including those in New York City.

Chief Justice Taft thus outlined the principal conclusions of the Supreme Court:

1. The specially constituted court of three judges had jurisdiction to hear and determine the application for the injunction upon the ground of the unconstitutionality of the orders of the commission.

2. The defendants answered the bill on the merits without questioning in any way the sufficiency or form of its averments. The bill specifically alleged that the cost

of the company's property in the state devoted to the rendition of intrastate telephone service, the cost of its reproduction, and its fair and reasonable value exceeded the sums of \$247,000,000, \$373,000,000 and \$323,000,000 respectively; and that the rates prescribed by the commission would prevent it from earning more than 2.56 per cent upon the cost of such property and 1.96 per cent upon its fair and reasonable value, and would not afford it a fair return upon such value. In short, it apparently stated the ultimate facts upon which the company asked relief, omitting any mere statements of evidence.

3. Upon the making by the commission of the orders in question, the proceedings had reached the judicial stage entitling the company to resort to the court for relief.

"It was not necessary that the company should apply to the commission for a rehearing before resorting to the court," the opinion stated.

"While under the public service commission law any person interested in an order of the commission has the right to apply for a rehearing, the commission is not required to grant such rehearing unless in its judgment sufficient reason therefor appears.

"The application for the rehearing does not excuse compliance with the order or its enforcement except as the commission may direct, and any change made in the original order upon the rehearing does not affect the enforcement of any right arising from the original order.

As the law does not require an application for a rehearing to be made and its granting is entirely within the discretion of the commission, we see no reason for requiring it to be made as a condition precedent to the bringing of a suit to enjoin the enforcement of the order.

Nor did the fact that the orders of the commission merely prescribed temporary rates to be effective until its final determination, deprive the company of its right to relief at the hands of the court. The orders required the new reduced rates to be put into effect on a given date. They were final legislative acts as to the period during which they should remain in effect pending the final determination; and if the rates prescribed were confiscatory, the company would be deprived of a reasonable return upon its property during such period, without remedy, unless their enforcement should be enjoined.

4. The application for the injunction was heard by the district court upon the pleadings and affidavits relating to the cost and value of the company's property, its revenue and expenses. It was not necessary that the company offer in evidence the voluminous testimony that had been taken by the commission on the legislative question prior to making the orders in question. The bill did not challenge the orders of the commission on the ground that it

had acted arbitrarily without any evidence.

The sole issue presented was whether or not the orders were confiscatory, which was to be determined by the court upon the evidence submitted to it."

Pennsylvania Bell Formally Takes Over Two Companies.

The Bell Telephone Co., of Pennsylvania, took possession of the properties of the Chartiers Telephone Co., of Washington, Pa., and the Pittsburgh & Allegheny Telephone Co., of Pittsburgh, on April 14.

For the present, according to a statement by Vice-President J. C. Lynch of the Pennsylvania Bell, the Chartiers company service will be continued without change. Plans are under way to take care of the transfer and the consolidation, which will be completed in the next few months. Wherever possible the plant of the Chartiers company will be used in making the consolidation.

A new division, called the Pittsburgh & Allegheny Division, has been created for the operation of the Chartiers system and the Pittsburgh & Allegheny system. George S. Reinoshi, formerly Pittsburgh district manager, is manager of the new division.

All toll connection to other telephone companies will be continued as at present through arrangements made by Bell officials with those companies.

Granted Higher Rate Schedule for Summer Resort Service.

The Pewaukee-Sussex Telephone Co., of Pewaukee, was authorized by the Wisconsin Railroad Commission's order of April 11, effective immediately, to discontinue its summer resort rate of \$12 per season of five months or less, and to establish a schedule of higher rental charges.

The company has been furnishing a considerable amount of short time service to summer resort residents, and found that it was not making an adequate return. On a property value of about \$17,000 for 1921 and \$18,000 for 1922, an average return of 5 per cent was earned.

The commission found that the company makes no connection charge, and as service has to be reestablished each summer season, a schedule of higher rates which included the usual \$3.50 for connection seemed fair. The new seasonal rates are:

Business, one-party	\$21.00
Residence, one-party	18.00
Residence, two-party	15.00
Residence, four-party	12.00

Grants Higher Rates in Order That Plant May Be Maintained.

The fact that the 1922 revenues of the Annaton-Preston Telephone Co., of Stitzer, Wis., had fallen short by some \$1,000 of providing for the depreciation allowance and had permitted no return upon investment, brought relief from the Wis-

consin Railroad Commission. An order entered on April 11, gave the company authority to place in effect on May 1 the advanced rates asked for.

Authority was also given to discontinue the so-called Herrod switch, upon provision of facilities for connecting all subscribers on that line to the switchboard at Stitzer.

The revenues for last year amounted to \$4,457 and expenses amounted to \$4,093. The property value as of December 31 was \$19,268, and the provision for depreciation was \$1,349, or 7 per cent of the book value. While this was found to be somewhat higher than usual, the commission found the construction of the lines to be such that, if proper service is to be furnished, the life of the plant will probably not be as long as that of many other companies.

It is expected that the new rates will yield something more than the normal return upon the property value, but the commission stated that it could not overlook the fact that the system has not been properly maintained and that more money must be spent to place the plant in better condition.

Although the present officers of the company were disposed to do all they could to furnish satisfactory service, the commission declared it to be impossible to maintain an adequate standard of service at the present rate.

The company has been charging \$10 per station per year, and the new rates are \$5 per quarter for business and \$4 for residence and rural telephones. There are 417 telephones in service, of which the greater part are residence or rural stations.

Summary of Commission Rulings and Schedule of Hearings.

ALABAMA.

April 11: Authority granted the Demopolis Telephone Co., of Demopolis, to establish a discount rule—25 cents to be added to the regular rental, and to be deducted if the bill is paid on or before the 10th of the succeeding month.

CALIFORNIA.

April 19: Associated Telephone Co. granted extension of time until December 31, 1923, in which to conclude reorganization and consolidation of Union Home Telephone & Telegraph Co., Long Beach Telephone & Telegraph Co. and San Bernardino Home Telephone & Telegraph Co. as the Associated Telephone Co.

April 19: Annual report filed by Reedley Telephone Co., of Reedley.

ILLINOIS.

April 26: Hearing held in Chicago in the matter of citation issued to the Illinois Bell Telephone Co. to show cause why rates for service in Chicago and adjacent territory should not be reduced.

MINNESOTA.

April 12: Citation which was issued March 27 to certain hotels in St. Paul and Minneapolis for noncompliance with order of December 28, 1922, canceled.

April 20: Schedule of advanced rates allowed Granite Falls Telephone Co., of Granite Falls.

April 20: Order entered giving the Bar-

rett Rural Telephone Co., of Barrett, permission to increase the switching charge for rural multi-party service to 50 cents a month.

April 20: Authority granted Sherburn Mutual Telephone Co. to increase its local and rural rates.

April 21: Increased rates granted Wendell Telephone Co., of Wendell.

April 23: Schedule of higher rates allowed Bellingham Telephone Co., of Bellingham.

MISSOURI.

April 12: Kahoka Telephone & Construction Co., of Kahoka, granted permission to issue and sell \$45,000 of its common stock.

April 17: Operation of increased rate schedule which was filed by Vandalia Union Switchboard Co., of Vandalia, suspended to 120 days from April 17.

NEBRASKA.

April 18: In the matter of the request of J. L. Shamer & Sons for an order on the Page Telephone Co. for the removal of poles of complainant, held that commission is without jurisdiction and complaint dismissed.

April 19: Complaint filed by W. M. Barbour for the Enterprise Irrigation district alleging that the Platte Valley Telephone Co. charges toll rates for certain messages and asking that the service be put on a flat rate basis.

April 20: Application filed by the Mulden Telephone Co. for order fixing charges to be made for furnishing switching service to certain rural companies which it serves through an intervening company's exchange.

April 20: Application filed by the Arapahoe Telephone Co. for permission to issue \$7,000 of additional stock.

NEW YORK.

April 19: Hearing on proposed new rates of the Walton Telephone Co., of Walton, adjourned for one month, to give the company an opportunity to complete the appraisal of its property.

NORTH DAKOTA.

April 5: Petition filed by Star Telephone Exchange, of Pisek, for authority to discontinue operation.

April 11: Change in discount dates filed by Milnor Rural Telephone Co., of Milnor.

April 11: Proposed cut-off notice and collection dates filed by Griggs County Telephone Co., of Cooperstown.

April 23: Hearing held at Stanley in the case of the commission against the Tioga Farmers Telephone Co., of Tioga; the Tri-County Telephone Co., of Niagara; Wildrose Mutual Telephone Co., of Wildrose; Farmers Mutual Telephone Co.; Williams County Mutual Telephone Co., of Ray; and the Northwestern Bell Telephone Co., on the so-called "other line" charge.

OHIO.

April 11: Lynchburg Telephone Exchange, of Lynchburg, authorized to issue \$15,362 in bonds.

April 12: Authority given the Brewster Telephone Co. to issue \$10,000 worth of 6 per cent bonds.

April 14: Permission granted the Northwestern Mutual Telephone Co., of Elmira, to sell its properties to the Archbold Telephone Co., of Archbold, for \$3,200.

May 21: Hearing to be held in Columbus on the rate case of the Cincinnati & Suburban Bell Telephone Co.

TENNESSEE.

April 17: Hearing held at Nashville in the matter of making permanent the temporary rates allowed the Cumberland Telephone & Telegraph Co.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

Last month telephone companies in various parts of the country had considerable trouble due to storms. On March 11 and again on March 18 heavy storms passed over Iowa. The snow around West Liberty, Iowa, was wet, sticking to the wires and covering the ground to a depth of about two feet on the level.

The plant of the West Liberty Telephone Co., of which H. B. Melick is manager, escaped damage owing to most of it being underground. The company has 25,000 feet of underground cable and 11,000 feet



first issue, the March one, carries an excellent likeness of President George R. Fuller on the front cover, and the first article gives an interesting sketch of Mr. Fuller's many years' association with the Rochester organization.

"A Simple Story of the Capitalization Case and the Rate Case," told by Vice-President and General Manager John P. Boylan, is followed by "500 in January" wherein Commercial Superintendent Frank



In a recent "quick lunch" review of telephone development and an account of the duties and problems of his office, at a luncheon of the Boston Rotary Club, Mr. O'Brien pleaded for a "get-together" spirit.

He started with the "crazy" suggestion of an old-time telegrapher, Charles J. Glidden of Lowell, to tie up Lowell and Boston with an old grounded telegraph circuit, over which he said it would be possible to carry on a conversation, and then told the



When Telephone and Telegraph Leads Go Down Like This Western Union Lead in Iowa, Line and Maintenance Crews Face Busy Times.—Note Emergency Lead Laid on Ground.

of aerial cable serving 900 subscribers. It is planning on building 27 miles of toll line this summer.

The accompanying illustrations show views of the Western Union's Chicago and Omaha lead which was built new in the summer of 1915.

R. L. Townsend, business man of Grand Junction, Colo., endeavored to cross the desert between Grand Junction and Delta, Colo., in an automobile. The car stalled in a snowbank. Townsend knew that the two counties had established a telephone on the desert, for any emergency. He reached it afoot, after a two-mile trudge, his feet badly frozen.

The telephone was in good order, so his plight was made known. A rescue car was hurried out and brought him home. Without the telephone, he would have perished. It is use of the telephone like in this case that gives basis for the contention that it is impossible to set a value on telephone service and that, regardless of the rate charged, it is cheap at any price.

A new arrival in the list of telephone company employes' publications is "The Rochester Telephone Bulletin, issued monthly by and for the employes of the Rochester Telephone Corporation." The

T. Byrne presents the results of the drive in January for new subscribers.

Editor Wm. J. O'Hea, on the editorial page under the heading, "That We May Know Each Other Better," tells the one and only purpose of the bulletin. Traffic Superintendent C. G. Vickery gives just a little of "What We Are Doing to Improve Our Service"—just enough to whet the appetite for the more that he promises.

The remaining pages of the 16 six by nine pages are filled with items of various kinds relating to individual, exchange and departmental activities, some serious and others not so serious.

It's a neat little publication and one which the telephone folks in and around Rochester in the Empire state are justly proud of.

William H. O'Brien, chief of the telephone and telegraph division of the Massachusetts Public Utilities Commission, has done a great deal in improving the relations between the public and the Massachusetts telephone companies. During the past few months Mr. O'Brien has addressed business and fraternal organizations telling the story of the telephone and telegraph and the difficulties encountered in present-day operation.

story of telephone development up to the present time. Today, in the Boston metropolitan division, there are 343,000 telephone stations out of a total of 687,000 in the entire state. In Massachusetts there are 397,000 subscribers on party lines.

Mr. O'Brien also told of the work of his department in handling nearly 2,500 complaint cases last year in the spirit of "let's sit down and reason together."

He said that his experience of 10 years in this particular department of state work, following many years of similar work outside, had convinced him that 95 men out of every 100, particularly in business, are fair and reasonable, if you tell them the truth and lay your cards on the table.

He said many have been "kidded" for so long that they are still suspicious, but cited the work of his department as encouraging evidence that the spirit of "live and let live" in the operation of public utilities as between the companies and the public, is very much more in evidence than ever before.

His experience has convinced him that so far as telephone operation is concerned, the average man is not concerned about rates, within reason, but rather with service. He declared the New England Telephone & Telegraph Co. had certainly been treated fairly by the public and the regu-

lating commission since regulation was instituted.

Good Service of Most Importance.

From his experience and viewpoint, Mr. O'Brien remarked, the big thing is service and things incidental thereto. He thinks the telephone companies could have done better in the matter of service for several years, and explained this by referring to the large percentage of wrong numbers given, either through careless operating or overloading of the operating force, which his department has not been able to do much with because of the fact that it has a very minimum inspection force whose time is more than taken with the adjustment of routine complaints and the last two or three years in the handling of thousands of complaints against the failure of the company to install service. It is along these lines that his department has specialized.

He said that, as important as transportation is, telephone and telegraph service, particularly telephone, is the most vital thing that enters into the prosecution of every form of business. The activities of the state department have been to help to create a condition where the business community in its "bread and butter" activities can have as good telephone service at 2:20 in the afternoon as it can at 9:30 in the morning, barring any great climatic disturbance that knocks everything to smithereens.

As against the shortcomings of the companies and their operating forces, Mr. O'Brien showed the other side of the picture—the failure of the average business man to protect his "bread and butter" by permitting his telephone service to be used only for business purposes between 9 and 5, and of the average residence subscriber who insists upon using his telephone line to the exclusion of his neighbor, who is upon the line with him and paying the same price.

Social Calls on Business Lines.

Mr. O'Brien cited specific cases that had come to his attention, and the attention of his inspectors where business men talk on unimportant social matters during business hours, necessitating the giving of "busy" reports to people trying to get in on the line to do business.

He told of many such cases, adding that it was none of the commission's business how a business man spent his money, but when he protested that people calling his place of business were told the line was busy when it was not, he has a responsibility which he must recognize as well as the responsibility of the company to see that the service is always of a reasonable standard.

He said the business man who spent money for what appears today to be necessary advertising of various kinds to notify the public that he has something to sell, and then uses his telephone or telephones for social and unimportant matters

during business hours or permits his employes to do the same thing, is certainly not getting a return for his advertising expenditures.

Why Wrong Numbers Are Given.

In regard to the giving of wrong numbers by the operator, Mr. O'Brien said there are two sides to the question: One where the operator does not stay on the line long enough to make sure that she has the number right and to give the calling party a chance to correct her if necessary, thus adding a tremendous debit to telephone traffic during the busy hours of the day; and the other is the case of the calling person who sticks a telephone instrument on his eyebrow, or the top of his ear, and talks anywhere except into the mouthpiece.

Many times a subscriber who does this repeats the number two, three or more times, then gets peeved because the operator does not get it right; she gets peeved at the delay, takes a chance that she has it right, jumps off with the call and a little later in comes a supervisor and helps to straighten the matter out. When such a performance occurs thousands of times a day, one can easily see what a tremendous effect it has upon telephone service.

Mr. O'Brien told of the many things that are necessary in order to secure service for many people who really need it, such as the changing of single lines to two-party lines and two-party to three and four, which condition never improves telephone service.

He laid great stress upon the necessity for cooperation, not only between the public and the company and the public utilities department, but between telephone users themselves.

For several years Mr. O'Brien has emphasized in his report the vital necessity for some drastic action to take care of the telephone subscriber who insists upon using his line as long as he pleases to the exclusion of his neighbor. Now the telephone company finds itself up against the toughest proposition that it has had to face, with large sections of boards completely tied up because of long-winded talks by party-line subscribers.

The campaign just begun by the telephone company to stop this, he said, is the result of the hammering by his department for several years. The present action of the telephone company, relative to conversations of more than five minutes on party lines, has the complete and hearty cooperation of the telephone department of the commission, he declared.

The speaker stressed those two points; namely, excessive use of business and residence lines with unnecessary conversation and the necessity for the development of a "let's sit down and reason together" policy in the working out of all these public utility problems.

In this connection he said he could conceive of no question on which, if men on

both sides, with the proper disposition, would agree to sit down and reason together, they could not sooner or later find a common ground for the adjustment of all their troubles in a manner satisfactory to all concerned.

In closing he said, "The more you develop the 'get-together' spirit the better community you develop—and the better community the better state, the better state the better nation, and the good old U. S. A. can't be any too good to suit me."

How failure to promptly answer the telephone costs business men money was revealed in figures announced last month by J. B. Cassels, district manager of the Southern Bell Telephone & Telegraph Co. at Albany, Ala. Mr. Cassels said a careful check had been kept on one telephone in Albany and that during the year approximately \$450 worth of sales had been lost each month. In a year's time the merchant was said to have lost approximately \$550 profit, basing the figures on a basis of 10 per cent profit.

"This shows how failure to answer the telephone promptly loses money for the subscriber, as well as makes the persons calling blame the telephone company for poor service," Mr. Cassel pointed out.

"If every subscriber will cooperate with the company by answering every incoming call promptly, we are sure that our local service will be much improved and will prove far more beneficial and satisfactory. We sincerely hope we may obtain this cooperation."

Fourteen employes of the New York Telephone Co., two of whom are women, are named in the award of Theodore N. Vail memorial medals for noteworthy public service performed in 1922, it was announced recently. Eight of the awards were for saving life.

Perhaps the most spectacular case of the 14 is that of Bert C. Posey, a cable splicer, of Brooklyn. While splicing a telephone cable on an East River pier on August 8, Posey heard the cries of a drowning man, who was about to go down for the third time. Posey dived to his rescue, brought him to the surface, and cried for aid to lift the victim, John Egan, to the pier. This done, the bystanders forgot Posey, who, although exhausted, made his own way to safety, where he found Egan left for dead. By persistently applying his knowledge of first aid, Posey finally restored respiration, having virtually saved Egan's life twice in one day.

The two women who will receive bronze medals are Miss Florence Fillingham and Mrs. Irene Crawford, telephone operators in the village of Wilson, Niagara County, who on May 1 spread an alarm which thwarted the activities of a bandit gang and resulted in the capture of one of the gunmen.

"Telephone Talks" to the Public

(Concluded from page 14.)

of public or private service which you receive and that our employes are as faithful and as efficient as the best.

The Telephone a Necessity.

No modern invention possibly has become a greater necessity in our method of living than the telephone. Business is literally built upon its use, while the home is incomplete without it.

A little more than one generation ago there was not a telephone in existence, while today America alone has more than 14,000,000 in use. They bind business together so that factories and stores, producers and consumers many miles apart are in instant communication with each other the same as if all were working under the same roof.

These silent, hidden messenger wires reach from home to home, from home to the store, office, factory and farm to such an extent that the feeling of isolation or inconvenience of communication is lost and we move about conscious that upon a moment's notice, without leaving our room, we can have a social chat with a friend; call the grocer, druggist, doctor, plumber, department store, school house, factory or farm, knowing we will have an immediate answer to our question or response to our request.

Money No Measure of Value.

The value of telephone service can not be measured in dollars and cents. No community without telephone service can exist in competition with another community that has telephone service.

Does anyone imagine that, if Lebanon and Boone county had no telephones, outside capital would invest money in factories and farms, stores and homes as freely as in neighboring cities and counties where good telephone service existed?

The truth of the case is that if all telephone service were wiped out of Lebanon there would begin to appear vacant office rooms, then vacant stores, and vacant homes, followed rapidly by decreasing trade—because live tradespeople and professional men and women were locating elsewhere—until Lebanon would be a city of silent factories, empty business houses and tenantless homes, and grass would eventually be growing where now exists your well-kept, paved streets.

Your telephone system gives a life to your community for which there is no substitute, and without which, in a few generations, Lebanon would cease to exist as a business and social center. Good telephone service is as essential to a healthy community life as good streets, pure water, sanitary homes, schools, churches or any other essential commodity or institution.

When you pay a telephone bill, you do not pay for what the service is worth in

dollars and cents; you are paying your proportion of what it costs to keep the telephone company up-to-date and in good working order.

Your telephone company is not free to do as it pleases in the matter of fixing rates or giving service. The law requires us to serve all applicants impartially.

Law and Order.

The physician can refuse to receive or treat anyone as a patient; the bank does not have to loan money to every applicant, nor does the merchant have to accept as a customer everyone who wants his goods. The telephone company, however, can not deny service to anyone who applies for it and is willing to comply with the rules of the company.

If in a certain section of the city we have no spare wires and some one applies for service, the law contemplates that we must furnish that service if in so doing the cost is not wholly unreasonable. We can not select our customers. It is true that some are much more able to pay for telephone service than others, but we can not adjust our charge on the ability of our patrons to pay.

We classify our service into two general classes—business and residence. These two classes are further divided into party-line or main-line service.

The law compels us to charge the same price to every one for the same class of service. We can not make it on the basis of the ability of the more wealthy to pay, or on a price less than cost to meet the ability to pay of persons of less means or smaller salary.

We must adjust our rate to the average ability of the community, keeping in mind all the time the requirements of the company of a certain amount of gross revenue necessary to give good service. There is no other way.

How Rates Are Fixed.

Before we can change our rates we must file our proposed schedule with the public service commission and receive its approval. Before the commission approves, it gives the merits of our claim a thorough investigation by having an audit made of our books, an appraisal made of our property, an investigation made as to our securities and past performance.

A public hearing is then held at such time and place as the commission may elect and all facts are thrown in the balance, the evidence weighed and a decision rendered accordingly.

We shall endeavor to have this hearing in Lebanon in order that you may be present if you so desire. We have no facts to conceal, no figures to keep away from you. Our course is open and above board. We seek to join hands with you

in solving the problem of good, continuous future telephone service at a reasonable rate that is fair both to the stockholders and to you.

Our Duty to You.

Our chief duty is to give you telephone service. We are not after your money, only insofar as it will enable us to render the service which you desire and pay the legal rate of return on the investment. Our eyes are not on your pocketbook but on your telephone, the equipment and the employes that render service.

You have a greater interest in the telephone plant which serves you than the stockholders themselves. They could dispose of their investment here and place their money elsewhere—but this community can not substitute anything else for its telephone system nor do without it. It is a fixed factor in your business and social life.

We who manage your telephone system work for a salary, and it is possible for us to sell our services elsewhere. But you can not escape your telephone system because your business is here and your home is here. It is true that you might sell out or move away. Should you do this, the business will still be continued by your successor, and your house would become a home for another.

We manage this telephone property for you and in your interest. Outside of making a living, we have no other purpose in holding our present position, except to see that you have service. It is true that it is also our business to look after the stockholders' interests and get for them, if possible, a fair return upon their investment.

While the property is theirs, the service is yours, and your interest is paramount. It is of vital importance to you that the plant be kept up and maintained so as to continuously give good service not only now but in future years. This can not be done unless you pay a rate for service that will enable us to do this.

We would be neglectful of our duty to you if we did not now warn you that the present revenues are not sufficient to enable us to continue to give good service and keep the plant in even a normal state of efficiency.

This is not so much our problem as it is yours. It is up to you, whether you are willing to pay a rate that will enable us to furnish that service and permit the stockholders to have a fair return upon their investment. We do not believe the fair-minded people of this county want to hold down the rates to such a low level that service will become unsatisfactory and stockholders receive nothing.

This is the whole matter in a nutshell. This problem is yours as well as ours.

Personal and Biographical Notes

Charles M. Niezer, president of the First National Bank of Fort Wayne, Ind., and also president of the Chamber of Commerce of Fort Wayne, on April 16, was elected president of the Home Tele-



Frank E. Bohn, Who Has Been with the Home Company in Fort Wayne, Ind., for 16 Years, Is Now Operating Vice-President.

phone & Telegraph Co., to fill the vacancy caused by the resignation of Wm. L. Moel- lering. He has been connected with the company for the past 2½ years as a director.

Frank E. Bohn was promoted to the position of first vice-president and general manager of the Home Telephone & Telegraph Co., Fort Wayne, Ind., at a meeting of the board of directors on April 16. This promotion to the position of operating vice-president places Mr. Bohn in complete control of the operation of the entire property.

Mr. Bohn has been with the company in various capacities for the past 16 years, having been secretary and general manager for the last four years. The excellent manner in which he has handled the property during this time has resulted in his being placed in complete charge as operating vice-president.

Otto Marahrens has been elected secretary of the Home Telephone & Telegraph Co., of Fort Wayne, Ind. Mr. Marahrens has been connected with the company for 20 years, having entered its employ in 1903. He held the position of assistant secretary and auditor prior to his recent promotion to secretary of the company.

George L. Hall, for several years manager of the Home Telephone Co. at

Dowagiac, Mich., has resigned owing to ill health.

F. E. Platt, of Kalamazoo, Mich., for some years connected with the Michigan State Telephone Co., has been selected to take Mr. Hall's place.

Mr. Platt will be in charge of the Home company until the consolidation at Dowagiac is effected, when he will have charge of the one office into which the two will be merged.

George R. Fuller, of Rochester, N. Y., president of the Rochester Telephone Corp., was surprised by more than 500 employes of the corporation at a luncheon at the Senaca Hotel, Saturday noon, April 7, the occasion being his 73rd birthday. Mr. Fuller was flabbergasted as he entered the ballroom and the hundreds of employes arose and cheered.

The affair was arranged entirely by the employes and was a complete surprise to Mr. Fuller. Frank T. Byrne was toastmaster, H. B. B. Mayo, of the maintenance department, represented the men and Miss Rose Speier, of the traffic department, responded for the women.

Expressions of loyalty, devotion and respect were echoed for the genial president, who for many years has guided the destinies of the corporation. At the conclusion of the luncheon Mr. Mayo presented Mr. Fuller with a bowling ball which Mr. Fuller rolled in Buffalo, March 31, when the officers of the Rochester Telephone Corp. defeated the officers of the New York Telephone Co. Mr. Fuller's average for this match series was 182.

Miss Rose Speier, on behalf of the girls, presented Mr. Fuller with roses, one for each of his 73 years.

A musical program, including an orchestra made up of the employes of the corporation, assisted in making the demonstration a joyous one. Mr. Fuller was visibly affected and found great difficulty in expressing his appreciation to, as he terms it, "his girls and boys."

In 1886 Mr. Fuller was one of the small group of contributors to a fund for the purpose of defraying the expenses of an investigation to determine whether or not some telephone system not infringing the Bell patents could be installed in Rochester. About that time a demonstration was given before this group of a so-called "writing telephone," which later developed into the "Teleautograph," which is used rather extensively today by a number of large concerns. This was Mr. Fuller's first attempt to become affiliated with the telephone industry and it is interesting at this point to note the advancement in the art of telephony.

Nothing developed until 1896 when Mr.

Fuller, who had not lost the desire to enter the telephone field, learned that the Automatic Telephone Service Co. was endeavoring to secure a franchise in Buffalo for the operation of an automatic telephone system in that city. He was curious to learn how a telephone system could be operated automatically and secured some literature describing it. Shortly afterwards he met a representative of the Automatic Telephone Service Co., who urged that an effort be made to obtain a franchise for operating a competing company in Rochester.

Steps were soon taken to interest some local people of influence in the securing of a franchise for an Independent company, and in 1897 an application was made to the common council for such franchise. While this application was under consideration, an automatic system was set up in the common council chambers, connecting eight or ten stations, which was demonstrated for two weeks. The application for the franchise was withdrawn shortly thereafter as it became obvious that the committee to which it had been referred would not report favorably upon it.

In 1898 Mr. Fuller was successful in interesting a group of prominent citizens in the organization of an Independent telephone company in Rochester, who were ready and abundantly able to finance the



George R. Fuller, Veteran Telephone Man of Rochester, N. Y., Was a "Surprised" Guest of His Employes on His 73rd Birthday.

undertaking if it developed that there was a demand for competition and that the support of the community could be relied upon.

A canvass for five-year contracts was

made during 1898-99 and 1,500 such contracts were secured and submitted to the common council in support of the application. The franchise was granted April 14, 1899, and the Home Telephone Co. was incorporated by 15 Rochester men. Of these 15 men there are but four alive and two were incorporators and are directors of the Rochester Telephone Corp., J. Foster Warner and George R. Fuller.

The construction of the plant was begun in 1899, and opened for service with 2,000 telephones in May, 1900. Mr. Fuller served as secretary of the Home Telephone Co. from its incorporation until December 22, 1899, when he was elected secretary of the Rochester Telephone Co. He was secretary and treasurer from February 11, 1901, to January 12, 1903, when he was elected general manager. He continued in these offices until December 11, 1905, when he was elected president and general manager of the company and held these offices until August 1, 1921.

The Rochester Telephone Co., notwithstanding the handicap of its contract with the city limiting the charges for telephone service, was able to carry along under Mr. Fuller's able management and to give good service, but it could not finance additions to meet the ever-increasing demands for new service, and as the merging of dual systems in larger cities was rapidly taking place, it became evident that sooner or later the elimination of competition and the merging of competing companies in Rochester must be brought about. It should be remembered that no dividends were paid on the Rochester Telephone Co.'s stock after July 1, 1906, and there was no market for its securities. This will explain why it could not finance the requirements demanded by increasing applications for new telephones.

Because of this condition, negotiations were entered into with the New York Telephone Co. early in 1916 for the consolidation of the two plants. The result of the negotiations matured in the consolidation of the two companies into the Rochester Telephone Corp. on August 1, 1921. Mr. Fuller was elected president of the new corporation on that date.

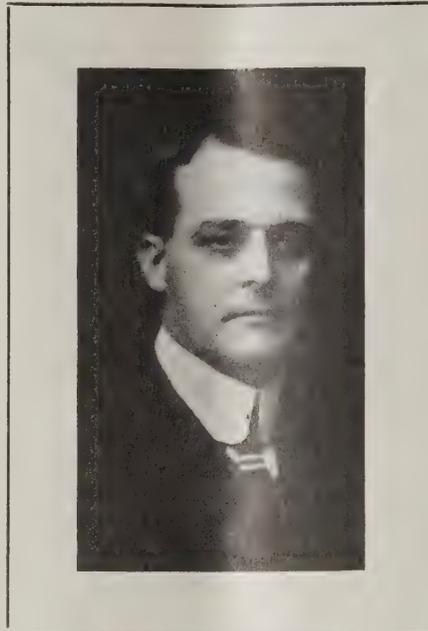
In 1902 the New York State Independent Telephone Association was organized and Mr. Fuller served as its president for the first two years of its existence. This association was superseded by the Up-State Telephone Association of New York, which was organized in 1921. Mr. Fuller was chosen to act as its first president and is still serving in that capacity.

During the period of government control of the telephone systems in 1918-1919, Mr. Fuller was supervisor of the Independent telephone companies in New York state.

J. B. Earle, of Waco, Texas, was the subject of a two-column article on the front page of the Waco Farm and Labor

Journal recently. The article was headed, "From Newsboy to Bank President," and a large cut of Mr. Earle was used in connection with it. His many friends in the Independent telephone field will be interested in what the Journal has to say:

"J. B. Earle of Waco, was a recent vis-



J. B. Earle, Well Known Texas Telephone Man, Was Featured in Newspaper—"From Newsboy to Bank President."

itor to Austin, having important business with the banking department, and while rushed for time, our longtime friend called at the office of the writer—who is serving as a member of the state industrial accident board—for a brief chat.

The optimistic and cheerful countenance of 'Bayliss'—that's the boyhood name that has stayed with him all through the years, and he likes it—Earle never looked more optimistic.

He was elated at the near completion of the ten-story, half-a-million dollar building that his bank will soon occupy as its permanent home, and said this would be the best year in the history of McLennan county.

Forty years ago Bayliss Earle was just an ordinary newsboy on the streets of Waco, but even at that early day in his life he was an optimist and could see sunshine in every cloud. He was a successful newsboy, too, and held his own at all times.

He grew to manhood in Waco and when just past maturity was elected justice of the peace. He filled this trust to the satisfaction of all, except the lawless element.

But this position was entirely too circumscribed for this predestined man of affairs. He was looking far into the future and when the psychological moment arrived Bayliss Earle grasped the idea of organizing an Independent telephone company.

It was a big undertaking, but not too stupendous for this old newsboy confederate of the writer, and the marvelous success of this telephone company stands as a monument to the efforts of Bayliss Earle. The assets of the company run into millions of dollars.

For years Mr. Earle was the manager of the Texas Telephone Co., but the system has grown so extensively, reaching out for hundreds and thousands of miles in every direction, that many able assistants were necessary to look after the business properly. At this time he is president of the Texas Long Distance Telephone Co.

The keen business acumen of this former Waco newsboy has ever been recognized and always in demand. Frequently he is called to New York, Chicago, St. Louis and other cities just for a consultation on big business.

Recently a situation arose in the affairs of the Liberty National Bank of Waco that caused the stockholders to induce Mr. Earle to become its president. Big business was pressing on the man, but the love for 'his baby' (he helped organize this bank several years ago) was too strong to turn a deaf ear to the call.

That is the chief characteristic of this man—never to neglect a friend—and, it may be said in passing, he never forgets a foe.

He is a fair fighter, puts his cards face up, so to speak, and the world knows where he stands on all matters.

His advancement has been steady at all times and his wonderful success is attributed to his bull-dog tenacity of never giving up. He doesn't know what failure is.

Some say he can write a perfectly good check for a million, and we hope he can, for he deserves it. The more he makes, the more some people will get, for we happen to know of many who have profited liberally by the generosity of Bayliss Earle.

From newsboy to banker is a long jump, but has been achieved by Bayliss Earle, unaided by capital or friends. His own efforts are responsible for the position he occupies today.

Here's to you, old newsboy friend of long ago, and may your remaining years be the best and busiest of your life. Of course, too much business should not be allowed to interfere with an occasional fishing trip. Eh, boy?"

Mr. Earle is also a director of the United States Independent Telephone Association and a vice-president of the Texas Independent Telephone Association.

E. M. Pierce, president of the Black River Telephone Co., Lorain, Ohio, for 23 years, resigned recently because of failing health.

Mr. Pierce will still retain a post on the board of directors.



Prest-O-Lite Service extends to the frontier of civilization. One of the 22,000 stations will serve you.

No monkeying up and down the poles

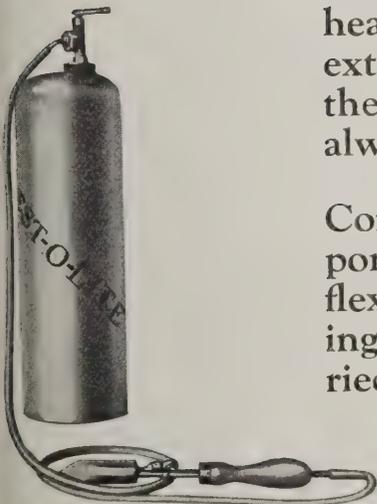
Your linemen and cable splicers can stay right on the job with a Prest-O-Lite self-heating iron. Needs no pre-heating or re-heating. No extra iron to heat because the Prest-O-Lite flame is always with the worker.

Complete outfit consists of portable Prest-O-Lite tank, flexible tubing and soldering iron. Tank is easily carried up the pole.

The easily controlled flame furnishes the heat at the temperature wanted—at the point wanted. It is always dependable.

Save time and money by using Prest-O-Lite service; 22,000 garages and gas stations exchange full tanks for empties. You pay only for the gas.

Get full equipment there, too, or write us for more information.



This Prest-O-Lite tank is 20 x 6 inches

Prest-O-Lite Gas

THE PREST-O-LITE COMPANY, Inc., *Indianapolis, Ind.*

SMALL TANK SALES DEPARTMENT

New York Office: 30 East 42nd St.

Pacific Coast Office: 599 Eighth St., San Francisco

In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto

Please tell the Advertiser you saw his Advertisement in TELEPHONY.

From Factory and Salesroom

Blomeyer Leaves Automatic Electric for Theodore Gary & Co.

Announcement has been made by A. F. Adams, president of Theodore Gary & Co., that on account of the constantly enlarging business of that company, E. C. Blomeyer has been tendered and has ac-



E. C. Blomeyer, Widely Known Telephone Man, Is Now Vice-President of Theodore Gary & Co., Kansas City, Mo.

cepted a position as a vice-president of Theodore Gary & Co. Mr. Blomeyer, who is at present a vice-president of the Automatic Electric Co., Chicago, will move to Kansas City at once and take up his new duties there.

By this arrangement this prominent organization adds to its present staff of executives another man well known and of long experience in the telephone field. The present organization, of which Theodore Gary is chairman, A. F. Adams, president, and H. L. Gary, first vice-president and treasurer, has also as officials C. A. Bennett, H. L. Harris and J. G. Crane as vice-presidents, L. E. Durham, counsel, and W. E. Jones, secretary. W. E. Polk is consulting engineer.

E. C. Blomeyer is widely known throughout the field of telephony, not only as a telephone man, but also as a writer and speaker on telephone affairs. He entered the business in 1904 as local manager for the Southeast Missouri Telephone Co. at Charleston, Mo. He was successively secretary, secretary-treasurer and assistant general manager of that company, leaving it in 1912 to become secretary-treasurer of the Brazos Valley Telegraph & Telephone Co., Waco, Texas.

After the consolidation of this and a number of other companies in Texas into the Texas Telephone Co., he became assistant to president, and later president of the new company, occupying this position until in 1920, when he became connected with the Automatic Electric Co. in Chicago as sales manager, and was later made vice-president in charge of sales.

Mr. Blomeyer is author of the "Letters to Managers," a series of articles on telephone management, which have had an extensive circulation to telephone people. He is also known as the writer of many articles on telephone subjects, and as the originator of a lecture and charts on utility rate making which have been successfully used by many telephone companies in rate cases. He has been active for years in telephone association affairs, and was for several years president of the Texas Independent Telephone Association.

Mr. Blomeyer's new connection with Theodore Gary & Co., opening a field of wider activities, will, it is felt, give him the opportunity of being of continuing and greater service to the Independent telephone industry.

Rubber Insulated Metals Corp. Removes to Newark, N. J.

Early this month the Rubber Insulated Metals Corp. removed its general offices from 50 Church street, New York City, to 18 Oliver street, Newark, N. J.

This concern manufactures the well known Rimco rubber insulated pliers, screwdrivers, and other tools, popularly known as "the Safety Tools" for linemen and high-tension work.

The new location will give the Rubber Insulated Metals Corp. larger accommodations and afford every facility for handling a steadily increasing business.

New Type Dial Switch Standardized by British Post Office.

The British Post Office has lately adopted and made standard a new type of dial switch which is intended to replace the various patterns already in use and to provide a standard dial for all systems.

The dial is somewhat larger in diameter than the more familiar types in this country. This is done so as to allow a slight delay before sending each train of impulses, so that the exchange apparatus has time to complete its work in the interval. While the actual delay is so small as to pass unnoticed by the subscriber, it avoids possible annoyance to the subscriber on finding that although he has dialled the correct numbers, the exchange apparatus has failed to establish the connection because

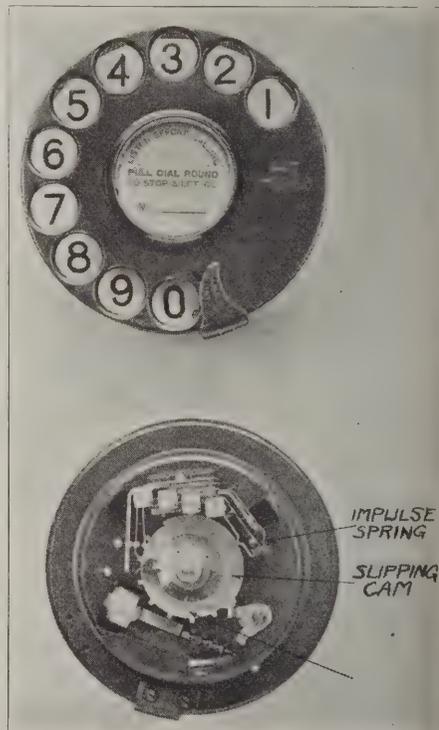
the trains of impulses have succeeded each other too rapidly.

The back view of the dial shows the essential features and the simple but sturdy construction. The impulses are obtained by a toothed cam tripping past a lever actuating a spring set. This spring set is on the right hand side of the photograph.

The impulse cam is secured to the center spindle and driven directly by the finger plate. A slipping or friction-driven cam is provided which screens the impulse cam while a number is being pulled and also for the first portion of the dial's return motion, it prevents the dial from impulsing until the proper moment and provides the delayed action feature.

In this dial the impulse contacts are pressed together for the make periods and allowed to spring apart for the break periods, resulting in perfectly clean impulses free from contact vibration.

The speed control of this dial is effected by a high speed centrifugal governor of

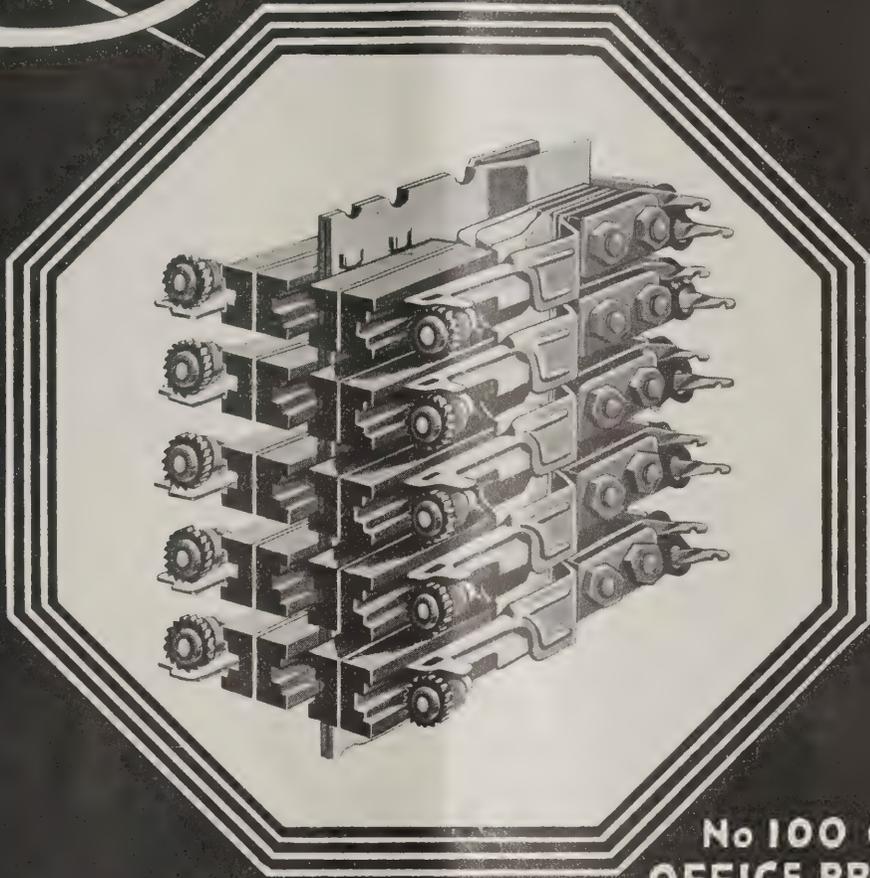


Front and Rear Views of New British Post Office Dial.

which the proportions of the springs and mass of the moving parts are declared to be dynamically correct, hence the speed of the dial is correctly maintained and almost independent of adjustment. Uniform and steady drive is provided by a clock spring housed under the impulse cam.

The dial is designed by Siemens Bros. & Co., Woolwich, England, who have pat-

COOK



**No 100 CENTRAL
OFFICE PROTECTOR**

Indispensable to
**LIFE
PROPERTY
SERVICE**

BOOKLET ON REQUEST

COOK ELECTRIC COMPANY ... CHICAGO

ents on the lost motion feature dating back to 1913. They have already secured large contracts for these dials.

Book Review.

E M F ELECTRICAL YEAR BOOK. Second annual edition, 1923. Published by Electrical Trade Publishing Co., Chicago. Cloth, about 1,240 pp. (9 ins. by 12 ins.) Price \$10.

In effecting a complete revision of this book, there has been no departure from the plan of combining in a single large volume, a dictionary, encyclopedia and trade directory of the electrical industry. About half of the original 14,000 odd topics were entirely rewritten or radically changed, and several thousand new topics added. Thousands of cross-references have also been added to further facilitate finding any desired topic.

Definitions cover the wide range from such theoretical terms as electrons to the purely practical, like linemen's wrenches. Included among encyclopedia topics are historical reviews with facts and figures of the leading branches of the industry, the chief lines of electrical development and main groups of equipment.

There are also 90 biographies of electrical inventors, scientists, and industry leaders: numerous lists with data of electrical associations, colleges, libraries, periodicals and testing laboratories; articles on electrical codes, exports, patents, and other electrical activities. The trade di-

rectory feature includes 3,150 classifications of electrical and closely related products, each with an unbiased list of manufacturers, also separate entries for about 6,580 American and Canadian manufacturers under company name, and over 6,750 entries under the distinctive trade names.

This constitutes the most comprehensive directory of electrical manufacturing ever published. It enables one to find quickly the manufacturers of any product, whether it is sought under its ordinary class name, or special trade name; information about each manufacturer, such as nearest branch office, can also be readily found.

All the editorial work was done under the supervision of F. H. Bernhard. A staff of 36 contributing editors prepared the most technical topics.

Among these was Arthur Bessey Smith, chief research engineer of the Automatic Electric Co., who contributed all of the topics dealing with telephony and telephone equipment. There are two long articles that review the history of the telephone in general and automatic telephone in particular. Another one discusses the change-over from manual to automatic. There are several hundreds of minor topics dealing with telephone practice, apparatus, etc.

The new book is attractively bound and makes a very useful reference book in bringing together a mass of valuable in-

formation covering all of the many lines of electrical activity.

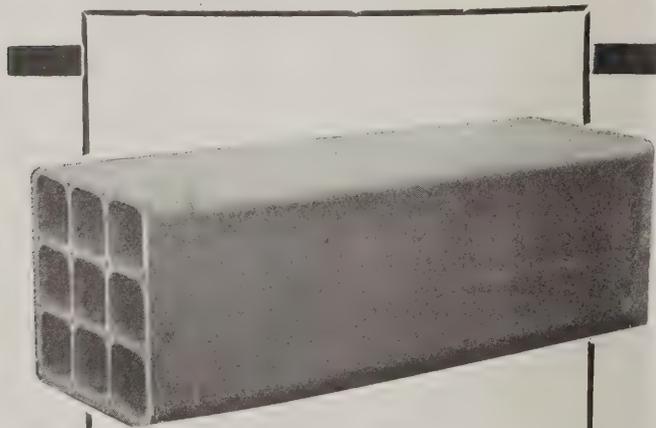
New Metallic Circuit Telephone System for Tangier, Morocco.

Tangier, Morocco, which boasts of being the second city in the world to use telephones—it is claimed that telephones were first installed in Tangier 48 years ago—is to have a complete new installation. The new service will be ready for use in May, 1923, according to United States Vice Consul Charles I. Graham.

Five months ago a contract was given to a large Swedish concern to install new telephones and a new central in Tangier. The company which operates the telephone service at the present time is a Spanish company and operates as a monopoly, a monopoly having been granted by the Shereefian government when the first telephones were placed in operation. The contract calls for the expenditure of 400,000 Spanish pesetas.

The present antiquated system will be entirely displaced and new instruments of the latest design are to be installed. A new central battery is also to be included and each instrument will have two wires instead of the one wire, as is now in use. In the present system the return is made via the ground and the currents are deflected by water mains and the service is badly interrupted.

In Tangier today there are 607 instru-



Vitrified, Glazed, Clay Conduit

Guaranteed to possess all the characteristics for *satisfactory* and *permanent* service.

We carry large stocks of round singles, square singles, two, three, four, six and nine duct, in standard and short lengths, in splits, mitres, and bends.

Send today for complete particulars and prices.

THE CLAY PRODUCTS COMPANY

BRAZIL

INDIANA

See How They Work



Bonita Aerial Cable Rings

Hand your men a few of these cable hangers and notice how easily and quickly they are attached. That's one reason why they are standardized by A. T. & T. Co.

CAMERON APPLIANCE CO.
EVERETT, MASS.

A Most Excellent Combination is Found in Every Monarch Telephone Because—



This small compact residence telephone is a most popular type for use in town, with not more than one other party on the line. It is usually equipped with a 3-bar generator and 1000 ohm ringer.

it is equipped with a high resistance transmitter and an induction coil having a secondary winding of 175 ohms. This most excellent combination in series with our 100 ohm Receiver prevents excessive transmission loss when patrons eavesdrop. It is a positive and undeniable fact that transmission losses are cut to the minimum by this combination.



An inside view of our residence type magneto telephone shows the neat and compact arrangement of all parts. This telephone is also arranged so that it opens away from the backboard.



All circuits are color coded, making it very easy to trace any particular circuit. Wiring is in cable form, being held in place by fibre cleats. Our cable forms are all treated after lacing, so that they are moisture proof.

Monarch Telephone Manufacturing Co.

GENERAL OFFICES AND FACTORY

951 W. Van Buren St., Chicago, Ill.

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Tel-Electric Co., Houston, Texas

Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Electrical Supply Co., New Orleans, La.

Coker Electric Supply Co., Los Angeles, Cal.

Poles Preserved the V-C Way Are Enduring

The Valentine-Clark Co. preserved the butt of this pole in 1910 for the Peoples Light Co., of Davenport, Ia. (Specification "A").* Note that portion of the butt where the earth has been removed at the ground line and about one foot below. There is absolutely no sign of decay.

**Preservative Treatment "A" provides for a continuous submersion in hot Carbolineum for a minimum duration of fifteen minutes.*



The secret of successful wood preservation is simple: Poison your wood so it will not be attacked by fungi, either at the ground line or elsewhere, by using a **high boiling oil of coal tar**; this will forever hold the poison and not leach out. Results are permanent if properly applied.

Write us today for further details.

THE
Valentine-Clark Co.
Minneapolis, Minn.

ments in use, each instrument having a direct wire to the central office. When a new subscriber desires to have a telephone installed, it is necessary to stretch a new wire from the subscriber's house to the central office.

In spite of this fact, telephone rates are not excessive, the rates varying from 17½ Spanish pesetas to 40 pesetas per month (\$2.70 to \$6.16 per month at the present rate of exchange). The variation in the rates is dependent upon the distance of the subscriber from the central.

The service at present is entirely local, there being no long distance connections with Spanish Morocco or French Morocco. It is understood that in the near future negotiations are to be undertaken with a view to the establishment of long distance connections between the Tangier zone and the French zone of Morocco.

O. V. Dodge, New Sales Manager of Automatic Electric Co.

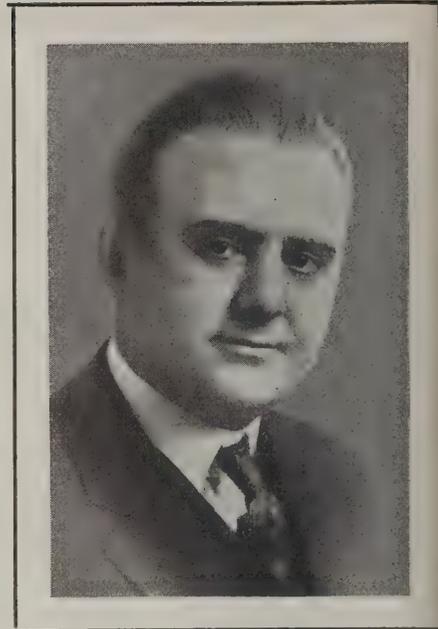
Effective May 1, O. V. Dodge, for the past nine months purchasing agent for the Automatic Electric Co., Chicago, becomes sales manager for that company. He succeeds E. C. Blomeyer, who goes to Kansas City as vice-president of Theodore Gary & Co.

Mr. Dodge went to the Automatic organization late in 1919. After making a thorough study of the manufacturing processes involved in producing automatic telephone equipment, he was assigned to the purchasing department to handle the purchase of raw materials.

In January, 1920, he was appointed assistant to the general superintendent, and later assistant to Grant Pelton, vice-president in charge of the factory. In addition, during this time Mr. Dodge took an active part in the operation of the Monarch Telephone Mfg. Co., thus being enabled to se-



O. V. Dodge, the Newly Appointed Sales Manager of the Automatic Electric Co.



W. M. Curtis, Manager of the Contract and Foreign Sales Department.

cure first-hand knowledge of the manufacture of manual telephone equipment.

Early in 1921 Mr. Dodge joined Automatic Electric Co.'s sales department as assistant to Mr. Blomeyer, and was dele-

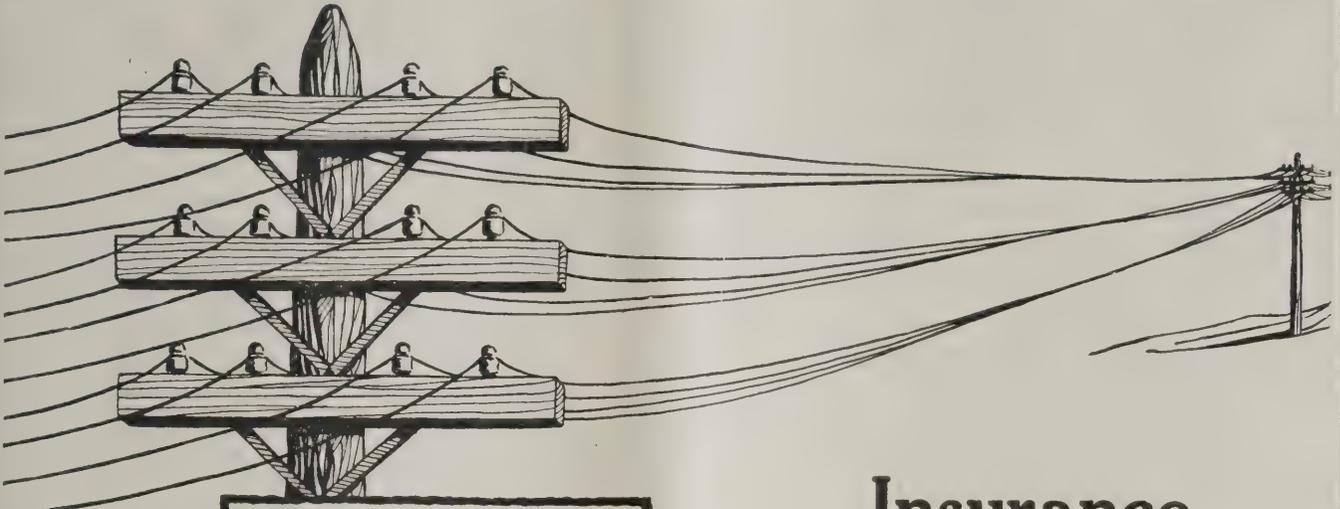


N. P. Bartley Has Charge of the P. A. X. Sales for the Automatic Company.

gated certain executive duties in the conduct of that department. In September, 1922, he was appointed purchasing agent.

Mr. Dodge comes to his new position thoroughly versed in all departments and activities of the Automatic Electric Co., and his experience will be, without doubt, a means of further cementing the friendships existing between that company and its many associates in the telephone field.

Mr. Dodge will have associated with him W. N. Curtis, manager, contract and foreign sales department, and N. P. Bartley, manager, P. A. X. sales.



The Policy

Of Lynton T. Block & Co. is to issue the most satisfactory and comprehensive insurance to be had anywhere—

Furnishing absolute protection at cost

Embodying all the standard features and more

Covering special classes and selected risks

Selling at established rates

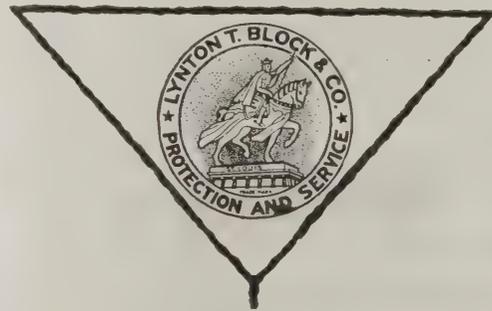
Returning savings at the end of the policy period, depending upon the individual experience of the risk.

Giving a claims service that is not equalled elsewhere

It is an honest policy, carried out in an honest way and gives a square deal under all conditions.

This forms the creed of every member of the organization and has built up the reputation of Lynton T. Block & Co. until it is one of the best and most favorably known in the Mississippi Valley.

Insurance at Cost



*WORKMEN'S COMPENSATION
EMPLOYERS' LIABILITY
PUBLIC LIABILITY
TEAMS LIABILITY
CONTRACTORS' LIABILITY
ELEVATOR
PLATE GLASS
AUTOMOBILE*



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**Underwriters of
Insurance at Cost**

**Utilities Indemnity and Fire Exchanges
Employers Indemnity Corporation**

**Chamber of Commerce Bldg.
ST. LOUIS, MO.**

Valuations—Supervision—Plant—Inductive Interference
Expert Administrative Counsel for Utilities

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The American Appraisal Co.
A Quarter Century of Service

MILWAUKEE NEW YORK CITY
Financial Reports



THE BOWDLE SYSTEM
Always shows you where you stand.
We have solved the bookkeeping problem of a large number of companies.
Write us about our monthly audit.
Bowdle Accounting System
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W. C. POLK
CONSULTING TELEPHONE ENGINEER
Plans, Estimates and Reports,
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Can arrange a moderate amount of financing.
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CHAPMAN
LIGHTNING ARRESTERS
Manufactured by
MINNESOTA ELECTRIC CO.
Minneapolis, Minn.

GOVERNMENT ACCOUNTANT During Federal Control
Systems of accounts installed to meet the requirements of Federal and State regulatory bodies, annual audits, financial reports, income tax matters, rate case material prepared, filed and presented.

CARLTON G. VAN EMON
PUBLIC UTILITY ACCOUNTING
221 Fifteenth St. N. W., Washington, D. C.



The "STEWART" Test Cabinet
Tells you if your line is short, crossed, or grounded and how many miles it is from you. So simple the operator can use it as easily as the man. Reads direct.
Sent on trial
STEWART BROTHERS
Ottawa, Ill.

Greece Wants Her Telephone System Rebuilt.

Entire reconstruction and development of the Greek telephone system by private interests has been decided upon by the Greek minister.

Terms upon which the concession will be granted have not been fixed but the best offer will be accepted.

The reconstruction covers the placing underground of the present overhead line system and the installation of modern central exchanges.

The cities of Athens, Piraeus and perhaps Saloniki will first be completely equipped with a modern telephone system and the work is to be extended later to all cities and towns of 10,000 inhabitants. All the cities are to have intercommunication by direct lines; at the present time there is direct communication only from Athens to Patras and Saloniki.

The existing telephone systems in Greece, according to Commercial Attache Hall, of the United States Department of Commerce, render poor service and yield only meager financial returns. At Athens the number of subscribers is only 2,140, connections are unreliable and the talking qualities poor.

Ordinarily there is no attempt made to get Piraeus, only a few miles away, and even in the city it is quicker to write and send a messenger rather than to attempt to do any business over the telephone.

The annual cost of the present telephone service to subscribers varies from 250 to 500 drachmas (1 drachma equals 1,2 cents).

There is no toll system in effect over such intercity lines as have been built.

Exchange Locates Doctors at All Hours in Pittsburgh.

Eight hundred physicians of Pittsburgh, Pa., whether they are making professional calls or playing golf, will be within reach of their patients 24 hours a day, according to an announcement made recently by the County Medical Society.

The society has established the Pittsburgh Physicians' Exchange. A central telephone exchange connects with all doctors' offices who are members of the medical society. A visible file index will be kept at the exchange and whenever a physician leaves his office, either on business or pleasure, it will be recorded at the exchange.

All patients have to do to locate their medical adviser is to call the information exchange.

Charles W. McKay
And Associates
"A Balanced Consulting Service at Reasonable Cost"
646 NO. MICHIGAN AVE.
CHICAGO
Telephone—Superior 6535



\$57.50 Addressograph
"Typewrites" names, addresses and rates on bills, 1000-1500 an hour.
FREE TRIAL—EASY TERMS
906 W. Van Buren St., Chicago

CONSULTING Telephone Engineer
GARRISON BABCOCK
800—20 East Jackson Blvd., Chicago, Ill.
Telephone Wabash 5212

TELEPHONE ACCOUNTING
"COFFEY SYSTEM"
The Independent Standard
Coffey System and Audit Co., C. P. A.
118 E. New York Street
Indianapolis, Ind.
Exclusive Telephone Accountants

American Electric
TELEPHONES
SWITCHBOARDS and SUPPLIES
Carried in Stock by
Southern Electric Supply Co.
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KESTER Acid-Core WIRE SOLDER



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CHICAGO, ILL.

GUSTAV HIRSCH, M.E.
CONSULTING ENGINEER
COLUMBUS, OHIO

Appraisal Construction Reports

J. G. WRAY & CO.
Telephone Engineers
Specialists in Appraisals, Rate Surveys,
Financial Investigations, Organization, and
Operation of Telephone Companies.
J. G. Wray, Fellow A. I. E. E.
Cyrus G. Hill
1217 First National Bank Bldg., Chicago



A complete stock of
KELLOGG TELEPHONES TELEPHONE SUPPLIES
NORTHWESTERN ELECTRIC EQUIPMENT COMPANY
SAINT PAUL AND DULUTH, MINNESOTA

Would it pay you to have this happen to one of your repair men?



"He was taken to the City Hospital"

So strong was the current passing through Neighbors's body that bystanders did not dare to touch him and lowered him from the telephone pole with a rope after his contact with the wire was broken. He was taken to the City hospital.

EXTRACT FROM WESTERN DAILY

Such occurrences are costly and can be avoided.

Many leading telephone companies have already put themselves on the "safe" side. These have equipped their men with

"Rimco" Rubber Insulated Pliers and Screw Drivers

—The "Safety" Tools for telephone workers are designed especially to meet the requirements of linemen and high tension work.

The insulation is a semi-soft, high-grade rubber compound BONDED to the metal by the "RIMCO" patented method and therefore, it cannot come off—and cannot crack or break when dropped.

The insulated handles being semi-soft, insure comfort, and give a firm grip with greater power.



"RIMCO"
RUBBER INSULATED
PLIERS
This pair subjected to 10,000
volts and left applied 10 minutes
and tested by the Electrical
Testing Laboratories New
York City, U.S.A.
GUARANTEE
This pair when bearing our
name, carries our guarantee
against any defects in material
or workmanship.
Always use the "RIMCO"
our trademark is embossed on
the insulation of the part in
which this tag is attached.
RUBBER INSULATED
METALS CORPORATION
NEW YORK, N. Y., U.S.A.
Catalog No. 1008

Manufactured Solely by the

Rubber Insulated Metals Corporation
18 Oliver Street NEWARK, N. J.



"Guards of Transmission"

Argus Type A-C Arresters—made of the finest materials and every step in their manufacture supervised by experts—are constant guards against lightning and crosses with high tension circuits.

They afford perfect protection for radio sets, too. And they're passed by the National Board of Fire Underwriters.

Let us send you our price list—now.

FOOTE-PIERSON & CO., INC.
160-162 Duane St. New York City

We Make Special Tools, Too

In addition to manufacturing a complete line of standard construction tools, we are also equipped to handle the manufacture of special construction tools of all kinds, made to your specifications. Our engineering department is at your service if you need help in designing special tools.

OSHKOSH MFG. CO.
134 Tell St., Oshkosh, Wis.

OSHKOSH
Construction Tools

Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and Incorporations.

BURLEY, IDAHO—C. M. Oberholtzer, E. C. Davis, and A. Ahlm are the directors of the newly incorporated Cassia Telephone Co., which has a capital of \$5,000.

MUSCATINE, IOWA—The Muscatine-North Prairie Telephone Co. has filed articles of incorporation. The company is capitalized at \$1,250 and has as its officers: J. G. Klein, president; H. J. Freyermuth, vice-president; C. Fischer, secretary, and G. McConaha, treasurer.

CANMER, KY.—The Canmer Telephone Co. has been incorporated by C. L. Adair, J. M. King, L. D. Lane and H. C. Lane, with \$1,500 capital stock.

Financial.

IRETON, IOWA—The Ireton Rural Telephone Association voted at its annual meeting to increase its capital stock from \$10,000 to \$15,000. The secretary's report showed the company to be in good condition, financially.

MIDDLEBURG, N. Y.—The Middleburg Telephone Co. has increased its capital from \$1,000 to \$10,000.

Construction.

PEARCE, ARIZ.—The Light Telephone Co. is planning to start work soon on extensive local improvements.

KEWANEE, ILL.—Improvements costing about \$12,000 are to be installed by the Kewanee Home Telephone Co. Included

in the program are 20,000 feet of underground and aerial cable. The Kewanee exchange will soon be connected by a copper toll wire with Princeton, which will open up a large territory to the east of Kewanee over Independent toll lines.

Elections.

EDINBORO, PA.—The stockholders of the Peoples Bell Telephone Co. held their annual meeting recently and elected M. S. Gillaspie, D. Austin, M. J. Reno, I. R. St. John, J. Z. Miller, C. L. Darrow and V. B. Billings to the board of directors.

The directors chose as the official board: M. S. Gillaspie, president and treasurer; M. J. Reno, vice-president, and I. R. St. John, secretary.

PATTON, PA.—The affairs of the Northern Cambria Farmers Telephone Co. will be in the hands of these officers for 1923: President, H. H. Gooderham; vice-president, P. C. Strittmatter, and secretary-treasurer, E. Wise. D. Sheehan, P. C. Strittmatter and F. Miller were elected directors for three years, and F. A. Westrich was elected for two years.

BIJOU HILLS, S. D.—At the annual meeting of the Bijou Hills Rural Telephone Co., officers and directors were elected as follows: O. Anderson, president; L. F. Dobberstein, vice-president; W. A. Thwing, secretary-treasurer; E. W. Graves, member of board for three years; and G. W. Gray, superintendent of lines.

TREZEVANT, TENN.—The officers of the Trezevant Telephone Co. for this year are: J. L. Cochran, president; R. L. Bryant, vice-president; A. A. Argo, secretary-treasurer, and D. F. Foster, manager. In addition to the foregoing officers, five members were elected to constitute the executive board: J. E. Bryant, A. R. Bryant, W. F. Smith, O. Patterson and A. J. Argo.

LUDINGTON, WIS.—The Ludington Telephone Co. held its annual meeting and reelected the officers as follows: O. W. Niebuhr, manager; J. Volbrecht, secretary, and J. E. Zetzman, treasurer.

SUGAR BUSH, WIS.—T. Ruckdashel was elected president and W. Hutchinson secretary of the Sugar Bush Telephone Co.

POSITION WANTED

POSITION WANTED—As lineman or manager of magneto telephone exchange. Best references and tools. Seven years' experience. Address Wm. Maseman, 1418 Oliver, North, Minneapolis, Minn.

WANTED—Cable splicing and switchboard repairing or rebuilding. Have complete set of instruments for locating all kinds of trouble. Address Cableman, Box 19, Hamilton, Ill.

HAZARD

Rubber Insulated
TELEPHONE WIRE



Uniform in construction Hazard Insulated Wires and Cables give uniform service. Made of the best of materials and by highly skilled workmen. Experience, knowledge and honesty of purpose insure long life and ultimate economy.



HAZARD MANUFACTURING CO.

New York Pittsburgh Chicago
Denver Birmingham
Wilkes-Barre, Pa.

Makers of Quality Wire Rope since 1848

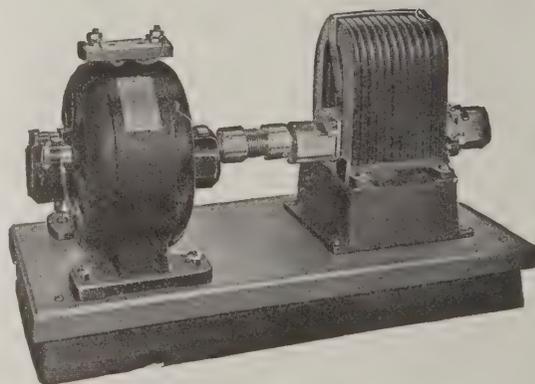
RINGING SERVICE

for 24 hours a day—and no watching or care except to lubricate! And the service is uniform and regular under all conditions.

Have YOU got this?

The Holtzer-Cabot

Magneto-Ringing Motor-Generator



will assure you this sort of service. You owe it to yourself to investigate. There are thousands in use. And YOURS is ready for shipment whenever you order it.

THE HOLTZER-CABOT ELECTRIC CO.

Chicago

Boston

Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
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CURRENT OPINIONS AND COMMENTS

This promises to be a big year in the automobile industry,

and leading men in the car manufacturing field are puffing out their chests with pride in the hope that the end of 1923 will see as many automobiles in use in the United States as there are telephones. One leading car-maker has made a statement to the press which begins:

"The most accurate conception as to the number of automobiles there are in operation in the United States is obtained by the fact that there are almost as many automobiles in use as there are telephones."

He places the number of telephones at approximately 14,500,000, and quotes the latest statistics as putting the number of automobiles in the country at 12,500,000 January 1, 1923. Estimating the 1923 car output at 2,500,000, he argues that "unless the telephone makes the same proportionate gain, the automobiles will equal, if not exceed, the number of telephones in America by the end of this year."

* * * *

Proceeding, the automobile leader pays the telephone a high compliment by saying:

"The fact that the automobile almost equals the telephone in numbers is a startling one, and makes the automobile rank in importance with that of the telephone whose economic value to America's industrial and social life has been established for years.

"Business, as well as the countless thousands of homes, wonders today how it ever operated without the use of the telephone. The telephone has linked business in a

transcontinental union and has battered down the isolation originally existing because of the tremendous territory within the borders of the United States. For the automobile to rival such a tremendous instrument of national existence as the telephone, is convincing proof that the automobile is firmly established as an economic necessity, bowing to none in vital importance."

It is not probable the telephone growth this year will reach 2,500,000. The figures will be more like 1,250,000.

* * * *

The future may see more cars than telephones in the country, but it is safe to say *there will always be more telephone users than automobile users.* More people will use the telephone—and oftener—than the gas-buggy. Neither the initial cost nor the up-keep of the telephone is anywhere near as large as in the case of the automobile.

* * * *

It would be idle to discuss the relative "economic value" of the telephone and the automobile. Each has its important place in the life of today and performs its individual mission. The question, "Is the telephone or the automobile more essential to modern life?" might make an interesting subject for a high school debating society, but so much can be said on both sides that probably no definite conclusion could be reached.

It would have to be conceded, however, that the telephone is not so prone to get people into trouble as is the speeding auto-

mobile. So far it has not been necessary to employ special

police details to see that telephone users do not violate the law.

Speaking seriously, the telephone and the automobile are not competitors in the sphere of public service. The stranded automobile tourist who has had to telephone a garage for a tow-in will testify to that.

* * * *

The Telegraph and Telephone Journal, of London, the official organ of the British government-owned wire system, says that France proposes to spend 200 million francs a year for ten years to put its telephone system—also government owned—in an adequate and efficient condition. The franc used to be worth about five to an American dollar, on which basis this assertion means that the French government plans to lay out about \$400,000,000 in the next ten years on telephone development.

The Journal goes on to state that "these sums will not represent an expense to the state but a particularly remunerative investment. By means of financial reforms, improved organization and equipment receipts will be increased, and it is expected that at least 20 per cent will be obtained on the capital engaged. Commercial tariffs will be introduced, of the nature of which we have no information, and collaboration with the public and with private initiative will be encouraged."

* * * *

In America, where utility regulation is in vogue, it sounds odd to hear a government-owned telephone system calmly talk

of making 20 per cent on the investment. The "tariffs" that rate commissions in the United States allow privately-owned telephone companies—giving infinitely better service—permit less than half that return which the French government hopes to make out of its patrons.

What do you think a state commission would say to a telephone company that demanded rates which would yield 20 per cent?

* * * *

Heads of government-managed telephone systems have no difficulty in getting good rates, even for service the people of the United States would not endure, and, besides, have the tax budget to fall back on in case of a deficit. In discussing government telephones the British journal says that the Italian government is handing the wire service over to a private corporation.

To prevent public sentiment demanding

such private operation the French government is planning the extensive reforms and improvements referred to. A grave telephone crisis exists in France on account of the wretched service which the bureau chiefs say is due to the difficulty of obtaining materials since the war.

As a matter of fact, judged according to American standards, the French telephone service was never anything to cheer about. If the French government has 400 millions to spend for telephone equipment during the next ten years, however, American manufacturers should profit thereby.

* * * *

As to Italy turning to private ownership, the reason for that—besides a desire for better service—is that Mussolini, the people's new leader, although formerly a socialist, has renounced the policy of government ownership. He says:

"We are done with government railways,

government employment agencies, government insurance. We leave to the state its police powers, to protect honest citizens from robbers and criminals; we leave it the control of the schools, to train our coming generations; we leave it the army to protect the territories of the Fatherland inviolate; and we leave the control of foreign policy."

* * * *

That would appear a sizable job for any government to handle, and handle well. Mussolini seems to have a business head that understands that industry fares better under private operation—that is, generally speaking. However, the private industry that gets as big as the government will find itself eventually taken over by the government.

In the United States we have one or two that seem to aspire to that size—and the danger.

Bell Seeks to Purchase Kansas City

Negotiations In Progress Looking to Transfer of Gary Local Interests to Southwestern Bell—Deal Contingent on Public Consenting—Gary Organization to Retain Long Distance Lines and Illinois Properties

Negotiations are in progress looking to the purchase of the Kansas City Telephone Co.'s operating properties by the Bell telephone organization. The Theodore Gary interests, which control the Kansas City company, are said to be agreeable to the transfer, subject to public consent—which means the approval of the state commissions, the municipal authorities and the Interstate Commerce Commission.

It is understood that the Theodore Gary interests will continue to own and operate their toll line properties consisting of the Kansas City Long Distance Telephone Co., the Texas Long Distance Telephone Co. and the Texas Toll Line Co., regardless of the result of the negotiations affecting the Kansas City Telephone Co. They will also retain their local exchanges and toll lines in Illinois.

Through its associated company, the Southwestern Bell Telephone Co., the Bell organization has for some time manifested a desire to regain its foothold in Kansas City, whose importance as a traffic point has increased by leaps and bounds in recent years.

The fact that the present management of the Kansas City Telephone Co. has been highly successful in establishing excellent service, and consequently winning the cordial good will of the public, naturally increased this desire on the part of the Bell to regain control of that important center.

Comment in the Kansas City press and statements from local civic organization leaders indicate that there will be opposition to the proposed transfer, and, as the Gary organization announces that the transaction is entirely dependent on public consent, it is expected much time will elapse before it is consummated.

There is pending before the Missouri Public Service Commission a joint application filed by the Kansas City Long Distance Telephone Co. and the Kansas City Telephone Co. for the former to dispose of to the latter its exchange holdings at Richmond, Excelsior Springs and Norborne, Mo. The amount stated in the application is \$225,572.91. The application provides that the transfer, if approved by the commission, be completed by January 1, 1925.

Similarly, the Kansas City Long Distance Telephone Co. has asked permission of the Kansas Public Utilities Commission to sell the exchanges at Lenexa and Independence, Kans., to the Kansas City Telephone Co. for \$296,398.46.

These moves are regarded as preliminary to the transfer of these various exchange properties to the Southwestern Bell company, providing public consent is forthcoming. While no official statement has been given out concerning the negotiations, it is reported in the Kansas City press that, if public approval is granted, the Bell interests will eventually operate

the Gary local exchanges in Missouri and Kansas, while the long distance lines now owned and operated as Gary properties will continue under the same control. This will be accomplished, if no hitch occurs, by the Bell acquiring control of the Kansas City Telephone Co., to which these exchanges will be transferred.

The principal telephone holdings of Theodore Gary & Co. in Missouri and Kansas are:

The Kansas City Telephone Co., operating in Kansas City.

The Home Telephone Co. of Joplin, Mo., which, in addition to the Joplin exchange, controls exchanges at Nevada, Webb City, Carthage, Carl Junction, Carterville, Purcell and Oronogo, Mo.

The Kansas Telephone Co., with exchanges at Lawrence, Ottawa, Garrettsville and Cherryvale, Kans.

The Kansas City Long Distance Telephone Co., with exchanges at Richmond, Norborne and Excelsior Springs, Mo., and Lenexa and Independence, Kans.

Including their Texas holdings, it is estimated the Gary telephone interests have an aggregate value of 30 million dollars.

According to the Kansas City Star when A. F. Adams, president of the Kansas City Telephone Co., was asked if the Bell was negotiating for the four companies mentioned, he replied:

"Not for the long distance lines of the Kansas City Long Distance Telephone Co."

what is the object in severing the Richmond, Excelsior Springs, Lenexa and Independence exchanges from the long distance company."

"The next step will be the transfer of the stock of the Joplin Home Telephone Co. and of the Kansas Telephone Co. to the Kansas City Telephone Co.?" was the next question put to Mr. Adams.

"That is contemplated," he confirmed.

"The negotiations, which have progressed to a point of satisfactory understanding," Mr. Adams was quoted as saying, "contemplate the purchase of a stock control in the Kansas City Telephone Co.

"By the time that stock is sold to the local telephone company we will have the ownership of the Joplin and Kansas companies vested in the Kansas City Telephone Co. If the two state commissions approve,

the sale also would carry the five exchanges of the long distance company."

"The approval of the Interstate Commerce Commission has not yet been obtained?" Mr. Adams was asked.

"Adequate notice must be given," the telephone executive replied. "The matter will come before the Interstate Commerce Commission on petition of the telephone companies. It is required that notice of the Interstate Commerce Commission's hearing be given the governor and the heads of the utilities commissions in the states in which the property is located. Following a hearing, the commission can reject the application or certify that the purchase would be in the public interest."

Mr. Adams would not discuss the probability of gaining the permission of the Interstate Commerce Commission.

Telephone users in Kansas City have

been so well satisfied with the present management of the local telephone plant that there promises to be considerable agitation over the transaction which the Bell desires to consummate. There is much unfavorable talk about "absentee ownership," and it is expected that progress will be most deliberate.

Emphatic denial is made that the Gary organization is at all anxious to get out of the telephone business. In fact, even though public sanction of the transfer of their local exchanges to the Southwestern Bell is finally forthcoming, the Gary interests will continue to own and operate their long distance lines in Missouri, Kansas, Texas and the Southwest. It is furthermore stated that they will continue in the telephone manufacturing field, probably on a larger scale than ever, both in the United States and in England.

The Empire State's Fine Convention

Annual Meeting of Up-State Telephone Association of New York, Held at Rochester April 18-20, Marked by Unusually Large Attendance, Excellent Papers and Diversified Entertainment—Everyone on His Toes All the Time

With an actual registration of 511 telephone people, of whom 234 were operators, an attendance record for state meetings was set at the convention of the Up-State Telephone Association of New York, held at Rochester, April 18, 19 and

There was not a dull moment during the convention for things were kept moving so swiftly by Vice-President and General Manager J. G. Ihmsen, that no one had opportunity to even wonder what was coming next. The papers presented were of unusual merit and full of practical information. The various entertainments, including the luncheon at and inspection trip through the plant of the Stromberg-Carlson Telephone Mfg. Co., were such as to satisfy and please the most critical pleasure seeker.

The first session was called to order by George R. Fuller, president, at 2 p. m. Wednesday April 18. Mr. Fuller introduced Clarence D. VanZant, mayor of Rochester, who welcomed the delegates on behalf of the city of Rochester.

In a very pleasing talk, the mayor eulogized the importance of telephone communication to the commercial and social interests of every community, and pointed out the importance of co-operation between the telephone companies rendering service and the subscribers who use the service. The mayor expressed a hope that the delegates would enjoy their visit to the city of Rochester, and dwelt at some length on its advantages and attractions.

Louis N. Foulkes, president of the Rochester Chamber of Commerce, was introduced by the chairman, and ten-



George R. Fuller, President of Rochester Telephone Corp., Continues as President of the New York Association.

dered a hearty welcome to the visitors on behalf of the commercial interests of the city. Mr. Foulkes, who himself represents one of the largest manufacturing interests in Rochester, expressed profound regard for the telephone industry, and referred especially to the progress made in its development during the past decade.

"Keys to the city are no longer being offered to visitors by Rochester authorities," said Mr. Foulkes. "Keys to the cellars appear to be more appropriate and are more welcome to the strangers." This

suggestion met with the hearty approval of the assembled guests.

Mr. Fuller responded to the welcome of the mayor and the president of the Chamber of Commerce, and followed with a very interesting address upon the usefulness of telephone associations in general and specifically upon the lasting benefits that have been derived through the activities of the New York association.

He stated that he had been the president of a New York association, which was in existence some 15 years ago. The only thing that was accomplished by many associations in those days was an annual feast and a good time for a couple of days. Upon returning home the members forgot about the association until the next annual convention.

Mr. Fuller took occasion to comment favorably upon the large attendance, and stated that it gave great pleasure to the directors, officials, and employes of the Rochester Telephone Corp. to act as host.

At the conclusion of his address, the president paid high tribute to Vice-President and General Manager J. G. Ihmsen for his indefatigable work in connection with the association's success. Then he turned the meeting over to Mr. Ihmsen, whom he delegated to conduct the remainder of the sessions.

Upon assuming the chair, Mr. Ihmsen spoke as follows: "I am fully aware of the responsibility that attaches to the important position of chairman at this convention. I appreciate the confidence that has been placed in me by our president, Mr. Fuller, and I am very much pleased indeed to have the opportunity of conduct-

ing the convention. I will make every effort to keep the proceedings moving along in a manner acceptable to you. As a reward for your indulgence and co-operation, I will endeavor to make the proceedings snappy and carry the subjects that are on the program through on scheduled time.

"Notwithstanding the serious character of the business which brings us together in conference, I hope that the sessions will be alive with animated, spirited discussions, appropriate reminiscences, and above all, good humor and a friendly fellowship at all times."

Following his remarks the chairman started the regular program off with a rush and a spirit of animation that was continued throughout every session. With some appropriate remarks preceding every number on the program, Mr. Ihmsen led up to the subjects in a way that kept the visitors from becoming weary, and gave the speakers an opportunity to confront a receptive and good-natured audience.

The regular numbers on the program for the first afternoon session were devoted entirely to traffic, which subject was opened by Miss Lillian A. Vavasour, traffic inspector for the Friendship Telephone Co., who spoke impressively upon the purpose of an operators' conference. As the afternoon session was attended by the managers, and plant and traffic employes, Miss Vavasour's able presentation of the subject was enthusiastically received by those engaged in all branches of telephone work.

This number was followed by a switchboard demonstration staged by employes of the Rochester Telephone Corp., and interpreted by William J. O'Hea. This feature is undoubtedly one of the most instructive and interesting demonstrations that has ever been presented, and gives to the public and the audience a more comprehensive understanding of the movements required in setting up switchboard connections in order to complete a subscriber's call. It shows the working panel of the A and B boards in multi-exchange operation. With the aid of highly-trained A and B operators, every movement from the time a call originates until it has been completed, is visualized. At the conclusion of a conversation, the method of disconnecting and registering the call is illustrated.

With the aid of other traffic employes, stationed at the subscriber's instrument, the common errors that enter into this feature of the work, that may be attributed to the subscriber's neglect, are plainly shown; also the mistakes sometimes made by operators in giving the wrong number, are explained.

Chas. A. Vickery, traffic superintendent, Rochester Telephone Corp., read a paper entitled, "Lubricating the Traffic." Mr. Vickery treated the subject of traffic in a unique and impressive manner. His paper will be published in full in a future issue of TELEPHONY.

Wednesday evening the visitors assembled at the Eastman Theater, guests of the Stromberg-Carlson Telephone Mfg. Co. They were conducted through this splendid building, guided by attaches of the theater, after which they were delightfully entertained by a high class motion picture and a splendid concert rendered by the Eastman orchestra.

The Thursday Morning Session.

The second day's proceedings were started promptly at 10 a. m. by the reading of a report by Mr. Ihmsen covering the activities of the association.

The importance of maintaining two groups in the telephone industry was dis-



Vice-President and General Manager J. G. Ihmsen Keeps New York Telephone Men on Their Metal All the Time.

cussed by F. B. MacKinnon, president, United States Independent Telephone Association. He expressed a hope that the Bell and Independent telephone companies would get together and decide what should be a fair and equitable division of territory, based upon the question of which could operate most efficiently and economically within a given zone.

When this conclusion has been reached, their right to operate at a fair profit should be conceded by the telephone public, and the integrity of the several companies should be defended by the regulatory bodies of the state.

President MacKinnon in the course of his address discussed the financing of small companies. He suggested that capital for this purpose could be readily obtained from financial sources at home, provided the company requiring financial assistance has been carefully managed, and also provided that the plant and equipment have been maintained in a manner to readily show that additional funds invested in the enterprise will be amply protected and yield a reasonable return to the investor.

Mr. McKinnon was followed by John E. Maling, who delivered an address upon the "Origin and Effect of Freak and Class Legislation." Mr. Maling warned the business men of the community that, unless they arose to the occasion and adopted means to combat class legislation, they would be confronted with more serious problems in the future than had been experienced in the past.

Mr. Maling referred to a number of specific instances where class legislation had retarded the progress of industry in this country. He predicted that, unless steps are taken to prevent, a great deal more dangerous legislation is likely to occur in the near future.

Approval of Mr. Maling's discourse was evidenced by a unanimous rising vote.

Seaborn N. Vines, public utilities accountant of Syracuse, read a paper with special reference to telephone accounting. The broad experience of Mr. Vines in establishing simplified accounting systems for the smaller telephone group, enabled him to present this subject in a way that appeals directly to the telephone companies that are not large enough to provide themselves with a complete organization.

"Bookkeeping contains many mysteries for the manager of the small company which are readily dispelled by an expert accountant who does not confuse small operations with vast undertakings," said Mr. Vines. "I have been able to start great many of the smaller companies in the right direction by establishing simplified methods that serve to carry the required information in a systematic manner, without introducing complications and extended detail work that is required in the case of a larger development."

Continuing, Mr. Vines referred to several specific cases where the companies had neglected to install a reasonable form of accounting, and which afterwards found it necessary to apply to the public service commission either for an increase in rate or capitalization. These companies found themselves entirely without the data necessary to secure the consent of the commission. In these cases, the companies were compelled to engage the services of an accountant in order to unravel the confused conditions. This in the end was more expensive than if a reasonable practice had been regularly followed.

The Thursday afternoon session was opened with the presentation of a training school for plant employes, which was introduced by R. M. Bruce, plant superintendent, Rochester Telephone Corp. In addition to a paper by Mr. Bruce upon the subject, a practical demonstration showing the quickest method of detecting outside plant troubles and inside equipment troubles, was offered through the medium of apparatus mounted upon display boards with the telephone instruments, material, and circuits in full view of the audience.

Another interesting illustration presented by Mr. Bruce consisted of a large panel, upon which was mounted the various articles of material used by the installers, and other plant employees. The cost or value of each article was shown in plain figures. By mathematical deduction, Mr. Bruce was able to show that through careless handling of the various items by employees, who fail to return the different parts to the stockroom, the company could suffer a loss running into many thousands of dollars during the course of the year.

"Results of An Intensive Drive for New Business," by Frank T. Byrne, commercial superintendent, Rochester Telephone Corp., held the close attention of the delegates. The conclusion reached in Mr. Byrne's discussion is that no matter how many subscribers' stations are connected with the system, an alert commercial department can always secure a way more—and a resourceful plant department will always find a way to furnish the facilities. Mr. Byrne's paper appears in full on other pages of this issue.

Prof. E. F. Potter in a lecture coupled with lantern slides and a motion picture, gave the visitors a more intimate knowledge of radio parts, and impressed them with the fact that managers of the local telephone plant in small communities could be the obvious source of supply for that neighborhood.

By means of a crayon drawing, Mr. Potter showed that there is only a slight difference between the regular telephone circuit and the radio circuit. He stated that the local telephone man is in a better position to erect the antenna and assemble receiving sets, than anyone else in the vicinity, and he urged the representatives to add this source of revenue to their present line of business.

The Rochester Telephone Corp. as host, offered an entertainment in Convention Hall at 8:00 p. m., using as a vehicle a musical revue and minstrel show, put on entirely by its employees. The local talent taking part in this entertainment was exceptional and a most complete performance was presented. The quality of the vocal numbers and the artistic dancing of the girls and boys showed evidence of painstaking rehearsals and an intensive study to please.

The humorous riddles propounded by the black face end men together with their amusing antics, were put across in regular minstrel style and were very amusing.

A clever burlesque stunt, "delivering the keys of the city to the visitors," was performed by calling J. G. Ihmsen, vice-president and general manager of the association, to the stage, and presenting him with a large corkscrew several feet long, made out of galvanized telephone

Employees of the Rochester Telephone Corp. Put on a Musical Revue and Minstrel Show During the Up-State Association's Convention—And It Won Wide and Most Favorable Commendation.



wire, with a diminutive cross arm for a handle.

At the conclusion of the performance, dancing was in order until midnight in the two large ballrooms connected with Convention Hall, two orchestras furnishing the inspiration.

Friday morning was given over to the manufacturers and supply dealers, to the extent that a representative of each company was called upon by the chairman to talk on the products and policies of his company.

Interesting discussions by all of the representatives were presented. They were interspersed with humorous comments and cheerful repartee by both the speakers and the audience.

Representatives of the following manufacturers participated in the program and made it a very instructive session:

The American Appraisal Co., Milwaukee, Wis.; American Electric Co., Chicago; Automatic Electric Co., Chicago; Cook Electric Co., Chicago; Copper Clad Steel Co., Rankin, Pa.; Craven & Berry, Dayton, Ohio; Fairfield Battery Co., S. Norwalk, Conn.

French Battery & Carbon Co., Madison, Wis.; Kellogg Switchboard & Supply Co., Chicago; National Carbon Co., Long Island City, N. Y.; Reliable Electric Co., Chicago, and Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

Promptly at 1:00 o'clock the delegates left for the factory of the Stromberg-Carlson Telephone Mfg. Co., in motor cars provided by the host. Luncheon was served immediately upon the arrival at the plant, to the accompaniment of music furnished by the Stromberg orchestra, and singing by the entire party. Luncheon was followed by a trip through the Stromberg factory.

In order to give the visitors an opportunity to visit all departments of the Stromberg factory, the afternoon session was not convened until 3:30, at which time Chairman Ihmsen called the meeting to order for the purpose of receiving reports from the standing committees, and for the election of directors and officers for the ensuing year.

In the report of the nominating committee, it was recommended that the same board of directors be continued for another year. No other nominations being made from the floor, the former board was unanimously elected as follows:

Geo. R. Fuller, Rochester; J. G. Ihmsen, Albany; G. G. W. Green, Johnstown; F. D. Fancher, Middletown; B. H. Brooks, Plattsburgh; John H. Wright, Jamestown; H. W. Fluhrer, Oneonta; H. P. McDonough, Newark; F. S. Rodenhurst, Clayton; F. C. Saunders, Wellsville; John P. Boylan, Rochester, and W. A. Seely, Norwich.

The convention was then adjourned and at a meeting of the directors which followed, the following officers were elected:

President, Geo. R. Fuller, Rochester; vice-president and general manager, J. G. Ihmsen, Albany; secretary, G. G. W. Green, Johnstown; treasurer, C. M. Beat- tie, Rochester, and assistant secretary, F. J. Brookman, Rochester.

With this convention, its second, the Up-State association takes a front rank position among the state organizations for excellence of its meetings, attendance and entertainment.

Among the guests from out of town and adjacent states were:

F. B. MacKinnon, Chicago; J. B. Mal- ing, Chicago; H. O. Leinard, Cleveland, Ohio; F. H. Ovitt, Enosburg Falls, Vt.; E. B. Rogers, telephone engineer, New York Public Service Commission, Albany, N. Y.; H. E. Bradley, Harrisburg, Pa.; F. L. McKinney, Columbus, Ohio; C. F.

Brisbin, Philadelphia, Pa.; G. R. Gran- Boston, Mass., and I. H. El Kordi, repre- sentative, Egyptian government, Cairo, Egypt.

The operators' conference was attended by 234 operators, and was productive of excellent results. Twelve papers on real- live, important subjects were read by operators from different sections of the state, and brought forth discussions that cleared up many controversial points that have existed in the field of traffic. The papers read by the operators will be published in subsequent issues of TELEPHONY.

The operators' conference which was held coincident with the general conven- tion, adjourned amid expressions of ap- probation and approval from the girls who have all taken so much pains in mak- ing their meetings successful.

QUALIFICATIONS NECESSARY IN THE SELEC- TION OF YOUNG WOMEN FOR OPERATORS

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

There is a verse in the Bible which reads: "As the twig is inclined, so the tree is bent."

When you are considering employing a young woman for telephone work, you cannot be too careful in looking into her past record. How far back? As far back as her twig record—in other words, her school life. The influence of her school life plays an important part in her business career or in her home-making life.

If she is to handle a responsible position—and what is more responsible than telephone operating?—her school life must have been such that her teachers have rated her as a good student and a conscientious, dependable girl. What can you expect if she cannot qualify in these important, char- acter-building essentials?

She should have at least a high school education. If she has anything less than a high school education, the reason must be that it was not of her choice—for instance, if it has become necessary for her to earn her own living or to help her family, at the expense of a high school education, or if there is no high school in her town.

If you consider employing her under these circumstances, be sure that she has not come to a dead stop in her quest for an education. Advise her of the opportunities for growth and development of *self* in telephone work.

In talking compensation for service, tell her that her employer will expect service from her that will be revenue-bearing service for the com- pany; that the company cannot afford to employ her for just the time she spends at the board. Advise her that her compensation will be a specified sum, plus her individual self-building, one of which assets can never be taken from her.

Too often we employ young women for what the hands can do, while the head is simply a good foundation on which to build the hair in the latest styles.

She must be a young woman who is highly respected in her community. If she is not a home girl, she must furnish reliable references of as high a standard as should be required of a home girl.

Let us consider the reverse for a moment. If she is a young woman who is not highly respected in the community—for instance, if she has made herself common by indiscretions—what sort of a service ideal has she? How do the mothers of the boys and young men in the community regard her— they, the company's patrons?

Then, there are certain physical qualifications which must be considered when interviewing a young woman for telephone work, namely, good hearing, reliable eyesight, a trainable voice, and normally good health.

Iowa Against Co-operative Buying

Annual Convention of Iowa Independent Telephone Association Turns Down Proposal for Co-operative Buying and Revision of Working Organization—Round Table and Informal Discussions Feature of the Meeting

By Stanley R. Edwards

Probably the topic which attracted the most attention at the 28th annual convention of the Iowa Independent Telephone Association, held at the Fort Des Moines, Des Moines, April 26, was the proposal regarding co-operative buying by the association. This was brought up at the opening session on Tuesday afternoon, but action was deferred until the next day, when a special committee recommended the rejection of the plan.

There were more exhibitors at this year's convention than at previous conventions, and a great deal of interest was manifested in them. The sessions of the operators' school were well attended, while

more money and carry on a more extensive work for its members.

He pointed out some of the direct benefits which have accrued from associated effort and directed attention in general to the legislative work of the association during the past four months.

In the course of his remarks, President Plaister particularly stressed the history of co-operative buying, and pointed out that no such project has endured for any length of time.

Secretary Chas. C. Deering then presented the secretary-treasurer's report, first giving a brief statement of the finances of the association. Then he told of

passage, as did also one for municipal ownership of telephone plants. Another bill, providing for physical connection, passed the senate but died in the house sifting committee.

There were a number of other bills mentioned by Secretary Deering which directly or indirectly affected telephone companies but they either were killed in committee or failed of passage when brought to vote.

W. H. Daubendiek, of West Bend, was recognized by President Plaister, and asked that his address on "The North West Iowa Association, Its Work and Its Accomplishments" be received at that time



The Annual Meeting of the Iowa Independent Telephone Association and Chief Operators' Conference at Des Moines Drew a Large Attendance of Men and Women from Every Part of the State.

the main sessions of the convention, with their addresses and discussions, held the close attention of all present.

At the Wednesday afternoon session these officers were elected: President, F. Boardman, of Nevada; vice-president, L. Farwell, Manchester; secretary-treasurer, Chas. C. Deering, Des Moines.

Executive committee: Fred G. Moore, Ashington; Harold L. Beyer, Grinnell; M. Plaister, Fort Dodge; O. L. Loudenger, Le Mars.

Immediately after calling the opening session to order on Tuesday afternoon, President J. M. Plaister, of Fort Dodge, spoke informally. He reviewed briefly the history of the association and the organization of the Iowa Independent Toll Clearing House, showing that the two, while separate organizations, occupy the same places and have the same employees. In this way, a great economy is effected and the association's expenses are approximately one-half those of other state associations carrying on a work that is similar in scope to that of the Iowa association.

President Plaister indicated in his remarks that the association has been run cheaply and right now ought to raise

the personal service work for individual companies that the association is constantly rendering throughout the year.

The work of general interest to members of the association during the year was the association's appearance before the state executive council last July when the assessment of telephone and telegraph property was fixed. Mr. Deering stated his belief that but for the presentation of the case of the Independent companies at stake their property assessments would have been very materially increased.

Passing to the matter of legislation, Secretary Deering outlined the legislation which was proposed during the session of the 40th general assembly which adjourned the week previous to the convention. He stated that no legislation of large consequence to the telephone industry was enacted.

Among the bills proposed were:

Senate file 256 by Bowman, providing for city council regulation of telephone rates. Each time this bill was reached on the calendar action upon it was deferred and it never reached a vote.

A bill providing for commission regulation of the telephone business failed of

instead of Thursday morning as scheduled on the program.

Mr. Daubendiek stated that the matter he wished to present he considered of large importance and desired to bring it before the convention early so that it could be given careful consideration.

He intimated that if his recommendations were adopted, the association's choice of officers for the ensuing year might be affected and, therefore, he wished to present the matter before the election of officers took place. Upon motion, Mr. Daubendiek was asked to speak.

Mr. Daubendiek spoke at considerable length, telling of the organization of the North-West Iowa Association, its objects and what it has done in the way of co-operative buying, particularly of batteries. In the course of his address, he asked Peter Eulberg, of Alton, to read the following resolution and recommendations:

"Inasmuch as the North West Iowa Telephone Association has successfully carried out the scheme of co-operative buying of material during the past year, we recommend to this convention that this plan of purchasing material be adopted by all operating companies in this state. We

recommend the following procedure by this convention:

First, a committee of not less than five persons—a majority of whom should be men from magneto exchanges—be appointed, these men to formulate a plan to carry out such plan of action by this convention.

Second, the purpose of this closer relationship of Independent companies through the group buying of material to be that all moneys derived from the co-operative plan of buying shall be devoted to the up-building of the Independent industry in this state.

Third, Iowa to be divided into not less than four districts for the proper handling of the above scheme, all district officers to co-operate through one state board to be created by this convention.

Fourth, for the proper functioning of the various departments in the telephone field it is recommended that there shall be created four departments with proper heads, viz., the plant, traffic, commercial and financial departments.

Fifth, all district and state officers handling funds to be bonded in a commercial bonding company in suitable amounts.

Sixth, that the activities of the purchasing agent be along the line of quantity contracts and that no stock of goods be carried, except possibly batteries.

Seventh, all orders handled by the purchasing agent to be on a cash basis.

Eighth, all magneto exchanges and those having small exchanges should be afforded every facility for expert advice, in the matter of new construction, how best to undertake; methods of collections; changes of rates, how best accomplished with least friction. If new capital is necessary, the financial department should be at hand to furnish best method as to how to place securities at home with local investors.

Ninth, that a system of reports be prescribed by this newly-created board and that all Independent companies be induced to furnish and make suitable reports, easily understood by the average manager, and that the entire membership be made acquainted with all standing of Independent neighboring companies in this state.

Tenth, it is hoped that by this method all operating companies in Iowa will be more closely linked together, and that the business will thereby be perpetuated by the future generations."

Mr. Daubendiek moved the adoption of the resolution, and upon its being seconded, the motion was declared open for discussion by President Plaister. After some discussion, during which the opinion was expressed that the proposals involved in the resolution should not be adopted without careful study and thorough understanding of all the points, W. H. Barker, of Sanborn, moved an amendment that the resolution be referred to a special committee of five members for consideration and recommendation, this committee to report at the Wednesday afternoon session.

This amendment was seconded, and when put to vote was carried.

The session then adjourned.

Wednesday Morning Session.

Immediately upon the opening of the Wednesday morning session, President Plaister announced the personnel of two committees, as follows:

Resolutions: T. A. Davenport, Belmont; Charles W. Quillen, Mr. Pleasant; M. Fretz, Harlan.

Auditing: H. B. Melick, West Liberty;



Retiring President J. M. Plaister, of Fort Dodge, is a Member of the Iowa Association's Executive Committee.

E. L. Farwell, Manchester, and J. L. Wilcox, Leon.

President Plaister then introduced M. T. Caster, plant superintendent, Lincoln Telephone & Telegraph Co., Lincoln, Neb., who spoke upon the subject, "Maintenance of Telephone Cable." Mr. Caster exhibited a number of pieces of lead cable and sheathing, illustrating troubles of various kinds, most of which he stated are almost entirely preventable.

The samples of sheathing shown illustrated trouble caused by crystallization of the sheath, rubbing on a tree, a wire cut, a ring cut, a lineman's spur cut, trolley wire burn, lightning, electrolysis, red squirrel and rat bites, holes from rifle bullets and shotguns.

Mr. Caster then read a most practical and interesting paper on the locating of cable troubles and the methods used to clear them. This paper will be published in full in one of our early issues.

The next speaker on the program was R. H. Holbrook, of the engineering extension department, Iowa State College, Ames, who delivered an exceedingly interesting address on "Industrial Iowa."

In order to properly impress his listeners, Mr. Holbrook started with the history of Iowa, back some 16 million years ago,

and outlined its development since then until the present time, when it has 1,300 post offices, 1,300 telephone exchanges, 572,000 telephones from which are daily made 3,200,000 calls.

He pictured Iowa as a great industrial state, containing some 214,000 farms having an average of 158 acres of the richest land in America. Resulting from the agricultural efforts in Iowa, one billion dollars in cold cash are received every year from the sale of agricultural products.

Statistics of all kinds issued from Mr. Holbrook's lips, interspersed with humorous remarks which drove the points home. Much and varied was the information given by Mr. Holbrook, and many of the points he brought out were entirely new to his listeners.

The first speaker at the Wednesday afternoon session was Senator M. B. Pitt, of Crescent. Senator Pitt delivered a stirring talk upon the subject, "Fundamentals of Americanism," in which he attacked radicalism and the employment of blocs for economic gain.

"Stand on your own feet," he recommended, in a warning against paternalism. "Anything you get from the government consider a charity. The agitation against the government is due to those who have failed to make a success and want the laws changed to suit their own conditions."

"Managers' Problems," was the subject of an address by P. M. Ferguson, of Mankato, Minn., manager of the Citizens Telephone Co., in which coöperation with the public and with employes was strongly advocated.

"Do not lose sight of the fact that the public has a direct interest in our business," said Mr. Ferguson. "I feel more contented with the conditions in the telephone business as they are today than I have for many years. We are beginning to reap the harvest of our missionary work of years gone by. We are receiving more for our service which in turn enable us to pay better than a living wage.

"But we must keep faith with our patrons, who are paying for our service. The fact that competition has almost been eliminated should not cause us to rest on our oars. The public is quick to notice an inefficiency or lessening of effort."

Mr. Ferguson pointed out that a great change has come over the industry in the past few years. "Employes—and that includes managers,"—he said, "took no special pride in the fact that they worked for the telephone company, and you could not blame them. Usually the telephone office was stuck upstairs over a liver stable or any other out of the way place that could be had cheap.

"Today, you find the telephone building occupying a location on the principal street. The employes carry their heads up and feel and know that they are the equal of others and are proud of their occupation.

A telephone manager, Mr. Ferguson

stated with emphasis, must be "sold" on his job, if he is to be a success, and he should devote his whole time to it. "The curse of the telephone business in the past has been the part-time manager," he said, "or the druggist or banker or some other half-baked individual who tried to manage a telephone business as a side line.

"The managing of a telephone plant is a profession and I maintain that a manager should have a thorough practical training for it in all departments of the business, from a long-handled shovel up."

He said, however, that it is unnecessary for the telephone manager to have any special business training, so long as he has a good business head on his shoulders. The manager should not be tied down, he declared, as much of his value to the company is his ability to make friends and form a favorable contact between the company and the public.

The telephone manager should give much of his time to civic duties, should be a member of all the civic bodies and take an active part in them. He should do very little detailed desk work, and should have his employes so well organized that he can attend to these other duties.

"Reports of all the various functions of the company come to my desk regularly—some daily, some weekly, and others monthly—so that without delving through books and records, I have an absolute check of what progress we are making."

Regarding public relations, Mr. Ferguson said: "Public utilities are just learning, it seems, that their very existence depends on the attitude of the public. Whether that attitude is favorable or antagonistic depends largely on the management.

"A telephone manager should take advantage of every opportunity to sell his company as well as its service to the community in which he has charge. Never miss an opportunity to tell the story of the telephone to any gathering that will listen to you.

"I have regular lectures which I give twice a year to the high school class in physics. In addition, this same class pays a visit to the telephone building, where I personally conduct them through the various departments and take pains to explain, in a way that they can understand, the operation of the various parts of the equipment."

He pointed out that it is important not to overlook the boys and girls, as they are the business men and women of tomorrow and an impression made upon them is lasting. "You are building up a bank account of good will that you can draw on in the future," he said.

Another method which he suggested for strengthening public relations was the company's collection policy. He said that in lieu of the old method of "Pay up or out comes your telephone," which has caused so many sore spots that are hard to heal,

the Mankato Citizens Telephone Co. has adopted a new policy.

"It pays to go slow before using the screwdriver," Mr. Ferguson stated. "Oftentimes there is a good reason for a subscriber to be delinquent, and that reason should be ascertained—thereby avoiding a mistake.

"Every manager will agree that delinquent subscribers are usually the ones who make the most complaints about service, so it is a good thing to keep them paid up. But how? That is the question."

Each month there is placed on Mr. Ferguson's desk a list of subscribers who are more than 30 days delinquent. Any new subscriber who starts running up a toll bill is also called to his attention.

Describing his method of handling these cases, Mr. Ferguson said

"I either call them direct or write them and call their attention to the account, stating that they have possibly overlooked it but that we cannot show any partiality or discrimination and will expect it to be paid by a certain date.

"If it is not paid by the specified time, I suggest to them that they allow us to discontinue their service until such time as they are able to pay, rather than let the account get larger, when it will take a greater effort to pay it."

This method, he said, has produced good



P. M. Ferguson, of Mankato, Minn., Told the Iowa Telephone Men of Many Problems Successfully Solved.

results. It hits them in a vulnerable spot—their pride is affected—and it has failed in only a few cases. If the company is obliged to discontinue service, it does not leave a sore spot, as they have requested discontinuance.

Taking up the matter of complaints, Mr. Ferguson said that his company had

adopted a modification of the slogan, "The Public Is Always Right." Whenever the human element enters into an operation, there are bound to be errors. However, the realization that there are causes for complaint is a step toward eliminating the causes.

Tact, he said, has an important place in handling dissatisfied patrons. When a subscriber makes a complaint or wants a rebate on a toll call, he should be courteously treated and thanked for bringing the matter to the company's attention. It pays well to treat everyone courteously.

Mr. Ferguson believes in allowing the rebate on the first request, unless the preponderance of evidence is in the company's favor. A note of the transaction should be made for reference in case the same party asks for a rebate again. It can soon be determined whether the customer is presenting a legitimate request or whether he is just "working the company."

"The point I wish to make," said the speaker, "is that oftentimes—by gracefully sacrificing 25 or 50 cents to which you had as good a claim as the subscriber had—you can prevent a sore spot that may cost you considerably more, and at the same time you can strengthen your public relations."

As an example of the value placed on good public relations by large corporations, he told of the Standard Oil Co. of Indiana sending such officials as members of its board of directors on tours of a month or more—the directors appearing before various civic organizations and "selling the company" to the public. The returns on campaigns such as this cannot be reckoned in dollars and cents.

Mr. Ferguson's point was: If this is considered good business by the Standard Oil Co., why is it not good business for telephone companies?

The subject of personal contact on the part of the management with the employes was next taken up by Mr. Ferguson. He said that it pays big dividends in increased effort, by the spirit of coöperation that it brings about.

"Employes should be given credit for faithful performance of their duty," he stated. "I always pass on to the operating room letters from subscribers commending service; or, if any particular employe is mentioned, I call that employe into the office and personally tell him how pleased the company is to have the subscribers speak well of its employes."

Regarding customer ownership, he said that it is a policy as well as a slogan, remarking that the large corporations are just learning that a very wide distribution of their stock among their customers or the public is the basis for a solid, reliable, business foundation.

Like many other telephone companies, the Mankato Citizens Telephone Co. adopted this plan when it was organized 25 years ago, and it has proved the best

foundation the company could have built upon.

"If you are managing a close corporation," he said, "advocate a distribution of your capital stock—the wider, the better. It will minimize your troubles and put that many boosters into the field in your behalf."

He said that not many companies the size of the Mankato company have as many stockholders as it has, and described the kind of stockholders' meetings that they have. Each year the board of directors and the manager sit down to a banquet with the stockholders. After a short entertainment program, the business session is held.

Every year the question as to whether a banquet will be held the next year is put to a vote and every year it is carried unanimously—and each year there is difficulty in finding a place large enough to banquet all the stockholders.

These meetings are considered by Mr. Ferguson to be of the greatest importance, as it is at such meetings that the company can get its message to the public at large. "Can you realize what a great power you have when you can send out 500 mouthpieces boosting your proposition?" he asked.

Speaking of stockholders as an asset to the company, he said that they are interested in it; that they preserve its equipment and caution others to do so; and that they find less fault with service interruptions, because they understand something of the obstacles which confront the company.

He told of a state inspector who had personally interviewed 79 subscribers of the Mankato company and who reported that he did not find one who had a complaint to make against the company. "Possibly," commented Mr. Ferguson, "those he interviewed were all stockholders."

While such a condition speaks well for the organization, Mr. Ferguson is not satisfied. He wants the subscribers to petition the Minnesota Railroad & Warehouse Commission to raise their rates! Then he will know the millennium has been reached.

He advised managers of small plants to avail themselves of every opportunity to attend conventions or other gatherings of telephone men, pointing out that much can be gained by rubbing elbows with the other fellow.

The small company cannot maintain engineering and traffic experts and as it often falls on the manager to perform these functions for his company, the more knowledge he can gather along these lines, the more valuable he is to his company.

Then, too, the manager of the company is isolated in so far as the new improvements in the art are concerned, and he owes it to himself as well as his company to keep informed.

Attending the conventions is one of the

ways by which he can keep informed, as the manufacturers display their latest developments at a convention and they cannot bring them to the small exchange.

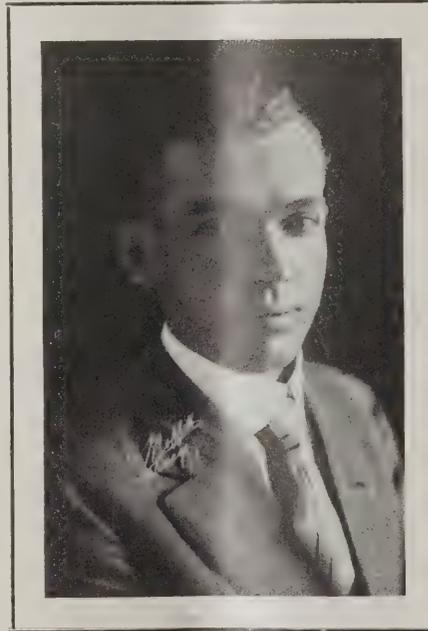
He advocated membership in the national association as a good investment, stating that it frequently happened that the dues for a number of years were paid by the returns received in only one instance of making use of the benefits of membership.

Mr. Ferguson said that he has never yet attended a convention and come away without some ideas which he could turn to profit for his company.

Following Mr. Ferguson's address, President Plaister called for the report of the special committee to which was referred the resolution relative to co-operative buying and changes in the association's operating methods. The report, read by Chairman J. H. Denkhoff, of Dyersville, follows:

"We, your special committee, appointed for the consideration of the resolution introduced by Mr. Daubendiek, beg leave to report that we have had it under consideration and make the following recommendation:

That the resolution be rejected for the following reasons, which are briefly set out



Fred M. Boardman, "Up-to-the-Minute Telephone Man" of Nevada, Iowa, Was Selected as President of the Iowa Association.

and are intended to include only such as may be concisely expressed:

First, co-operative buying by the association as a whole would be impractical, by reason of the fact that a general provision for co-operative buying would entail financial responsibility upon the individual members of the association covering the entire amount purchased.

The committee, however, encourages the members of the association to purchase to the very best advantage, and should co-

operative buying be undertaken, we are of the opinion that it should be arranged so that only companies as are desirous of doing so shall participate in the benefits.

2. We are of the opinion that the division of the association into the four different heads, viz., plant, traffic, commercial and financial, would entail an unnecessary complication in the management of the association, and are further of the opinion that the interests of the members may be more completely served by pursuing the long-established policy of having questions affecting any of these departments referred to the secretary of the association, with a request for advice and assistance. It is the understanding of the committee that in the past such assistance and advice have always been available upon request.

3. In the opinion of the committee, advice on the matters of construction, matters of collection, change of rates, and the investment of new capital would be so varied, under the different surroundings, and would constitute work of such intricate nature that it would not be wise for the association to employ experts along these lines, excepting upon request of the members to the secretary.

4. That we are not in a position to recommend that the different members of this association be required to make complete reports of their financial standing for distribution to the various members of the association, but that if for any reason any number of members should deem it advisable that they should make such reports among themselves, such arrangement should be made by individual members rather than by the association as a whole.

With this brief comment, this report is respectfully submitted."

The report was signed by every member of the committee which consisted of J. H. Denkhoff, C. W. Quillen, G. L. Saunders, W. H. Daubendiek, and R. L. Parker.

Mr. Denkhoff then moved the adoption of the report, and upon it being seconded, President Plaister asked for a discussion. There being no discussion, the vote was taken and the motion was unanimously carried.

The report of the committee on credentials and election was then presented by O. L. Loudenslager, of LeMars, as follows.

"We recommend that for the election we go into an executive session of members only; that the offices of secretary and treasurer be combined; that in accordance with the motion adopted yesterday we ballot separately for the offices of president, vice-president, and the combined office of secretary-treasurer; that in order to save time, we ballot for the four members of the executive committee on one ballot, that the eight receiving the highest number of votes on the informal ballot be declared the nominees, and that on the formal ballot members be requested to vote for four of said nominees.

We call attention to the provisions of the constitution that each member company in good standing is entitled to one vote."

Mr. Loudenslager moved the adoption of the report, and upon being seconded by F. M. Boardman, of Nevada, the motion was put and carried.

The convention then went into executive session, an action which President Plaister stated he had never known taken in the history of the association, dating back over 25 years.

The election of officers resulted in the selection of F. M. Boardman, of Nevada, as president; E. L. Farwell, of Manchester, vice-president, and Charles C. Deering, of Des Moines, secretary-treasurer.

In the reelection of Mr. Deering as secretary-treasurer, the confidence in which he is held by the association was evidenced by the fact that he received 50 votes out of a total of 51 that were cast.

The executive committee as elected consists of Fred G. Moore, of Washington; Harold L. Beyer, of Grinnell; J. M. Plaister, of Fort Dodge, and O. L. Loudenslager, of LeMars.

The banquet Wednesday evening was largely attended. During the serving of the repast, jazz, specialty dancing and vocal numbers were featured. The tables were removed after the meal, and general dancing was enjoyed to a late hour.

Upon the opening of the Thursday morning session, President Plaister introduced Joseph Carmichael, director of the Iowa Committee on Public Utility Information, who told of the work which the committee is doing. Mr. Carmichael stated

that since its organization in January, 1922, the committee has justified its existence and the scope of its activities is increasing. He presented evidence to show the wide publicity which is being given to



Chas. C. Deering, Many Years Secretary-Treasurer of the Iowa Association, Received 50 Out of 51 Votes Cast for Secretary-Treasurer—Nuf Said.

matter sent out by the committee to the newspapers.

Mr. Carmichael advocated advertising, declaring that the public relations of companies that advertise are better than those that do not advertise. He told many of the details of the committee's activities and

urged that the telephone companies become affiliated in the committee's work.

A number of questions were asked Mr. Carmichael and a great deal of interest was manifested. President Plaister asked those who would contribute towards having the telephone companies represented on the committee to indicate their attitude and there were a number of hands raised. The matter will be considered by the new officers of the association.

Following Mr. Carmichael's address, President Plaister declared the round table conference open. Collection methods were briefly discussed by a number of those present, after which adjournment was taken until afternoon.

The Concluding Sessions.

The attendance at Thursday afternoon's session was small but enthusiastic. Mr. Caster, of Lincoln, Neb., was present and there was an extended discussion of the points considered in his paper on cable maintenance. The matter of laying cable underground without conduit was considered and a great deal of interest manifested in the subject. High tension interference also came in for its share of discussion.

W. H. Daubendiek, of West Bend, introduced a resolution that the Interstate Commerce Commission be urged to change its definition of Class C companies so as to include companies with annual revenues of \$25,000 to \$50,000, or in lieu of this to greatly simplify the accounting requirement for Class C companies. This resolution, by motion properly seconded, was adopted.

After this the convention adjourned.

Cumberland Hearings in Tennessee

Testimony on Financial Transactions of Cumberland, Its Dealings with A. T. & T., and the 4½ Per Cent Contract, Presented by Acting President Hoxsey on Cross-Examination—Further Hearings to Be Held in June

The financial transactions of the Cumberland Telephone & Telegraph Co. since 1885 were given by J. M. B. Hoxsey, acting president since January 1, at the first day's hearing before the Tennessee Railroad & Public Utilities Commission on the company's fight for increased rates throughout the state.

The hearings began in Nashville April 7, and continued to April 21, when adjournment was taken until June 12.

Mr. Hoxsey was examined chiefly by counsel for the company when the case was first heard in 1921. His cross-examination was resumed at the April 17 session by Charles P. Hatcher, of counsel for the municipalities, which are protesting against the requested raise in telephone rates.

The witness told of the various bond and stock issues and of the fight by the American Telephone & Telegraph Co. to

obtain control of the Cumberland company. He said the capital stock as located in Tennessee was \$5,982,990; the bonded indebtedness, \$5,336,133 as charged to Tennessee operations, and the borrowed money \$2,884,686 as allocated to the state.

Regarding the transactions passing between the American company and the Cumberland company, it was testified that in 1888, \$55,000 of stock was sold to the American Bell Telephone Co., and shortly afterwards \$420,000 of stock was transferred on the 4½ per cent perpetual contract.

The American Bell company later became the American Telephone & Telegraph Co. Various amounts followed, until this company in a few years owned a majority of the Cumberland stock.

Also among stockholders of the Cumberland company were shown to be The Ohio Valley Telephone Co., of Louisville;

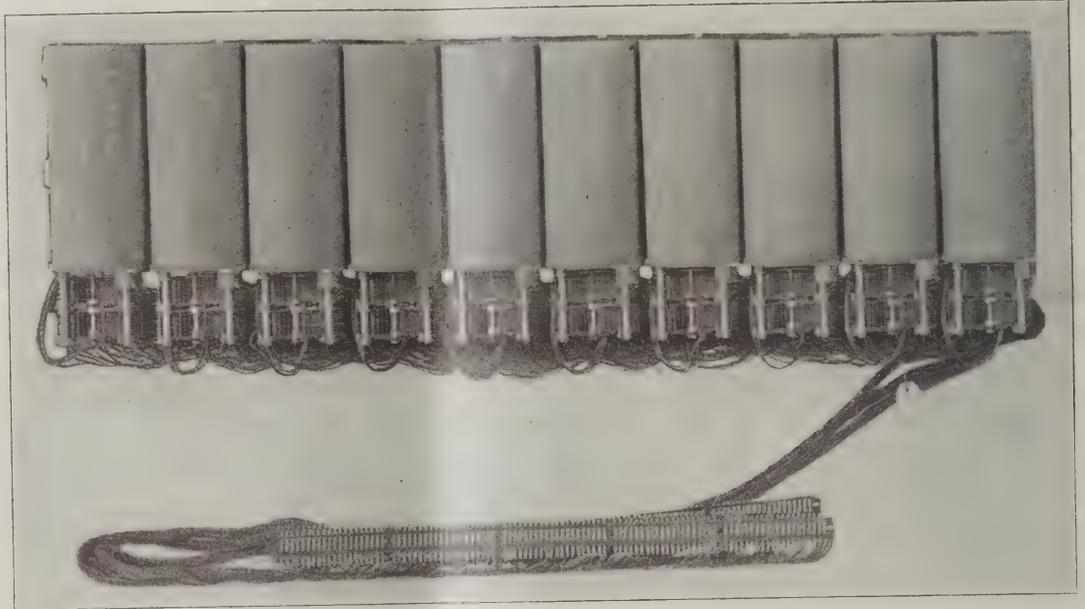
Great Southern Telephone Co., and the East Tennessee Telephone Co.

None of this stock was ever sold below par, but some of it was purchased at more than its market value, Mr. Hoxsey testified.

A seeming conflict between an affidavit signed by James E. Caldwell, official of the Cumberland company, and testimony given by Mr. Hoxsey, developed when Attorney Hatcher asked about the exchange of common stock. Mr. Hoxsey testified that minority stockholders exchanged common stock for preferred stock, and then for bonds, when the bonds were issued. Offers to exchange stock, he said, were made only to minority holders.

At this point Mr. Hatcher read an affidavit from Mr. Caldwell, stating that the offer was open to all stockholders. "I really do not see how that statement can be correct," Mr. Hoxsey stated, reserving,

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- Draw no salaries.
- Are not affected by epidemics, strikes, weather or traffic conditions.
- Render first class, profitable service in both normal times and emergencies, twenty-four hours a day.



Whenever Hand Operation Is Replaced by Machinery—

A step forward in the progress of civilization is recorded. Almost invariably the operation is performed better, quicker and more economically.

Automatic operation of a telephone system does more than merely save operators' salaries. It takes the guesswork out of telephone service by making it uniformly and unfailingly rapid, accurate and reliable.

When you install Strowger Automatic equipment you will have the pride and satisfaction of knowing you are placing at the service of your subscribers the very best and most modern telephone equipment available. The efficiency and operating economy of Strowger equipment will give you steady and certain profits.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd. Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston

London

Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



however, the right to insert a correction in his testimony if he found Mr. Caldwell's affidavit to be correct.

Mr. Hoxsey said that in 1912 the A. T. & T. owned more than \$10,000,000 stock in the Cumberland company, but that it didn't own complete control in that company, and that in February of that year stock in the amount of \$8,600,000 was retired in exchange for a bond issue amounting to \$13,760,000; that the Cumberland at that time had a surplus of some \$5,000,000 and that the surplus was thereupon reduced by the difference in the amount of stock and the bonds issued for the retirement of that stock; that the reduction of the surplus took care of the interest and dividend requirements; that the common stock was exchanged for preferred stock and this preferred stock was then exchanged for bonds on the basis of \$1.60 in bonds for \$1.00 in stock.

Mr. Hoxsey said the bonds are due in 1937, being 25-year bonds dated 1912. He said the surplus was not sufficient to make the offer at that price to the American Telephone & Telegraph Co., and that the American company must have waived its right and assented to the transaction.

He said that in December, 1922, the Cumberland company owed to the A. T. & T. on demand notes \$8,277,080, bearing interest at 6 per cent, and also owed \$40,000 from the Christian-Todd Telephone Co. at the same rate of interest, this amount having originally been \$65,000, which had been borrowed in 1917, but which had been reduced by repayment of \$25,000. Mr. Hoxsey said that the Cumberland company owned the controlling interest in the Christian-Todd company.

Much of the second day's session was devoted to bringing out a history of the 4½ per cent contract.

There was also an effort made by attorneys for the protestants to show that by reason of this contract with the associated companies, the American company was enabled to show greatly increased net earnings in 1903 over 1902. The 4½ per cent contract was made in 1903, but was retroactive to 1902, according to Mr. Hoxsey.

It was brought out that the original contract between the American and the Cumberland was on an instrument basis, but that this was later changed to the flat 4½ per cent on gross revenue.

Mr. Hatcher asked the witness if the wages paid operators who handled exchange and toll business in offices were not paid on the basis of separation of exchange and toll service.

Mr. Hoxsey said the wages were so divided, but was not sufficiently familiar with the basis of division to say how much was paid for each service, as he hadn't seen any of the separations so made. He gave it as his opinion, however, that a fair separation would be to make the separation on the basis of traffic units, but didn't

know if this method was being followed.

He said the basis of separation as to traffic units was computed on the basis of time consumed in the operation rather than on the basis of revenue produced.

Mr. Hoxsey, in reply to a question by Mr. Hatcher, said the tangible property of the American company used by the Cumberland company under the terms of the 4½ per cent contract were the transmitter, receiver and the induction coil, including switchboard instruments and operators' sets. He said also that special experts were sent into the territory for specific work at the request of the associated companies without charge to them, and this was another service which the Cumberland company received under the contract. The hook, stem, bell and instrument cord were not the property of the American company.

The witness said it was more advantageous for the Cumberland to rent transmitters and receivers from the American company than to purchase them outright. He said it was also desired for the sake of uniformity; that there had been some 70 types of receivers and some 50 types of transmitters manufactured, and furthermore, the outright purchase of these parts, now leased, would necessitate a large increase in the investment by the connecting companies without any increase in the facilities for service.

The witness enumerated certain benefits which the Cumberland Bell received under the contract with the A. T. & T., which he thought were susceptible of exact mathematical evaluation, mentioning instruments, patents, experts for research work, work of accounting, saving of royalties on certain items purchased from the Western Electric Co. and benefits of insurance, by which latter service a reduction of some 35 per cent in insurance rates in Tennessee was about to be received. He said the saving to the Cumberland company under the contract was more than what the company paid under the contract.

Questions as to the effect on the company of the new revenue bill and as to its 1922 earnings were asked of Mr. Hoxsey at the April 19 session. He said the company made 2.66 per cent in 1922 and under the new rates, if they had been in effect in 1922, would have earned 4.82 per cent. He declared the company paid 16.50 per cent of its net earnings in 1922 in Tennessee in privilege taxes, and that the company's total tax in Tennessee in 1922 was \$312,465.60. Under the 1923 revenue bill the company would have paid much more in privilege taxes than either the railroads or telegraph companies, and almost three times more than all the gas companies in the state combined.

Following Mr. Hoxsey, George J. Yundt, vice-president and engineer of the company, at Atlanta, testified.

The total reproductive cost of the Cum-

berland Bell property was given by Mr. Yundt as \$24,726,085. He presented long and detailed figures from a specially prepared appraisal of inventory and property, which was required by the commission. In his reproduction cost, he said \$582,330 of the total represented cash and supplies on hand, and that \$2,303,000 was the company's growing concern value.

Depreciation value was placed at \$2,412,450, and the cost present condition of the property with its various attachments, at \$22,313,635.

A feature of Mr. Yundt's testimony was the statement that gross additions to telephone property amounting to \$1,174,264 had been made in 1922, but that plant displacements of \$817,312 had cut the net addition property to \$356,952.

Mr. Yundt's schedule of property costs was estimated, he said, from December 31, 1921, which witnessed the lowest price level since before the war. Since then, he said, materials and wages have substantially increased.

He also said that the automatic telephone will probably reach Nashville next year or in 1925.

Another item of interest developed was that this year a pole-treating plant is to be established in Tennessee by the Western Electric Co.

Regarding the division of toll and exchange properties he said that 64.14 per cent of the property had been apportioned to exchange and 11.67 per cent to toll in figuring reproduction costs and 24.19 per cent for joint use for toll and exchange purposes in reference to the Tennessee properties. He said that if the jointly-used property was separated as between toll and exchange, that is the 24.19 per cent, it would run something like 14 per cent to toll and 10 per cent for exchange.

J. J. McTiernan of Atlanta, chief accountant of the Cumberland company, was next called.

Mr. McTiernan showed his method of separating toll and exchange accounts in 1922, showing the existing relation of charges for services as between the Cumberland company and the Western Union Telegraph Co.

Likewise, A. B. Crunden, of New York, chief of accounting methods testified as to his plan of separating exchange from toll accounts, and interstate from intrastate accounts. Both witnesses filed exhibits into the record.

Illinois Bell Appropriates \$2,600,000 For New Plant.

At its April 25 meeting, the executive committee of the Illinois Bell Telephone Co. approved an expenditure of \$1,825,566 for new plant in the city of Chicago and \$795,767 for Illinois outside of Chicago, making a total of \$2,621,333.

The total approved this year is \$6,110,692.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

First it rains and then it snows,
Changes off a while and blows;
Dark clouds hover all about—
Presto! Then the sun comes out.

First in smiles and then in tears,
Like a child of tender years;
Fickle as a flirty maid—
Always changing, never staid.

Song birds trill their notes once more,
Dad takes off the old storm door;
Leaves start out from swelling bud—
Cars get stuck in slimy mud.

April showers are said to bring,
The flowers of May of which we sing;
But I know that raindrops, pattering down,
Have spoiled the roads all over town.

Lest we grab the beautiful rose too quickly or squeeze it too much, to its harm, in our hands, the protecting thorn is ever-present to discourage and to teach us moderation. Perhaps, this is why we are confronted with difficulties as we emerge from our winter's confinement indoors, else we would fling off all restraint and go to extremes in our joy at being released.

Some troubles await us at all seasons of the year but more especially in the spring does the need of repairs in general show up. The weak batteries which we have put off replacing on account of the difficulties of travel in winter must, at last, be taken care of. The sagging wires, the leaning poles, the slack guys, and the weakened cross arms with the broken pins must be looked after at once.

Service which has been allowed, perhaps, to slacken up a bit under the excuse of bad weather and snow-bound roads, must be brought back to normal once

promptly, however, as may be seen in riding through the rural districts. Many rural companies, which employ no regular line-man or manager, seem to let repairs go until service stops entirely. Then the individual, whose service is terminated by the lack of repairs of damage by the elements or accidents, protests so loudly and insistently that some sort of illy-considered and hastily-executed repairs are made in the cheapest sort of way possible—and there effort lapses until the next victim has a loss of service.

Sometimes no service is had for weeks and, in some cases, months, but such examples are not the rule; a week or ten days, however, is not an exceptionally long period with some rural companies to let things go before efforts are made to remedy them. What would the rural patrons of your company think, Mr. Average Manager, if you were to let things go like that; even in the worst of winter weather? Generally a wait of a few hours after trouble is reported is resented by many rural patrons when their service is bad, if it is not fixed before that time.

Many rural patrons do not stop to think how nearly impossible it is at times for us to remedy lapses of service from trouble on the line or at their stations promptly. They only know the service is not available and they want it restored regardless of expense or trouble to the company. Not all are so inconsiderate, however, but they all want service available as nearly 100 per cent of the time as possible. We can not blame them too much at that, for who knows at what minute a fire, an accident or sudden sickness might make connection with fire department or the doctor quite imperative.

Of course, the better the plant is kept up, the better the service possible, but a good foundation of proper building with the proper material is very essential as an aid to the best service. The cheaply-constructed plant may be properly kept up, and thereby enable the force to furnish pretty good service, but the solidly built network of lines and good station equipment will give better.

In the report of the supervisor of telephones to the Minnesota Railroad and

Warehouse Commission just issued, one can glean a vast amount of instructive knowledge. Reports on some of the plants show a low cost per station of plant value, but an excessively high level of maintenance costs. On the other hand, some



The Sagging Wires, the Leaning Poles, the Slack Guys and the Weakened Cross Arms, Must Be Looked After.

plants with a high plant value per station show low costs of maintenance and a large percentage of net profit set aside for depreciation, interest and dividends.

Of course, the nature of the country served and the type of plant may be responsible for much of the contrast, but in checking up 15 or 20 plants of about the same size, operating in about the same sort of country, one may find a vast difference in both the plant value and the total of operating expense. Those plants which have several widely-scattered units of operation generally show the greatest overhead expense and the smallest net profit set aside.

The reason for this is, of course, that, where several small towns are grouped together in one operating radius, costs of operating are increased by the having to have operators at all the different plants where a relatively small amount of business is done and where operators have too much idle time; also repair costs are more because they either entail too much travel from the main plant, if handled from there, or in case they are handled by local repairmen, the cost is increased by reason of the larger number employed.

The widely-scattered systems of grounded lines of some exchanges are generally much less in plant value totals than the thickly-settled community in which are solidly built and heavily-loaded lines.

In reports, however, one can never tell in just what condition a plant may be, but it is safe to assume that, where it shows a good net profit from operation set aside year after year, it is in good shape, especially if the maintenance figures



April: Song Birds Trill Their Notes Once More; Dad Takes Off the Old Storm Door.

more. It is perhaps, the thorn of bad roads which keeps us from overdoing in our anxiety to get things back on a proper working basis again.

Not all rural lines are put in shape

show a reasonable amount has been spent yearly.

As a barometer of good management I believe continuous net earnings of an amount sufficient to pay a reasonable dividend year after year is the best guide that can be had.

If a manager gets slack in giving service and in keeping up his plant in tip-top shape, he will slacken in other things as

well, and a fairly accurate report will show all of these conditions to a person who may be versed in reading between the lines and to whom figures mean something when standing in this column or that. The commissioners are generally men who can thus digest a report and form a fairly accurate idea of general conditions.

AHPORISM: A slack guy means a slack lead.

Women's Eight-Hour Bill Passed in the Illinois House.

By a vote of 89 to 56 the Illinois house of representatives on April 25 passed the women's eight-hour-day bill of Representative Lottie H. O'Neill (Rep.) and sent it to the senate.

Many of the Illinois telephone operators have expressed themselves as against the bill, claiming that it is unfair to them.

Intensive Campaign for New Business

Putting Over a Drive for New Business to Utilize Spare Plant and Exchange Facilities, Which Developed Nearly 550 New Subscribers—Paper Presented at Annual Convention of Up-State Telephone Association of New York

By Frank T. Byrne

Commercial Superintendent, Rochester Telephone Corp., Rochester, N. Y.

The idea of a drive for new business in off season did not originate with the Rochester Telephone Corp. Word was received from our vice-president, W. B. Woodbury, that other companies in which he was interested were preparing to conduct such a drive, and that it might be well for us to consider taking similar action. This matter accordingly came up for discussion at our weekly department heads' conference.

Realizing that in practically all of our central office districts outside of Rochester, we had a considerable margin of spare plant that should be producing revenue, it was decided that we put on a drive for new subscribers along lines similar to those used by the Allegany County Telephone Co. in October, 1922; that is, that we let all of our employes solicit new business for a period of 30 days on their own time, paying them a commission for each application accepted.

This idea was incorporated in a letter issued to employes by our general manager, December 18, 1922, after plans were formulated to put on the drive during the month of January, 1923. This letter read:

To Our Employes:

Orders for additional telephones in the city of Rochester have been coming in unsolicited about as fast as we can take care of them. Our gain in telephones, outside of Rochester, however, has been far from satisfactory.

We had in mind sending canvassers to the territory outside of Rochester in an effort to stimulate our station growth, but on second thought decided to call on our employes of all departments to put their shoulders to the wheel, and we feel confident that they will, one and all, loyally respond as they have in the past.

We shall, therefore, put on a drive for additional telephones and added revenue during the month of January, 1923.

It is our hope that we can add 500 subscribers outside of the city of Rochester.

A commission of \$2 will be paid for each new subscriber secured, and all employes will be eligible to commission, except the district commercial managers.

Commission will also be paid on extension sets, etc., and special prizes awarded.

Rules governing this drive will be announced in a few days.

The number of new telephones procured for each exchange district will be posted every day at noon during January in the executive office in Rochester.

Let us make this drive a big success, and to that end your coöperation and support are solicited.

Sincerely yours,

JOHN P. BOYLAN,
General Manager.

The second step in these plans was to arrange for organization meetings in the different central office districts, at which all of the employes would be present, in order that the technical points in connection with the work of soliciting applications for service could be explained by the respective district commercial managers, and also for the purpose of arousing the enthusiasm of the employes to the extent necessary, if the campaign were to be a successful one. Five such meetings were held before January 1.

Appreciating that if we were to get results from the employes of the different departments, they would have to forget departmental lines and assume, for the period of the drive, that they were employes of only one department—the commercial department—Mr. Bruce, plant superintendent, Mr. Vickery, traffic superintendent, and myself decided that we would set the example by attending these meetings together and endeavor to show the employes that we, as heads of these departments, were coöperating 100 per cent for the success of the drive.

Before talking to the employes at these meetings, we saw to it that they were all seated in the form of a circle, with space for three chairs forming a gap. We then filled in this gap by taking the chairs ourselves, thereby closing the circle. When talking we remained seated and tried to make the whole affair as informal as possible. We used the simile of the family

circle, pointing out to the employes that we had a family problem to solve, and if we wished to solve it we must go at it as members of one family. I might say right here that if we had not obtained one new subscriber, we accomplished a worth-while object in stimulating in the employes a spirit of coöperation which, to my mind, always brings large returns.

Copies of rules governing the drive were given to the chief operators and wire chiefs who were in attendance, for posting on the bulletin boards in the different exchanges. These rules specified—

1. That the duration of the drive was to be from January 2 to January 31.

2. That any employe of the corporation was eligible to commissions and prizes for securing applications, except the officers, department heads and district managers.

3. That applications for service should be taken only where facilities were available for connecting the applicant without construction; that applications would have to be those that would normally be accepted by the corporation at full rates; that the service connection charge of \$3.50 per station and the first month's rental should accompany each application. Applications for extension stations and for regrades from one class of service to another could be taken during the drive and commissions were to be paid for such extra stations and regrades, but that main stations only counted in the quotas.

4. That the commissions were to be \$2 for each main station, 50 cents for each extension station, and 10 per cent on the increase in the annual rate for each regrade, and that these commissions were payable as soon as service applied for was established.

These rules also covered the routine for handling applications, the issuing of bulletins showing the progress of the drive, the quotas for each exchange district, and the prizes to be awarded to the employes having the three highest records of applications for main stations secured and

accepted. These prizes were: First, \$25; second, \$15; and third, \$10.

In addition to the prizes given to the individual employes, there was also awarded a trophy to the commercial district obtaining the greatest percentage of its quota. This trophy was in the form of a silver shield on which was inscribed the purpose of the trophy and the name of the commercial district winning it. The trophy was won by the Warsaw commercial district which had obtained 169 per cent of its quota.

The quotas for the exchange districts were arrived at in this manner: The total expected growth for the territory outside of Rochester city for the year 1923 unsolicited was 638 new subscribers, and as 500 is approximately 80 per cent of 638, each exchange was assigned a quota equal to 80 per cent of its expected 1923 growth.

The unit values of applications in the different exchange districts for the purpose of awarding the prizes, were derived by multiplying the total quota by 100 and dividing this result by the quota for each exchange district, disregarding decimals and rounding out the figure for convenience in counting, e.g., the total quota was 500, the quota for Atlanta was 8; 500×100 is 50,000, which divided by 8 is 6,250. This figure, therefore, represented the value of each application in Atlanta.

Placing a unit value on each application in the different exchange districts was necessary so that each district would be on a uniform basis. Each employe obtaining an application was credited with the number representing the application's value in the district where it was obtained, and the total amount was summed up at the end of the drive to determine the various employes' standing.

Our territory is divided into four commercial districts, each district being under a district commercial manager. The district managers were made responsible for the obtaining of the quota in their respective districts and regulations for their guidance, supplementing the rules to all employes, were issued. These regulations specified that—

1. A record be maintained on forms, which were supplied, of all applications taken during the drive, and the crediting of each employe submitting applications.
2. Commissions be payable at the option of the employe as soon as the subscriber was connected.
3. The district manager prepare daily bulletins, of the amount of business secured, and forward them each day for posting on the bulletin boards of the different exchanges.
4. District managers visit various exchanges in their districts, frequently, in order to encourage the employes to obtain their quota, and to furnish any information necessary.
5. District managers furnish a brief statement of rates to all employes for their guidance, and to forward a copy of each

day's bulletin to the commercial superintendent's office where the bulletins were compiled and forwarded to the general manager.

During January the weather was the worst we have had in some years. The snowfall was the greatest on record for any January, with the exception of 1915. Although the month opened mild, on the 6th a cold wave overspread the state with frequent snow storms and high winds. The storms of the 14th and 18th were particularly bad, the wind causing serious

What Will You Do With Tomorrow?

The great and startling question is, "If you should live tomorrow?"

What then?

If you should live tomorrow; if you should be granted yet another 24 hours of activity, of influence, of speech—what will you do? There's the question.—Ralph Barstow.

drifts, closing the roads to traffic. Up to and including the 14th we had obtained 43 per cent of our quota, or 216 new subscribers, but by the 25th we had but 65 per cent, making a total of 325, or a gain of 101 for the period between the 14th to 25th.

This indicated that if we were to obtain the desired goal, it would be necessary to secure 175 applications in seven days, or 25 a day, while our average had been slightly over 13 a day up to the 25th; or in other words, we had to double our average for the remaining period of the drive. This was quite a problem as the roads were impassable and the villages thoroughly combed for prospects. Our only hope was in the rural territory outside of the villages.

We thought first of equipping our people with snowshoes and skis, for this seemed to be the only way possible to reach the "ruralites." On second thought we decided to first try the rural mail carrier who is supposed to be able to get into all sorts of inaccessible places, so we prepared this letter:

Isn't it rather lonesome these days, considering the fact that you are virtually isolated on account of the heavy snows and the impassable condition of the roads, to be without some means of communication with the outside world? Wouldn't a telephone be an invaluable aid these stormy days?

We are having a little campaign for new subscribers *THIS MONTH*—the employe who secures the greatest number receives a cash prize. I am trying to win one of these prizes.

The cost of installing the service is \$3.50, and this will be billed on the first month's bill, with your rental charge.

Knowing that you are without telephone service, and thinking that perhaps the installation of a telephone would be a comfort and convenience in arranging your farm affairs, I am taking the liberty of

enclosing an application, which I would be pleased to have you sign and return to me in the enclosed stamped envelope.

Yours sincerely,

Three hundred of these letters were typed and the employes canvassed for the names of prospects whom they had in mind. The letters were then mailed over the employe's signature, but this was one of the occasions when the rural carrier could not make good in time. We have, however, had quite a number of these applications returned to us as late as March 15 requesting service, showing that the letters were finally delivered.

When it became apparent to the employes that this mail could not be delivered and returned to us before the end of the drive, they decided that the only thing for them to do was to get into the rural territory, regardless of the impassability of the roads—and they did. They tried to get over the roads with automobiles and sleighs, but found that they could not get very far as we know of instances where girls in our traffic department who, in attempting to reach these prospective applicants, were dumped into snowbanks, but they always succeeded in getting the applications. Some of our men provided themselves with snowshoes and skis and covered the territory in that manner.

By continuing to battle with the elements, we not only succeeded in getting the 175 subscribers necessary to make the quota, but obtained 36 additional, so that the drive closed on January 31 with 536 new subscribers, 29 extension stations, and regrades showing an increase of \$450 per annum.

This putting into service of plant, the majority of which would ordinarily lie idle and "eat its head off," so to speak, in maintenance, resulted in an increase of revenue amounting to \$18,556.40 per year. The service connection charges amounted to \$1,931. The expense of obtaining these additional stations amounted to \$1,088.30 in commissions and \$140 incidental expenses, making a total expense of \$1,228.30, or a cost per station of \$2.17.

Statistics of the Telephone Growth in California.

With 193,518 telephones installed as of March 1, 1923, Los Angeles leads the state of California in telephone equipment, and also ranks San Francisco by 17,766 stations, according to statistics compiled by the Pacific Telephone & Telegraph Co.

San Francisco is second with 175,752, and is the only other city, with the exception of Los Angeles, over the 100,000 mark.

Oakland is third with 51,591 telephones, and San Diego fourth with 21,790. Other Southern California cities shown are Alhambra, 2,974; Glendale, 4,632; Riverside, 4,766; San Pedro, 2,828; Santa Ana, 3,706; Anaheim, 1,769; Fullerton, 1,343; Burbank, 679; Brawley, 473; Inglewood, 791; Wilmington, 590, and Culver City, 452.

Indiana Bell Hearings Completed

Commission Concludes Hearings on Rate Case of Indiana Bell Telephone Co. and Expects to Issue Ruling by July—Rate-Making Powers of State Questioned—Indiana Bell Under Jurisdiction of Interstate Commerce Commission

Announcement has been made by the Indiana Public Service Commission that it will probably make its ruling in the Indiana Bell Telephone Co. consolidated rate case, involving every Bell telephone exchange in Indiana and which has been before the commission since November 27, 1922, on or about July 1. The hearing, which has been completed, is regarded as the most important rate case that has ever been before the Hoosier commission.

Brings Up Federal Authority.

During the final arguments in the case, attorneys for the Indiana Bell raised a point which may clip the rate-making powers of state public utility commissions. They contend that under the federal law the Interstate Commerce Commission and not the Indiana commission has jurisdiction over depreciation. The Indiana Bell is an interstate carrier, they asserted, as to its local exchanges as well as the long distance toll system, because the local exchanges are used in performing a long distance service.

The advancement of this proposition, both in the oral arguments and in a brief for the Indiana Bell evidently was of greater interest to the commissioners than any other phase of the discussion. The commissioners asked W. H. Thompson, attorney for the Indiana Bell, many questions in the course of his argument on this point, their questions indicating that if the Indiana commission has no jurisdiction over depreciation, then the rate-making power is seriously affected, either directly or indirectly.

That the American Telephone & Telegraph Co., parent of the Indiana Bell and of Bell systems throughout the country, has a policy of denying that state commissions have any control over the rate of depreciation is indicated by the fact that the brief filed with the Indiana commission credits to C. M. Bracelen, general solicitor for the A. T. & T., the authorship of several points setting forth the Interstate Commerce Commission's jurisdiction in the matter and denying that state commissions have any power in a matter over which the federal government has taken jurisdiction.

Mr. Bracelen took the position some time ago in a telephone rate case in New York, but it is understood that the United States Supreme Court, which recently passed on the rate case, did not deal with the question of depreciation jurisdiction.

If the Indiana commission takes the position that it has the right to say what the rate for depreciation shall be, it might be that the question raised by the Bell in-

terests will ultimately be decided by the courts on the basis of the Indiana case.

In his final argument in behalf of the Bell company Mr. Thompson dealt chiefly with the relations between the Indiana Bell and the American company, attempting to show that the dealings between the parent and the subsidiary were entirely legal, and that service of the Indiana company was rendered more efficient through the assistance of the general staff of the American company.

He also argued that the Indiana Bell is an interstate carrier and that the Interstate Commerce Commission, under the act of Congress, has told the Indiana Bell to fix its depreciation rate until the Interstate Commerce Commission acts.

"Doesn't that leave you unregulated?" asked Commissioner Oscar Ratts, referring to the contention that the Indiana commission has no jurisdiction.

"Yes, sir," said Mr. Thompson.

Commissioner Ratts then asked whether the Indiana Bell was not "dodging between the two," meaning the Interstate and state commissions. Mr. Thompson said he thought not, for the Interstate Commerce Commission would step in any time it thought the Indiana Bell's depreciation rate was too high.

Depreciation and Federal Law.

In answer to a question of Commissioner Edgar Blessing, Mr. Thompson said that to a certain extent the power of the Indiana commission to fix rates was removed. He said there was no reason to assume that the Interstate Commerce Commission would not deal fairly with the subject. He said the rate of depreciation affected the integrity of the property and the question of whether the company could perform its functions as an interstate carrier.

Chairman John W. McCardle wondered whether "it wouldn't lead to Congress making the telephone rates."

In his argument Mr. Thompson submitted the following points:

The evidence shows that the Indiana Bell is entitled to relief, and has not made a dollar of profit for years; has a corporate deficit of \$2,400,000 and its property is being confiscated; is entitled to a return of 8 per cent on its present value; the appraisal by the company is not hypothetical, but is based on actual construction costs of recent years; present price levels will probably continue for the next five years with slight variations; going value for which the company claims over \$7,000,000, is not a question of what it actually cost

to bring the company into the status of a going concern, but what it would cost to do it now if the plant were reconstructed; 20 per cent of value of physical plant is a conservative figure for going value.

He denied that the directors of the Indiana Bell are not "bona fide." Frederick Van Nuys, of counsel for the commission had argued that they are not bona fide because before they were elected they executed an option to sell their one share of stock back to the A. T. & T. within a year after ceasing to be directors.

Indiana Bell and A. T. & T.

In discussing the relations of the Indiana Bell and the A. T. & T., Mr. Thompson said the "relationship is sanctioned by law," and the Indiana commission by order authorized the A. T. & T. to acquire the Indiana Bell stock. He admitted that the commission had a right to investigate the working of intercompany contracts and asserted that the evidence was that the 4½ per cent licensee contract between the Indiana Bell and the A. T. & T. and the standard supply contract between the Indiana Bell and the Western Electric Co., which also is controlled by the A. T. & T., have been advantageous to the Bell.

He asserted that the evidence shows that the Indiana Bell saves at least \$185,000 a year by buying of and through the Western Electric and that one of the savings under the licensee contract with the A. T. & T. is in financing. He said \$250,000 was saved by the Indiana Bell in getting the face value of demand notes, not having to sell them at a discount to the A. T. & T., financial backer of the Indiana Bell.

A. T. & T. Earnings.

To remove what he regarded as a misconception, because the A. T. & T. has been paying 9 per cent dividends, he submitted a table showing the net earnings of the A. T. & T. for 1922 were 7.017 per cent of its book costs, the net earnings being \$81,668,440 and the book costs \$1,163,931,842. He said the A. T. & T. has been able to pay 9 per cent dividends because on most of its funded debt the interest rate is less than 6 per cent, much of it being 4 and 4½. The total number of stockholders was 248,925 in 1922, and the number holding fewer than 100 shares was 236,241. He spoke of the company as a great American institution that had done more than any other to advance telephony.

In his arguments Mr. Van Nuys said the Indiana Bell is a "corporate fiction" and the real party interest is the A. T. & T. The Indiana commission, he said, has a perfect right to scrutinize all the rela-

tions between the two concerns in view of the "corporate fiction," and look through the form to the substance.

He said that while the 4½ per cent contract payments out of gross revenue began in 1902, it is not until 1919 that the contract said anything about consulting and advisory service of the general staff, so he contended that a charge for such a service was an "after thought." There have been many engineers of the A. T. & T. before the 1919 contract was written. Moreover, he argued, it was the duty of the A. T. & T., being in the utility business, to improve the business in every way it could without expecting special pay.

George Barnard, in arguing in behalf of

the commission, declared that a utility should be entitled to a fair return on "what the utility can show its property to be worth." He declared that the theory of reproduction value in appraising property was pure speculation, while the theory of prudent investment or original cost was based upon fact.

"The people of Indiana should not be penalized on a hypothetical case involving a speculation showing a difference of \$13,000,000," he declared. "Give them a return on all money they have prudently invested through all the years they have operated, and you will come as near to measuring justice as any standard yet set up in this land."

He read an order from the commission, issued in February, 1920, which set a value on the Central Union Telephone Co.'s property, later absorbed by the Indiana Bell, but at that time controlled by the same interests that control the Bell company. The order, he said, fixed the value of the property at \$15,773,412.

"This was the first opportunity given these men to appreciate the value of their property, and I charge they did it to the extent of \$2,000,000," he declared. "For 30 days after the order of this commission was issued, they wrote upon their books \$19,000,000 as the value of their property."

Other arguments were presented by Frank B. Faris and Perry E. O'Neal.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Red Wing Merger With Tri-State Approved by Commission.

The merger of the Red Wing Telephone Co., of Red Wing, with the Tri-State Telephone & Telegraph Co., of St. Paul, was approved on April 24 by the Minnesota Railroad & Warehouse Commission.

The order requires that the Tri-State company, after the consolidation is effected, shall prepare a statement every month showing revenues and expenses of the combined properties by principal accounts, and shall furnish, within six months, data showing the valuation of its properties within the Red Wing exchange—these documents to be filed with the commission and copies provided for the city clerk of Red Wing.

Due to the elimination of property and adjustments in operating account because of the consolidation, the commission deemed it advisable to require the company, after experience under the unification, to present its case again with the complete valuation and operating statements.

The rates approved for the merger are the same as those proposed by the company, except four-party residence desk and wall sets, and are practically the same as those now in effect in Albert Lea, Austin, Faribault, Owatonna, and Stillwater—which cities were used for purposes of comparison.

The valuation claimed by the Tri-State for the properties after consolidation was \$181,652. The commission's figures for the Tri-State exchange in Red Wing were: Reproduction new value as of October 31, 1921, \$57,135; depreciated value, \$41,830.

The value of the property of the Red Wing company, as made by Mr. Stone, an engineer upon whose judgment the commission relies, was given as: Reproduction new as of October 31, 1918, \$155,029; de-

preciated value, \$112,628. Additions to the properties between that date and September 30, 1922, gave a depreciated value of \$123,225.

The depreciated values of the Tri-State and Red Wing exchanges, when combined, would produce a value of \$165,055, according to the commission's figures.

The estimate of property which it will be necessary to eliminate was presented by the Tri-State as \$7,794, on a claimed total value of \$189,446.

From these figures the commission found that the minimum value that could be applied to the combined properties at the present time for rate-making was \$150,000.

Some of the witnesses at the hearing made the claim that there was watered stock outstanding against the Red Wing property and that this should affect the valuation, but the commission said that none of the values which it used were in any way affected by stock or securities issued and that only the actual physical property was considered.

It was brought out that the Red Wing company has paid to its original stockholders in dividends or appreciation in its property over a period of 18 years, approximately 150 per cent, or an average of 8½ per cent per annum.

"This," said the commission, "marks the Red Wing Telephone Co. as having been a financially successful enterprise, but it cannot be said to prove that there was excess earnings or watered stock of the company outstanding."

The operating expenses as set up by the Tri-State for the consolidated property amounted to \$53,997 per year, or \$21 per station. This was lower than that for the five cities mentioned and about \$1.50 higher than for Winona.

The new rate schedule proposed would yield a revenue of \$59,730 according to the

company, and \$61,678 according to the commission's experts. The commission used \$20 per station per year as a reasonable operating expense, which it said would yield a revenue of \$51,820, leaving \$9,858 for return—or about 6 per cent upon a value of \$150,000.

The rates finally approved for the unified service are:

Business:	
One-party	\$4.50
Two-party	3.75
Extension	1.00
Residence:	
One-party	2.50
Two-party	2.00
Four-party	1.50
Rural	1.50

The proposed rates of \$1.75 for four-party residence desk sets was reduced to \$1.50 net, and the proposed \$1.50 for wall sets was reduced to \$1.25 net.

The testimony of representatives from the rural district showed that during the past few years the Red Wing company has been furnishing a poor grade of service on these lines. There are 30 rural circuits, with an average of 13 subscribers to a circuit. Some of the circuits were found to be of excess length—Line 26 having 22 miles of circuit and 19 subscribers.

One of the conditions attached to the permission to increase the rural rate to \$1.50 was that during the 1923 season the Tri-State company should reconstruct the rural circuits so as to have no circuit with more than 12 subscribers, except those serving the territory known as Prairie Island.

California Company Gets Time Extension for Consolidation.

The California Railroad Commission, on April 19, granted the Associated Telephone Co., of Long Beach, an extension of time

until December 31, 1923, in which to conclude the reorganization and consolidation of the Union Home Telephone & Telegraph Corp., Long Beach Telephone & Telegraph Co. and San Bernardino Home Telephone & Telegraph Co. as the Associated Telephone Co. and to establish rates and regulations.

Surrenders Franchise to Go Under State Commission Control.

Notice of the surrender of the franchise and licenses held by the Laporte Telephone Co. in the city of Laporte and in Laporte County, Ind., was filed with the city clerk of Laporte on April 20. The surrender is made in accordance with the acts of the Indiana legislature in 1921, which authorize a public utility to surrender such franchise in lieu of indeterminate results.

The company announced its determination to submit to the control of the Indiana Public Service Commission rather than to local and county authorities.

The action is purely a technical one, and will not affect the policy of the company, other than to change the source of control.

A. T. & T. Seeks Right to Land in Indiana for Pole Line.

Right to erect and maintain on certain strips of land in Laporte County, Ind., necessary poles, wires, cables and fixtures for telephone service is asked in two separate complaints filed April 10 in the circuit court by the American Telephone & Telegraph Co.

According to charges made in the complaints the defendants are the owners of certain real estate located in Center township, which is in the line of the proposed telephone wires which are to be erected between South Bend and Highland. It is stated that due effort has been made by the telephone company to effect an agreement with the defendants but that right to construct the line over their property has been refused.

It is set forth in the complaint that by reason of the fact that the telephone company is a public utility and is incorporated for the purpose of serving the public, it has the right to appropriate such rights as may be necessary in performing this service.

In addition to the right to cross the property with the poles and wire the company asks that it also have permission to go upon the land at any time to make needed repairs in maintaining the line.

Deficit for Last Five Years—Higher Rates Allowed.

In allowing the application of the Bellingham Telephone Co., of Bellingham, for increased rates, the Minnesota Railroad & Warehouse Commission said that the company has been operating on a scale of rates entirely too low. The new schedule which the commission approved on April 23, to take effect May 1, is sub-

stantially as proposed by the company. The old and new rates are as follows:

	Old rates.	New rates.
Business—		
One-party	\$1.25	\$2.50
Two-party	1.00	2.00
Residence—		
One-party	1.25	1.50
Two-party	1.00	1.25
Four-party .....	...	1.00
Rural—		
Residence, multi-party.....	1.25	1.50
Business, multi-party (exclusive)	1.25	2.50
Business, multi-party (grouped) .....	...	2.25
Schools, multi-party	1.25	1.25
Village lodges and schools....	1.25	1.50
Employes	1.25	1.00

The rate of \$2.50 for rural business is for stations which are on exclusive business lines, with not to exceed 10 stations per line. The \$2.25 rate applies to business which is grouped with multi-party residence stations.

A discount of \$1 was allowed under the old rates for payment of the bill for the entire year on or before January 20. Under the new rules there is a discount of 75 cents on bills paid quarterly in advance; 50 cents on bills paid two months in advance; and 25 cents for payment one month in advance. The new schedule given above, however, covers the net rates.

Service connection charges were also allowed as follows: \$2 for business instruments not in place, \$1.50 for residence, and \$1 for extensions; \$1.50 for business instruments in place and \$1 for residence. The inside move charge is \$1; change in type of equipment, \$1; and disconnect and reconnect for non-payment, \$2. Change of name in the directory listing will cost \$1.

The company operates a magneto exchange, serving 87 town and 320 rural stations. As the greater part of the construction and the great number of telephones are located in the rural districts, the commission found some difficulty in establishing rates which would be remunerative and at the same time would not be prohibitive.

The exhibits presented showed that the company has been operating at a loss for the past five years, even though the exchange was economically operated.

Michigan Commission Approves Sale of Two Exchanges.

The Michigan Public Utilities Commission gave its approval, on April 10, to the sale of the exchanges at Adamsville and Union to the owners of the system at Edwardsburg.

The Union exchange was established by William Fox in 1902 and grew to 50 or 60 patrons. About 1912 it was taken over by the Birch Lake Telephone Co., of Vandalia, and this company has operated the exchange ever since.

New poles, new wires and other equipment are to be installed at once by the

Edwardsburg company, and it is planned to rehabilitate the Union exchange, which, through lack of sufficient patronage, needs considerable attention.

Higher Rates Approved for Sherburn, Minn., Company.

An increase of 25 cents a month in the one-party business and residence rates was allowed the Sherburn Mutual Telephone Co., of Sherburn, by the Minnesota Railroad and Warehouse Commission on April 20, effective May 1. The old and new rates are:

	Old rates.	New rates.
Business, one-party.....	\$2.25	\$2.50
Residence, one-party.....	1.25	1.50
Rural, multi-party.....	1.25	1.25
Rural switching service.....	.30	.35

The company operates a magneto exchange at Sherburn, serving approximately 198 town and 126 rural stations, and performing switching service for 54 rural connecting company stations.

The rate allowed are not as high as those requested by the company, but the commission found that a large portion of the operating expenses had been incorrectly distributed, tending to inflate the maintenance expense, and that by adhering to the accounting methods prescribed by the commission the schedule allowed would be adequate.

Rates Too Low—Commission Allows Advances as Proposed.

A review of the revenues and expenses of the Granite Falls Telephone Co., of Granite Falls, for the years 1920, 1921 and 1922 showed the Minnesota Railroad and Warehouse Commission that the company has been operating under rates which were insufficient. The schedule of advanced rates proposed by the company was allowed on April 20 to take effect May 1.

The Granite Falls company was organized in 1905. It operates a common battery exchange and serves about 400 town and 232 rural stations. It also performs switching service for eight rural connecting stations.

The rates which the company has been using and those which went into effect May 1 are:

	Old rates.	New rates.
Business, one-party.....	\$2.50	\$3.00
Residence, one-party.....	1.50	1.75
Residence, two-party.....	1.25	...
Residence, four-party.....	1.00	1.25
Rural, multi-party.....	1.50	1.50

Equipment in Good Condition—Advanced Rates Allowed.

On April 21 the Minnesota Railroad and Warehouse Commission gave the Wendell Telephone Co., of Wendell, permission to place in effect on May 1 a schedule of increased rates.

The Wendell company has about 53 town subscribers and renders switching service

to 161 rural connecting stations. A majority of its subscribers are stockholders in the company.

Exhibits presented at the hearing showed that during 1922 the company collected from its stockholders assessments amounting to \$1,472, in addition to the operating revenues.

In 1920 and 1921 the company expended some \$3,200 for reconstructing the exchange, including replacing the old open wire leads with underground cable and installing a new switchboard. With this new equipment, the commission said, the company should be able to furnish excellent service to its patrons.

The old and new schedules are:

	Old rates.	New rates.
Business, one-party.....	\$2.00	\$2.50
Business, joint user.....	1.00	1.00
Residence, one-party.....	1.00	1.00
Rural switching service.....		.50

The rural patrons receiving switching service have paid in the form of assessments, in some years amounting to \$1.00 a month,

Court Sustains Higher Rates Than Called for in Franchise.

The action of the Cumberland Telephone & Telegraph Co., in charging a higher rate in Biloxi, Miss., than the franchise called for was upheld on April 19, when Judge Graham rendered a decision against F. W. Elmer, Jr., who had brought a test suit in the Harrison County Circuit Court to prevent increased charges.

Judge Graham decided that power to fix rates had not been expressly vested in the Biloxi authorities by the state legislature. According to the Mississippi constitution, Judge Graham declared, the power of rate-making is placed in the hands of the police. Express act rather than implication, is necessary to permit a municipality to frame rates, he held.

Rate-making contracts let by a municipality are not obligatory on the state, particularly in lieu of specific authority from the state to the municipality. He ruled that such authority had not been granted to Biloxi.

Every Mississippi community having made rate reservations on franchises granted, is affected by the decision.

Mutual Companies Must See That Toll Charges Are Paid.

The Nebraska State Railway Commission has ruled that mutual telephone companies that adopt rules for the government of their subscribers in the matter of charges for services furnished through the mutual by an outside company, must see that the latter is not a loser. While no formal order has been issued in the matter, the commission has told C. B. Cox, manager of the Mullen Telephone Co., that if these subscribers do not make

prompt payment for services, he will be upheld in refusing to continue service.

In the country outside the district served by the Mullen company is a network of mutuals that have adopted the plan of charging on the call basis when they are routed through to Mullen, but these refuse to make the collections for the town company.

The sums are so small that the latter cannot afford to make the collections itself with the subscribers so far distant, and the Virginia Telephone Co., which is the medium through which the most of these calls reach Mullen, also refuses to make collections or to deny switching connections to these patrons whether they pay or not.

The commission has instructed Mr. Cox to refuse physical connections to the Virginia if payments are not made for service rendered.

Irrigation Company Wants Flat Rate Toll Service.

When is a toll message not a toll message? This is a question the Nebraska State Railway Commission has been asked to answer. The Enterprise Irrigation district is 24 miles long, and it has telephones at its headgates and in its superintendent's office. The wires run through exchanges of the Platte Valley Telephone Co., which makes the regular toll message charge every time one official has to call the other up on company business.

The irrigation district has now applied to the state commission for an order holding that these are not properly toll messages and do not come under the toll rate schedule. It asks that the commission fix a flat rate for monthly service, which will give its officers the right to call one another up as often as the necessities of the business require. It is willing to pay a sum in excess of the regularly-scheduled rates for business service on the two exchanges to which the respective telephone stations are now attached.

Telephone Company Refuses to Take Lines Off Power Poles.

The Nebraska State Railway Commission has refused to act as umpire in a novel controversy in the village of Page, Holt County, between the locally-owned telephone company and a transmission and electric light company operated by J. L. Shamer & Sons.

The latter made complaint that several years ago, following a storm that laid low its pole lines, the telephone company had obtained temporary space on the poles of the light company for its wires, and that now it refused to take them off, claiming that it was first in the town and had a right to continue to use them.

The telephone company admitted that it had gone onto the light company's poles as an emergency proposition following a sleet storm that tore down everything for

it, but left the light line poles intact. Further than that it made no explanation.

The light company said that the situation was a dangerous one, that contact between the two wires resulted in putting the switchboard out of commission and endangered the lives of the operators and subscribers.

After cogitating the matter, the commission concluded that it had no jurisdiction, and advised the light company that its only redress was to go into court about it. It also advised the telephone company that the condition was fraught with danger, and that as it is a partnership and not a corporation the owners might find themselves facing a heavy damage suit should a crossing of wires cause death or injury.

Curiously enough none of the subscribers complained as to service conditions. Because of this, and the additional fact that the property of the company is wholly within the town limits of Page, the commission had no legal power to interfere or make an order.

Asks Mortgage for Plant to Redeem Notes.

An application has been filed with the Nebraska State Railway Commission by S. H. Rolston and J. E. Rolston, owners of the Ainsworth Telephone Co., for permission to mortgage the plant for \$5,500.

The owners have recently done considerable work on the plant to bring it into good service condition, and have accumulated a considerable indebtedness which is now represented by notes. If it can mortgage the plant, J. Earle Rolston, manager, says, it can reduce its interest charges materially. Not all of the indebtedness, he explains, is covered by the \$5,500, but the remainder is held by his father.

Illinois Commission Is Not Authorized to Suspend Rates.

An order of the Illinois Commerce Commission permanently suspending certain rates proposed to be put into effect by a telephone company, is unauthorized. The commission should determine whether or not the proposed rates are just and reasonable, and, if not, should determine what are just and reasonable rates and fix them. Illinois Bell Telephone Co. vs. Illinois Commerce Commission, ex rel. Cities of Sterling and Rock Falls; Supreme Court of Illinois, 137 Northeastern, 451.

Assets More Than Double Stock Issued, Asks Stock Dividend.

Application has been made by the Cozad Mutual Telephone Co. to the Nebraska State Railway Commission for permission to issue a stock dividend. This company was recently taken over by a group of business men and put into first-class physical shape, with a great deal of underground construction. Originally they had

put \$8,455 in cash into the till, representing \$8,900 worth of stock at 95 cents, but their improvement program called for the expenditure of nearly twice that amount of money.

At the present time the company has an authorized capital of \$22,250, and it desires authority to issue the difference between this and the \$8,900 outstanding. Its assets, as scheduled to the commission in a financial statement accompanying the application, total \$24,170.

Court Cannot Prescribe Rates But May Accomplish Same Effect.

A court cannot in terms prescribe the rates which may be charged by a corporation after confiscatory rates established by ordinance are enjoined. However, it can, in effect, accomplish the same result by refusing its aid to a company which, after the issuance of such injunction, undertakes to collect an exorbitant rate, so that it would not come into equity with clean hands. City of Louisville vs. Louisville Home Telephone Co.; U. S. Circuit Court of Appeals, 279 Federal, 949.

Nebraska Maximum Rate Bill Passed When Reconsidered.

With the aid of United States Senator Howell, who came to Lincoln to assist, the advocates of H. R. 598; which forbids the state railway commission from making any rates for public utilities other than maximum rates, were able to secure the reconsideration of the bill, killed two weeks ago in the senate.

When placed on final passage, the bill secured the necessary 17 votes, with 15 in opposition, to put it over, and it is regarded as certain that Governor Bryan will sign it. The commission fears that it will result in discrimination. The advocates of the bill gave as their reason for desiring its passage that it would result in the restoration of competition in the telephone business.

Asks Stock Dividend Account of Dividends Put Into Plant.

The Cedar County Farmers' Telephone Co., of Hartington, Neb., has applied to the state railway commission for permis-

sion to issue a stock dividend of approximately \$7,000. This represents the difference between its stock outstanding, of \$9,400, and the valuation of \$16,304, placed on its property by the commission in 1917. The company has planned to build a new exchange building, install a new switchboard, put up cable and make other improvements totaling about \$14,000.

In making the application, B. Ready, the official in charge, said that the company proposed to sell new and additional stock to finance these improvements, but that before this could be done it would be necessary to hand over to the present holders the accumulations that they had permitted to go into new property instead of drawing out as dividends. It is planned to have the present stockholders add enough cash to the stock dividend so that each will receive an additional share of stock for each one now held.

Continues Trial Rate Schedule Because Figures Not Conclusive.

The Platte County Independent Telephone Co. has been given permission by the Nebraska State Railway Commission to continue in effect the schedule of rates that expired by limitation on May 1. The company was recently purchased from C. J. Garlow and associates by Frank H. Woods, R. E. Mattison, W. E. Bell and W. L. Lemon of the Lincoln company.

The rate schedule was a trial one, put in a year ago by the commission over the protests of the company. The commission figured that the rates should result in a reasonable return on the investment. The annual report of the company showed that for 1922 its revenues were \$35,521.87 and its operating expenses, \$29,650.93, and after deducting interest, taxes and miscellaneous expenses, there was left for dividends but \$1,358.76.

The commission declined to accept these figures as conclusive that its rate schedule was too low. It says that the company's books were lost or destroyed during the year and had to be reconstructed. It is convinced the operating revenues were larger than given. For the first three months of 1923 the financial experience of the company, the commission says in its

new order, justifies the belief that for the year it will earn 6.66 per cent on the fair valuation of \$117,000. The company has a capital stock of \$55,765.

The company was authorized to abandon the old system of adding 5 per cent to the rates where payment in advance was not made under the rules of the company, and to put into effect the standard system of a spread of 25 cents a month between net and gross rates.

Nebraska Bill Fixing Minimum Toll Commissions Passed.

S. F. 200 has passed both houses of the Nebraska legislature, and will be signed by the governor within a few days. This bill inserts the words "at least" before the words in the statute that fix the commission for telephone companies at 15 per cent for originating toll messages and 10 per cent for terminating messages, in addition to computing the units used in giving the service.

This will permit any company to negotiate a commission contract with toll companies in excess of this percentage, which has been the law for years. It also permits the state railway commission to fix a new percentage.

Most of the companies in Nebraska have contracts with the Bell and Lincoln companies by which they get 25 per cent on the total toll business, under the single ticket method of keeping track of calls.

Council Grants New Franchise to Georgetown, Tex., Company.

The city council of Georgetown, Texas, granted the Georgetown Telephone Co. a new franchise which will run for a period of 25 years.

The new permit, which was issued April 14, fixes the rate at \$2.25 for residence telephones and \$4.50 for business.

Provision is made for a readjustment of rates at the end of every five years during the life of the franchise.

Court Approves Higher Rates in Washington Temporarily.

A temporary order granted April 24 by the federal court in the state of Washing-

Name of Company.	City or Town.	Popu- lation.	Type of equip- ment.	Total No. of tele- phones.	Net rate per annum									
					1- party busi- ness.	2- party busi- ness.	3- party busi- ness.	1- resi- dence.	2- resi- dence.	3- resi- dence.	4- resi- dence.	Rural busi- ness.	Rural switch- ing ser- vice.	
Leesburg Telo., Fla. . . .	Leesburg	1,855	Mag. and C. B.	.....	\$42.00	\$.....	\$.....	\$30.00	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....
¹ Southwestern Bell, Ark..	Ft. Smith	28,870	.....	.....	72.00	.....	.....	34.80	30.00	.....	.....	.....	.....	.....
South Atlantic, Fla.	Miami	29,571	Auto.	.....	*90.00	*60.00*	*60.00*	51.00*	42.00*	.....	33.00*	.....	.....	.....
Farmers Mut., Nebr.	Avoca	231	C. B. Mag. and C. B.	120	*60.00	.....	.....	.....	.....	.....	.....	.....	8.40	.....
Newark Telo., Ohio	Newark	26,718	.....	.....	72.00	.....	248.00	33.00	.....	.....	21.00	.....	.....	.....
Mountain States, Utah ..	Holiday	750	.....	.....	48.00	42.00	.....	24.00	21.00	.....	18.00	.....	.....	.....
Freeman Telo., Wis.	Ferryville	203	Mag.	169	.....	.....	.....	.....	.....	.....	.....	.....	18.00	.....
Hampden Farmers, Wis..	Columbus	2,460	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.00	7.50

*Desk sets \$3 extra. ¹Reduced rates. ²Four-party. ³Incoming line. ⁴100 calls per month; extra calls 3½ cents each. ⁵In- struments owned and maintained by subscriber \$3 less.

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ton gave the Pacific Telephone & Telegraph Co. and the Home Telephone & Telegraph Co., of Spokane, permission to place in effect on May 1 increased rates in Seattle, Tacoma and Spokane.

This overrules the March 31 order of the Washington Department of Public Works, which denied the company's applications for increased rates and the cities' petitions for reductions.

The hearing on the matter of making permanent the temporary order of the court was set for April 30, and legal representatives of the three cities and of the public works department planned to contest the order at this hearing.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

April 23: San Fernando Telephone & Telegraph Co., authorized to use \$3,529 received from the sale of its stock to finance construction expenditures; also granted an extension of time to December 31, 1923, in which to dispose of stock amounting to \$10,000 par value, the issuance of which was authorized in June, 1921.

ILLINOIS.

April 4: Illinois Bell Telephone Co. granted an extension time to 30 days from March 31, in which to report the transfer of property, as required by order of January 3.

April 4: Jasper County Telephone Co., of Newton, authorized to file schedule of rates designated as ICC No. 3 covering service in cities and villages set forth in the order.

April 5: Scott County Telephone Co., of Winchester, authorized to place in effect rate schedule ICC No. 3 on May 1.

April 11: Sangamon County Telephone Co., of Pawnee, authorized to execute and deliver its first mortgage or deed of trust, dated April 1, 1923, to Eli Weber, of Springfield, as trustee, to secure \$25,000 principal amount of bonds; and to issue and sell \$16,000 aggregate principal amount of first mortgage gold bonds, dated April 1, 1923, maturing April 1, 1938, bearing 6 per cent interest.

April 11: Illinois Local Telephone Co. authorized to issue and sell \$20,000 aggregate par amount of its 7 per cent cumulative preferred capital stock, consisting of 200 shares of the par value of \$100 per share.

April 11: Approval given to the intercorporate contract dated January 30, 1923, between the Commercial Telephone & Telegraph Co., of Olney, and the Calhoun Independent Telephone Co., of Calhoun; complaint of Commercial company against the Calhoun company in relation to toll commissions, dismissed.

April 11: Herrick Limited Telephone Co. and Oconee Telephone Co. directed to reconstruct the toll circuit between the exchanges of the companies at Herrick and Oconee.

April 11: Complaint of B. R. Blair against the Home Telephone Co., of Douglas County relative to unsatisfactory telephone service, dismissed—cause of complaint having been satisfied.

April 12: Order entered authorizing the Mt. Carroll Mutual Telephone Co. to sell and the Carroll County Independent Telephone Co. to purchase the entire telephone property of the mutual company located in the city of Mt. Carroll, and in

the rural territory contiguous thereto, for \$14,500; and authorizing the Carroll County company to execute and deliver its first mortgage or deed of trust, dated May 1, 1923, to the First National Bank of Savanna, Ill., as trustee, for the purpose of securing a total issue of \$300,000 bonds; and to issue and sell \$90,000 aggregate principal amount of its first mortgage bonds, Series "A," bearing 7 per cent interest; and directing that no change in rates be made affecting patrons now being served by the Carroll County company without order.

April 18: In the matter of citation against the Union Telephone Co., for violation of certain rules of general order No. 65, dismissed, order having been complied with.

April 18: Approval given to intercorporate agreement dated January 23, 1923, between Eldorado Telephone Co., of Eldorado, and Western Union Telegraph Co. for the collection and remittance by the Eldorado company of charges for telegrams and cablegrams.

April 19: Schedule of rules, regulations and conditions of service in Rushville presented by the Schuyler Telephone Co.

May 1: Hearing held at Springfield on complaint of the Golden Retail Merchants Association as to the rates charged by the Golden Farmers Telephone Co., of Golden.

May 2: Hearing held at Springfield on complaint of H. E. Ogle and others relative to increased rates, toll charges, and service of the Home Telephone Co. in Arenzville and vicinity.

May 2: Hearing held at Springfield on complaint of C. Blimbing and others as to service furnished by the Home Telephone Co. of Arenzville, in Concord.

May 2: Hearing held at Springfield on complaint of S. A. Culp against the Deer Creek Telephone Co. and the Eureka Telephone Co., alleging unlawful disconnection of complainant's telephone.

May 2: Hearing held at Springfield on citation to Cornell Telephone Co., of Cornell, and Automatic Home Telephone Co., of Pontiac, to show cause why toll connections should not be reestablished between Cornell and Pontiac; reopened on petition of Cornell company.

May 2: Hearing held in Springfield in the matter of increased rates proposed by the Danvers Telephone Co. for service in Danvers; order previously entered by the circuit court of McLean County reversing and remanding original order of the commission.

May 2: Hearing held at Springfield on proposed increased rates of the Illinois Bell Telephone Co. for service in Beardstown and vicinity.

MICHIGAN.

April 10: Sale of Adamsville and Union exchanges to the owners of the Edwardsburg company, approved.

MINNESOTA.

April 24: Approval given to merger of Red Wing Telephone Co., of Red Wing, with Tri-State Telephone & Telegraph Co., of St. Paul; schedule of increased rates authorized to become effective after the consolidation.

MISSOURI.

April 23: Supplemental order No. 3 issued, granting the Columbia Telephone Co., of Columbia, extension of time to October 1, in which to complete the improvements ordered by the commission on March 17, 1922; it appearing that certain materials have not arrived.

NEBRASKA.

April 23: Application filed by Cedar

County Farmers Telephone Co., of Hartington, for permission to issue stock dividend of \$6,904 in order to equalize difference between valuation by the commission and stock outstanding, preparatory to additional stock issue to finance improvements.

April 23: Application filed by Ainsworth Telephone Co. for authority to mortgage plant for \$5,500 to retire outstanding indebtedness in bills payable form.

April 23: Application filed by Madrid Central Telephone Co. asking commission to establish proper rate over rural line to Graintain for messages, setting up that Graintain company has no exchange but switches through Wallace Telephone Co., which is alleged to be demanding an excessive rate.

April 23: Complaint filed by Madrid Central Telephone Co. against Northwestern Bell company, alleging that defendant company refuses to handle toll messages at Paxton, which the Madrid company reaches by a line from Elsie, but insists on routing them by a more circuitous route through the townseat town of Grant.

April 24: Application filed by the Cozad Mutual Telephone Co. asking for permission to issue a stock dividend of \$13,350, which represents the difference between the outstanding stock and the amount of authorized capital of \$22,250 and which has gone into additional property in recent months.

April 25: In the matter of the Platte County Independent Telephone Co. for permission to continue in effect existing rates; ordered that petition be granted, company to substitute for 5 per cent of net rate as a penalty for failure to pay according to the rules of the company, and spread fixed at 25 cents a month.

April 26: Complaint filed by Henry Wolff of Eagle, against the Eagle Telephone Co. alleging refusal of company to furnish service to a tenant farmer.

April 26: Application of the Arcadia Light & Telephone Co. for permission to destroy ancient records; granted.

TENNESSEE.

April 17-21: Hearings resumed in Nashville on rate case of Cumberland Telephone and Telegraph Co.; adjourned on April 21 to June 12.

WISCONSIN.

April 26: Farmers Telephone Co., of Beetown, ordered not to restore the Burton exchange until such time as the entire system has been placed in first class condition.

April 27: Increased rate schedule authorized for Bristol Telephone Co., of Bristol, effective May 1.

May 1: Hearing held at Madison on the application of Wautoma-Mt. Morris Telephone Co., of Wautoma, for authority to increase its rates. U-2847.

May 4: Hearing held at Soldiers Grove on the complaint of C. A. Peterson and others against the Sylvan-Soldiers Grove Telephone Co. and others, alleging that service rendered is inadequate. U-2824.

May 7: Hearing to be held at Madison on the application of the Browntown Telephone Co., of Browntown, for a modification of order dated December 4, 1922. U-2792.

May 8: Hearing at Madison on the application of the Midway Telephone Co., of Stetsonville, for authority to increase its rates. U-2862.

May 11: Hearing at Birchwood on the investigation of the alleged discontinuance of service by the Wise Telephone Co. to the Algoma Panel Co. U-2860.



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Creosoted Yellow Pine Poles

From Factory and Salesroom

G. W. Rodormer, of the Reliable Electric, Is Recovering.

The many friends of George W. Rodormer, secretary and sales manager of the Reliable Electric Co., Chicago, will be pleased to learn that he is making a very good recovery from an operation for appendicitis.

Mr. Rodormer returned from the convention of the Up-State Telephone Association at Rochester, N. Y., and on Saturday afternoon, April 21, was operated upon at the St. Francis hospital, Evanston, Ill.

He left the hospital this week and expects to be soon able to resume his activities with the Reliable Electric Co.

Cook Electric Co. Has New Chicago Factory and Office Address.

George R. Folds, president of the Cook Electric Co., announces the purchase of a new factory and office building at 2700 Southport Avenue, Chicago. All the company's operations will now be conducted under one roof.

The Cook company has moved its Chicago factory and office from 900 West Van Buren street to the new location and the Zion City factory will be completely moved during this month. The Zion City plant was disposed of to local capital. The new Chicago factory is a handsome red brick structure of one story in height. It is a real daylight workshop with saw-tooth roofs and represents the very best design in factory construction.

The Cook Electric Co. has made ample preparations for the move and for several months it has been organizing and training a large working force at its Chicago factory.

The company's plans provide against in-

terruption in manufacturing and insure a continuance of its present practice of prompt shipment. As an additional safeguard, the company has been operating on a high production basis for some months,



President George R. Folds, of Cook Electric Co., Now Has Company's Operations United in One Plant.

and has a large stock of standard pole cable terminals and central office protectors in Chicago available for immediate shipment.

New Cable Ship of Siemens Brothers Launched and Tested.

The launching of the new cable ship "Faraday"—which was constructed for Siemens Brothers & Co., Ltd., of London and Woolwich, England—occurred February 16 at the Jarrow yard of the Palmers Shipbuilding & Iron Co., Ltd.

The ship was taken to sea on April 6 and 7 for her trials, which were very

successful, a speed of about 13 knots being attained and the machinery working smoothly throughout the tests.

The Faraday is well designed for the work of cable laying and repairing. Her length over the bow sheaves is 415 feet; extreme breadth, 48 feet 3 inches; moulded depth, 29 feet 3 inches; and gross tonnage approximately 5,400.

The ship was fitted by the Palmers company with twin-screw, triple-expansion engines, steam being supplied by three boilers, and has a storage capacity for oil fuel to provide for a steaming radius of 10,000 miles.

There is a clipper stem adapted for carrying three cable sheaves, a cruiser stern with two sheaves fitted on the starboard side, two masts with schooner rig, double bottom fore and aft with oil-tight middle line division, suitable for carrying either water ballast or oil fuel.

Oil fuel is also carried in the cross bunker at fore and aft end of the cable tanks and separated from these by spaces, which can be used for additional water ballast, to ensure ample immersion of the vessel when her cable is discharged.

There are four cable tanks, all adjacent to one another, having a total coiling capacity sufficient to contain about 4,500 tons of cable—or the whole length of a transatlantic submarine cable. Each has a watertight steel cone, the internal surfaces of the tanks being finished flush in order to prevent damage to the cable.

A large hold is fitted up for stowing buoys and other gear incidental to cable work.

The total number of the ship's officers, cable staff and crew will exceed 150, and very comfortable quarters have been fitted up for them.

The small boats include five lifeboats, two working boats and two motor lifeboats with patent mechanical davits to each.

The deck known as the shelter deck is the working platform for cable repairing, testing, jointing, etc. At the bow are the three cable sheaves and immediately forward of the main cable machinery hatch is a dynamometer for registering the pull of the cable; in back of this hatch is a steel house and shelter for the control gear to the picking up machinery.

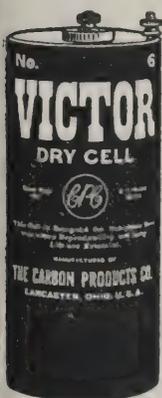
Situated on the after end of this deck is the paying out machinery with its attendant dynamometer jockey gear, stern sheaves and handling gear.

The upper deck in the forward watertight compartment contains a steam wind-



New Factory and Office Building of Cook Electric Co. at 2700 Southport Ave., Chicago.

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lass and engines for the capstans on the deck above, and farther back is the main cable machinery—of Siemens Brothers' latest design and constructed by the Palmers company.

All that is modern and some ideas that are entirely new have been embodied in the Faraday, and the Siemens Brothers company is to be congratulated on this splendid addition to its facilities.

The old cable ship Faraday, which the new one supplants, was a good ship but was becoming inadequate to meet the demands of the Siemens Brothers' business. She sailed on her first voyage in connection with the laying of the direct United States cable in May, 1874.

She has been in constant use ever since, including the laying, in 1910, of the first Pupin coil-loaded telephone cable across the English Channel for the British post-office.

This cable was of a special—and at that time a novel—construction, and modifications of the paying-out machinery were made which proved to be eminently successful. This cable has had far-reaching effects on long distance telephony in Europe.

Late in 1920 another cable of this type was laid from the island of Gotland to the mainland near Stockholm.

In 1921 the ship was absent from England, on her last voyage, for about four months, engaged in laying a cable from Porto Rico to Cuba, and then undertook further work in the Gulf of Mexico and off the Cuban coast.

It was one of the earliest twin screw vessels, said to be the first vessel equipped with electric light, and carried one of the first of Lord Kelvin's compasses.

The Kellogg Radio Head Set Popular With Many Fans.

The Kellogg Switchboard & Supply Co. has been receiving, for the last four months, a large number of voluntary testimonial letters on the value of the Kellogg radio head set. Almost without exception, these letters play up the volume and clearness of the Kellogg set.

The head sets are wound to 1,200 ohms per receiver, 2,400 ohms per set. They are in every way a standard Kellogg product.

The magnet of the Kellogg radio head set is of special tested steel and is hardened by a special method and process which controls the heat and time, electrically and mechanically, and does not trust to uncertain variation in manual labor. The concealed binding posts does away with tampering or any adjusting. The magnet windings are of great accuracy, the mountings, end plates, wire, insulation and insulating of the wire are of the highest grade and of the material best suited for the purpose. The diaphragms are of the correct thickness for this work.

Repeated tests of every kind imaginable which the company has been able to make show that this radio equipment ranks with the very best. Considering its extremely small size and its extreme lightness, it is said to be in a class by itself.

Those who are the most enthusiastic fans—those who stay "glued" to their sets until one and two o'clock in the morning—are the most appreciative of this very great advantage of Kellogg radio telephones.

Listening to the best concert or the most interesting lecture imaginable may become tiresome unless you are wearing a head set of exceptional lightness and convenience. The simple adjusting features and the lightness of the band itself, and its comfort in wearing are also to be considered when buying a head telephone that is to be worn by the hour.

The Kellogg Bakelite receiver shell is non-metallic and all terminals are entirely enclosed within the shell. The cap is of the most approved design, the concave surface being the result of years of practical telephone receiver construction. The diameter of this cap is 23/16 inches, and it screws into place with heavy threads which will not allow the cap to slip in any ordinary usage.

When two people desire to use one set or one receiver each in listening, the head band is instantly removable and as equally easy to replace when desired.

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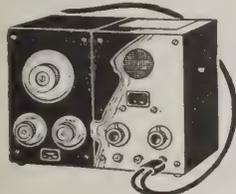
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Prices in the Metal Markets.

New York, April 30.—Copper easy; electrolytic, spot and futures, $16\frac{1}{2}@16\frac{3}{4}c$. Tin steady; spot and near-by, $44.75c$; futures, $45.50c$. Iron steady; No. 1 northern, $30.50@32c$; No. 2 northern, $30@31c$; No. 2 southern, $27@28c$. Lead easy; spot, $7.62@7.75c$. Zinc easy; East St. Louis spot and near-by delivery, $6.85@6.90c$. Antimony, spot, $7.75@7.87c$.

Bureau of Mines to Test Telephones for Use in Coal Mines.

The Bureau of Mines announces that it is prepared, at its Pittsburgh experiment station, to conduct inspections and tests of telephones designed for use in coal mines, and has issued its Schedule No. 9-A entitled, "Procedure for Establishing a List of Permissible Telephones for Use in Coal Mines."

A statement issued by the bureau declares that a telephone submitted for permissibility tests must be so designed and constructed that under no circumstances can its normal operation cause ignition of either dust or gas, or a combination of dust and gas, in the surrounding mine atmospheres. All parts of the telephone

shall be adequate for the service for which they are intended.

The construction of permissible telephones shall be especially durable. This requirement shall be applied consistently to all the details of the telephone under test, in order that with proper care and maintenance the permissible qualities of the telephone will remain unimpaired under the severe conditions imposed by mining service.

A thorough inspection of the telephone will be made to determine its adequacy and permissibility. Tests may be made to check the electrical characteristics and constants of the various parts, and to determine the adequacy of the insulation and of other parts or features of the apparatus.

In addition, compartments which inclose contacts or other parts likely to produce sparking will be tested while filled and surrounded with the most explosive mixture of Pittsburgh natural gas and air. A sufficient number of tests under these conditions will be made to prove that there is no danger of the explosive mixture surrounding the telephone being ignited as the result of an explosion within the compartment.

Similar tests will also be made with greater or less proportions of gas in the explosive mixture, as well as tests with coal dust sifted into the compartment before the introduction of gas.

The telephone will not be considered to

have passed the above tests, even though the surrounding explosive mixtures are not ignited, if flames are observed, if excessive pressures are developed, or if distortion of any part of the telephone takes place.

Schedule 9-A may be obtained from the Bureau of Mines, Washington, D. C.

POSITION WANTED

POSITION WANTED—By two telephone operators with nearly five years' experience. Would take charge of small exchange or work in shifts. Southern part of Wisconsin preferred. References given. Address Mrs. Carrie Wills, R. R. 3, Richland Center, Wis.

HELP WANTED

WANTED—Linemen and troublemen for Automanual plant. Open shop. Address Galesburg Union Telo. Co., Galesburg, Ill.

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Telephony

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CURRENT OPINIONS AND COMMENTS

Independent telephony has often proved the value of local ownership of the service company. With home capital invested in their securities, such Independent companies have avoided much of the trouble experienced by those controlled by outside influence. That word "Home" in the name of an operating company has helped smooth any a rough spot in the road. Investors in any utility are interested in its success and naturally will do what they can in its behalf. United action on their part usually gets good results. Recognition of this same principle has led the president of the New York Central Lines to adopt a plan which will be watched with interest. He has sent a letter to the 35,000 stockholders of his road urging them to exert their influence against the imposition of any additional detrimental restrictions upon railway companies. He has a shrewd idea that, if the 35,000 people who have money invested in railroad securities will unite to prevent legislation or regulation adverse to their company, they can accomplish something.

* * * *

It is a wise move. Such an appeal will have an effect that will help the carriers, and, specifically, will strengthen their loyalty to "their" company. Incidentally, this railroad executive says: "The recovery and performance of the railroads during the recent months under the transportation act are events unparalleled in American industry. If given a fair chance, the carriers will continue to

afford the nation the best service and the cheapest rates of any railroads in the world."

* * * *

Local ownership means local management, and that, too, is a big asset for a utility, or for any business concern, as a matter of fact. The business enterprise run by the home folks invariably gets more sympathy and support from the community than does the company whose local representatives have to take orders and carry out policies laid down for them by interests not identified with the home town.

This feeling, or sentiment, is manifest in the Kansas City newspapers' comment on the proposal of the Bell organization to purchase the Kansas City Telephone Co. The local ownership and management of this company have been unusually successful in winning the good will of the Kansas City telephone users.

That this cordial, friendly relation with the public has been a real, tangible asset is shown by the fact that several rate adjustments were given public sanction during the war period when more revenue was needed to meet increasing expenses. In return, the company left nothing undone to prove its intention to render the people the best service possible.

* * * *

Comment in the Independent field on the desire of the Bell system to acquire the Kansas City company is to the effect that the Bell leaders know a good thing when they see it, and figure they need Kansas

City to complement their system in the Southwest.

Under the Hall memorandum, the proposal goes to the United States Independent Telephone Association, whose officers and directors have been busy in Washington the past week before the Interstate Commerce Commission hearing on depreciation, 30 days before a formal agreement is reached. The public consent of the Missouri and Kansas commissions and also of the I. C. C. must be obtained to the transfer.

Expressions in the Kansas City press indicate a decided reluctance to a change from home control and management, and disclose a situation which speaks well for the record they have made.

* * * *

Not much definite progress is so far reported from the telephone depreciation conference with the Interstate Commerce Commission which began at Washington May 1.

The question is a highly complicated one, and the deeper the federal officials delve into the problem, the more difficulties appear to confront those who would establish a fixed rule to apply to the telephone industry as a whole.

It is hoped the commission will relax its policy so as to exempt the smaller companies from keeping a system of complicated accounts and records that will be practically useless. It is a vexation and an expense that is not worth the effort.

The federal government could very well get along with fewer reports and wearisome tabulations of statistics from busi-

ness concerns, and let industry devote that energy to something worth while.

* * * *

In commenting on improving business conditions—always a pleasant topic—in these columns recently reference was made to the fact that general business woke up and seemed to take on new life after Congress adjourned. The inference was plain that with the law-makers taking a much-needed (by the country) vacation, business felt increased confidence, and went ahead as though freed from a disquieting influence.

A late bulletin from Babson, the business analyst, touches on the same thought in a rather unique way. He says:

* * * *

"Spring business is being increased by the belief that Congress will not be in session again until December, and then only for a short session. Whatever the motives of our politicians may be, the fact remains that they are a great drag on the prosperity of America.

"Under our present system of government the only reason we have any prosperity is because of our tremendous natural resources. Our forests, mines, fertile fields and other great gifts of God

enable us to afford to indulge in factional legislation and political log-rolling as a pastime. Hence, when we cease this selfish game for nine months, business almost always piles up. Certainly this is one of the chief causes for optimism today."

The predictions of business leaders are uniformly hopeful. Gary and Schwab of the steel industry and most of the financial observers agree that prospects for continued prosperity are most favorable. In fact, the Federal Reserve Board, on May 1, declared that the growth in the physical volume of production since the middle of 1921 "indicates a rate of industrial recovery almost without parallel in American business."

Expansion is proceeding, and the only danger is that expansion may lead to perilous inflation. Wage increases have pleased labor, and unemployment is conspicuous by its absence.

It would be a pity if returning good times were changed into bad times because high prices resulted in another disastrous "buyers' strike," but that seems to be the chief danger at present.

* * * *

The political persecutors of service corporations, who have tried to destroy state

regulation and get local control of the utilities, haven't made much headway. In New York, for instance, the legislature is kicking Governor Smith's home rule program full of holes.

* * * *

Six anti-utility bills—including one to abolish the state commission—have been killed. Another bill to create a department of public utilities in New York City with power to own, lease, operate or control service plants also has been shelved.

Public opinion indicated a belief that the politicians' plans meant a backward step to the system in vogue 20 years ago, when the utilities were the football of municipal politics, and the legislature did not care to adopt them.

* * * *

Another good sign is the announcement of the new mayor of Chicago that he will not sanction a demand for lower utility rates if it means a cheapening of service. He is preparing, however, to give close attention to the Chicago telephone situation. While he was a judge on the bench, Mayor Dever heard the Central Union case, and became familiar with certain angles of the Bell telephone organization which he still remembers.

Maintenance of Telephone Cable

What to Look For in Visual Inspection of Cable System—The Location of Trouble—Use of Test Set and Making Temporary Repairs—Paper Presented at Annual Convention of the Nebraska Telephone Association

By Mark T. Caster

Plant Superintendent, Lincoln Telephone & Telegraph Co., Lincoln, Neb.

Professor Alexander Graham Bell invented the telephone in 1876. He expressed the idea that cables of telephone wires could be laid underground or suspended by overhead, communicating by branch wires with private dwellings, country houses, shops, manufacturers, etc., uniting them through the main cable with a central office where the wire could be connected as desired, thus establishing direct communication between any two places in the city.

During the development of the telephone industry the use of telephone cable has rapidly increased until at present the amount invested in telephone cables represents approximately one-fourth the investment in distributing plant. Therefore, maintaining this part of the telephone plant warrants very careful attention and the application of the best means for reducing the expense and the service interruptions which result from cable troubles.

Cable trouble is like war, because in

some ways it merits Sherman's definition of war, but more particularly because prevention is better than cure.

Because the conductors contained in the cable are generally insulated with paper, the insulating quality of which depends upon the absence of moisture, the importance of continuity of the sheath surrounding the cable is obvious.

Lead was selected for use in covering telephone cables because of its flexibility and because of its price. Pure lead, however, readily crystallizes when subjected to vibration or frequent bending, and is ductile to a high degree. It has been found that the addition of a small percentage of tin or antimony produces an alloy which resists these phenomena and insures a reasonable length of life of cable sheath and protection for the lines carried through the cables.

As even the best obtainable cable sheath is susceptible to crystallization and other damage due to vibration, bending and

pressure, it is necessary that cable be properly supported so as to reduce vibration and bending to a minimum, and to exclude as far as possible any constant pressure upon the sheath in a concentrated area.

Approximately 90 per cent of cable trouble can be foreseen and prevented. Visual inspections of the entire cable system above ground and in manholes should be made at regular periods in order to detect bad conditions, and apply remedies which will avoid trouble later on. In general an inspection of cable in manholes, if made every two years, will be sufficient. Inspection of aerial cable should be made at least twice each year.

There are certain locations and conditions where faults are most likely to develop. In manholes these points are where the cable enters the duct, and where cable supports should be in the manhole. The lack of proper supports will result in cracked sheath near the end of splices.

In the inspection of aerial cable the inspector should examine the cable along the entire length of each riser not protected by molding or pipe; examine closely the sheath at the top of the riser pipe or at the end of the molding; inspect carefully all cleats and supports; and examine the sheath at the point where the riser cable leaves the pole and joins the cable on the messenger, giving careful attention to the cable supports near the pole and the condition of the sheath under and between these supports. Also he should note carefully whether or not the cable is properly anchored and supported at corners and splices.

The inspection of cable in spans can generally be made from the ground, but on riser poles it should be made by climbing the pole and examining the cable critically. The sheath should be examined closely at each pole; also at each end of all splices within reaching distance of the pole. The branch cable at terminals should receive very careful attention to determine whether or not it is properly secured to the main cable and the messenger at the end of the splice. See that it is properly attached to the pole so as not to rest on crossarm braces, or other pole hardware; also that it is not being used by anyone climbing the pole.

Cable should be inspected closely where it passes through trees or where there is a possibility of limbs rubbing or coming in contact with it during high winds. Cable and messenger should be placed below rather than above limbs so that if a contact cannot be avoided, it will be between the messenger and the limb, rather than between the cable and the limb. Cable can frequently be shifted upon poles so as to avoid injury to trees.

Underground cable sheaths should also be tested to determine whether or not electric current, of appreciable quantity, is passing between the cable sheath and the earth or other object. The cable sheath is seriously affected by electrolytic action, which generally results when electric current of considerable volume flows from the cable sheath to the earth or other body through a poor contact.

The cable sheath is also affected seriously by chemical action; therefore the presence of any of the acids or alkalis which affect lead should be avoided. Electrolysis can best be avoided by establishing proper bonds between the cable sheath and ground or return conductors to power houses.

Locating Cable Trouble.

When it is suspected that the insulation on the conductors in the cable has been damaged by mechanical injury or the entrance of moisture, the telephone receiver and dry battery are at once the most readily available and the best preliminary testing instruments.

When electric current is continually passed through a receiver no noise is

heard in the receiver, but when the current is varied or interrupted the change is readily detected by a click which is heard in the receiver. In cable testing, the presence or absence of this click, and also its magnitude, indicate to the experienced testman the condition of any circuit under test.

The following arrangement is best for use in magneto exchanges:

A wire should be connected from one pole of the receiver to ground and another piece of wire attached to the other pole of the receiver. This last wire can be used as a feeler for testing the conductors at the end of the cable and determining roughly the number of conductors in trouble. It will readily be noticed that, when a contact is first made and broken with a good conductor, a click similar to that produced by connecting the receiver across the terminals of a condenser is heard in the receiver. Subsequent contacts, however, with this same good conductor will not result in subsequent clicks being heard in the receiver.

This is due to the fact that the static electricity stored in the conductor causes a click when it is discharged to ground and unless a considerable amount of time elapses before successive contacts are made, no additional click will be heard. However, if the insulation is impaired the conductor will not retain a static charge, hence no click will be heard when such a conductor is tested. By introducing the dry cell between the receiver and ground and touching the conductors with the test wire, a click will be produced in the receiver each time a conductor with impaired insulation is touched.

In common battery exchanges the use of the exchange switchboard signal can generally be used in determining which lines are in trouble. The receiver is also convenient in detecting whether or not idle conductors in the cable are affected.

To test cable in a common battery exchange connect one terminal of the receiver to ground and, with a wire or clip attached to the other terminal, touch working pairs to find the battery side of a line. When battery is encountered, it will cause a sharp click in the receiver. If a light click is heard, the cable lug should be tapped two or three times to determine whether or not the click is caused by static discharge or battery current flow.

After determining which conductors are affected, a study of the cable distribution chart will sometimes reveal quickly what section of cable contains the fault. For example: If only conductors Nos. 21 to 35 test in trouble and there is a 15-pair branch which contains this count, the task is reduced to locating the fault in this section of cable.

The Wireless Test Set.

The wireless test set consists of an apparatus called a "fault finder," for produc-

ing an interrupted current; also of an exploring coil and a telephone receiver. The fault finder is made up of an induction coil, vibrator—sometimes also an interrupter—a battery consisting of from one to four dry cells, a two-point switch, and a set of binding posts. This apparatus is mounted in a compact wooden case. Diagrams of the wiring are usually shown on the lid of the case.

The exploring coil is very simple and rugged in construction. A simple coil of insulated wire is wound on a soft iron core, and the ends of the coil are terminated so that the cord tips of a head receiver may be attached thereto.

The Use of the Set.

The test set is designed for locating crosses, grounds, short-circuits, split pairs and wet pairs in both underground and aerial cable systems. It cannot be used in locating opens. It must not be used in locating faults in loaded cables as it is liable to magnetize the loading coils.

Method of Operation.

The vibrator of the apparatus for producing the tone or interrupted current, used in connection with the exploring coil, should be adjusted to operate at as low a frequency as is consistent with a uniform tone.

When the battery switch is closed, the vibrator will operate continuously. The secondary of the induction coil is provided with two windings "high" and "low." In the Matthews' set, terminals 4 and 5 are connected to the high winding and terminals 2 and 3 are connected to the low wind.

In locating grounds, wet spots, short circuits, and crossed or split pairs, the low winding should be used whenever possible. The proper winding to use can be determined in the following manner:

Connect the conductor or conductors in trouble to either the high or low winding and then test for the tone with the exploring coil at some convenient point on the cable, noting the volume of tone in the receiver. After this has been done, connect the conductor or conductors in trouble to the other winding and note the volume of tone as in the first instance. The winding which gives the greater amount of tone in the receiver is the proper one to use in locating the fault in question.

Drawings in Fig. 1 show the correct connection to use for the various faults encountered.

Locating Grounds.

For locating grounds the test set should be connected as shown in Fig. 1-A. The exploring coil should be held on the under side of the cable in order to eliminate any effect from currents flowing in the messenger strand. However, in large cables, because the different layers of wires are placed spirally, the magnitude of the current induced in the exploring

coil will vary at certain points along the cable.

Therefore, if the exploring coil is continually held on the lower side of large cables, there will be certain points located at regular intervals not more than a few feet apart, where the tone is scarcely audible, and an equal number of points located midway between these, where the tone will be comparatively louder. In such cases the exploring coil should be moved in a spiral manner around the cable sheath. This will avoid being misled by a vanishing tone when locating high resistance faults, or when the fault is a long distance from the point at which the interrupted current is applied.

To save time and the labor of riding every span while using the exploring coil, satisfactory results may be had by climbing poles at intervals along the cable route, and making listening tests at these places, until the trouble is located in a certain section or span. It is then necessary to complete the listening tests by riding that section or span in a cable car.

When locating high resistance grounds, the tone reduced in volume will be heard beyond the location of the fault. The only way that troubles of this nature can be located, is by noting the point at which a noticeable decrease in the volume of tone occurs. In these cases it is desirable and often necessary that the fault finder be connected to the defective conductor or conductors at the terminal,

which will leave the shortest possible length of conductor beyond the probable location of the fault, in order to reduce the capacity effect of the conductor beyond the fault to a minimum.

In case the exact location of the fault is not apparent from the condition of the sheath, it is necessary to connect the test set first to one end of the conductors and then to the other, thus checking one location against another before any opening is made in the sheath.

Cross-connecting boxes may be utilized, as test points at which to connect the fault finder, in order to shorten the distance between it and the fault. The cross-connecting jumpers of the conductors under test should be opened, to reduce the capacity effect, resulting from the conductors in the good section of cable.

This is especially desirable in cases where the moisture trouble is light, and is located in the section of cable between the cross-connecting box and the office. In starting the fault finder should be attached to the conductors at the office end.

Locating Wet Spots.

In locating wet spots choose several pairs (those showing the most pronounced trouble) and connect an equal number of pairs to each binding post of the "high" winding of the fault finder as shown in Fig. 1-B. The exploring coil should then be moved along the cable as described for locating grounds. If the insulation is thoroughly wet, no tone will be heard in the receiver beyond the location of the fault; and if the insulation is less wet, the volume of the tone may be only reduced at the location of the fault as in the case of high resistance grounds.

Another method which is sometimes used for locating wet spots is to connect several pairs to one binding post of the fault finder, the sheath of the cable to the other binding post and proceed as in the case of grounds. Beyond the location of the fault "no tone" or "tone" reduced in volume, will be heard in the receiver. See Fig. 1-C for test set connections.

Locating Crossed Pairs.

For locating crossed pairs the fault finder should be connected as shown in Fig. 1-D. Beyond the fault no tone will be heard in the receiver.

Locating Short-Circuited Pairs.

For locating short-circuited pairs the fault finder should be connected as shown in Fig. 1-E. If it is known for a certainty that the cross has no appreciable resistance, the "low" coil should be used and the fault may be positively located as there will be no tone in the receiver beyond the fault.

If, however, the fault shows considerable resistance, then the "high" coil must be connected to the conductors in trouble. There may not be any tone in the receiver beyond the fault, but in many cases the tone does not cease beyond the fault, al-

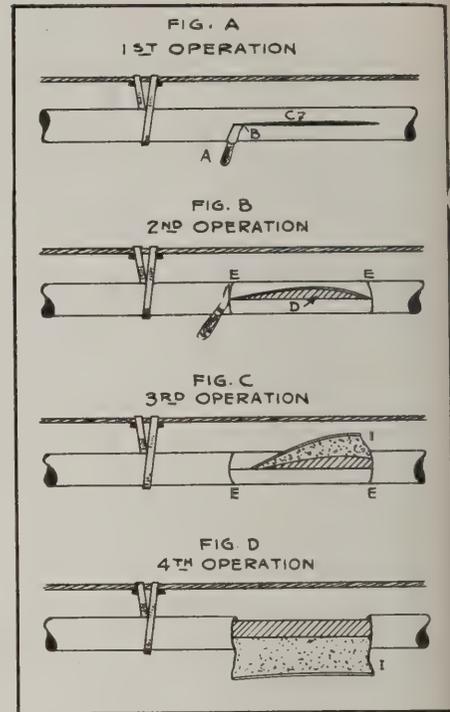


Fig. 2. Method of Removing Cable Sheath to Repair Conductors.

though its volume is reduced. Therefore, much care should be exercised in determining at what point the tone is reduced.

Temporary Repairs on Wet Cables.

The location of the trouble having been determined, the next step is that of making repairs. The man doing the work should provide himself with a helper and such tools from the cable repair kit as will be needed to temporarily repair the cable.

Much care should be exercised in the matter of providing a safe and convenient place to work—safety being the first consideration. In some instances an extension ladder, supported against the messenger and with both sides of the ladder lashed to the messenger with 3/8-inch or 1/2-inch rope, provides a suitable place from which to work. In places where a ladder cannot be used, the cableman's platform should be substituted.

In the event a platform is used, it should be securely supported from the messenger by means of ropes, not less than 3/4-inch, and properly guyed to some pole or other stationary object by ropes of not less than 1/2-inch in diameter to prevent tipping sidewise.

Removing Lead Sheath of Cable.

The drawings in Fig. 2 illustrate proper operations in removal of sheath.

The lead sheath should be removed with a shipping knife and a pocket knife. Start the operation by making a longitudinal cut in the sheath as shown in Fig. 2-A. The method of holding the shipping knife for this work is shown at A. Blows are struck with a hammer on the head of the knife at B, and the knife is given a side motion, which opens the cut

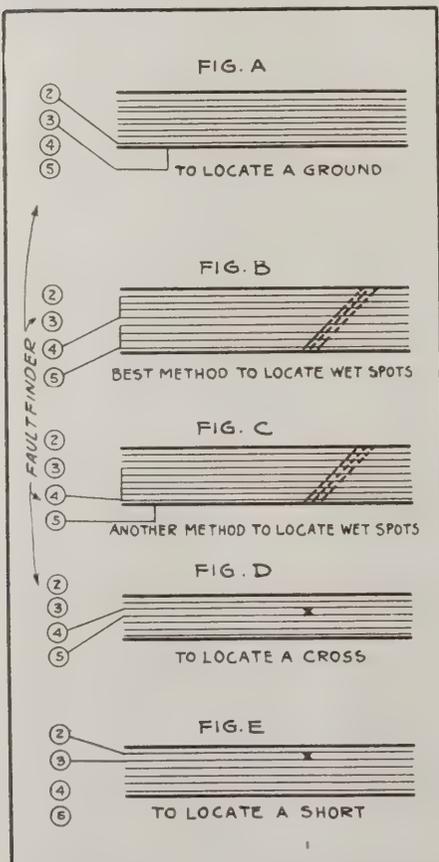


Fig. 1. Method of Locating Cable Troubles.

in the sheath, as shown at *C*, without the possibility of injuring the insulation or conductors.

The required length of this incision is problematical. To start with, it should not be longer than six or eight inches and should extend equal distances on either side of the crack or opening. Open up the sheath with the claws of the claw hammer as shown at *D*, Fig. 2-B, just enough to expose the core so it may be examined for traces of moisture. Water tends to discolor both the inside of the sheath and the paper insulation.

In the event that moisture is detected, the length of this incision should be extended far enough to either side of the crack or hole, to get past all visible traces of moisture. The next operation is to cut a circular groove around the sheath at each end of the longitudinal incision as shown at *E*, Fig. 2-B.

In doing this a sharp pocket knife is the best tool to use. Press the edge of the knife against the sheath in the location of the desired groove, then rock the knife so as to produce the same effect as if the sheath was rolled along the up-turned edge of a knife blade. Continue this operation until a groove has been cut the entire distance around the sheath. Care should be taken not to cut a groove deeper than halfway through the sheath.

If the knife cuts entirely through the sheath, a sharp edge will be produced at the inner side and the insulation may also be damaged. The sheath may now be turned back as shown at *I*, Fig. 2-C, by means of the claw hammer. If properly cut and removed, the inside of the remaining sheath at each end of the incision will be rounded and smooth, Fig. 2-D.

Wrap freshly boiled cotton tape, about 3/4-inch in width, around the core at the end of the sheath with a thin, dull tool. Work the tape back about 1/2-inch between the sheath and the paper wrapping of the core to protect the core from injury at the edge of the sheath. The tape should be applied so as to cover the paper wrapping around the core of the cable for about 1/2-inch from the ends of the sheath. The paper wrapping should then be removed from around the core up to the cotton wrapping.

Next separate the wires enough to allow the fingers to pass freely between them. If the tension on the cable conductor prevents a satisfactory separation, secure slack by removing the hangers for about three or four feet and force the cable away from the messenger in the center of this section, after which replace the hangers.

Examination of Insulation and Conductors.

Before boiling out the wet spot, an examination should be made to see that the paper insulation is not damaged, and that the conductors have not been corroded off

due to an electro-chemical action, which sometimes takes place if the trouble has been of very long duration. Evidence of electro-chemical action will be visible, due to discoloration of the paper insulation, giving it a copper colored stain. In cases where defective insulation or conductors are discovered, the conditions should be repaired and an explanation given on the report covering each repair job, as instructed hereinafter.

Open conductors are repaired by splicing in new pieces of core wire. This core wire may be secured from the waste pieces of cable resulting from construction jobs or being carried in the store-room. Wire for this purpose should be boiled out with hot paraffine and properly stored with other cable material.

When open conductors are discovered, be careful to disturb them as little as possible, before the adjacent ends are connected, because of the possibility of getting the conductors mixed and splicing wrong pairs together, when both conduc-

tors of more than one pair are open. To avoid this, carefully lift one pair from its place in the layers and repair it before disturbing the next one.

The proper method of joining conductors in a cable is shown in Fig. 3. By following this plan, pieces of properly insulated cable conductors may be substituted for defective sections.

Preparation of Paraffine.

The paraffine should be prepared for use as follows: Place the furnace on a level surface, away from side or cross walks or inflammable articles. The furnace should never be placed within 10 feet of a manhole because of the danger to the workman in the manhole if the pot of paraffine or metal should be accidentally upset.

See that the paraffine pot is filled about two-thirds full with paraffine. If a large pot is used, heat the sides of the pot before placing it on the furnace. This will allow the paraffine to circulate around the sides of the pot and prevent a possible explosion when it is being heated from the bottom. After the paraffine has been melted around the sides of the pot, place it on the furnace and heat it to a temperature of 375 degrees.

In cases where thermometers are furnished, place the thermometer in the paraffine so that the bulb will not touch the bottom or sides of the pot or the temperature recorded will not be correct. When the thermometer registers the proper temperature, remove the pot from the furnace and begin the process of boiling out the cable.

If a thermometer is not provided, determine the proper temperature of the paraffine by means of an approved visual test. To the inexperienced men the placing of a few drops of water in the hot paraffine is probably the most reliable test. If after a pause of about one-half second the liquid begins to sputter and the water is thrown out, the paraffine is hot enough for use, but if it does not sputter, continue the heating process. A thin grey vapor arising from the paraffine will indicate when nearly the proper temperature is reached.

As soon as the paraffine appears to have reached the proper temperature, remove the pot from the furnace and test the paraffine to see that it is *not too hot*. Whenever a white smoke rises from the surface of the paraffine, it is too hot to use, and must be removed quickly to a distance from the furnace and allowed to cool. *Superheated paraffine is dangerous* as it will sometimes ignite from exposure to the air even when not near a flame. It will also, if used, ruin the insulation on the cable.

Paraffine may be re-used several times, adding small pieces of paraffine to the pot as required. When the paraffine becomes dirty, *do not attempt to use it any further*, but pour it off, clean the pot, and

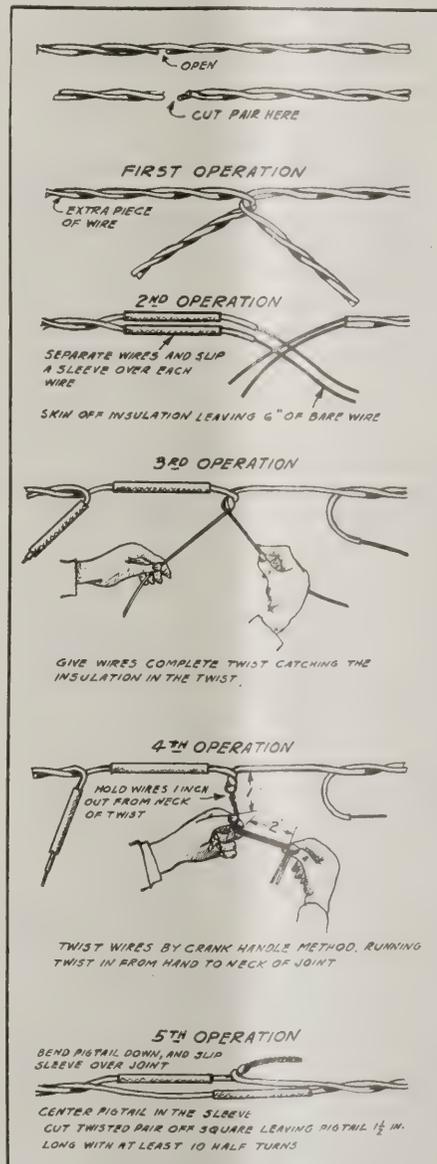


Fig. 3. Method of Repairing Open Conductors.

supply fresh paraffine. Paraffine, if used when extremely discolored, will stain the paper insulation on the wires, and make it difficult to distinguish the colors.

When it is necessary to boil out cotton tape, muslin or cotton sleeving, heat the paraffine as directed and remove the pot from the furnace before introducing the article to be boiled. The pot should never be allowed to remain on the furnace when boiling-out any splicing materials.

Boiling Out the Cable.

The paraffine is poured by means of the dipper held in a position a short distance above the wires and the pot is held below to catch the drippings. Do not pour paraffine on the center of the opening. Start the boiling process by pouring the paraffine at a point four inches back on the sheath and continue until the sheath is thoroughly heated. Repeat this process at the other end of the opening, after which move the operation gradually along the wires alternately—from both ends, thus driving the moisture toward the center of the opening.

If bubbles form at the end of the sheath, it is an indication that not enough sheath has been removed to get past the moisture. In this case remove another foot of sheath and bind up the end of the opening with muslin as directed in the foregoing, after which with the paraffine at proper temperature, pouring should again be started. The pouring should be continued as long as bubbles are given off, or a cracking or frying sound is heard. Moisture must not be driven back into the cable and care must

ing. The two layers of muslin should be wrapped in reverse directions without cutting at the end of the first layer.

The muslin should not be wrapped any tighter than is necessary to produce a smooth surface. Tie the muslin at the end as shown in Fig. 4-A. The wrapping should then be boiled out by pouring hot paraffine first on the lead sheath at each end, and then working gradually toward the center of the wrapping.

The opening should then be wrapped with four layers of two-inch adhesive tape, extending three inches farther back on the sheath than covered by the muslin. The two outside layers of tape should be placed in two pieces beginning at the ends and working toward the center so as to lap in the manner of shingles. See Fig. 4-B.

The cable should then be raised and the center of the taped portion tied to the messenger with at least four turns of marlin as shown in Fig. 4-C.

Conclusion.

After the trouble has been located and cleared and the opening in the sheath protected as described, the cable will be in condition to give service for a few weeks, if necessary. As soon as possible, however, an experienced cable splicer or a plumber, who can work in the location where the trouble was found, should be secured to replace the lead sheath and complete the repairs in a permanent manner.

When a plumber is employed, care should be taken to see that the temporary protection is removed; that the repaired

ly it will be necessary to slit the sleeve in order to apply it.

The plumber or experienced cable splicer will have no real difficulty in doing the lead work satisfactorily.

Special Meeting of Directors of National Association.

The board of directors of the United States Independent Telephone Association held a special meeting at the Hotel Powhatan, Washington, D. C., Monday, April



Dr. R. E. Gordon, President of Illinois Telephone Association, is a New Director of U. S. Independent Telephone Association.

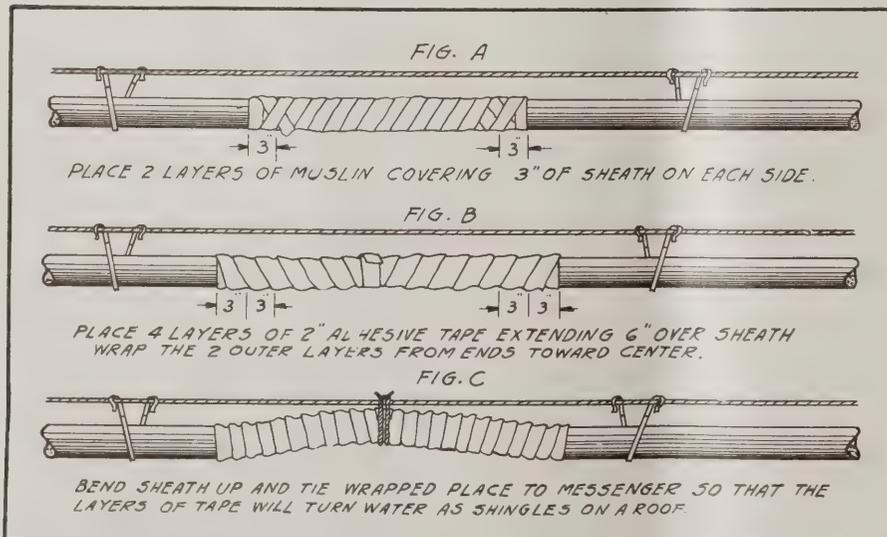


Fig. 4. Method of Temporarily Protecting the Opening in the Cable Sheath.

be taken to guard against it, by applying the hot paraffine first to the cable sheath at the ends of the opening.

Protection of Opening.

First compress the wires together lightly and wrap the opening from end to end with two layers of freshly boiled-out muslin, extending the wrapping three inches over the sheath at each end of the open-

section is again boiled out with paraffine following closely the instructions referred to in that section. Two or more layers of boiled muslin should then be applied over the conductors in the open section, after which a lead sleeve, just large enough to comfortably slide over the wrapped portion, should be applied and wiped joints made at both ends. Obvious-

30. The meeting was primarily to discuss the attitude to be taken by the association toward the proposed depreciation procedure of the Interstate Commerce Commission which was set for formal hearing at Washington May 1.

After electing Dr. R. E. Gordon, of El Paso, Ill., a director of the association to fill the unexpired term of H. L. Reber, of St. Louis, Mo., who resigned because of the sale of the Kinloch properties to the Southwestern Bell, the directors devoted several hours to a discussion of the proposed depreciation procedure.

A report from the executive committee was presented by Attorney C. B. Randall. The directors voted approval of the course the executive committee had decided to follow. President MacKinnon proposed that the association should formally recommend to the Interstate Commerce Commission that the commission, acting under the discretion allowed it by the Interstate Commerce Act, should modify its accounting requirements so that in those states where state commissions require the keeping of proper accounts and making of reports. After discussion, it was decided to postpone action on this proposal until the following day.

It was voted to accept membership in the telephone committee of the American Engineering Standards Committee, this telephone committee being a new division. The association also decided to contribute its quota to the building fund of the United States Chamber of Commerce.

A second meeting was held Wednesday, May 2, when the directors formally voted to request the Interstate Commerce Commission to modify the federal accounting requirements so that in those states where

telephone companies are required to keep accounts and make reports by state commissions, the companies will be relieved from making reports to the Interstate Commerce Commission and that the Interstate Commerce Commission be further requested to modify its classification of telephone companies so that class D companies shall include those companies having under \$25,000 annual receipts instead \$10,000 as at present.

The officers of the association are to

present the matter to the Interstate Commerce Commission and ask for a formal hearing, if a hearing be thought necessary.

The following directors were present: Geo. W. Robinson, H. L. Harris, T. L. Youmans, Dr. R. E. Gordon, E. M. Prisk, E. D. Schade, F. L. Beam, C. Y. McVey, Geo. R. Fuller, R. E. Mattison, H. L. Beyer, J. B. Earle, W. G. Brorein, H. F. Farwell, F. B. MacKinnon and C. C. Deering.

Washington Depreciation Hearing

Interstate Commerce Commission's Hearing on Depreciation Extends from May 1 to May 5—Both Bell and Independent Groups Represented, Also State Commissions and Some Cities—Attorneys to File Briefs Before August 16

At the hearing held in Washington May 1, by the Interstate Commerce Commission to consider the commission's order No. 14700 on depreciation there were representatives of all interests present.

The United States Independent Telephone Association, the Wisconsin Telephone Association and the Illinois Telephone Association appeared on behalf of the Independent group of the telephone industry. The Bell group was represented by a committee from the American Telephone & Telegraph Co., consisting of C. M. Bracelen, general attorney, C. A. Heiss, comptroller, and R. H. Burcher, assistant vice-president, department of operation.

The National Association of Railway & Utility Commissioners was represented by a committee consisting of Thorn A. Browne of Nebraska; Jesse W. Greenleaf of Kansas; and A. R. Sterling of Minnesota, assisted by J. W. Howatt, F. B. Tappan, A. B. Greene and Geo. C. Mathews, telephone engineers and statistician of the Minnesota, Michigan, Florida and Wisconsin commissions, respectively.

The City of New York was represented by C. R. Maltbie, engineer and attorney. Stephen A. Foster appeared for the City of Chicago.

The United States Independent Telephone Association was represented by C. B. Randall of St. Paul, Minn., and H. L. Beyer of Grinnell, Iowa, attorneys, and the directors of the association who met in Washington during the week. For the Illinois association C. B. Cheadle, of Joliet, appeared as attorney and for the Wisconsin association, Carl D. Jackson, of New York, formerly chairman of the Wisconsin commission and now attorney for the National Electric Light Association.

Although the telephone groups were prepared to introduce the evidence of a number of witnesses to support the contentions of the industry against some of the proposed procedure of the commission,

but one witness was examined—A. B. Crunden, general supervisor of accounting methods for the Bell system.

After an opening statement by C. M. Bracelen, Mr. Crunden was put on the witness stand, where he remained during the entire time devoted to the hearing—from Tuesday morning until Saturday morning. The direct examination by Mr. Bracelen and cross-examination by the attorneys of the states and cities occupied the entire week and brought out all of the essential points at issue so that it was decided to introduce no other testimony.

Mr. Maltbie for the City of New York, Mr. Foster for the City of Chicago and Mr. Browne for the state commissions made formal statements as also did Mr. Mathews for the Wisconsin commission and Mr. Tappan for the Michigan commission.

On behalf of the telephone groups closing arguments were made by Mr. Randall for the Independent association and Mr. Bracelen for the Bell group. Mr. Jackson for the Wisconsin association made a statement on Thursday as he was obliged to leave before the hearing could be concluded.

Before the adjournment on Saturday noon attorneys for all parties were granted until August 6 in which to file briefs in the case. This means no decision as to the permanent rules to be prescribed by the commission will be reached until some time in the fall.

During the hearing several of the attorneys argued strongly for the elimination of the B, C and D class telephone companies from the depreciation requirements. This was emphasized by the action of the United States Independent association directors who adopted a resolution to request the Interstate Commerce Commission to change its accounting and report requirements so that B, C and D class companies would be greatly relieved of their accounting burdens and thereby also relieved from the depreciation order requirements.

The position taken by the telephone associations and the Bell group showed that all are harmonious in believing that the commission is wrong in providing that "storm damage" shall not be included as part of depreciation, nor "cost of removal"; the telephone groups also were a unit in asking for the continuance of present practices in setting up depreciation accounts.

While there was apparently a division of opinion among the representatives of the state commissions, yet they seemed to be unanimous in contending for the Interstate Commerce Commission's position on "storm damage" and against the commission's attempting to control the actions of the telephone companies in the matter of depreciation or any other operating procedure principally affecting intrastate business which, of course, is the principal business of telephone companies.

The position of the telephone companies was identical with the position taken by the executive committee of the United States Independent Telephone Association as expressed by C. B. Randall and published in TELEPHONY of April 14.

The hearing served the very useful purpose of affording all interested parties—the public and the companies—to discuss at length the fundamentals of depreciation and the methods of the companies in determining proper depreciation and the accounting procedure followed by the companies in handling all the different accounts necessary in recording realized depreciation, such as salvage, cost of removal, etc.

This opportunity for discussion was educational to all interests. What its positive results will be on the procedure of the commission, remains to be disclosed by whatever final order the commission issues.

The Illinois Telephone Association, successor to the Illinois Independent Telephone Association, filed the following statement with the commission:

"In a report filed with the Interstate Commerce Commission and transmitted to certain telephone companies under date of March 10, 1923, in a statement numbered 14700, certain recommendations to the Interstate Commerce Commission are made by the Bureau of Accounts, depreciation section, as a tentative basis for compliance by the Interstate Commerce Commission with the following provisions of paragraph five, section twenty, of the Interstate Commerce Commission act, as amended February 28, 1920:

The commission shall, as soon as practicable, prescribe for carriers subject to this act, the classes of property for which depreciation charges may properly be included in operating expenses, and the percentages of depreciation which shall be charged with respect to each of such classes of property, classifying the carriers as it may deem proper for this purpose. The commission may, when it deems necessary, modify the classes and percentages so prescribed.

The carriers subject to this act shall not charge to operating expenses any depreciation charges on classes of property other than those prescribed by the commission, or charge with respect to any class of property a percentage of depreciation other than that prescribed therefor by the commission. No such carrier shall in any case include in any form under its operating or other expenses any depreciation or other charge or expenditure included elsewhere as a depreciation charge or otherwise under its operating or other expenses.

On November 5, 1921, in a statement filed with the Interstate Commerce Commission by the Illinois Independent Telephone Association certain general recommendations were given for the information of the commission in this matter. At approximately the same time other statements on the same general requirements of the law were filed by other interested parties and as a result of an investigation and study conducted thereafter by the Bureau of Accounts, depreciation section, the subject matter of the tentative report transmitted to certain telephone companies under date of March 10, 1923, has been set down for hearing at Washington, D. C., May 1, 1923, at 10:00 a. m.

The Illinois Telephone Association hereby submits brief answers to inquiries one to four inclusive as raised by the commission and given on page two of the pamphlet containing the order of transmittal and the tentative report referred to, together with certain specific comments on the subject matter of the hearing.

No consideration is given in the statement filed by this association on November 5, 1921, nor in the brief statement herein, to the consideration of the determination and accounting of depreciation from the standpoint of the promotor or of the stock and security market.

Consideration of the subject along these lines is thought to be a matter of financial promotion, very slightly if at all re-

lated to the continuous conservative management and operation of telephone properties having in view the maintenance of service of a standard satisfactory to the public and the conservation of the interests of the permanent owners, the stabilization of telephone rates, and the preservation of the integrity of the investment used and useful in furnishing telephone service.

It is believed, for this reason, that the determination and accounting of proper charges against operation for cost of property used up must be based upon the same general principles whether the property involved be large or small. The smaller telephone properties are apt to be more seriously handicapped than the larger ones, unless an equitable and conservative procedure is developed for conserving their investment and service against the effect of the inevitable but unanticipated and unforeseen expiration of plant service lives.

Subject, therefore, to the present elementary accounting methods for class C and class D companies, it is necessary to lay down basic principles as to the conservation of their investment and service for the future use of such companies as well as for those involving larger investment. This is important because of the large aggregate plant investment in such properties and because of the large number of patrons dependent upon them for the maintenance of continued and adequate telephone service.

Answers to Inquiries.

"Referring to the specific inquiries on page two of the pamphlet containing the letter of transmittal and report made by the Bureau of Accounts, depreciation section to the commission, dated March 10, 1923, and numbered 14700, the following is respectfully submitted:

—I—

Has a depreciation reserve any other purpose than to provide a means of equalizing the effect of property retirements, so that the disproportionate burden may not fall upon the operations of any one year? If so, what other purpose or purposes has it?

Disregarding all considerations bearing upon the exigencies of creating a market for securities and stocks of operating telephone companies by temporarily exhibiting a favorable rate of return greater than would be possible of permanent realization, it may be said that the purpose of a depreciation reserve is *primarily* to afford a means of preserving the integrity of the total investment in property used and useful in the service of the public. It is axiomatic that invested capital must be maintained unimpaired in order that industry may survive.

If the integrity of the investment is to be maintained, the cost of the property used up must be made a charge against operation during the life of the property.

To do otherwise would be to cause the progressive dissipation of the original capital investment.

The prime function of depreciation charges being the preservation of the investment, its establishment upon a conservative and equitable basis, in which the progressive consumption of capital in operation throughout the economic life of the property is offset by corresponding average charges to operation, will automatically afford a means by which the effect of all property retirements may be equalized so that the disproportionate burden due to property retirements in any unusual amount in any one year shall not fall upon the operations of that year.

—II—

If a depreciation reserve has no other purpose than that above stated, will the method of determining depreciation charges which is recommended by the depreciation section provide a reserve which is no larger than is necessary for such purposes?

As shown in the answer to inquiry I, a depreciation reserve *has* a purpose other than providing a means of equalizing the effect of property retirements. No answer to inquiry II, therefore, is possible.

—III—

Should amounts reserved as the result of depreciation charges, from what would otherwise be surplus earnings, be segregated in a special fund, to be invested in whole or in part in liquid assets, so that companies may be in a position to make necessary or desirable replacements of property even when not in a position to market new securities on advantageous terms?

Amounts available as a result of depreciation charges should ultimately and preferably be invested in plant. Such an application of such funds will utilize the funds to the best economic advantage and in the most profitable way.

This is true because if the funds available as the result of depreciation charges should be invested otherwise than in telephone plant, it would be necessary to secure capital in the same amount by the sale of securities. It would be necessary to pay the prevailing market rate for the capital thus secured while the maximum possible return from the investment of the fund other than in telephone plant would be less than the return if invested in telephone plant.

The segregation of the company asset in such a special fund would not make it easier for telephone companies to make necessary or desirable replacements of property because any general financial conditions which would make it difficult to market new securities on advantageous terms would also have the effect of lowering the market values of securities in which such a fund might be invested.

—IV—

Does the straight-line method of determining depreciation charges, as compared

with a sinking fund or annuity method, result in larger charges than the public served can equitably be asked to pay?

The total of all charges against operation to care for depreciation should cover the total investment at the time of its retirement from service minus net salvage, and any method which assures the attainment of this result is satisfactory. It is believed, however, that the straight-line method, so-called, is the most workable, is entirely equitable and should be adopted.

General Comments.

"There is no disposition to claim that physical wear and tear or the effect of obsolescence, inadequacy, public requirements or other factors underlying depreciation is uniform and gradual.

There is, however, no question whatever as to the gradual and uniform expiration day by day and year by year of the economic service life of the property represented in the investment used and useful in furnishing telephone service.

It is recommended in the report of the Bureau of Accounts, depreciation section, that the classes of property for which depreciation charges may properly be included in operating expenses should embrace only physical property that is subject to wear and tear from usage and other effects of age and decay, or whose usefulness or economical operation may come to an end because of obsolescence, inadequacy, changes in the art, or public requirements.

It is to be emphasized that property falling within the classifications of right-of-way, franchises, patent rights, and other intangible capital, insofar as it represents a part of the investment in property used and useful in the service of the public, is subject to progressive consumption through operation in the same way as the physical property with which it is associated. The determination of the service life of such items of investment must, however, be based principally upon experience, and upon the basis of such experience charges should be made against operation to prevent any dissipation of the capital invested in such property.

It does not appear to be material as to the character of the causes which result in the depreciation, provided they are legitimate, and there does not appear to be any reason for the statement that the intangible property of a telephone company is not gradually consumed in the operation of the property just as truly as the tangible property is consumed. Neither does there appear to be any justification for the statement that in order that the depreciation of telephone property may legitimately be made the basis of a charge to operation to provide against depreciation that depreciation must be gradual.

It is clear, however, that provision must be made so that the capital invested in right-of-way, franchises, patent rights,

and other intangible capital may not be dissipated, and there appears to be no reason why charges to operation to care for such items shall not be spread over the service life as the similar charges are spread to provide for the depreciation of the tangible portions of the property.

Since there appears to be no justification for the assumption that provision for depreciation shall be limited to provision against the effects of wear and tear from usage, age, decay, physical deterioration, obsolescence, inadequacy, public requirements, and changes in the art, there can be no justification for the elimination of a provision to cover the effect of storms and casualties.

It is again emphasized that the service lives of the several classes of property shall be determined principally upon the basis of experience, and there is no sound method by which such experience can be interpreted as to whether the service lives indicated are the result of any group of causes.

The service life, for instance, of a telephone pole may be terminated by a storm either when it is comparatively new or when it is approaching the end of its useful life due to other causes, or its life may be shortened but not terminated, and there is no practicable method, even should such a refinement be desirable, by which the effect of the storm upon the observed service life of such a pole may be separated from the effects due to other causes. Conversely, the service life of underground conduit and cables may be affected by floods, although their life may not be terminated for years thereafter.

These considerations present an insurmountable obstacle, in our opinion, to the exclusion of the effects of storms and other casualties from the provision that must be made to provide for depreciation.

In conclusion it is respectfully submitted that:

The service life of any given classification of plant can only be determined on the basis of actual past experience qualified to some extent by all available information as to the probable effect of changing conditions in the locality involved.

Investment represented by intangible property is subject to the same laws as to the expiration of its service life as tangible property, and will be dissipated unless suitable charges are made against operation during its service life.

Since service life is to be determined principally by experience there is no method by which the effect of storms and casualties may be eliminated in determining such service life on the basis of experience.

Should the rate of depreciation for any given classification of telephone property be desired it should be obtained by determining the percentage which applied annually to the total original cost through-

out the service life, will at its expiration equal the total original cost less net salvage realized."

"Magneto Service Instruction" Bulletin of U. S. Association.

The United States Independent Telephone Association has just issued a pamphlet entitled, "Magneto Service Instruction," a book especially prepared for the student operator of small exchanges. These instructions have been written by Miss Anne Barnes, traveling chief operator of the Iowa Independent Telephone Association. The fact that Miss Barnes has written these instructions is in itself a guarantee that they will be of value to every company operating magneto exchanges.

The association is issuing these instructions in accordance with a resolution adopted by its members at the annual convention in October, which expressed the need of the industry for operators' rule books.

In the foreword Miss Barnes states that it should be the first duty of operators to become familiar with the instructions which relate to their work, to conscientiously observe them and keep in mind the three elements which make public service a success—courtesy, accuracy, speed. Managers are asked to carefully read the pamphlet and his chief operator should be the second to have it.

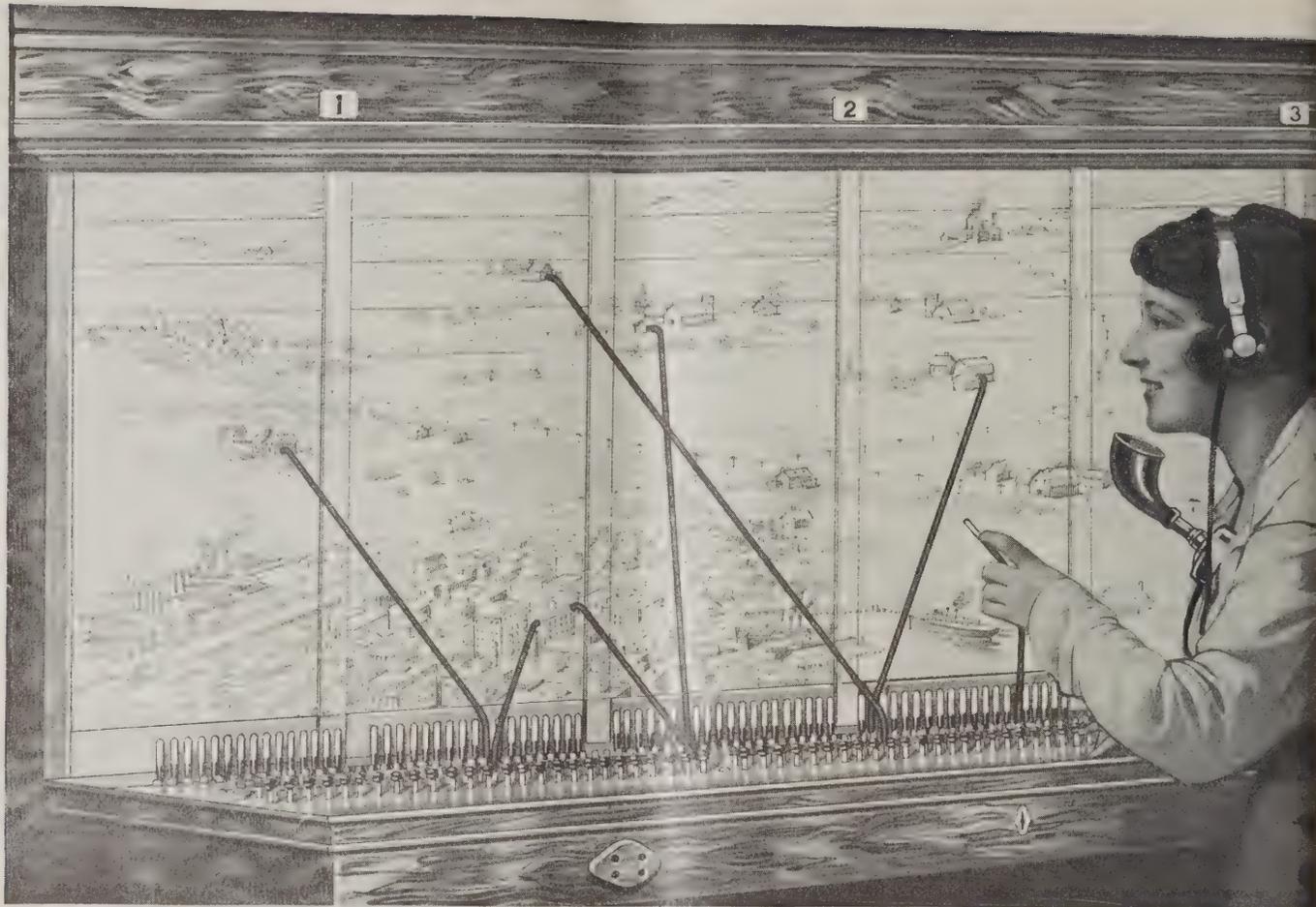
The bulletin is divided into three sections, general operating instructions, use and care of equipment, and general operating practice. Under these heads are answered many of the different questions that arise in exchange operating rooms, both as to relations of operators with the company, their co-workers, the public, their work and the equipment.

It contains so much informative matter that at least one copy should be in every small exchange. Copies may be obtained from the United States Independent Telephone Association, 19 S. La Salle street, Chicago, at 15 cents each.

Michigan Companies Busy Planning Details of Merger.

In coöperation with engineers of the Citizen Telephone Co. of Grand Rapids, Mich., the Michigan State Telephone Co. has worked out seven different plans for the merger of the properties of the two companies. Tabulation now is being made to determine the plan to be followed.

One plan contemplates separate operation of the two systems until an all automatic service can be given. Another plan provides for cable connection between the exchanges and continued use of the manual system on the old Michigan State telephones. It is estimated that 18 months to two years will be required to effect the merger.



Snapshots Along Telephone Trail

"What an Operator Sees as She Sits at Her Task Each Day" — Interesting Paper Read at Operators' School Held at Fort Dodge Under the Auspices of the Engineering Extension Department of the Iowa State College

By Miss Nelle M. Roberts

Chief Operator, Central Mutual Telephone Co., Rockwell City, Iowa

Recently my attention was attracted by a simple little advertisement in a magazine. It has been a source of inspiration to me, and I trust I may be able to pass it on.

The title is, "What an Operator Sees as She Sits at Her Task Each Day." The scene takes place in a little telephone office—neat, well arranged and attractive—equipment ready for business. Enters the operator, having just come from the crisp, fresh atmosphere outside. Seating herself at the little switchboard, taking a plug in her hand, she, too, is ready for work.

Does the switchboard, dark, somber and inanimate, seem so to her? Does it look like a mere mechanical device, composed of pieces of wood and of metal, to be punched, pommelled and plugged at all day? No! a thousand times, No!

She sees the switchboard as a transparent medium, through which the connections are made. The plug she grasps in

her hand is a wonderful key, unlocking untold wonders to her.

Inserting the plug in the jack, she utters, in a soft, modulated voice, "Number, please?"

In the distance she sees a pastoral scene—a farm home, surrounded by green fields, growing crops, cattle on the hills—and she seems to breathe the wonderful country air.

The companion plug completes the connection to the business firm in the city, with its busy clerks, anxious and alert to answer the call for service.

Another signal. This time she sees the sick room where care is needed. Quickly she completes the connection to the doctor's office, where help may be secured.

Flash! Flash! come the signals. "Big Business" is awakening, and the telephone office—as the "Heart of Industry," through whose veins pulse the lifeblood of the community—begins to take on the renewed life of another business day.

Slowly the wheels of industry begin to move, touched into action by the medium of the telephone.

Again she looks, not at her switchboard but through it. She sees the signal flash from the gay vacationist. She adds to his pleasure by completing his connection to the house of supplies or to his friends who alike are on pleasure bent.

Signal! This time from the small boy, an Isaac Walton in the making, he with the fishing rod and the bent pin hook. Get him his "pal" and make his heart glad.

Signal! The business man wishes to make arrangements for a game of golf. Give him his connection. He wants to keep his mind and body keen and alert in order to meet his fellow men in the busy marts of trade.

Flash! Flash! The signals from the farm, the factory, and the mine. They want supplies, they want instructions. The operator starts them on their day's work.

by means of the magic wand she holds in her hand.

Flash! comes the signal from the busy mother, who is anxious lest the storm, in its fury, injure her children. Hurry, operator, and allay her fears, by giving her the connection she wants.

Flash! Flash! Flash! the signals—a terrible accident, a mine disaster, an automobile accident, a train wreck. Call for help! Gruesome is the scene her imagination pictures.

The operator, calm, and with perfect poise, summons help for those in distress—that is her training. Whatever the accident—fire, flood or storm—the brave operator helps with her magic touch, gets relief, gives warning or does whatever is needed, in the least possible time. Her reward? Just the consciousness of duty well done, of help extended in time of trouble.

Again the signal flashes from the neighboring city. See the victor-crowned students as they leave the athletic field! Quickly, let them give the result of the game.

She sees through her switchboard the work of the team, the surge of the crowd, the team hurled back, cheered by the crowd, they press forward; urged to greater effort, in the last moment, just before the whistle blows, they press forward to victory! Quick! Let them give the report to the home folks.

Across the continent flashes the news of the day, the big features—war, peace, accidents, victories—all news of national importance. Quickly the news is given to the press.

Sitting at her switchboard, with the magic instrument in her hand, looking through the switchboard and all about her—does she get any pleasure from the pictures thus flashed on imagination's screen, while at her day's work?

My friends, go back to your switchboards, large or small as they may be. With the magic cords in your hands, get a breath of the fresh country air, enjoy the pleasure of giving help to the afflicted; and take an interest in being able to start the wheels of industry moving.

Enjoy the vacations with those who indulge; enjoy their drives; go with them along the highways of country, through the woods, and even across the continent with them.

Yes, enjoy the pleasures of the small boy with his rod and his line; enjoy the golf with the business man who keeps fit; be glad you can render assistance to those in distress; shout with the home team as it returns with the laurel wreath; enjoy being able to spread the big features of the day.

You little know the value of your work as you sit at your switchboard each day. It can never be estimated. Back and forth the shuttle flies, thousands of calls per day, carrying messages of every kind.

Yours is a wonderful service, and the public appreciates your work.

Magic cords you hold in your hand. Wonderful visions you may paint as you sit in your office at your daily task. What a pleasure to you to know that the great heart throbs of the Universe pulse through the medium of the switchboard and through the cords you hold in your hands!

The Average Operator's Problems.

By Miss LEWIS KOCH, *Chief Operator, Ida County Telephone Co., Ida Grove, Iowa.*

The chief aim of the telephone company is to see that efficient service is rendered. By efficient service, I mean courteous, accurate and prompt service.

Therefore, the primary responsibility of every telephone operator is to handle every call in such a way that the subscriber will be convinced that the service is courteous, accurate and prompt. You probably noticed I said every call; this makes the service dependable so that the subscriber knows he may expect the same grade of service on Tuesday that he did on Monday.

We must make our service attractive; easy to understand. If our subscriber seems in doubt of the classification of a call, explain, it carefully. This will inspire his confidence; also avoid errors in commercial work later.

We should never explain that we are short of help, for the subscriber may get the impression that we are not managing our work properly. What he wants is service, not excuses. We must answer unusual questions, such as those regarding the time trains leave, ball games, etc. Hunting up a called party without any definite address may be extra work, but we must consider the good of our patron first. Of course, in a small place there is much more chance to locate the called party without any great difficulty.

We must work with beginners in such a way that telephone work will attract her.

An operator may make the public think she knows every name and number, but she is often imposing on her neighbor operators to furnish her with what she cannot remember. This is not fair to the other operators or to other waiting subscribers.

There are hundreds of instances of the heroism of operators, alone in small offices in times of peril, such as floods, fires and calls for doctors. What difficult problems they have had, how they notified the proper people to take care of the emergencies, rang the telephones of subscribers whose lives were in danger, and stayed in the office until compelled to leave—all these are wonderfully inspiring stories. You are all familiar with stories of these natures, especially if you have been operators for any considerable length of time.

Another responsibility is to conserve the company's revenue. So far as possible we must see that the public pays for just service rendered. Every possible effort should be made to complete every toll call presented. Our aim should be to complete as many as we can in ten minutes; if not in ten minutes in 20 minutes.

Here is an illustration of how an operator completed a cancelled call to Denver, Colo.:

A party placed a call from Ida Grove to a party in care of one of the hotels in Denver. The operator was unable to locate the party and the calling party on receiving the report cancelled his call. Later in the day another party in Ida Grove placed a call to the same party at Denver, locating him. After this conversation was completed, long distance rang the party who had placed the earlier call and asked him if he still wanted to talk with the Denver party.

He replied that he would if we had located him. This saved a cancelled call.

Sometimes our subscribers move without notifying the operators and we have no way of locating them. When we do find such a subscriber, we should make a note of it so that the company can get in touch with him.

If all of us, when we enter the operating room, will accept and shoulder the responsibility placed on us by our companies and forget our social duties while on duty and conduct ourselves as any other business women do in their several lines of endeavor, better results will be obtained and our many problems will be easier to meet.

The one great big thought we must keep in mind is this: "Service first, service last and always." Then our problems will melt like snow in July.

Bell Discontinues Its North Dakota District Organization.

The Northwestern Bell Telephone Co. has discontinued the district plan of organization in North Dakota, and has divided its territory there into 12 areas, seven of which are non-functional, three semi-functional and two functional. It is expected that the advantages accruing will be a saving in time and money and the getting in better touch with the field.

In the seven non-functional areas all the toll and exchange plant is maintained and operated under the supervision of an area manager, who has headquarters at some exchange in his section. He has personal charge of headquarters and supervises the work elsewhere.

In the semi-functional areas the commercial and traffic work is handled by an area manager and the plant work by an area plant chief, the first reporting to the division traffic chief and the commercial office, and the latter to the division superintendent of plant.

The Connecting Company Relations

It is Characteristic of Telephone Service That Quality Is Depressed to the Level of the Weakest Link in the Chain of Contact—Paper Presented at the Syracuse Meeting of the Up-State Telephone Association of New York

By W. C. Sexsmith

District Manager, New York Telephone Co., Binghamton, N. Y.

I am a member of the biggest family in America! Does the telephone family fully recognize its functions as necessarily auxiliary to the activities of every other business? Are the people of this organization properly impressed with their individual and collective moral engagement to personal, commercial and social welfare?

Just what is the telephone industry? Approximately, it's a partnership arrangement between 300,000 thrifty Americans, with money to invest, and 350,000 other industrious Americans, with personal service for hire—mind, I say hire, because no employe is permitted to part with his identity.

The joint obligation of this partnership is to create facilities and provide avenues for the private exchange of thought between people at a distance from each other. These facilities are rented, and these avenues periodically cleared for profit to be shared by all concerned.

The one outstanding peculiarity of the commodity in which we deal, is that we are unable to deliver a product of uniform excellence, and that no two customers ever receive the same quality or satisfaction. This is so because the customer, himself, is largely responsible for whatever takes place after instrumentalities have been provided, circuits established and his correspondent located.

Unless each concerned in the communication thinks clearly, acts quickly, speaking courteously and distinctly, the service is penalized in quality and the user is penalized economically. Here is where the requirements of excellent universal service stretches the arm of invitation to every citizen to stop, look and then listen to a message ready for distribution through the workers, which will say to the people, "You, too, belong to the organization. You will profit, or otherwise, proportionately to whatever constructive or destructive attitude you assume."

Another characteristic of our business is that the quality of the service is depressed to the level of the weakest link in the chain of contact. The subscriber in Syracuse, paying for the best grade of service, receives when talking with Farmer Smith, exactly the same class of service as that with which Farmer Smith is provided.

This is a good logical reason, a selfish one, if you please, for wanting more closely to cement the connecting companies

with our family relations. The most difficult daily task facing every up-state commercial telephone man, is the adjustment of dissatisfaction having its source in inequalities of service, the only remedy for which seems to be the provision of a good circuit and standard instruments for Farmer Smith.

Things are good or bad by comparison, only. The man who realizes more than he expects, pronounces the service good. The man who receives less than he expected, decrees that it is poor or rotten, whichever mode of expression most nearly harmonizes with his temperament or digestion. One paying for standard Bell service often receives less than expected from connecting companies and, therefore, condemns the whole system.

The success of either limb of the Bell partnership depends upon the prosperity and contentment of the other. Both rise or fall together, on the crest of public sentiment, the level of which will adjust to average satisfaction with the service performed. The old economic law of sup-

TOO MUCH POSITIVENESS.

The most absurd foible is to possess too much positiveness. If you are in the wrong, positiveness only adds embarrassment to your defeat. If you are in the right, it only lessens your triumph.

Study the situation, then form an opinion, but never form a personal opinion that will not listen to reason.

Positiveness, infallibility, unchangeableness—these are impractical intellects.—Van Amburgh.

ply and demand, designates certain limitations which must be understood and applied by the investor, the worker and the consumer, if each is to enjoy a full share of confidence in dealing with the other two. The investor must receive for the use of his money, all that capital is worth, plus an insurance of security.

One insurance of security is contentment on the part of those serving and those being served. The workers in this instance are the custodians of one and a half billion dollars of property values. The contentment of the employe partners depend upon fair remuneration for work per-

formed, unrestricted opportunities for recognition and provision for sickness and advancing years.

In exchange for insurance of safety, the investor necessarily sacrifices a portion of the gain accruing to money more hazardously employed. The worker shall have always to produce in excess of his remuneration in order that he may share with his partners a portion of the profit and contentment of useful occupation. These partners together are obligated to produce that which can honestly be sold for more than it costs and less than it is worth—enough more than it costs to properly reimburse the investor and the worker, and to provide a margin of safety.

The margin of safety is also necessary for the protection of the consumer, for he has no other sources of supply and there must be no break down. The product should sell for enough less than it is worth to provide the consumer with a share of the gain of this needful co-operation.

The consumer should promptly release to the producer, without opposition, such revenues as have been earned, because burdensome collection has no part in economical management. The possession of money earned, is a recognized right, and its collection should involve no additional effort on the part of the owner. Any patron opposing the logic of this contention is a subject for tactful education and telephone people must continually teach, if contentment is to prevail.

The aim of each group of this triangular arrangement of interests, is the same—satisfaction with results. There is an increasing inclination on the part of the more thoughtful employes to occupy two positions of the triangle. Many are joining the investors. The attitude of capital suggests recognition of this fact. The combined efforts of all financially interested or personally engaged, should be diligently co-ordinated to the end that the public may recognize conditions as they are, for the public is a safe monitor in dealing with fair conditions.

Every organism is, one time or another, infested with some sort of parasite. Even green, luxurious fields are over-run with crickets and grasshoppers, noisy pests which in the dark distract attention from the more important activities. You can't hear cattle chewing the cud of contentment, and you can't hear wheat growing. Light banishes the noisy clamor and dis-

loses the real forces which are mostly silent.

The telephone company is equipping 350,000 employes for the purpose of lighting its field of activities. These employes are going about with lanterns, not looking for honest men, but uncovering noisy, dishonest ones who make a clamorous din, angling for votes with whatever bait may be camouflaged in the dark.

We recognize that public service in the broad sense requires vastly more than quick, accurate telephone connections from its servants. It is entitled to such contact as shall leave happiness in its wake and such information as shall assure any unselfish individual that he is being met half-way by another human, subject to the same perplexities of existence and living under environments which are comfortable or otherwise through association with fellowmen.

The telephone company has been successful, often in the face of extreme adversity. A group of humans with brains enough for continuous progress and ultimate success, likewise have gray matter enough to know that the roots of all industry are nourished in agricultural soil, and that this soil must be continuously cultivated if prosperity is to prevail. During the war we heard much about the first line of defense and the second line of defense, but less about the real line of defense, which stuck to its plows, its reapers and its cattle. There were long hours every day, including Sunday, no threatenings of a strike. Now that the war is over, the clamor for bonuses and preferential treatment is not noticeably rural.

In classifying its obligations, the telephone organization recognizes the real line of defense as the natural source from which the traffic of our streams, highways, railroads and wires has its beginning. Nothing may safely be permitted to interfere with the cultivation of Uncle Sam's tillable acres. If the farmer is to stick to the soil, it will be because of contentment with living conditions and remuneration.

Telephone service has a great deal to do with the social and economical comfort of rural communities. Through its connecting companies the telephone system wants, not only to open the ways of universal telephone communication, but it wants to open the windows of understanding in order that the farmer may know that the ultimate goal is provision for satisfactory communication between each individual and every other individual, as needs be.

Three important facts should be clinched to the intellect of any who think upon this subject:

First, the subscriber must be willing to pay more than the service costs—enough for required replacements and proper compensation for those who do the work.

Second, the company must make its service worth more than it costs, for the user is entitled to a share of the profit from any transaction in which he has a part.

The third important fact deals with two parasites of the business—the deadhead who sponges his way, but whose service costs proportionately and must be paid for, and the outside meddlers who screen political selfishness, with suggestion, inference and sometimes open attack upon

Don't Shun Trouble.

Every trouble is an opportunity to win the grace of strength. A trouble is a moral and spiritual task. It is something which is hard to do. Strength is increased by encounter with the difficult. Every day we are blessed with new opportunities for the development of strength of soul.—George Hodges.

public service corporations. These acts often impress the less thoughtful and impose upon many who may believe in political unselfishness.

The expenditures required to defend the telephone business from unjust attack, have been enormous. The burden is upon the shoulders of the user—a sort of indirect taxation, for every cent that the company spends comes from the user of its service.

Remember what the company really is—just an association of upwards of 350,000 humans, seeking a living the same as everybody else and as fully awake to smiles of appreciation and recognition, and as honestly loyal as you. They are engaged with the problems of existing and being accountable as decent citizens.

So well diversified and scattered are the activities and interests of these people, that it would be impossible to pool enough strength to steer the ship upon a crooked course, if anyone had a mind to. Even our president is only a hired man, and crooks are not hired by successful business.

Remember this: The compensation of the workers and the investors are fixed charges, which cannot be altered to meet contingencies; hence, the consumer is the one penalized through pernicious activities.

The laws of the country fix our net earnings at a fair average return and the laws of common sense decree that success crowns only such as voluntarily deliver value received.

The reservoir of our revenues is the demand for our service, and every time it becomes necessary to increase a rate the reservoir is lowered by the elimination of such as cannot meet increased rates.

In addition to using a triangular figure to illustrate common interests, I'll also use it to picture the goal of our vision. Let the peak stand for the highest type of

service required for universal needs. Let one corner of the base be founded upon the most reasonable return consistent with successful continuation, and let the other corner rest upon public confidence. That's our aim.

As two angles of this plan have neared completion, there are a few pessimistic people who imagine that the future contains limited opportunities for ambitious telephone men. There are twice as many employes as there were telephones when I entered the business. This fairly illustrates the existence of increased opportunities and emphasizes the crying need for such talent as is fit for the survival of a multiplicity of growth demands.

We are just facing one of the most gigantic constructive tasks ever assigned to a group of humans—and the most remunerative. In making friends of the public for our business, no small portion of the recompense will be an increased acquaintance with our fellowmen, and a broader, healthier interest in community welfare.

It is worth while to be engaged in an occupation which eventually must be recognized as a trail to advanced civilization. There being no such thing as individual freedom, what's the logic of selfishness? Let's so train our activities as to become efficient servants, for in the language of Rotary, "He profits most who serves best."

The privilege of co-operating with our connecting companies is appreciated. The thought in which this association had its conception is a pleasant one—helpfulness to each other. It is a nucleus of contact through which we may become more closely related and better acquainted with each other and our common problems.

Our duties to our respective communities are exactly the same. We want to help you and we want you to help us. In helping each other and the community, we traffic in the highest requirements of good citizenship.

Interstate Utilities Co., Takes Over Another Exchange.

The Interstate Utilities Co., of Spokane, Wash., has purchased another exchange—the Clark Fork Telephone Exchange, at Clark Fork, Idaho, of which Mrs. N. Banby was owner. The transaction was announced about the middle of last month, by John F. Davies, vice-president and general manager of the Interstate company.

This purchase means that the Interstate Utilities company will have a direct through line from Sandpoint, Idaho, to Thompson Falls, Mont., and from there to the East. The new line will give service to Cabinet, Trout Creek, Noxon and other towns en route.

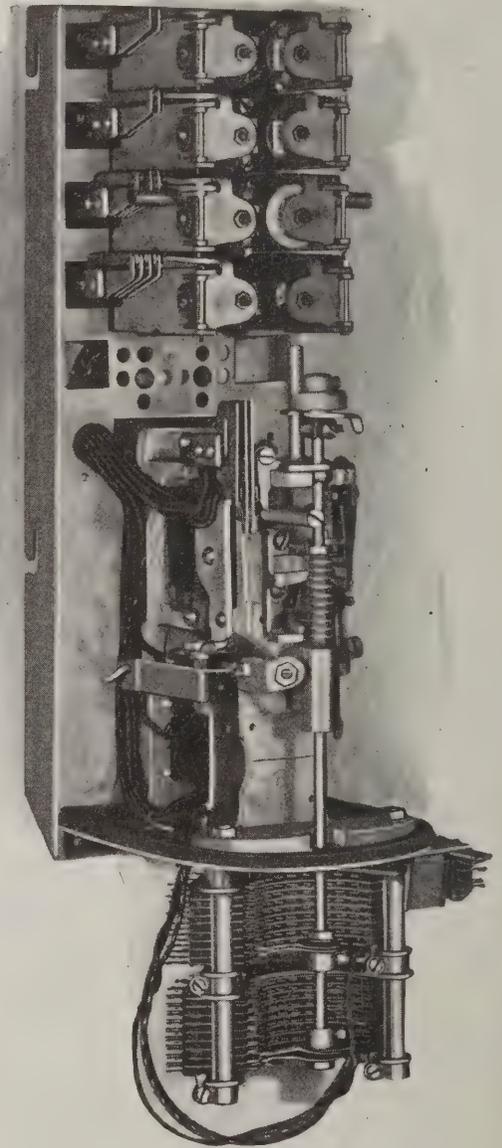
Starting June 1, a new line will be built connecting the points named. The work will require about two months and will cost \$12,000.

*Reliable
Well-designed
Relays*

and

*Sturdy,
Durable
Mechanisms*

*assure the most pleasing
and reliable service and
the very lowest mainte-
nance expense.*



A Proper Balance Between Relay and Mechanical Operation

Here is an interesting and important feature of Strowger switch design. Notice how some of the functions of the connector switch, for example, are performed electrically, by means of relays, and some mechanically, by means of ratchets and pawls.

This is not because of any accident of design. It is the result of a carefully worked out plan, which has stood the test of long experience. Mechanisms are used for the purely mechanical functions, (line and trunk finding,) because they can do this work better and more economically. Relays are used for control purposes and other less mechanical functions because experience has shown that they are better for these things.

In this way, Strowger switch design embodies a combination of relay and mechanical operation which assures the utmost reliability and economy in operation and the lowest maintenance expense.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS
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ASSOCIATED COMPANIES

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International Automatic Telephone Company, Ltd. Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



California Independent Association Holds Annual Meeting.

The annual meeting of the California Independent Telephone Association was held in Los Angeles on Saturday, April 28.

The meeting was called to order by President Charles A. Rolfe, of Redlands, and the roll call showed an attendance of 20 representing 14 companies throughout the state, from the Imperial Valley to the San Joaquin Valley.

President Rolfe made an oral report of the work which had been accomplished during the last year and told of several important matters which are now under consideration, the details of which have not yet been sufficiently worked out to warrant their presentation. Mr. Rolfe spoke of the railroad commission, the change in its personnel and its staff, and the assurances which had been given to them that the telephone association realized the problems with which they were confronted, and would co-operate in the solution of any problem, if asked.

Secretary Ernest Irwin also made a verbal report of his activities during the last three months.

The treasurer's report showed the financial condition of the association to be satisfactory at the present time.

C. H. Lorbeer, of Pomona, moved the appointment of a nominating committee to consider and recommend nominations for officers for the ensuing year. This motion was seconded and carried. The committee was appointed, and reported at the afternoon session.

The replies to President Rolfe's circular letter to members concerning the ravages of white ants in poles were read by the secretary. These are interesting and instructive and will be incorporated into a report at an early date. The general conclusion seemed to be to use "treated" poles only as a preventative of this pest, although even this precaution was found not to be absolutely sure.

B. M. Snowden, of Huntington Beach Telephone Co., reported that he had read a government report which said that the government would soon make compulsory the treating of poles with preservative of some sort as an aid in conservation of timber.

At the afternoon session the nominating committee made its report. Upon motion duly made and seconded, the secretary was instructed to cast a ballot for the following persons to fill offices during the coming year:

President, Charles A. Rolfe, president of the Southwestern Home Telephone Co., Redlands.

Vice-President, Carl H. Lorbeer, manager of the Pomona Valley Telephone Union, Pomona.

Treasurer, P. R. Ferguson, auditor of Interstate Telegraph Co., Riverside.

ELIZA JANE.

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

This morning, as I came down the street, my attention was drawn to two advertisements. The thoughts the advertisers suggested were as widely different as the commodities they advertised.

The first advertisement—"Eliza Jane Bread"—appeared on the side of an automobile truck.

There was no need for the picture of a big, golden brown loaf beneath the words. The reading of the words caused memory to draw for me a mental picture of big, golden brown loaves crackling from the heat as they were removed from an oven, many years ago. Even the fragrance of those loaves was wafted to me from out of the past, and created a desire for the kind of bread that mother used to make.

Farther on down the street, I paused, attracted by another advertisement, an up-to-date washing machine which stood in a window—"Wash-a-Day Smiles."

"What an appropriate name," I reflected, while I watched the machine working away without any effort on the part of its possessor. "Just give it something to do and go on about other duties. No supervision. How fine!" How crude the old-fashioned tub and washboard method of half a century ago seem.

"What matters the cost of the machine," I thought. "It is offset by convenience, dispatch and ease for the user." That is the demand of hurrying Americans, today.

Yes, the machine was rightfully named. The name was positively up-to-the-minute. Now, suppose it had been named, "Eliza Jane Washer." Would that name have attracted my attention? Not pleasantly, if at all, since one does not go along the street reflecting about things which are hard and disagreeable.

The baker sells his bread product by borrowing from the past the bread-baking reputation of "Eliza Jane"; but the washing machine producer does not name his up-to-date washing machine "Eliza Jane."

What kind of telephone service are we advertising today in handling our work as operators? Of course, the modern made switchboard is not universally necessary or possible; but a standard universal service is necessary and possible.

I occasionally hear operators say, "Our patrons do not want us to say, 'Number, please?' and to repeat numbers. Anyway, we just can't train them to call by number."

Girls! Your job—telephone operating—is half a century old. In the beginning, "Eliza Jane" service was given. Do you want to continue giving "Eliza Jane" service after half a century's achievement and experience?

A proverb modernized: Train your subscribers the way they should do and, when they get used to it, they will not depart therefrom.

Executive Committee: L. C. Torrance, Jr., vice-president of Santa Monica Bay Home Telephone Co., Ocean Park; A. Terkel, president and manager, Reedley Telephone Co.; F. H. Wright, secretary and manager, Home Telephone Co., Covina; and T. A. Gould, president and manager, Redondo Home Telephone Co.

After the election of officers the meeting was thrown open for general discussion of vital subjects to the industry, including such matters as franchises, accounting, reports, construction matters and tree trimming.

Prices in the Metal Markets.

New York, May 7.—Copper—Steady. Electrolytic, spot, and futures, 16½@16¾c. Tin—Easy; spot and nearby,

\$44.50; futures, \$44.75. Iron—Steady; No. 1 northern, \$30.50@32.00; No. 2 northern, \$30.00@31.00; No. 2 southern, \$27.00@28.00. Lead—Steady; spot, \$7.50. Zinc—Steady; E. St. Louis spot and nearby delivery, \$7.12@7.15.

New Building and Equipment for Bristol, Tenn.-Va. Company.

A common battery system will be installed in Bristol, Tenn.-Va., before March 1, 1924, Albert Parlett, president of the Inter-Mountain Telephone Co., announced recently.

The company will also have a new building there, Mr. Parlett said. The new home of the company will be a two-story brick building and will contain a basement.

What Is Your Company Doing?

Chats About Company Doings.

By Stanley R. Edwards.

When the Northeastern Telephone Co. completed the rebuilding of its plant and finished its new exchange building in Walthill, Neb., recently, it was given considerable attention in the columns of the Walthill Times—in fact, the story of the rebuilding was given more than a column on the front page.

E. C. Hunt, manager of the company, took one of the reporters for the paper through the exchange, explaining all the new equipment to him; introduced him to some of the operators so that he might realize—and make the readers of the paper realize—what nice, courteous, likable girls they are; and then took him to the office of the exchange and had a pleasant little visit, during which he explained all about the outside plant, the new cable and reconstruction work.

The reporter came away an enthusiastic booster for the telephone company and he wrote a very convincing story of the part the company is taking in the town's progress.

The article related the extent of the outside work that has been done—not forgetting the four miles of underground cable—and described in detail the new Kellogg equipment which has been installed in the exchange.

Some neat compliments were paid to the girls, to Mr. Hunt, and to the company, and this note, designed to stir up the appreciation of the public to what the company has done, was struck:

"It is doubtful if any city of our class in the state has a system so completely up-to-date as Mr. Hunt has given Walthill. . . . Mr. Hunt has not only fulfilled every promise he made to the village . . . he has done far more." All of which goes to show that it pays to make the acquaintance of the editor.

The new switchboard is of the common battery, automatic ringing type, with dark keyshelf features, and has made a big improvement in the service.

It is planned to give attention to the reconstruction of the rural lines as soon as practicable.

Down in Monette, Ark., is a newspaper publisher, C. C. Watson, who is a telephone man also—he is owner of the Inter-River Telephone Co., which operates in Monette, Black Oak, Lake City, Leach-

ville and Manila. He, as a newspaper man, knows the value of publicity, and believes in taking the public into his confidence.

In a recent issue of the Monette Sun-Times, Mr. Watson ran a half-page editorial, in which he "said a few things," under the head of "Marvelous Development of the Telephone."

Figures were first presented showing the growth in stations and capitalization of the Bell system from two telephones



Newly Installed Switchboard in New Exchange Building of Northeastern Telephone Co., Walthill, Nebr.

in 1877 to over 14 million, with its connecting stations, and an authorized capital stock of a billion dollars. Then Mr. Watson gets right down to local conditions and graphically tells the story of the local company and its problems.

"Although the telephone business is now the greatest industry in America, and the only one that places its service within the reach of every class of people," says he, "it is less understood by the public than any other business.

"It is a peculiar business in many respects and in one particular it is different from any other enterprise.

To build and equip a modern telephone exchange, with its lines extended all through the community it attempts to serve, a large amount of capital is necessary.

The great Bell combination has never had difficulty in securing development funds, for the capitalists of the East control it, and 250,000 other stockholders throughout the country are always ready to take the new stock as it is issued.

Although an absolute necessity in business in these modern days, the local Independent companies always have great difficulty in getting the capital at all. When the venturesome investor puts in all he can command, the neighbors and banks laugh and watch his business go to pieces for the want of funds with which to render service to the very people who laugh. Let

a telephone system get in bad condition, and those who should have been the first to assist in perfecting it are the first to make complaint and reflect upon the credit of the company.

A telephone system is not like any other enterprise we know of. When it buys telephones and other supplies and places, this material in use it cannot be resold as a merchant recuperates his bank account.

Here, in the "Wonderful Valley of the Wonder State," here in Monette, Black Oak, Lake City, Leachville and Manila, is an illustration of this condition.

Since the editor of this newspaper is also owner of the telephone system in this section, it is only fair to ask the reader to put as much salt as he likes on the comment here offered.

For 20 years various efforts have been made in this section to give these splendid growing towns a dependable telephone service. Finally the Inter-River Telephone Co. was organized with five stockholders. No mass meetings were held to beg the public to furnish the capital or to even pledge support.

Banks were paid the slow loans they had been carrying on the "junk heaps" that were the predecessors of this company. The American Bell company was paid the sum it had advanced the old individually owned plants, and these plants were consolidated into one system, incorporated and rebuilt from Pekin to Big Lake. New switchboards were installed in each of the five towns, the business districts of each place were cabled and given metallic circuits, and rural lines were built down every public road in the trade territory of each of these towns.

About that time the most disastrous business depression the world ever knew hit this section. The business paths were strewn with wrecks and many of the best men in this valley walked out in search of new fields where they could begin life over again.

The telephone company withstood the crash, rendering practically free service through almost three years of scarce money, still extending its lines—still adding new men and women to its roster of employes—still buying new materials and holding its service up to perfection.

Then came a period of unprecedented development, following a bale-to-the-acre crop and high price. This emergency had to be met. The great Bell system had 250,000 stockholders to call upon and the combined resources of all the great banks of the continent were placed at their command. The Inter-River company, the home company, had one individual only to look to.

In 1922 with bad collections and handicaps innumerable, this company bought and paid for 224 new telephones, built 60 miles of new lines into new communities, met every demand made upon it, and took care of the increased toll service incident to the bumper cotton crop. It had to do it, for it was a public utility dictated to by the state, the federal government and the local authorities of five towns.

Naturally the management 'knit its weary brow' when it realized, after all these difficulties and tribulations, that the very men and institutions in this section that should be most earnestly working for its success are still figuratively 'counting the days' when this company too, like its predecessors, will croak and give it up.

But, this is the American way of doing things. So be it!

The local company, however, is just now preparing to lay out its summer work. It has ordered 200 more telephones for the long waiting lists, and single handed the one owner plans to not only keep pace with the demands but even exceed the record of the 'Octopus' is excellence of its service.

Pardon this resort to 'personal privilege' and just add more salt. Be assured, however, that Buffalo Island will continue to have the best of everything, including the only perfect rural telephone system in the entire country."

There's the fighting spirit that will not down. If more of the owners of the smaller plants had the spirit and optimism of Mr. Watson, there would be a scarcity of telephone plants "for sale." Mr. Watson has a belief in his community, belief in his business and belief in himself that every real telephone man admires.

The Mutual Telephone Co. celebrated the first quarter century of its existence in Erie, Pa., with a banquet April 19. The affair was also the fifth annual banquet of the company for its employes, an event that rivals the summer outing of the organization in its attractive features for their entertainment.

About 140 persons, practically all the employes of the company, together with the officers, attended the banquet and enjoyed the delightful informal program which was followed with a dance.

Speeches by A. A. Culbertson, president; John Z. Miller, manager, and music and reminiscences were followed with the introduction of a novelty feature, initiation into the inner circle of the mystic "Four Out of Five," and along with a good deal of fun brought out the principles of the telephone business in detail, together with the instructions given new employes in the school. "Service" was given as the password and "MTCO" and "four out of five" as the mystic symbols.

Horace Fenton was the employe who went through such a harrowing experience that he was left with a permanent wave. As a newly-made member of the Mutual Telephone Co., he swore to give service to the public under pain of having his wires crossed, his fuses burned out, his diaphragm buckled and his joints pulled apart.

Having laid himself open to this dreadful doom, he was led from the room to be returned for examination a few moments later muffled in a sheet and carefully secured with telephone wire. When finally unmasked, it was found his hue had turned to a chocolate brown and his straight brown hair to a crinkley black. In fact, he had so far taken on the appearance of a gentleman of color that he got lost among the waiters and was not seen afterwards.

Reminiscences were given by "The Old Guard," M. Victor Wright, who has been with the company 21 years; Harrison Gingenbach, wire chief, 17 years; Harold Noble, 16 years, all of whom married Mutual "hello" girls.

W. S. Vivian, of Chicago, representing the Automatic Electric Co., was guest of the company and spoke on the development of telephone equipment.

General Manager John Z. Miller in his address directed attention to a number of interesting facts regarding the company and the success it has achieved. Among other things, he said:

"This is the fifth occasion of this kind, but it marks a new milestone in the history of our company, for we celebrate our 25th anniversary.

It is worthy of remark that for the full quarter of a century we have been operating there has been no breakdown of equipment nor of human service that has interfered with the continuity of our operation. In all of the 13,140,000 minutes that have elapsed since we opened our first exchange, the people of Erie have had continuous, dependable and superior service, without interruption from any cause whatsoever.

In 25 years we have cut over to four new switchboards. The automatic equipment we are now using is the fifth board we have installed. That was cut into service five years ago, but it has already lasted the average lifetime of the four previous boards.

We started in three small rooms on the fourth floor of the Downing Bldg., now occupied by the Trask, Prescott & Richardson Co. The switchboard was a flat table arrangement with four upright cabinets containing drops. It seems now to have been a crude affair, but there was nothing better made at the time. With it we were able to give very good service. Four hundred lines was the capacity of the board.

Up to the time of the Mutual Telephone's arrival on the field, the Bell

company had operated 14 years in Erie and had only 450 subscribers. We thought if we could equal that number in two or three years we would do well. In less than a year we had outstripped our competitor.

In three years we had moved to our own building across the street, and have grown by leaps and bounds ever since, until now we are operating more than 16,000 telephones in Erie city and county, with three branch exchanges in the city, three outside exchanges and a hundred miles of toll line. Next to Philadelphia and Pittsburgh, our Erie exchange is the largest in Pennsylvania.

Already we have outgrown our main exchange, to which three separate additions have been made to the original building. As you all know, we have purchased recently an adjoining property facing on East 10th street, where we will erect a strictly up-to-date office and exchange building.

It is gratifying to know that we are connected with an organization that bears a national reputation of being one of the most successful Independent telephone companies, for each one of us has had a part in its success. Let us pause and inquire into the secret of our success. Two things have contributed largely to this end:

First, the square-deal policy of the company. The Mutual company has always considered that good service comes first. The public is entitled to the best service that can be given. Time and again equipment that was far from worn out was laid aside for more modern apparatus. In no other line has there been such a rapid advance, requiring constant change to give our subscribers the advantage of the latest improvements.

Then our rates have been kept down to the lowest figure consistent with good service and a fair return on the money invested.

That our employes have been satisfied and happy is proved by the small turnover and the large number of those who have been with the company for many years.

The second reason for our success is our corps of faithful, loyal, interested employes. There is a spirit of teamwork in this organization that is hard to beat.

It is this feeling of co-operation—all of us working for one end, the highest class of service—that has given us the highest standard we enjoy among the institutions of Erie."

In keeping with the unique ideas carried out in the entertainments, the printed program carried a print of the various centers of the company, and the inner surface carried a replica of the first Mutual subscription list, less than 200 names.

Flowers decked the banquet tables and there were attractive favors for both men and women.

The New Type of FIRST AID for Telephone Companies



WHY COMPACT EMERGENCY DRESSINGS MARK A NEW ERA IN FIRST AID AND ARE BEING ADOPTED BY TELEPHONE COMPANIES EVERYWHERE



**C. E. D. Kit
No. 24
for large groups.
Dimensions
9 1/4 x 9 1/4 x 2 3/8
inches**

A COMPACT Emergency Dressing is an emergency treatment, complete and ready for instant application. The dust-proof packets are uniform in size, with complete illustrated instructions on the wrapper. The compresses or vials they contain are reduced to the smallest practical dimensions, but are adequate for the emergency for which they are designed. These packets are fitted in cases of solid steel and there is a C. E. D. Kit for every purpose, a Compact Emergency Dressing for every emergency. From telephone operators to field workers who may find themselves many miles from proper surgical attention, C. E. D. Kits will give the necessary First Aid, will minimize chances of infection or other serious results, lost time, waste of materials and cost of First Aid generally.



COMPACT Emergency Dressings effect more than a monetary saving. They give an approximation of surgical cleanliness, make possible the promptest application of dressings and remedies, when minutes may mean life or death, often saving an employee from partial or complete disability, or making it possible for him to return to work within jig time.

This illustrates the relative size of a Compact Emergency Dressing unit. A few shelves will hold adequate supplies of Dressings for replenishing those used in the various kits, over a period of six months. We are supplying this type of Dressings to the largest telephone system in the world.

Send for our illustrated booklet T 5

FIRST AID SPECIALTY COMPANY

35 NASSAU STREET

NEW YORK

First Aid Equipment for Companies

The Most Modern Type of First Aid Equipment Especially Adapted to the Needs of the Telephone Industry—"Individual" Idea of Treatment In Cases of Emergencies—The Unit Size of Package and Its Many Advantages

By Douglas H. Smith

Prior to 1920, first aid kits had consisted of an assortment of roller bandages, gauze and one-yard rolls, adhesive plaster, burn ointment, splints and bottles of boric acid solution, aromatic spirits of ammonia, castor oil, iodine, etc. This list of contents represented a "gun-shot" assortment to cover the entire range of industrial accidents regardless of the class of risk.

Many of the items were not required for a particular hazard. The size of the kit was adjusted to hold a greater or less number of items mentioned. No thought was given to any special assortment of dressings and treatments to meet only the accidents which might occur in the hazard of the specific work.

With this type of first aid equipment, it was too often common practice to use portions of gauze or bandages left over from previous dressings. The replacing of open or partly-used packages, for purposes of economy, left fragments which were inevitably contaminated.

Realizing that a first aid equipment, which would offer a close approximation of surgical cleanliness, was to be desired, there was developed the "individual" idea of treatment. This meant a dressing or treatment for a specific type of injury; sterile—not having been touched after leaving sterilizer until applied to the injury—complete in itself, adequate, yet with nothing left to be put back. Thought was given to the best method of packing, with the result that a unit size was set.

Each dressing or treatment was placed in a carton of this unit size or a direct multiple thereof. This offered interchangeability of the dressings, so that, with a given size of container, the assortment of contents could be selected to meet any particular risk.

The unit size of container offers another important feature. It is impossible for the kit to become "mussed-up." Like the titles of books on a shelf, the label on

each carton is instantly visible. This also simplifies inspection.

During 1920 and 1921 the accident prevention committee of the National Electric Light Association made an exhaustive study of all types of first aid kits then on the market. The result of this study was the adoption of the "individual" idea, in which each dressing is a complete treatment for a particular injury, sterilized and sealed in individual containers on which are full directions for applying it.

It should be scarcely debatable that a sterilized dressing, made up with compress and bandage attached, is far more desirable than that obtained from the conventional first aid kit.

This "individual" idea is also incorporated in the first aid kits used by the Bell telephone system.

Emergency dressings of the "individual" type are primarily intended for use by men who have no access to the services of physician or nurse. They are not intended to take the place of proper surgical dressing material used under favorable conditions in an adequately equipped dispensary or hospital.

These dressings have a very important place in industry in the equipment of workers in the field as, for example, certain classes of public utility workers and workers of other industries not segregated in plants. They also have a place in establishments not providing the services of a competent medical personnel on the premises.

Assortments are selected to meet the hazards of the various divisions of work in the telephone industry—construction, maintenance, and traffic. These are packed in durable steel boxes.

The size of the kit is established by the frequency of the accidents and the number of men who depend on the kit for first aid treatment.



First Aid Kit Especially Adapted for Use of Installers, Troublemakers, Linemen and Inspectors.

One illustration on this page is of a kit especially adapted for the use of:

- (1) Installers;
- (2) Troublemakers;
- (3) Linemen; and
- (4) Inspectors.

An intermediate size of kit is available which is ideal for use by:

- (1) Cable splicers;
- (2) Drop wire installers; and
- (3) Heavy construction gangs.

There is a special assortment for men working in the underground.

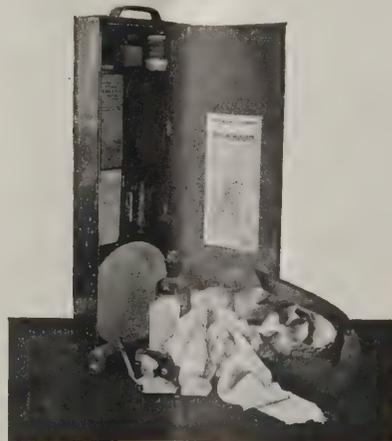
In the central office, a kit with a suitable assortment of internal remedies, to meet traffic conditions, will be found to cut down "lost time." The care of this kit should be entrusted to the matron in the restroom or to some member of the traffic personnel whose judgment can be fully trusted.

Wisconsin has recognized the necessity for first aid equipment, and has incorporated its rulings in its electrical code of October 1, 1922:

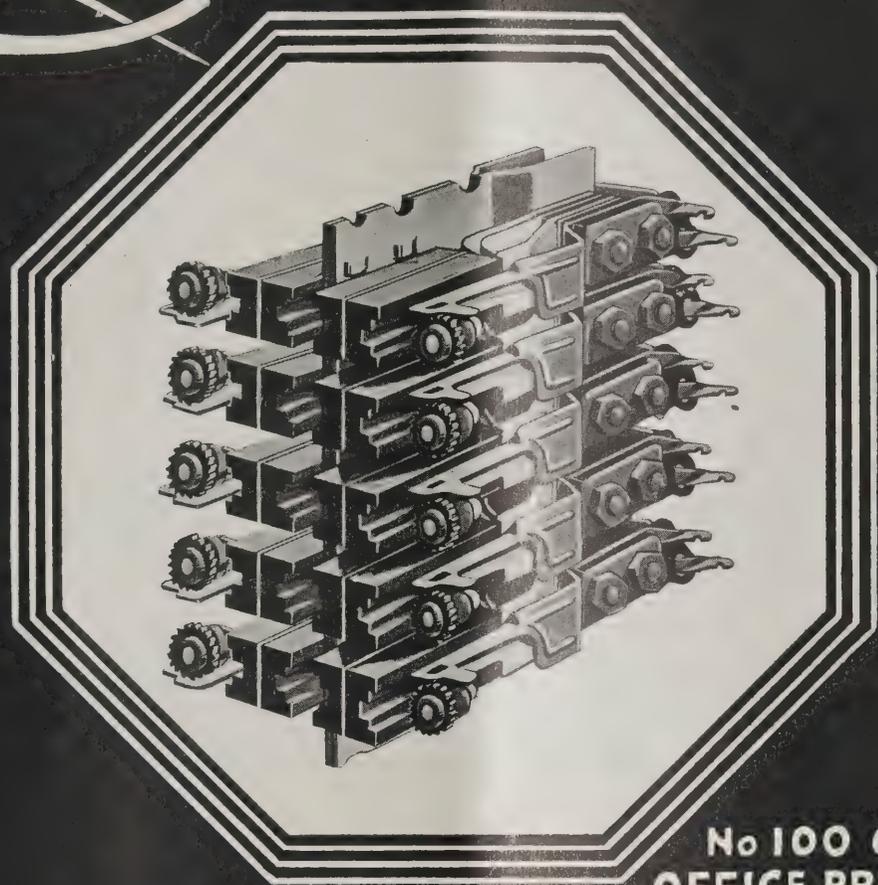
Order 1406.—Protective Devices.

"(a) There shall be provided in conspicuous and suitable places in electrical stations, telephone exchanges, testing departments, and line construction and repair wagons, a sufficient supply of suitable protective, first aid, and fire extinguishing devices and equipment, to enable employees to meet the requirements of these orders.

"Such devices and equipment shall be periodically inspected or tested to insure that they are kept in good order."



A Study in Contrasts—The Compact Emergency Dressing Kit and the Conventional First Aid Kit—Both of These Kits Have Been Used.



No 100 CENTRAL
OFFICE PROTECTOR

Indispensable to
**LIFE
PROPERTY
SERVICE**

BOOKLET ON REQUEST

COOK ELECTRIC COMPANY ... CHICAGO

For heavy construction a larger kit in a No. 20 gauge steel case is available. This is designed for use in:

- (1) pole line construction;
- (2) subway construction; and
- (3) cable installation—
 - (a) underground cables;
 - (b) aerial cables; and
 - (c) building cables.

For the use of underground gangs a



Kit for Use of Heavy Construction Gangs. Special assortment of first aid dressings is prepared.

Wherever the "individual" idea has been presented to safety engineers or committees, it has met with hearty approval. The list of companies now using this type of kit and dressing should be proof of the superiority of the idea. Industrial surgeons are also heartily in accord with the simplicity of the emergency first aid treatment which these dressings offer.

The idea of a dressing which has not been touched until applied to the injury, bringing an approximation of surgical cleanliness into first aid treatment, appeals to the surgeon. He knows the danger from infection. The injured man reaches him with a dressing which has adequately protected the injury until the permanent dressing is made.

The question of maintaining the kits 100 per cent efficient by keeping their contents complete has also received careful consideration. A uniform package container is available, holding ten single-unit cartons of dressings. This simplifies the storing of refills.

The "individual" idea is the last word in first aid equipment, eliminating the chances of infection from dressings soiled by exposure to dust and dirt or contamination by being handled in making a previous dressing. Rapid and effective emergency treatment is assured, reducing the possibility of long or permanent disability of the injured person.

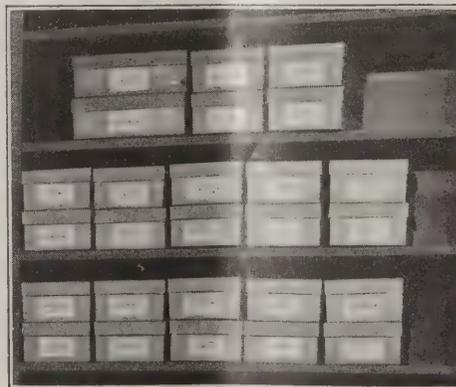
Working on Scheme for European Long Distance Telephony.

The scheme for a through European telephone system which received a fresh impetus from Frank Gill in his presidential address to the Institution of Electrical Engineers last winter, is being given consideration by engineering experts from many of the chief countries in Europe. The International Technical Committee on Long Distance Telephony held its first meeting on March 12 at the Ministry of Posts and Telegraphs and Telephones in Paris. M. Dennery, the French inspector-general of posts and telegraphs, was elected president.

The conference, which is purely technical and the preliminary of a general European conference to be held later, appointed a number of sub-committees to discuss particular classes of questions in detail. On the present committee the following six countries of Western Europe are represented: France, Great Britain, Belgium, Italy, Spain and Switzerland.

The committee concluded its labors at Paris on March 20. It was unanimously decided, with a view to attaining complete uniformity both in technical theory and practical working, to favor the establishment of a permanent international advisory commission on international telephonic communication on which all the European countries should be represented, and having a permanent secretariat in Paris which would also be an international bureau of technical information.

The committee agreed upon the principles which should govern the construction, development and upkeep of an international telephone system, and drafted a scheme for the development work considered immediately necessary, to be completed in 1923 and 1924. At a subsequent meeting to take place this year the com-



View of Stock Shelf Showing Uniform Package Containers.

mittee will draft an extensive ten years' program of development.

As a basis for the determination of the quality of transmission to be provided on an international system of trunk telephone lines, the preliminary committee agreed to

adopt standard specifications for: (1) sub-station apparatus, that is to say, the subscriber's transmitter, receiver and induction coil; and (2) an international transmission unit of reference.

In both cases these specifications will conform with present practice in Great Britain. The unit of reference has been agreed as the equivalent of one mile of standard cable having an attenuation constant of 0.106 at a frequency of 800 cycles per second.

The quality of speech transmission to be provided for international service in general is to be not inferior to the audibility obtained in a circuit consisting of two standard telephones separated by 32 miles of international standard cable. In special cases—for example, those where the volume of traffic will not justify the provision of expensive high-grade lines—a tolerance of not more than six miles of standard cable will be admitted.

The desirability of establishing a network of underground cables for international services was agreed, but having in view the present state of the art, it was decided to regard 1,000 miles as the limiting distance for telephone lines wholly in cables. In cases where greater distances are involved, aerial lines will be provided at the outset.

Telephone repeaters with thermionic valves will be used both on aerial line and on cables, and it was agreed that repeaters should be so designed as to give a constant amplification factor over the whole range of frequencies compare within the limits of the speech band. Where distortion correcting devices are necessary, they will be provided as independent units.

The various administrations represented at the conference have agreed to undertake special study of the regulations required to protect long distance telephonic communication from disturbance by electrical power transmission systems.

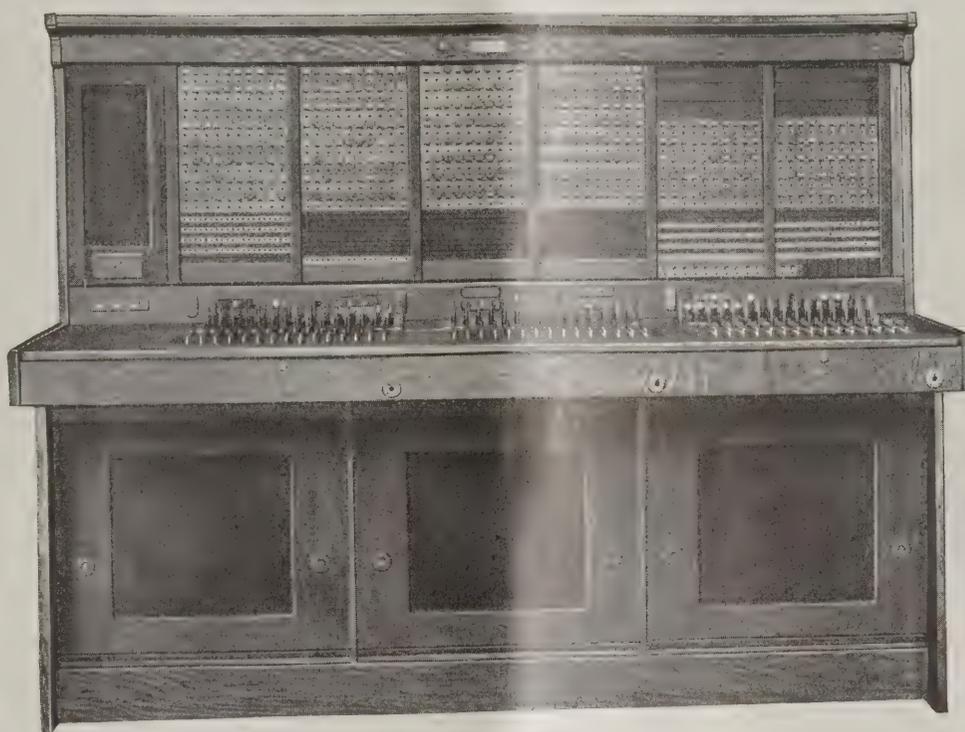
Cuban Company Stations Increase 10 Per Cent Last Year.

Stockholders of the Cuban Telephone Co. held their annual meeting April 18, New York City, in the offices of the International Telephone & Telegraph Co., which owns 92 per cent of the Cuban company common stock.

The report for the year showed a net increase of 9.5 per cent in telephones Cuba. Long distance revenue showed increase of 16 per cent steady growth was reported over the Havana-Key West submarine cables, which are jointly owned by the International company and the American Telephone & Telegraph Co., most of this traffic being between New York and Havana.

Radio work by the company, the report stated, resulted in sending messages from Havana, which had been clearly heard in Alaska.

Assuring High Service Standards at Brodhead, Wis.



The switchboard shown herewith, and equipped as outlined, was installed May 1st by the Brodhead Telephone Company of Brodhead, Wisconsin. It is at present arranged for magneto service only, but with double lamp supervision and the busy test feature. Each position has fifteen cord equipments, so arranged that they may be converted to full universal type when desired, by adding two relays to each cord circuit. A selective key for harmonic ringing is a part of each cord equipment.

The first position is multiplied to the third, and the third position to the first. Equipment mounting space is so arranged that common battery equipment may be installed, either multiple or non-multiple type. The general plan of the switchboard allows great flexibility and the investment, after being completely cut to common battery, is no larger than if common battery had originally been purchased.

Battery for the operators' transmitters, line and supervisory pilots, and supervisory lamps, is supplied from the same storage battery. The conditions that caused the Brodhead Company to decide on this type of equipment, exist in hundreds of other exchanges throughout the country. Perhaps yours is one of them. Think it over and write us.

Monarch Telephone Manufacturing Co.

GENERAL OFFICES AND FACTORY

951 W. Van Buren St., Chicago, Ill.

Tel-Electric Co., Houston, Texas

DISTRIBUTORS

Electrical Supply Co., New Orleans, La.

Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Coker Electric Supply Co., Los Angeles, Cal.

Personal and Biographical Notes

W. S. Vivian, formerly head of the department of public relations of the Automatic Electric Co., Chicago, on May 1 became associated with the Middle West Utilities Co., Edison Building, Chicago.

Mr. Vivian will be engaged in employe



W. S. Vivian, Well Known Throughout the Telephone Field, Is Now Associated With Middle West Utilities Co.

and public relations work for the company, whose subsidiaries serve directly or indirectly more than 900 communities located in 15 states with electricity, gas, transportation and other utility services. While his new work takes him out of the telephone field, he will be always glad to see and hear from his many friends formed during the many years of his connection with the telephone industry.

Mr. Vivian first entered the telephone field in 1899, with the old Michigan State Telephone Co. Since 1902 he has been connected with the Independent movement—first, with the Citizens company of Grand Rapids, Mich., and two years later with the Michigan association. From 1913 until 1920 he was secretary-treasurer of the national organizations. Since 1920 he has been a vice-president of the United States Independent Telephone Association.

In 1918 in France as captain in the Signal Corps, Mr. Vivian arranged for the care and disposition of the first groups of American telephone operators sent over to handle the telephone traffic back of the lines.

For the past three years Mr. Vivian has been associated with the Automatic Electric Co., aiding telephone companies to improve their public relations. He has also conducted many successful operators'

schools; in fact the first operators' school that was held was under his supervision.

Mr. Vivian was one of the original members of the Illinois Committee on Public Utility Information and in his new work again takes membership on the committee.

During the many years of Mr. Vivian's connections with the Independent industry, he became acquainted with telephone men and women all over the country and enjoys an extremely wide acquaintance. His many friends wish him great success in his new association, for which he is particularly well adapted by experience and temperament.

Frank B. Insley, of Liberty, Mo., manager of the Liberty Telephone Co., was recently elected president of the Liberty Chamber of Commerce.

Mr. Insley believes in taking active part in civic affairs and his election to head the local commercial organization is evidence of his standing in his community. It is notable that telephone men are more and more taking a leading part in local civic activities.

A. N. Van Camp, of Highmore, S. D., has purchased the exchange at Faith and is operating it under the name of the New Faith Telephone Co. Besides making the plans for overhauling and improving the system there and managing the company, he continues to manage the Hyde County Telephone Co. at Highmore and keep it in smooth running order.

Mr. Van Camp admits that the job keeps his head and his hands quite busy, but he also finds time to carry on his duties as a member of the traffic committee of the South Dakota Telephone Association. In that connection he will have to take part in conducting some of the operators' schools during the summer.

W. T. Williamson, division manager of the Chesapeake & Potomac Telephone Co. at Charleston, W. Va., for the last 15 years, was elected vice-president of the company at a meeting of the board of directors held in New York City a short time ago.

Mr. Williamson has spent practically all of his adult life in the business of transportation or communication, and for the last 21 years has been connected with the telephone company, during which time his headquarters have been at Charleston.

He was born at Marietta, Ohio, in 1871, attended school in Ohio and West Virginia, and became a student at the Ohio Wesleyan University at Delaware, Ohio.

After finishing college he secured a position with the Chesapeake & Ohio Railway Co., which he held for 13 years.

He was at various times agent at White

Surphur and Montgomery, claim agent with offices at Charleston, and passenger and ticket agent at Charleston.

He resigned from the latter position in 1901 and became manager of the Charleston exchange of the Southern Bell company which later sold its West Virginia holdings to the Chesapeake & Potomac.

Since that time his ability has brought him successive promotions. He was superintendent of the commercial, traffic and plant departments, and was finally promoted to division manager. He has been division manager for several years.

Mr. Williamson is a member of the board of trustees of the First Methodist Episcopal Church of Charleston, of the Sunday school, and is a York and a Scottish Rite Mason and Shriner.

W. L. Ford, president and manager of the Eldorado Telephone Co., Eldorado, Ill., became a stockholder in the Independent Telephone Co. of Harrisburg recently and was made secretary-treasurer and general manager of the company.

Upon assuming charge, Mr. Ford immediately went to work making plans to rebuild and improve the Harrisburg system, and to put in additional facilities to give better service to the patrons. There are 800 subscribers in Harrisburg.

Mr. Ford has proved his ability as



W. L. Ford, President of the Eldorado, Ill. Company, Has Taken Active Charge of the Company at Harrisburg.

telephone manager, by putting the Eldorado system in splendid shape and greatly improving the service. He knows the telephone business thoroughly and believes in efficiency and service.



The exacting demand made upon telephone batteries is twofold. First, they must work faithfully while the receiver is off the hook; second, they must cease their activities the instant the receiver is hung up, in order to last a sufficiently long period. Columbia Gray Label Batteries combine these two requisites to the utmost degree and therefore cost less per month of service. Fahnestock Spring Clip Binding Posts at no extra charge.

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Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Bell Rates Reduced May 1 in Various Cities in Georgia.

Telephone rates in Atlanta, Savannah, Macon, Augusta and Columbus, Ga., were reduced May 1 by the Southern Bell Telephone & Telegraph Co., in compliance with an order issued by the Georgia Railroad Commission on April 10.

These five cities bore the brunt of the increased rates allowed by the commission on March 1, 1921, and they in turn get most of the reduction. There are minor reductions in the other cities of the state.

The commission estimated the reductions would amount in the aggregate to \$328,235.28 a year, on the basis of the company's revenue in 1922.

This, the company insists, will cut its earnings far below 8 per cent on the valuation of its property used in Georgia, which it contends is a fair return, according to the commission's findings in other rate cases.

Nevertheless, the company announced that it would not resist the commission's order, but would make the reductions as ordered.

The old rates and the reduced rates in the five largest cities are:

ATLANTA.		
Business:	Old rates	New rates
One-party	\$10.50	\$10.00
Two-party	9.80	9.00
Residence:		
One-party	5.00	4.50
Two-party	4.00	3.50
Four-party	3.50	2.75
MACON AND AUGUSTA.		
Business:		
One-party	\$ 6.60	\$ 6.25
Two-party	6.00	5.75
Residence:		
One-party	3.90	3.65
Two-party	3.30	3.30
SAVANNAH.		
Business:		
One-party	\$ 7.50	\$ 7.00
Two-party	6.90	6.25
Residence:		
One-party	4.35	4.00
Two-party	3.75	3.25
COLUMBUS.		
Business:		
One-party	\$ 6.25	\$ 6.00
Two-party	5.60	5.25
Residence:		
One-party	3.75	3.50
Two-party	3.10	2.75
Four-party	2.50	2.00

Carroll County, Ill., Company Authorized to Buy Mutual.

An order issued by the Illinois Commerce Commission on April 12 gave the Mt. Carroll Mutual Telephone Co. authority to sell and the Carroll County Independent Telephone Co. authority to purchase the entire telephone property of

the Mutual company in Mt. Carroll and vicinity. The purchase price mentioned is \$14,500.

At the same time, the Carroll County company was given permission to execute and deliver its first mortgage or deed of trust, dated May 1, to the First National Bank of Savannah, as trustee, for the purpose of securing a total issue of \$300,000 in bonds.

It was also authorized to issue and sell \$90,000 principal amount of its first mortgage bonds, Series "A", bearing 7 per cent interest.

The Carroll County company was ordered to make no change in the present rates without order of the commission.

I. C. C. Authorizes Mountain States to Take Rural Lines.

The Mountain States Telephone & Telegraph Co. received permission from the Interstate Commerce Commission on April 25 to purchase the Peoples Telephone Co., a small concern operating in Laramie County, Wyo., which has been connected with the purchasing company's lines.

No Laws Passed Materially Affecting Telephone Industry.

The Missouri Telephone Association reports, under date of May 7, that the session of the Missouri General Assembly, recently adjourned, did not pass any law materially affecting or regulating the telephone industry in the state.

At the convening of the session, however, the outlook was not bright as there seemed to be a sentiment among the membership favoring restriction on telephone companies as well as on other classes of public utilities.

Several bills were proposed abolishing the Missouri Public Service Commission or curtailing its powers, but all of these bills were defeated.

The only changes in the present commission law were those brought about by two bills introduced by Representative Maxey of Bates County. House bill No. 587 makes the counsel of the commission the representative of the public in all rate hearings before the commission. House bill No. 588, also by Mr. Maxey, requires the utilities to pay for audits and appraisals of property when the same is directed by the commission. The fees thus collected, to the sum of \$125,000 may be used for expenses of the commission during the next two years.

Senators Cave and McCawley introduced and secured the passage of senate

bill No. 232, an act to repeal the tax commission law, and senate bill No. 337, an act providing for the department of revenue and disbursements to take the place in part of the tax commission. Both bills were vetoed by the governor, but the assembly later appropriated money for the tax commission so it will continue to function for two years.

A number of what might be called "freak" bills, detrimental to the utilities interests were started on their way, but none of them were passed.

Hearing in Northwestern Bell's Nebraska Injunction Suit.

The injunction suit brought by the Northwestern Bell Telephone Co. to prevent the Nebraska State Railway Commission from enforcing an order eliminating the 10 per cent surcharge on exchange tolls has reached the stage where the taking of testimony has begun. The case was begun Monday, May 7, at Omaha before Master in Chancery Dunham, named by the court to make findings of fact and conclusions of law and present these later for action by the court.

The first proposition taken up deals with the 4½ per cent contract with the American Telephone & Telegraph Co., under which some \$18,000 a month is sent from Nebraska to the New York Bell headquarters as license fees. The company has summoned a number of A. T. & T. men to put into the record testimony in support of the reasonableness of this charge by reciting what return was given in the way of service, invention, research and the like, by which the Northwestern profits in many and varied ways.

The commission proposes to attack the reasonableness of this contract, and in making it has taken advantage of the investigations and decisions of other state commissions. The attorney for the commission, Hugh Lamaster, says that it is admitted that these services performed by the parent company are valuable, but that it is not willing to concede, nor does it believe, that they are worth the price demanded by the American Telephone & Telegraph Co., which owns all but a few shares of the Northwestern Bell.

The agreement is that half of the hearings shall be held in Lincoln for the convenience of the commission and the other half in Omaha, where access to Bell records is easy. The case is expected to continue for several weeks.

The railway commission is preparing to actively fight the claims and figures of

he Bell. It is in much better shape to
o so than it looked as though it would
e a few weeks ago.

The governor's opposition to the com-
mission was represented in an effort to
eny it only the barest appropriation, and
ie won in the house. The senate, how-
ver, added \$50,000 to the \$85,000 the
governor was willing to give. Being an
ncrease over the governor's budget rec-
ommendation a three-fifths vote in each
ouse was necessary. This was finally
ecured, and the governor signed the bill.

**Only Three Bills in Nebraska Leg-
islature Become Laws.**

Only three new laws affecting the tele-
phone industry were passed by the Ne-
braska legislature, which has just ad-
ourned after a session of four months.

One of these was to keep the Lincoln
company from closing its, Endicott ex-
change and giving service from two ad-
joining towns. The town is too small to
pay remunerative rates, and the people de-
clined the opportunity offered to buy the
plant back. Instead they had a law passed
that provides that no telephone company
operating ten or more exchanges may close
an exchange unless 60 per cent of the
patrons for the preceding six months peti-
tion for that to be done and it gets the
permission and order of the state railway
commission. The company will ask for
increased rates shortly.

Another law was the Osterman bill,
H. R. 598, which was killed no less than
three times in both houses, but which
finally became a law. It was resurrected
in the senate during the closing hours
through the efforts of United States Sen-
ator R. B. Howell, who believes that the
only way to restore competition in the
telephone industry is to prohibit the state
railway commission from making other
than maximum rates, and allowing the
companies to make any lower rates they
please. The bill was signed by the gov-
ernor.

The third law amends the section fixing
commissions on toll messages at 15 per
cent on outgoing and 10 per cent on termi-
nating, by making these the minimum com-
missions, and permitting the companies to
negotiate or the state railway commission
to order higher compensation.

**Asks Higher Rates as Only Had
2½ Per cent Return.**

The Daykin Telephone Co. has asked
authority from the Nebraska State Rail-
way Commission to charge an additional
25 cents a month for service; \$2.50 for
business individual, \$1.50 for residence
individual and \$1.25 for farm service. The
company says that the present rates have
netted but 2½ per cent return on the
actual investment for the past two years.

The company has also asked for per-
mission to issue \$25,000 stock in addition
to the \$10,000 now outstanding. It finds

it necessary, because of the electric trans-
mission line development with its high
voltage, to rebuild its rural lines metallic
instead of grounded, and the added stock
is to finance this and also turn into stock
the present company surplus of \$3,685. It
also has a depreciation reserve of \$4,847,
and an equipment investment of around
\$15,000.

**Business Rate of \$2.50 Authorized
for West Va. Company.**

The Silver Hill Telephone Co., operat-
ing in Wetzel and Marshall Counties, has
been given authority by the West Vir-
ginia Public Service Commission to estab-
lish a rate of \$2.50 for business tele-
phones. The order was issued April 24.

The company has 28 subscribers, all of
whom have private telephones. Recently
a number of oil and gas companies have
commenced business in the section served
by the company and have made applica-
tion for office telephones. It was shown
at the hearing on the application that
these companies were willing to pay a
rental of \$2.50, and the commission de-
cided that the charge is not unreasonable.

**Rates Only Allowed 2 Per Cent for
Depreciation—Increased.**

A schedule of increased rates and new
classifications were authorized for the
Bristol Telephone Co., of Bristol, by the
Wisconsin Railroad Commission on April
27. The company has been charging \$12
per year for service on multi-party lines
when the instrument is owned by the com-
pany, and \$10 when the subscriber owned
all of the instrument except the transmit-
ter and receiver. The new monthly rates,
which went into effect on May 1, are:

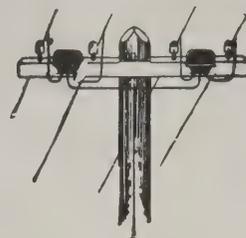
Business, one-party	\$2.50
Business, two-party	2.25
Residence, one-party	2.25
Residence, two-party	2.00
Residence, four-party	1.75
Rural, multi-party	1.75

The business and residence rates are for
service within one-half mile of the ex-
change. For each additional mile the rates
are increased as follows: One-party line,
75 cents for three months; two-party, 50
cents; four-party, 25 cents.

Subscribers owning that portion of their
instruments exclusive of the Bell talking
set will be entitled to a reduction of 25
cents.

The Bristol company's switchboard is
of the magneto type with a capacity of 320
lines and it serves at present 382 subscrib-
ers. The local lines and a number of the
rural lines are metallic and the material
has been purchased to make the remaining
lines metallic.

The book value as of December 31, 1922,
was shown to be \$27,730. While this
seemed rather high for the number of sta-
tions, it was accounted for by the large
amount of cable installed. The commis-



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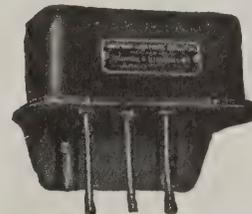
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sion used \$30,000 plant value as a basis for rates in this case, having added to the book figures a sum to cover the work still to be performed.

The operating revenues for 1922 totaled \$5,270, and the expenses—including \$500, or only 2 per cent, for depreciation—amounted to \$4,916. The commission allowed 5½ per cent of the rate value, or \$1,650 per year, as the proper depreciation reserve. The items listed in the operating expenses appeared to be very low, and the commission doubted that such moderate expenses could be maintained.

Prohibit Restoration of Exchange as Unnecessary Expense.

An order prohibiting the rehabilitation of an exchange was issued on April 26 to the Farmers Telephone Co., of Beetown, by the Wisconsin Railroad Commission.

At the annual meeting early last year the stockholders went on record for the restoration of the Burton exchange and the board of directors later passed a similar resolution. However, a petition against doing any work on the Burton exchange was filed by T. S. Metcalf and 25 other persons.

At the hearing it developed that since the restoration of the exchange was first agitated, a metallic circuit had been installed between Cassville and Potosi, and that the subscribers who were formerly connected to the Burton exchange are now served for the most part by the Cassville and Potosi centrals. All who appeared at the hearing were in favor of abandoning the Burton exchange.

For some time the Farmers company has been engaged in the very necessary work of rehabilitating its system and there is still a great deal of work to be done. It therefore appeared that to restore the Burton exchange at this time would be unwise, as it would delay the more needed improvements and would put an unnecessary expense on the company.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

April 25: Mountain States Telephone & Telegraph Co. authorized to purchase the Peoples Telephone Co., which operates in Laramie County, Wyo.

CALIFORNIA.

April 20: Annual report filed by California Telephone & Light Co., which operates in Santa Rosa, Calistoga, Sonoma and vicinity.

May 3: Hearing held on application of Huntington Beach Telephone Co., to increase rates, before Examiner Williams at the city hall, Huntington Beach.

May 3: Hearing held at Huntington Beach in case of City of Huntington Beach vs. Huntington Beach Telephone Co.

May 9: Hearing held at Kerman on application of Kerman Telephone Co. for a certificate of convenience and necessity to extend its lines into Biola.

ILLINOIS.

May 9: Hearing held at Chicago on

application of A. Haverstick and others for an order requiring the Illinois Bell Telephone Co. to furnish services in or near the city of Rock Falls.

May 9: Hearing held at Chicago on citation issued to the Illinois Bell Telephone Co. to show cause why the rates for service from the Chicago exchange should not be reduced.

May 10: Hearing held at Chicago on application of the Belvidere Telephone Co. for increased rates for service in Belvidere.

GEORGIA.

April 10: Order entered reducing rates of Southern Bell Telephone & Telegraph Co. in various cities.

KANSAS.

April 5: Consolidated Telephone Co. given permission to put into effect the following schedule of rates at Oberlin and Colby: Business, one-party, \$2.75; residence, one-party, \$1.75; rural switching service, 50 cents; desk sets, 25 cents; business extension sets, \$1.00 extra; residence, 50 cents; extension bells, 15 cents.

One-party rural subscribers will pay in addition to the published rate, 25 cents per month for each one-fourth miles or fraction thereof, air line distance, between city limits and subscriber's station.

April 5: Authority granted the Consolidated Telephone Co. to abandon its exchange at Clayton and operate subscribers' lines from its exchange at Norcatur; to abandon its exchange in the village of Oronoque and operate subscribers' lines from its exchange at Norton; also to abandon its exchange at Cedar Bluffs and connect all subscribers interested to its exchange at Oberlin.

April 5: New schedule of toll rates authorized for the Burlingame Independent Telephone Co., of Burlingame.

April 13: Petition of the patrons of the Cunningham Telephone Co. for an investigation into the rates charged for service in Cunningham dismissed without prejudice.

April 18: Spearville Telephone Co. permitted to increase its switching charges at Spearville from \$5 to \$6 per year; effective January 1, 1924.

April 19: In the matter of petition of L. Miller and others that line No. 600 of the Edwards County Mutual Telephone Co., of Lewis, be connected to the switchboard of the Belpre Telephone Exchange, of Belpre; denied.

April 24: Application filed by the Kansas City Long Distance Telephone Co. for permission to transfer its exchanges at Lenexa and Independence to the Kansas City Telephone Co. for the sum of \$296,398.

April 27: Approval given to sale of the Herington Coöperative Telephone Exchange, of Herington, to the United Telephone Co., of Abilene.

May 1: Hearing held at Bonner Springs on application of the Wyandotte County Telephone Co., of Bonner Springs, for an amended schedule of rates.

May 3: Hearing held at Jamestown on application of Jamestown Telephone Co. for permission to establish a 10-cent toll charge between Jamestown and Scottsville.

May 4: Hearing held at Potter on petition of several citizens of Potter for reduction in the rates of the Potter Telephone Co.

May 8: Hearing held at Kincaid on petition of Mrs. H. B. Whitaker to sell the telephone plant at Mildred.

May 8: Hearing held at Kincaid on petition of the Eastern Kansas Telephone Co. to increase its rates.

May 8: Hearing held at Kincaid on



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application of Arthur Gibbs to sell Eastern Kansas Telephone Co., of Kincaid.
May 8: Hearing held at Kincaid on application of A. V. Hirschler for authority to sell the telephone plant at Lone Elm.

May 8: Hearing held at Kincaid on application of Parker Telephone Co. to increase rates for service at Parker.

May 9: Hearing at Humboldt on petition Emporia Telephone Co. for permission to place into effect a new schedule of rates at Humboldt.

May 15: Hearing to be held at Wakeeney on petition Farmers Mutual Telephone Co., of Ransom, for a certificate of convenience and authority.

May 15: Hearing at Wakeeney on Trego Co. Coöperative Telephone Co.'s petition for a certificate of convenience and authority.

May 15: Hearing at Wakeeney on petition of various subscribers of the Farmers Mutual Telephone Co., of Ransom, for authority to discontinue connections with Wakeeney Telephone Co. on account of inefficient service and operate over Trego Coöperative Telephone Co. lines.

May 16: Hearing at Garfield on complaint of E. Brandenburg and others against the Gove County Telephone Co., alleging unsatisfactory service.

May 17: Hearing at Alma on Wabunsee County, Independent Telephone Co., petition to make change in rates.

May 28: Hearing at Wakarusa on petition of Wakarusa Telephone Co. for authority to increase its rates.

June 5: Hearing at Kingsdown on petition of patrons of Kingsdown Telephone Co. for a reduction in rates.

June 6: Hearing at Meade on application of Southwestern Telephone Co. for an increase in rates.

June 6: Hearing at Meade on application of Plains Telephone Co. for advanced rates.

MICHIGAN.
April 24: Fayette Rural Telephone Co., of Fayette, ordered to reconnect the lines of the Moscom Plains Telephone Co.; also to appear on May 15 and show cause why it should not continue to give service at the former rate.

MINNESOTA.
May 15: Hearing to be held at Cokato in the matter of application of the Farmers Telephone Co. for authority to increase its rural rate at Stockholm.

May 17: Hearing to be held at Glencoe in the morning and at Lester Prairie in the afternoon on application of the McLeod County Telephone Co. for increased local and rural rates for service in Glencoe, Silver Lake, Lester Prairie and Browntown.

May 23: Hearing to be held at Browns



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Valley on petition of the Browns Valley Telephone Co. for advanced rates for service in Browns Valley.

MISSOURI.

April 24: Application filed by Kansas City Long Distance Telephone Co. for authority to sell its exchanges at Richmond, Excelsior Springs and Norborne to the Kansas City Telephone Co. The consideration mentioned is \$225,572, and the transfer is to be completed by January 1, 1924.

April 27: In the matter of the application of the Home Telephone Co. of Joplin for permission to increase toll charges at Carl Junction and other exchanges, dismissed at the request of applicant.

NEBRASKA.

April 30: In the matter of the application of the Dawson-Nemaha Telephone Co. for permission to establish gross and net rates; it appearing that request is reasonable and that the rates asked are standard, ordered that company be given authority to make a spread of 25 cents a month between the two rates.

May 1: In the matter of the objections of the Firth Telephone Co. to the application of the Blue River Power company for permission to erect a transmission line on the highway occupied by the telephone company lines, ordered that permission be granted only insofar as no conflict occurs, and that the matter be continued for a conference and adjustment.

May 2: In the matter of the application of the Ainsworth Telephone Co. for permission to mortgage its plant for \$5,000 to take care of accounts payable, it appearing that the plan will enable the company to make an interest saving, per-

mission is granted.

May 2: In the matter of the application of the Northwestern Bell Telephone Co. for permission to close its exchange at Antioch; it appearing that this town, once the center of the potash industry, has declined in population since the closing down thereof, and there being but 19 subscribers remaining, all of whom have signified their willingness to have the exchange closed; order issued as requested.

May 2: Application filed by the Daykin Telephone Co. for permission to increase rates 25 cents a month for each class of service.

May 2: Application filed by the Daykin Telephone Co. for permission to issue \$25,000 of stock.

May 3: Application filed by the Hendley Switchboard Co. for permission to increase switching rates from 40 cents to 50 cents a month.

May 4: Application filed by the North Platte & Dick Telephone Co. for permission to make certain increases in schedules.

May 4: Complaint filed by C. F. Hoyt, of Lincoln, against Lincoln Telephone & Telegraph Co., alleging failure to give two-party service.

NORTH CAROLINA.

April 25: Schedule of increased rates approved for service by Thomasville Telephone Co., of Thomasville, effective May 1.

NORTH DAKOTA.

April 18: In the matter of petition of the Oliver-Mercer Telephone Co. for a decrease in the switching rates of the Mercer County Telephone Co.; petition withdrawn.

May 7: In the matter of increased rate application of the United Telephone

Co., which serves Mt. Victory, Ridgeway and neighboring towns, hearing held at Columbus on property valuation.

June 6-7: Hearing on the case of the Westerville Telephone Co. postponed to this date.

OKLAHOMA.

April 24: In the matter of application of the Southwestern Bell Telephone Co. for increased rates for service in Muskogee, Ardmore, Okmulgee and other towns dismissed upon petition of the company. Increases were asked in 1920 and company states that conditions at that time no longer exist.

WEST VIRGINIA.

April 24: Silver Hill Telephone Co., operating in Wetzel and Marshall Counties, authorized to establish a business rate of \$2.50.

WISCONSIN.

May 1: Complaint against the service rendered by the West Line Telephone Co., which connects with the Barneveld exchange, dismissed.

POSITIONS WANTED

POSITION WANTED—By two telephone operators with nearly five years' experience. Would take charge of small exchange or work in shifts. Southern part of Wisconsin preferred. References given. Address Mrs. Carrie Wills, R. R. 3, Richland Center, Wis.

WANTED—Night switchboard man for automanual system. Please give references and experience with letter. Address Galesburg Union Telephone Co., Galesburg, Ill.

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MAY 19

The last one was in the May 5th issue

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Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
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CURRENT OPINIONS AND COMMENTS

Frequently of late
a tendency is noted
in certain quarters

to suggest that public utility rates should
be reduced. The argument is made that
the prices of many commodities have come
down since the war, and that, therefore,
telephone rates, gas rates, lighting costs
and street-car fares should go back to pre-
war levels.

"Don't they know the war is over?" is
the common query of the grumblers who
write to the newspapers and have their
communications printed in the department
devoted to "the voice of the people."

* * * *

So far as the average telephone rate
is concerned, a fair, thorough investigation
of the facts will show that it is not too
high. Many rate commissions have so
declared. In fact, the average telephone
rate should be increased in order to en-
able the operating company to give good
service and maintain the standards that
are constantly rising to keep pace with the
growing demands of the public for a wider
and more efficient telephone service.
Every rate commission that has inves-
tigated the situation within the last six
years knows this is the truth.

* * * *

The increased business activity now evi-
dent has raised prices in many lines in
the last nine months, and the citizens who
complain about high costs are too prone
to roar thoughtlessly about their telephone
and gas bills and demand a nickel street-
car fare.

They overlook the fact that the utilities
were the last to get needed rate adjust-

ments when the war sent the prices of
labor and materials sky-high. Even then
their income never produced big profits,
and for a considerable period they had
to struggle hard to meet constantly in-
creasing expenses on a meager pre-war
revenue.

Furthermore, they had to continue to
operate—win or lose—for a utility cannot,
like an ordinary business, shut down when
times are bad.

Those that were granted better rates
operated for many months before they
got back to a safe level, and many of the
financial scars resulting from those peril-
ous days are still unhealed.

* * * *

The general public forget that the util-
ity corporations cannot pile up a big sur-
plus in prosperous times to carry them
over the lean periods. Their income is
regulated by rate commissions that func-
tion always with a vigilant eye on the pop-
ular effect of their official orders. The
utilities are in a different class from that
of the profiteers who grab everything in
sight when the grabbing is good, and who
should be curbed and brought up with a
sharp turn when money is less easy to get.

It seems nothing short of ridiculous to
howl about the modest cost of telephone
service, street-car rides, gas and electric
lights when the sugar, oil and coal prof-
iteers are taking millions from the people
in exorbitant prices through manipulation
of various kinds.

The cold fact is that utility service, con-

sidering its essential
value, is the cheap-
est thing the Amer-
ican people buy today. If they were com-
pelled to do without this service a week,
they would appreciate it more, and un-
doubtedly would be glad to pay double
the present rate to have it restored.

* * * *

When a private business concern runs
into hard times and finds its income in-
sufficient, it can stop or reduce its losses
by restricting its operations or shutting
down altogether. The utility cannot do
that without getting into trouble.

For instance, the Nebraska legislature
has just passed a law providing that no
telephone company operating more than
ten exchanges may close an exchange un-
less 60 per cent of the patrons for the
preceding six months petition that this
be done, and the company obtains the
consent of the state railway commission.

In other words, no matter if this par-
ticular exchange does not yield revenues
sufficient to meet expenses, the operating
company must continue to give service un-
til the subscribers relax their strangle hold
on the company's throat. That furnishes
a concrete illustration of the difference
between private business and the public
utility.

* * * *

The Nebraska law covers the telephone
situation in the town of Endicott. The
town is too small to pay remunerative
rates, and the Lincoln Telephone & Tele-
graph Co. wanted to close the exchange
and give the service from adjoining points.
The people objected. They also declined

the opportunity to buy the plant, for they felt they had the company "on the hip."

Then the legislature passed the law as described, including the ten-exchange clause so it would specifically apply to the Lincoln company.

Of course, the company can apply for a higher rate which will enable it to meet expenses, but the law is outrageously unfair. To compel any utility to operate at starvation rates, or to be at the mercy of a lot of "hard-boiled" kickers, would lead to impossible situations. Also it would only create deficits which the public would have to pay in the end. It is a fair sample of the radical legislation in which corporation-baiters delight.

* * * *

Remember how much enthusiastic talk there was about *coöperation* among the telephone interests last fall at the na-

tional convention at Chicago? *Coöperation* was the golden text, and everybody was for it.

Judging from reports that come back from Washington there was a lack of harmony among the telephone representatives at the depreciation hearing before the Interstate Commerce Commission, and of lacking coöperation there was "nothing else but." One state delegation, which included a Bell official, presented a proposition which not only conflicted with the views of other Independents but was contrary to the ideas of the Bell organization. There were also other examples of disagreement that will delay a harmonious settlement of the important questions involved.

Nobody expects entire unity on so complicated a problem as that which the Interstate Commerce Commission has as-

sumed to control, but there should be little more coöperation than has so far been exhibited. The commission will need before it wades through that job.

* * * *

It is ten years since the Interstate Commerce Commission began its valuation of the railroads, and the work will not be completed for several years longer. The purpose of the valuation is to reach a basis for determining what are fair freight and passenger rates—an issue most important to the entire country. Even after 15 or 20 years of this government work, there will be lawsuits that will consume more time.

This slow progress is typical of governmental bureau activity, and has been partly due, also, to a lack of money. The situation does not promise speedy action on the depreciation question.

Lubricating the Traffic Action

Certain Conditions in Local Operating That Must Be Considered in Order to Maintain a Harmonious and Evenly Balanced Service—Paper Presented at Annual Convention of Up-State Telephone Association of New York

By C. G. Vickery

Traffic Superintendent, Rochester Telephone Corp., Rochester, N. Y.

In preparing this paper, I have had but one thought in mind. That is to give you a dose of the same old medicine with a little different flavor, leaving out three ingredients "The Voice with a Smile," "Accuracy," and "Speed."

This little taste of the same elixir spiced up a bit, I am sure, will not make you feel any less like work, but on the other hand, it may give you a new lease on action. Your action may be bound in some way. If this is true, no one but yourself knows whether you have it tied with a rope made of "I don't care," or whether your mental faculties need lubricating with the oil of "right desire" in order that your temple or human frame will function in a way that action may be obtained.

The trouble with many of us today is that we have reached a state of mind where we wait to be driven; a drive on this or that feature of operating. For instance, we place an order for a drive on "cut-offs." Every one gets keyed up for the drive, and for two or three days we talk "cut-offs"; we avoid "cut-offs," and the improvement is wonderful. Then we sit back and watch our efforts dwindle down until we are back in the same old place from which we started.

Well, what should we do? Yes, what should we do is right. Lubricate your action with a desire to reduce the "cut-offs" to a minimum. How? Well, let us

make every day a drive day following a few good rules as to the cause and the remedy, and apply the remedy day in and day out. That is the answer. Perhaps you will find the remedy in this paper before we are through.

I read a wonderful article the other day written by E. K. Hall, vice-president of the American Telephone & Telegraph Co., in which he mentions the four great "C's," and what they stand for; namely, Contact, Conference, Confidence, and Coöperation. We are in contact now, our conference is on, and we all have confidence; now let us coöperate.

To coöperate, the chief operators, supervisors, operators—all have a very important part to play in the theorem. We must be alive to what constitutes good service, and what causes poor service, so we can weed out the poor, giving the good a chance to grow.

The chief operator is delegated to oversee this end of the job. She is the one to pour on the oil of action to the supervisors. They in turn see that the balance of the force hits on all four cylinders.

We must take into consideration right here the days when we have unusual traffic loads—caused by fires, floods, storms, etc., that call upon us to stretch beyond provision made—and brush aside standard practice for the time being, devoting our entire time to handling as

quickly as possible all calls, and obtaining the called numbers promptly, for tomorrow is another day and the sun may be shining. The swollen streams of traffic may be within the banks, and we should set about to place our house in order by checking all operators on each feature of operating.

If faults are detected, they should be corrected at once. A fault is a defect, and we will call a defect an evil. Evil means "having qualities tending to injury," or mischief. If we have any condition of this kind, we must reverse the word "evil." "Evil" spelled backwards spells "live." Now take each letter of the word "live" and see what it stands for.

"L" stands for "Labor," and means "to form," "perfect," "carry on or urge with effort."

"I" stands for "Ideal," which means "reaching an imaginary standard of excellence." We must form the picture of our ideal for good service in our minds and then strive for the ideal.

"V" stands for "Vigilant," and means "avoid danger," "provide for safety," "wakeful," "watchful," and this word must be a part of the chief operator or supervisor.

"E" stands for "Education," "to instruct or to teach" our operators the meaning of the word "live" in the fullest sense as pictured above.

In April, 1920, there was issued by the American Telephone & Telegraph Co., traffic circular No. 139, headed "Local Service Notes." This circular covers all of the important features of local operating, and is without a doubt the best guide in the field today for chief operators and supervisors, in the study and discussion of particular operating conditions requiring attention.

It is from these notes that I have selected certain conditions in local operating that we must consider in order to maintain a harmonious and even-balanced service. We will not take the notes in the order as given in the "Local Service Notes," but will commence with the supervisor when she first reports to a division for work.

The first duty is to place her house in order. This is done by checking each operator as to the height of her chair, her position in the chair, and also note if her set plug is in the correct position jack. Next, see that each horn of the sets is adjusted to the correct distance from the lips.

- (1) The height of chair;
- (2) The manner in which the operator is sitting in the chair;
- (3) The location of the set plug;
- (4) The adjustment of horns.

These rules do not mean that they should be done today and not tomorrow, but every day. It does not matter how heavy the traffic, this job should be done every time a supervisor takes her division, if she is to keep her house in order.

Remember, you are to live and let live. There must be no reversal of the word, "no evil."

Now that we have placed our house in order, what is the next important duty of the supervisor? Not one here can tell me? You have placed your house in order, now you must do the dusting. The stile strip method of repetition comes next, and you must see to it that not a cobweb is left behind you (every operator must stile strip). This is your job, and it is strictly up to you.

You are a supervisor for this particular purpose. But wait a minute! What are your eyes doing during the time you are checking each operator on the stile strip method of repetition? There is another important duty which functions in right here. How about the line and supervisory signals? Are you watching them? Which comes first, the line or flashing supervisory signal?

Flashing disconnect signals first.

Line signals second.

One-light disconnect signals third.

Two-light disconnect signals fourth.

That is the proper order. In answering a flashing disconnect signal, the operator answers by saying, "Operator." Do all of your operators answer in this manner? Do you check to see if they do; and if you find one who does not, do you make

a note of it in order to call it to the operator's attention as soon as the traffic quiets down? That is a part of your job, you know.

How are line signals handled when there is a heavy load and calls are standing? Do you yell them across two or

WHY IS AN EXECUTIVE?

In all great affairs of the world, it is the MEN that count.

An executive is measured by the work he makes it possible for others to do by improvement in methods, by arousing a team spirit, by organization and co-operation.—Gerard Swope, President, General Electric Co.

three positions, or do you obtain the number and quietly pass the call to the operator you wish to handle it? "Quietly pass" is what we are after in order not to confuse several operators and take from them their concentration on the call they are receiving from the subscriber or "B" operator.

What causes slow answers?

1. Inattention.
2. Signals not answered in the order of appearance.
3. Failure to overlap the operations properly.
4. Lack of teamwork.

To overcome this condition, supervisors should teach their operators to maintain an alert attitude with eyes on the board. They should hold in their right hand—later transferring to left hand if necessary—the answering cord of the next pair to be used, and answer calls in the order of their appearance. This should be taught by the supervisor and checked every day.

Do you train your operators to answer a second call while taking up an assigned trunk, while ringing, or disconnecting, or operating a register button, or writing tickets?

Do your operators answer any call within reach? Do they assist adjacent operators by putting up or taking down cords? Do they avoid plug intervals by not plugging in on answering jacks until they are ready to say, "Number, please?"? Do you ever detect voice interference of any kind on call circuits; if so, what action do you take to correct it?

Rotating Cords.

Why do we rotate cords? Who can tell me? Well let us see the reason for it. The object of rotating cords is to assist both operator and supervisor in knowing the status of calls up on the position by having the relative order in which the cords are used correspond as far as possible to the order in which the connections were established.

Why? Because the operator is in a better position to know on which calls to give supervision or ring, to expect re-

calls, or to register; for example, on cords used latest, the following are likely to occur:

1. Busy-back flashes.
2. Need for voluntary supervision and subsequent ringing.
3. Recall by special operator.
4. Recalls due to operating errors.
5. Abandon calls which should not be registered.

On cords which have been in use the longest:

1. Disconnect signals which should be followed by registering.
2. Signal conditions requiring disconnect supervision.

In answering calls, the cords should be used beginning with the *second pair, then the third, then the fourth, fifth*, and so on, up to the next to the last, reserving the first and last for passing, then beginning again with the pair farthest at the left not in use. A pair disconnected should not be used again until reached in rotation.

Supervising Calls.

How about voluntary supervision? The last ruling made by the Rochester Telephone Corp. on this subject was: "Supervision will be given at 30-second intervals." The first supervision is to be given at 30 seconds, the second supervision at 60 seconds, and the "Don't answer" at 90 seconds. This means that the "Don't answer" period is 90 seconds, providing supervision is given at exactly 30 second intervals. However, we go on to say that a leeway will be permitted so that a voluntary supervision will be considered properly given if given between 15 and 45 seconds; that is, 15 seconds will be allowed on each side of 30 seconds.

Suppose an operator supervises at 45 seconds, and her second supervision is 75 seconds, and her third supervision is at 120 seconds; she has supervised at 45, 30 and 45 seconds. This has run past the 90-second DA period, but the leeway, as stated above, has allowed her this time. All right, we have arrived at the DA period, and if the call were trunked, what should the operator do? She should change the trunk. If the called subscriber answers inside of another minute, the operator will report the first trunk used as in trouble. The same applies to calls to the local multiple. The operator will change cords, and report the first pair in use.

When should operators be limited as to the number of calls they answer? They should not plug-in on a new call if there is a flashing supervisory signal to be answered, nor should they plug-in on a new call until they are ready to say, "Number, please?"

I am not sure that enough oil has been placed on "action." Let us try it, and if we find we are lacking in action, we may have to change the oil.

We will now apply the brakes to errors,

such as wrong numbers, cut-offs, double connections, etc.

It is not necessary for me to tell you that there is a tendency on the part of operators to cover up errors made in operating. Why is it? Here is the answer: When you are in direct contact with your operators at conference, have you their confidence so they will cooperate with you when you explain to them how much better it would be for the service if they would report to you when they make or cause an error? No you haven't! Something has put fear in their hearts, or they would report.

It is a lack of the four "C's" on your part. You have to approach them by proving to them the benefit that can be derived by their errors. We all make mistakes or errors, if you please. Every mistake in life is a blessing for someone. Perfection is reached only through a field of mistakes. Take the errors and use them as they should be used. They are evils, and you can reverse the word so that they will team with life.

Remember, this can not be done without action, and action will go only as far as your greatest gift—thought—is exercised. Don't wait to be driven; on the other hand, take the initiative and institute your own drives. Make them an every-day affair.

"Haste Makes Waste."

What causes wrong numbers? Poor repetition is the cause of a great many. Closing the listening key is another cause—not giving the subscriber an opportunity to correct. Haste makes waste. It is far better to complete one connection accurately than to use excited haste in completing many connections and causing mistakes.

A calm, well-balanced supervisor who is able to look at a good sized load of traffic without getting excited is reflecting to her operators harmony undisturbed, and such reflection is absorbed by the operators so that they go at their job knowing that the general on the firing line is looking out for their interest.

This is the secret of the whole works. You have their confidence, they have yours, and they are there to cooperate. When you call them into conference, and are in direct contact face-to-face, you will find that confidence and cooperation is ever present.

Let us get back to wrong numbers. I am a firm believer in a schedule that places the same operator at the same position every day. They become familiar with the subscribers' multiple, the outgoing trunk multiple, the subscribers themselves, and, too, the subscribers understand the operator. Why make hash out of an opportunity to make good? That is exactly what is done when operators are switched here and there every day. This will be a great help in preventing wrong numbers.

Faulty ringing on party lines, breaking

in on call circuits and poor passing, accepting doubtful trunk assignments and improper adjustment of transmitter horn, cause wrong numbers. This is the second time we have tooted the transmitter horn, but it is worth the blowing if you do your job right and keep them up where they belong.

Noises in Operating Rooms.

There is another cause for wrong numbers, and that is a noisy operating room. The question of noise has been brought up time and time again. It is not new to anyone here, I am sure, but perhaps we can obtain a little different viewpoint by touching on the question here and there.

Did you ever stop to think of the extra exertion required on the part of an operator in raising her voice to overcome noise, such as side-tone from adjacent operators? And when I say "side-tone" I mean that part of the voice from the adjacent operator that spills over after she has filled her transmitter with really more than is actually required to make her subscriber hear.

When the voice vibrations run over, so to speak, it must find some place to lodge, so it floats over into the transmitter of operators sitting at adjacent positions. Added to this condition are the voices of supervisors and other employes, if allowed to carry on their part of the work with a voice that has the same effect on the operator that a sudden flash of light would have on anyone sitting in a dark room.

Of course, you have noticed that sense of peace and relief experienced in stepping from confusion, due to excitement brought about by some unavoidable and sudden catastrophe, to a place where all is quiet. Noise and confusion never lend a sense of peace.

What would happen tomorrow if every office was cut down 50 per cent in noise; if the operators' voices were lowered, transmitters up, enunciation perfect? I will tell you—everyone would feel as though he had stepped from a sense of confusion to a sense of peace. Furthermore, every operator would leave at the end of the day feeling that she had enough voice left to "talk it over with Mother," on her arrival home.

Do you know that the greatest single sense of noise in an operating room is the voice of the operator? That the general lowering of the voice and the elimination of noises that we can do without will make the general atmosphere of the room easier and more natural, and all will benefit by it?

Outside of the voice, where can these noises be found, you ask. In the handling of head sets, chairs, walking fast or running (except during fire drill), allowing switchboard man to talk loud or drive wedges into the multiple during busy hours, opening or closing of switchboard curtains suddenly, allowing shades to blow or flap, snapping of keys and register but-

tons by operators, method of handling cords when disconnecting.

Some operators have the habit of lifting and dropping cords to free cords disconnected, which leads to noise from cord weights swinging against the panels. Many other noises also could be reduced.

"Oh!" someone says, "How can a supervisor stop all of the noise?"

Well, she cannot stop all of it, but she is in a position to stop a lot of it, and she can call the attention of the chief operator to any noise which she considers interferes with her particular operators in giving gilt-edge service if it is due to something she can not control.

In lowering the voice of the operator, we must not go too far. We must maintain distinctness of enunciation; on the other hand, good enunciation is more easy to obtain if the room is more quiet.

Another thing that is important in obtaining good voice results is the position of the operator in her chair. Does she sit like a half-closed jackknife? Is she twisted in her chair like a corkscrew, or does she sit up square about? You know correct posture makes for deep breathing, and this in turn for greater ease in speaking and more pleasant quality of voice.

Difficulties in transmission and hearing due to conditions of the operators' sets should be watched closely and corrected. What an opportunity for a supervisor to improve the service by switching off a part of the noise of the room!

Of all faulty operating, nothing is worse than to have two keys open at the same time when supervising; then, too, the careful testing of the multiple jack with the plug on a slant, making sure whether the line is busy or not. The accurate aim to the jack wanted is also important. We do not want to report a line busy by testing the wrong jack. There are many other features in operating that are important, such as wrong reports, etc., but I will leave them for another time.

Work of "B" Operators.

Before closing, I wish to speak about one very important subject, and that is the work of the "B" operators. If the "B" supervisors will follow out the instructions in this paper, they will correct a condition that every now and then is shot full of holes. It is this—referring O.K. numbers to the "special operator."

If there is anything on the face of this green earth that makes a subscriber boil until he foams at the mouth, it is the referring of a perfectly good O.K. number to the "special operator." I know the "A" operators are to blame for a great deal of it, but it all can be overcome with action and an every-day drive on repetition. If this does not overcome it, it is positive proof that someone is asleep.

In writing this paper, I had something more in mind than the reading of it.

My thought was *action*, action for better service.

What Telephone Means to Community

United Telephone Co., Abilene, Kans., Conducted Essay Contest among High Schools in Its Territory—Subject Was: "What Telephone Company Means to Our Community" and Over 500 Papers Were Written—The Best Papers

The United Telephone Co., Abilene, Kans., through its Bureau of Public Relations, has just awarded prizes in an essay contest conducted among all the high schools in its territory. Over 500 papers were written by high school pupils on the subject, "What the Telephone Company Means to Our Community."

Each high school received a prize of \$5 for the best paper submitted, and in addition there was a grand prize of \$20, given to the best paper from all high schools. The three best papers are being printed in the United Telephone Voice.

The first prize was awarded to La Verna Cochran, Canton, Kans., and here is her essay:

What the Telephone Company Means to Our Community."

By MISS LA VERNA COCHRAN.

When you lift the receiver and casually discuss matters great or small with some unseen person, perhaps only a few doors away—perhaps a hundred and even a thousand miles distant—you give little thought to the unseen forces, the wondrous invention, the years of painstaking development, or the potent organization, material and minds that have made this act of yours possible.

Telephoning has become such an everyday occurrence in the rush of modern life that its importance is made apparent only when storms put the lines out of order.

Yet, behind this simple act of lifting the telephone receiver from its hook and conversing with some distant person, there is the story of a marvel—a romance wonderful and entrancing, replete with curious and astonishing happenings. This romance was begun in 1876 when Alexander Graham Bell discovered the principle of telephony in the combination of electricity, sound waves, and acoustics; and from this combination came the telephone.

The telephone is a dominant invention, for it assists to build communities, to make people happier, more efficient, and more useful.

Words cannot express what the telephone means to us in the home. For the day's groceries, the iceman, the doctor, the fire department, the latest markets, the garage, for this and that—a hundred or more necessities—the telephone awaits us, a ready messenger, more fleet than the fabled Mercury and making the seven-leagued boots as antiquated as a 1903 flivver.

We depend upon the telephone for emergencies of all kinds, and connections are established by countless thousands with the utmost rapidity. Every time we tele-

phone we have at our command property worth over two billion dollars. Millions are actually used for one long distance call, and for our simplest message we have the exclusive use of hundreds of dollars worth of property for a few cop-pers.

Take the telephone away from the farmer and you immediately put him back

TEN GOLDEN RULES.

1. Honor the chief. There must be a head to everything.
2. Have confidence in yourself, and make yourself fit.
3. Harmonize your work. Let sunshine radiate and penetrate.
4. Handle the hardest job first each day. Easy ones are pleasures.
5. Do not be afraid of criticism—criticize yourself often.
6. Be glad and rejoice in the other fellow's success—study his methods.
7. Do not be misled by dislikes. Acid ruins the finest fabric.
8. Be enthusiastic about your work—it is contagious.
9. Do not have the notion that success means simply money-making.
10. Be fair and do at least one decent act every day in the year.—The "Cog."

into the age when oxen pulled the plow. He is another who needs a doctor in a hurry; he uses the telephone. He needs a part for machinery while the unharvested crop waits; he telephones to town. To him it means a saving of labor, quick service, and the saving and gaining of money. Before he had the telephone, the farmer spent a large portion of his time on the road to attend to his business affairs, which in modern times he settles over the telephone.

The telephone helps to make advancement in a community, town, or city. The telephone wires are circulatory systems for the vital fluids of a territory's life.

Suppose you had to walk to the grocery to place every order, to the neighbor's house every time you wanted to ask a question! The telephone is your errand boy. A large percentage of the business of all stores—the dry goods store, butcher shop, grocery store—is done over the telephone. It speeds up business and serves as a means of communication that cannot be given in any other way. Therefore, the social purpose of the telephone is to build up the community in which it operates.

Without adequate telephone service our railroads and trolley lines would be hopelessly blocked with traffic, the modern city skyscraper would be impossible, suburban life woefully inconvenient, and rural life intolerable. The ramifications of the telephone's business and social conveniences are so great as to baffle analysis. Once the luxury of the rich man, it is today the necessity of all.

Telephones not only are an important part in the home and community but also played an important role in winning the World War. In peace or war, the opportunity of airplane telephones to render real service helps to make the job of producing them an important one.

The mine telephone has warned in time to prevent many a disaster.

The conductor of a train taps in on the wires with a portable telephone to call for help.

Less than half a century ago we depended on word of mouth for transacting our business, and it seems impossible that a certain mechanism should become so vitally a part of our daily life. Without communication, we could exist, not live; and possibly the existence of many would soon cease.

No cost is too much, no sacrifice too great, to keep the wires open. Every city, town, village and hamlet needs and should have telephone service. Linking city, village and farm, crossing mountains and wilderness, the telephone system challenges Nature in her strongholds and battles her fiercest moods. In winter and summer, in forest and desert, the telephone workers guard the highways of communication. Traveling afoot where there are no roads, crawling sometimes on hands and knees, riding on burrows, motorcycles, or trucks, they "get there" as they can.

We hear in these days of people getting married by telephone; of lawsuits being conducted by telephone; of games being played by telephone.

Without telephone service all industry would soon grow stagnant. It can no longer depend upon the slowly-moving mails or messenger. Block communication by wire, and 2,000,000 business and pleasure talks a day are replaced by 10,000 tedious messenger trips. Block utilities and commerce lags, trading dwindles, manufacture staggers; industry is blighted, prosperity sickens; wealth and health, happiness and hope, peace and plenty—all the characteristics of a normal, sane and progressive American community—turn to their opposites. This sounds overdrawn,

but the first essential of a society is that its members communicate, and without that communication a compact society would not be possible.

Expansion and development of the telephone is increasing in a great measure. Figures that express the material and labor which they represent are terms almost beyond comprehension.

It is doubtful if, among all of the productions of human genius, there will ever be anything nearer the miraculous that is used so much and makes so much advancement in the community than the telephone. United States is spoken of as a talkative nation, for 200 calls for every man, woman and child are made each year.

Whatever else may fail, the telephone service must not fail if human effort can prevent it.

We, the general public, ought, in common decency and fair dealing, avoid hasty judgment, ill-tempered complaints, and hostile notes of mind. We ought willingly and gladly to help to our utmost the institutions which both law and equity have called "Public Servants."

* * *

The second prize went to Rosa Brincefield, of Abilene. Here is her paper:

"What the Telephone Company Means to Our Community,"

By MISS ROSA BRINCEFIELD.

When Alexander Graham Bell in 1876 created the crude, inefficient instrument that was the forerunner of the telephone of today, he did not, in the wildest flights of his imagination, or in his fondest dreams, vision the results of his years of working and experimenting.

If he had been told that in less than half a century two billion dollars would be invested in a business he had made possible, that the distance around the earth could be spanned 1,200 times by telephone wires, even the "impractical dreamer" who had sacrificed 17 years of his life in privation and want, for a vision, would have been awed by the mammoth proportions the child of his brain had assumed.

It would be interesting if some person, standing on a street corner, or near the door of a crowded building, asked ten people—choosing without discrimination, but merely as they hurried past—what they thought of the telephone, its commercial value, its necessity and in general just what it means to the public, nine of those people would answer very much like this:

"Why, it's very handy. I don't know what I'd do without it."

"It's not very expensive, but it's very necessary to our comfort."

"It's a very convenient device in constant demand. Mr. Bell must have made a pile of money out of it."

Perhaps the tenth might say:

"It is a wonderful invention. It has revolutionized the whole world, and it

PATHS.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Paths usually lead somewhere. They always attract my attention, whether made by man or beast. "Who started that path?" is my first thought on seeing a path. "Why was it started in the beginning?"

People are prone to follow a beaten path, even when they are not sure where it will take them. In some New England cities the irregular streets are said to have originally been paths made by animals going to water.

Many people are imitators; some prefer to go a route traveled by others before them, as traveling is thus made easier. Many paths seem purposeless. They are like resolutions made and kept for a little while and soon forgotten.

We can account for the purpose of the paths of the shining steel rails; we know there is some destination for all who travel over their route. Why? Because it costs people time and money to go these paths. Consequently, there must be a purpose of some kind—family, business or pleasure.

Sometimes paths are short-cuts taken to reach a destination more quickly. Very often, too, such paths are taken with no regard for other people's lawns. Folks who trespass on the property of others in order to gain their own goals, are selfish. Such paths bother me, for I know the people who take them have no regard for the rights of others. It is just so in life.

The Bible says the straight and narrow path is best. It is harder to keep to but then nothing worth while is attained without real effort. That applies to our telephone work at the switchboard. There must be no short-cuts, no retaliation, no trespassing. We must look toward our work, never backward nor away.

has not yet reached the zenith of its development."

And that is just what the telephone has done! It has brought the whole world into closer contact in ideas, in business, and in other relations that spell prosperity and happiness.

Most people consider the telephone a closed incident, a finished product. But that is not so. No one may say what the next score, or the next decade of years may bring.

It is not necessary to speak here of the usefulness of the telephone. One can realize the millions of messages that are carried over the wires daily. Messages of life, of death, of hope, of despair, social calls, and the prosaic calls to the shops. Let it suffice when I say there is nothing in more common use, except perhaps the lead pencil.

We depend on the telephone and its operator for our very protection. In her hands rests, often, our lives, and most of the property of every community, which she protects from fire, flood and burglary.

How potent, how dominant a part this small, black instrument on the wall, the table, or the office desk, plays in the lives of men, and of nations!

What the Operator Sees as She Sits at the Switchboard.

The very striking illustration of the girl at the telephone switchboard, which was used in connection with the paper, "Snap-

shots Along Telephone Trail," by Miss Nelle M. Roberts—published on page 20 in TELEPHONY of May 12—was used through the courtesy of the Kellogg Switchboard & Supply Co.

The Kellogg company had the photograph and drawing made and used it in connection with one of its advertisements in TELEPHONY some time ago. It was very cleverly utilized by Miss Roberts in connection with her paper.

Illinois Association Representatives at Depreciation Hearing.

At the hearing on depreciation before the Interstate Commerce Commission in Washington, D. C., beginning May 1, the Illinois Telephone Association was represented by a committee appointed by the board of directors. This committee consisted of Jay G. Mitchell, chairman, Dr. R. E. Gordon, A. R. Bone, and A. B. Cheadle. Mr. Cheadle also represented certain of the telephone companies operated by the Cheadle-Sterrett interests.

The Illinois Telephone Association, through this committee, entered the appearance of its member companies. The committee supported the position taken by the association in a brief dated November 5, 1921, and in the statement published on pages 17, 18 and 19 of last week's issue of TELEPHONY, which was filed in response to the announcement of the Interstate Commerce Commission under docket No. 14,700, dated March 10, 1923.

Gatherings of Telephone People

Recent Meetings of Owners and Managers, Chief Operators and Operators in Nebraska, Indiana and Iowa Bring Out Many Points of Value in the Furnishing of Telephone Service, Coöperation and Public Relations

Nebraska Operators and Managers Meet at North Platte.

A group of telephone operators and managers assembled at North Platte, Neb., recently at the invitation of C. S. Copps, district traffic chief of the Northwestern Bell Telephone Co., Grand Island district.

The morning was spent in visiting the North Platte operating room and in getting acquainted. A luncheon at the Palace Hotel, followed by a community song service, helped to make everyone feel at ease.

A number of different points of toll operating were discussed in a round table led by Miss Anna Grosbeck, traveling chief operator of the Northwestern Bell Telephone Co. It is usually said that women are more prone to talk than men in a social gathering, but this time Miss Grosbeck had difficulty in getting the men to keep quiet long enough for the operators to get in a word now and then.

It was a very interesting session throughout and many valuable points were brought out in addition to the social features which will do much to oil the traffic channels of the Grand Island district.

To conclude the session Mr. Copps invited Bruce Brown, of Brady, to make a few remarks. Mr. Brown stressed the point of courtesy in operating. He told of a most memorable lesson he received many years ago while seated in the private office of a prominent telephone official. A man pushed past the information desk and rudely interrupted a private conference by asking where a certain address could be found.

Mr. Brown expected to see the stranger referred to the information desk, or the corner policeman, but not so in this case. The busy official personally secured the city directory and looked up the information desired and courteously bowed his caller to the door.

He commented afterward, saying that if every employe would take the same attitude in dealing with the public and each

other the company's public relations would be very satisfactory indeed.

Those shown in the reproduction of the photograph taken at the meeting are, left to right:

Front row: O. Scofield, owner of Wallace exchange; Robt. Kunkle, North Platte, secretary, Dickens Telephone Co.; Beatrice Hoatson, operator at Hershey; Bruce Brown, owner, Maxwell & Brady

Central Indiana Telephone Association. More than 200 people attended the luncheon.

Mr. Wilde talked of the duty of the public service commission and its relation to both the public and the utilities. The gist of his address was that, if the utilities want pleasant relations with the public, they must play fair and give first class service; and if the public wants first class

utility service, it must play fair and be willing to pay what it costs to give such service plus a fair profit.

Mr. Barnhart spoke at considerable length, touching the questions of public duty, patriotism and business integrity. "Wherever I speak," said he, "it is my mission to preach to the utilities that they should put all their cards on the table face up, exhibit absolute candor with their patrons and invite fair and



Some Nebraska Telephone People Spent a Most Profitable Day Together at North Platte.

Telephone System; Grace Anderson and C. O. Sutherland.

Second row: Nellie Murray and Mrs. Cross, operators at Hershey; Sybil Wilson, chief operator at Gothenburg; W. H. Jenkins, president, Hershey Telephone Co.; Anna Dick, chief operator, North Platte; Mrs. Martson, operator at Brady, and Miss Anna Grosbeck, traveling chief operator, Northwestern Bell.

Third row: Edith Book, chief operator at Maxwell; Edgar Hanna, Dickens Telephone Co.; Mrs. Carter, chief operator, Brady; C. S. Copps, district traffic chief, Grand Island district; Geo. White, owner, Sutherland exchange, and Rebecka Billeter, chief operator, Cozad.

Relations of Utilities and Public Discussed at Luncheon.

Henry A. Barnhart, of Rochester, Ind., president of the Indiana Telephone Association, and Carl Wilde, director of service for the Indiana Public Service Commission, were the principal speakers at a luncheon at Greencastle April 25, when the Kiwanis and Rotary clubs of Greencastle entertained the representatives of the West

constructive criticism from the public.

"A great deal of the difficulty between the public and the utilities is due wholly to a misunderstanding on the people's part. I haven't a word of defense for any public utility that takes advantage of the public—such action is both indefensible and reprehensible. I only plead for an understanding and for fairness on both sides. I believe it would lead to better relations if the people could be made to know the great expenses of recent years to which the telephone business has been subjected.

"The people must know that our expenses never cease. We can not shut up shop nor curtail expenses when business gets bad, as some kinds of businesses do, but must go on 24 hours every day in the week and 365 days in the year. And yet we are permitted to make, at the most, 7 per cent on our investment and assume all risks of storm, sleet and other destructive possibilities."

The speaker said he believed the Indiana Public Service Commission is a valuable body, both for the public and the utility companies, as it prevents either side from taking a wrongful advantage of the other.

An operators' school was held in connection with the meeting. It was in charge of W. M. Kendrick, toll supervisor of the Indiana Bell Telephone Co.

The morning session was given over to a business meeting. At the afternoon session Prof. R. V. Achatz, of Purdue University, gave an illustrated lecture on preservative treatment of wood poles. W. H. Curran, plant engineer of the Indiana Bell Co., Indianapolis, discussed "Foreign Wire Relations."

Harry Boggs, of the Indiana commission, spoke on simplified bookkeeping; and E. E. Potter, formerly in charge of the United States Naval radio school, gave an illustrated lecture on radio that was very interesting.

The officers who served the association during past year were reelected. They are: M. L. Clouser, Thorntown, president; Dalton Wallar, Crawfordsville, vice-president; and John M. Stanley, Ladoga, secretary-treasurer.

Bell and Connecting Company Representatives Meet.

The Northwestern Bell Telephone Co. invited the operators, managers and office employes of their connecting companies to a very instructive and pleasant meeting in Norfolk, Neb., on May 9. The visitors were received by John H. Duff and F. G. Hartzell, and not one present doubted their welcome.

The forenoon was devoted to getting acquainted and informal discussion and shop talk. After a splendid lunch, short instructive talks were made by Effie Anderson of Columbus, Elsie Stunbaugh and Ruth Halverstein of Norfolk relative to the handling of toll calls, collections and subscribers' calls. Many questions were asked and answered in a pleasing and instructive way.

Mr. Hartzell gave a talk on "How to Increase Toll Business," and he talked so well that there is no doubt that tolls will increase in that part of Nebraska. One operator said: "I am going to talk to my brother in New York—have him call me at 12 midnight, reverse."

The meeting was a decided success. A similar meeting is to be held in Columbus at an early date, followed by others as the season advances.

Good Talks, Good Attendance, at Operators' School in Iowa.

The operators' school at Leon, Iowa, May 8, was just as successful as the other operators' schools which have been held under the auspices of the engineering extension department of the Iowa State College, of Aimes. A group of papers of considerable merit was presented, and the attendance was very satisfying—the registration list totaling more than 40 names.

The school was in charge of Miss Anne Barnes and Manager R. R. Wilcox, of

the Leon & Lineville Telephone Co. The company was host at the luncheon which followed the morning session.

The sessions began at 9 a. m. and continued until late in the afternoon. That the program was a good one, may be judged from the following:

Address of welcome, E. A. Place, president, Leon Chamber of Commerce.

"Qualifications Necessary in the Selection of Operators," Miss Knauss, instructress, Northwestern Bell Telephone Co.

"Industrial Iowa," R. H. Holbrook, engineering extension department, Iowa State College.

"Public Relations — The Company's Standpoint and the Subscribers' Standpoint," R. R. Wilcox, manager, Leon & Lineville Telephone Co.

"How Well Do You Sign Your Name?" Miss Connie Farver, of Garden Grove.

Discussion on "How Correct Ticket Details Aid the Commercial Department."

"An Average Operator's Problems," Mrs. Frances Akes.

"The Value of System in Operating," Miss Blanche Farver, Garden Grove.

"Classification of Toll Rates," Miss Dowd, chief operator, Northwestern Bell Telephone Co., Corydon.

"The Conversation Drill," Miss Harris, chief operator, Northwestern Bell Telephone Co., Osceola.

Question box.

Interurban Telephone Cables in France.

By Chester Lloyd Jones, American Commercial Attache.

The unsatisfactory conditions in the French telephone service have given rise to widespread criticism, and even to proposals that the telegraph and telephone services be taken out of the hands of the government and turned over to the operation of private companies.

There has recently been established a company known as the Taxiphone Co., the object of which is to introduce automatic telephones in French cities. Even if this service should greatly expand, however, it would leave unaffected the unsatisfactory conditions existing in interurban telephonic communication.

The French equipment for telephoning over long distance is not of modern type, a circumstance the more remarkable in view of the degree to which French investigators have interested themselves in the scientific study of communication.

The French long distance telephone service still regularly employs two-wire copper aerial circuits, using wires from 2½ millimeters to 5 millimeters in diameter. For many of the more important routes the extension of this service is almost physically impossible because of the large number of wires already in use. These means of communication are

greatly affected by weather conditions and by the neighborhood of currents of industrial electric power. The cost of upkeep is also high, even under normal circumstances.

While the United States, Germany and England have adopted the use of cables, in which a large number of wires are joined, in their interurban services, France has accomplished practically nothing in this way and has at present a cable service far inferior to that of Holland, in spite of its much greater extent and population.

Plans for the laying of subterranean telegraph cables have been under discussion in France for many years, especially plans for a cable from Paris to Strasbourg. Other routes actively demanded are the following: Paris-Amiens-Lille; Paris-Rouen-Havre; Paris-Amiens-Boulogne-London; and Paris-Lyons-Marseilles.

The establishment of the first of these lines was approved in the Chamber of Deputies in connection with the budget of 1923 and is now up for consideration by the senate. The postal, telegraph and telephone administration has promised to push construction as rapidly as possible if necessary funds are forthcoming.

The cost of installing a cable system, including a relay station every 100 kilometers, is estimated to be approximately 2,075 francs per kilometer. Similar service on open line construction, it is said, will cost about 1,960 francs. It appears, therefore, that the establishment of the two systems is about equally expensive, but the advocates of the cable lines point out that the ultimate cost to the state would be considerably less if the system now in force were abandoned, due to the fact that the upkeep of the cable systems is more economical than that of the lines at present in use. In addition, the improvement in the service which is to be expected would, it is argued, greatly increase the use of the lines and therefore their earnings.

Forty-Two Millions for Wire Services in Australia.

Under the new Australian federal ministry an advisory board is to take charge of reforming the activities of the postoffice department, including the telephone and telegraph services. The sum of approximately £9,000,000 (\$42,750,000 at \$4.75) is to be expended, says U. S. Consul General Thomas Sammons, Melbourne, Australia, in a report to the Department of Commerce.

The shortage of telephones in Australia at the present time is estimated at 15,000. According to press reports, applications for new telephone installations are being received at the rate of over 2,500 a month, not more than 1,800 of which can be taken care of by the department with its present capacity.

Wm. W. Dean, Noted Engineer, Dead

Prominent Inventor and Engineer Dies Suddenly in New York—Was Pioneer Telephone Man, Entering Field in Early 80's, and Founder of Dean Electric Co.—Prolific Inventor and Famed for Harmonic Ringing System

Telephone men all over the country were much shocked to hear of the death of William W. Dean, one of the best known telephone engineers of the United States, who passed away suddenly in New York City, May 3. Death was due to heart failure, which was undoubtedly hereditary, as five of the deceased's relatives have died of the same trouble within the last year. Mr. Dean was 60 years old, and left a widow and two sons, William W. Jr. and Charles. A sister also survives him.

For several years past Mr. Dean had been living at 143 Clark Road, Lowell, Mass., where he had been connected with the United States Cartridge Co. Funeral services were held at Lowell and the interment was at St. Louis, Mo.

Mr. Dean went to New York City May 1 to arrange for winding up his connection with the United States Cartridge Co. of Lowell, and make preparations for joining the General Motors Research Co. at Dayton, Ohio. He met several friends the following day, and arose the morning of May 3 to turn the water on for his bath. His friends heard him walking about the room and after an hour called for him, but found him lying dead in the bed.

Physicians who were called at once stated that death had come quietly, as a result of weak heart action. Intimate associates of Mr. Dean said he had been troubled about his heart for several months, but his sudden death came as a severe shock to all who knew him.

William W. Dean was born in Fairfield, Iowa, in 1863. He attended Washington University, in St. Louis, where he took a deep interest in telegraphy and telephony, which he maintained throughout his whole life. After his graduation, he became connected with the Missouri Bell company as a troubleman, and in 1887 was made chief inspector.

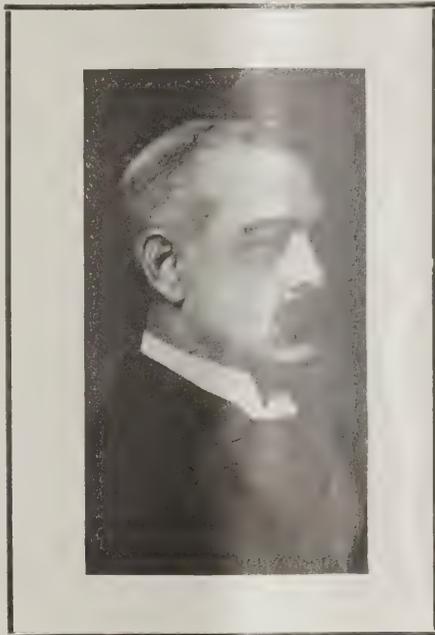
During these years he had been working hard, observing a great deal, and studying out the many problems of telephony which were as yet unsolved. He had built up for himself a practical knowledge of the telephone business and was beginning to be recognized as an authority on apparatus.

In the late 80's he went to South America as chief engineer for the Compania Union Telefonica, of Buenos Ayres, where he spent four years reorganizing and rebuilding the system. When this work was completed he again associated with the Bell companies, and later became chief

engineer for the Kellogg Switchboard & Supply Co., remaining with the latter company for a number of years.

About 15 years ago he started the Dean Electric Co., at Elyria, Ohio, for the manufacture of telephones. After a time, he left the Dean company in order that he might follow his profession as an engineer. He specialized in developing patents for manufacture, acquiring a very complete and widely known electrical laboratory.

He was also connected with the Western Electric Co. in the early days and was



The Late "Billie" Dean Was One of Independent Telephony's Outstanding Figures for Many Years.

with the Stromberg-Carlson Telephone Mfg. Co. at Rochester, N. Y., for a period.

Prior to his death, Mr. Dean was with the United States Cartridge Co., at Lowell, designing special motors for phonographs.

For over 20 years Mr. Dean was, probably, the most prolific inventor in the telephone field. At one time it was said he had more telephone patents to his credit than any engineer in the industry, not excepting C. E. Scribner. Perhaps the two greatest achievements of Mr. Dean in this direction was automatic ringing, which he perfected in an early day, and the system of harmonic ringing which he invented, and developed as a manufacturer, and which was first used by Independent companies.

Back in 1912 TELEPHONY printed a list of the telephone patents granted to Mr.

Dean between November 24, 1885 and April 2, 1912, that spoke eloquently for the fertility of his inventive genius and the intelligence of his unflagging industry.

The record showed: 1885, 1 patent; 1886, 2 patents; 1887, 1 patent; 1894, 1 patent; 1895, 6 patents; 1896, 8 patents, 1897, 11 patents; 1898, 8 patents; 1899, 1 patent; 1900, 2 patents; 1901, 4 patents; 1902, 3 patents; 1903, 13 patents; 1904, 8 patents; 1905, 9 patents; 1906, 19 patents; 1907, 30 patents; 1908, 17 patents; 1909, 7 patents; 1910, 8 patents; 1911, 10 patents; 1912, 2 patents.

For many years "Billie" Dean, as he was popularly called, was one of the outstanding figures in the Independent telephone industry. He was known by all the pioneers in the business and took an active part in its development. His talent in perfecting equipment to speed up and make telephone service more efficient amounted to genius, and his contributions to the art have done much to raise American telephone standards to the high position they admittedly occupy today.

Although not so closely identified with the telephone business during the past few years, Mr. Dean retained a keen interest in its progress and kept in close touch with his many telephone friends. While in Chicago several weeks ago, he visited the Kellogg factory, and spent several hours with President J. B. Edwards renewing old associations and recalling the experiences of the early days when the industry was young.

Mr. Dean had been a subscriber to TELEPHONY for many years, and it is interesting to note that he never sent in his renewal notice without adding a pleasant message of good will and cheer. His death will be sincerely mourned by telephone men everywhere.

Italian Telephone and Telegraph Lines Extended.

New poles, nearly all in pairs, have been set up for a distance of 500 kilometers in connection with improving the telephone and telegraph service in Tuscany, according to U. S. Vice-Consul Earl Brennan, Florence, Italy.

This extension has been made in connection with the work of electrification of various railway lines in southern and central Italy and is being done by the Ministry of Posts and Telegraphs. On these poles there have been placed about 7,000 kilometers of copper wire. Additional work is under way for the new telephone lines between Florence and Pisa.

Improvements the Order of the Day

Telephone Companies in Various Parts of Country Extending Lines, Making Additions to Switching Equipment and Providing New Exchange Buildings—
New Copper Toll Circuits, Underground Cable, and Reconstruction Work

Peninsular Company to Spend Half Million for Improvements.

Plans for the largest program of extension and additions thus far undertaken by the Peninsular Telephone Co., of Tampa, Fla. were announced recently by W. G. Brorein, president of the company.

Expenditures necessitated by the extensions will amount to close to half a million dollars, and will involve, among other matters, the construction of 600 miles of new copper long distance circuits extending to all parts of the company's system in Hillsborough, Pinellas, Manatee, Polk and Hernando counties.

Included in the improvements will be a new copper long distance circuit extending to Fort Myers, and operated in connection with the Lee County Telephone Co., of Fort Myers. At present, the only telephone connection Fort Myers has with the outside world is by an old-style iron wire line, over which conversation is practically impossible most of the time, and wholly unsatisfactory the rest of the time.

A new copper circuit is to be constructed to Brooksville, with additional circuits to St. Petersburg, Clearwater, Plant City, Lakeland, Lake Wales by way of Winter Haven, Lake Wales by way of Bartow, Bartow itself, and the Ridge section from Frostproof to Haines City.

Additional facilities also are to be provided from Bartow to Arcadia, including the through copper circuit to Fort Myers from Arcadia.

Extensive additions are to be made to the cable systems at Bradentown and throughout the entire Manatee river section, together with large additions to the central exchange facilities, switchboards and other equipment at that point.

Additions are to be made to all of the Tampa branch exchanges—from 100 to 200 new lines being added to each switchboard, in addition to new lines for the central exchange.

Other additions to the service in Tampa, President Brorein stated, will include much new underground cable and conduit work, involving an expenditure of about \$100,000 on the outside plant of the company in Tampa. As the downtown section is well provided for in the matter of underground conduits, most of the underground work is to be done in the outlying districts.

These additions and extensions of the local system, President Brorein said, were necessitated by the rapid growth of Tampa and suburbs—the company's local business having increased largely in the last year.

Installation of the automatic system in the exchanges at Clearwater and Plant City, with big additions to the equipment and plants at both places, will also be completed during the summer, it was announced. Material extension of cable and switchboard facilities and equipment at the Lakeland exchange is another feature of the improvement program of the Peninsular company.

At Plant City the company has purchased its own building. Automatic equipment for the exchange is already on the ground, ready for installation. The company also has purchased a building site at Sarasota and will begin construction of its own building there in a few weeks. At Sarasota, also, the automatic equipment is to be installed.

All of this new work is to be completed in ample time to afford entirely adequate local and long distance service for the largely augmented numbers of winter visitors expected in Florida next season.

Many Improvements Required in Los Angeles, Calif.

In order to establish a uniform method of operating the combined automatic and manual telephones now in use in Los Angeles, Calif., and at the same time to make preparations for the future growth of Los Angeles, the Southern California Telephone Co. will introduce a new numbering plan within the next few months, according to announcement made by N. R. Powley, commercial superintendent.

The system will make it possible to use an automatic telephone to dial the number of a manual telephone in the same manner in which the automatic number is dialed.

Among the improvements which will be required are: Additions to practically all of the company's offices; the renaming of six central offices, and the establishment of new office units in Hollywood and the Vermont, Adams, Huntington Park, Wilshire and downtown areas.

It will be necessary to bring into service large units of machine switching equipment in the Hollywood and downtown areas during the early part of the summer and to expand the company's construction program to care for the installation of 70,000 new telephones in the next two years.

The plans for caring for local needs are characterized by Mr. Powley as "the greatest telephone program to be effected in the shortest time in the history of the telephone business."

The present automatic plant has a ca-

capacity of 100,000 telephones, which will be increased to 600,000 under the new plan, and the manual plant will be added to, wherever necessary, to take care of the growth.

The company's construction program for this year, including the installation of the new system, will reach the grand total of approximately \$14,000,000, an amount almost equal to the combined plant value of both companies at the time of consolidation in 1917.

Carolina Company Has Started a Large Extension Program.

Extensions and improvements in the service of the Carolina Telephone & Telegraph Co., of Tarboro, N. C., involving an expenditure of half a million dollars, have been announced by officials of the company. The plans provide for spending approximately \$300,000 in Fayetteville on additional equipment to take care of increased business.

The extensions will include the running of two of the five copper circuits now going to Fort Bragg, on to Sanford, connecting at that point with the Bell system; and the building of a direct line from Sanford to Raleigh, affording the district improved service to central and northwestern portions of the state.

Extensions now under construction or already completed are a new copper circuit from Fayetteville to Charlotte, which gives direct connection between these cities; three additional copper circuits to Selma, affording direct service to New York, Philadelphia and other northern cities; two copper lines to Roseboro, which, with the one now existing will furnish direct connection with Roseboro, Clinton and Garland.

In addition to these improvements in the toll service, the Carolina company now has a force of men at work in Fayetteville extending its local cable lines.

The exchange building there will be added to, and a new brick building will be built at Dunn, while work has started on the construction of new exchange quarters in Washington.

Small Nebraska Company to Reconstruct Its Plant.

The Oakdale Telephone Co. of Nebraska, has undertaken an extensive rebuilding program. The lines in the town will be entirely reconstructed as well as part of the rural lines, with cable installation in the main portion of the town, with all pole lines taken off the main street.

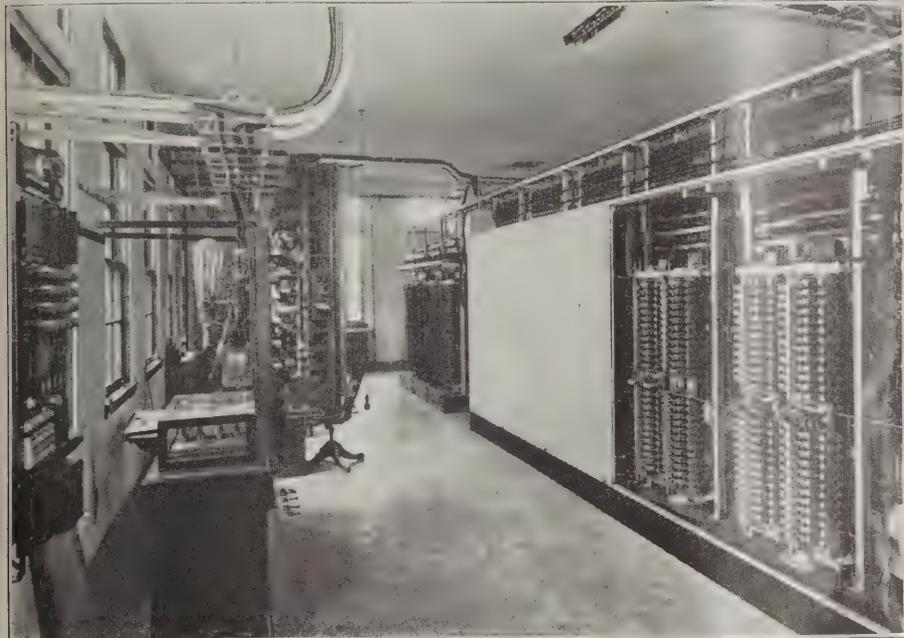
The company was formed following the dissolution of the Cedar County Mutual Telephone Co. a few years ago when it was found necessary to increase the valuation of the company. The stockholders in the two companies are the same. The company is one of the few Independent corporations in the state that has been able to pay dividends right along and at the same time keep its lines in good service condition. Five thousand dollars has been set aside for the new construction.

University Place Office of Lincoln, Neb., Exchange Cut Over.

The Lincoln Telephone & Telegraph Co. recently cut over its new University Place exchange, and from it will serve 1,800 patrons in that city, Bethany and North-east Lincoln. University Place is the



"M" Office Building of Lincoln Telephone & Telegraph Co., in University Place, Neb.



Line Switch Units, Rack and Power Equipment in the "M" Exchange.

seat of the Nebraska Wesleyan university, and is a city of over 5,000 persons. Originally located two miles from Lincoln, the two have grown together until but a narrow strip separates them.

Several years ago the company had experts who spent months in studying all the factors of city and company development and growth, and from the data at hand was able to predict with reasonable accuracy future telephone requirements. The establishment of this new office marks another step in the completion of this fundamental plan.

The new office will be known as the "M" exchange of the Lincoln headquarters, and is the third to be established as part of this exchange. Heretofore the service has been manual. The new equipment is entirely automatic of the latest type, and is expected to render high-grade service.

The company made ample preparations for the work of cutting over, and within five minutes from the time the last call was put up on the manual exchange the

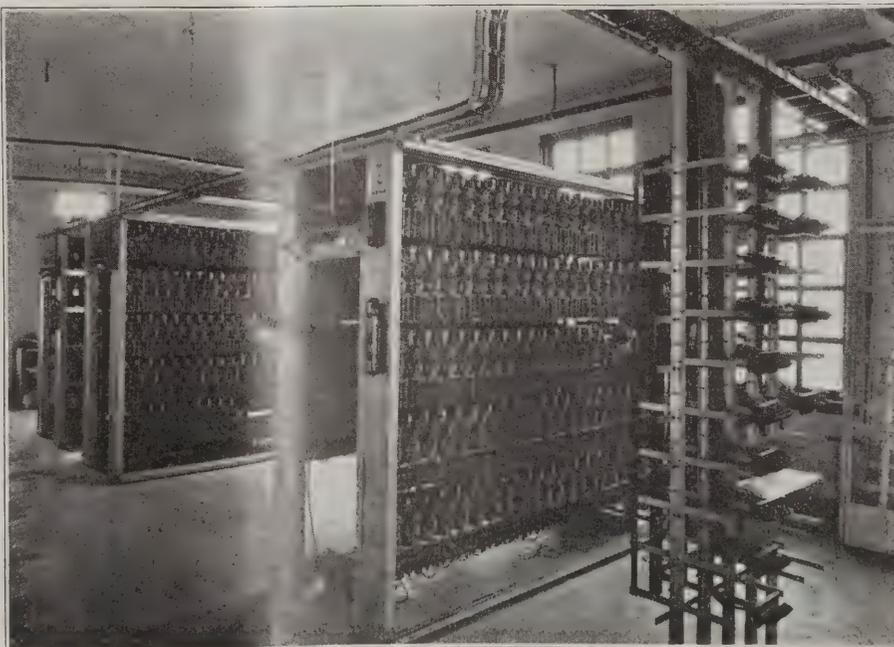
automatic equipment was put into service. Seventy-five men were used on the work. Simultaneously with the transferring of the wires from the manual switchboard to the automatic, a special force of men were working in the manholes where the cables are spliced and on the poles where the wires and cable were connected.

The new exchange building is of dark red pressed brick, trimmed with Bedford stone, is of the latest fireproof construction and designed especially for the housing of the modern automatic telephone equipment.

Bill to Reduce Rates in New York City Rejected by Assembly.

The New York Republican Assembly consigned to the scrap heap, on May 2, Senator Walker's bill designed to make telephone rates in New York City the same as they were in 1915.

A motion to take the bill from the rules committee failed 72 to 69.



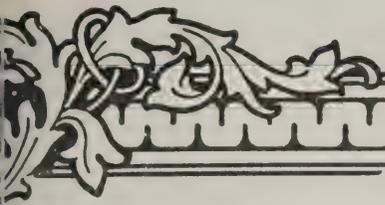
Switch Bays in "M" Office of Lincoln Telephone & Telegraph Co., Lincoln, Neb.



*The Home
of the
Pioneer Automatic Telephone
Manufacturing Organization*

*Engineers and Manufacturers of Strowger
Automatic Telephone Equipment since 1892*





Pioneers in Automatic Telephony

No telephone equipment can be completely developed and made an engineering and commercial success overnight. Only long years of experience in actual operation can determine whether a certain type of equipment will be successful and economical, or otherwise.

When the time comes, as it inevitably must, to replace your present equipment with automatic, remember that Strowger Automatic equipment, first in the field of automatic telephony, has stood the test of experience—has been successfully applied to the operating, traffic and service conditions of exchanges of every size and kind in all parts of the world.

Studies of any exchange will be gladly made without charge or obligation.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS.
BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York
International Automatic Telephone Company, Ltd. Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris
Automatic Telephone Mfg. Co., Ltd., Liverpool Automatic Telephones, Australasia, Ltd., Sydney



Financial Statements and Reports

News about Companies as Shown in Reports Made at Their Annual Meetings—Financial Conditions Reflected in Balance Sheets—Mountain States Company Had a Healthy Growth—Nevada Company in Good Condition

California Telephone & Light Co. Had Good Surplus Last Year.

The annual report for 1922 filed April 20 with the California Railroad Commission by the California Telephone & Light Co., which operates in Santa Rosa, Calistoga, Sonoma and vicinity shows that its telephone operating revenue was: Electric, \$261,376; telephone, \$88,267, or a total of \$349,643.

Operating expenses were \$188,870 for electric and \$64,411 for telephone; total \$253,281, giving a net operating revenue of \$72,506 for electric, and \$23,856 for telephone, total \$96,362.

Miscellaneous non-operating revenue amounted to \$1,378; interest, rent and other deductions totaled \$52,599; and the net corporate income for the year was \$45,141.

The surplus at the beginning of the year amounted to \$164,231; miscellaneous deductions were \$486; and the company declared dividends of \$156,660 during the year, leaving an accumulated surplus at the end of the year of \$52,226.

New Ulm, Minn., Company Had Revenues of \$45,000 Last Year.

A total income of \$44,876 and a net income of \$14,320 were shown on the financial statement for 1922 recently issued by the New Ulm Rural Telephone Co., of New Ulm, Minn. Plant and equipment is listed at \$205,247.

The statement of operations for last year is as follows:

REVENUES.	
Subscriber station rentals	\$41,554
Installations and renewals	440
Toll commissions	2,465
Miscellaneous	416
Total	\$44,875
EXPENDITURES.	
Maintenance	\$ 8,941
Traffic	7,806
General	7,830
Depreciation	6,000
Net income	14,298
Total	\$44,875
DISTRIBUTION.	
Interest	\$ 1,015
Dividend	4,301
Taxes	2,764
Accounts charged off	660
Undivided profits	5,579
Total	\$14,319

Reedley, Calif., Company Files Report for Last Year.

The Reedley Telephone Co., operating in Reedley, filed its report for the year 1922 with the California Railroad Commission on April 19. The company's operat-

ing revenue for last year was \$21,581; operating expenses, \$16,450, giving a net operating revenue of \$5,131. Interest, rent, taxes and other deductions totaled \$2,006, making the net corporate income for the year \$3,125. The surplus at the beginning of the year amounted to \$9,615, and the accumulated surplus at the end of the year was \$12,740.

Keystone Company Increasing Revenue, Decreasing Expenses.

The net earnings of the Keystone Telephone Co., of Philadelphia, Pa., for March were \$10,786 greater than they were for March of last year, and the net earnings for the first quarter of this year were \$23,920 above those for the same period last year. This increase was brought about by greater gross earnings and lower expenses.

The balance available for dividends, surplus and reserve was \$7,199 more for March of this year than for the same month last year, and for the three months' period it was \$15,954 greater.

	For month ended March 31, 1923	Year previous
Gross earnings	\$146,587	\$139,473
Operating expenses and taxes	83,961	87,633
Net earnings	\$ 62,626	\$ 51,840
Less interest charges...	43,950	40,363
Balance available for dividends, surplus and reserve	\$ 18,676	\$ 11,477
	For 3 months ended March 31, 1923	Year previous
Gross earnings	\$434,525	\$415,810
Operating expenses and taxes	245,699	250,904
Net earnings	\$188,826	\$164,906
Less interest charges...	131,749	123,783
Balance available for dividends, surplus and reserve	\$ 57,077	\$ 41,123

Indiana Bell's 1922 Deficit Nearly \$390,000.

The Indiana Bell Telephone Co. had a gross income for 1922 of \$864,698.09, which was \$786,164.47 larger than the gross income for 1921, it is shown by the annual report of the company. Notwithstanding the increase, the gross income was insufficient by \$388,869.78 to pay interest and rent, so the deficit for the year is shown to be that amount.

The income account shows the total operating revenues for 1922 were \$7,546,-116.51, or \$682,934.43 more than for 1921. It also shows that the total operating

expenses, including depreciation, were \$6,217,139.37, or \$35,573.31 greater than for 1921. The revenues increased proportionately much greater than the expenses.

In his annual report to the stockholders, President C. H. Rottger said in part:

"While the results for the year 1922 show improvement over the year 1921, they are still far from satisfactory. The revenues fell short of paying operating expenses and interest charges by nearly \$390,000, with nothing whatever for any return on the stockholders' investment represented by \$15,000,000 capital stock outstanding, all of which was issued and sold at par for cash or its equivalent in property. The net earnings for the year, before interest, were at the rate of 2.59 per cent on the average plant in service.

As stated in the 1921 annual report, the unsatisfactory financial condition of your company is due to the inadequate rates for service. The public service commission of Indiana is making a statewide investigation of our rates and has before it, for consideration, new rate schedules which we submitted for our entire system. This investigation is nearly completed and we confidently expect a decision from the commission before July 1, 1923.

During the year 1922 we expended approximately \$3,000,000 for additions to plant and equipment, the principal items being as follows: Land and buildings, \$41,-620; central office equipment, \$832,786; subscribers' station equipment, \$701,019; exchange lines, \$1,082,554; toll lines, \$330,-039.

During the year we connected 33,572 stations, disconnected 31,542 stations and sold three small exchanges operating 284 stations, making a net gain of 1,746 stations for the year. Our program for 1923 contemplates an expenditure of \$3,000,000 for new construction. This expenditure will enable us to provide additional facilities in congested sections in some of our larger exchanges, betterments and improvements where urgently required and an estimated net gain of 11,000 telephone stations.

On December 31, 1922, there were more than 463,000 stations connected with the Indiana Bell company's statewide system. During the year the company handled a daily average of 1,071,725 local messages and 13,658 toll messages. During the year the company has paid out \$63,982 to its employees under its plan for employees' pensions, disability benefits and death benefits. The total payroll expenditures during 1922 amounted to \$4,613,080."

The balance sheet shows assets and

liabilities of \$33,742,972.30. For plant and equipment the book cost is \$30,901,027.08, or about \$5,000,000 less than the company's appraisal in the rate case before the commission, the appraisal being made on the basis of cost of reproduction on average prices, including high of recent years. The balance sheet also shows the capital stock is \$15,000,000, the funded debt \$11,416,700, and advances from system corporations for construction, \$5,133,625. It shows a corporate deficit of \$2,430,918.23.

Cumberland Bell Reports Profits of About 3 1/2 Per Cent.

A net profit of 3.79 per cent. or a total of \$1,862,400 on an investment of \$50,-308,091 was reported for the last fiscal year in a statement recently issued by C. A. Stair, general manager of the Cumberland Telephone & Telegraph Co. in Louisiana. The report covers the company's operation in four states, Louisiana, Mississippi, Tennessee and Kentucky.

According to the statement, the gross earnings totaled \$16,337,255, with total operating expenses of \$14,474,814.

Mr. Stair also stated that new telephones for the year will total 17,923 at a cost of \$5,741,400. The company operates 505 central offices and 278,050 telephones connecting with 87,711 stations of other companies and 2,071 lines to farm houses.

The equipment of the company, according to the annual report, includes among other assets, 857,268 miles of wire, 21,715 miles of pole line and 809 miles of underground conduit.

The employees number 6,700 persons with an annual payroll of \$6,700,000.

Southern Bell Looks for Great Development in Next Five Years.

More than \$5,600,000 was expended last year in installing additional central office equipment and outside plant work by the Southern Bell Telephone & Telegraph Co. in five southeastern states, including Alabama, Georgia, Florida and North and South Carolina. Most of this was new money obtained from investors.

The gross operating revenue was \$16,-119,652, and operating expenses amounted to \$13,191,180, the net revenue being \$2,928,472.

According to an official statement, the importance, extent and value of the telephone service is indicated by the fact that there were approximately 736,342,000 local calls and 8,500,000 long distance calls during 1922 in the states named.

The company now has 259,467 stations in five states connecting approximately 120,000 stations of other companies and 23,000 telephones on farm homes.

There are 6,600 Southern Bell employees and the company's annual pay roll is more than \$7,374,500. The company owns 292 central offices, 782,643 miles of wire, 13,105 miles of pole line and 1,045 miles of un-

deground conduit included in its local and toll plant. This property represents an investment of more than \$48,215,673.

Announcement made by the company is that the next five years of growth and development in southeastern territory will be such as to cause the already large investment to grow rapidly year by year. The year 1923 will be one of expansion for the telephone industry, and if there are no delays the unfilled demand for service should be practically eliminated, the company states.

Some of the estimates already made include for the year an expenditure of \$5,-557,000 for additions and extensions exclusive of operating expenses. Approximately 55,266 new telephones will be installed and 54,887 removed, making a net gain of 20,379 telephones. The necessary capital has been arranged for and plans mapped out so that the program will be carried out as arranged.

Engineers of the company estimate that during the next five years 300,924 new telephones will be installed as a whole and 190,835 will be discontinued, leaving a net gain of 110,089 telephones during the period. This will require gross addition to the plant costing \$30,781,000.

Summaries of Reports of Class A Companies for January.

The statement of revenues and expenses of 72 Class A companies compiled by the bureau of statistics of the Interstate Commerce Commission shows the operating income for the first month of this year to be about 21 per cent higher than that for January, 1922.

Revenues totaled well over \$52,000,000, or 12 per cent more than those for the preceding January, and the expense of operation amounted to \$36,225,000, an increase of

8 1/2 per cent. The ratio of expenses to revenues decreased 2.25 per cent.

Traffic expenses were 7.1 per cent higher for last January than for January of 1922, and taxes assignable to operations were 18 per cent higher.

There were 10,546,838 stations in service at the end of last January, as compared with 9,877,728 the year before, an increase of about 7 per cent.

Comparison of Pennsylvania Bell Figures for 1921 and 1922.

The Bell Telephone Co. of Pennsylvania earned net income of \$6,075,437 in 1922, or 10.1 per cent on \$60,000,000 of stock, against \$5,869,000, or 9.87 per cent, earned in 1921. The income account follows:

	1922	1921	Increase
Operating revenue	\$37,223,878	\$34,154,690	\$3,069,188
Operating expense	27,764,436	25,437,836	2,326,600
Net operating revenue	\$ 9,459,441	\$ 8,716,854	\$ 742,587
Taxes, etc.	1,759,606	1,517,916	241,690
Operating income.	\$ 7,699,835	\$ 7,198,938	\$ 500,897
Non-operating income (net) ..	1,272,206	1,574,547	*302,341
Total income..	\$ 8,972,041	\$ 8,773,485	\$ 199,536
Bond interest, etc.....	2,896,604	2,904,580	*7,976
Dividends	\$ 4,800,000	\$ 4,800,000	.....
Surplus..	\$ 1,275,437	\$ 1,068,904	\$ 206,533

*Decrease.

Compared with the 1920 report, the one for 1922 was especially favorable.

Item.	—For the month of January—		
	1923.	1922.	Increase or decrease (*). Amount. Ratio, Pct.
Number of company stations in service at end of month	10,546,838	9,877,728	669,110 6.8
Revenues:			
Subscribers' station revenues	\$33,311,747	\$30,519,654	\$2,792,093 -9.1
Public pay station revenues	2,453,428	2,163,431	289,997 13.4
Miscellaneous exchange service revenues..	452,611	435,439	17,172 3.9
Message tolls	13,815,022	11,590,095	2,224,927 19.2
Miscellaneous toll line revenues	1,459,504	1,323,612	135,892 10.3
Sundry miscellaneous revenues	931,367	739,360	192,007 26.0
Licensee revenue—Cr.	1,923,617	1,736,349	187,268 10.8
Licensee revenue—Dr.	1,922,852	1,734,852	188,000 10.8
Telephone operating revenues	\$52,424,444	\$46,823,088	\$5,601,356 12.0
Expenses:			
Depreciation of plant and equipment	\$ 7,586,058	\$ 6,855,093	\$ 730,965 10.7
All other maintenance	7,479,284	6,609,221	870,043 13.2
Traffic expenses	14,187,679	13,241,411	946,268 7.1
Commercial expenses	4,603,509	4,417,899	185,610 4.2
General and miscellaneous expenses	2,368,582	2,285,818	82,764 3.6
Telephone operating expenses	\$36,225,092	\$33,409,442	\$2,815,650 8.4
Net telephone operating revenues	\$16,199,352	\$13,413,646	\$2,785,706 20.8
Other operating revenues	\$ 495	\$ 1,042	*\$ 547 *52.5
Other operating expenses	1,523	1,203	320 21.0
Uncollectible operating revenues	331,779	212,642	119,137 56.0
Operating income before deducting taxes..	15,866,540	13,200,843	2,665,697 20.2
Taxes assignable to operations	4,235,522	3,534,263	651,254 18.2
Operating income	\$11,631,018	\$ 9,616,575	\$ 2,014,443 20.9
Ratio of expenses to revenues, per cent....	69.10	71.35	*2.25

Statistics of Operations of Class A Companies for January.

Handling Manual-Automatic Traffic

Special Training of Operators in the Interconnection of Manual and Automatic Traffic Is Required—The Tri-State Devised a Course Which Would Enable the Operators to Understand the Process of “Cross-Over” Connections

By W. I. Howard

Traffic Superintendent, Tri-State Telephone & Telegraph Co., St. Paul, Minn.

The development of automatic telephone service in the United States during the last few years has created in some of the larger cities the complicated problem of giving a combined automatic-manual service. This has been necessary owing to the large outlays of capital in modern manual central office equipment, which cannot be economically scrapped until such a time as its life has in a large measure reached its ultimate.

In the process of conversion to the automatic system it has, therefore, been considered good business policy to take care of expansion with automatic equipment, retaining the valuable manual equipment and providing an interchange of connections between the two systems in such a way as to give the automatic subscriber a service to other automatic subscribers and to manual subscribers, at least as satisfactory as that he would have had on the full manual system. Otherwise the automatic subscriber would naturally feel that the gradual conversion towards full automatic service was a step backward instead of progress in the art and would resist such a change.

The “cross-over” connections between manual and automatic lines may be most economically established by operators,

making it necessary to train them in many additional practices. When a manual subscriber asks for a connection to a subscriber on the automatic system she must go in on a trunk to the proper automatic office and dial the called number.

In completing such a connection, the operator encounters a number of conditions not encountered in the manual connection. She learns that a called line is busy only after she has completed the dialing process. She must be accurate in the use of the dial and the dialing circuit, to avoid sending preliminary, distorted or wrong impulses into the automatic equipment.

If during a conversation an automatic subscriber is cut off, she must know how to re-establish the connection even though he is still at the telephone and holding his automatic connection busy to her. When an automatic subscriber wants a manual subscriber he must dial through the automatic office to get his order to an operator who has access to the manual lines.

In training the operating forces to handle the “cross-over” traffic, it is necessary that they have a general knowledge of the principal functions of the automatic switches and what happens when they use their equipment improperly.

The operators found it very difficult to get a clear understanding of the automatic equipment, from verbal descriptions, as might be expected, and the demonstration board shown in the accompanying illustration was provided.

The demonstration equipment is mounted on an oil painting of a section of the business district of St. Paul and is, to a certain extent, a true picture of the sky line and two of the offices of the Tri-State Telephone & Telegraph Co. The long, two-story building at the left of the picture represents the Garfield automatic exchange, with a section of automatic equipment mounted on it. The seven-story building with a roof garden, to the right of the Garfield office, is a good representation of the main downtown office building housing the Cedar exchange, as well as the general offices of the company. The first floor of the building is not shown.

On the front of this building is mounted a bank of subscribers' line multiple jacks, three strips of trunk multiple jacks and three strips of answering jacks and associated lamps. Below this is a section of “A” operators' keyboard, with two complete cord circuit equipments, and a dial for calling subscribers connected to the automatic offices.



Demonstration Equipment Designed to Give Operators a Knowledge of What Actually Takes Place in Manual-Automatic Cross-Overs.

At the right of the "A" position is a section of "B" operators' keyboard, equipped with two trunks from manual offices, one trunk from an automatic office, and a so-called display panel on which the illuminated digits of a manual number appear when an automatic subscriber dials a subscriber on the manual system. The four switches shown mounted above the display panel are the digit selectors for the panel.

The teacher in instructing the students how to handle the different classes of calls operates the telephone and keyboard equipment as the subscribers and the operators at the switchboard do, thus demonstrating the different steps followed in the completion of connections.

The following classes of calls and connections are demonstrated:

A manual subscriber calling a manual subscriber in the same office.

A manual subscriber calling a manual subscriber in another office.

A manual subscriber calling an automatic subscriber.

An automatic subscriber calling an automatic subscriber.

An automatic subscriber calling a manual subscriber.

An operator encountering a busy manual line.

An operator encountering a busy automatic line.

An operator encountering all trunks busy in the automatic system.

An operator referring a subscriber to the supervisor.

An operator taking care of an automatic subscriber who has dialed incorrectly.

An operator retarding or forcing the dialing impulses and its effect upon the automatic switches.

Handling a call from an automatic subscriber when a trunk assignment lamp is burned out.

Handling a subscriber who wishes to recall the operator.

Re-establishing a connection cut off during conversation—between the different classes of subscribers.

The course of a call in a manual or an automatic multi-office exchange is understood and need not be mentioned here. Completing connections from manual lines to automatic lines, and vice versa, are comparatively new however and may be of sufficient interest to narrate.

A manual subscriber asks his "A" operator for an automatic number. The "A" operator selects an idle trunk to the automatic office, in which the called line terminates, and inserts the calling cord of the pair in the trunk, after having thrown the key to connect it with her dialing circuit. She dials the last four digits of the subscriber's number and at the end of the dialing period the called subscriber's telephone bell rings automatically.

In case the connected parties are cut off during conversation, the fact that an automatic subscriber is involved makes it necessary that the "A" operator have access to a special or service operator who has

access to the test connector and can "get in" on a busy automatic line. On request of the "A" operator, the service operator asks the automatic subscriber to hang up his telephone so the connection may be re-established.

An automatic subscriber dialing a manual subscriber causes the four digit selectors to operate in their turn and set up the called party's number on the display panel, before the operator at the office in which the called number terminates. The call-indicator operator tests the multiple jack of the called line and finding it not busy, inserts the plug of the trunk seized by the call, starting the automatic ringing of the called party's bell and clearing the call indicator equipment for the next call.

The call-indicator operator cannot "cut-in" on this class of traffic and requires a head receiver only for securing a busy test. A call-indicator position will store six calls, which appear before the operator for completion in the order in which they were initiated by the calling subscribers. A seventh storing equipment is provided to take care of any call that may have reached the manual office after the six regular storing devices have been seized.

Since the demonstration board has been in use, we find the operators have little difficulty in guarding against incorrect operation of the equipment provided for establishing "cross-over" traffic.

Organizing for Increased Efficiency

Good Service Is a Tangible Asset—It Includes Every Employe and Every Department—Efficiency Increased by Developing Initiative and Enthusiasm—Address Delivered at the Convention of the Nebraska Telephone Association

By H. F. McCulla

Commercial Engineer, Lincoln Telephone & Telegraph Co., Hastings, Neb.

There are two fundamental conceptions of the main objects to be attained in organization practice. The first conception is to safeguard the owners' interests by closely supervising each employe's act so as to reduce to a minimum all chance of making mistakes. This is essentially the governmental plan. It tends to discourage and delay the work, provide a maximum of non-productive labor, a minimum of initiative, enthusiasm and production per employe.

With a mistaken conception of results to be obtained, this plan so binds and interferes that it is referred to on every hand by the well known name "Red Tape."

The second conception of the main object of business organization is that of increasing the efficiency of each and every employe, and thus secure maximum production at minimum cost. In summary, pick your employe. Give him all the advance information possible; this means

not only for a particular job, but of the work as a whole.

Remember that at one time our knowledge of the particular subject at hand was as limited as his. The old theory of a "self-made man" was exploded long ago, for we know that without help in various ways from another, none would progress very rapidly or very far.

Tell him as nearly and as exactly as possible what is wanted. Then step aside and leave the execution of the job to him. Judge the results obtained by his average unit cost for a period of time, not by any particular piece of work. Give him due credit for any improved methods which he works out and puts into effect to good advantage.

This plan is working out in all types of business organizations today, and is recognized by all as the plan which develops in the employe initiative, enthusiasm, self-confidence and loyalty.

"Service," after all, is the most important point to be covered by this paper. It is the one commodity which we are all selling, and to all of us is of the greatest importance. However, many business concerns use the word without clearly understanding its meaning. To them it sounds well and they hope the sound will make a favorable impression.

What May Be Done to Improve Organization Service.

There are many public utility companies now endeavoring to preach and practice better service, because they have learned a little concerning what they have lost in the past by withholding a real service from their patrons. The class of commercial enterprises which has long supplied a conscientious service will continue to do so, for they realize that service is the key to the successful conduct of their business.

"Service" does not mean alone the kind

of telephone communication which our plant will furnish. Service includes everything pertaining to the company and its affairs. And here we can best bring out the points which will answer the question stated before, "What may be done to improve organization service?" by realizing and recognizing the following facts, and incorporating them at all times into our service:

Good service is a summary of the best in the organization, including every employe and every department. Good service is not a theory—it is a tangible result. We realize that we must not build this service upon the sandy and false foundation of hastily-formed policies, but rather upon the solid, substantial rock of basic principles—principles established by years of conscientious service, and which have stood the test of time.

Today, more than ever in the history of business organizations, is realized the importance of the "little things." Courtesy, thoughtfulness, and "I thank you" spirit. The courtesy and thoughtfulness of the solicitor, the installer, the troubleman, the collector, the commercial employe who receives the subscriber's payment for service over the counter, may appear as "little things" to us, yet they form a large part of the magic word "service."

Courtesy is the one thing which costs us nothing, means so much to the other fellow, gives us that pleasant feeling of a kindly deed done, and can reflect nothing but credit to the individual or company which bestows it.

And the "I thank you" spirit is about the most contagious thing in the world. "Thank you" is easy to say and a thousand times easier to listen to. However, a mechanical, cold-blooded, "Thank You" is not courtesy.

The dictionary gives courtesy as "politeness with kindness." The kindly tone, the

pleasing smile, the careful attention and consideration, exemplify courtesy much more than any formal expression.

Essentially, remember at all times that "service" is our "all in all." Service is progressive, and must be recognized as such. We must consider no limitation to service, striving always for perfection.

Not All Calls by State Employes Are Tax-Free in Missouri.

For the information of telephone men in Missouri who are not familiar with the revenue act as applied to long distance calls necessitated by the increased activity of the highway department in road building, the Missouri Telephone Association states that the act provides that telephone calls on government business which are to be paid from the funds of the United States or of the state, are exempt from this tax. This applies to telephone calls that are to be paid out of state funds only.

All employes of the state highway department who are entitled to tax free messages will be supplied with proper identification cards for presentation at the toll office when calls are made. In addition to the identification, they will be supplied with exemption certificates and directed to fill them out properly and leave at the office when call is made.

Oklahoma Telephone Companies Operating on Narrow Margin.

Telephone companies have perhaps been operating at a closer margin during the past few years than at any time during pre-war days, according to a statement by H. W. Hubenthal, telephone engineer of the Oklahoma Corporation Commission.

The war-time advance in rates represented in Oklahoma a total increase in revenue, per station, between 1914 and 1920, of approximately 43 per cent, he

said. During the same period operating expenses increased, per station, 63 per cent. Receding costs and reduction of rates in Oklahoma since 1920 have been such that in 1922 the expense increase over 1914 was 43 per cent, while the revenue increase was 5 per cent less, or 38 per cent, per station, these figures being developed from reports of the Southwestern Bell Telephone Co., applicable to Oklahoma.

The statement reviews the work of the telephone department showing that it has saved the people of Oklahoma large sums of money and has been operated at the small cost of \$5,000 per year. Approximately, 98 per cent of the complaints to the department are disposed of informally without the necessity of a hearing.

There are two telegraph companies, 300 Independent telephone exchanges, 153 Southwestern Bell company exchanges and 76,000 miles of long distance lines in Oklahoma, according to the statement. There are 250,000 telephone stations in Oklahoma which are about evenly divided between the Bell, Independent and rural companies.

Wed by Telephone; Bride in Texas, Groom on Coast.

Miss Helen Leona Satterwhite, sitting at the telephone office in Fort Worth, Texas, was wedded to Horace William Keller, critically ill with pneumonia in the naval hospital at Bremerton, Wash., May 3, by a long distance ceremony.

Justice of the Peace Hughes, sitting beside the bride in Fort Worth, officiated at the ceremony, getting the verifications from persons in the sick room of Keller. Justice of the Peace James W. Carr officiated in Bremerton. A telephone circuit more than 2,000 miles in length was set up for the occasion. The ceremony was completed in 45 minutes.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Bell's Injunction Suit Against Nebraska Commission.

After lasting for five days, the hearing before a master in chancery in Omaha of the Northwestern Bell's injunction suit against the Nebraska State Railway Commission was adjourned until May 21, when witnesses from the New York office of the American Telephone & Telegraph Co. will be heard. The suit involves the future rate schedules of the Bell in Nebraska, although primarily it is a suit to enjoin the elimination of the 10 per cent surcharge on exchange rentals that has been in effect for several years.

The principal witness for the company

was H. A. Livermore, statistician for the Northwestern Bell. He took the stand after both sides had emphasized the importance of going fully into the facts and each had detailed the effect of the proposed rates. Mr. Lamaster, who appeared with Chairman Taylor for the commission, entered an emphatic objection to the inclusion in the expenditures account of the five million dollars that the Bell has spent in experimenting on machine switching and in the installation of the equipment in Omaha. He said the telephone user should not be charged with the cost of experimenting.

E. M. Morsman, for the company, said

that the commission rates would be confiscatory and, that under the rates it has been allowed to charge, the company has made no greater return than 4.64 per cent during any year since 1917.

Mr. Livermore's testimony consisted largely of showing the financial results of operations for the last five years, the division between toll and exchange revenues and expenses, the allocations between the five states served, the amounts set aside for depreciation and those expended in maintenance, together with a complete financial history of the company, to support the contention that it has failed to earn a reasonable return on a fair valua-

tion of the property. One of the items he presented showed that telephone users contribute approximately \$200,000 a year in federal taxes.

Cannot Order Line of One Company Connected to Another.

The Kansas Public Utilities Commission ruled on April 19 that it had no power to order that line No. 600 of the Edwards County Mutual Telephone Co., of Lewis, be disconnected from the switchboard of that company and connected to the Belpre Telephone Exchange, of Belpre.

A number of subscribers on line No. 600 filed a petition for connection to the Belpre company, but the officers of the Edwards County company objected. The commission found that the petitioners had a reasonably sufficient telephone connection with the Belpre exchanges and its subscribers, through the trunk line now owned by the Edwards County company.

United Company Purchases Herington, Kans., Company.

The purchase of the Herington Coöperative Telephone Exchange, of Herington, by the United Telephone Co., of Abilene, was authorized by the Kansas Public Utilities Commission on April 27.

It is stipulated in the contract of sale that the United company is to furnish free exchange service to the exchanges at Burdick, Latimer, Ramona, Delavan, Lost Springs, Tampa, Hope, Lincolnville, and Woodbine.

The matter has been pending for some time, there having been several delays in order to give certain stockholders of the Herington company an opportunity to re-finance it—which, however, they were unable to do.

Must Reconnect Smaller Company and Show Cause for Increase.

The Michigan Public Utilities Commission, on April 24, ordered the Fayette Rural Telephone Co., of Fayette, to resume business with Moscom Plains Telephone Co. and to appear before the commission May 15, to show cause why it should not continue to give service at the former rate.

The Moscom Plains exchange is a small organization in the south central part of Michigan. The Fayette organization is larger and it connected the Moscom company with the rest of the Michigan system. The Fayette company is alleged to have raised its prices for service without notice, and the Moscom company refused to pay, and was cut off.

Increased Rate Schedule Authorized for Thomasville, N. C.

A rate advance was authorized for the Thomasville Telephone Co., of Thomasville, by the North Carolina Corporation

Commission on April 25. The higher rates became effective May 1.

The town officials and other leading business men approved the increased asked for by signing a petition filed with the application.

The financial statement of the company showed that during the year closing December 31, 1922, it had a deficit of \$1,197. The company has 96 one-party business, 13 two-party business, and 126 one-party residence telephones.

The old and new rates are:

Business:	Old rates.	New rates.
One-party	\$3.25	\$3.75
Two-party	2.75	3.00
Residence:		
One-party	1.75	2.25
Four-party	1.25	1.50

Under the new schedule, desk sets are 25 cents; business extensions, 75 cents; residence extensions, 50 cents; and the joint user charge is 50 cents.

Ashtabula, Ohio, Company Gets Renewal of Its Franchise.

The city council of Ashtabula, Ohio, passed an ordinance on April 23 giving the Ashtabula Telephone Service Company, the right to continue to use the streets of the city for the coming 20 years. The ordinance goes into effect 30 days after its passage. The company filed its acceptance on April 30.

The franchise does not mention rates and it is probable that the next negotiations between the company and the city will be an effort to agree on a rate ordinance. It is the desire of the company to go to the commission with a schedule of rates which are acceptable to the city representatives.

The ordinance provides that free service is to be given the city and also designates the residence service that is to be given at a reduced rate upon the order of the council, and at places designated by it. The number is not to exceed 65 for use in city affairs by councilmen, heads of departments, firemen and policemen, at a rate of 25 per cent below the schedule rate for the same service, but in no case at a lower rate than \$1.50 per month, payable in advance.

The company will proceed with the erection of its new building as rapidly as possible.

Liability for Broken Telephone Wire Touching Light Wire.

A telephone company, whose wires were 10 or 12 feet above, and 6 or 8 feet to one side, of an electric wire, let a broken wire hang from its line in such a position that, from natural causes or playing of children, it could be brought into contact with the electric wires. The company was guilty of an act of negligence rendering it liable for the death of boys 13 and 17 years of age, who were

killed thereby. *Sebring vs. Bell Telephone Co. of Pennsylvania*; Supreme Court of Pennsylvania, 118 Atlantic, 729.

New Rural Rates Are Allowed for Pennsylvania Company.

A new tariff for rural service was granted on May 2 by the Pennsylvania Public Service Commission to the Central Telephone Co., furnishing service in Cairnbrook, Somerset county, and that vicinity.

On all rural lines connected to the Central company's lines at the municipal limits or the one-half mile exchange zone and directly connected with the exchange, a rental of \$6 per station per annum will apply.

Where the company performs switching service only, the charge will be \$3 per station per year.

The new rates are effective June 1.

Joint Use of Poles Where No Consideration Given for Land.

A voluntary mutual telephone company was given, without consideration, the right to erect a telephone line across another's land.

To be entitled to restrain the present owner of the land from interfering with the line under the principle that one seeking equity must do equity the company must permit the owners to use its poles in erecting another telephone line across the land in question. *Pervical vs. Faris*, Supreme Court of South Carolina, 113 Southeastern, 353.

Troubles Between Rural Line Subscribers Before Commission.

An action before the Wisconsin Railroad Commission, which was the result of a neighborhood feud, was dismissed by the commission on May 1. An informal complaint had been filed alleging that the service rendered by the West Line Telephone Co., a roadway company whose lines are switched at the Barneveld exchange, is inadequate because of abuse of the line by subscribers and because of an unsatisfactory arrangement of lines.

Some two years ago many members of the telephone company were bitter against each other as a result of a disagreement, and there was a general interference with conversations being carried on over the lines. In 1922, at the annual meeting, an effort was made to quiet the line by dividing it into two parts, known as the upper and lower lines.

Objection is now made by some of the members on the lower line to one of the parties receiving service on that line. However, as a change to the other line would involve considerable extension work and as the service has been quite satisfactory under the new arrangement, the commission declined to order any change.

It deplored the discourteous practices indulged in by some members of the company and said that the officers should summarily discontinue service to any patron who failed to act decently toward the others on the line.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

May 4: J. R. Fort, owner of the Cambria Telephone Co., allowed to place in effect increased rates authorized May 31, 1922, on condition that the system be modernized and placed in condition to render good service.

May 9: Huntington Beach Telephone Co. authorized to issue and sell for cash, at not less than par, \$25,500 of its capital stock for the purpose of paying indebtedness and financing in part cost of additions and betterments.

ILLINOIS.

May 16: Hearing held at Springfield in the matter of complaint of S. A. Culp against the Deer Creek Telephone Co., of Deer Creek, and Eureka Telephone Co., of Eureka, alleging disconnection of his telephone from the line near Eureka.

May 16: Hearing held at Springfield on citation to the Cornell Telephone Co. and Automatic Home Telephone Co. to show cause why toll connections should not be reestablished between Cornell and Pontiac; petition for rehearing filed by Cornell company on order entered February 28, 1923.

May 17: Hearing held at Springfield on application of the Buckley Telephone Co.

for advanced rates for service in Buckley.

May 17: Hearing held at Springfield on petition of the Illinois Bell Telephone Co. for increased rates for service in Beardstown.

June 13: Hearing in the Chicago rate case of the Illinois Bell Telephone Co. postponed to this date, on plea of S. A. Foster, attorney appointed to represent the new city administration.

INDIANA.

May 2: New rate schedule approved for the Hope Independent Telephone Co. of Hope.

MINNESOTA.

May 14: Mabel Telephone Exchange Co., of Mabel, authorized to establish, as of June 1, a rate of \$3 per year for switching rural stations, and \$4 for switching stations within the village.

MISSOURI.

May 12: Certificate of convenience and necessity issued, permitting the Ellington Telephone Co. to construct a telephone system and toll line connecting the exchanges at Ellington and Centerville.

NEBRASKA.

May 9: In the matter of the application of the Hendley Switchboard Co. for permission to increase switching rates from 40 cents to 50 cents a month; it appearing that this exchange is owned and operated by three farm lines converging at Hendley and that all of the 145 stations served are owned by the stockholders; that the increase will apply alike to each, and that the present revenues are insufficient, necessitating the directors carrying the financial load, request found reasonable and order issued accordingly.

May 10: In the matter of the application of the North Platte & Dickens Telephone Co. for permission to establish rates at its exchange at Dickens for certain local subscribers and for several switched stations; ordered that the company be authorized to charge \$1.50 for local service and \$6 a year for switching service, each subscriber served to furnish his own instrument.

May 16: Hearing held on application of Lincoln Telephone & Telegraph Co. for permission to increase rates hitherto charged on University Place exchange, where new building and board have been erected and service area increased, to the level of Lincoln zone rates.

NEW YORK.

May 8: New rate schedule filed by Chestertown Telephone Co., of Chestertown, proposing increases for service in various towns in Warren County.

May 8: Schedule of increased rates for service in Warren County filed by the North Creek Telephone Co., of North Creek.

PENNSYLVANIA.

May 2: Increased rate schedule, to become effective June 1, filed by the Hershey Bell Telephone Co., which furnishes service in Hershey, Derry Church and other towns.

May 2: Central Telephone Co., furnishing service in Cairnbrook and vicinity, authorized to make new rural rates effective June 1.

TENNESSEE.

May 3: Application filed by the Peoples Telephone & Telegraph Co., of Knoxville, for an increase in rates.

From Factory and Salesroom

Special Vacuum Cleaner for Telephone Equipment.

A new and different type of vacuum cleaner, weighing only 6½ pounds, is now being used for cleaning telephone equipment. In place of the usual long handle



Cleaning the Multiple Cable in the Rear of the Switchboard With the New Vacuum Cleaner.

with which the standard electric cleaner is equipped, the new cleaner, known as the Premier Handy Electric Vacuum Cleaner, has a handle resembling that of an electric iron. It is supported by a strap over the operator's shoulder, as shown in the illustrations.

This cleaner is manufactured by the Electric Vacuum Cleaner Co., Inc., Cleveland, Ohio, and was designed originally for cleaning the upholstery of closed cars and for cleaning pool and billiard tables. But a certain telephone company saw its possibilities for cleaning telephone equipment and apparatus and placed an order for several of these machines.

The results produced were so satisfactory that the manufacturer saw another field for it which looked nearly as large as that of the automobile field. A short fiber section and rubber tool were added to the cleaner's equipment and various samples were sent to equipment supervisors and maintenance supervisors of telephone plants in different sections of the country.

The reports on its operation were most affirmative, so the Electric Vacuum Cleaner Co. immediately began an intensive cultivation of the telephone field, with the result that a great many of the machines

are now saving time and expensive equipment in telephone exchanges in nearly all sections of the country.

The Premier Handy may be used both as a suction cleaner or as a blower. In using it as a blower, it is necessary only



The Premier Handy Cleaner Easily Takes the Dust From the Apparatus in the Switchboard.



*Like These
Age-Old Syrian
Water Wheels*

*Since Bible times,
these wheels have
pumped a depend-
able water supply
without interrup-
tion.*

French Telephone Batteries Do Their Work Perfectly

Near the ancient Bible city of Hamath the Great, on the River Grontes, these enormous mahogany overshot wheels have worked without interruption for centuries. Day in and day out they perform their work with minimum care and attention.

French Telephone Batteries are designed and built to give the same type of dependable service within the limitations of the materials which must be used. Ample current when called upon, the lowest possible degree of idle losses and an unequalled record of long life, have brought a large number of telephone companies to standardize exclusively on French Batteries.

FRENCH BATTERY & CARBON COMPANY, *Madison, Wis.*

Atlanta Dallas Denver Chicago New York Minneapolis Kansas City



For years French Telephone Batteries have stood for the highest development of practical battery efficiency.

FRENCH TELEPHONE BATTERIES

to remove the bag, attach the blower coupling, put on the hose, and a powerful blast of air is available for cleaning surfaces that are inaccessible to the suction tools.

As shown in the illustrations, the Premier Handy is supported at the operator's



The Main Frame Equipment Is Easily Cleaned With the Premier Handy.

side and out of the way of equipment. The operator may stoop, climb a ladder with it, or get into otherwise inaccessible places, due to its compact construction and to the unique method of its use.

The Premier Handy cleaner is fully guaranteed by one of the largest and oldest makers of electric vacuum cleaners. Service and repair parts on it are furnished by 46 service stations in all principal American and Canadian cities. The Premier Handy may be obtained direct from the Premier Handy department of the Electric Vacuum Cleaner Co., Inc., Cleveland, Ohio, or from the telephone equipment jobber.

Saskatchewan, Canada, has High Rural Telephone Development.

Saskatchewan, Canada, has one rural telephone to every nine people, according to a report issued by W. J. Patterson, provincial supervisor of telephones.

Telephone subscribers in the province number 89,000, the report shows. Of these 58,000 live in rural districts. There are 56,931 miles of line in the province. Saskatchewan constructed 3,168 miles of new telephone line last year. The provincial government has \$11,000,000 invested in telephones and the investment of private companies totals \$15,000,000.

Government ownership of telephone system has proved unusually successful in the prairie provinces. Gross revenue from government operated lines in Alberta last year amounted to \$2,359,551. Construction of new lines in the province this year call for an expenditure of \$150,000 and

the building of 1,100 miles of new rural telephone lines.

Rural telephones, the report points out, open up lines of communication in the remotest districts. They bind towns and communities closer together and make it easy for neighbors to reach each other. Settlers in the newly-opened districts still in the pioneer stages of development now are provided with telephones. With automobiles, churches, social centers and excellent schools, they have most of the comforts of city folks.

Employee - Stockholders, Plan of Electric Storage Battery Co.

The employee-stockholder plan has been adopted by the Electric Storage Battery Co., of Philadelphia, Pa., as a means of encouraging a deeper interest on the part of the employes in the organization and making them feel more an integral part of it.

The plan, which was approved at the stockholders' annual meeting April 18, provides an easy method for the employes to acquire stock, enabling them to do so on the most advantageous terms and keeping the payments down to nominal monthly installments. It went into effect on May 1 and the period within which stock may be purchased extends to May 31.

There are a few regulations attached to the plan, simply for the purpose of protecting the company while the stock is being paid for—for instance, when employes leave the company or wish to withdraw from the purchase agreement. In these cases the company will pay to the employe the net amount paid in by him

tion of the stock plan follows the action of the company in creating a pension fund and the erection of a fully equipped club house for recreation purposes.

A Trailer Efficient and Easy to Operate—The Utility.

A special model of trailer—and one which has become very popular with telephone men—is the "Utility Trailer," product of the Utility Trailer Mfg. Co., Los Angeles, Calif. And no wonder it has won its good reputation—for it is designed particularly to reduce the cost and hazard of handling cable reels, and to make the matter of handling the reels an easy one.

It can be handled entirely by one or two men, can be used as a general utility trailer about the yard, or as a pole dolly by laying one beam across the trailer frame just ahead and one just behind the permanent wood and steel bunks.

Immediately after the trailer was developed by the Utility company's engineers, it was subjected to the most severe tests, both by engineers and by telephone companies—and it came through with colors flying. Since then it has had a wide sale in the United States and Canada.

It is simple in design and easy to operate, as may be seen from the illustration, and it has a capacity of three tons.

In order to load the trailer, it is only necessary to put the axle in the cable reel, back the trailer under the axle as close as possible, adjust the pull chains, let down the front trailer leg, block front of trailer wheels, pull the tongue down with the truck—and the reel is automat-



Cable Reel Ready for Loading on Utility Trailer.

on the stock, plus interest at the rate of 5 per cent per annum.

Giving the large body of the organization, the "employes," an intrinsic interest in the company is a policy that works both ways; it's for the good of the company and for the good of the employe.

It is of interest to note that the adop-

ically loaded. Take up the slack in the pull chains and it is ready to travel.

The unloading is just as easy: Loosen the pull chains and turn the reel on the axle until it has rolled past the center, at which point the trailer will unload itself. The unloading can be done without the slightest jar by holding back on the trailer



He's going to
make his work
easier with—

BONITA

AERIAL CABLE RINGS

Reg. U. S. Pat. Off.

They Save Time and Last Longer
Over FIFTY MILLION in Use

STANDARDIZED BY THE A. T. & T. CO.

Cameron Appliance Co., Everett, Mass.

tongue with the chain attached to the truck.

The manufacturers will be glad to furnish information as to specifications and price. Their address is 1328 Palmetto street, Los Angeles, Calif.

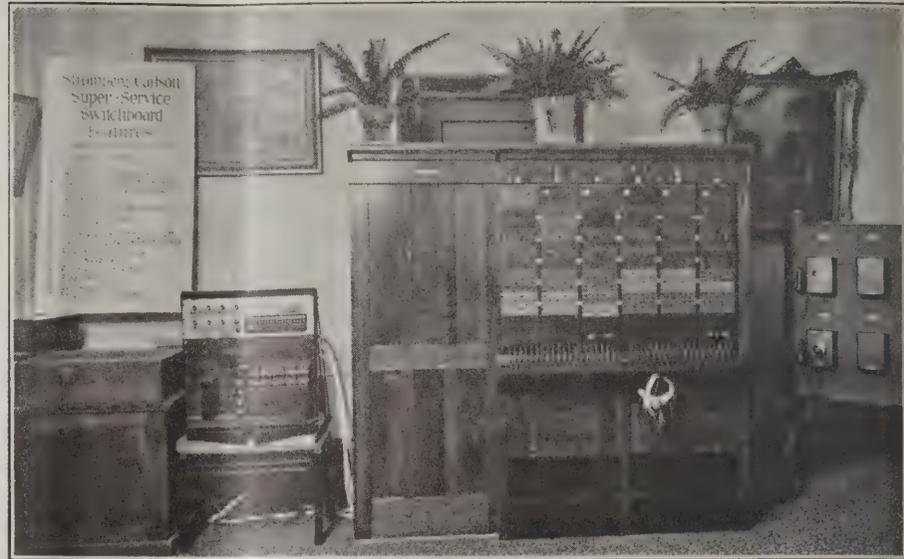
Prices in the Metal Markets.

New York, May 15.—Copper—Easy; electrolytic, spot and futures, 15½@15¾c. Tin—Easy; spot and futures, \$42.12. Iron—Steady; No. 1 northern, \$30.50@32.00; No. 2 northern, \$30.00@31.00; No. 2 southern, \$27.00@28.00. Lead—Steady; spot, 7.00@7.25c. Zinc—Easy; East St. Louis, spot and nearby delivery, 6.60@6.65c. Antimony—Spot, 7.50c.

It Caught the Eyes of New York Telephone Men.

Many new ideas were displayed by telephone manufacturers at the convention of the Up-State Telephone Association of New York, which was held in the Powers Hotel, Rochester, N. Y., on April 18, 19 and 20. The entire parlor floor was given over the exhibitors.

What particularly interested the 500 visitors was the speed and the accuracy displayed by the super-service switchboard which was exhibited by the Stromberg-Carlson Telephone Mfg. Co. The visitors were delighted with the many new features included in that switchboard, such as the "operator's ringing control," which requires but four ringing buttons for each position, instead of four ringing buttons for each cord pair as was the practice on older types of switchboards; the "advance



Stromberg-Carlson Exhibit at Up-State Convention at Rochester Featured a Super-Service Switchboard.

plugging-in" method which allows the operator to plug in only one call in advance of her listening-in; the "operator's listening indication" whereby the operator knows at any instant exactly to which answering cord her telephone set is connected.

Other features of the super-service switchboard also were demonstrated successfully during the three days of the convention to give proof that the super-service switchboard eliminates the busy-hour fatigue of the operators, and is, therefore, not only advantageous both to the operating company and the subscribers but also advantageous to the operating force.

The accompanying illustration shows the switchboard, the telephones, the relay rack, the converter and the interrupter, all of which were utilized to exhibit the possibilities of the super-service switchboard features.

Telephone Calls Displace Love Letters—Public Scribe Quits.

The fact that the telephone has become an instrument of such general use—even in the countries of Europe—has put an ancient business out of existence. And so, M. Faes, last of the public scribes in Paris, recently closed his shop, as he had no more calls to write love letters.

SOLDERING

The delicate connections, small units and all fine work in general is as simple as writing with a lead pencil, if you use

THE POST SOLDERING IRON

PLATINUM HEATING ELEMENT—INTERCHANGEABLE TIPS—WORKS ON ANY CURRENT
(Large and Small)



The smallest electric soldering instrument on the market

One Half Actual Size

List price \$6.00

FROM YOUR JOBBER OR WRITE

POST ELECTRIC CO., Mf'rs

Dept. G, 30 E. 42nd St., NEW YORK, N. Y.



Switchboard Plugs, All Types, U. S. Patent 1302471
INSULATION IN ONE UNIT. IN USE IN FIVE CONTINENTS

TELEFON FABRIK AUTOMATIC

7 AMALIEGADE, COPENHAGEN, DENMARK

**NORTHERN POLE
and
LUMBER COMPANY**

SERVICE
POLE
**DULUTH
MINNESOTA**

Hot Galvanized Pole Line Hardware

M. LANZ BOLT CO.

PITTSBURGH, PA.

To insure delivery on time order your poles as early as possible.

C TELEPHONE Construction NECESSITIES



DOUBLE-TUBE SLEEVES

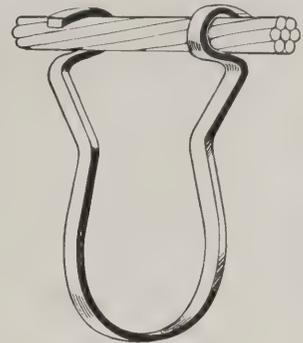
Here is a means of making a joint that is really a reinforcement in your overhead lines. Exhaustive tests prove that under all conditions of strain, the rupture will take place anywhere but at the joint itself. Made accurately to size from the best grade pure copper, carefully annealed and manufactured and manufactured accurately to size.

C-B Knobs
A flexible insulator that saves time and wire.

OTHER NATIONAL SUPPLIES

Single Tube Connectors
For all underground work where splicing cables requires a perfect connector.

Marline Hangers
A strong, practical and economical appliance.



CABLE RINGS

These cable rings firmly grip the messenger with two prongs, while the tension created by the spring in the ring absolutely prevents slipping. Its ease of manipulation, not only for installing, but for re-clipping purposes, makes "National" a prime favorite wherever used.

THE NATIONAL TELEPHONE SUPPLY CO.

NATIONAL

5100 SUPERIOR AVENUE
CLEVELAND, OHIO

The Handyman Guy Stretcher

Operated by **one** man. Capacity 6,000 lbs. Weight, only 26 lbs. A continuous stretch or pull of four feet. No slack lost. No danger of slipping or breaking. Also used to take slack in underground cables.

THINK OF IT—A one-man Tool that does the work of five men or more, saves hours of time, and eliminates block and tackle. Just fasten the swivel hooks to your come-alongs and guy or messenger is stretched to capacity.

SERVES MANY OTHER PURPOSES

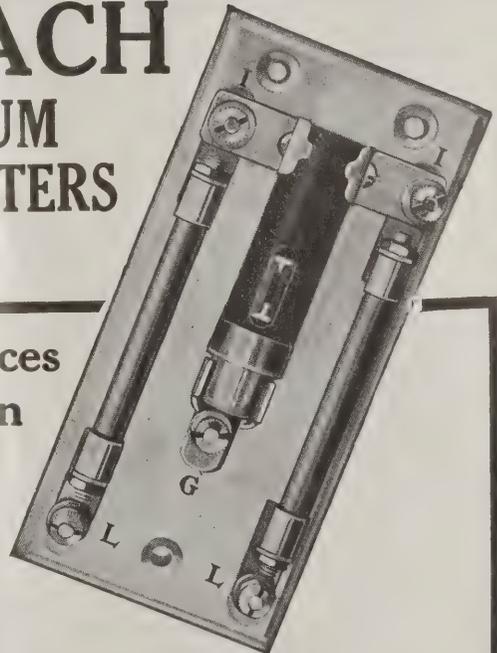
Write us or ask your Jobber.

Harrah Mfg. Co.
Bloomfield
Indiana



BRACH VACUUM ARRESTERS

at prices
within
your
reach



When the best protection costs no more, why not have it? BRACH arresters insure: non-grounding of lines, cables, clear transmission, balance of potential between pairs, and full protection against power crosses or lightning. There are no carbons to clean and no maintenance bills.

You can readily afford BRACH Vacuum Arresters at our present low prices. Type 440, shown above, complete with porcelain base, fuses and mountings, sells at \$1.50 each.

L. S. BRACH MFG. CO.
NEWARK, N. J.

THE ONE-MAN KIT



C. E. D. Kit No. 1

This little First Aid Kit fitted with Compact Emergency Dressings, may be worth its weight in gold to a lineman, installer, troubleman or inspector. Each of these dressings is a complete emergency treatment, bringing to First Aid an approximation of surgical cleanliness.

Why not standardize your First Aid equipment by installing Compact Emergency Dressings?

Send for Booklet T 5



First Aid Specialty Company

35 Nassau Street New York

Sterling Battery Meters Bespeak Accuracy and Reliability.

The Sterling pocket type of battery meter has many friends among the telephone maintenance men. And it is a good will that has been well earned, for the meters are both handy and efficient.

As it is apparent that a group of connected dry cells is—like a chain—only as strong as the weakest link, one weak cell destroys the effect of all the others. When cells are discarded because they yield no spark, a few good cells may be thrown away with the bad, unless each cell is tested separately.

For testing dry cells, the Sterling ammeter, it is said, has proved itself an instrument that can be relied upon for accuracy. It enables its user to know the exact strength of the cell, how long he can use the cell before discarding it, and just when the battery needs complete renewal.

One point of information which is of great value in connecting up wiring systems: The Sterling ammeter will show no reading unless the terminal at the bottom of the meter is placed on, or in contact with, the carbon or positive side of the dry cell. In this manner, the instrument also serves as a polarity indicator.

The No. 24 ammeter registers up to 35 amperes. The No. 25, which registers up to 60 amperes, is used in connection with multiple dry batteries.

The Sterling voltmeters have an important role in testing both dry and storage batteries. They measure the direct current electric circuit within the range for which they are designed, locate defective or broken connections, short circuits and similar wiring troubles.

If storage batteries are tested with the voltmeter while they are discharging, the results obtained will give an accurate indication of the strength and condition of the battery. It is made in types to register various voltages.

The voltmeter, a combination of the



The No. 24 Sterling Pocket Ammeter.

ammeter and voltmeter in a single case, serves the purpose common to the other two. It is a great aid for those who work with both dry and storage batteries and for work around similar electrical circuits.

The Sterling pocket battery meters are

2 5/16 inches in diameter, 5/8 inch deep and weigh only four ounces. They are put up in nickel-plated cases and are so constructed that dry cells may be tested by merely laying the meter across the binding posts.

Each meter has a flexible cable, which



The Sterling No. 34 Pocket Voltmeter.

may be either detached, or screwed on tightly to prevent loss. There is just enough glass exposed to permit a view of the dial, so that the likelihood of breakage is slight. It is not necessary to hold the meters in any particular position while testing, as the indicator points accurately without regard to the position of the instrument.

No effort has been spared to make the mechanism of the highest possible grade, and several features have been included which make for an almost indefinite life of the instrument.

E. W. Rockafellow Made Vice-President of National Pole Co.

On May 1, E. W. Rockafellow, for a number of years general supply sales manager of the Western Electric Co., became a vice-president of the National Pole Co., of Escanaba, Mich., and will represent it at 220 Broadway, New York.

Mr. Rockafellow started his business career when he entered the employ of the Western Electric Co. as an office boy. He studied shorthand in spare moments, and in 1888 acted as private secretary to H. B. Thayer, who at that time was manager of the New York house and is now president of the American Telephone & Telegraph Co.

In 1890 Mr. Rockafellow was advanced to the job of assistant purchasing agent, and when the Western Electric Co. opened a store in Thames street, New York, in 1892 he was placed in charge. Early in 1894 he was appointed traveling salesman, with territory extending from Baltimore to Galveston.

Military service interrupted his business career in 1898, when at the outbreak of the Spanish War, Captain Rockafellow applied for leave of absence from the Western Electric Co. and served in command of Company M, 47th Regiment, New York Volunteers.

After the war he returned to the Western Electric Co. and in 1901 was appointed

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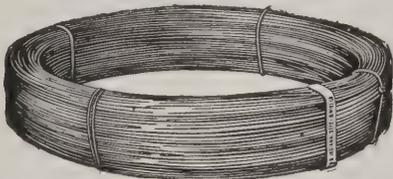
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The price of the PREMIER HANDY with all the equipment, as described, is only \$35.00. This is about half the price of many standard electric vacuum cleaners with attachments and only a **very small fraction** of the cost of a Pump Type Vacuum Cleaner truck equipment or an installed Vacuum Cleaner System.

There is labor saving, sanitation and distinct economy for your exchange by the use of the PREMIER HANDY.

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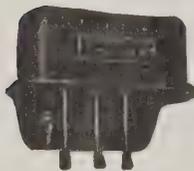
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Telephony Advertisers

sales manager of the company's New York house, moving up to the position of supply sales manager in 1908. In April, 1919, he became general supply sales manager.

In his work in the general supply sales department, Mr. Rockafellow devoted



E. W. Rockafellow, Many Years With Western Electric Co., Is Now Vice-President of National Pole Co.

much of his time to the development of the jobbing side of the business, both from the standpoint of the company as a whole and of the distributing houses.

He was one of the organizers of the Electrical Supply Jobbers' Association and the Society for Electrical Development and has been a director in both organizations since their foundation. For years he has been active in the National Electric Light Association and has served on many committees of that organization.

Mr. Rockafellow takes to his new work with the National Pole Co. the good wishes of his many associates in the Western Electric organization, who admire him for his high personal standards and for the wholehearted sincerity which has characterized all of his work for the up-building of the electrical industry.

American Insulated Wire & Cable Co. Makes Magnet Wire.

On April 2 the American Insulated Wire & Cable Co., of Chicago, commenced operations in its new magnet wire department.

The department is in charge of a man who has had wide experience in the production of magnet wire and the high standard of the company's older products will be maintained.

The output of the new department is sold under the trade name of A-1 magnet wire and includes this variety: Plain enameled, single and double cotton enameled, single and double silk covered, single and double silk enameled.

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You should have Vac-M Arresters if you would have effective service the whole year 'round.

They successfully balk lightning and crosses with high tension circuits and in their metal containers are proof against wind and weather.

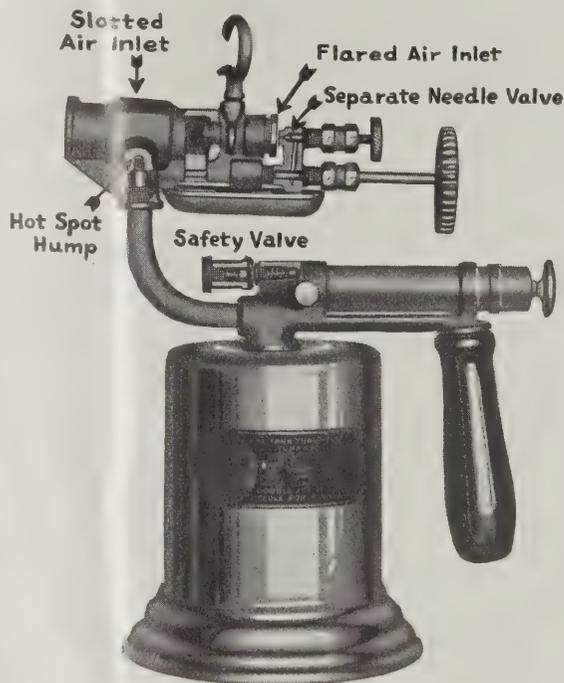
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Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and Incorporations.

WESTMORELAND, CALIF.—The Number Eight Telephone Co. has been incorporated with a capital stock of \$10,000, divided into 200 shares at \$50 each, of which \$250 has been subscribed.

GEDDES, S. D.—With a capital of \$1,500, C. H. O'Deen, F. Westebdorf and H. Vikken have organized the Morningside Telephone Co.

PHILIP, S. D.—H. Kurth, G. M. Freese and N. W. Goodell have incorporated the Bad River Farmers Telephone Co. with \$1,500 capital stock.

HUDDLESTON, VA.—The Bedford Mutual Telephone Corp. has been granted a charter authorizing it to operate a telephone system in Bedford County with maximum capital fixed at \$5,000 and minimum at \$1,000. The incorporators were listed as T. R. Plybon, president; S. R. Woodford, secretary; C. D. Burnett, O. L. Updike, and Raymond Ashwell.

WHITE BLUFFS, WASH.—The White Bluffs & Columbia River Telephone Co. has filed a certificate changing its name to Columbia River Telephone Co. and listing its capital stock as \$25,000.

HELVETIA, W. VA.—The Helvetia Telephone Co. has been organized with a capital of \$10,000. The incorporators are W. Thomas, A. E. Vogel, P. Doetwyler, A. F. Kraemer and A. Teuscher.

MORGANTOWN, W. VA.—The Dents Run Telephone Co. has been incorporated by S. H. Arnette, F. R. Neeley, J. R. Fox, T. H. Fetty, and D. G. Snyder, with a capital of \$2,500.

EAGLE RIVER, WIS.—With a capital of \$40,000—divided into 400 shares of the par value of \$100 each—the Eagle River Telephone Co. has been incorporated by W. H. Radcliffe, R. B. Radcliffe and A. Radcliffe.

Construction.

SALINAS, CALIF.—The Pacific Telephone & Telegraph Co. plans to make improvements to the local system at an expense of about \$11,640.

SANTA BARBARA, CALIF.—A large amount of construction is being planned for this year by the Santa Barbara Telephone Co. Work in the Santa Maria district will begin in about two months; the Monticeto exchange will be rebuilt in its entirety and a new line will be constructed to that town; and a quantity of material has been ordered for extensions and improvements in Santa Barbara. The annual report of the company showed that it has 6,700 subscribers in Santa Barbara and 922 in Monticeto, also that about \$100,000 was expended for betterments in Santa Barbara county.

FORT WAYNE, IND.—The Home Telephone & Telegraph Co. expects to start construction, some time during the present year, of a downtown main office and a new exchange on the south side.

ASHTABULA, OHIO—The Ashtabula Telephone Service Co. has purchased a site on which to erect a \$100,000 building. Work is to start about June 1.

COLUMBUS, OHIO—It was announced at the recent annual meeting of the Ohio Bell Telephone Co. that the construction pro-

gram for 1923 contemplates the expenditure of \$10,700,000 for additions to plant and equipment. This will provide for the unification of service at 22 dual service points.

Elections.

CANTON, ILL.—The directors of the Canton Home Telephone Co. were re-elected at the stockholders' annual meeting, and they organized by electing as officers: M. J. Gorman, president; G. W. Chandler, vice-president; F. W. Plattenburg, secretary; W. D. Plattenburg, treasurer; and P. P. Andrews, manager.

KEWANEE, ILL.—The officers of the Kewanee Home Telephone Co. have been re-elected as follows: W. I. Hibbs, president; G. B. Thompson, vice-president; Dr. A. C. Shoemaker, secretary-treasurer and general manager; and F. M. Ashe, manager.

WOODHULL, ILL.—The Clover Mutual Telephone Co. has elected W. E. Anderson and T. H. McConnell as directors. The other directors are E. Rehn, W. Nelson, G. Stephenson, A. N. Johnson and F. Shuttuck. The directors organized by electing J. E. Johnson as president and R. J. Forgy as secretary-treasurer. The company has been in existence 24 years.

FORT WAYNE, IND.—At the annual meeting of the stockholders of the Home Telephone & Telegraph Co. the old board of directors was re-elected as follows: A. E. C. Becker, W. A. Bohn, F. E. Bohn, M. D. Fisher, G. M. Hofmann, W. L. Moelering, E. C. Miller, C. Niezer, I. Lehman, J. D. Reuss, L. H. Moore and E. M. Wilson.

IRETON, IOWA.—D. G. Johnson was re-elected president of the Ireton Rural Telephone Association at the recent annual meeting; R. W. Younie was re-elected vice-president; and F. F. Faringer, secretary-treasurer and general manager.

GRAND RAPIDS, MICH.—The Citizens Telephone Co. has re-elected as its directors: W. H. Anderson, F. E. Church of Lansing, H. W. Curtis, T. H. Goodspeed, R. D. Graham, C. Hamilton, C. H. Hollister, R. W. Irwin, J. B. Martin, W. K. Spencer, C. E. Tarte and V. M. Tuthill.

KENESHAW, NEB.—The Keneshaw Telephone Co. will have as its officers for this year: S. A. Westing, president; J. H. Augustine, vice-president; Mrs. M. Weeks, secretary-treasurer; and E. Weeks, manager.

COLUMBUS, OHIO.—Stockholders of the Ohio Bell Telephone Co., at their annual meeting, elected the following directors: E. S. Bloom, C. P. Cooper, F. A. Davis, E. J. Farrell, E. K. Hall, F. R. Huntington, C. Y. McVey, E. A. Reed, J. Sherwin, A. Smith, H. B. Thayer and F. H. Tolles. The directors re-elected E. A. Reed, president; C. P. Cooper, vice-president and general manager; J. Upchurch, vice-president and general auditor; C. L. McNaughton, secretary-treasurer, and F. H. Tolles, general counsel.

WELCH, OKLA.—The Welch Mutual Telephone Co. has elected O. Stroud as president and L. Stroud as secretary for the coming year.

LINESVILLE, PA.—The board of directors of the Western Crawford Telephone

Co. has elected as officers: J. H. Wright, president; L. E. Whiting, vice-president and general manager; L. C. Wright, secretary; and H. M. Dickson, treasurer.

SHERMAN, TEXAS.—Stockholders of the Grayson Telephone Co. held their annual meeting recently and elected J. B. Earle, L. S. Gardner, F. C. Dillard, W. R. Brents, C. A. Shock, J. G. Crane and C. A. Bennett, directors. The directors then organized by electing J. B. Earle, president; C. A. Shock, vice-president and secretary; J. G. Crane, treasurer, and J. C. Paxton, assistant treasurer.

The North Texas and Peoples Home Telephone companies held annual meetings following the meeting of the Grayson company, and elected the same officers as the Grayson.

The Bonham Telephone Co. also held its annual meeting, at which J. G. McGrady was chosen president; C. A. Shock, vice-president and secretary-treasurer; J. B. Earle, vice-president, and J. C. Paxton, assistant treasurer.

MILWAUKEE, WIS.—The board of directors of the Wisconsin Bell Telephone Co. remains the same this year as that for last year. It comprises: W. R. McGovern, O. H. Falk, J. O. Frank, O. C. Fuller, H. O. Seymour, E. R. Bowler, B. E. Sunny, H. B. Thayer, E. S. Bloom and C. J. French.

Miscellaneous.

HARTSELLS, ALA.—The Massey Telephone Co. has made an arrangement whereby its 100 subscribers will receive service through the Hartsells exchange of the Southern Bell Telephone & Telegraph Co. The community had service several years ago in a small way, but it was suspended, and the Massey company was formed later to reestablish service.

DECATUR, ARK.—John Caldwell, of Calico Rock, has purchased the Mt. Zion Farmers Mutual Telephone Co.

CLAY CITY, IND.—The Mutual Telephone Co. has filed a preliminary certificate of dissolution.

LINTON, IND.—A preliminary certificate of dissolution has been filed by the Fairview Mutual Telephone Co.

HELP WANTED

WANTED—Wire chief who is an all around man for a common battery plant. Western Electric equipment and plant in good condition. 950 subscribers. If occasion demands it, there is some outside supervision to be done. Address Jerseyville Telephone Co., Jerseyville, Ill.

WANTED TO BUY

WANTED TO BUY—Telephone exchange, southeast Kansas or Southwest Missouri preferred, from 300 stations up. Address A. M. B., 5295, care of TELEPHONY.

WANTED—Good used 3 or 4 position, C. B. switchboard, 200 or more lines wired. Write full description and lowest price first letter. Address 5298, care of TELEPHONY.

Telephony

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Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
608 S. Dearborn St., Chicago

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Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 21

CHICAGO, SATURDAY, MAY 26, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

Reference was made in these columns several months

ago to the signs that other public utilities were following the example of the telephone in extending service into the farming districts. The electric power companies especially are now reaching out for customers on the farms, and with increasing success.

Besides the natural desire to sell more current, they are actuated by the belief that if their service is more universally distributed they will improve their public relations and protect themselves from much of the unnecessary legislation, litigation and politics that hamper all utility operations.

Discussing the phase of the "back to the farm" movement of the electric industry, a financial writer in a Chicago paper makes the following comment which is of special interest to telephone men:

"If this view is correct, it may turn out that the political experiences of the utility industry served a useful purpose in spurring it to extend its scope. Undoubtedly there was a period in the history of the utilities when the temptation was strong to furnish service to a few at high cost.

The telephone business passed through such a phase over a score of years ago. Expiration of the early patents and the growth of Independent companies caused a revolution in the ideas of telephone leaders, and led to the expansion of the early part of the century, which has made the telephone almost universal in this country as it is in no other. It has also reached an enviable economic stability."

True it is that the telephone has reached

THE TREND OF TELEPHONE EVENTS

an enviable economic stability, but the passing years continue to bring many important changes to the industry, and wherever telephone men gather they will be found discussing the latest developments and seeking to ascertain the trend of events within the business. A glance back over the early history will show the more important changes that have marked the growth of the telephone, and may throw light on the present trend.

* * * *

When telephones were first installed, and for a number of years afterward, the Bell companies built their exchanges and developed service largely in the big cities. This was natural, for it was only amidst dense population that the new industry could soon be put on a paying basis—a most important consideration to those embarked in the apparently hazardous enterprise of selling the so-called "toy" to the public.

But the smaller communities and the rural districts also demanded service as soon as the telephone made good. When the Bell was slow in furnishing service, Home companies were organized and the Independent telephone movement was born. On the expiration of the original patents the universal demand for service enabled the Independents to establish themselves strongly in thousands of towns and build up a business which challenged the attention of the Bell.

Then followed the era of competition, during which the Bell built plants at

places where the Independents first furnished service, and the Independents invaded many Bell points where high rates and inadequate service made competition welcome.

* * * *

This era of competition resulted in a tremendous growth in the number of telephones in use and, for all its bad effects in some particulars, was one of the primary causes of the United States leading the world in telephone development today.

Next came the public demand for only one telephone plant to a town. Rate commissions and economists as well declared against dual service, and public sentiment—as well as economic reasons—forced many readjustments. The Independents withdrew from some points—usually the larger centers—and left the Bell to serve the field, while the Bell retired from others and left the locally-owned company to operate.

These changes were facilitated by the fact that the two forces had reached a more amicable understanding as to connection agreements than had obtained during the days of competition, when the fight was bitter and neither side would cooperate even in the interest of good service.

* * * *

During these readjustments there has been a so-called division of territory in some states whereby each side operated in some of the leading cities. Notable examples of the situation are now seen in the cases of the Kansas City Telephone Co., the Lincoln Telephone & Telegraph Co. at Lincoln, Neb., and the Tri-State

Telephone & Telegraph Co. at St. Paul, Minn., which are locally-owned Independent properties. By this division the Bell operates at St. Louis, at Omaha and at Minneapolis and surrounding towns.

Under this plan, communities are given telephone service, either by Independent or Bell companies, without regard to the size of the places served.

* * * *

Judged by the beginning of the telephone industry, it seemed natural for the Bell to serve the larger cities while the Independents operated in towns and rural districts. That was the way they started, but the days of competition rubbed out these lines of demarcation. Besides, experience has shown that the Bell, with its necessarily vast organization, cannot operate so economically in the smaller towns as can the locally-owned Independents.

The trend of events within the last few years indicates a yielding to this theory, for the Bell has taken over the Independent plants at St. Louis, Columbus, and Grand Rapids, and is now negotiating for Kansas City, while in a number of smaller places it has withdrawn from the field, leaving the Independents to supply service.

* * * *

These events might point toward a return to the condition which existed at the beginning of the telephone industry.

In other words, the Bell started out operating only in the larger cities and was more successful there, while the Independents made their great growth in the thousands of smaller communities and in the rural districts.

Possibly another cycle is approaching in which, eventually, there will be a division of service territory along these lines.

There is a general opinion that the Bell system, with its tremendous overhead, usually operates without any return on its investment in places having fewer than 3,000 stations, and depends on the big centers for the volume of revenue to make up the difference. By reason of the economy of their organizations, locally-owned companies have repeatedly proved their ability to give service in the smaller communities at a much less expense than can the Bell.

* * * *

All signs indicate that the demand of the times is for better and more telephone service at lower costs. The pressure towards this end is demonstrated at every rate hearing, all over the country. It is up to the Independent and the Bell groups to work out the problem, and to do that there must be the right kind of coöperation between them.

In denying that the Bell desires a monopoly, Vice-president E. K. Hall, of the

American Telephone & Telegraph Co., told the Chicago convention last October that it was important to maintain the two telephone groups, and that they should work together to give the public adequate, efficient service. To give that sensible plan real effectiveness there must be a fair division of working territory.

Many observers ask the question: If the Bell organization aspires to handle the big centers, why should it not surrender many more of the smaller points to Independent interests that can operate them on the local ownership basis more economically?

Of course, the correct answer to this query involves several factors, the principal ones being sufficient capital and capable men to look after the management.

* * * *

There is plenty of opportunity for both groups in supplying telephone service to the people of the United States. For either group to invade the other's rights in any way, or to attempt what it cannot handle efficiently, would be courting trouble.

The American people—the court of last resort—demand good telephone service at a reasonable cost, and they are traditionally opposed to monopoly. These are important points which the two telephone groups should keep in mind and act accordingly.

How Much Publicity Do You Use?

Here Is a Question That Many Telephone Managers Have Asked—It Is Answered with a Discussion Which Reviews the Successive Stages of Publicity and Results Attained Contrasted with Complete Publicity

By J. C. Paxton

Assistant General Manager, The Grayson Telephone Co., Sherman, Texas

When the newspaper man comes to your office for an advertisement, is it good business to give him one? How much should the public know about your business? What kind of publicity should you use?

These are questions which confront every telephone manager. Perhaps no iron-clad answer can be given to them, but there are certain definite lines along which it is safe to proceed.

There have been three stages in the history of publicity: First, when not used at all; second, when partially used; and third, when fully used.

The first stage is probably a relic of the barbarous times when every man lived for himself alone. It was a highly competitive age—not competition for business but competition as to whether I cut your

throat before you cut mine. Every new discovery gave the possessor a distinct advantage over his fellows—an advantage which he was not slow to take.

Through generations of such living, there was instilled into the heart of man the idea that secrecy was the best policy and that to share a new discovery was to part with a valuable asset.

This idea was very common among business men of the last generation, and is still found among some of them today. Fifty years ago any member of a firm would have been driven from it as a traitor if he had been caught revealing business secrets to a rival concern. Today, through trade associations and trade papers, business men freely give out information regarding methods of operation,

and are greatly benefited by an interchange of ideas.

Suppose I have an idea and you have one. If we exchange ideas, it does not deprive me of my idea, or deprive you of yours, but, whereas, before we each had only one idea, now we each have two ideas. This is the theory of modern business, and it is fast driving out the old policy of suppression and secrecy.

As business emerged from its clandestine period, it entered the second one, when publicity was used, but only partially.

Of the publicity used in this period it may well be said: "The half has not been told." Men began to give publicity to their undertakings, but were careful to present only the favorable features and to

keep concealed the more unfavorable ones. It was the age of secret diplomacy, when, after years of professed friendship, nations suddenly found themselves at war because of some secret treaty. It was an age of upheaval and scandal in business, when the firm which made the fairest promises was the quickest to break them, if a profit could be made thereby.

Suppose you were on a jury when a witness came to the stand, and after giving testimony favorable to the defendant, he withdrew before he could be asked any questions by the other side. Would you not think that there must be something wrong with his side of the case, or he would not be afraid to answer a few questions?

That is the attitude which the public necessarily takes when it sees a business which manifestly is revealing only a part of the facts, and concealing other facts equally vital. It is an attitude of distrust and suspicion which exists even though there may not be any real cause for it.

From this fact has come much of the public distrust which exists today regarding utilities and big business in general. From time to time, the public would hear of some flagrant case of graft or mismanagement in a utility, and since the other utilities kept quiet, it figured that all of them must be in the same boat.

Realizing these facts, a few far-sighted business men began to use the third method of publicity—to tell the truth, the whole truth, and nothing but the truth.

A few utilities and big business corporations began to publish their financial statements and to tell the public just how their business was run. The public made the surprising discovery that a big corporation was not necessarily a giant oppressor, but simply a large concern, run by human beings, and no better or no worse than the average small business.

There is something about an open-hearted, whole-souled man which wins and inspires confidence in everyone. Just so, a

full publicity it is a utility. Not only do we deal with the public more largely than any other business, but public opinion, expressed through various regulatory or legislative bodies, determines our rates, our taxes, and even the conditions under which we shall operate our business.

If the utilities of the country had started years ago to giving the public the real facts regarding their business, most of the difficulties under which they are now operating would never have been encountered.

Take a typical case—that of the railroads. Nine out of ten persons in this country still have the idea that a railroad is a crooked concern, which is robbing the public to pay enormous salaries to its officials, and fat dividends to its stockholders. The members of the Interstate Commerce Commission do not think that, because they know the facts.

If all the railroads would publish their financial statements in such form that the average man could understand them; if they would show just what part of the total income goes for salaries of executive officers and for dividends, and what part goes for wages of labor and other operating expenses, it would clear away the misapprehension that exists in the minds of most people.

What applies to the railroads will apply on a smaller scale to the telephone industry. In each community there usually exists a widespread distrust of the telephone business, unless the local company has taken steps to remove it.

How much right has the public to know about our business? As we are public institutions, the public claims the right to know more about us than it does about a private business, just as it claims the right to know more about the affairs of a public official than it does about the affairs of a private individual.

Not only does the public claim the right to know more about a utility, but it will help the utility for them to do so. The more they know about a utility's affairs, the more interested they will be in it, the less apt to believe unfounded rumors regarding it, and the less willing to join in an attack upon it.

If you are manager of a telephone exchange, and one of your personal friends comes up to protest against some new ruling which you have found necessary for the safe conduct of your business, what will you do?

You will make him sit down across the desk from you, and you will explain to him the reasons for your regulation until he is satisfied. It is a pretty safe bet

that nine times out of ten you can take one of your friends and, in a personal interview, convince him of the necessity for any reasonable requirement of your business.

Now, that is the whole secret of full



"You Will Make Him Sit Down Across the Desk from You and Explain to Him the Reasons."

publicity. If you can convince one of your friends by telling him all the facts, why not tell all the facts to the general public, and convince them too?

Many utilities and large business institutions have recently adopted the plan of giving wide publicity to their affairs. Utility publicity bureaus have been formed all over the country for the express purpose of keeping the public informed of the nature and needs of the utility business. All these are good things, but the greatest good can be accomplished by the local utility man right in his home town.

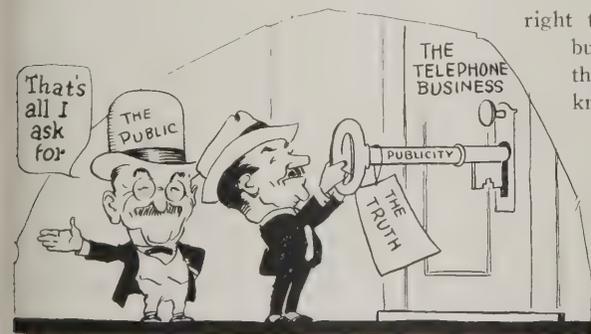
Are there no limits to the amount of information a utility should give out regarding itself?

Yes, there are some. The management of a company does not present every detail of the business in its report to the directors—but it does present the outstanding facts of the business in such shape that the directors can tell what is really going on. Just so, a utility should present sufficient facts about itself and its plans to the public to enable them to tell what is going on.

Many telephone companies follow the plan of using considerable publicity when they are after an increase in rates, want to speed up collections, or have some other special need. During the times when there is no special need, they use no publicity at all.

It is undoubtedly a good plan to use publicity when you have a special need for it, but if you use it only at such times its value to you will be discounted very heavily.

You know what you think of a neighbor who never comes to your house except when he wants to borrow something; first, it is your lawnmower, then your rake and hoe, or your new fishing tackle. He may be a fine fellow, and have a good reason each time he comes to borrow, but pretty soon you get to feeling that you hate to see him come, because you know he will want something. The public feels about the same way with reference to a



The Third Method of Publicity—To Tell the Truth, the Whole Truth and Nothing But the Truth.

business which makes a practice of frank, open, square dealings with the public, soon builds up for itself a reputation and a good-will which will successfully weather all the storms of adversity.

If any business in the world should use

utility that never comes before them except when it wants something.

A utility should adopt the policy of keeping itself and its affairs constantly before the people it serves. It should keep them informed of developments in its particular field, and of the steps it is taking to maintain and extend its service.

There are many different forms of publicity open to a utility, and a telephone company can avail itself of any or all of them.

There is the paid advertisement in the local newspaper. This form of publicity should be used by every telephone company. Each month it should present salient facts regarding its business to the public by means of newspaper advertising. No other method of publicity reaches so many people as this one.

A telephone company can give publicity to its undertakings by means of notices or bulletins mailed to all subscribers. Nearly every telephone company mails bills each month to all its subscribers. This offers a splendid opportunity at small cost to enclose a little bulletin giving interesting facts regarding the business.

Down in Texas last year, a telephone company was having a rate fight. The only newspaper in town was hostile. It not only refused to print articles favorable to the company, but constantly ran articles attacking the proposed rate increase. Since it could not get a hearing through the paper, the telephone company started mailing bulletins direct to its subscribers.

Every time the newspaper published an attack on the company, every telephone subscriber would receive a bulletin giving the true facts in the case, and calling attention to the unfair attitude of the paper. After three or four rounds of this kind, the editor sent word to the telephone manager that he was willing to "call it a day," and from that time on he never published a single article against the telephone company. This incident shows the power of publicity through bulletins mailed to subscribers.

One of the best sources of publicity for a telephone company is through notices and writeups in the local newspapers. The papers are always on the lookout for local news, and are glad to get anything of general interest. Happenings among the employes, new additions to plant, little incidents with a human interest side, all will be gladly published by the editor.

Pick up several copies of the average newspaper and look through them. The chances are good that you will find one or more news items regarding the telephone business. Perhaps it is the number of telephones in New Zealand, a report on New York's underground plant, or maybe an account of how some operator stayed at her post in time of danger. It helps you for the paper to publish these telephone items, even if they are far away;

but the point is that if the editor publishes news about the telephone business in New Zealand, he will also be glad to publish news about the telephone business in his own town.

Make the newspaper man your friend. Have your operators tip you off when there is an unusual happening in town, and telephone the editor so he can get it for his paper. Buy advertising in his paper and pay for it. You have a business to build up just the same as a merchant has. Don't expect to get something for nothing, but if you treat the newspaper man right, he will treat you right.

When you have some real telephone news, take it to him and he will run it for you. Don't be too awfully modest in fig-

ELIMINATE THESE THINGS.

The youth who honestly aspires to the real aristocracy of leadership and power should, by heroic will-power, eliminate from his soul four things—fear, self-indulgence, jealousy and prejudice. Add to these a firm belief in Almighty God, and a fixed resolve for service to humanity, and there is nothing on earth or in the waters under the earth, that can long impede success or continually thwart its human recognition.—John Temple Graves.

uring what is "news." The editor can throw it in the waste basket if he doesn't want to use it. You had better take him a few items which he can't use than never take him anything because you are waiting for a world-famous happening.

A good form of telephone publicity is through the spoken word. Almost every town has a Rotary Club, Chamber of Commerce, or other local organization which would be glad to hear an interesting talk on the telephone business.

Any high school principal is glad to have a business talk before his older classes. A telephone manager can go before a high school class, make a talk which will be of real benefit to the students, and give them some good information about his business. When these students have grown up, and are the men and women of the community, they will feel friendly toward the telephone business because they know something about it, and because they will remember that the manager took an interest in them.

One of the most valuable means of publicity is through personal contact. If you can get a subscriber to come to the office, show him the operating room with the girls at work, show him the terminal room with its network of wires, show him the cashier's office and explain how much money it takes to run a telephone plant. You will send him away friendly to the operators and more considerate of the company and its requirements.

In one of the Southwestern states there

is a state normal school which far surpasses all the other state schools in its ability to get appropriations. No matter how hard up the state treasury may be, or how much the legislature may skimp on the other state schools, this normal always gets its full quota.

I wondered why this was true until one day I visited this normal with a small party of friends. We first went to the president's office and told the stenographer that we wanted permission to look over the grounds. She asked us to wait a few minutes, saying that the president was in conference, but would be glad to show us around himself.

Soon the president came out, greeted us cordially, and spent the next hour showing us all over the place and explaining in detail each thing of interest. When we left, every man in the crowd said that if he ever went to the legislature, that president could have anything he wanted for his school.

The same rule will work around a telephone exchange. If you can't get a subscriber to come to you, you can go to him. Every telephone manager should get around town, make service tests, examine the equipment, visit his subscribers. A few minutes spent in this way every day, or a definite time each week, will do much to build your service up and impress the subscribers with your desire to give the best possible service.

A large percentage of telephone complaints are psychological—they exist only in the mind of the subscriber. Once it is known that the management is alert to remedy all troubles, complaints of this kind usually drop to almost nothing.

One could write at almost endless length about publicity and the benefits to be derived from it.

Given a well-organized telephone company, honestly and capably managed, striving to give the best possible service, the more information you give the public, the better.

Given a poorly-organized company with watered stock, inefficient management and careless employes, and the less information you give the public, the better. One good thing about the latter type of concern is that sooner or later that very publicity which it shuns will force it out of business.

Sometimes we see in the papers a squib to the effect that away back in the mountains of a certain state, they don't know the Civil War is over yet, and still vote regularly for Andrew Jackson at each election. So, even in the telephone business, there are some managers who do not know that times have changed, and are still operating under the old policy of secrecy and suppression of facts. But the modern telephone man is losing no opportunity to keep abreast of the times, and is finding well-chosen publicity one of his most valuable assets.

A School for the Plant Employes

Educational Plan for Training Plant Employes Adopted by Rochester Telephone Corp. Gives the Men an Understanding of the Fundamentals—
Paper Presented at the Rochester Convention of the Up-State Association

By Robert M. Bruce

Plant Superintendent, Rochester Telephone Corp., Rochester, N. Y.

There is nothing new in the idea of training employes. The traffic department recognized some years ago the importance of placing trained operators at the switchboard instead of schooling them at the expense of the subscriber, resulting in poor service. But the training of the plant employe has been left to his supervisor or foreman, or more usually to "follow-the-leader" methods.

Some of you may remember how you started in as a groundman, or an installer's helper. You were told to get busy and, if you didn't move fast, an oath or a swift kick helped you to understand. You were bawled out in a loud and vicious manner for doing something wrong when no one had told you how to do it right.

In the early days there were no instructions or handbooks to guide you in what you were attempting. I will not say that the things learned by hard knocks in the school of experience are not important factors in a man's telephone education, but I can see where many of our good employes would have been further advanced if they had received proper instructions at the time they started in the business. And I can see how, by giving their employes an understanding of the fundamentals, the companies would have been many dollars ahead—but why hold a post-mortem?

If I may refer to our local situation at the time of consolidation, August 1, 1921, you will appreciate some of the problems which have confronted us. My only reason for telling you of these things is to show why an educational plan for our plant employes was necessary in Rochester.

Shortly after the consolidation we hit upon the plan of centralizing the despatching of our repairmen so as to eliminate the covering of the same territory by two repair forces despatched from two or three central office headquarters to clear trouble in one locality.

This plan was put into effect after suitable equipment had been installed to handle it.

We had overlooked a big point, and that was that we had two distinct forces. In other words, we had a force of men who understood Western Electric equipment and another force familiar with Stromberg-Carlson types of apparatus. We tried the central dispatching plan for about six weeks and could see that we were worse off than before we started. We now realized the necessity of taking measures at once to educate the men so

that they would be able to handle trouble on both types of equipment.

The most serious condition in those days, and one which caused much concern, was the P. B. X. situation. We hastily threw some P. B. X. equipment together and proceeded to take our repairmen and put them through a course of sprouts. At that time 12 men were working on this class of trouble. After we had gone along to a point where our repairmen were familiar with any type of P. B. X.

TO GAIN SUCCESS.

For gaining success I have a rule which I formulated many, many years ago, and that rule is: Stick, Dig and Save.—Chauncey M. Depew.

board, we were able to reduce our force to six. The results of this experiment were so gratifying that we felt the need of going further.

In September, 1922, we organized a definite form of instruction covering the following branches:

First, a fundamental knowledge of the circuits in use in the various types of apparatus.

Second, public relations. Along with teaching the fundamentals of telephone circuits, we also take up that all-important subject, "Public Relations."

It is particularly important that the new employes be instructed how to conduct themselves while on the subscriber's premises, and it is likewise important that the older men be reminded of their duties in this respect.

A short time ago an irate subscriber came into my office. He was very much excited and after offering severe criticism of the company's methods and its employes, I found out that the trouble was due to a careless workman walking across a highly-polished floor without removing his dirty rubbers. I had another case where a subscriber complained because, according to his story, two men were loafing in the basement.

It seems to me that if the employe whose job it is to install a telephone enters the premises in a business-like manner, sizes up the situation, and does the job with some display of snap, he creates the impression in the mind of the subscriber that the whole works is functioning in

much the same way. On the other hand, if an employe were to walk into a private residence, throw his tool bag down in the middle of the floor for someone to stumble over, discard his overcoat any old place, go down cellar and light a cigaret, stroll around and get into an argument with the subscriber before the telephone had been used, the service, in the mind of the subscriber, will be about the same as this representative has caused him to picture it—decidedly off color.

When we place poles on private property, we have no right to destroy shrubbery and break down flowers, or to leave the lawn covered with two or three inches of loose dirt. If we do unavoidably leave some of these things in a bad condition, there should be no time wasted in making a report and no delay in adjusting the matter to the satisfaction of the property owner.

When we consider that our plant men come in contact with at least 250 *subscribers* every working day and that the actions of these men are likely to be watched and criticized by the public, we all feel that too much attention cannot be given to impressing the employes with the importance of so conducting themselves when on the subscriber's premises as to leave the very best impressions.

Third, value of material. We also teach our employes some idea of the monetary value of the things they are working with. Wire, tape, batteries, and other articles are used in a great many homes and business places for other than telephone purposes. I do not mean to infer that our men are dishonest, but they do get careless and leave material on the subscriber's premises, or give it away without considering its value.

To bring out this point, we have mounted a number of articles on a board and indicated their value in terms of money. You would be surprised to know how differently the employes look on materials since their value has been called to their attention in this way.

They know more about their job and what the company is spending. They are more economical because they feel that the company has always done the fair thing in respect to wages, and if they save money for the company they increase its earnings. If the earnings are increased, they know they will benefit more than if the earnings are not so large. It is brought out in school that if an installer was a bit care-

less and cut a run of triple wire two or three feet too long and threw it away, in the course of a year such a practice would amount to a loss of over \$1,600 for the installation department.

A case was cited in the schoolroom where an inspector found a box containing 100 12-volt switchboard lamps in the back of a P. B. X. board. The operator informed the inspector that the repairman left them there so one would be available when it was necessary to replace a burned-out lamp. The lamps cost 30 cents each—\$30 in material lying around with a chance of losing it.

Fourth, a full day's work. The necessity of economizing on time is taken up and the value in dollars of a few minutes spent in visiting or idling is brought out. The men are brought to understand that they are expected to put in eight hours of effective labor, and that the wasted time means so much less production and so much less chance for advancement.

Fifth, loyalty and coöperation. The principal factor in the success of any company is the loyalty of the employes. The men are impressed with the fact that wholesale coöperation and loyalty to the interests of the company rebound to their own benefit. The faculty of being able to work with your fellow employes in harmony and to be willing not only to do your own share of the job, but also to lend a helping hand to the younger worker, is taught as a desirable quality.

Sixth, value of the benefit plan. The sickness and accident benefit plan is explained to the men and the advantages are shown, in accident cases, of accepting settlements which are given by our company, instead of turning the matter over to the state industrial commission.

Seventh, safety from fire hazards. Stress is laid on following the specifications of the state board of underwriters, and our installers are expected to pass the same inspections which are required of electric light and power installers. The standard wiring specifications of the American Telephone & Telegraph Co.'s engineers are also taught, on the principle that if the work is properly installed, the maintenance will be economical.

Schedule for Classes.

The question of arranging hours for the school was considered from the standpoint of least interference with regular duties. The time for classes was set for 4:30 to 6 p. m., the company releasing the man a half-hour earlier and the employe giving an hour of his own time for the sake of the instruction. When a man is engaged who needs to make quick progress—we will say in the installation department—he is informed that he must spend two evenings a week in the school until he is sufficiently advanced to go out on his own hook.

The classes are limited to seven, as it was found that with a greater number the

instructor could not give sufficient attention to the individual members and questions could not be answered with sufficient detail to be grasped by all the men.

After the school had been in operation a short time, interest began to be shown by other employes and all available evenings were taken. Classes from 7:30 to 9 p. m. were then opened and volunteers were glad to come on their own time and have been regular in attendance. The classes are given two lessons each week until such time as they are able to go ahead independently with their work.

The commercial men are also taking advantage of this school to become posted on the actual working of the plans they are selling, and classes for them are held twice each week. The standard wiring plans mean a lot more after being shown in actual operation.

The room where the classes are held is fitted up with blackboards, a telephone pole with cable terminal, drops and aerial wires. We show mounted on panels various types of substation equipment, central office apparatus and P. B. X. boards are also used in classwork.

Method of Teaching Circuits.

The circuit is drawn on the blackboard and explained to the men. They are then requested to make a copy of the drawing. The drawing on the board is then covered up. Their copies are taken away and they are required to reproduce the circuit from memory. The drawings are examined by the instructor and any errors pointed out.

As soon as the men are able to sketch the circuits from memory correctly, its operation is explained and all questions answered until each man thoroughly understands it. The panel boards are now brought into use and the apparatus connected up and shown in actual operation. By this method the men make practical use of their blueprints and drawings.

Troubles are now introduced into the apparatus or wiring and the men apply their own knowledge to locating and clearing them. The instructor sees to it that the troubles are located by an intelligent application of the knowledge of the circuits which have been taught—and not by a hit-or-miss method.

The men must find and clear the trouble and be able to explain why the circuit would not work. Special care is given to teaching the men to be able to locate and clear troubles without calling the deskmen for tests. They are expected to have their lines ready for the final O.K. when they call the deskman.

Results of School Work.

In the installation department this school work has made the men familiar with the various types of apparatus used in Rochester and has aided in the speeding up of installations. It sometimes happens that in transporting equipment from the storeroom to the subscriber's premises, something becomes out of adjustment or dis-

arranged and, under the old order of things, could not always be repaired by the installer. It was necessary for him to either return the equipment to the storeroom and obtain new, or install it and send a repairman to put it in condition.

In the maintenance department the results have been still more obvious. The time per station for clearing trouble has been reduced, as the men know how to test for defects and how to locate and clear them promptly. We have reduced the number of repeated troubles by 25 per cent and the total troubles approximately 15 per cent. It has taken unnecessary work off the deskmen and given them a chance to watch complicated troubles more closely and do other things.

A great many good suggestions have been made by the men who attend the school, as we always set aside a certain amount of time for general discussion of the topics under consideration. It is also the practice for the instructor to go to the men at times while they are on their work, to be sure that they are applying the teachings of the school, both in installation work and in locating trouble.

We have seen that our public relations teachings have reduced very noticeably the number of complaints which were caused by carelessness and thoughtlessness on the part of the employe. I believe they have saved the company a great many dollars in damage claims and, best of all, have demonstrated to our subscribers that our organization is made up of considerate and businesslike employes.

The spirit of coöperation between the various departments has been greatly improved and the stone-wall barriers that have existed to a certain extent have been removed, for the reason that the men are familiar with their own shortcomings and appreciate more the problems of other departments.

From the standpoint of the company, the school offers an opportunity of knowing which men can qualify for certain work and where each man should be placed. It gives the man who has ability an opportunity to show it. It makes him feel that he is not just a cog in the wheel, but that he is a part of a wonderful organization in which, if he does the right thing, he has a chance of advancement by his efforts.

We do not want to create the impression that we have reached perfection in our educational work. We have not; and we are always open to suggestions.

The tremendous amount of cable construction work planned by the engineering department for completion during the year 1923 made it necessary for us to take steps to increase our splicing force to meet this program. We attempted to bring in help from the outside. We found, however, that splicers were not available from any source. Therefore, the only thing we could do was to educate our splicers'

helpers, who were desirous of advancing in that particular branch of the business and were willing to give up their time from six to nine o'clock in the evening to learn the job and to get the necessary practice. This was done in the following manner:

A suitable bench was placed with racks to accommodate seven or eight men at one time. Small pieces of junk cable were fastened to these racks and the men instructed how to remove armor without injuring the wires within, the method of splicing the wires, and the operation of wiping joints.

To add a touch of real conditions, a piece of messenger wire with cable, as actually constructed, was placed. As the men advanced, they were required to erect a platform on this messenger and perform the work under practically the same conditions as they would have on a regular job. In about two months' time the men were capable of going ahead with small aerial construction work.

English Operator Prosecuted for Giving Information to the Press.

The seriousness with which the telephone authorities in England regard the lack of discrimination among telephone operators is reflected in the prosecution of an operator in the Telephone Trunk Exchange for disclosing information in contravention of his duties as operator.

Prosecuting for the Post Office, the telephone department's attorney informed the Mansion House judge that under a section of the act applying to telephones the disclosure of messages was made a misdemeanor punishable with a maximum term of 12 months' hard labor.

The operator in question had made police telephone messages the basis for news stories which he had in turn telephoned to London newspapers. In order to confirm the telephoned stories sent them by the operator the newspapers had communicated with the police in the districts concerned. Test messages were sent by the telephone authorities thereafter and where there were any items of news contained in them the same operator notified the newspapers as before.

The court committed the telephone operator for trial, allowing bail in \$250.

Condensers and Loading Coil for Homemade Radio Outfits.

The operation of radio-receiving sets can be improved by the use of a very simple and cheap condenser connected across the telephone receivers and a similar one connected in series with the antenna, according to the Bureau of Standards of the Department of Commerce. Longer waves can be received by the use of a very simple type of loading coil. The coil is particularly useful in connection with the single-circuit receiving set.

The auxiliary condenser which is used

LIFE'S CANVAS.
By Miss Anne Barnes,
*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

"Sunshine and shadows and laughter and tears,
These are forever the paints of the years,
Splashed on the canvas of life day by day,
We are the artists, the colors are they."

Sometimes, when we think of the lives of other people, we wonder if there has not been an unfair distribution of these tubes of color with which every mortal paints his manner of living on life's canvas.

Recently I met an old lady in a depot who still had a long and useful life to live. We were both waiting for the same train. It is interesting to meet an old person of this woman's type, as her conversation does not consist of current topics of today and possibilities of the future. Rather, she talks of other days. She draws from memory's storehouse bits of old-fashioned living.

As this old woman talked, I seemed to be standing before the canvas containing the unfinished picture of her life. Although she was old and uneducated, the tubes of sunshine and laughter were not emptied long ago, leaving only gray tubes of shadow and tears for old age. No, she had plenty of each to finish her life's picture.

"It is too bad we had to walk over here. I thought we might find a taxi at the other depot," I remarked.
(I was handing her the tube of gray paint.)
"Oh, I'm used to walking. I will walk a mile after I leave the train. I am going to visit my boy, Henry," she replied pleasantly.
(She reached for the tube of sunshine paint.)
"I have lived alone since Henry died 14 years ago come next October the eleventh."
(She made a little stroke from the tube of gray.)
"But the children are all married and live on farms near about."
(She reached for the tube of sunshine paint.)
"After Henry died, I 'let out' the farm, and I raise chickens and flowers in summer and quilt for other people in the winter. I've used 60 spools of thread these last two months quilting."
"Isn't it hard to quilt so steadily?" I asked.
"Yes, at first it was hard; but if you like to quilt, after you get used to it you don't think of being tired. Anyway, I was brought up to work, and I have never known what it would be like to set idle. I never had no book learnin'. Henry and me married and started farming when we were 18 years old. The children all have book learnin', though, but they wouldn't if Henry and me hadn't worked and saved. We have good children."

I noticed she had an old dress on her arm. I realized that visiting for her meant fitting right into the daily routine of farm work, starting at five and ending at bed time.

As I watched her trudging down the road on her mile's walk toward Henry's, I thought:

"Lord, grant me the patience to work and to wait,
Make me an artist, though humble my style,
And let my life's canvas show
Something worth while."

in series with the antenna, and the loading coil, may also be used when the crystal detector is replaced by an electron tube detector unit, or when an amplifier is added to the receiving set.

The condenser used in series with the antenna makes it convenient to tune to wave lengths less than 300 meters. The condenser used across the telephone receivers increases the intensity of signals which are received from some radio stations.

The loading coil enables the equipment to respond to wave lengths above 600 me-

ters, up to about 3,000 meters. Time signals from high power stations can thus be received. The use of the loading coil also increases the receiving distance of the equipment, because many of the higher power stations use longer waves.

All these features are fully described in Circular No. 137 of the Bureau of Standards, which is the fourth of a series dealing with construction of a very simple radio receiving set, and may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.; at five cents a copy.

Advertising Creates Toll Business

Extensive Campaign to Increase Use of Long Distance by Majority of Subscribers Introduced by Southwestern Bell—Sells the Voice Itself Rather Than Long Distance—Advertisements Carrying Heart Appeal Bring Results

By M. J. Fleming

An advertising campaign which has brought results, and one that is worthy of study, was inaugurated early this year by the Southwestern Bell Telephone Co. in order to increase the use of long distance service by its subscribers.

Formerly the company had always featured one of three ideas in its long distance advertising—elimination of distance, speed of communication, or accuracy of communication. To illustrate these points, the usual method has been to picture two telephone subscribers with telephones in hand, separated by clouds or rivers. However, it was felt lately that with this style of advertising one of the most powerful selling points the telephone has to offer—the personality of the human voice—was overlooked.

So in developing the new campaign the idea of selling the voice itself as the most perfect means of communication was the fundamental thought, this slogan being carried throughout the series: "Your Voice Is You—Visit Them by Telephone!"



"The most harmonious the sound of the voice of our life is."
—La Boetie

The Joy of Hearing a Voice

When you are traveling, evening brings lonesome hours. You would be glad if it were possible to pack your grip and find yourself instantly at home. You imagine the joyful cry, "It's Daddy!" responding to your call.

You cannot make this quick visit, but at the nearest telephone "Long Distance" will send your voice—you—over rivers, mountains and deserts to your loved ones. It will bring them to you.

When you hear the voice, you feel the presence. The voice is the person. *Your voice is you.*

Ask the Long Distance operator about Station to Station calls and particularly the low rates prevailing after 8:30 p. m.

SOUTHWESTERN BELL TELEPHONE CO.
Your Voice is You—Visit Them by Telephone

Doesn't a Reminder Like This Make a Man Want to Get Within Speaking Distance of His Family—Right Away?

This message is being spread throughout the territory of the Southwestern Bell—Missouri, Kansas, Arkansas, Oklahoma and Texas—by newspaper advertisements, posters on display at exchanges, and folders distributed among the subscribers.

The reasons that made it advisable to sell the voice instead of the telephone are similar to the conditions which caused manufacturers of beds to sell sleep rather than beds, soap manufacturers to sell "that school-girl complexion" or "the skin you love to touch" rather than the chemical content of their products, and victrola companies to sell the performance of great artists rather than a mechanically perfect instrument to put in a corner of the living room.

"Your Voice Is You" sort of "sinks in" and makes an impression. It makes a personal appeal. "Why, that's so—it would be kind of nice to get the folks on long distance and say 'Hello' to them. And I guess they'd like to hear my voice just as much as I want to hear theirs."

"Each inflection of your voice has a meaning for those who know you. Nothing may substitute for it." This point is well designed to set a person thinking—and if he can be started thinking, he will usually act.

It all started with the discovery that the Southwestern company was getting 90 per cent of its toll business from only 10 per cent of its subscribers and these were, of course, all business patrons.

This brought up the problem of getting the 90 per cent of the subscribers who were only using 10 per cent of the toll business, to increase their use of toll facilities. The selling of the voice dovetails very well with the attempts to interest this 90 per cent—the home subscribers—for, in pointing out the importance of the voice in communications the appeal is naturally to the heart.

For this purpose, quotations from old poets are used in the advertising, and one entire poem that ties the advertising appeal up with modern times and conditions is used—"Let Them Hear Your Voice," by Edgar Guest.

The campaign started with the Christmas advertisement, which was followed by a series of advertisements in all the leading newspapers through the Southwestern Bell territory.

A booklet using the same sketch as appeared in the advertisement, and elaborating to a considerable extent on the

theme, was issued at the same time, for counter distribution. Other booklets were issued from time to time, also using the sketches and themes and expanding on what was told in the advertisements.

"Catchy" posters and counter cards were issued for display at hotels, railroad stations, exchanges and connecting company offices; rate cards—a different one



"How wonderful is the human voice! It is indeed the organ of the soul."
—Langfellow

Adelina Patti's debut before the Academy of Music, in New York, November 24, 1859, in Lucia di Lammermoor.

Your Voice is You

"It is indeed the organ of the soul!" Men crossed the continent to hear the golden notes of Patti. Nations have been swayed under the spell of a great leader. Each inflection of your voice has a meaning for those who know you. Nothing may substitute for it. *Your voice is you.*

When you have news for a friend—when a business matter needs attention—when you wish to bring joy to those at home—send your voice—yourself—on the errand. You may talk to anyone, anywhere in the United States—by telephone.

Ask the Long Distance operator about Station to Station calls and particularly the low rates prevailing after 8:30 p. m.

SOUTHWESTERN BELL TELEPHONE CO.
Your Voice is You—Visit Them by Telephone

Another Advertisement Used by the Southwestern Bell to Emphasize the Personality Expressed by the Voice.

being compiled for each city, giving the rates from long distance calls from the city to representative points in the United States—were placed on the counters for distribution; and bill inserts were enclosed with the monthly statements—all driving home the point that "Your Voice Is You."

Publicity stories were prepared for newspapers in which advertisements were run—no avenue of access to the interest of the public being left unused in the campaign.

Courtesy cards, gently giving the telephone users a few instructions as to the manner of using the telephone so as to

derive the best service, were prepared, supplied with cords so that they could be hung on the instrument. Different cards were issued for the manual and the dial telephones.

The part which the employes could take in the campaign was not forgotten, and posters for the employes' bulletin boards were issued one week previous to the publication in each town of the advertisement with which the poster dealt. A long distance supplement to the Southwestern Telephone News also told them about the campaign and how they could help, and every employe received one of the supplements.

A quotation from Cicero, "Wonderful, indeed, is the power of the voice," was the inspiration for the first advertisement,



*"'Tis the heart's
sweeter voice, as reach
the heart."
—Dr. Mount*

Her Voice

Hark back in memory to the days of childhood when you knelt at your mother's knee. Was ever anything sweeter than the sound of her voice? It was more beautiful than the distant chimes of a cathedral. There's something in the voice we love which overflows our hearts with joy.

Today others cherish your voice as you cherished hers.

If distance prevents your visiting family or friends—remember you can send *your voice*—*yourself*—to them over rivers, mountains and deserts, by Long Distance telephone.

Ask the Long Distance operator about Station calls and particularly the low rates prevailing after 8:30 p. m.

SOUTHWESTERN BELL TELEPHONE CO.

Your Voice is You—Visit Them by Telephone

The Pleasure Derived From Listening to the Voices of Those We Love Is Well Brought Out in This Advertisement.

which was entitled "A Delightful Holiday Remembrance."

It was run during the holiday season and reminded the telephone user that on those days his presence, the sound of his voice, is valued above all precious gifts. "But what if distance prevents your actually joining the happy circle?" the advertisement brings out, "Your telephone then is the friendly tie. It takes no heed of miles, of rivers, mountains or deserts."

There was an attractive sketch at the top of the advertisement, in which the father was shown greeting his family, in person—the telephone itself not being shown in any of the advertisements.

Another advertisement utilizes Adelina Patti's famous debut in New York City, November 24, 1859, as "Lucia." To those who crossed the continent that they might attend this performance, Patti was her voice and through it she expressed her personality.

The family of the man away from home, while interested in hearing a famous singer, is not half so interested as it is in having contact with "Dad's" personality. He is reminded, all through this series of advertisements, how easy it is to quickly bring his personality into contact with them.

Other advertisements remind the traveler who is lonesome for the "home folks" that, with the kindly assistance of "Long Distance," he can be right with them in a few minutes' time; that "When you hear the voice you *feel* the presence"; and that "'Tis the heart's voice alone can reach the heart."

A strong appeal is carried by one advertisement which has a few grains of flattery—and who is immune?—and a good percentage of logic in it. The words of Pliny, the younger, "The living voice affects men more than what they read," are related to "Your Voice," the title of the advertisement.

A subcaption, "Direct—Persuasive—Accurate," combines the flattery and the logic. Again the fact that the inflection of the individual voice has a meaning for those who know it is brought out. "Directions" that you give personally are quickly and accurately executed, because your associates cannot fail to understand you." That is apparent enough, but its relation to the telephone is not always thought of.

Another—picturing the invention of the telephone by Bell—follows the educational trend, which is so popular in modern advertising. Still another tells the man away from home that a cheerful corps of long distance operators is at his service, ready to transport his voice to his loved ones.

The posters were exceptionally good-looking and of a style to attract the eye. Most of them duplicated the advertisements.

The first one, the one about the holiday season, was done on a ground of vivid blue, almost a "Rolls-Royce" blue. The reading matter was in dark blue, the exact shade to stand out from the lighter blue, and the home scene was in soft tones. The whole thing was a well-studied arrangement, effective and pleasing.

Another one is in gray and blue, with a touch of orange; and another—this one a counter card, supplied with an easel—was in dark blue with black letters on a cream colored inset, and the figure of a man lounging in a chair, with a letter in his hand. The thought that he is only a few steps from a telephone—and, thus, from the writer of the letter—immediately suggests itself.

One of the articles prepared for the press contained information about the oscillograph. It was put up in an interesting, readable style, and told the public how the human voice is photographed by this machine and how the machine shows that no two voices are alike. There was no technical language used and the item was one of those which is easily absorbed.

The oscillograph item, which appeared under the head, "Machine Photographs the Human Voice," follows:

"Taking a picture of the voice sounds about as reasonable as picking up a handful of shadow. Yet that is just what is done by the oscillograph, an instrument in use in the experimental and research laboratories of the Bell telephone company.

The real work for which the oscillograph is used is to improve the transmission of the human voice by telephony, especially over long distance. According to Mr. ———, local manager, the telephone company works on the principle that it does not sell a tangible commodity such as stores do, but actually enables the subscribers to exchange their ideas by carrying their speech.

On this principle, the company believes that the more clearly it can carry the tone of the voice the better people can exchange their ideas, and in order to improve the quality of transmission, the Bell



*Wherever you are the Blue Bell there's
a telephone line that ends in your home.*

This Sign Means You're Near Home

When you see the sign of the Blue Bell, remember, you're near home. The actual distance—over rivers, mountains and deserts—may be miles or hundreds of miles; but the Blue Bell means a telephone—a cheerful corps of Long Distance operators—at your service, ready to transport your voice—*you*.

How You May Send Your Voice Home

Station to Station Calls—This service is quicker and costs less. Use it if you are willing to talk to anyone who answers the telephone at the number you call. Tell the operator you wish to place a station to station call and give her the number or the name and address under which it is listed in the directory. No charge is made unless the connection is completed.

Evening Rate—Station to Station calls placed between 8:30 p. m. and midnight are half the day rate if this rate is 50c or more.

Night Rate—Station to Station calls between midnight and 4:30 a. m. are one fourth the day rate, if the day rate is \$1 or more.

Person to Person Calls—Use this service if you wish to be connected with a particular person. Excess above one-fourth more than Station to Station day service. Under certain conditions a small charge is made for reports rendered on these calls.

Ask the Long Distance operator for sample rates to points in which you are interested.

SOUTHWESTERN BELL TELEPHONE CO.

Your Voice is You—Visit Them by Telephone

A Human Appeal in the Words "Near Home" and Some Information About the Rates—A Good Combination.

system is constantly making tests and trying out new methods.

Thousands of voices have actually been photographed in the laboratories, with interesting results.

In the testing done with the oscillograph the electric current carrying the voice is sent through two very fine wires, to which is fastened, between the wires, a minute piece of looking glass.

The other equipment used is an arc light and a strip of photographic film wound on a drum.

According to Mr. ———, this experiment has proved to the company that no two voices are alike, and explains why you can immediately recognize a friend's voice over the telephone no matter how many miles or hundreds of mile away he may be at the time.

You say, 'It's Mary,' 'It's Bill' or 'It's Jack,' and feel that the long distance telephone has brought them right into your room.

These experiments also have suggested to the company a new slogan which is being used quite widely now. This slogan is: 'Your Voice Is You. Visit Them by Long Distance!'

Getting the newspapers to run Edgar A. Guest's poem, "Let Them Hear Your Voice," was a happy thought, for Mr. Guest has a knack of writing about everyday affairs in a way that makes them linger in the memory. The poem is:

If you could see them smiling as they listen to your voice,
If you could catch the gladness of the eyes of them at home,
When, instead of wire or letter, you have made the 'phone your choice,
You would know that way is better than all others when you roam.

Oh, the spoken birthday greeting is the finest, after all,
For, to hear a loved one talking always makes the heart rejoice;
And better far than waiting for the letter man to call
Is to hear their merry voices and let them hear your voice.

Go ask the waiting mother or the wife or children small,
The happiest form of greeting and they'll tell you that their choice
When you are not there to kiss them, is to have you send a call
Over miles and miles of distance so that they may hear your voice.

To secure the coöperation of the 18,000 employes of the company, a special supplement to the Southwestern Telephone News was prepared. It explained carefully the plan of campaign and how each employe could get behind the company's advertising and do his bit to get it over the top.

The operators were instructed that when a patron calls, asking for the cost of a long distance call, then is the time to say, "I will get the information for you." This, the operator can do by call-

ing the long distance operator immediately, or taking the matter up with her supervisor and later giving the information to the subscriber.

There are so many ways in which each employe can back up the advertising which a company does, that only a few hints could be given through the News. They were advised to plan systematically to tell people about the value of long distance service—for example, to tell a person a day, if possible.

But above everything, they were requested to make the company's customers feel that they are good people to do business with—courteous and ready to serve.

It was pointed out that being well acquainted with the rates and classes of service would be of great help in the campaign, as they could then give the information promptly, even if the question of only a possible long distance call was brought up.

The employes were given some salient "talking points" on long distance facilities—a few good paragraphs from one of President Thayer's speeches being reproduced in the supplement.

The appeal to the employes closed by pointing out that all of them have a chance to make this idea real to their friends; that they can give it their own personal touch which will put it over with their friends, put the personality of their voices into the selling of the idea to the public.

It took considerable thought to devise a campaign which would be novel, impressive, and result-producing, but it was worth the effort to produce the complete and systematic plan of selling long distance telephone service through forcefully impressing the idea, "Your Voice Is You."

Officers of American Institute of Electrical Engineers.

At the annual business meeting of the American Institute of Electrical Engineers, held in New York, May 18, the report of the committee of tellers on the election of officers for the administrative year beginning August 1, 1923, was presented; and the following were declared elected:

President, Harris J. Ryan, Stanford University, Calif.; vice-president, H. E. Bussey, Atlanta; S. E. M. Henderson, Toronto; William F. James, Philadelphia; J. E. Macdonald, Los Angeles; Herbert S. Sands, Denver. Managers, H. P. Charlesworth, New York; William M. McConahay, Pittsburgh; W. K. Vanderpoel, Newark, N. J. Treasurer, George A. Hamilton, Elizabeth, N. J. (Re-elected).

These, together with the following hold-over officers, will constitute the board of directors for the next administrative year: E. B. Craft, New York; H. W. Eales, St. Louis; G. Faccioli, Pittsfield, Mass.; H. M. Hobart, Schenectady, N. Y.; Frank B. Jewett, New York; G. L. Knight, Brooklyn, N. Y.; James F. Lincoln, Cleve-

land; Ernest Lunn, Chicago; William McClellan, New York; A. G. Pierce, Pittsburgh; H. T. Plumb, Salt Lake City; Harlan A. Pratt, Hoboken, N. Y.; R. F. Schuchardt, Chicago; W. I. Slichter, New York; Harold B. Smith, Worcester, Mass.; R. B. Williamson, Milwaukee.

The wide geographical distribution of the Institute's directors is indicated by the fact that 12 states and Canada are represented in the list.

At the meeting of the board of directors held on the same date, F. L. Hutchinson was reappointed secretary for the coming administrative year.

The annual report of the board of directors, presented at the business meeting showed a net increase in the membership during the year of 1,035, the total membership on April 30 being 15,298.

Sixth District, Missouri Association Holds Meeting.

There was held at Sedalia, Mo., May 9 a convention of the sixth district, Missouri Independent Telephone Association and in connection therewith an operators school conducted for local and toll operating. The meeting was well attended a was the operators' school, the total attendance being 93. The convention was for managers, owners, wire chiefs and troublemen of telephone properties in the district.

The principal addresses were: E. I. Chase, assistant to the president of the Kansas City Long Distance Telephone Co on "Public Relations"; W. C. Polk, consulting engineer to the Gey Investmer Co., Kansas City, on "Depreciation," an a report of his appearance before the Interstate Commerce Commission on the subject.

Robert Hedrick, secretary of the Missouri Telephone Association, Jefferson City, discussed legislation and reported upon the legislation recently enacted at the recent session of the Missouri legislature.

The operators' school was conducted by J. P. Smallwood, district traffic chief Southwestern Bell Telephone So., Sedalia assisted by Miss Barbara Schultz, instructor for the Southwestern Bell Telephone Co., at Kansas City, and Miss LeVerna McGinnis, chief operator, Southwestern Bell Telephone Co., Sedalia.

The convention and operators' school closed with a theater party at the Sedalia Theater. A feature of the entertainment was a solo by Miss Beulah Morrison, Moberly, singing "The Wren." Miss Morrison is the daughter of Frank E. Morrison, salesman of the Kellogg Switchboard & Supply Co., with headquarters Moberly.

Following the theater party a dance was given participated in by the visitors and the local people.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

Some bid for fame and seek a name
By way of song or story;
But others say that is no way
To blaze a path to glory.

Some think a smile is more worth while,
If it cheers a lonely heart,
Than a ton of gold, if the heart is cold,
Or bloodless works of art.

There's some who say it does not pay
To boost your own home town;
But I'm here to state, so get me straight,
'Tis the road to real renown.

No one of the different classes of business men are better situated to help boost the town in which they live than telephone men. They come in contact with all classes of people, both in their city and in the surrounding territory, and, being common and approachable, get to hear a good many things which the preacher, the banker and other professionals do not generally get to notice or hear.

He is in a position oftentimes to put in good words for his fellow business men when he hears adverse statements of them while at work among the rural subscribers. Not being a merchant with competition, the telephone man generally can raise his voice in civic affairs where regular merchants would fear for its effect on their business.

He need fear no retaliation if he takes a stand on business and moral questions of policy, because his services are still in demand, and right will prevail in the end and disgruntled ones forget that they may have taken a stand against what proved to be the best interests of the city in some local squabble.

To go back and deal with a merchant, face-to-face, with whom you may have

because of his position in the community. There is no sense in that.

You know how it is—the merchant is afraid oftentimes to take sides on new questions and policies coming to the fore because he aims to steer a middle or neutral course and thus not antagonize his customers. The banker does the same because he knows that whatever side he chooses, his rival will probably take the other, and he is nervous lest he may take the wrong or less popular side of the question and thus lose prestige.

The telephone man has all the community for his patrons regardless of cliques, churches or political faith and he need not be afraid. He shouldn't be anyhow, but you know human nature is pitifully weak in spots,

and frail man dearly loves to be on the strong and popular side of any movement. Some appear to be on both sides, as it were, but these kind of people never have much influence because they are generally soon discovered and then exert an influence on neither side.

The very nature of his business makes a telephone man quite a forward looker, and he is in a good position to exercise his judgment as to prophecy on many civic movements, while discussion as to desirability of their attainment is being held.

In the olden days, it was a common practice with certain despotic rulers to kill the bearer of bad news but the modern citizen should not have the same fear of telling the people that certain desired improvements mean higher taxes because that piece of intelligence is not necessarily anything of the sort. It generally proves to be the contrary when the truth has had a chance to assert itself.

The merchant who takes the ultra conservative side of public questions, because he is afraid he will lose the trade of people who may not wish to see anything going forward which would cause them any additional expense as to taxes, is poor timber for a citizen. These same property owners, once

improvements have been made, are generally the most pleased and proud ones in the community. It takes leadership and foresight to accomplish things that are worth while—and it takes courage to go

forward in the face of being misunderstood, even for a brief time.

Columbus discovered America and from that time forward taxes began to be incurred in a land where there were no community taxes before. In fact, the imposi-



They Get Nothing in Return for Taxes But Hardship.—
We Receive the Benefits of Modern Civilization.

tion of taxes began to be the chief occupation of the followers of Columbus on his third and fourth voyages.

This difference, however, can be noticed between the taxing of the early Americans and those of today. Then they got nothing in return except hardship, slavery and death, mostly with torture, whereas, they now receive all the benefits which our modern civilization makes possible. Remember, each and every one of these benefits have been made in the face of strong opposition and despite dire predictions that the "taxes would be riz."

It looks foolish on paper to read that a modern business man would hesitate to openly proclaim his championship of a cause which could not help but result in progression for his city for fear of losing custom, but you know and I know that the state of mind of business men is very uncertain and their reasoning process quite peculiar.

Let us hope that with that fear of competition removed, as has been the case in the telephone business, telephone men will no longer be afraid to openly proclaim their adherence to any program which will rebound to the credit and convenience of the community in which they live and whose interests they have at heart.

Show them that telephone companies have to pay taxes, too, and oftentimes without any seeming direct return or excuse other than the frequently repeated statement of the uninitiated, "Let the corporations pay more taxes; they can stand it better than we can."

APHORISM: Half the fun of fishing is in the fight the fish puts up.



He Can Raise His Voice in Civic Affairs, Where Regular Merchants Fear Its Effect on Their Business.

broken business relations, is more embarrassing than to continue to use telephone service, where you do not have to be quite so intimate. But a telephone man should not be too cocksure or assertive



Miami's Strowger Automatic Switchroom
and Telephone Building



The Service That Builds Goodwill

"Bank presidents and business men all declared that any corporation or business enterprise like the one in Miami should have an increase in rates to justify the best service.—These bankers and business men also said that the service was perfect, and when asked whether they had any suggestions for betterment of the service, they said they had none. I don't think that you could find a similar situation in the country."—

—A. S. WELLS, Florida Railroad Commission.

How often does it come down to this?—That to get proper and just rates you *must* give adequate and pleasing service.

The easiest way, and in the long run by far the least expensive way to give satisfactory goodwill-building service is by the installation of Strowger Automatic equipment.

Apart from the recognized benefits of speed and accuracy of Strowger automatic service, telephone subscribers who use the dial regularly appreciate the fact that the telephone company is placing at their service the only equipment that can justly be called the most modern.

And remember that Strowger Automatic service costs less to give than any other kind. We have the facts. Let us show you how they apply to your own exchange.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS
BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



Iowa Operators Talk Things Over

Some Ideas About Pleasant Relations Among Telephone Operators—Qualities Required, Duties and Responsibilities—Papers Presented at Operators' School Held at Belmond, Held Under the Auspices of the Iowa State College

"We Are Glad to Meet You!"

By Miss Genevieve Starnes,

Belmond Telephone Co., Belmond, Iowa.

Has there any old crab got mixed with the fun?

If there has, take him out and give him a run.

Forget the old lady and the old man's spite.

Remember the switchboard, but enjoy yourselves right.

Was it switchboard I spoke of? Forget that just now.

Look sweet for the ladies, make your neighbor a bow.

We want some new methods to better our work

Once before you taught us—our cords not to jerk.

We've a trick, we operators. Perhaps you've been told

Of speaking in public as if we were cold. To her we say "operator"; to him we say "right."

This neat little phrasing, shuts conversation up tight.

This girl is "chief operator," can't tell it by sight.

Mr. Manager, your majesty, I know you're all right.

We are all operators, so take my advice. Don't crab to our faces, but treat us all nice.

You see that fair lady, we owe her a lot, The people owe, too, for the system, we've got.

To her should our welcome be heartiest of all;

She keeps all our service from a fatal downfall.

So here's to our service, efficient and steady,

To serve all the people, it always is ready.

And here's to our operator, so steady and true,

We say one and all, we are glad to meet you

Every person in this gathering understands, I think, the meaning of this little parody. Most of all, I hope you have felt the motive of it as I wish you to—that of bringing you together in such a way that you will be glad that you were together here today.

In our work day after day in the wonderful terminal of voices we meet thousands and thousands of voices—some the same—some different. Some of these voices we can even link with a personality. This is probable because every voice has a distinct personality.

Is that personality what you expect? To find that personality would be a great step in the union of service all over our vast universe and be of great value in helping us to serve others as we serve

ourselves. Thus I hope you feel the message I have tried to give—that we are glad to meet you.

Qualifications Necessary in the Selection of Telephone Operators.

By Miss Gladys Gross,

Sheffield, Iowa.

The following qualifications—in my opinion—are most necessary in the selection of operators namely, character, physical condition, efficiency, politeness, education and age.

The qualification I consider most essential is that of character. I have chosen character first for the reason—without it no one, regardless who they may be, should be able to qualify for any position.

Of course, in the past operators have been criticized more or less from a moral standpoint. There is less cause for this today than there has been, due to the fact that chief operators have been more careful and considerate in their selections, also the companies have done much to correct this condition by restricting certain liberties of operators as well as patrons.

Trustworthiness in regard to character is also of great importance. The operator should be very careful that she does not repeat anything heard over the lines; especially is this a necessary requisite of a small-exchange operator.

The next qualification named is that of physical condition. By this I mean one who has a pleasing voice, good hearing, good eyesight and is not at all inclined to be irritable.

The third qualification is that of efficiency. To become efficient the operator must be accurate and prompt in her work. She must learn readily, and be suitable for her position.

Speed with reference to efficiency is very necessary. This qualification is especially important in telephone work. I believe, however, it is best to dwell on accuracy with beginners, because if the operator does her work accurately to begin with, speed will eventually follow.

Another qualification is that of politeness. The operator must be polite and courteous to the public. Occasionally slight misunderstandings arise which can be best taken care of in a courteous manner.

Next education.—It is well to aim to secure operators who have had at least a high school education, but in case they have the other requisites and were unable to obtain a high school education, due to circumstances not under their control, it is very probable they will make good operators.

Lastly, I think there are cases in which age should be considered; for instance a younger person may be employed when under direct supervision of another more experienced, but were the prospect to be a night operator of a small exchange, perhaps one who was older could use better judgment. However, the average younger person usually adapts herself to new methods more readily.

Working for the Subscriber and the Company.

By Miss Forrest Gordon,

Dows, Iowa.

Working for a company would seem very easy, but where you have both the customer and the company to deal with, it sometimes keeps a person guessing. The subscriber wants service and generally does not want to wait one minute on busy circuits, and we must strive to please him if it is possible to do so.

Then if the telephone company does not keep the toll circuits, exchange lines and switchboard, in good working order, the operator gets the blame for not giving good service. The operator cannot give good service unless the equipment of the company is kept up. I also think that if an operator does not like her work, she cannot render good service, for if she is not interested she does not care, to a certain extent, how the public is served. At any time an operator is not satisfied with her position, she should quit and try her luck at something else.

To serve the public you must have patience with every one, though they scold you for not answering just as soon as they ring. Many subscribers seem to think that they are the only one ringing Central, when there may be four or five ringing at the same time. When people enter a store and the clerks are busy, they wait for their turn to be waited upon. But with Central it is different—the subscriber thinks the operator can answer half a dozen calls at the same time, the effect of invisibility.

To be a good operator she must be able to write a legible hand, articulate plainly and have at least a grammar school education.

Another thing that would help the subscriber to better service is to call by number—not to call Central and ask her to ring Mr. or Mrs. So and So. Many times Central does not know the number and she has to stop and look up the number. While she is doing this, someone else is ringing in, and wondering why Central does not answer.

To work for the company is much

easier than working for the subscriber because it is more reasonable. An operator has to work for the company with the same spirit as if she was working for herself. If the operators work together, they will be able to give better service.

A great many subscribers have never been inside of a telephone office. If they would only step in to see what an operator has to contend with, I think they would be more reasonable; it would give them some idea what the responsibility an operator has and what she has to contend with every day.

Responsibility of a Telephone Operator in a Small Town.

By Miss Louise Jergensen,
Thornton, Iowa.

The responsibility of an operator in a small town is, perhaps, greater than one might think at first thought. She is manager, chief operator, local and long distance operator, collector, and janitor.

In the larger places, she would have only one of these duties to be responsible for. Along with all of the duties mentioned, she is supposed to be responsible for the movements of the doctor, the butcher, the banker, the produce man, what time the trains go, give every one the correct time as often as called for, the storms that burn out the telephones, and for all calls to parties who are not at home and therefore do not answer.

In fact, the operator in a small town, must constitute herself an information bureau: "Please ring the store"; when later they don't answer. "Do you know what they are paying for eggs today?" "Is the creamery open on Tuesdays?" "Who did the doctor take to the hospital today?" "Have you heard how Mrs. Blank is this morning?" "I can't get the mayor, do you know whether there is council meeting or not?" "What time does the



Group at Operators' School at Emmetsburg—One of Several Held in Iowa Recently.

show start?" "Are there English or German services at the Lutheran Church today?" and "What time is it, please?"

Recently we had a night call. "Ring the doctor, and while you are ringing, please tell me what to do for croup," came the message over the wire. The doctor was not in, but Central had a remedy for croup which she gladly gave the anxious mother, and the child was soon better.

Some of the more serious responsibilities of the operator in a small town is a good clean, neat subscribers' ledger—always with every subscriber's account right up to date—and toll statements right on hand in shape to show any subscriber a complete detail of all his long distance calls. It is very important, in accepting long distance calls, to get full information from the patron before starting to pass the call to the toll center, and then get the call to the toll center just as quickly as possible.

The operator must at all times see that the entire office building is neat and clean and everything in order, report all cases of telephone and line trouble promptly. This is very important, for the more promptly the troubles are reported, the more promptly they will be attended to. In fact, all services must be promptly rendered.

The subscriber loves prompt service, both in the operator and the management, in seeing that their troubles are attended to quickly. The subscribers really hold the operators responsible for the prompt attention to their telephone and line troubles, regardless of who is really responsible.

The operator is the mouthpiece of the company and has direct dealings with the patrons at all times. The company is judged by the public by the way the operator presents her plan of service to her patrons, either on local or toll calls.

The Value of System in Operating

What System Is and a Few Examples Illustrating Its Benefits—Some of the Newer Methods That Make for Orderly Arrangement of Work—Paper Presented at the Chief Operators' Conference Held at Des Moines, Iowa, Recently

By Miss Grace Coan

Chief Operator, Crawford County Telephone Co., Demison, Iowa

I wonder if our failure to accomplish any undertaking, which requires time and effort, is not due to the fact that we have not previously planned the piece of work. System means plan, order, arrangement, you know. Take our long distance work, for example: Any operator, who has her tickets assembled properly, knows how much easier it is to operate, both correctly and swiftly, for she knows just where each ticket will be according to the point it has progressed toward completion.

A young man was asked for his definition of system. He replied:

"I will illustrate my definition of system by relating an incident which came to my attention recently. I was sitting in a depot, waiting for a train that would be due in a short time. I saw a young man enter, who after purchasing his ticket, opened his grip, took out a tablet and proceeded to make some sort of a carbon copy report.

"In the process of making this report, he found it necessary to take out different articles from the grip. As I watched him work, I noticed that he knew just where to locate any article he needed, and when

through with each article, he replaced it deliberately just where he got it. Finally, he replaced the order book in the grip, put his fountain pen in his pocket, lighted a cigar, read the paper for at least six or eight minutes, while he smoked composedly.

"System, orderly arrangement. No wonder he accomplished quite a piece of work and finished with everything in its place.

"That little incident has helped me in my work," he concluded.

I often think what a lack of system there was in most telephone offices a few

years ago. In fact, if we were to visit an exchange where the operators worked as we did seven years ago, I am sure we would find conditions very amusing.

We had no particular system for operating and no standard phrases. "Hello" was a very common word; operators used it to answer line signals, both local and toll, especially supervisory signals. "Number," of course, operators took for granted, was the correct phrase for answering local line signals. Then someone added "Please." Operators were soon impressed with how much more courteous the word "Please" added to "Number," made the phrase sound; therefore, "Please" found its way into the operators' vocabulary.

The reason for not repeating orders, at that time, was that the repetition of the number was considered a great waste of the operator's time. "Why, she could be answering another number while repeating a number," was the argument made by the operator.

The manager went back into his office and sat down. What more could he do—in those days? What he went into the operating room to tell her was that he had visited a town where the operators repeated all orders and the manager there said it had cut down the wrong number connections and saved time for both operators and patrons.

Now, think of the poor cords, how they were jerked out of the jack! When the operator could not reach them easily, why shouldn't she handle them roughly, if she saved a little of her time? Since the operator has had the opportunity of attending the annual schools and has heard the discussions, which are all in favor of system and order, she has grown broader in her views.

The following are a few of the results gained by systematic work and better operating:

The development of teamwork has been a great help in speeding up the local service. It must be watched closely, though, for an operator must not plug-up another number until the last connection is disposed of.

In offices of any size, the operators should not communicate; this surely improves the service. Operators have been known to allow a line signal to burn until they finished telling something interesting to a fellow-worker.

Switchboard marking has done away with a great deal of confusion caused by patrons moving, who consequently had to have their numbers changed. The result is that the subscriber does not reach the wrong party and the subscriber, having the new number, is not called unnecessarily.

Something else, that is very important, is the correct building and clearing of toll circuits. The operator must know the right routing, before she takes up the circuit to work on a call. If she does not, the intermediate operator must look up

the routing; this is imposing on each operator, as she is doing the originating operator's work.

Clearing properly is just as important, for a through connection cannot be taken down without a verbal clearance order. If the intermediate operator is not authorized to clear a circuit, she must find out if it is clear before taking down the connection.

The telephone companies took peg counts a great many years ago, but their methods were much more simple than ours of today. They had two small boxes on the switchboard; one contained a num-

Manual vs. Mental Knowledge.

Manual knowledge of the work is important, but without the mental training that directs the movements of the hand it leads to little. A man in the shop who has no education will be promoted, it is true; but the man who has made it his business to learn why the wheels go round, and how, stands a much better chance. That is self-evident. He will travel faster and farther.

Lack of theoretic knowledge and the ability to get to fundamentals that mental training gives are a handicap which may be made up in time, but meanwhile others with such training are getting ahead and working at a bigger job.—General W. W. Atterbury, vice-president, Pennsylvania Railroad Co.

ber of kernels of corn; as the operator answered a call, she took a kernel of corn from one box and placed it in the other. At the end of the hour the kernels were counted and recorded.

This method of peg count did not prove satisfactory, as oftentimes the corn was spilled, thus making the peg count inaccurate; the peg count of today is very satisfactory. Peg counts can easily be taken regularly in most offices. They are of great assistance in determining the number of operators needed to carry on the work and in distributing the load. In smaller exchanges, peg counts may only be taken once a year, so as to give the company an idea of the business that is being done.

An interesting practice is observing long distance calls to determine the number completed within ten minutes. This practice has a tendency to speed up the completion of calls, as the observing sheet shows the time of day and the operator who completes the call. Most naturally, each operator tries to bring up her previous day's record.

Through publicity the patrons of the company have become better acquainted with telephone work. The company has proven to the public that much time can be saved when answering the telephone by announcing the name or telephone number.

It has taken a great deal of patience on the part of the company to train subscribers to use the directory and to call by number. In larger exchanges, subscribers who do not know the number are referred to Information; in smaller offices, the operator gives subscribers the number each time that they call by name.

At first it is a little difficult to educate the subscribers in the smaller exchanges, for there are always a certain few who think they are the busiest people in town; but they can be convinced of the importance of calling by number and in time will co-operate with the company. For instance, they are invited to the office to see how the work is carried on, or someone in authority calls them and explains our methods to them personally.

No doubt next year we will be able to tell of improvements over this year's work, even though it does not seem possible.

State Association Executives Meet in Chicago in June.

Following the custom inaugurated last summer—of holding a meeting of the executives of the various state telephone associations—a call has been issued by President F. B. MacKinnon, of the United States Independent Telephone Association, for a meeting to be held Friday and Saturday, June 8 and 9, in Chicago.

Announcement will be made later as to the place of meeting in Chicago. It is anticipated that there will be a much larger attendance at this meeting than at the one held in St. Paul last July, owing to the fact that Chicago is more centrally located for some of the executives of the associations.

Attention at this year's meeting will be focused mainly upon two topics—the financing of telephone companies and employe benefit plans.

Eighth Machine-Switching Office in New York City.

The New York Telephone Co. announced May 18 that "Jerome," the city's eighth machine-switching telephone central office, would soon be placed in operation in the company's new building at 117-127 East 167th Street, the Bronx.

Dial telephones are now being substituted for the manual instruments at the premises of subscribers who will be served by the new office.

Washington Association Will Have Its Convention June 22-23.

The Washington Independent Telephone Association will hold its annual convention Friday and Saturday, June 22 and 23, at Blaine. W. M. Anderson, of Wenatchee, secretary of the association, announces that plans are under way to make this year's meeting the best one yet, and he expects a good attendance.

What Is Your Company Doing?

Chats About Company Doings. By Stanley R. Edwards.

The Tri-State Social and Dramatic Club, an organization composed of employes of the Tri State Telephone & Telegraph Co., and sponsored by the good will department of the company, of which Mrs. Dora B. Hancock is supervisor, presented at the Metropolitan Theater, St. Paul, Minn., Saturday, May 5, its third annual play. This year's play—a musical melange in two acts called "Satsuma"—was one of the most brilliant and spectacular follies ever attempted by amateurs.

Elaborate stage settings and lighting effects were obtained from eastern studios for the production. The cast was made up of 93 club members.

Particularly striking events of the first act included such effects as the manikin chorus of young ladies in men's full evening dress, the pink and gold ballet, Spanish chorus, the Satsuma dance in black and white and solo dances of Gladys Roberts, who personally directed the ballet and all dancing numbers.

The influence of ancient Egypt, producing weird music, ancient garb and Egyptian dances contrasted with the up-to-date dress of American travelers, formed the attractive and colorful setting for the second act. The comedy act in the form of clever dialogue and song lyric was written and performed by Miss Gilberta B. Nafey and J. W. Cook, members of the club. Miss Blanche Williams, J. Willard Edwards, Misses Olive Remlin, Irene Capistrant and Mable Ramsey in song numbers, were particularly pleasing.

Special mention should be made of the duets of the Misses Fleu and Chapman and Penning and Rosenquist. One of the big hits of the show was the work done

by the quartet composed of Messrs. Hess, Markus, Johnson and Peters.

The entire show was presented under the personal direction of H. R. Allensworth, valuation engineer of the Tri-



Miss Elva C. Chapman and Miss Dorothy A. Fleu Made a Great Hit.

State, to whom the decided success of the show should be largely credited. Satsuma was certainly worth more than the price of admission and furnished a substantial foundation among the Tri-State Dramatic and Social Club's friends for next year's play.

While on an inspection tour, the junior electrical engineers' class of Purdue Uni-

versity, Lafayette, Ind., visited the offices of the Home Telephone & Telegraph Co., of Fort Wayne, Ind., on May 12.

It was the custom of the junior electrical engineering students of the university to make an annual tour of inspection of electrical properties of special interest to them, but the world war interrupted this general plan and it was not resumed until this year. On May 10, 11 and 12 the class made the first inspection tour since the war.

A rather significant feature of the tour was that an inspection of the main offices of the Home Telephone & Telegraph Co. was included in the schedule. The greatly increased demand by telephone companies for electrical engineers has stimulated the interest of engineering students in telephone properties.

Eighty student engineers were in the group that inspected the company's offices and all were enthusiastic in their comments on the instruction they received and items of unusual interest brought to their attention. They spent two hours in a careful inspection of the switchboards in operation and of the terminal rooms and equipment.

The telephone industry as a whole is benefited by such visits of student engineers, and engineering colleges should be encouraged to regularly include telephone properties in their schedules for inspection tours.

"I am enclosing a copy of an article which was published by both of the daily papers of Warsaw, Ind., and created considerable fun and talk, concerning the telephone company," says J. W. Scott, manager, Warsaw, Ind.

"Again, I find that quite a number of



The Entire Cast of "Satsuma," Given by the Tri-State Social and Dramatic Club—The Entertainment Was a Great Success.

patrons have taken the directory in an idle hour to see what further could be made of the names in the telephone directory.

"I believe the best publicity that our company has had has been caused by the association of the various names in our directory.

"Thinking perhaps a great number of telephone men might get good from the same thing, if the idea were suggested, I am sending this copy and if you desire to use it you are welcome."

Mr. Scott has worked up an entertaining article with a clever play on the names found in the directory. Undoubtedly many of our readers will get some ideas and amusement from the article which follows:

What's in a Name? Look What Is Revealed in Warsaw's Telephone Directory.

BY J. W. SCOTT.

The Commercial Telephone Co.'s directory will not only place one in touch with the citizens of Warsaw, but if the names be applied, will involve side trips into realms of history, zoology, anatomy, weather conditions and climate. The historical names of America are perpetuated by the book.

See what this book does to the 18th amendment! Beers, Siders, Gibsons, Gordons, with Brewers, Maish, Barrs and Glasses openly advertised.

Listen to the Crafts represented: Milers, Miners, Colemans, Taylors, Slaters, Turners, Shumakers, Weavers, Bakers and Goldsmiths with a force of Beyers, Sellers and Skinners to put it Overall. These employ Cooks, Filars, Butlers, Ushers, Wheelers and Oylers, who are supervised by a Boss who was a Sailor and is a Redman, and a Foreman, who was a Seman and is a Shriner. These men are Young, Stout, Long, Manley and Wise.

Visit the zoological garden. We have Lyons, Wolfs, Campbells, Moose, Coons, Haas, Dobbins, Lambs, Beagles and Shepherd Kers. The garden is an Aiker of land with Boggs, Rockhills, Poor Clay and Lakes. The animals run Luse Sommers and Winters.

For a study in anatomy we have a Foote, Hand, Shinn, Hipp and Hyde.

You, Isaac Waltons, are represented in Anglin, by Fishers, Carpers, Netters, Spears with Lakes; Pike, Dewart and Webster.

The farm is represented by a Haymaker, Ryman, Greenfield, Groves, and Parks with Clover, Hay and Reeds. Due to a Bumgardner, who did not use his Ladds and their Powers to Schue the Grubbs away, the Boss stood a Gast. The Hayden was empty.

For Hunters and Fowlers, there are Ferndell, Woods with Small Elders. Lims and Stumps are provided.

The rainbow is there with its Blacks, Browns, Blues, Greens, Whites and Grays with the Dyes and Schades.

THE SENTINEL POPPIES.

By Robert Bell McKendry.

"A MEMORIAL TO OUR HEROES BENEATH
THE POPPIES."

In Flanders' Field the sentinel poppies stand,
On hillside and valley, and all thro' the land;
Watch and ward sweet they keep o'er the graves of our dead,
A greeting of love held in each bobbing head.

When the winds chant a dirge for the valiant who rest,
In the soil that their blood has eternally blest,
The brave little poppies keep time with the hymn,
Nodding and bobbing with rhythm and vim.

And sometimes kind Heaven weeps over each bed,
In sorrow, 'twould seem, for the lives that were shed,
Then, drooping their proud heads, the poppies bend low,
And mingle their tears as they sway to and fro.

And when chill Winter wraps her pure mantle of white
Round the forms of the brave lads who fell in the fight,
The poppies creep under the blanket of snow,
And cheerily whisper to lov'd ones below.

And so through the years the sweet story will be—
How in sunshine and rain, or when storms cross the lea,
The sentinel poppies their faith-vigil keep,
O'er the couch of our boys as they take their long sleep.

Mourn not, then, and grieve not because they are gone;
Their valor will live in both story and song:
How to make the world safe no ground did they yield,
As they fell mid the poppies on red Flanders' Field.

And as their pure heart blood seeped down thro' the sod,
It was eagerly drunk by the poppies—and God
Blessed the giving—an immortal shield,
To guard well the memories of grim Flanders' Field.

(Copyright, May, 1923.)

For music we find Fifers, Pipers, Bells, Blackhawks and Thrushes with Carrolls.

Want to buy a Carr? We have Fords, Franklins and Haines; or Mabie it is only a Lytle Gift you wish? Here is a sample list: Funnels, Heeters, Horns, Globes, Bales of Sheets and Coyles of Copper.

The Bible? Sure! There are the Cains, Jobs, Jordans, Thomas, Simon and Baum of Gilead.

Our knockers are Basts, Rapps, Stoners, Pounds and Polks.

Say, girls! What Schade is Brownell;

and for extremes how is this: Chase, Crall and Russell?

Watch your step. There are Thorns to Pierce, Stingers and Kutz by Sharp Razors.

Send in your replies at once. How many Pounds in a Millington, Edgington or a Headington? How old is Oldfather? Long is Longfellow? Low is Lowman? And what is Gilworth, and what does Gerlack?

Should the Milburn, the Byler Burst will Dilsaver? Will Hilligas or Gaskill the man in the Moon?

Will Milice Fries?

For a Tripp abroad, there is a Hull of Good Beam to Carey you Bowling over the Ripples. The compass is represented by the Norths, Souths, East and Wests to guide you to Berlin, Ireland, or the Jer-man Border, where you may find Kings, Dukes and Castles.

Guy and Jays who Carey Leiter Domes instead of Morehead should not Mock or Guy. It shows Poor Breeding. The directory recommends Howe and Cornell for education.

Don't start a Rough over the foregoing—the directory furnishes prize fighter McCoy to take a Polk, an Armeys, Archers, Spears and a campfield.

Don't Hoot at Tom or Lambert. Others may Hoppus and there will be Amos to Ward off. Say Melick and run.

A conundrum? See Oram if Rigdon and Carteau. As a Ruse, run like a Whitehead to Dewart Lake. Hale a Newcomer, who will show you how to Brubaker. Phillipson for you now have a Fulford with Williard battery. Don't Welch Orr Berroth; the Lehman would use a Derrick and is Aiken to get you in Dutch.

You are not to Marvel. Look Wise, the Burden is hers. They Willette Knickerbockers be worn in Winters and Neher Freese.

Mottos:

Mottos are easily discovered, for instance:

Deem, Standard Quality a Sterling Groth; unlike a Valentine, good each and every day.

If work is a Drudge, Cease! Be a Freeman, Meek; have Hope and exercise Justus.

We have traveled broadly and you may be hungry. The directory hands you a menu: Frankforts and Murphys with Cress and Spriggs. Choice of meats—Bareham, Sandham, Dunham, Dillingham with Rice and Graham, Dunwell. On Sundays, especially Easterday, a Bloomer for the table.

Cash is required but again our needs are supplied. There are Pyles of Nichols and Shillings and Thrift to supply Moore.

While there is much that might be taken from this wonderful book, there is an end to all things. I ran into Graves and Coffins, and I am so frightened that my name is Dennis.

The Cable Workers in the heart of cities or at civilization's outposts can always depend on Prest-O-Lite Service.

Ward H. Snook is right

Ward H. Snook knows Cable Work. He knows the *best* methods and tools. Writing in Telephony he said:

“The usual cable sheath tools * * * are very useful but not necessary. All one needs is a pocket knife, a hammer, the necessary sheet lead from which to make the sleeves, a stick of solder the size of a lead pencil, *an acetylene blow torch* with a pencil flame, a pair of tin trimmers scissors and a mole-skin about 2 x 2.”

But just as important to the cable splicer is the Prest-O-Lite Service which makes possible the Prest-O-Lite Torch.

Wherever the job is there is one of the 22,000 P-O-L stations ready to furnish equipment and to exchange full tanks for empties, charging you only for the gas. This service is dependable and economical. It makes possible the use of Prest-O-Lite Torch, always on the job,—the tool that saves lost time and lost motion. Get acquainted with

Prest-O-Lite Gas and PREST-O-LITE APPLIANCES

If your dealer can't show you all you want to know—write us for details.

THE PREST-O-LITE COMPANY, Inc.
SMALL TANK SALES DEPARTMENT
Indianapolis, Ind.

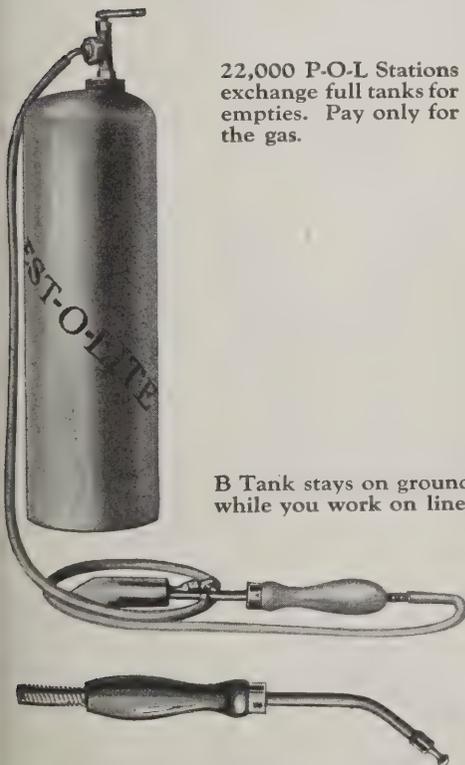
New York Office: 30 East 42nd Street
Pacific Coast Office: 599 Eighth Street, San Francisco
In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto



M C Tank may be strapped on back as shown.

22,000 P-O-L Stations exchange full tanks for empties. Pay only for the gas.

B Tank stays on ground while you work on line.



Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Discontinues Alabama Exchange That Had Seven Subscribers.

Granting the petition of the Southern Bell Telephone & Telegraph Co., the Alabama Public Service Commission on May 9 authorized the company to discontinue the operation of its exchange at Hillsboro.

The exchange had only seven subscribers, six of whom endorsed the petition for discontinuance.

Bad Bargain No Reason for Abrogating a Contract.

The theory of regulation received a new twist by a recent decision of the Nebraska Supreme Court, and the lawyers there are doing considerable talking about it.

One of the basic parts of regulation by the state includes a nullification of all municipal franchises. Thus if a telephone company secured a long-term franchise to operate a plant in a city in the day when competition was the thing, the commissions and the courts have generally been holding that if the rates fixed therein become unremunerative at any future time, the company cannot be bound by them. This was based on the theory that the state power superseded that of its political subdivisions.

The case before Nebraska Supreme Court was one where the village of Davenport had secured an injunction in the lower court against the Meyer Hydro-Electric Co., which operated a light plant in connection with a mill. It entered into a 25-year contract with the city, in the form of a franchise ordinance that gave it certain rights to the public thoroughfares, to furnish current for a stipulated price.

Lately the cost of generating electricity has increased, and the company notified the village authorities that unless it would pay higher rates than stipulated in the contract, it would refuse further to furnish current.

It was clearly shown in the trial that the law does not permit a village in Nebraska to enter into a contract extending beyond a 5-year period. Before the supreme court, the company urged this as a reason why it should hold that the contract was void, because it was beyond the power of the village authorities to make—a doctrine called by the legal term of *ultra vires*.

The supreme court holds, however, that the doctrine of *ultra vires* is not available where its application will defeat the ends of justice and work a legal wrong. The company, it says, recognized the village's right to contract by entering into one with

it and obeying it until its own interests were damaged. It cannot now claim that the village cannot hold it to the terms of that contract.

Men, it says, make bad bargains and are financially ruined by them. That, however, is no reason for abrogating the contract that includes the bad bargain. Corporations, sometimes, do likewise, but the courts will hold their contracts inviolate, especially when, as in this case, to do otherwise would endanger life, health and property.

Illinois Bell Asks Leave to Issue \$50,000,000 in Bonds.

The Illinois Commerce Commission held a hearing May 16 on application of the Illinois Bell Telephone Co., for authority to issue \$50,000,000 of its 5 per cent, first and refunding mortgage bonds. The commission took the petition under advisement.

The proposed issue is for the purpose of meeting obligations due under first mortgage maturing December 1 of this year, to retire floating indebtedness, and to secure additional capital for additions and betterments to property.

Application was filed at this time to enable the commission to check the company's records of expenditures for construction, and approve the financing, in order to avoid delay at the time of issuance of the bonds.

The application did not state the price at which the bonds were to be sold. Arrangements for the issue are to be made at some future time prior to the date of maturity of the present issue.

An open form of mortgage was submitted to the commission covering the Illinois property of the company. The bonds to be issued thereunder are to mature 33 years from date of issue, with provisions for issuing additional bonds in future years under the usual restrictions as to the construction of additional property, and the earnings on the entire property.

Information submitted to the commission by the company in connection with the application showed that the company has issued and outstanding \$60,000,000 common stock, and that the total book value of the company's property in Illinois is in excess of \$120,000,000.

California Investigation for Maintaining Efficient Service.

Development of telephone service in California on an unprecedented scale, calling for a construction program throughout the state by the telephone

companies aggregating \$30,000,000 during 1923, has caused the California Railroad Commission through its telephone department to inaugurate a state-wide investigation of the telephone situation with the view to maintaining service at the highest possible state of efficiency.

Under the direction of Walter J. Dodge, telephone and telegraph engineer of the commission, a careful check will be made of conditions in the northern and southern sections of the state with the view of ascertaining whether it will be possible to reduce the number of delayed installations, and the number of service complaints, made to the commission and to the companies by patrons.

Some idea of the magnitude of the telephone development in California to keep pace with the rapidly growing population and business requirements of the state may be gained from the fact that the 1923 program for Los Angeles alone calls for the expenditure of approximately \$15,000,000, while a similar amount will be expended throughout the rest of the state to meet demands for service.

Complaints of all nature in regard to telephone service to the railroad commission average 600 a month in Los Angeles, and about 70 a month for the rest of the state. Complaints to the company in Los Angeles aggregate approximately 6,000 a month. Delayed installations in Los Angeles now aggregate nearly 15,000, while installations are being made at the rate of 4,500 a month. Applications during February numbered 13,000. Service changes numbered 4,000 in addition to the new installations.

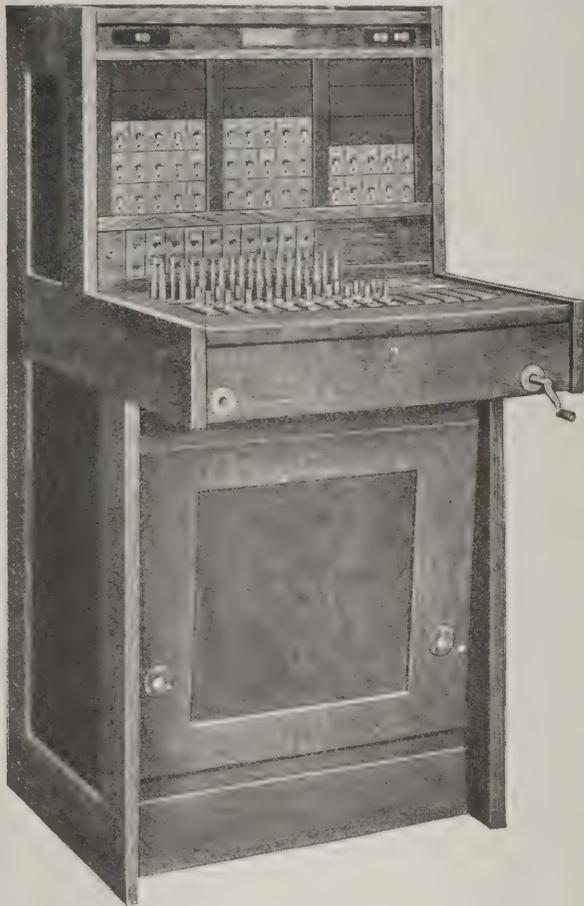
It is for the purpose of preventing a condition similar to that in Los Angeles from developing in San Francisco and the bay district, which are now showing indications of a great increase in population and the incidental demand for telephone service.

The recent installation of a new telephone exchange in Berkeley to be known as Thornwall exchange was in line with the efforts of the telephone company to keep pace with the demands for service in Berkeley, which are showing a remarkable increase.

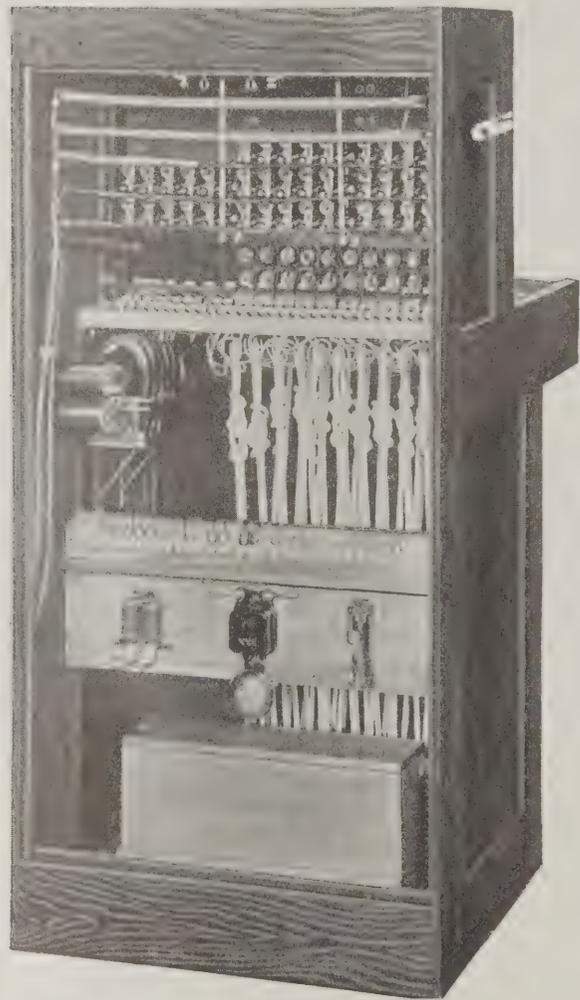
Will Issue Stock and Raise Rates When Service Improves.

Authority to issue \$50,000 of 6 per cent preferred stock and to increase rates at Decatur and Berne, Ind., when it makes improvements with the money derived from the sale of the stock was contained in an order issued May 7 by the Indiana

THEY ALL LOOK ALIKE, BUT—



Monarch magneto switchboards, at a glance, look very similar to all other makes, but — examine the workmanship and design closely and you will find there is really no comparison. The illustrations and description given below will convince you of these facts.



Note how neatly and compactly all vital parts are arranged. All essential parts are easily reached; the drop coils, jacks, night alarm, bus bars and cord racks. Condensers are mounted in a cabinet to protect them from cord weights. So that no soldered connections need ever be disturbed, wiring for transmitter and night alarm battery, buzzer test taps, booth jack and other uses is brought out to numbered taps on the terminal strip.

Monarch Telephone Manufacturing Co.

GENERAL OFFICES AND FACTORY

951 W. Van Buren St., Chicago, Ill.

DISTRIBUTORS

Tel-Electric Co., Houston, Texas
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Electrical Supply Co., New Orleans, La.
Coker Electric Supply Co., Los Angeles, Cal.

Public Service Commission to the Citizens' Telephone Co., of Decatur.

The order establishes \$3.50 a month for business and \$2 a month for residence telephones one-party stations.

Rates Approved for Missouri Exchange of Kansas City Company.

Effective June 1, the Kansas City Telephone Co. has been authorized—by the Missouri Public Service Commission's order of May 12—to establish the following rates for service at its exchange at Hickman Mills:

Business—	
One-party	\$4.50
Four-party	2.75
Extensions	1.00
Residence—	
One-party	2.25
Two-party	2.00
Four-party	1.75
Extensions .....	.75
Rural—	
Business, ten-party	2.50
Residence, ten-party	2.00
P. B. X.—	
Trunks	4.50
Stations	1.25

Missouri Commission Approves Sale of St. James Company.

Authority to sell the St. James Telephone Co., of St. James, was granted to C. A. McComb on May 17 by the Missouri Public Service Commission, it appearing that the mayor of St. James had assented to the transfer.

The new owner is W. E. McComb, and the price mentioned is \$12,000.

Want Zone Service at Local Exchange Service Rates.

Hearing was had on May 16 by the Nebraska State Railway Commission on the application of the Lincoln Telephone & Telegraph Co. for permission to add 25 cents a month to the charge for residence and \$1.00 a month additional for business service to patrons at University Place and Bethany, two suburbs of Lincoln.

A committee of citizens and representatives of the city governments appeared to protest, largely on the ground that they did not care to pay any more than they are now paying. These two cities, totalling about 6,000 population, have been served for years from a manual exchange at University Place, and the subscribers have been given the service furnished all other patrons of the Lincoln zone.

Up until the wartime they paid the same rate as did Lincoln people and others in the zone, but for some reason that General Manager Mattison told the commission he did not recall, no raise was made there when Lincoln rates were increased to meet the added cost of giving service.

Following the development along the lines indicated by the economic survey

which suggests where branch exchanges, trunks and distributing lines should be built when changes are made, the company recently erected a new building at University Place and changed to the manual service. At the same time it took in a section of northwest Lincoln, serving about 500 telephones.

Mr. Mattison said that the company had increased its investment from \$99,000 to over \$200,000, and if the raise was denied, the anomalous situation would be presented of not only all other Lincoln zone subscribers paying more but that the 500 newly-added to the University Place exchange would be paying more than the others thereon.

The commission asked the objectors when they came, May 25, to be prepared to answer two questions: Whether they thought there should be any difference on the rates charged patrons of the suburbs and those charged Lincoln people for the same service, and if so, why? Whether if it be shown that the company does not need the added revenue they contend, that the saving be spread over the entire zone or confined to them? These were the two defenses they presented.

The company submitted testimony to show that prior to 1918 the patrons were given the option of local or zone service, at the two scheduled rates, and where they figured that a large percentage would want only local service, only one business man out of 42 so voted and only 35 residence patrons out of over 500. This left less than 5 per cent of the total wanting local service only. Now the other 95 per cent, who want zone service, object to paying the zone rates.

Same Rates Will Continue Effective in Bellefontaine, Ohio.

The application of the United Telephone Co., of Bellefontaine, Ohio, to continue using the rates which have been effective since January, 1921, was allowed by the Ohio Public Utilities Commission on May 9.

The rates permit a 4.6 per cent return on the valuation of the property as found by the commission.

Higher Rates Allowed Company Which Suffered from Storm.

A schedule of increased rates was allowed the Manitowoc & Northern Telephone Co., operating in the vicinity of Manitowoc and Two Rivers, by the Wisconsin Railroad Commission's order of May 17, which takes effect June 1.

The company receives switching service from the Wisconsin Telephone Co. and the Two Rivers Telephone Co. in the territories in which it operates.

The present rate for rural lines is \$15 a year, payable semi-annually in advance. In addition, the company has a few one and two-party lines for which rates have

never been established, but the subscribers on these lines are willing to pay the rates asked for.

It developed at the hearing that the company had suffered very severely from the sleet storm of February, 1922; that practically its entire wire plant was destroyed, and that the cost of rebuilding was about \$9,000. All the lines are metallic and the maximum loading on any line is given as 11.

It appeared that 182 subscribers receive service from the Manitowoc exchange and 15 from the Two Rivers exchange. The switching charge of the Wisconsin Bell for service from its Manitowoc exchange is \$7.50 per station per year, and that of the Two Rivers company is \$6.

The company estimated its property value at \$16,000. The commission thought \$12,000 was more nearly correct, but took into consideration the abnormal loss suffered on account of the storm.

It was difficult to estimate expenses for last year, because operation was entirely suspended during a portion of the time. However, a fair amount to allow for expenses seemed to be \$2,720. With a revenue of about \$3,600 this year, there would be approximately \$900 left for depreciation and return and for wiping out extraordinary losses due to the sleet storm. It was apparent, though, that the company did not stress the importance of a return upon its property, and that the rates allowed would enable it to keep up the property in fairly good condition.

The new schedule provides the following net rates per month:

Rural, one-party	\$6.35
Rural, two-party	3.35
Rural, multi-party	1.50

On one-party stations, there is an additional mileage charge of \$1.50 per year for each quarter mile or fraction thereof beyond a radius of one and one-quarter miles; and on two-party stations the extra charge is 75 cents per year per quarter mile.

The company is also allowed to make an installation charge of \$3, to be refunded if the party remains a subscriber for a period of two years.

Order Issued Legalizing Rate Which Has Been in Effect.

On May 17 the Wisconsin Railroad Commission gave the Farmers Independent Telephone Co. permission to discontinue its present legal rate of \$12 a year and place in effect, as of June 1, a semi-annual rental of \$9 gross or \$7.50 net. This rate is for instruments furnished by subscribers.

The discount rule provides that \$1.50 shall be deducted from the gross rate for bills paid on or before the end of the third month of the billed period.

The rate allowed is not an increase—it

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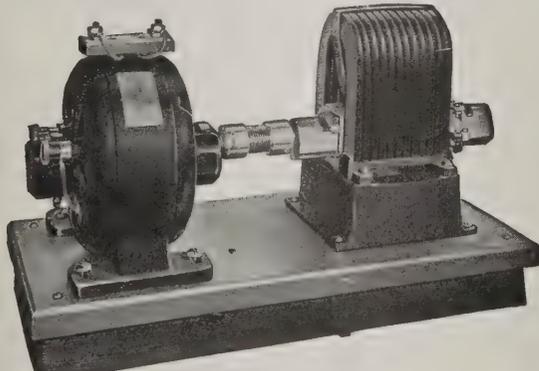


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appearing that the company has been charging \$15 a year where instruments were furnished by the subscribers, and \$18 for company-owned instruments. The order simply legalizes the rate charged.

According to the company's annual report for the year ended December 31, 1922, the operating revenues amounted to \$4,644 and the operating expenses, exclusive of depreciation, to \$2,856, leaving a balance of \$1,788 available for depreciation and return.

Mountain States Files Statement of 1922 Operations in Utah.

According to the statement filed by the Mountain States Telephone & Telegraph Co. with the Utah Public Utilities Commission for 1922, the net income on the Utah property was \$355,000. The value of property is given as \$9,570,000.

The company has 48,000 owned stations and 450 service stations in the state, yielding operating revenues of \$2,400,000, with telephone operating expenses of \$1,772,000, including \$480,000 depreciation.

Ohio Bell Acquires Control of Montgomery County Company.

The Ohio Bell Telephone Co. on May 3 absorbed the Montgomery County Telephone Co., a line which has furnished service to Miamisburg, West Carrallton, Centerville, Sulphur Grove and other points since 1905, when the company was organized.

The consideration is said to have been \$100,000.

Separate Exchange Areas for Suburbs Held Discrimination.

Small municipalities and residence communities forming the suburbs of a large city, the inhabitants of which suburban communities have their social and commercial interests in the metropolitan center, cannot be said to have separate community interests.

Where a telephone business has been built up to include such city and its suburbs, with free call service throughout the entire district, the telephone company may not thereafter separate the suburbs into separate exchange areas, and make toll charges for calls beyond the boundaries of each exchange area. To do so amounts to unjust discrimination. (Per Marshall, C. J.) City of Cincinnati vs. Ohio Public Utilities Commission; Supreme Court of Ohio, 137 Northeastern, 36.

Franchise Rates Increased As the Subscribers Increase.

The telephone franchise contract with the city of Somerset, Ky., provided for an increase in rates when the "list of Somerset subscribers" reached a specified number.

It also required the company to furnish

to all subscribers within the city limits efficient telephone exchange service, including county service, over subscribers' lines and exchanges belonging to the company or connecting companies where free exchange service is furnished.

The court held that the phrase "list of Somerset subscribers" meant subscribers served through the Somerset exchange, regardless of whether they lived within or outside the corporate limits of the city. City of Somerset vs. Gainesboro Telephone Co.; Court of Appeals of Kentucky, 244 Southwestern, 758.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

May 16: Joint petition filed for consolidation of the Cayuga Southern Telephone Co. and the Farm & Village Telephone Co.—operating in Cayuga and Tompkins counties, N. Y.—with the New York Telephone Co.

ALABAMA.

May 9: Southern Bell Telephone & Telegraph Co. authorized to discontinue operating its exchange at Hillsboro.

CALIFORNIA.

May 16: Application filed by Pacific Telephone & Telegraph Co. for authority to exercise the rights and privileges conferred on it under franchise granted by the city council of Stockton.

May 29: Hearing in Mill Valley in the case of the town of Mill Valley against the Pacific Telephone & Telegraph Co.

ILLINOIS.

May 4: Sangamon County Telephone Co. ordered to make repairs and replacements in its lines and equipment in Pawnee.

May 16: Hearing held on application of the Illinois Bell Telephone Co. for authority to issue \$50,000,000 of its 5 per cent first and refunding mortgage bonds; taken under advisement.

May 22: Hearing held in Chicago on application of the Kewanee Home Telephone Co., of Kewanee, for authority to execute its deed of trust to secure an issue of \$175,000 of its first mortgage bonds, and authority to issue thereunder \$125,000 of the bonds.

May 23: Hearing held at Chicago in the matter of application of A. Haverstick and others for an order requiring the Illinois Bell Telephone Co. to furnish service in or near the city of Rock Falls.

INDIANA.

May 7: Citizens Telephone Co., of Decatur, authorized to issue \$50,000 of 6 per cent preferred stock, and to increase rates at Decatur and Berne when improvements have been made.

MICHIGAN.

May 8: Hearing held at Lansing on joint application filed by the Reading Central Telephone Co., of Reading, and Michigan State Telephone Co., for authority to the Reading company to buy toll lines running from Hillsdale to Camden and from Hillsdale to Ransom.

MISSOURI.

May 11: Effective date of proposed rate schedule PSC. No. 4 of the Warrenton Telephone Co., for its exchange at Warrenton, suspended to September 8, in order that a hearing may be held on the reasonableness of the rates.

May 12: New rate schedule approved for the Hickman Mills exchange of the Kansas City Telephone Co.

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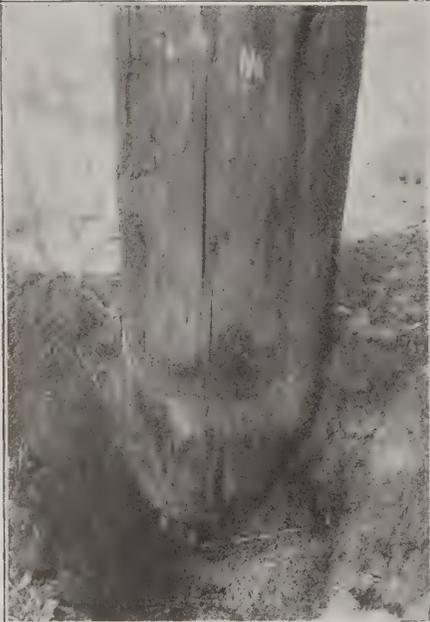
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May 17: C. A. McComb authorized to sell the St. James Telephone Co., of St. James, to W. E. McComb, at an agreed price of \$12,000.

NEBRASKA.

May 14: Application of the Hay Springs Telephone Co. for permission to destroy ancient records, granted.

May 14: Application of the Eagle Telephone Co. for permission to eliminate from its rate schedule the 25-cent a month charge where payments for service are not made in advance according to the general rules prevailing, granted with instructions that hereafter no more than the net rate shall be required of any subscriber.

May 16: In the matter of the application of the Lincoln Telephone & Telegraph Co. for permission to increase rates to University Place and Bethany subscribers to the same level as other subscribers in the Lincoln zone; testimony taken and objectors given until Friday, May 25, to make a showing in opposition.

May 16: In the matter of the application of the Mullen Telephone Co. for permission to charge 20 cents a call to remotely located farm lines now indirectly switched from central exchange instead of the 50 cents a month now charged for switching; it appearing that the parties served refuse to pay the switching rate on the ground that the service they demand does not justify the expenditure, and it further appearing that the 20-cent charge is satisfactory to all persons, order issued granting authority asked.

May 17: Application filed by the Comstock Telephone Co. for permission to destroy ancient records.

May 17: Application filed by the Frontier Telephone Co. to amend tariff by providing for a 25-cent monthly charge for desk set service.

NORTH DAKOTA.

May 15: Order entered allowing section 14 regarding filing of change in discount dates of the Milnor Rural Telephone Co., of Milnor, to become effective as provided

by law, 30 days after filing, which was April 11.

May 16: Same action as above taken regarding filing of cut-off notice and collection dates of the Griggs County Telephone Co., of Cooperstown.

May 16: Brisbane-Lark Telephone Co. authorized to extend existing lines.

May 16: Elm Grove Telephone Co., of Stanton, given authority to extend existing lines.

May 18: Order entered permitting Spring Brook Telephone Co. to install a switch at or near the center of its line, and to charge subscribers east of the switch \$6 per year, and those west of the switch \$2 per year; Fairview Farmers Telephone Co., of Hannover, authorized to disconnect with the farm switch which connects it to the Center exchange; and Hannover Mutual Telephone Co. ordered to continue paying \$3 per year per subscriber switching charge to the Center exchange.

OHIO.

May 9: United Telephone Co., of Bellefontaine, given permission to continue using the rates which have been in effect since January, 1921.

May 10: Hearing held in Columbus on application of the Cincinnati & Suburban Bell Telephone Co. for a reappraisal of its property.

May 10: Application of the Citizens Telephone Co., of Delaware, for an increase in rural rates, dismissed.

May 31: Hearing to be held on the application for increased rates after unification of the Galion Telephone Co. and the Central Union Telephone Co.

WISCONSIN.

May 17: Order entered legalizing the rate of \$15 per year for subscriber-owned instruments, which has been used by the Farmers Independent Telephone Co. for some years.

May 17: Schedule of increased rates allowed for the Manitowoc & Northern Telephone Co., which operates in the vicinity of Manitowoc and Two Rivers.

From Factory and Salesroom

Time and Labor Saved in Boring Holes with Iwan Auger.

For facility in making holes for poles, posts and anchors, Iwan Brothers, of South Bend, Ind., have designed a special auger. It comes in different sizes, is strongly constructed, and is recommended by its manufacturers as a labor and a time saver.

On rush jobs, especially where weather conditions necessitate that the work be done in a hurry, these tools enable the hole digging to be well ahead of the pole setters.

The 12, 14 and 16-inch Iwan post hole augers are especially designed for pole holes, being rapid in operation and having other features which make for economy.

There are smaller sizes for the anchor holes, and it is said that these holes, which are on a slant, are bored just as easily as the vertical holes.

While a regular handle comes with the auger, there is an appliance—called the Blackburn extension handle—which is of

assistance in deep boring. It is four feet long, and when extended to its extreme length is eight feet.

Complete information about this and other equipment handled by Iwan Brothers may be obtained from them.

Handyman Rapid Pole Puller, New Product of Harrah Co.

The Harrah Mfg. Co., of Bloomfield, Ind., now has in production the Handyman rapid pole puller which it has been developing for the past year.

It has been the company's aim to make a jack which will require but one hitch to pull a pole and which is light enough so that one man can carry and operate it.

It is now stated that two men are needed only on the larger poles or where the ground is hard.

In connection with the pole puller, the Harrah company also furnishes a clamp which is chained to the pole and allows a more direct lift with the jack.



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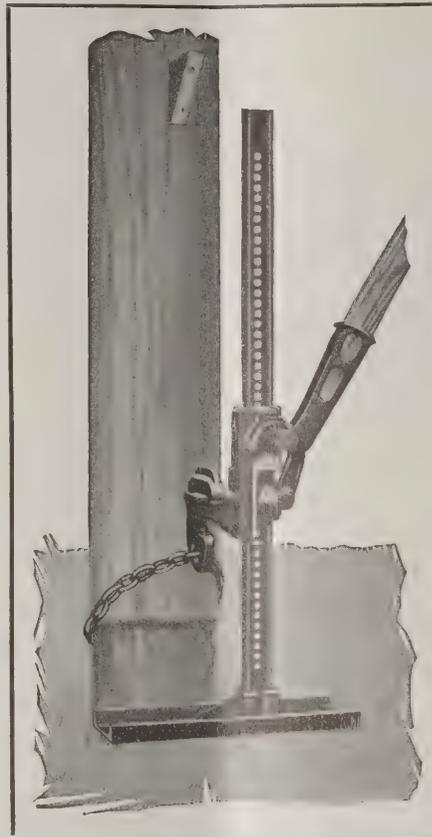


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New Dry Cell "A" Battery Made by French Battery & Carbon Co.

An interesting folder, descriptive of the new Ray-O-Vac dry cell "A" battery, has been issued by the French Battery & Carbon Co., of Madison, Wis.

The new battery is for use with radio sets and is the outcome of several months' experimenting with the dry battery tube. It is stated that the battery will give ap-



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This is a new and different type electric vacuum cleaner that weighs only 6½ pounds. It is supported by a strap over the operator's shoulder, thus allowing both hands free to direct the cleaning tools. It has powerful suction. It is built and guaranteed by one of the world's largest makers of electric vacuum cleaners.

For cleaning telephone equipment, by suction, use the end of the rubber hose, the bristle brush tool or the small rubber tool. When you desire to use the PREMIER HANDY as a blower, simply remove the bag, attach the blower coupling, put on the hose and you then have a powerful blower for cleaning surfaces inaccessible to the suction tools.

The Premier Handy has been tested in scores of exchanges, and has been found to be practically indispensable for cleaning switchboards, cable runways, relay racks, distributing frames, and for general cleaning of telephone equipment and apparatus.

The price of the PREMIER HANDY with all the equipment, as described, is only \$35.00. This is about half the price of many standard electric vacuum cleaners with attachments and only a **very small** fraction of the cost of a Pump Type Vacuum Cleaner truck equipment or an installed Vacuum Cleaner System.

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Book Review.

RATE-MAKING FOR PUBLIC UTILITIES, by Lamar Lyndon. Published by McGraw-Hill Book Co., New York; 209 pages, 5½ ins. by 8 ins. Price \$2.

In this volume Mr. Lyndon has endeavored to present logical and mathematically exact conclusions for each factor which enters into the consideration of valuation and rate-making. The reasons for his conclusions are set forth in detail. The positions taken and conclusions drawn by Mr. Lyndon are the result of years of personal experience in the valuation of properties and rate-making, reinforced by the study of authorities, decisions and works on the subject.

The chapter headings include discussions of the general theory of rate-making, depreciation, methods of valuation, intangible values, modification of capital account, the rate of return, operating costs, increase in population of cities. Separate chapters are devoted to rate-making for gas and electric supply companies, electric railways and telephone service.

In his discussion of telephone rates, the

author advocates measured service as the only rational system, fair to the company and fair to every individual of the public. His idea is that there should be a low monthly charge for the use of the telephone equipment and that no calls be furnished under this charge. For every call made from the substation an additional charge would be made.

The book is of interest to all who are concerned with the management of public utilities, for the matter of rates and the factors which enter into their making is most important.

Automatic Telephones Proposed for Riga, Russia.

A new full automatic telephone exchange to replace the present system in operation in Riga has been proposed by the General Director of the Latvian Post and Telegraph Bureau of the Ministry of Communication, U. S. Vice-Consul Carl Birkeland, Riga, reports. The cabinet is reported to have approved the project which will be submitted to the constituent assembly during the coming summer. It is expected that favorable action will be taken by the assembly when the matter comes up.

The new project calls for a machine-switching telephone exchange capable of caring for 10,000 lines, with a maximum capacity of 20,000 lines. It is proposed to install the new system in the office build-

ing which was erected for that purpose during the year 1914.

The installation will be extended over a period of about four years. Two thousand subscribers' lines will be installed the first year; 3,000 the second year, 3,000 the third year, and 2,000 the fourth year. The estimated cost is stated to be \$600,000.

Prices in the Metal Market.

New York, May 22.—Copper—steady; electrolytic, spot and futures, 15½@15¾c. Tin—easy; spot and futures, 41.87c. Iron—steady; No. 1 northern, \$30@32; No. 2 northern, \$29@31; No. 2 southern, \$27. Lead—steady; spot, 7.25c. Zinc—steady; East St. Louis spot and nearby delivery, 6.70@6.75c. Antimony—spot, 7.30c.

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POSITION WANTED—By equipment man of 14 years' experience, available June. Central states. For particulars address 5302, care of TELEPHONY.

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It is always gratifying to call attention to any word of

recognition of the contributions made by independent telephone inventors and manufacturers to the development of the telephone art. The value of their efforts towards making American telephony the world leader is too often overlooked, for the tendency of this swift present day is to regard the results without much thought in who produces them.

A writer in The Nation's Business, discussing the radio situation, refers to the manufacturing and patent difficulties in that field at some length, and then says:

"There are still many legal wrinkles to be ironed out in the case of smaller corporations infringing upon the patent rights claimed to be owned by others. In fact, there is an independent group drawing together for the purpose of protection along this line.

"In the telephone field we have some very powerful Independent manufacturers who have been able to maintain their position through research work. The improvements that have been made by their research workers have thoroughly justified their existence and recognition, and no doubt the same state of affairs will come to pass in radio."

* * * *

The achievements of Independent engineers and manufacturers in the telephone field have done much to place the American telephone at the head of the world procession. Their inventive genius and manufacturing skill have added many valuable refinements to the art.

CURRENT OPINIONS AND COMMENTS

Wm. W. Dean, who died May 3, was one of the Independent group whose engineering research led to results worthy of more fame than was commonly accorded them. Others may have done more spectacular things, thereby winning more publicity, but in the line of downright usefulness in making every-day telephone service more efficient few have excelled him.

* * * *

All public service corporations ought to derive real benefit from the decision handed down by the United States Supreme Court, in the Southwestern Bell telephone rate case, a report of which appears on other pages of this issue. In this important opinion the highest tribunal in the land again holds that in fixing service rates state commissions must take into consideration the cost of reproduction of the plant at prevailing prices.

Rate commissions which have shown a disposition to disregard rising prices in passing on rate applications will no doubt pay heed to the supreme court's finding, for it will naturally be observed and followed by the district federal courts to whom service companies appeal when the regulating authorities give them unfair treatment.

* * * *

It is gratifying to observe, also, that the supreme court takes occasion to drop the commissions a plain hint that they should not meddle in the management of the companies. The court says: "It must never be forgotten that while the state may regu-

late with a view to enforcing reasonable rates and charges, it

is not the owner of the property of public utility companies and is not clothed with the general powers of management incident to ownership."

This, in effect, recognizes and approves the principle of private management, which is not to be interfered with unless there are palpable evidences of wasteful or inefficient administration which would injure the service or make it too expensive to the public.

* * * *

A dissenting opinion was signed by Justices Brandeis and Holmes who suggested that a preferable basis for rate-making would be the capital invested in the enterprise. They asserted that the advocates of reproduction cost as a factor in rate-making would find its application harmful to the service companies when costs of labor and material are lower.

Probably few utilities will be alarmed at this prospect, however, as no one expects that prices will return to the levels of, say, ten years ago. At least there is no sign of that coming to pass very soon.

Another and more interesting suggestion was made by the dissenting justices when they criticized the practice of leaving many elements to be determined by the opinion of expert witnesses, and urged the wisdom, instead, of "making rates more dependent on ascertainable facts."

* * * *

It would seem to a layman that "ascertainable facts" are just what the majority of the court are contending for when they

emphasize the importance of considering reproduction cost in adjusting rates. Their opinion says:

"It is impossible to ascertain what will amount to a fair return upon property devoted to public service without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made.

An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today."

There is no doubt that the prices of today (reproduction cost) are surely among the "ascertainable facts" which the dissenting opinion holds to be the proper basis

for rate making. Thanks to rising prices in every line, a telephone plant ten years old could not be reproduced today probably for less than 150 per cent of the original cost. If the supreme court's viewpoint impels rate commissions to be more liberal, the situation of many utility companies with rate cases pending should be improved.

* * * *

The assertion that telephone service is the cheapest of commodities, and that it is, therefore, unfair to lower rates, finds convincing proof in the report made recently by H. W. Hubenthal, telephone engineer of the Oklahoma Corporation Commission. He was not trying to prove that point either, so his figures are all the more impressive.

Present Cost Factor in Rate Basis

United States Supreme Court in Southwestern Bell Telephone Case Declares That State, in Making Rates, Must Consider Present Cost of Reproducing Property—Not Clothed with Power of General Management.

Rates for public service corporations which fail to take into consideration the cost of reproduction at prevailing prices will not be approved by the United States Supreme Court as now constituted.

This was disclosed May 21 when Justice McReynolds delivered the opinion in a case brought by the Southwestern Bell Telephone Co. in Missouri against the Missouri Public Service Commission, the decision to reaffirm a rule making reproduction costs an essential element in determining whether rates are confiscatory bringing from Justice Brandeis a dissenting opinion in which Justice Holmes joined.

Summary of Decision.

"It is impossible," the majority opinion said, "to ascertain what will amount to a fair return upon properties devoted to public service without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made.

"An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today."

It must never be forgotten, the court added, in discussing the 4½ per cent paid to the A. T. & T. Co., "that while the state may regulate with a view to enforcing reasonable rates and charges, it is not the owner of the property of public utility companies and is not clothed with the general power of management incident to ownership."

Asserting that advocates of reproduction cost as an element of rate making would find its application harmful to the public utilities when the cost of materials and wages were lower, Justice Brandeis suggested as a preferable basis the money invested in the enterprise. Urging the court to "lay down a rule which will establish such a rate basis and such a measure of the rate of return deemed fair," he criticized his colleagues for leaving many of the elements to be determined by the opinion of experts, instead of making rates dependent upon ascertainable facts.

While contending that reproduction costs as an essential element in rate making are better than the old tests, selling price or net earnings, the minority insisted that "where the financing has been proper, the cost to the utility of the capital required to construct, equip and operate its plant should measure the rate of return which the constitution guarantees opportunity to earn." Such a rule, it added, would make rates based on facts and not on opinion.

Under the rule which the court adopted, the value for rate making purposes, the minority insisted, "must ever be an unstable factor."

The public utilities, it was added, would have the courts adopt reproduction cost or prudent investment as the measure of rates, whichever is the higher.

History of the Case.

The history of the case dates back several years. At the end of the period of government control, the Southwestern Bell made application to the Missouri Public

In Oklahoma the war-time advance in telephone rates represented an increase in revenue, per station, of about 43 per cent, from 1914 to 1920. During the same period the companies' operating expenses per station increased 63 per cent.

Then costs began to drop and rates were reduced so that in 1922, while the expense increase over 1914 was 43 per cent, the revenue increase figured but 38 per cent. Apparently the service companies retained most of their increased revenue, although costs receded, but this was necessary, for the rate-makers realized that their compensation in the first place was entirely inadequate. A rate commission would have to be "hard-boiled," indeed, to ask a utility to exist and operate today on its income of the year 1914.

Service Commission for permission to continue the rates which had been in effect during the latter part of the period of government control in 46 of its Missouri exchanges; and also for permission to continue the service connection charge which had been ordered by the Postmaster General.

The hearing lasted for some time and the resulting order from the commission denied the application of the Bell company, established different schedules in most of the 46 towns, and denied the continuance of the service connection charge.

The Bell company immediately took an appeal to the state supreme court, filed the bond required, and agreed to the impounding of the moneys collected in rates and service connection charges until a decision was rendered.

The state supreme court sustained the order of the commission, but a majority opinion of the judges set aside the commission's contention that the service connection charge was not a just and lawful charge, the contention being based upon the supreme court's decision in the so-called Columbia case made some years ago. The court's opinion stated that the two cases were not parallel, but that the service connection charge was a just and lawful charge if reasonable rates were prescribed.

An appeal was taken by the Southwestern Bell Telephone Co. to the United States Supreme Court, resulting in the decision which was handed down last week.

Under an order by Circuit Judge Slate in the Circuit Court of Cole County, the company each month has paid into the Central Missouri Trust Co. at Jefferson City, the difference between the desired rates and those authorized by the commission, which was to be held in escrow until settlement of the case. That money now aggregates \$707,954 and is to be turned over to the company as soon as the mandate of the United States Supreme Court is received. It would have been returned to the individual subscribers had the commission been sustained.

Complete Text of Majority Opinion.

The majority opinion in the case follows:

Supreme Court of the United States.

No. 158.—October Term, 1922.

THE STATE OF MISSOURI *ex rel.* Southwestern Bell Telephone Co., plaintiff in error, *vs.*

PUBLIC SERVICE COMMISSION OF MISSOURI and JOHN A. KURTZ, EDWIN J. BEAN, HUGH MCINDOE et al., etc.—In error to the Supreme Court of the State of Missouri.

[May 21, 1923.]

Mr. Justice McReynolds delivered the opinion of the court.

The Supreme Court of Missouri (— Mo. —) affirmed a judgment of the Cole County Circuit Court which sustained an order of the Public Service Commission of Missouri, effective December 1, 1919. That order undertook to reduce rates for exchange service and to abolish the installation and moving charges theretofore demanded by plaintiff in error. It is challenged as confiscatory and in conflict with the Fourteenth Amendment.

During the period of federal control—August 1, 1918, to August 1, 1919—the Postmaster General advanced the rates for telephone service and prescribed a schedule of charges for installing and moving instruments. The act of Congress approved July 11, 1919—41 Stat. 157—directed that the lines be returned to their owners at midnight July 31, 1919, and further

That the existing toll and exchange telephone rates as established or approved by the Postmaster General on or prior to June 6, 1919, shall continue in force for a period not to exceed four months after this act takes effect, unless sooner modified or changed by the public authorities—state, municipal, or otherwise—having control or jurisdiction of tolls, charges, and rates or by contract or by voluntary reduction.

August 4, 1919, the commission directed plaintiff in error to show why exchange service rates and charges for installation and moving as fixed by the Postmaster General should be continued. After a hearing, it made an elaborate report and directed that the service rates should be reduced and the charges discontinued.

The company produced voluminous evidence, including its books, to establish the value of its property dedicated to public use. The books showed that the actual cost of "total plant, supplies, equipment and

working capital," amounted to \$22,888,943.

Its engineers estimated the reproduction cost new as of June 30, 1919, thus: Physical telephone property, \$28,454,488; working capital, \$1,051,564; establishing business, \$5,594,816; total, \$35,100,868. They also estimated existing values (after allowing depreciation) upon the same date: Physical telephone property, \$24,709,295; working capital, \$1,051,564; establishing business, \$5,594,816; total, \$31,355,675.

The only evidence offered in opposition to values claimed by the company were appraisals of its property at St. Louis, Caruthersville and Springfield, respectively, as of December, 1913, February, 1914, and September, 1916, prepared by the commission's engineers and accountants, together with statements showing actual cost of additions subsequent to those dates.

Omitting a paragraph relative to an unimportant reduction—\$17,513.52—from working capital account, that part of the commission's report which deals with property values follows:

The company offered in evidence exhibits showing the value of its property in the entire state (outside the cities of Kansas City and Independence, whose rates are not involved in this case), and also at 46 of its local exchanges in the state. It shows by such exhibits that the value of the property in the entire state (and when speaking of the property in the state in this report we mean exclusive of Kansas City and Independence) is as follows:

Reproduction cost new, \$35,100,471; reproduction cost new, less depreciation, \$31,355,278; and cost as per books, \$22,888,943. It also shows the company's estimate of reproduction cost new less depreciation, and the pro-rated book cost, at each of the 46 local exchanges mentioned.

The engineers of this commission have made a detailed inventory and appraisal and this commission has formally valued the company's property at only three of its exchanges, viz.: at the city of Caruthersville, reported in re Southwestern Tel. & Tel. Co., 2 Mo. P. S. C. 492; at the city of St. Louis in cases No. 234 and No. 235 as yet unreported; and at the city of Springfield, reported in re Missouri & Kansas Telephone Co., 6 Mo. P. S. C. 279, and as a result we have only the estimates and appraisals of the company before us in relation to the value of the property at the other exchanges.

We think it is clear, however, from the data at hand that the values placed by the company upon the property are excessive and not a just basis for rate making.

The values fixed by this commission at Caruthersville, St. Louis and Springfield in the cases above mentioned aggregate \$11,003,898, while the company estimates the aggregate cost of reproduction new of these plants in this case at \$18,971,011. The ratio of the latter figure is 172.4 per cent. This percentage divided into \$35,100,471, the company's estimate of the aggregate cost of the reproduction new of its property in Missouri in this case, equals \$20,350,000, which might be said to be one measure of the value of the property.

Again, the company's estimate of the aggregate cost of reproduction new, less depreciation, of its properties at Caruthersville, St. Louis and Springfield, in this case is \$16,913,673. The ratio of this

figure to the aggregate value fixed by the commission at these exchanges, plus additions reported by the company, is 153.7 per cent. This percentage divided into \$31,355,278, the company's estimate of the aggregate cost of reproduction new, less depreciation, of its property in Missouri in this case, equals \$20,400,000, which may be said to be another measure of the value of the property.

The company also shows by exhibits 19 and 212 that its return under the Postmaster General's rates on \$22,888,942, the book value of its property in the state, is at the rate of 11.65 per cent per annum for depreciation and return on the investment, which would yield the company 6 per cent for depreciation and 5.65 per cent for return on the book cost of the property. As stated, however, we do not think that the book cost of the "prorated book cost" of the property as claimed by the company would be a fair basis for rate making.

As we understand it, the "prorated book cost" given in evidence by the company for the various exchanges is simply the percentage relation of reproduction cost new, which the original cost of all property bears to reproduction cost new of all property and in individual instances the actual cost might vary greatly, either up or down, from what an appraisal would show. If the company, to eliminate competition, paid a price in excess of the value or because of discouraged local operation were enabled to purchase a plant far below its actual value, the "prorated book cost" basis would not reflect anything like the original cost.

We also think that the figure of \$22,888,943, claimed by the company to represent the book cost or original of the property cost in the state, is subject to certain adjustments with reference to the amount of non-useful property included, working capital, and the amounts to be deducted account extinguished value recouped from patrons by charges to depreciation.

In the St. Louis case, *supra*, the original cost of the non-useful property deducted and disallowed by the commission amounted to \$454,689.16. It appears from the company's exhibit 256 that the "prorated book cost" of the St. Louis exchange is just about half of that given for the state. However, it is clear that the proportion of non-used and non-useful property in St. Louis bears a much larger percentage relation to useful property than would obtain throughout the state. It would appear that estimating the company's property not used and useful for the entire state at \$500,000 would be a fair approximation. This sum at least should be deducted.

The depreciation reserve applicable to the Missouri property is not shown by the company. However, on the company's exhibit 15, the balance sheet as of June 30, 1919, of the Southwestern Bell Telephone Co. (Missouri corporation) operating in Missouri, Kansas and Arkansas, the reserve for accrued depreciation and reserve for amortization of intangible is given as \$7,963,082.37.

The same exhibit shows the original cost of fixed capital for Missouri, Kansas and Arkansas property as \$46,061,162.76. The total fixed capital of the Missouri property shown on the company's exhibit 19 is \$21,837,759, which is 47.4 per cent of \$46,061,162.76 and 47.4 per cent of the reserve for depreciation, \$7,963,082.37, equals \$3,774,501 or the portion assignable to the Missouri property.

Adjusting in accordance with the above, we have: Total plant and equipment, including working capital, as per company's

exhibit No. 19, \$22,888,943. Deduct property not used or useful, \$500,000; deduct excess working capital, \$17,513.52; deduct depreciation reserve, \$3,774,501; [total to be deducted] \$4,292,014.52. [Net total] \$18,596,928.48; add for intangibles, 10 per cent, \$1,859,692.85; total adjusted original cost, \$20,456,621.33.

After carefully considering all the evidence as to values before us in this case, we are of the opinion that the value of the company's property in the state, exclusive of Kansas City and Independence, devoted to exchange service, will not exceed the sum of \$20,400,000, and we will tentatively adopt this sum as the value of the property for the purposes of this case.

As stated, supra, this commission has formally valued only a part of this property, and we should not be understood as authoritatively fixing the value of the property at this time.

The three earlier valuations to which the commission referred are: St. Louis, December, 1913, \$8,500,000; Caruthersville, February, 1914, \$25,000; Springfield, September, 1916, \$815,000; total, \$9,340,000. Between those dates and June 30, 1919, additions were made to these properties which cost, respectively, \$1,623,765, \$5,992 and \$34,141. Adding these to the original valuations gives \$11,003,898, the base sum used by the commission for the estimates now under consideration.

Obviously, the commission undertook to value the property without according any weight to the greatly enhanced costs of material, labor, supplies, etc., over those prevailing in 1913, 1914 and 1916. As a matter of common knowledge, these increases were large. Competent witnesses estimated them as 45 to 50 per centum.

In *Wilcox v. Consolidated Gas Co.*, 212 U. S. 19, 41, 52, this court said:

There must be a fair return upon the reasonable value of the property at the time it is being used for the public. . . . And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase.

In *The Minnesota rate cases*, 230, U. S. 352, this was said:

The making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law.

See also *Denver v. Denver Union Water Co.*, 246 U. S. 178, 191; *Newton v. Consolidated Gas Co. of New York*, 258 U. S. 165 (March 6, 1922); and *Galveston Electric Co. v. City of Galveston*, 258 U. S. 388 (April 10, 1922).

It is impossible to ascertain what will amount to a fair return upon properties devoted to public service without giving consideration to the cost of labor, supplies,

etc., at the time the investigation is made. An honest and intelligent forecast of probable future values made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today.

Witnesses for the company asserted—and there was no substantial evidence to the contrary—that, excluding cost of establishing business, the property was worth at least 25 per cent more than the commission's estimates, and we think the proof shows that for the purposes of the present case the valuation should be at least \$25,000,000.

After disallowing an actual expenditure of \$174,048.60 for rentals and services by the American Telephone & Telegraph Co. and some other items not presently important, the commission estimated the annual net profits on operations available for depreciation and return as \$2,828,617.60—approximately 11½ per cent of \$25,000,000. That 6 per cent should be allowed for depreciation appears to be accepted by the commission. Deducting this would leave a possible 5½ per cent return upon the minimum value of the property, which is wholly inadequate considering the character of the investment and interest rates then prevailing.

4½ Per Cent a Management Question.

The important item of expense disallowed by the commission—\$174,048.60—is 55 per cent of the 4½ of gross revenue paid by plaintiff in error to the American Telephone & Telegraph Co. as rents for receivers, transmitters, induction coils, etc., and for licenses and services under the customary form of contract between the latter company and its subsidiaries.

Four and one-half per cent is the ordinary charge paid voluntarily by local companies of the general system. There is nothing to indicate bad faith. So far as appears, plaintiff in error's board of directors has exercised a proper discretion about this matter requiring business judgment.

It must never be forgotten that while the state may regulate with a view to enforcing reasonable rates and charges, it is not the owner of the property of public utility companies and is not clothed with the general power of management incident to ownership. The applicable general rule is well expressed in *State Public Utilities Commission ex rel. Springfield vs. Springfield Gas & Electric Co.*, 291 Ill. 209, 234.

The commission is not the financial manager of the corporation and is not empowered to substitute its judgment for that of the directors of the corporation; nor can it ignore items charged by the utility as operating expenses unless there is an abuse of discretion in that regard by the corporate officers.

See *Interstate Commerce Commission v. Chicago Great Western Railway Co.*, 209

U. S. 108; *Chicago, Milwaukee & St. Paul Railway Co. v. Wisconsin*, 238 U. S. 491; *People ex rel. v. Stevens*, 197 N. Y. 1.

Reversed.

* * *

Considerable Missouri newspaper comment was created by this decision, particularly in St. Louis, and some of them at first seemed to think the decision was something new and, in a way, a precedent. W. J. O'Connor, assistant to the president of the Southwestern Bell Telephone Co., in a letter published in the *St. Louis Post-Dispatch*, points out that the court in its decision followed its established principles. In his letter to the newspaper, Mr. O'Connor said:

"I have read your editorial on the recent decision by the United States Supreme Court in the Bell telephone case. You, I know, will agree with me that we ought to be fair to everybody—fair even to the supreme court. If it were consistent with the dignity of the supreme court to answer a newspaper criticism, the supreme court could say this:

"The case in which we first determined how to ascertain the amount of money upon which a railroad or a utility was entitled to earn a reasonable return arose in Nebraska. It involved railroad properties which had been constructed during and after the Civil War at war costs. The property had cost substantially \$50,000,000 but at the time we were called upon to make a ruling the same property could have been constructed for \$25,000,000.

The railroad asked a return upon original cost of investment. William J. Bryan and other representatives of the state of Nebraska pointed out that to base the return on original cost was for the public to guarantee the railroads against fall in prices. The result was that this court pronounced the rule of law to be that present fair value is the measure of rates and not original cost.

In that case the decision at the time was in favor of the public and against the corporation.

In our recent decision in the *Southwestern Bell Telephone Co.* case, the facts were reversed. Whereas in the Nebraska case the original cost was above the present value, in the Bell case the present value was above the cost.

When a few years from now we have to consider the plant built during the late war, we shall still apply the same rule, although then present value will be again below the original cost. We are sure you would not consider it fair in dealing with a corporation to take value as the base when value happened to be below original cost and then to take original cost when that happened to be below value."

If we look at the past and at the future, as well as at the present, you will see little to condemn in the action of the supreme court."

What the New York Operators Say

A Study of the Duties of Various Operators and the Best Manner of Performing Them—Qualities an Operator Should Possess—Papers Read at the Annual Convention of the Up-State Telephone Association at Rochester

Duties of a Recorder.

By Miss Sidney McCarthy, *Chief Operator, Canandaigua, N. Y.*

In attempting to explain the duties of a recording operator, as I see them, I am going to say, first of all, that the recording operator is the *direct* saleswoman of the special commodity which every telephone company has to sell—long distance—and in a reflex way, perhaps, is the barometer of our entire service. This being true, you will agree with me that a large responsibility as to the success of an office in the number of completed calls, the quality of its service, and the volume of business done, rests upon the recording operator.

A good recording operator then, being a saleswoman, must have not only all the qualifications of a saleswoman who has something tangible to offer you—something you can see—and is able to inject her personality into the proposition; but the recording operators must be able, in addition, to visualize the wants and feelings of her customer. This, of course, calls for the skill and caniness on her part, for she undoubtedly is blocks, and perhaps miles, away from her prospective buyer. She, therefore, cannot inject much of her personality; so, of course, must resort to other methods of holding, selling and satisfying her customer.

We have all experienced, at one time or another, the difference between a real live, wide-awake salesman, and the listless sort who made you feel you were a bore to you. You undoubtedly purchased what you went after—but I daresay you avoided going back to that chap and, perhaps, never went in to that store again. The same analogy can well be made of a good recording operator and one that is not so good. We aim to have our recording operators so good that they not only satisfy but impress the customer that we appreciate his business and that we are here to serve him to the best of our ability.

Having outlined the responsibility of a recording operator, I will attempt to outline her duties as such.

1. She should be alert with plug in hand and all necessary articles, such as pencils and tickets, in readiness.

2. In saying "Long Distance," she should receive the subscriber as though he were a caller at her door or a customer in her store. If this were true, she would meet him with a smiling face and with her "Good Morning" make him feel that he was welcome. So why not carry this same cherry voice and smile into our work

by making the subscriber feel we welcome his call?

3. A recorder should never forget that "Please" and "Thank You" are very easily said and impress the subscriber far more than any other phrase she might use.

4. A recorder should assist the subscriber in passing his call as much as possible.

5. It is necessary when recording a ticket to be accurate in placing the details on the ticket the first time, for it is hard to read a ticket that has been crossed off and rewritten. Such practice is oftentimes the cause of wrong connections being established which is very annoying to everyone concerned.

6. The operator should verify the name, number or station, if there is any doubt about it, but this should not be done until the subscriber has finished talking, and then any necessary questions may be asked.

7. Any necessary information that a subscriber does not give should be obtained by the recorder, such as "What place do you wish to reach, please?"

8. If any doubt exists in the recorder's mind as to whether the subscriber wishes a station-to-station or a person-to-person call, she should ask, "Do you wish this to be a station-to-station or a person-to-person call?" If the subscriber is not familiar with the difference, explain to him that the person-to-person rate is higher than the station-to-station. Then dismiss the subscriber with a courteous "Thank you, we will call you."

9. Any special instructions, such as having message reversed, appointment or messenger call, should be carefully recorded in the proper space on the ticket and in such a manner that they will not be overlooked by the line operator.

10. All entries should be placed at the extreme left of the ticket so that sufficient space is left for any changes the subscriber might make.

I believe that, if a special effort is made along these lines, it will have a tendency to not only improve our service but also increase our efficiency and revenue.

The Qualifications of a Telephone Operator.

By Rose C. Speier,
Supervisor of Traffic Methods, Rochester Telephone Corp., Rochester, N. Y.

In order that a satisfactory grade of operators may be obtained, the person interviewing applicants should realize the responsibility which rests upon her in choosing the right type of applicant for

operating. Great care should be taken by those to whom this feature of the work is assigned, for it is upon the careful selection of applicants that the future of the service depends.

Each applicant should be studied, and the interviewer should be satisfied that the applicant, if engaged, will eventually be an asset to the company rather than a loss. She should bear in mind that the service which will eventually be rendered by these applicants will be good in proportion to the desirability of the employees engaged. In fact, upon the proper choice of operators depends the entire proper functioning of the operating organization in the months which are to follow.

The person who interviews the applicants should be one who possesses a good knowledge of human nature. She should be kind and courteous to those who apply, thus creating a favorable impression of the company. She should bear in mind that an applicant, whether engaged or not, is interested in the company, so much so, that she is willing to devote her time to the promotion of its business.

If the applicant is engaged, she senses that courtesy by telephone employes is not superficial but real, and thus the first lesson of courtesy in telephone work is given by example. If she is not engaged, the kindly, interested manner in which she is interviewed will contribute something to the opinion of the general public regarding the company through the favorable reports which she may give to her family and friends.

When examining applicants, the interviewer should display an attitude of interest in the applicant's welfare, and the necessary questions should be asked with evidence of friendly interest. It is only by being personally interested in each applicant that it can be determined whether the applicant is capable of eventually being a good operator, the most valuable possession of the telephone company.

In order to be a good operator, an applicant should be alert, intelligent, healthy, industrious, courteous, and should have a good character and disposition; therefore, in interviewing applicants, particular attention should be paid to the following:

DEPARTMENT: It can be determined whether an applicant can be trained to be successful in operating if she is well-mannered, and courteous in speech, rather than pert or flippant in speech, and unladylike in manner.

MENTAL QUALIFICATIONS: The most

necessary qualification of a telephone operator is the ability to think clearly and act promptly and intelligently. This can be determined by observing whether the items on the application blank are written in the proper spaces and in a businesslike manner, and whether she is quick to grasp what is said to her.

PHYSICAL REQUIREMENTS: It is of the utmost importance that persons employed be in good physical condition so that their attendance when they are in the central office will be regular. The success of an operating force depends to a great extent upon the regular attendance of the force; therefore, applicants who have physical defects such as diseases of the throat and lungs, as goitre, constant clearing of the throat or coughing; also nervous diseases, indicated by restlessness or inability to sit quietly, or the twitching of muscles, should not be engaged.

EYESIGHT: Good eyesight is a very necessary requisite. A test of the applicant's eyesight should be made by means of a standard reading chart. If it is found that the vision is seriously impaired, she should be considered ineligible.

HEARING: It is essential that the hearing of applicants should be acute in both ears; therefore, they should be asked whether they are subject to earache or have had trouble with their hearing.

VOICE: The voice of the applicant should be clear and distinct and have a pleasant quality, and should have no impediment. In order to determine this, applicants should be required to read a paragraph of the rules book.

AGE: Applicants should be between the ages of 16 and 25. Applicants who are over 25 years old are not easily corrected, and generally are too set in their ways to be trained to operate.

CHARACTER: The character of an applicant can be determined by her general appearance and manner of speech, also by the report which is received from her former employer in response to the inquiry which is forwarded to him.

DISPOSITION: The time to determine the disposition and attitude of an operator is when she applies. If an applicant is sober, solemn, and sullen acting, or if she is apparently unwilling to work irregular hours, or on Sundays or holidays, she should not be engaged, because applicants of this type invariably develop into discontented, dissatisfied employes, and are a detriment to any office to which they may be assigned. An applicant who can smile easily, and seems entirely satisfied with the hours of duty, can be developed into an operator who can surmount difficulties and be the ideal operator who can use "The Voice With the Smile."

I have outlined the general qualifications of operators as determined when an applicant applies. If these natural qualifications are found at that time, the right kind of applicants will be trained, and op-

erators developed who will conscientiously live up to the central office requirements of discipline, solve intelligently the problems that frequently come up, and wholeheartedly render good service.

The Duties of a Tributary Office Operator.

*By Miss Harriet Van Denpoel,
Toll Supervisor, Glen Telephone Co.,
Johnstown, N. Y.*

Operating in a small toll center or a tributary office plays a very important part in toll line use and has a direct bearing on the service furnished at the larger toll center. In order to give this service satisfactorily it is necessary for the operator at the smaller place to be as well trained and qualified as time will permit.

One of the very first things that a small office should know is the operating practices to be used, particularly those affecting service furnished at the larger toll center, because if the small office is not properly handling its business, it will materially affect the service at the larger center which handles the business from the smaller office.

Need of Confidence of Tributary Office Operators Towards Toll Centers.

An operator in a small office has a unique position. She is usually acquainted personally or by telephone acquaintance with each one of her subscribers, and she handles the business from them in a rather personal way. When she attempts to do business with the larger center where the work is guided entirely by operating practices, she is liable to obtain the idea that often she does not receive sufficient attention and may feel that her service is being neglected.

This feeling may come from the apparent haste and impersonal manner of the larger center operators; also it may come from her belief that the larger center is neglecting her calls so that the service of the large office may be put through first. The small office should be made to understand that all business at the larger center is handled in accordance with the filing time. The assurance that the large office does handle all its business in the order in which it is filed would accomplish a great deal toward overcoming a critical attitude by the operator of the smaller office against the operators of the toll center.

Nothing breaks down a distant or "long distance" attitude among toll center and tributary office operators more than having the tributary office operators occasionally pay a visit to the toll center.

SUPERVISION: Demonstration and practice are the most efficient methods of toll instruction.

If a force at a small office has been instructed as to the use of cords, keys, methods of holding a calling subscriber's line, their work should be supervised to see that they follow the operating practices which have been taught to them.

AVOID WASTE: Every toll operator should appreciate that it costs a large amount of money to construct and maintain a toll circuit. If a toll circuit or a group of circuits are not used to the best advantage by the small office and by the toll center, it becomes necessary to construct additional circuits.

If toll circuits are used efficiently, therefore, the large cost of constructing an additional circuit can be avoided. The following features of operating at tributary offices affecting the efficient use of toll circuits should be given careful attention.

Technique of the Work.

HOLDING TOLL CIRCUITS AND SUBSCRIBER'S LINE: Before working out over the toll circuit the toll operator takes up a trunk to the tributary office, rings and says: "Hold this circuit" and "(subscriber's line number)." It is essential that the tributary office operators guard the toll circuit and subscriber's line in order that the toll operator may complete the call or give the calling party a report promptly after reaching the called telephone.

If the toll circuit or subscriber's line is released, valuable toll circuit time is wasted and both the calling and called parties may be annoyed by the unnecessary delay.

ANSWERING TOLL CIRCUITS AND SUPERVISORY SIGNALS: It is essential that toll circuits and supervisory signals be answered promptly. From time that the toll circuit or supervisory signal appears until it is answered, the toll circuit time and the time of the operator at the toll center is being wasted.

SEGREGATING CONNECTIONS: It is felt that it may be of assistance to the tributary operator if the cords which are used for outgoing toll calls handled at the toll center, and all incoming toll calls, are segregated from cords on which local connections are established.

RING THE TOLL CENTER IF THE SUBSCRIBER RINGS OFF AT THE END OF CONVERSATION: It is essential to the accurate timing of toll calls and the prompt release of toll circuits, that the tributary office operator ring the toll center promptly after the subscriber rings off, as the toll operator does not receive a signal at the end of the conversation unless the tributary operator signals her.

DESIGNATING RECORDING TRUNKS: Certain trunks from the tributary to the toll center should be designated for recording and the operators at both the tributary and the toll center should be instructed not to use these circuits for the completion of calls unless all other circuits in the group are busy.

Reports to Subscribers by Tributary Operator.

Ofttimes the operator at the small office can materially assist the toll center operator by giving the calling party every assurance that his call is receiving attention and he will receive a report as soon as one is obtained.

The operator in the small office, being

very close to the subscriber, is liable by some little word to convey the idea to the calling party that because she is not handling his call, she is not responsible for the delay. In a big business like the telephone business, each employe has her own individual function to perform and if anyone does not perform it properly, we are liable to create the wrong impression.

General Importance of Work of Tributary Office Operator.

An operator in a small office can and does give reports on calls which in a large office would be considered a very grave offense, such as "There is nobody home," or "They have gone to lunch" and a number of other apparently most improper reports. Such a report, as a matter of fact, is a most intelligent report to make, in case the operator knows from her own personal

knowledge that such report is really true.

The operator at the small office is usually the center of social activities. She knows the business of most all the people of the town. She should guard it sacredly and in no way make a breach of the confidence that most subscribers have in their operator. Oftentimes a girl working in a small office hears something about town and not on the telephone. If she should whisper this to some one else, their first thought is that she must have heard it on the wire.

It behooves the operator of the small office to be very guarded in her gossip. She must be the individual in the town who hears much but says little. The telephone company's reputation is either made or lost in a small town by the type of operators and quality of service it furnishes.

The happiest expression one can hear from a subscriber in a small town is when they speak of the telephone girl as "Our Operator" and are willing to do everything possible to assist her.

Greenville, Tex., Company Asks for Increase in Rates.

The Greenville Telephone Co., of Greenville, Tex., has applied to the city council for an increase in rates.

Under the ordinances of the city an audit of the company's books is required on which to base a decision of the advisability of increasing the rates. This audit has just been completed and the report made to the city. It now remains for the city council to accept or reject the application for increase in rates.

First of Season's Operators' Schools

Up-State Telephone Association of New York Opens Summer Campaign for Education of Operators with Meeting at Cuba—Proper Methods of Handling Local and Long Distance Calls Principal Subject Discussed

Friday, May 17, was "Telephone Day" in Cuba, N. Y., and as operators continued to arrive by train and automobile during the early morning much local interest was aroused as to the object of their visit. They were operators selected to represent their respective offices in Allegany and Cattaraugus counties at this meeting which was, in reality, a district traffic conference for that section of western New York. It was the first of a series of similar meetings planned by the Up-State Telephone Association of New York to be held throughout the state during the present year, and Cuba was honored with the opening date.

The sessions were held in the rooms of the American Legion and were in charge of Miss Lillian Vavasour, of Albany, formerly with the New York State Public Service Commission, assisted by Miss Margaret Gonter of Wellsville, traffic supervisor, Allegany County Telephone Co., and Mrs. E. E. Lewis of the Cuba office.

After registration of the delegates, the morning session opened with an address by Miss Vavasour setting forth clearly the purpose and object of operators' conferences and the direct and immediate benefits to be derived. Attention was called to various problems of a practical nature incidental to the handling of the daily local service and this brought out a general discussion of the best methods to overcome these and increase the efficiency of the handling of these calls.

Operating practices were compared, the manner of handling and recording complaints was reviewed and much time was devoted to the detail of correct phrasing by operators and its beneficial effect upon telephone users generally.

Adjournment was taken at one p. m. and a pleasing lunch was served at the Hotel Kinney, after which the afternoon session convened. This was devoted to long distance traffic and the proper methods of expediting the toll business, especially long distance calls.

Here, as in the morning meeting, the operators were invited to present any of their problems for consideration and advice. Many availed themselves of the opportunity to state actual cases and thus obtain expert advice as to the proper solution for future guidance.

The topics considered in both sessions were of practical interest to all in their daily work at the switchboards and the discussions on the floor showed clear thinking on the part of the delegates and their desire to improve the service in every possible way.

The spirit of co-operation shown by those in attendance did much to make a success of the conference and vindicated the judgment of the management of the Up-State Telephone Association in planning for the series of similar meetings to be held during the next few months. The second meeting will be held at Wellsville, June 4, after which other sections of the state will be scheduled.

At the Cuba meeting the following delegates were present:

Andover, Miss M. Driscoll; Angelica, Mrs. P. Gibson, Miss Farwell; Belfast, Miss Katherine Rock and Miss Peggy Rock; Belmont, Mrs. Ellen Byram; Bolivar, Miss Moore, Miss I. Moses and Miss R. Freeman; Cattaraugus, Miss M. Pingleton and Mrs. M. Irving; Cuba, Mrs. E. E. Lewis, Miss Hutchings, Miss Otto,

Miss Watson and Miss Callahan; Ellicottville, Mrs. J. L. Butts; Franklinville, Miss H. Tracey; Friendship, Miss L. Austin and Mrs. J. Jones; Little Valley, Miss N. Armstrong and Miss M. Jepson; Rushford, Miss F. Van Name; Wellsville, Miss M. Gonter, Miss M. Connell, Miss R. Gonter, Miss H. Gordon, Miss K. McHale, Miss F. Nagle and Miss M. Tanner.

The June meeting to be held at Wellsville will be conducted along much the same lines and will cover the eastern section of Allegany County and the adjoining offices in Steuben County. It should prove equally valuable to the operators serving the public in that territory.

F. C. Saunders, president of the Allegany County Telephone Co. and also vice-president of the Up-State Telephone Association of New York in charge of the tenth district, was greatly pleased with the large attendance and close attention which the operators gave to the proceedings. He believes that the friendly feeling created by a more intimate acquaintance among the operators, together with the schooling which they receive, will greatly improve and speed up the service.

The operators were all enthusiastic in commending the conference plan as a means of establishing uniform operating practice, and correcting the errors that may have crept into the traffic department, as well as creating greater interest in the work.

J. G. Ihmsen, vice-president and general manager of the association, announces that in addition to the meeting at Wellsville on June 4 there will also be a district meeting and operators' conference held at Vernon, Oneida County, June 22, and at Middleburgh, Schoharie County, June 29.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

I know a church upon a hill,
Built fifty years or more,
Where humble folks on Sunday morn
Flock through its open door.

For fifty years a choir has sung
And deacons passed the hat,
While ushers tiptoed down the aisles,
Soft as a pussy cat.

The grace of God, for fifty years
Preached from the pulpit old,
Has waked repentance, or lulled to sleep,
The folks of the fold.

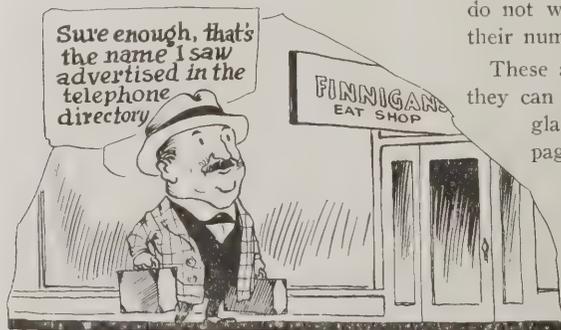
Now all these years the folks have known
These things of which I tell,
Yet each Sabbath morn they advertise
By means of the church bell.

Which shows that no matter how long
you have been in a community—no matter
what your standing is—if you have some-
thing which you want others to acquire
to your profit, you must advertise.

The shop-worn excuse that "everyone
knows me. I've been here such and such
a length of time" is not a good excuse.
The church has been there all those years,
and yet it finds it advantageous to ad-
vertise by ringing the bell.

Of all the advertising mediums for local
business there is, of course, none better
than the local newspaper in the home
town, or the trade periodical in the home
territory. Next to that I believe that a
really attractive, catchy display advertise-
ment in the local telephone directory is the
one medium to carry off the honors.

It beats bill boards, hotel register, coun-
ty-fair premium lists or barber shop mir-
ror advertisements. It is right where it
catches the eye whenever the telephone
book is consulted, and that is pretty often



You Instinctively Feel You Have Found a Friend When
You See a Name With Which You Are Familiar.

and all the year round. The directory
advertisement is a medium of profit as
well as a means of paying for your di-
rectories.

We have been using advertising in our

local directories for several years and find
it easier and easier to go out and line up
enough advertisements for each issue to
pay for the expense of printing and leave
a very large margin of profit to offset the
cost of reading proof, compiling lists of
names, checking and counterchecking be-
sides.

Our latest directory has 78 pages be-
sides the covers, and much more
than half the space is given over
to advertisements, all local. Considerable care should be
exercised in going after ad-
vertising and also in seeing to
it that only snappy, brief,
and catchy advertisements
are inserted.

Small strip advertisements
at tops and bottoms of pages
and half-page advertisements
next leaf to the list of names
and telephone numbers is the rule we fol-
low though occasionally we insert a full
page advertisement in place of the two
half-page spaces.

The ordinary custom is to have a di-
rectory 6 inches by 9¼ inches with some
dark heavier paper for the cover to make
the outside less liable to show dirt. A hole
is punched in the upper corner next to the
back for the purpose of inserting a string
with which to hang it up near the telephone.

Outside the cover, in front, we gen-
erally sell a number of single line spaces
to groceries, meat markets and farm im-
plement people, in which they have merely
their firm name and telephone numbers
for the convenience of their patrons who
may wish to call them in a hurry and who
do not wish to spend time in looking up
their number.

These are in large, heavy-faced type so
they can be easily read by people without
glasses in a dim light. The back
page is usually sold to the leading
advertiser of the town at a
higher price than the other
cover pages or the inside
pages.

The following is the sched-
ule of charges we have been
using for several years:

Front cover line, black face type	\$10.00
Inside front cover page	15.00
First page.....	20.00
Inside full page.....	10.00
Half page.....	5.00
One-fourth page.....	3.00
Back inside cover page.....	15.00
Back cover page, outside.....	25.00

Name in black type in lists..... 1.00

This is for each issue of the directory,
and we get one out each year on June
first.

All advertisers are given an option each
year of taking the space they had the pre-



The Best Advertising Medium for Local Business Is the
Local Newspaper or Trade Periodical.

vious year, before letting it go to some
other advertiser. If they relinquish it,
then you can sell it to someone else. There
is usually great competition for the cov-
eted positions, such as outside cover
pages, but the difference in price usually
settles most of these choices.

Nearly all the advertisers renew for the
same old spaces year after year, many
with no changes in the reading of their
advertisements; especially those who are
advertising slogans or trade marks. Some
merely list their names in bold face type
just to keep their names familiar with
the public from whom they draw their
trade. Being that but one directory is
published a year, naturally an advertise-
ment must not be of a specific nature as
to sales but more of a general nature, to
last out its time and be of value.

The telephone book is never thrown
aside but is consulted many times a day
by all the family who, in turning its pages
in search of a number, cannot help but get
an eye full of advertising at every turn
of a leaf, whether they wish to or not.

The advertisements become like familiar
objects along our road to various places
each day. They are read unconsciously
sometimes, but their message is remem-
bered when the patron goes to town or
wants certain articles. Then the value of
the advertisement is cashed in by the mer-
chant.

We seek familiar places and names
when we go shopping, and the customer
familiar with the names in the telephone
book generally looks for these names along
the street, on the signs over the shops,

and feels at home when they are found.

They feel a sort of friendly confidence in the people who bear the names, even though they may be strangers up to this time; just like you would feel if you were walking down the streets of Chicago, or New York, or Philadelphia, and saw the sign of one of the big department stores from whose catalogues you had often selected articles for purchase by mail. You would instinctively feel like you had found a friend in the midst of strangers when you noted the familiar name in the host of others of whom you had never heard before. This store would get your custom every time if you were shopping bound.

That is the way of an advertisement in a telephone directory. It keeps the name familiar and fresh in mind so it occurs to you when you want anything in the line handled by the advertiser.

It will pay any telephone company to get out a telephone directory with a few advertisements—and don't forget to include one for your own company while you are about it.

APHORISM: If it brings people to church, it will bring them to trade.

Many Small Exchanges in the Bell Telephone System.

There are in the Bell telephone system 4,468 exchanges serving less than 1,000 stations each. These exchanges constitute about 80 per cent of the total exchanges and serve nearly one and one-quarter million stations or 13 per cent of the total stations served directly by the Bell system.

Are You Eligible as an Independent Pioneer? Then Join!

The Independent Pioneer Telephone Association of the United States wants every eligible telephone man in the country as a member, and a drive has just been started to bring the membership up to 1,000 by October 1.

A good, live letter has been sent out by President H. E. Bradley, of Harrisburg, Pa., to get the campaign into swing and induce each of the present members to bring in at least one new member. If everyone does this, it will not be difficult to pass the 1,000 mark. Surely, President Bradley points out, every Pioneer knows one telephone man who has been 15 years in the business, and those who are qualified should be proud to belong to the Pioneers.

There are many inducements to belong to the Pioneers. Several plans are now being worked out to perpetuate the history of the industry and those who have had a part in its making.

One of the plans for the next convention is a complete printed roster of all members—and this should contain the name and record of every real Independent

GUIDES.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Some people lead; others follow. In telephone work we need good leaders and good followers.

A chief operator must be a good leader. She must be an instructor, a guide, and a friend to every operator under her supervision.

In order to be a good guide, she must know, up to the present day, all there is to be known about the work she is instructing others to do. She must inspire her operators to want to follow her lead. If she has to get back of them and urge them toward duty, something is wrong with the leader. If she is "only a pal" among them, she cannot lead and follow at the same time.

"Paling" among a group which it is her duty to lead brings about misunderstandings. There are so many natures to consider in a group of people. A jealous nature breeds trouble. Remove the cause of jealousy and do not destroy the otherwise good possibilities of an employe. There is a difference between paling and mixing—one breeds contempt and the other respect. Keep the girls' point of view. Get on their level as a leader.

* * * *

CROUP SERVICE.

Mary sat at her little switchboard, all alone for the first time. Everything had seemed so simple and easy to understand and operating had seemed like mere play, until Maud, the old operator, waved good-bye from the front door.

Maud had been employed by the company for the last fifteen years. She had given excellent service, such service as it would be hard to duplicate.

"Well," thought Mary, "I believe I can do about as well as Maud did on local, but I am not so sure of toll.

Signal.

"Central, get me the doctor, quick, and find John and send him home. Johnnie has the croup!"

Up went the receiver on a party line, before Mary could find out who was calling and what doctor was wanted. What should she do? She must do something quickly. There were four doctors in Smallton.

Mary called each one of them and asked: "Are you the family doctor for a family which has a telephone on the No. 36 rural line, and a little boy named Johnnie?"

The last one she called was the right doctor. By this time the excited mother was back at the telephone asking why the doctor had not come.

"Well," thought Mary, "telephone service in a small town means more than putting up and taking down connections."

Yes, telephone service in a small town does mean more than putting up and taking down connections. The very individual service which patrons in small towns require makes it necessary that great care be given in placing the responsibility on the right young woman. And, who is the right young woman?

Briefly, she is a girl who has been a good school pupil, and who is respected highly in the community by all who know her. In her service to others she must be friendly but dignified. If she follows the rules of her company, she will not take upon herself and other employes unnecessary work, which is generally the result of too much familiarity with her patrons. Familiarity breeds contempt, in any line of work.

If operators in small towns answer their signals with, "Number, please?" repeat the orders given, and watch the connections closely, they will be giving as good service as patrons expect. Emergencies as they arise, will always be taken care of if operators of the right type are at the switchboard.

Pioneer in the United States. A list such as this ought to be of value in placing good men in better positions.

The organization has attained some degree of fame for the entertainment which their initiations have furnished at conventions and district meetings. When the initiation is properly put on, it involves a

large amount of work, but it certainly helps to make the occasion memorable.

An application blank is enclosed with the letter sent out by Mr. Bradley and he tells the members not to just hand the blank to a friend whom they wish to become a member, but to wait until he fills it out—and then send it in for him.

Problems of Operation Answered

Shunt Between Line and Earth Diverts "Humming" Currents.

My lines are grounded circuit. Since the high tension electric light and power lines were built through this locality, there is humming or buzzing heard through the instruments on the rural party lines. The amount of humming is, of course, greatest on those lines which parallel the power line for the greatest distance.

Why is it that throwing the listening key at the switchboard has a quieting effect on a line? Often, when I am at an instrument on a party line, I can tell just when the operator throws the key so as to listen in.

Where the main portion of a party line does not parallel a power line, but a branch line does do so, is there any sort of coil or device that might be installed at the junction of the main line and branch—or elsewhere—that would have a quieting effect on any or all of that line?

The noise on grounded telephone circuits which parallel high tension electric transmission circuits is due to the passage of induced currents of audible frequency over the telephone circuits and through the receivers of the connected telephones which are in service.

These currents are of the same general character as the voice-carrying currents which pass over the line normally.

If two connected telephones evidence the existence of such currents by an audible hum, then by placing a shunt between the telephone line and the earth, such as would be the case when an operator's listening key is operated in the switchboard, some of the currents causing the hum are diverted through the shunt connections. In this way the strength of such circuits passing through the receiver windings is reduced, causing a corresponding reduction in the noise.

There is no coil or other device that can be installed at the point of connection of a stub line with the main circuit that will eliminate noise produced by inductive interference, without effecting a corresponding reduction in telephone transmission.

If the induced currents are very heavy and of reasonably high voltage some relief may be obtained by the installation of drainage type line arresters placed on the poles along the lead at intervals of not more than one-half mile.

Repeating Coil in Better Balance Quiets the Circuits.

We have two No. 12 copper toll circuits phantomed, running between stations *A* and *C*, a distance of 120 miles. At *B*—which is 45 miles from *A*—we run side circuit No. 5 through one No. 46-A, W.E. repeating coil, to give this station service both east and west.

In order to avoid opening the phantom circuit when station *B* plugs in, the phantom was strapped from punchings 6 to 6

between the coils. On the side circuit No. 25, we cut in two No. 18-B, W.E. non-inductive, 40-ohm coils to balance against the resistance of the repeating coil windings on No. 5. At both stations, *A* and *C*, the same kind of coils are used to take the phantom out to the switchboard.

We have always had more or less trouble with No. 5 talking crossed with the phantom but not with No. 25. Both circuits show good balance at both stations *B* and *C* and all connections are soldered and in good condition.

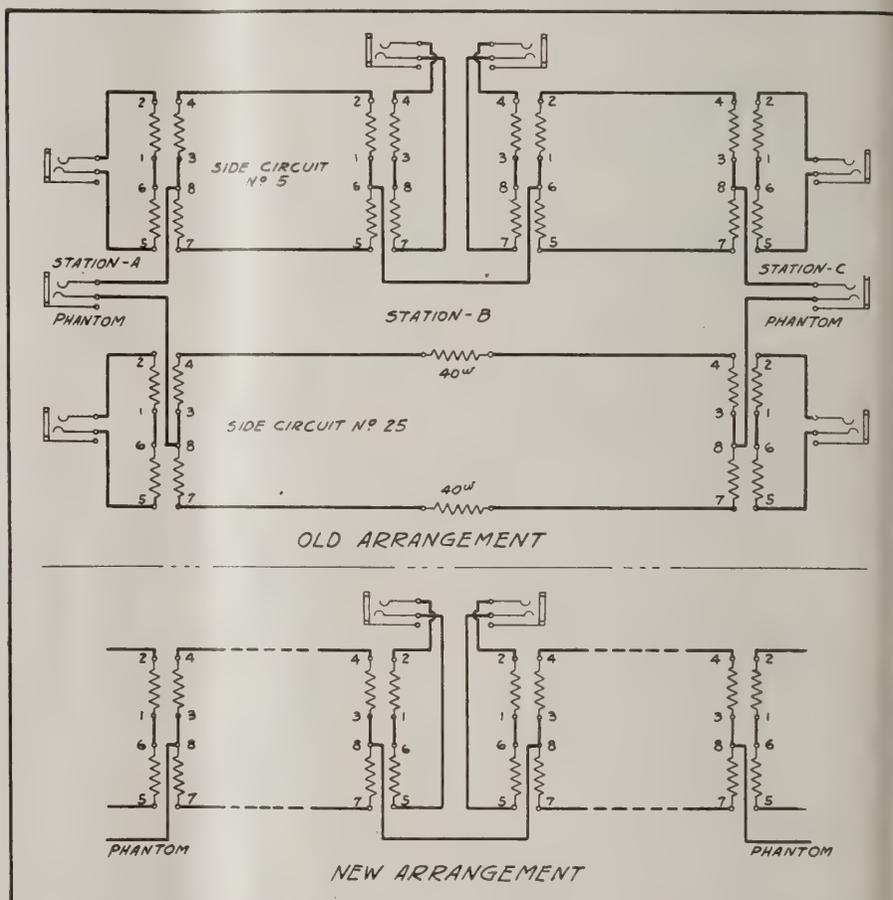
The sketch shows the hook-up of the coils at all three stations. The new arrangement shows how it is at present, after

side circuit at the intermediate station *B*. This part of the repeating coil does not balance up as well as the 3-4, 7-8 side.

Making Lines Metallic Is Best Way to Decrease Cross Talk.

We have about 60 grounded lines on which we have considerable cross talk, especially on those working through bridle wire in rings.

We do not want to make these metallic, as the cable is not large enough. What we wish to know is whether it will increase or decrease the cross-talk if we run a No.



Phantom Circuit Arrangements With An Intermediate Station on One Side Circuit.

the wiring was changed on the coils at stations *B* and *C*. This has almost entirely eliminated the cross-talk and likewise has quieted the phantom, which was quite noisy before.

What did we do to clear our trouble, for all that was done was to reverse the line with the switchboard side on the coils at both *B* and *C* and change the phantom strap at station *B* from 6 and 6 to 8 and 8 on coil.

The repeating coil is in better balance on the side on which it now is than it was when on the other side.

End stations *A* and *C* were always connected all right with the phantom tapped at *A*. The old method used the 1-2, 5-6 side of the coil to lead the current into the

12 copper or No. 10 iron wire from the office as far as the cable terminal or to the end of the bridle wires and ground it there, instead of using the ground at the office.

Each station uses one wire and ground and we do not want to make metallic or common return but would like your suggestions.

It would be impossible to tell whether a No. 12 copper wire or a No. 10 iron wire would increase or decrease the cross-talk described. In all probability, if the ground were made at the end of the wire instead of at the office, the cross-talk would be increased materially.

Any attempt to reduce the cross-talk would be in the nature of a makeshift.

and the only solution that could be recommended is to make the lines metallic.

The difficulty that the cable is too small is one frequently found, as telephone companies in many cases have not made proper provision for growth when cable was installed.

The additional cost of a cable 25 or 50 pairs larger would have been only a few cents a foot and the entire difficulty would have been eliminated.

Noises on Line Which Is Carried Through a Lead Pipe.

We have a subscriber who has a country golf club. His "Inn" is connected by P. B. X. to our lines. He has a lead pipe running some 50 rods underground, in

which the telephone wire is conducted to the Inn.

Upon disconnecting the line at the last pole, we find it is all right. So the trouble is underground. We may have to find it with a cable tester.

There is a heavy ground on this line. When the bell is rung, it is noticeable, but when connected with long distance lines the noise is very pronounced and we have to use the plugs of the condenser outfit.

Can you tell us what this trouble is? How can we locate the exact point of trouble? It is a very annoying condition.

The trouble in the telephone wires passing through a lead pipe underground is probably due to one of two causes—either the ground has settled and has bent and crushed the lead pipe, causing mechanical

pressure on the wires sufficient to ground one of them; or, due to a similar settling or other cause the pipe has been broken without breaking the wires, so that water has entered the pipe and is standing in and around the wires.

We suggest that a careful effort be made to pull the existing wire out of the lead pipe, pulling in a new pair of rubber covered and braided copper wire in place of the present one.

It may be found to be impossible to pull the existing wire out, in which case the lead pipe will have to be abandoned and an iron pipe substituted for it. By means of a pipe pushing machine, iron pipe can be installed without digging up the lawn.

Some Hints For the Small Exchanges

Discovering Switchboard Trouble By Radio.

A short time ago I discovered a case of switchboard trouble in a rather unique manner and thought perhaps it might be of interest to the telephone boys.

Our radio receiving set is located in the office about 40 feet from the switchboard. While listening in on the radio set I heard a buzz that sounded like ringing machine induction. I knew that, if we were receiving induction from our ringing circuit, something was wrong. It sounded like one of the higher frequencies.

I stopped each vibrator and found it to be the 66-cycle one causing the trouble. By testing I found a broken down insulation in one of the ringing keys on the switchboard.

This was trouble found by use of radio and located before it had caused any interruption to the service. Wonder if others have located trouble by radio.

J. A. Gustafson,

Manager, Fredonia Telephone Co.
Fredonia, Kans.

Use of Discarded Inner Tubes by Maintenance Man.

Most all telephone companies have automobiles or Fords nowadays and, of course, have old discarded inner tubes lying around which it has, I believe, been the custom to throw away. Well, here how I turned them into money-savers. Cut the 3½-inch tubes into short lengths and slip them over the insulators you carry in the trouble cars. You can carry the mass over the roughest of roads without leakage.

Take the 3-inch tubes and insert a piece of thin board in one end, leave a flap on the other, and you can carry mouthpieces until Doomsday without marring or breaking.

Take the larger tubes, place the wood

in one end, leave a flap on the other and you can carry desk-stand cords, receiver cords—or make them a little longer and they make good tool bags. The blocks of wood should be tacked to hold them in.

Try your hand. If you discover other uses for them, let us know. They are thrown away at the present time.

J. A. Davenport, Wire Chief.

Blackfoot, Idaho.

Audio-Frequency Amplifier Unit for Simple Receiving Set.

Very simple radio receiving outfits are described in a series of circulars issued by the Bureau of Standards of the Department of Commerce, and published at the request of the states relation service of the Department of Agriculture. The circulars are fully illustrated.

The first two, which are Bureau of Standards Circulars Nos. 120 and 121, describe receiving sets using crystal detectors. Circular 120 describes the receiving antenna and ground connection also.

Circular No. 133 describes an electron tube detector unit which can be substituted for the crystal detector in either of the two sets previously described.

Circular No. 137 describes telephone shunt and series antenna condensers and a loading coil for use with the simple receiving sets.

The fifth circular of this series is Circular No. 141. It describes an audio frequency amplifier unit of such proportions that in external appearance it matches the electron tube detector unit. One or two of these amplifier units may be used with the equipment previously mentioned to amplify the signals detected by the electron tube detector unit, or the detector unit may be omitted and one or two amplifier units used with the crystal detector. In either case, the addition of the amplifier units results in a considerable increase

of the volume of the received signal and increases the receiving range somewhat.

Copies of these circulars may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The price of Circular 141 is 10 cents. The others are 5 cents each.

Bureau of Standards Gives New Data on Dry Cells.

The recently adopted standard sizes and tests for dry cells and flash light batteries, together with much additional data, are given in a revised edition of Circular 79 issued by the U. S. Bureau of Standards. These tests and sizes were adopted by a conference of the leading manufacturers, government representatives, and the largest individual users which met at the Bureau of Standards in December, 1921.

The electrical theory and construction of various kinds of dry cells are given in this circular, together with a discussion of the various kinds and the types of service for which they are intended. About half of the circular is devoted to a discussion of the electrical characteristics of dry cells, including their behavior in circuit; the internal resistance of dry cells; method of grouping cells; effects of temperature on the voltage, current, and capacity; and the capacity of dry cells discharging under various conditions of service.

Standard tests for dry cells are described, and specifications for the performance of the standard sizes of cells and batteries are given in the appendix.

This circular, entitled "Electrical Characteristics and Testing of Dry Cells," may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., by asking for Circular 79 (second edition). Price 15 cents.

The first edition of Circular 79 was issued in 1919.



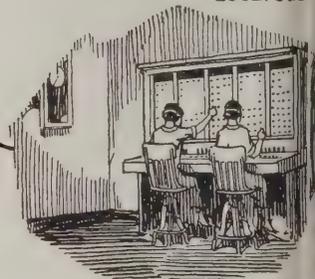
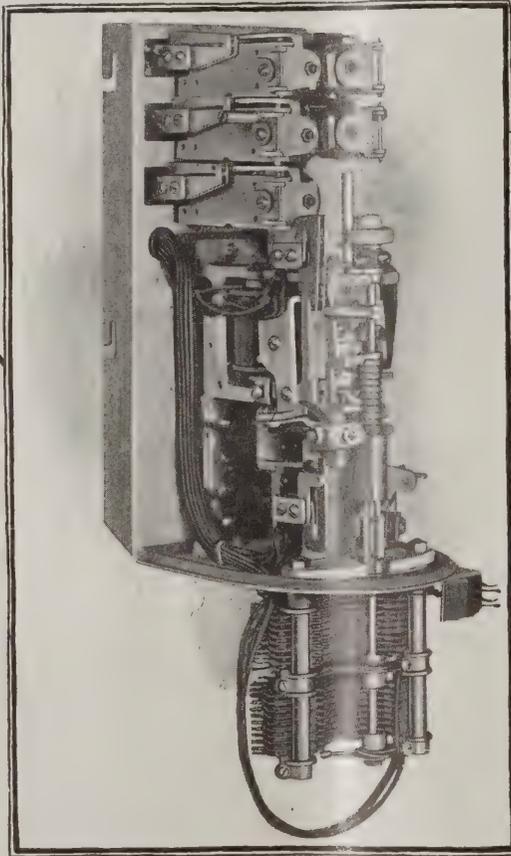
Columbia Cor



Rural Subs



Local Sub



Toll Exc



Brow



Let Your Subscribers Direct Their Calls

Just a timely word to you managers of small operating companies—

Are you paying operators to do those things that your subscribers would prefer to do themselves, and can do better and quicker—by the Strowger Automatic method? If you are, your service is not all that could be desired; nor are your profits as great as they might be.

To illustrate, just glance at the sketch opposite. This shows what the C. A. X. (Community Automatic Exchange) can do for service in an exchange of a typical rural network. By making one or two simple turns of the dial, a subscriber can direct his own call immediately to any one of a number of points—any local or rural subscriber, to the long distance operator at any convenient toll center, or to the operator in any other exchange in the community to which direct connections might be desired; no operators, no worry, and the very best kind of service.

This is no visionary or untried scheme; it has been done and is meeting with complete approval wherever recommended. Let us send you further details. We will be glad to show how they will apply to your own conditions.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd., Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



Financial Statements and Reports

California Companies Report 1922 Good Year—New York Bell Earned \$1.50 More on Common Than During 1921—Business of International Company Showed Substantial Progress—Ohio Bell Has Big Improvement Program

Annual Report of California Companies for Last Year.

Several of the California telephone companies filed their annual reports for 1922 with the railroad commission recently. A summary of the reports follows:

The Gilroy Telephone Co., operating in Gilroy, had operating revenues of \$17,136, and operating expenses of \$10,319, giving net operating revenue of \$6,817. Miscellaneous non-operating revenue amounted to \$293; interest, rent, taxes and other deductions totaled \$2,493; and the net corporate income for the year was \$4,617.

The surplus at the beginning of the year amounted to \$4,056, and miscellaneous additions to surplus for 1922 amounted to \$4. The company declared dividends of \$1,445 during the year, leaving an accumulated surplus at the end of the year of \$7,232.

The Los Gatos Telephone Co., operating in Los Gatos, reports that its operating revenue was \$30,301; operating expenses \$20,742; and net operating revenue, \$9,559. Interest, rent, taxes and other deductions totaled \$2,302, making the net corporate income for the year \$7,257.

There was a surplus of \$12,284 at the beginning of the year, and miscellaneous additions to surplus for 1922 amounted to \$265. The company declared dividends of \$3,200, leaving an accumulated surplus at the end of the year of \$16,606.

The Turlock Home Telephone & Telegraph Co., which operates in Turlock, had operating revenues of \$33,789 and expenses of \$30,168. The net operating revenue was \$3,621, and interest, rent, taxes and other deductions totaled \$3,214, leaving the net corporate income for the year \$407.

The surplus at the beginning of the year amounted to \$1,348. There were miscellaneous additions to surplus amounting to \$461, and miscellaneous deductions of \$241, leaving an accumulated surplus at the end of the year of \$1,975.

New York Bell Had Profits of \$17,000,000 Last Year.

The New York Telephone Co.'s net profits in 1922 were \$16,969,832 after payment of charges and taxes—an equivalent of \$8.07 a share on the \$204,692,000 common stock—according to the annual report made public recently. This compares with net profits of \$13,244,543, or \$6.45 a share, in 1921.

Attention was called in the report to \$63,000,000 improvements made by the company in 1922, and to the need of \$300,000,000 for the proposed extension

of lines in the next five years including \$55,000,000 for 1923.

Total assets of the company on December 31, 1922, amounted to \$316,144,808. Total operating revenue was \$109,612,620, as compared with \$99,608,268 in 1921. After the payment of 6½ per cent dividends on the preferred stock and 8 per cent on the common stock, the surplus for the year was \$153,740.

A comparison of items in the income account for 1922 and those for the two previous years follows:

Operating	1922.	1921.	1920.
rev. ...	\$109,612,619	\$99,608,268	\$87,906,465
Net earn.	13,873,822	11,404,520	5,483,026
Total inc.	25,613,006	21,393,036	12,164,574
Net profits..	16,969,832	13,244,543	6,070,073
Surplus..	153,740	403,296	*5,929,927
Profit and loss surp.	29,653,128	32,581,493	32,503,162

*Deficit.

The total assets of \$516,144,808 include cash and deposits of \$7,383,802; bills and accounts receivable, \$19,447,326; stocks and bonds of other companies, \$119,364,743; real estate, \$41,350,228, and telephone plant, \$277,403,741.

The gain in the number of stations was 152,957—there having been 355,184 telephones installed and 202,227 disconnected. In New York City alone the gross connections totaled 205,000 as against 182,000 in the same area in 1921.

Fifteen new central offices were put in service and 224 central office switchboards were enlarged during the year. Seven new buildings and eleven major additions to existing buildings were begun, while two large new buildings and nine building additions were completed.

The total financing for the year was \$25,000,000 in preferred stock, and this was placed in the hands of about 80,000 persons, including a large number of subscribers.

H. F. Thurber, president of the company, said in his report that he believes even the present telephone rates are inadequate, but that they will receive a fair trial.

The report shows that on December 31, 1922, there were 2,070,171 telephones in the territory served by the New York Telephone Co. and its connecting companies. Of these, 1,838,402 were owned and operated by the New York Bell. In the last year a daily average of 8,265,000 telephone calls originated through the company's 583 central offices. To provide

service, 25,400 operators were required. The plant department numbers about 13,000 persons.

At the end of the year the company had in service seven machine-switching central offices, operating a total of 37,000 stations. Present plans call for the addition of ten new machine-switching offices in 1923. These will serve initially about 60,000 stations and will have an ultimate capacity of 150,000 stations.

International Company Had Earnings of \$2,500,000 Last Year.

The International Telephone & Telegraph Corp., of New York City, reports for itself and its subsidiaries gross earnings of \$4,215,513 for the year ended December 31, 1922, and net earnings before depreciation of \$2,456,773. The surplus net income after interest but before depreciation was \$1,836,332.

The recent sale of 50,000 shares of capital stock of the company's stock not only greatly strengthened the financial position of the company, but provided the necessary cash to take care of the company's needs for new construction and equipment during the current year and for a considerable portion of 1924.

The consolidated balance sheet for 1922 shows total current assets of \$3,296,159 compared with \$2,393,935 previous year. This year's cash position includes \$664,589 compared with \$651,333 last year; notes receivable, \$1,339,102.

Current liabilities total \$1,417,819, compared with \$1,153,371 in 1921. Working capital as of December 31, 1922, was \$1,878,341.

Inasmuch as the new financing was consummated during April, the whole complexion of the balance sheet has been changed.

The International company and its subsidiaries have no floated indebtedness at this time, the \$164,331 on the consolidated balance sheet having been liquidated. Furthermore, there is cash in bank or invested in short term securities in excess of \$2,000,000.

On the balance sheet of the holding company the cash position is now approximately \$1,000,000, compared with \$201,673 on December 31 and floating debt has been eliminated.

Notes receivable totaling \$1,339,102 among the consolidated current assets have been paid off to the company.

In summarizing operations for the year 1922, Sosthenes Behn, president of the company, said: "It is gratifying to be able

to announce promising prospects for the extension of the activities of the corporation into new fields, as well as substantial progress in the localities of our established operations, notwithstanding the marked general business depression which prevailed in Cuba and Porto Rico practically throughout the year.

"At the time of writing this report, an almost complete and favorable reversal of conditions in both Cuba and Porto Rico can be recorded. Cuba and Porto Rico, therefore, are anticipating a most fruitful year and we confidently may look forward to the continued development and prosperity of these richly endowed islands.

"There is no doubt that long distance wireless telephony has a proper field of development where it is not practicable to establish wire connection, or where the limited traffic will not justify the more expensive but more reliable cable communication."

1923 Improvement Program of Ohio Bell Calls for \$11,000,000.

Directors of the Ohio Bell Telephone Co. at the recent annual meeting approved payment of the regular quarterly dividend of \$1.75 per share on preferred stock.

E. A. Reed, Columbus, president, and other officers of the Ohio Bell were re-elected at the meeting.

President Reed's annual report showed that no dividends were declared in 1922 on common stock, all of which, except the qualifying shares of the directors, is owned by the American Telephone & Telegraph Co.

At close of the year's business there were 3,918 holders of preferred stock, 3,118 of whom are residents of Ohio.

The report showed that the company spent \$9,041,000 during 1922 for additions to plant and equipment, and the program

for this year calls for expenditure of \$10,700,000 for additions.

The expenditure in 1923 is to provide for unification of service at 22 dual service points and an estimated gain of 32,000 stations, exclusive of duplicate stations which may be discontinued at points where dual service is now furnished.

During 1922 the company connected 92,271 stations and disconnected 79,131, making a net gain of 13,140 in the state.

In addition the company connected in new locations and disconnected at their former locations 41,507 stations for subscribers moving from one address to another. All of this work cost the company \$796,618, while charges to subscribers amounted to only \$78,295.

Taxes assignable to operation for the year amount to \$2,129,590. This is an increase of 28 per cent over 1921 and shows that out of every dollar of operating revenue the company collected last year, 9.25 cents, or almost one-tenth, was paid out in taxes.

The report showed also that the Ohio Bell and its connecting companies had 849,610 stations at the close of 1922. The average number of local messages handled daily during the year was 2,370,313.

The company, at the close of the year, had 10,467 employes and its payroll for the year amounted to \$11,530,114.

As a part of its campaign to promote a better understanding between the company and the public, 926 telephone demonstrations, showing the operation of switchboards and how calls are handled, were given before 68,641 people during the year 1922. These demonstrations are being continued this year.

Resolutions deploring the death of Frederick H. Goff, Cleveland banker, and praising the "distinguished service he gave so freely and unselfishly to com-

munity and national movements for the public good," unanimously were adopted by the directors. Mr. Goff, who died March 14, was a director of the Ohio Bell Telephone Co.

Summaries of Reports of Class A Companies for February.

The comparative statement which was compiled by the bureau of statistics of the Interstate Commerce Commission from reports of February operations filed by Class A companies, shows an increase of almost 21 per cent in the operating income for last February over that for February, 1922.

The gross revenue increased 11 per cent, expenses 7½ per cent, and net revenues almost 20 per cent.

Subscriber station revenues were about 9 per cent more during the month than during the previous February; traffic expenses were 7½ per cent more, and taxes assignable to operations 15½ per cent higher.

Elyria, Ohio, Company Authorized to Increase Its Rates.

The Ohio Public Utilities Commission authorized the Elyria Telephone Co. of Elyria, on May 11, to raise its rates there.

Business stations were raised from \$4.50 to \$5.50 per month, and residence telephones were raised from \$1.75 and \$1.50 to \$3.

Tentatively Agreed That Corinth, Miss., Company Join Bell.

A tentative agreement between the Cumberland Telephone & Telegraph Co. and the Sun Telegraph & Telephone Co., which has operated in Corinth, Miss., for the past 12 years, was reached May 15, by which the later company becomes a part of the Cumberland company's physical property.

Item.	—For the month of February—				For the two months ending with February.			
	1923.	1922.	Amount.	Increase or decrease (*). Ratio, Pct.	1923.	1922.	Amount.	Increase or decrease (*). Ratio, Pct.
Number of company stations in service at end of month	10,674,723	9,918,584	756,139	7.6				
Revenues:								
Subscribers' station revenues	\$33,190,101	\$30,495,548	\$2,694,553	8.8	\$ 66,501,848	\$ 61,015,203	\$ 5,486,645	9.0
Public pay station revenues	2,166,897	1,955,355	211,542	10.8	4,620,325	4,118,786	501,639	12.2
Miscellaneous exchange service revenues	416,581	418,133	*1,552	*.4	869,192	858,572	15,620	1.8
Message tolls	12,581,798	10,650,068	1,931,730	18.1	26,396,820	22,240,212	4,156,608	18.7
Miscellaneous toll line revenues	1,457,951	1,351,222	106,729	7.9	2,917,455	2,674,785	242,670	9.1
Sundry miscellaneous revenues	953,640	798,674	159,966	20.0	1,890,007	1,588,034	301,973	19.0
Licensee revenue—Cr.	1,943,154	1,738,915	204,239	11.7	3,866,771	3,475,264	391,507	11.3
Licensee revenue—Dr.	1,941,975	1,740,917	201,058	11.5	3,864,827	3,475,770	389,057	11.2
Telephone operating revenues	\$50,773,147	\$45,666,998	\$5,106,149	11.2	\$103,197,591	\$ 92,490,086	\$10,707,505	11.6
Expenses:								
Depreciation of plant and equipment	\$ 7,653,014	\$ 6,933,483	\$ 719,531	10.4	\$ 15,239,072	\$ 13,788,576	\$ 1,450,496	10.5
All other maintenance	6,864,590	6,394,239	470,351	7.4	14,343,854	13,003,460	1,340,394	10.3
Traffic expenses	13,210,230	12,275,896	934,334	7.6	27,397,909	25,517,307	1,880,602	7.4
Commercial expenses	4,488,886	4,239,848	199,038	4.6	9,092,395	8,707,747	384,648	4.4
General and miscellaneous expenses	2,354,820	2,248,806	106,014	4.7	4,723,402	4,534,624	188,778	4.2
Telephone operating expenses	\$34,571,540	\$32,142,272	\$2,429,268	7.6	\$ 70,796,632	\$ 65,551,714	\$ 5,244,918	8.0
Net telephone operating revenues	\$16,201,607	\$13,524,726	\$2,676,881	19.8	\$ 32,400,959	\$ 26,938,372	\$ 5,462,587	20.3
Other operating revenues	427	1,062	*635	*59.8	922	2,104	*1,182	*56.2
Other operating expenses	1,847	2,550	*703	*27.6	3,375	3,753	*378	*10.1
Uncollectible operating revenues	303,591	213,688	89,903	42.1	635,370	426,330	209,040	49.0
Operating income before deducting taxes	15,896,596	13,309,550	2,587,046	19.4	31,763,136	26,510,393	5,252,743	19.8
Taxes assignable to operations	4,155,529	3,598,966	556,563	15.5	8,391,051	7,183,234	1,207,817	16.8
Operating income	\$11,741,067	\$ 9,710,584	\$2,030,483	20.9	\$ 23,372,085	\$ 19,327,159	\$ 4,044,926	20.9
Ratio of expenses to revenues, per cent.	68.09	70.38	*2.29	....	68.60	70.87	*2.27	....

Statistics of Operations for February, 1923, of Class A Telephone Companies. Compiled by Interstate Commerce Commission.

The Rural Rate Switching Problem

North Dakota Commission Attempts to Straighten Out Rate Tangle of Many Companies Receiving Switching Service at One Exchange—Only Two Companies Directly Connected; Others Connected by Local Switches in Farm Homes

A rather difficult matter confronted the North Dakota Railroad Commission when it was asked to solve the problem of several companies receiving switching service at one exchange—that at Center. However, an order which arrived at some sort of a solution was entered on May 18, effective July 1.

One Exchange Serves Eight Companies.

Among the eight companies receiving switching service at the Center exchange are the Spring Brook Telephone Co., Hannover Mutual Telephone Co., and the Fairview Farmers Telephone Co.—these three being directly concerned in this case.

The commission found that there were but two service station companies connected directly to the Center exchange, the other companies being connected by means of local switches located in farm homes throughout Oliver and Mercer counties.

In order for subscribers located on some of the rural lines to reach Center, the county seat, it has been necessary for them to go through one or more farm switches. For the use of these farm switches, subscribers are required to pay \$1 per year in addition to the regular service switching charges at Center.

An even more complicated situation was presented by the subscribers of the Spring Brook Telephone Co. Many of the subscribers had connections with the exchanges at Hazen and Center. The switching charges allowed for the exchange at Center were \$6 per year, and at Hazen \$3 per year, and since it was necessary for subscribers on the Spring Brook line to go through a farm switch in order to reach Hazen, the total switching charges of subscribers on this line amounted to \$10 per year.

In a former order, issued December 20, 1921, the commission established switching rates by dividing the territory into exchange areas, requiring subscribers having direct switching service at Center to pay a higher rate than subscribers receiving only indirect service at the Center exchange. The result of this arrangement was to establish rates, ranging from \$1.50 to \$6 per annum.

Later petitions were filed with the commission on behalf of the Fairview Farmers, Hannover Mutual and the Spring Brook companies, protesting against the rates, and asking that the case be reopened. A hearing was accordingly held on April 18 of this year, at Center.

Commenting on the tangle which it had

to unravel, the commission said that it was an exemplification of the impracticability of several companies operating in one territory.

"If the telephone lines involved in this proceeding were owned and operated by one company," the opinion read, "the question of establishing rates would be a comparatively easy one and the service would be of higher quality."

Unsatisfactory Way to Do Business.

The record showed that there are only nine or ten subscribers on some of the lines. The rural companies are not organized for profit and consequently the revenue is derived from assessment, "a very unsatisfactory way to conduct a telephone business."

Because of limited revenues, the small companies are not in position to pay reasonable service switching charges; and in a case where it is necessary for the subscribers to go through one or more farm switches in order to reach the exchange, and where service is desired at two or more exchanges, the rates become prohibitive.

The commission pointed out that subscribers on rural lines should bear in mind that if they expect to receive service at separate exchanges, they must pay the reasonable charges for the additional service.

Center is the county seat of Oliver county and is an inland town. A number of the subscribers on the lines involved in this proceeding desired service at either Hazen or New Salem, because the latter towns are located on a railroad. In view of the fact that the petitions varied somewhat, it was necessary to consider them separately.

The Decisions Rendered.

The Spring Brook company asked permission to install a switch at the center of their line, and that it be given a rate of \$6 per year for subscribers located nearest to Center and \$2 per year for subscribers located on the other half of the line. The reason assigned for this request was that subscribers located the greatest distance from Center desired service at Hazen.

This meant that subscribers on the east half of the line would pay \$6 to Center, while the total switching charges of the subscribers west of the line, including the charges to Hazen and the farm switch, would be \$6. As that seemed a fair proposition, it was allowed.

The Fairview Farmers company, of Hannover, which has only nine subscribers, objected to paying \$1.50 per year per subscriber for switching charges at Center, and requested that it be permitted either to disconnect with the Center exchange or to pay a toll rate for each call.

The testimony showed that the Fairview company has connections with Youngstown and New Salem and pays switching charges amounting to \$7 per subscriber. All of the subscribers on this line do their trading at New Salem and that for a period of one year only 15 calls were made to Center, it was testified.

In order for subscribers on this line to reach Center, it was necessary for them to go through two farm switches, and the commission felt that it would, therefore, be impracticable to establish a roll rate.

The Fairview Farmers company was accordingly permitted to disconnect.

The Hannover Mutual Telephone Co. was required by the former order to pay \$3 per year per subscriber. This was a larger company, there being 30 petitioners who requested that the rate be reduced to \$2 per year, or in lieu thereof that a toll rate be established.

The situation with respect to this company was somewhat different from that of the Fairview company and the Spring Brook company, in that their lines are located nearer to Center. The town of Hannover is located seven miles from Center and Center is the logical trade center for many of the subscribers of this company.

Arrangements have already been made by the officers, whereby subscribers may reach both Hazen and New Salem over a long distance line. Subscribers on this line reach Center by going through a farm switch connecting with the Spring Brook company, for which they pay \$1 per subscriber per annum. This makes the total switching charges only \$4, and consideration of the testimony convinced the commission that the rate of \$3 was not unreasonable.

There was no testimony tending to show that public convenience and necessity demanded a physical connection between these companies, but the telephone operator reported that on April 13, 14 and 15 she kept an accurate account of the incoming calls from the Hannover Mutual company, and that a total of 20 calls originated on that line.

This would indicate a reasonable de-

mand for service at Center, and it was decided that the rate of \$3 per annum should be left unchanged.

"It would be impracticable," the commission said, "to convert the farmers' lines into a toll line. The only solution for those farmers who desire occasional calls to Center will be the installation of a toll line either between the Spring Brook Telephone Co. or the Hannover Mutual Telephone Co.

"Each rural company obtaining service at the Center exchange must be required to bear its proportionate share of maintaining the exchange and, in our opinion, a solution will not be found in disconnecting the Hannover Mutual Telephone Co. from the Center exchange."

The decision was made without prejudice, it being provided if an agreement could be made between the owner of the Center exchange and the rural company, whereby a payment would be made for each call, the commission would approve a reasonable charge.

Georgia Association Holds Its First Annual Meeting.

The first district meeting of the Georgia Independent Telephone Association—which was organized in February—was held at Fitzgerald on May 17.

There were about 30 companies represented—quite a good showing for such a young organization—and every person present was keenly alive to the problems discussed and deeply interested in the helpful talks that were presented. The officers were well pleased with the active participation of the members.

W. R. Bowen, of Fitzgerald, the first president of the association, was chairman of the meeting. The other officers who are serving the association are: Vice-presidents, W. R. Hunter, of Quitman; J. M. Dent, of Douglas; and P. D. Fortune, Summerville; secretary-treasurer, J. L. Mathews, of Statesboro; and general counsel, J. Prince Webster, of Atlanta.

The association added ten companies to its membership at the meeting, and it is steadily growing.

After the business session, a luncheon was served to the delegates at the Lee-Grant Hotel.

A rising vote of thanks was given W. R. Bowen, who is also president of the Bowen Telephone Co., of Fitzgerald, and J. P. Manning, general manager of the company, for their efforts in making such a success of the first district meeting.

The program included the following interesting talks:

Address of welcome, W. R. Bowen.

Response, W. D. Horton.

"The Future of the Industry from an Independent Point of View," W. R. Bowen.

"What Coöperation and Organization May Accomplish," by J. Prince Webster.

Question box, in charge of W. A. Jennings.

"Public Relations and Standardization of Telephone Directories," by J. L. Mathews.

"The Value of Systematic and Uniform Accounting," W. G. Merrick.

"Toll Line Development and Its Possibilities," J. P. Manning.

"Toll Terminal Charges or Exchange Compensation," J. M. Dent.

"Depreciation Reserves to Be Prescribed by the Interstate Commerce Commission and Effects," J. Prince Webster.

Annual Meeting of the Northeastern Indiana Association.

The Northeastern Indiana Telephone Association held its annual meeting at Fort Wayne on May 22—the Home Telegraph & Telephone Co. acting as host.

The operators of the association had a joint meeting with the association in the morning, the session beginning at 10 o'clock at the chamber of commerce.

A luncheon was served at noon in the chamber of commerce rooms for members of the association, and at the cafeteria of the Home company for the operators.

P. J. Maloney, president of the association, opened the meeting, the program for which follows:

JOINT MEETING—10:00 A. M.

Address of welcome, C. M. Niezer, president, Fort Wayne Chamber of Commerce.

"Conventional Talk," H. A. Barnhart, president, Indiana Telephone Association.

"Some Telephone Problems," R. V. Achatz, professor telephone engineering, Purdue University.

Luncheon, followed by address by Carl Wilde, director of service, Public Service Commission of Indiana.

1:30 P. M.

"Telephone Repeaters," S. J. Ewald, district plant superintendent, American Telephone & Telegraph Co.

Informal address, F. V. Newman, general manager, Laporte Telephone Co.

Selected talk, Max F. Hosea, treasurer, Indiana Telephone Association.

The following talks were made at the operators' afternoon session:

"The Operators' Part in Public Relations," F. F. Davis, division traffic superintendent, Indiana Bell Telephone Co., Indianapolis.

"Employes' Relations," R. M. Loomis, division traffic superintendent, Indiana Bell Telephone Co., South Bend.

"Loyalty," E. L. Gaines, traffic superintendent, Home Telephone & Telegraph Co., Fort Wayne.

Henry A. Barnhart gave one of the principal addresses of the morning session, urging the strengthening of inter-city lines and the development of rural districts by telephone companies. He made reference to the many uses of the telephone, citing

as an example of necessary efficiency the recent shooting of the chief of Rochester, Ind., and the wounding of one of the telephone company auditors by an auto bandit. At that time, he said, the telephone was used exclusively to notify surrounding cities of the shooting and theft and to ask their co-operation in locating the bandit.

"I regard good long distance telephone service as even more important than local service," said Mr. Barnhart, "for the reason that long distance service so often proves of vital importance.

"You can always get along locally pretty well, but there are some weak links in some of our toll systems. I believe that where the long distance lines of a stronger company go through a system of a company which is not financially able to keep up the toll end of its business to the highest efficiency, the stronger company should take the initiative, in some manner supplying the funds, which will make it possible to strengthen the weak link in the general system."

Following the general business session the annual election of officers for the association resulted in the re-election of all of those who served during the past year. The complete list of officers follows: P. J. Maloney, of Columbia City, president; C. L. Knipple, of the Indiana Bell Telephone Co., Huntington, vice-president, and Martin Umbach, of the Home Telephone & Telegraph Co., Fort Wayne, secretary-treasurer.

Public Utility Bureau Starts Operating in Louisville, Ky.

The recently appointed public utility bureau, of Louisville, Ky., working in connection with the board of public health, began operations May 21.

George W. Hubley heads the bureau as utility engineer, with Charles Roser as auditor. Under control of the bureau in utility questions are the Louisville Home Telephone Co., the Louisville Railway Co. and the Louisville Gas & Electric Co.

The bureau is to have regulatory power on any question concerning the utilities, with the utilities reserving the right to legal action in case of non-agreement.

The appointment of Mr. Hubley and Mr. Roser will be augmented within the next few weeks by one or two assistant engineers or inspectors, an assistant auditor and an office force.

Texas Association Making Plans for District Meetings.

The Texas Independent Telephone Association is arranging to hold a number of district meetings during the remainder of the year. In all probability the first district meeting will be held in Houston some time during the latter part of June or the first of July.

The other points for district meetings have not been selected. It is probable that

the meetings will be held the same places this season as they were last year. There are, however, two new places being considered—one is San Antonio and the other is Amarillo.

Minnesota Association Takes Up Power Line Interference.

A group meeting of the Minnesota Telephone Association was held at Hawley on May 24.

The conference was called for the special purpose of taking up the matter of damage resulting from inductive interference caused by the power lines being built in proximity to the telephone lines. Other problems confronting the companies were also discussed.

The construction of the high power lines has caused serious inconvenience and damage to the rural telephone lines—in a number of cases rendering them useless for several hours at a time.

Jay Greaves, president of the Minnesota association, and J. C. Crowley, Jr., secretary, of St. Paul, attended the meeting.

The members of the different local telephone companies who took part were: H. C. Boyce, president, H. F. Jones, secretary, and P. Shea, of the Glyndon Telephone Co. of Glyndon; M. O. Solum, president, A. L. Rund, manager, and O. Olson, director, of the Rollag Telephone Co. of Rollag; O. A. Waagensteen, president, H. Hanson, manager, A. K. Torgerson, N. J. Norby and Senator C. H.

Kelsen, of the Lake Park Telephone Co., Lake Park; F. W. Horn, president, and G. H. Levitre, of the Felton Rural Telephone Co., Felton, and H. Holden and H. Hanson of the Norman County Telephone Co., Ada.

Nebraska Commission Employs W. H. Crum on Bell Case.

The Nebraska commission has employed W. H. Crum, of Chicago, to assist it in its defense of its exchange schedule, now under fire in the federal court. The case is now being heard by an examiner in Omaha.

Mr. Crum is now sitting with the Nebraska commission and assisting in the cross-examination of Bell witnesses.

Personal and Biographical Notes

E. R. Cogswell, manager of the Springfield exchange of the Illinois Bell Telephone Co., has been made commercial superintendent of the Chicago suburban division; assuming his new duties on April 16.

He is in charge of the company's suburban business in the territory within a 40-mile radius of Chicago. The district is second in importance only to the Chicago division.

Mr. Cogswell went to Springfield in 1905 as assistant manager and became manager of the exchange in 1911 when he succeeded Verne Ray.

During his residence in Springfield, Mr. Cogswell was very active in civic affairs. He was a director in the chamber of commerce for six years; vice-president and a director of the Sangamo club, a director of the Rotary club, and a director of the Springfield Tuberculosis Association.

He was one of the first Springfield men to become interested in the Good Fellow movement, having started the work among employes of the telephone exchange before it was taken up by the city. When the work was turned over to the chamber of commerce. Mr. Cogswell took a prominent part in its direction.

Fred W. Kelly, manager of the Decatur exchange of the Illinois Bell Telephone Co., has been appointed manager of the Springfield exchange of the company, to succeed E. R. Cogswell.

A. W. Forbes, of Stanton, Neb., secretary-treasurer of the Nebraska Telephone Association, has always had a great interest in telephone affairs, especially in the executive end.

He was raised in Broome County, N. Y., and went to Kansas in 1886, where he clerked in a dry goods and general store until '93, at which time he went into business for himself.

He bought the Bell exchange at Stanton in 1904 and built it up from a company of 66 stations to one of over 700 stations in 1921.

Mr. Forbes had practically no telephone construction experience, but when, during



When A. W. Forbes, Secretary-Treasurer of the Nebraska Association, Starts Anything, He Usually Gets It Done.

the war, there was a shortage of help, he went out with a ladder and stick to put up some wires and he did build six miles of line.

Kendall Weisiger, of Atlanta, Ga., educational director of the Southern Bell Telephone & Telegraph Co., has gone to New York City, where he will assist in the perfection of an educational program for the Bell system. He will be engaged in this work about six months.

Mr. Weisiger has been connected with the Southern Bell for 23 years, and has held a number of important positions with the company, having specialized in recent years in educational work. He believes educational work in the telephone industry to be of the utmost importance, and has done a great deal to spread the movement. He has also been in charge of the company's circulating library at Atlanta.

A resident of Atlanta for 22 years, Mr. Weisiger has taken a leading part in civic and welfare work, some of his "outside" positions being president of the Associated Charities, president of the Five-Way Financial Federation, vice-president of the Anti-Tuberculosis Association, chairman of the Boy Scouts court of honor, and chairman of the Rotary educational foundation.

Obituary.

Paul Preston Haynes, for several years a member of the Indiana Public Service Commission, died May 9 in Boston, Mass., after a brief illness, at the age of 35.

Mr. Haynes completed a two-year term on the Indiana commission and then was reappointed for another term by Governor Goodrich, but he resigned in March, 1921, after three years' service. Since then he had practiced as attorney specializing in utility matters. Besides his work on the commission he was a member of the special war committee of the National Association of Railway, & Utility Commissioners, which dealt with many important questions of utility regulation during the war.

Mr. Haynes was well known to Indiana telephone men for he handled many of the commission's telephone cases. At the Winona Lake convention of the United States Independent Telephone Association in June, 1920, Mr. Haynes was one of the principal speakers, and made an excellent impression upon all who heard him.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Three New York Companies Ask Permission to Consolidate.

A joint application filed May 15 with the Interstate Commerce Commission by the New York Telephone Co., the Cayuga Southern Telephone Co., of Polar Ridge, N. Y., and the Farm & Village Telephone Co. asked permission to consolidate their properties under the name of the Cayuga Southern Telephone Co.

The application states that the Cayuga Southern will pay \$70,000 for the Farm & Village properties and \$72,000 for properties of the New York Telephone Co.

Master in Chancery Told of Services From That 4½ Per Cent.

F. L. Rhodes, of Shorthill, N. Y., outside plant development engineer for the American Telephone & Telegraph Co., was the principal witness offered by the Northwestern Bell Telephone Co. during the past week in support of the reasonableness of the 4½ per cent contract between the two corporations. Mr. Rhodes detailed at great length the variety and character of the services that the parent Bell company performs for its subsidiaries, the legal and engineering advice furnished, the development work done from which it profits greatly, the surveys and experiments the results of which are passed on to the district organizations.

One of the chief savings, he said, was in the development of economies in plant operation. He said that millions of dollars had been saved in construction work and maintenance as a result of the work done by the research departments, especially with respect to underground and aerial cable. To accomplish this, cables had been strung on the elevated railroads in the larger cities to register vibrations, sunk in vats, hung in fungous pits where decay had been accelerated and had been treated to almost every conceivable condition.

Mr. Rhodes said that ability to seal the wires, damp-proof, in coverings of lead and antimony in such small compass as in the sample he showed, had been the result of years of experimentation and had saved millions for the future. He illustrated the growth of cable work by showing a sample of the first underground cable with 15 wires and compared it with the modern one of smaller compass holding 1,500 pairs of wires.

The parent Bell also furnishes vital portions of the instruments to its subsidiaries. As a result of experiments covering years and costing large sums to it but which cost the subsidiaries no direct payment,

the present telephone had been evolved. He contrasted it with a model of the first Bell telephone.

The cross-examination of Mr. Rhodes before Master in Chancery Dunham was undertaken by Hugh Lamaster for the state railway commission, which attacks the payment of over \$200,000 a year to the American Telephone & Telegraph Co. as excessive and unreasonable.

Some Peculiar Arguments for Lower Zone Rates.

A queer proposition was sprung during the closing session of a hearing of the Nebraska State Railway Commission, when the application of the Lincoln Telephone & Telegraph Co. for permission to increase the rates of the University Place exchange, a part of the Lincoln zone, to the same figure as all other zone subscribers was submitted.

A committee representing the city council and the business men's association said that they were not willing to pay the same rates for the same service because, being in a city much smaller than Lincoln—about a twelfth of the latter's size—the people there did not know as many persons in the zone as do the people of Lincoln.

Commissioner Browne was nonplussed. He said he had always understood that the number of a man's acquaintances depended, not upon the size of the town he lived in so much—although that is a limiting factor—as upon the capacity of the man himself for friendship, and that the smaller places facilitated this more than do the larger ones.

Mr. Browne said that in Lincoln he paid the same price for his residence telephone as do all others and the same price that the company asks of University Place subscribers. He did not believe that he called to exceed 50 telephones, as a rule, and while it might appear as an unnecessary expense to put upon a subscriber to base the price to him on the cost of furnishing service to 15,000 patrons, yet there was no practical way by which the company could limit him to calling only a restricted number.

Later another member of the committee shifted the ground. He said that there should be an equal charge for equal service, but maintained that the remedy was not to increase the rates to University Place but to reduce it to Lincoln subscribers. He did not urge that this be done, because that was Lincoln's affair, but he thought the war was over and war rates no longer justified.

Under cross-examination of Mr. Matison, however, he admitted that the supplies, material and labor that he purchased in his business cost him more than they did before the war, and that in his own business he had not reduced his prices or charges for service.

The University Place representatives were quite sure that most of the subscribers there had need only of a local service, save that business men desire the right to call up wholesalers and railroad depots—none of which it has—without extra cost. They did not want to pay for zone service, but insisted that there should be a flat rate and no additional cost to talk to Lincoln if they desired to do so.

The company submitted a graph that put an entirely different light on this claim. The chart was made up from peg counts taken two days of each month during the entire year of 1922. This showed that the daily average of calls originating on the University Place exchange was 8,246. Of this number 58.2 per cent were for connections within the corporate limits of the town, 37.9 per cent were to Lincoln, 2.9 per cent to Havelock and the remainder to two small towns in the zone.

There was an average of 3,080 calls that were daily passed to the University Place exchange. Of that number 89.3 per cent were made by Lincoln people who desired to talk to University Place people, 8 per cent from the adjoining shop city of Havelock, and the remainder from the other towns in the zone.

Combining these calls, the figures show that only 43.1 per cent were purely local calls, 51.2 per cent were Lincoln connections and the small remainder divided among the other three. This established the use of the University Place exchange as a distinctly zone service.

University Place is the home of Wesleyan University, and is peopled largely by Methodists. Although it is built practically up to the limits of Lincoln and many of its people work in Lincoln, it has steadfastly refused to become a part of the bigger city.

No Money for Ordered Improvements—Suspends Operations.

The town of Bradner, Ohio, east of Bowling Green, was recently cut off from the outside world, as far as telephone service is concerned. For the last few weeks Bradner residents have been walking and riding to Prairie Depot, the nearest neighboring town, to use the telephone.

A short time ago the Ohio Public Utili-

ties Commission ordered the Bradner Telephone Co. to make improvements. The company officials said that the revenue was not sufficient to finance the improvements and the company suspended operation.

The Bradner village council has demanded that the telephone company resume operation or else take 30 days to remove its wires, poles and other equipment from the streets to make way for a new company.

California Company Authorized to Suspend Operations.

Authority was granted by the California Railroad Commission to the San Joaquin Valley Telephone Co., operating a small telephone system of 29 stations in the towns of San Joaquin and Tranquillity, to suspend operations and abandon its lines. The order approving discontinuance was issued May 18.

Supplementary Order Postpones Effective Date of Previous One.

A supplementary opinion and order was issued on May 21 by the Wisconsin Railroad Commission in the matter of the application of the Browntown Telephone Co., of Browntown, for authority to establish legal rates. The commission has now modified its previous order of December 4, 1922, and provided that the rates and rules provided therein shall be made effective for all service rendered, whether to stockholders or non-stockholders, on and after July 1, 1923.

Previous to the issuance of the original order on December 4, the company had increased its rates without filing them with the commission and without securing authority to make any increase. Furthermore, the company was discriminating between stockholders and non-stockholders.

This practice was ordered discontinued by the original order and a schedule of rates therein provided, which was uniform for all subscribers. The order required that the rates be made effective as of January 1, 1923.

The company, however, did not comply with this order, and the commission thereupon referred the matter to the attorney general for prosecution. After the attorney general had notified the parties that they were subject to prosecution, representatives of the company came to the commission and expressed their intention to comply with the order, but asked for a modification of the order so as to provide for semi-annual billing instead of quarterly billing and asked further that the effectiveness of the order be postponed until July 1, 1923.

The supplementary opinion of May 21 further authorizes the company to require—in cases where the credit of a prospective subscriber is unknown or unsatisfactory—a deposit of \$6, which deposit shall not be considered an advance payment for telephone service but shall be retained by

the company for such period as reasonably required on account of the subscriber's credit. The deposit, or any portion of it necessary, upon disconnection of the subscriber's service, is to be applied to any bills for service owing to the company, and only such portion of it not so required is to be returned to the subscriber.

Portage, Wis., Company Authorized to Issue \$5,000 Preferred.

A certificate of authority was granted by the Wisconsin Railroad Commission on May 24 to the Portage Telephone Co., of Portage, permitting that company to issue 50 shares of its preferred stock of the par value of \$100 per share, making a total of \$5,000.

The issue is for the purpose of securing funds with which to pay for additions and extensions to its property and plant and all for purposes properly chargeable to capital account.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

May 18: San Joaquin Valley Telephone Co., operating in San Joaquin and Tranquillity, authorized to suspend operations.

May 19: Application filed by Colfax Suburban Telephone Co. for authority to sell its property and plant to C. G. Bell.

MAINE.

May 18: Order entered suspending for three months schedule of proposed advances in toll rates filed by Eastern Telephone & Telegraph Co., New England Telephone & Telegraph Co., Maine Telephone & Telegraph Co., and the Aroostook Telephone & Telegraph Co.

MINNESOTA.

May 31: Hearing held at Red Wing on application of the Tri-State Telephone & Telegraph Co., of St. Paul, for approval of consolidation of its exchange at Red Wing with the Red Wing Telephone Co. and for approval of rates.

June 20: Hearing to be held at Starbuck on petition of the White Bear Lake Telephone Co. for authority to increase local and rural rates at Starbuck.

NEBRASKA.

May 21: Application of the Eagle Telephone Co. for permission to install emergency night rates for special calls, dismissed for want of prosecution.

May 21: Application of the Crownover Telephone Co. for an order permitting it to refuse further connections to the Sargent Telephone Co. because of alleged non-payment of charges, dismissed as settled.

May 21: Application of the Lincoln Telephone & Telegraph Co. for permission to sever toll connections with the Citizens Telephone Co. of Malma, dismissed for lack of prosecution.

May 21: Application of the Lincoln Telephone & Telegraph Co. for authority to discontinue free service and flat-rate charges between exchanges of the company with the Malmo, Weston and Morse Bluffs exchanges of the Citizens' Telephone Co. of Malmo, dismissed as settled.

May 21: Application of the Dundy County Telephone Co. for authority to increase rates, dismissed for want of prosecution.

May 21: Application of the Clearwater Telephone Co. for authority to increase rates, dismissed for want of prosecution.

May 25: In the matter of the application of the Lincoln Telephone & Telegraph Co. for permission to charge University Place subscribers the Lincoln zone rate for the same service; evidence adduced, and matter taken under advisement.

NEW YORK.

May 23: Petition filed by the Cazenovia Telephone Co. for authority to issue \$34,000 in preferred stock, funds to be used in improving its property in Cazenovia.

OHIO.

May 11: Elyria Telephone Co., of Elyria, authorized to increase its rates for business and residence service.

OKLAHOMA.

May 17: Approval given to the discontinuance of the exchange at Stecker, Caddo County, it being shown that continuance would mean a loss. Service will be furnished from the exchange at Apache.

OREGON.

May 10: Application filed by Deschutes Mutual Telephone Co., of Redmond, for permission to place a new rate schedule into effect.

PENNSYLVANIA.

May 11: Complaint filed by the Dunkard Valley Telephone Co. alleging that the Farmers Line Telephone Co. has constructed a line and is soliciting business without having a certificate of convenience or authority to do business in Greene County.

TENNESSEE.

May 11: Additional statements and information which were asked for by the commission at the recent hearing, filed by the Cumberland Telephone & Telegraph Company.

May 17: Proposed increased rates of Peoples Telephone & Telegraph Co., of Knoxville, suspended.

WISCONSIN.

May 21: Supplementary order entered permitting the Browntown Telephone Co., of Browntown, to suspend the effective date of order of December 4, 1922, to July 1, 1923; also to require in certain cases of service connection a deposit of \$6.

May 22: LaCrosse Telephone Co., of LaCrosse, authorized to issue \$17,000 par value of its preferred stock, for the purpose of securing funds with which to pay for additions and extensions.

May 24: Authority given the Portage Telephone Co., of Portage, to issue 50 shares of its preferred stock, of the par value of \$100 a share; funds derived from the issue to be used to pay for extensions and improvements to property and plant.

June 1: Hearing held at Fond du Lac on complaint of W. K. Porter and others against Van Dyke Telephone Co. and the Fond du Lac Rural Telephone Co., asking for physical connection between the lines of the companies lines. U-2852.

June 5: Hearing to be held at Antigo on the proposed extension by the Marathon City Telephone Co., of Marathon, in the towns of Cassel and Ammett. T-1082.

June 8: Hearing to be held at Madison on application of the Alliance Telephone Co., of Minong, for authority to increase its rates. U-2881.

June 15: Hearing to be held at Madison on application of the Fennimore Telephone Co., of Fennimore, for authority to increase its rates. U-2879.

June 15: Hearing to be held at Madison on petition of the New Auburn Telephone Co. of New Auburn for an increase in rates.—U-2880.

June 18: Hearing to be held at Madison on the application of the Wise Telephone Co., of Birchwood, for permission to increase its rates.—U-2882.



A telephone personality

In your face to face contacts with people, your appearance, your bearing and many other things help you to make the right impression. But in your telephone contacts there is only one thing by which you can be judged—your speech.

An effective telephone personality is to-day a business and social asset. Everybody appreciates the person who speaks distinctly and pleasantly, neither too fast nor too slow, with a clear enunciation of each word, with lips facing the mouthpiece and speaking into it. In business, this is the telephone personality which induces favorable action on the part of the listener. To the salesman it may mean the difference between an order and

no order; between an interview granted and an interview refused.

Curiously enough, people who are careful to make themselves effectively heard and understood face to face, often disregard the need for effectiveness in their telephone speech. Perhaps they shout, perhaps they mumble, perhaps they hold the mouthpiece far from their lips. And frequently they never realize that their carelessness has defeated the purpose of their talk.

The Bell System maintains for telephone users the best facilities that science, modern equipment, skilled operation and careful management can bring to telephone speech. But these facilities can be fully effective only when they are properly used.



" BELL SYSTEM "

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy, One System, Universal Service, and all directed toward Better Service

CHAPMAN LIGHTNING ARRESTERS

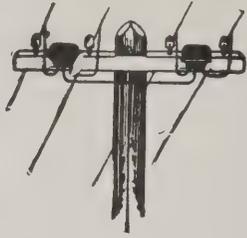
are as lasting
as the lines
they protect

Year after year they are rendering 100% service under all kinds of climatic conditions.

In the great Canadian wheat fields of the North, in the tropics, at sea level, and at the top of the Rockies, you will find them on the job.

Best by Every Test.

Manufactured by
Minnesota Electric Co.
309 2nd Ave. So.
MINNEAPOLIS, MINN.



From Factory and Salesroom

Brookins New Blow Torch Built on Principles of Efficiency.

A new blow torch that burns without pumping, is light in weight, uses less fuel and yet gives more heat—these are the qualities declared to be incorporated in the Brookins torch.

The principle of its design is that of vaporizing the fuel before it enters the combustion tube, thus maintaining a constant pressure as long as the torch is being used. After the first few strokes of the pump, in order to set up the pressure needed to start the torch, the pressure is maintained automatically, the manufacturers of the torch state.

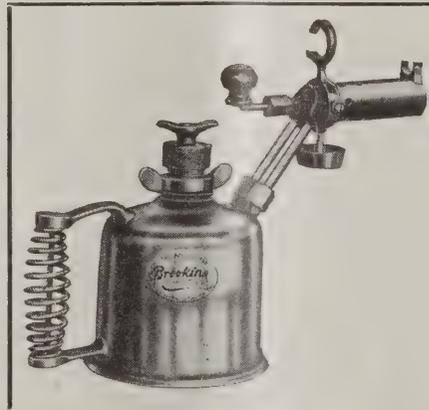
So simple is the design and construction of the Brookins torch that it is claimed that it will last almost indefinitely, requiring practically no care. "Just fill it, start it, and use it," the manufacturers say.

The combustion chamber has a patented vapor tube, in the direct path of the flame, which plays around it and heats it instantly and continuously. This vapor tube is protected from contact with the outside atmosphere, in order that the torch may perform just as efficiently and operate as economically in below zero weather as though it were burning in summer heat.

The efficiency in heating possessed by the Brookins blow torch results in faster work, and the principle which uses every particle of energy in the fuel makes it unnecessary to refill the torch frequently.



Larger Size Brookins Blow Torch.



The 1/2-Pint Size Brookins Blow Torch.

Another of the distinctive features of this torch is that it is intended especially to overcome carbon troubles. The orifice is through a separate nut, which can be easily removed and cleaned.

The burner is designed so that it cannot become filled with liquid fuel. Another advantage is that the torch can be used in any position, so that no matter how it is held it will continue to burn steadily and at maximum temperature. Indeed, it has any number of features that combine into a very desirable tool to work with.

Some of the qualities which recommend the Brookins fire pot are sturdy construction, insuring long life; positive regulation of flame; ability to burn in the strongest breeze; easy cleaning facilities; great heat; low fuel consumption, and maintaining its own pressure.

The torch is made in three sizes—half pint, pint and quart—and details concerning each size, as well as other items in the Brookins line, will be furnished upon application to the Brookins Mfg. Co., Dayton, Ohio.

Quick Emergency Shipment by Leich Electric Co.

On Sunday morning, April 15, the city block of Metamora, Ohio, that contained the telephone central office burned to the ground and left the community isolated, so far as telephone communication was concerned. By Monday morning Mr. Campbell, of the Leich Electric Co., was on hand to help plan a new equipment and arrange to put in a temporary board until a new board could be obtained.

A telegraph order for a new switchboard with special features was sent to the Leich Electric Co., Genoa, Ill., on the afternoon of April 16 and on the 25th shipment was made from the factory.

In the new switchboard are incorporated features that greatly increase the operating speed of the board and ordinarily are not furnished on a switchboard of 300 lines capacity. All line drops are supervised with lamp pilots that remain lighted as long as a drop is down. Cord circuits supervision is obtained by double clearout signals with pilot lamps and restored by a contact operated by the cam of the listening key. Positive supervision is thus obtained with the least possible motions of the operators and enables them to pay very close attention to line calls.

Mr. Granger, superintendent of the Metamora-Richfield Telephone Co., will be kept busy this season getting the system into shape again, but in the end it will be up to the minute in every respect.

Arrester That Gives That Feeling of Security—the Argus.

An old standby—that's the reputation the Argus type A lightning arrester, manufactured by Foote, Pierson & Co., Inc., of New York City, has acquired.

A27 Cable Terminal

Self-Cleaning

Equipped with



P495 

**Sawtooth
Discharge
Blocks**

Without Extra Charge

Reliable
Electric Company

3145 Carroll Ave., Chicago, Ill.

THE ONE-MAN KIT



C. E. D. Kit No. 1

This little First Aid Kit fitted with Compact Emergency Dressings, may be worth its weight in gold to a lineman, installer, troubleman or inspector. Each of these dressings is a complete emergency treatment, bringing to First Aid an approximation of surgical cleanliness.

Why not standardize your First Aid equipment by installing Compact Emergency Dressings?

Send for Booklet T 6



**First Aid Specialty
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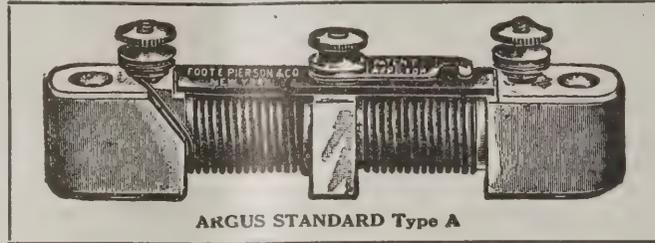
35 Nassau Street New York

Such are the principles involved in the design of the type A and so reliable have they made the arrester, that it has become a standard with the company and has attained a wide popularity in the telephone field. It is so constructed as to cause the

the organizers of the Electrical Supply Jobbers' Association.

Claude L. Matthews became the junior partner in 1901, after spending a year and a half in the employ of the Packard Electric Co. of Warren, Ohio, where he obtained his first job after leaving the engineering school at Princeton University.

James R. Kearney joined the organization in 1905 as a salesman, after resigning his position as superintendent of construction of the



The Type A Argus Lightning Arrester Used Where Space Is Limited.

arc of lightning discharge to be broken up into several small discharges, no one of which is of sufficient intensity to raise a burr on the ground plate.

It is designed to arrest the lightning and at the same time maintain the circuits in good working order without attention from a lineman.

The Argus arrester is intended for use where space is limited—such as mounting in cable boxes already in use, without disturbing the box.

To guard against interference from power circuits—which is so apt to occur during a storm—the Argus arrester is provided with a fuse which can carry from five to seven amperes.

Complete details of the Argus type A, as well as information regarding the many other styles of arresters manufactured by the company, may be obtained from Foote, Pierson & Co., Inc., 160 Duane Street, New York City, N. Y.

W. N. Matthews Corp. Successor to W. N. Matthews & Bro.

The W. N. Matthews Corp. has just been organized under the laws of Missouri, to take over the business of W. N. Matthews & Brother, Inc., a New Mexico corporation. The capital stock of the Missouri corporation will consist of 5,000 shares of \$100 par value, 7 per cent cumulative preferred stock, and 100,000 shares of \$1 par value, common stock.

The business of W. N. Matthews & Brother, Inc., will be taken over in its entirety by the W. N. Matthews Corp., and the old company dissolved. The officers of the new company will be W. N. Matthews, president; Claude L. Matthews, secretary and treasurer, and C. C. Fredericks, vice-president and general manager. James R. Kearney will be manager of sales for the electrical division, and Louis P. Murray, manager of sales for the mechanical painting division.

W. N. Matthews & Bro., Inc., was established in 1899 by W. N. Matthews, who prior to that time was in the electrical supply jobbing business, and was one of

Topeka Edison Co. C. C. Fredericks joined them in March, 1923, as general manager. Mr. Fredericks is a mechanical engineer with a wide experience in the production and marketing of mechanical specialties. He started out with S. F. Bowser & Co. of Fort Wayne, Ind., in 1899 and worked his way up through the production department to that of sales executive. In 1920 he went to St. Louis and organized the St. Louis Pump & Equipment Co., of which he was vice-president and general manager. He sold his interests in this company in the fall of 1922 and joined the Matthews company.

Mr. Kearney has a sales organization of 15 representatives reporting to him.

Louis P. Murray joined the Matthews organization on April 2, 1923, immediately after resigning his position as vice-president of the S. F. Bowser Co. of Texas. He had been associated with this company for 15 years. Previous to that he was superintendent of tank wagon service and warehouses for the Standard Oil Co. of Indiana in St. Paul and Minneapolis.

Mr. Murray is rapidly building up a sales organization that will devote its entire time to the sale of Matthews mechanical painting equipment. He will have district offices in the principal cities of the United States, and has already established offices in Chicago, Detroit, Kansas City, Atlanta, New Orleans, Tulsa, Omaha and Denver.

The development of mechanical painting equipment by the Matthews organization has been going on quietly for the past three years, and the equipment is now used all over the country for painting the interior and exterior of buildings, bridges, fences, poles, transformers, manufactured products of all kinds such as automobiles, furniture, transformers, fixtures, etc.

Paragraph.

ALBERT F. CROSBY, of the American Crossarm & Conduit Co., Chicago, has recently been advanced to the position of vice-president in charge of sales. Mr. Crosby has been connected with the company for 24 years.



YOU NEED THE UTILITY

This combination Cable Reel Carrier and Pole Dolly simple in design—perfect in operation—is immeasurably practical and useful for the telephone company. Of finest materials. Splendid construction. Pole Dolly bunks furnished without extra charge. Complete line of two and four wheel trailer equipment—specially designed for telephone use. More "Utility" trailers in use with telephone companies in western U. S. than all other makes combined. Interesting catalog on request. Write now.

UTILITY TRAILER MANUFACTURING CO.
 (Formerly Los Angeles Trailer Company)
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This is the way to clean your switchboards and telephone equipment—with the

Premier Handy Electric VACUUM Cleaner

This is a new and different type electric vacuum cleaner that weighs only 6½ pounds. It is supported by a strap over the operator's shoulder, thus allowing both hands free to direct the cleaning tools. It has powerful suction. It is built and guaranteed by one of the world's largest makers of electric vacuum cleaners.

For cleaning telephone equipment, by suction, use the end of the rubber hose, the bristle brush tool or the small rubber tool. When you desire to use the PREMIER HANDY as a blower, simply remove the bag, attach the blower coupling, put on the hose and you then have a powerful blower for cleaning surfaces inaccessible to the suction tools.

The Premier Handy has been tested in scores of exchanges, and has been found to be practically indispensable for cleaning switchboards, cable runways, relay racks, distributing frames, and for general cleaning of telephone equipment and apparatus.

The price of the PREMIER HANDY with all the equipment, as described, is only \$35.00. This is about half the price of many standard electric vacuum cleaners with attachments and only a very small fraction of the cost of a Pump Type Vacuum Cleaner truck equipment or an installed Vacuum Cleaner System.

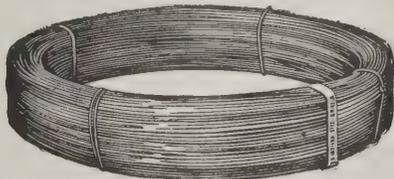
There is labor saving, sanitation and distinct economy for your exchange by the use of the PREMIER HANDY.

Order direct from us or from your Telephone Equipment Jobber.

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TELEPHONES
SWITCHBOARDS and SUPPLIES
Carried in Stock by
Southern Electric
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Atlanta, Ga.



New Telephone Companies and Incorporations.

WINCHESTER, ILL.—With a capital of \$60,000, the Winchester Telephone Co. has been incorporated by A. Hainsfurther, G. W. Biwman, R. W. Frost and K. Miller. The correspondent is B. B. Boynton, Booth building, Springfield.

LYNNVILLE, IND.—L. Tyring, J. W. Crane, J. E. Hart, G. H. McWilliams, C. C. Miller and I. D. Hart have organized the Lynnville Independent Telephone Co. with a capital of \$2,500.

AMERICUS, KANS.—Articles of incorporation have been filed for the Freeman Mutual Telephone Co. No capital stock is mentioned.

PLYMELL, KANS.—The Farmers Mutual Telephone Co. has organized with a capital stock of \$3,000.

BARBOURVILLE, KY.—The Swan Telephone Co., of Swanpond, Knox County, has been organized by P. S. Miller, A. J. Lundy, C. B. McKnight and C. E. Flanery. The capital stock is \$600.

HARLAN, KY.—The Everts Harlan Telephone Co. has been incorporated by J. T. Gregory, M. A. Gregory and C. W. Goff, with \$10,000 capital stock.

CHISHOLM, MINN.—Articles of incorporation have been filed for the Northern Farmers Telephone Co., giving the capital stock as \$15,000. The officers and directors are: J. Ketola, president; N. Vaineo, vice-president; H. Tomfor, secretary-treasurer; G. A. Gilbert, R. L. Waters and R. Neimi.

MARION, OHIO—With a capital of \$1,000,000, the Marion County Telephone Co. has been organized by F. E. Guthery, S. E. Berlow, J. F. Prendergast, A. J. Berry, F. A. Huber and J. G. Laffler.

FORT COBB, OKLA.—Rural Telephone Line J, out of Fort Cobb, has been organized by W. F. Henneke, F. J. Hoops and E. Baker, with \$200 capital.

COLOME, S. D.—J. A. Beaver, D. W. Ewing and G. L. Wheeler have organized the Kansas Flats Telephone Co. with \$1,500 capital.

LETCHER, S. D.—With a capital of \$2,500, the Farmers Union Telephone Co. has been incorporated by E. E. Hunter and W. C. Bottkn.

EVERETT, WASH.—P. T. Lee, M. Oliver and A. E. Dailey have organized the Municipal Underground Telephone Co. The capital stock named is \$500,000.

CLINTONVILLE, WIS.—The Bear Creek Telephone Co. has been organized with \$10,000 capital stock by J. H. Spangler, H. Rohden and T. H. Buntrock.

STANLEY, WIS.—G. Heians, J. May and H. Vanderloop have filed articles of incorporation for the West Worden Telephone Co.

Construction.

TAMPA, FLA.—Work was recently started by the Peninsular Telephone Co. on some of the improvements called for in its large extension program, which will involve an expenditure of about \$500,000. There will be improvements made in both the local system and that of other exchanges belonging to the company.

CABINET, IDAHO—The Interstate Utilities Co. has recently started work on a new line connecting Cabinet, Trout Creek, Noxo and other towns. The line will be part of

the through line from Sandpoint to Thompson Falls, Mont., and will cost about \$12,000.

UNION, MICH.—The owners of the telephone system at Edwardsburg, who have purchased the Adamsville and Union exchanges, plan to install new poles, wires and other equipment to improve the service.

CHISHOLM, MINN.—The Northern Farmers Telephone Co. has started preliminary work on a line connecting the farming country north of Chisholm with that town.

MISSOULA, MONT.—Extensive improvements, involving the expenditure of about \$63,000, will be made in the local system of the Mountain States Telephone & Telegraph Co.

OAKDALE, NEB.—The Oakdale Telephone Co. has started work on the reconstruction of some of its local and rural lines.

CAZENOVIA, N. Y.—The Cazenovia Telephone Co. is planning to issue \$34,000 in preferred stock, the proceeds of the sale to be used to pay for improvements to its plant. It is planned to change from ground- to a common battery system. Alterations to the central office plant and the installation of additional outside equipment are included in the program.

Financial.

CHARLESTON, W. VA.—The Chesapeake & Potomac Telephone Co. of West Virginia has filed a certificate of increase of capital stock from \$7,500,000 to \$12,000,000.

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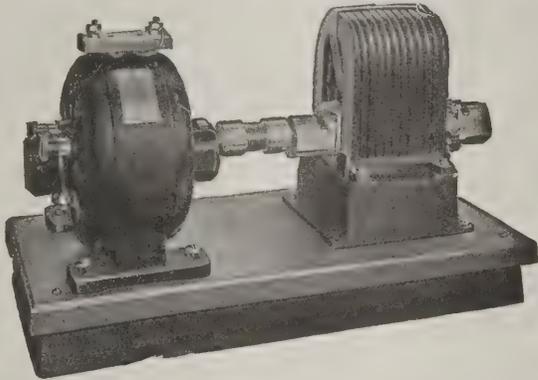
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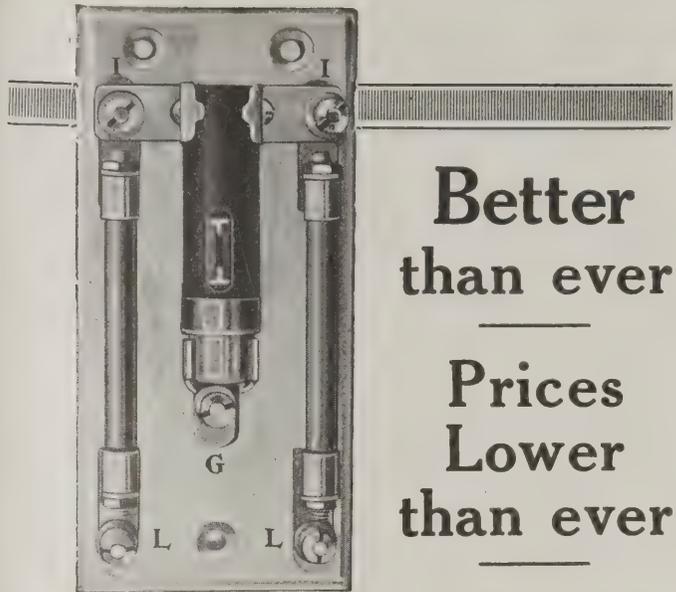
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During the past year we have brought out several improved types for telephone protection and also brought prices within the reach of every company.

Take our new Type 440, for instance. It embodies all the advantages of BRACH Arresters—full protection against lightning, crosses, grounded lines, gives clear transmission and balance of potential between pairs.

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Elections.

WOODHULL, ILL.—The Woodhull Village Telephone Co. will have the same directors and officers this year as it had last year. They are: S. H. Whitcomb, president; F. J. Wendt, vice-president; G. E. Swanson, E. J. Charlson and A. Swanson, treasurer, collector and manager.

MATLOCK, IOWA—At the annual meeting of the stockholders and directors of the Matlock Telephone Exchange, officers and directors for the ensuing year were reelected as follows: H. C. Neldt, president; J. H. Tutje, secretary; H. O. Tuttle, treasurer; S. Cooper and H. Beldt, directors.

COUNCIL GROVE, KANS.—The annual meeting of the Council Grove Mutual Telephone Co. resulted in the reelection of the present board of directors. Ex-Representative G. W. Coffin was elected president for another year; Herbert Wilson, vice-president; C. H. White, treasurer; and C. V. L. Branic, secretary.

GRAND RAPIDS, MICH.—The following officers have been elected by the directors of the Citizens Telephone Co.: President, R. D. Graham; vice-president, V. M. Tutthill; secretary, A. E. Wells; treasurer, T. H. Goodspeed; general manager, C. E. Tarte.

HANSKA, MINN.—The officers of the Hanska Rural Telephone Co. for this year are: C. Olstad, president; M. B. Erickson, vice-president; and C. O. Strom, secretary-treasurer and manager. The directors elected are: N. Erickson, M. B. Erickson, G. F. Lee and P. E. Peterson.

SLEEPY EYE, MINN.—C. P. Cutting has been elected president of the Sleepy Eye Telephone Co.; F. Romberg has been elected vice-president; W. Brust, secretary; F. J. Riedl, treasurer; and W. W. Smith, H. F. Dohrman, M. A. Kiefer, A.

Losleben and C. C. Hansen, directors. At the present time the company is operating 810 stations, 505 in the city and 305 rural.

FAIRFAX, MO.—The directors of the Fairfax Telephone Co. are: E. H. White, E. C. Whitford, W. A. Groesbeck, I. Whitford, W. B. Seymour, A. Peters, R. F. Buck and C. E. Dankers.

RHINELAND, MO.—At the annual meeting of the Rhineland-McKittrick Telephone Co. held recently F. Meyer was elected president; W. Peters, vice-president; R. Duffy, secretary; and R. Grote-wiel, director for three years.

TEMPLE, N. D.—At the recent annual meeting of the Temple Rural Telephone Co. all of the directors and officers were reelected. G. Eckblad is president; E. O. Peterson, vice-president; J. A. Van Wag-enen, secretary; and the Security Bank acts as treasurer. T. L. Sagaser and P. W. McAleer are directors.

CINCINNATI, OHIO—C. W. Dupuis was elected a director of the Cincinnati & Suburban Bell Telephone Co., succeeding E. Goepfer, who resigned. The other directors were reelected.

LORAIN, OHIO—A. V. Hageman has been named as president of the Black River Telephone Co., to succeed E. M. Pierce, resigned. He also continues his position as general manager. W. Honecker retains his post as vice-president; H. E. Hageman will serve as treasurer, succeeding A. V. Hageman; and B. G. Nichols is the secretary. The board of directors consists of E. M. Pierce, W. B. Thompson, N. C. Alten and the officers.

NEW LEXINGTON, OHIO—The following directors were recently elected by the stockholders of the Perry County Telephone Co.: J. Amberge, T. M. Potter, P. M. Cullinan, C. T. Griffith, P. R. Brehmer, J. W. Cherry, and J. C. Druckemiller.

MEADVILLE, PA.—The board of directors of the Meadville Telephone Co. has organized for this year by electing J. H. Wright, president; L. E. Whiting, vice-president; L. C. Wright, secretary; and H. M. Dickson, treasurer. L. E. Whiting was elected general manager.

ENOSBURG FALLS, VT.—The Northern Telephone Co. will have as its officers for this year: O. Merrill, president; H. A. Puffer, vice-president; C. L. Ovitt, secretary; E. J. Parmelee, treasurer; E. J. Irish, assistant treasurer; and F. H. Ovitt, superintendent. The directors are Messrs. Merrill, Puffer, Ovitt, V. A. Irish and J. K. Perley.

UNION GROVE, WIS.—The annual meeting of the stockholders of the Union Grove Telephone Co. resulted in J. S. Blakey being elected president; H. Nelson, vice-president and director; W. D. White, secretary-treasurer; and W. J. Collender, manager.

Miscellaneous.

LINESVILLE, PA.—The controlling interest in the Western Crawford Telephone Co. has been sold to J. H. Wright, of Jamestown, N. Y., H. M. Dickson, G. W. Phillips and C. C. Johnson, of Meadville, and their associates who own the Meadville Telephone Co. as well as other telephone properties in western Pennsylvania and western New York.

MARION, S. D.—J. J. Bollinger, owner of the Bridgewater Union Telephone Co., of Bridgewater, has purchased the controlling interest of the Hurley Telephone Co. The plant consists of two exchanges and several hundred rural subscribers.

SUMMITVILLE, TENN.—The Summitville Telephone Co. has been sold to a mutual organization.

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JUNE 9

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Volume 84
Number 23

CHICAGO, SATURDAY, JUNE 9, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

CURRENT OPINIONS AND COMMENTS

The value of the right kind of publicity to public service companies has been emphasized so often in recent years that most utility men—which, of course, includes telephone managers—now realize its importance.

They know that publicity of the right kind is helpful in building good will, but not all of them thoroughly understand what is the right kind. They are apt to confuse "publicity" and "propaganda." The latter term has a sinister sound, especially since the war, when "propaganda" stood for something which aroused prejudice.

* * * *

The department of journalism of a Western university has asked a prominent newspaper publisher how to distinguish between "legitimate publicity" and "propaganda," and his answer is especially interesting to utility managers inasmuch as it throws light on what the controllers of the press consider good material to spread before its readers, the public.

It follows logically that the utilities by adopting the suggestion outlined by the publisher can gain access to the newspaper columns through "legitimate publicity" and avoid being accused of trying to put over propaganda."

* * * *

According to the publisher: "Legitimate publicity is the spreading of truthful information, or facts, about any cause or condition which is of interest or importance to people generally, and not for the pecuniary or other advantage of the person reading it."

His definition of propaganda is carefully

worded as follows: "Propaganda is the giving out (or hiring) of opinions, arguments, or pleas to induce people generally to believe what some individual, group, or organization, wants them to believe, for the pecuniary or other advantage of the individual, group or organization giving out (or hiring) the propaganda."

* * * *

Plain facts constitute the best publicity. We often hear it said, "The facts speak for themselves," and for the utility which has the facts on its side, and gets those facts before the public, there should be no doubt of the outcome. When all the facts are known, "propaganda," as such, doesn't get far unless the facts absolutely point in the same direction.

Facts are much more important than opinions, and nobody knows that better than the successful newspapers. They know that the public must have the facts in order to judge correctly any question, and that to obtain complete knowledge of the facts, there must be full publicity.

* * * *

The telephone company with a rate controversy at issue, for instance, will fare better if it obtains legitimate publicity than if it depends on propaganda as defined above. In other words, the information and facts laid before the community will prove more helpful than pleas and arguments that consist of generalities, or that presume to supply the public with a ready-made opinion. People prefer to look over the facts and form their own opinions.

The company which keeps its patrons posted as to what it is doing to improve service is aiming at the right kind of publicity that bears good fruit. This plan should be followed consistently from week to week, and not neglected until the day of need for customer-friendship actually arrives.

* * * *

Failure to seek public good will in the early days of service corporations has been responsible for much of the troubles which all the utilities have encountered. There has been a marked change in this particular in the last few years, but there is still opportunity for progress in the task of winning the public. It is, in fact, one task that cannot be overdone, for whoever heard of a business concern being on too friendly terms with its customers?

Victor H. Morgan, former editor-in-chief of the Scripps-McRae League of Newspapers of Ohio, in a recent speech said:

"The public utility industry of this country had a new birth on the day that it came to realize the importance of harmonious relations with the public.

"Had the pioneers of this industry possessed the same understanding that the present-day utility operator possesses, municipal ownership nowhere would have made progress, utilities nowhere would have been in ill favor with the public, and state commissions to regulate rates never would have been thought of."

That is a sweeping statement, but it shows the value that an experienced observer places on the friendly public rela-

tions that can be created by judicious publicity.

The various state committees on public utility information are doing a useful work in popularizing the service business along broad, general lines, but the local manager is the factor in position to keep in personal touch with the local newspapers every day.

Especially is this true of the local telephone man. It is his opportunity to establish friendly relations with the local press and lay the foundation for a good will which will help his company materially.

Advertising telephone service pays in every community, and along with the advertising the manager should see that the local paper is supplied with many news items about the company, which are not only acceptable to the news-gatherers but

which will unobtrusively but effectively help the company's public relations.

That is the "legitimate publicity" previously referred to.

* * * *

Bruce Campbell, president of the Illinois Bar Association, in his annual address said that the country is going "law crazy" and that the tendency of the government to regulate everything has reached a point where paternalism is the order of the day. Mr. Campbell has figured in many important telephone cases, representing Independent companies, and is influential in Democratic politics.

His warning against a multiplicity of laws and over-regulation agrees with the views of many other thoughtful men in both parties. He made it plain that he

did not refer to the prohibition question, however, and declared that all good citizens will obey a law whether they believe in it or not. Adherence to this principle would increase the belief that there are too many laws on the statute books.

In line with this idea, Mr. Campbell advocated a commission composed of competent representatives of all classes to determine what laws are necessary and what should be repealed. A novel suggestion that would maintain two bodies—one to make laws and one to kill them.

Mr. Campbell's wide experience with rate commissions naturally leads him to take the position that there is too much regulation. Less regulation, and decidedly less political influence in regulatory matters, are what is needed.

The Banks of the River—and Life

Contrary Influences Which Keep the Vocational Life of the Telephone Man in Its Course Are Similar to the River Banks—Paper Prepared for the Annual Convention of the Kansas Independent Telephone Association.

By E. L. Chase

Assistant to General Manager, Kansas City Long Distance Telephone Co.

The attorney, the auditor, a special engineer and the officials of a telephone company were gathered one day a few years ago before the state commission on an application to increase the rates at their exchange. Testimony had been taken regarding values, revenues and expenses and then the quality of the service rendered was opened up by an irate subscriber who made various and sundry accusations against the company's service and blamed it on the management.

It seems that this subscriber had long held a grudge against the local manager and had seized this opportunity to square the score. While he was speaking and venting his wrath against the telephone company, the local manager's thoughts flew back to the time shortly before when he had helped to round up voters one day who succeeded in killing an aggrandizing ordinance, the intent of which was to feather the pocket of this particular subscriber.

Being a conscientious telephone man, for a moment he almost wished that he had stayed out of this bit of politics and argued that probably a telephone man has no right to meddle in politics or public affairs in general. But then there came to him in almost the same breath the reassuring knowledge that he had done a bit of unselfish service to his community and strengthened, therefore, by the thought that he was right, and this being

an informal meeting, he asked to say a word.

In brief language he admitted that the service had not been what he would like to have had it, for war conditions had nullified his best efforts. He stated that he had made these facts known to many of his subscribers by advertising and that it was his frank opinion that they were not making a complaint against the service, realizing the handicap under which he had been working.

This statement was greeted with a hearty applause on the part of the other

public spirited and had conducted himself as a citizen interested in everything that had made his town a better town in which to live and to do business in, had his subscribers back of him.

This story brings up a question: To what extent should a telephone man take part in public affairs and activities other than those directly and irrevocably related to the telephone business?

It is more precisely of this question that I intend to talk, but it is one that I do not presume to have the wisdom to answer for you. My purpose is only to throw out certain suggestions which will aid you in answering it for yourself.

First of all, a telephone man is a man just about as wise, as good and as bad as other men. In the second place, the telephone man is a property holder in his community who votes and occupies just about as much space as other citizens; and in the third place, the telephone man is a citizen of the United States of America and probably is similar to other citizens in that at least once a year he thinks about his government when he receives his income tax statement, so if I discuss for a few minutes some of the ordinary phases of life I should be discussing something of interest to you.

Some of the aspects of life remind one of the banks of a river, for life has many influences that seem contrary; that limit



Then the Quality of Service Rendered Was Opened Up by an Irate Subscriber Who Made Various and Sundry Accusations.

25 subscribers who were listening at the hearing. This applause convinced the commission that this single complaint probably needed investigating, but that the question of service was not entering into the rate hearing. The manager, who had been

us on this side and that. Influences that encourage us here and discourage us there.

I sometimes like to think that the vocational life of a telephone man flows along like a river between two banks. Not that it is smooth and placid with no winds of worry to ruffle its surface; not that it has nothing to do but carry the cargoes of commerce and the barges of pleasure, or even that it floats the driftwood of idle gossip, but like a river the life of a telephone man is kept in its course by the banks on either side.

I wonder sometimes if the old stream doesn't grow tired of its banks, for whichever way it looks except straight ahead it sees these limiting impediments. I imagine that often it wearies of going in just one direction and yearns to veer off to the right or to the left. Occasionally these banks turn with it, but usually they meet it with a rebuff and it is turned back into its course, only to dash against the bank on the other side.

So it is that the telephone man who tries to change radically his direction or policy, often finds these ever-present banks that dash him back into his course again. Oh, sometimes, we run this way or that for awhile and describe large letter "S's" on the landscapes, but finally we perceive that these ever-present banks have been filling their one purpose, which is to keep us in our course, going straight down to the great sea of perfect public usefulness.

Rivers differ widely in their characteristics and some do not even terminate in the sea, but I have yet to find a river without banks. Occasionally a river gets to a place where it loses its banks, as is the case of "Lost River" down in the arid Southwest. The story is that this river flows out of the mountains with cool fresh water, down into the valley until it reaches a desert of parched sand and there, because it rebels against its banks, it spreads out in the dry, thirsty sand and is sucked up and lost, thus earning its name.

So, after all, these things that restrict us on one side or the other—that dash us back in our course when we attempt to stray off—are the very things that keep us, as a river, flowing steadily to the sea. So banks are not alone to be thought of as restrictions and as barriers, but as friendly guides that accompany us, or even go in advance to help us find the heavily-shaded spots with large beautiful trees that overhang to cool and rest us, or the huge cliffs that guard us from interruptions and dangers, so to speak.

After all, why should we be worried with the limitations of life, for all life has been filled with them. Steam flowing freely out of the spout of a teakettle is next to useless, but when you confine it and bind it within iron bands and bonds it becomes powerful to such an extent that it drives the great locomotives across our continent and keeps the wheels of

industry in action. Make it free and it is useless, give it the impediment of restricting banks and it becomes our faithful servant and powerful ally. Laws and conditions of restraint allow us to generate power.

Some good people have the wrong idea of freedom. They think that freedom



Like a River, the Life of a Telephone Man Is Kept in Its Course by the Banks on Either Side.

means the right to do anything at any time without regard to its effect upon others. They forget, or do not know, that the freest man is the man who has placed around himself the most limitations and the most restrictions. Freedom is only obtained by obedience to law. My freedom to swing a walking cane ends where your nose begins and only as I observe that fact am I really free.

Some think that King Solomon contradicted himself when they read these two verses from the Proverbs:

Answer not a fool according to his folly, lest thou be like him.

Answer a fool according to his folly, lest he be wise in his own conceit.

There is no contradiction in these to me. I see in them the banks of the river; on the one hand my conduct is to be so and so; on the other, the contrary. It all depends upon circumstances. So with the things that a telephone man should or should not do in connection with public affairs; in some cases he should not, and in others he should.

This same thought is emphasized when the Master of Men in speaking of charitable acts said, "Let not thy right hand know what thy left hand doeth." And then again with a different thought in mind he said, "Let your light so shine that men may see your good works, etc."

On the one hand we are to keep them so secret that not even the left hand knows what the right hand does; and on the other hand we are to advertise them even as a candle is set on a table that it may give light to all that are in the house. Contrary? No, for they are only meant for different cases. These are the banks on either side of the river that help to keep us in our course.

If the telephone man is a citizen and a taxpayer, certainly he has a right to dabble in politics if politics begin injuring

him or his company, for the man who has not enough backbone to fight for his own rights does not make a good citizen—and the good telephone man is always a good citizen. On the other hand, surely he has no business to dabble in partisan politics for the sake of politics. This is the other bank of the river.

The telephone man finds in his community men of every religious faith and of no religious faith. With some he disagrees, but as a servant of the public such disagreement must not affect his attitude toward them for as a public servant in his business relations he knows no sect or creed. Occasionally a question of right or wrong arises in the community. The community seems to be split in twain over some issue.

The telephone man thinks that here is a great truth that is being trampled on and he remembers the proverb, "Who for truth no sword uplifteth, he for error strikes a blow."

He realizes that many of his subscribers do not look at this question as he does, yet he feels that if he does not "come out in the open" on the question, he will be doing himself an injustice. Then in his more sober moments he realizes the wisdom of another proverb, "Truth needs no defense; it is its own defense." Here again the two banks of the river.

Occasionally we chafe under the restraining influences of the conventions of society. We feel that certain rules that have been followed in the telephone business for years are wrong. We, as other men, want to be original and see our plans carried out, but when we stop and think, we also see the other bank which tells us that these conventions of society, as a whole, give us the boiled-down wisdom of the past—and then we think long and hard before we take the initiative in changing them.

While it is certainly our job to keep our ear to the ground in an attempt to detect the trend of times, usually we find the best course lies in being conducted onward in our course by the banks of the river.

One group asserts that the telephone man should avoid activity in public affairs and should devote himself solely to the telephone art. Only in this way, they claim, can he avoid conflict with the varied interests he serves telephonically. They claim that as a public utility man he, at least theoretically, represents all the interests in the community and must not express an opinion or take sides on any public question.

Another group believes that being a public utility operator does not lessen the duties of manhood and citizenship, but rather imposes a greater responsibility to

active part in public affairs in helping to guarantee better cities and cleaner government.

This does not mean to them partisan or sectarian activities. They believe that the telephone man does not take sufficient interest in the question of government, being too prone to leave these things to be watched by his state and national associations.

Some telephone men are apt to conceive their business as a means of accumulating dollars only. They say "what else are we working for!" Every question arising must be answered for them in terms of how much money will result. Their one controlling thought is the almighty dollar. Their favorite expression, "Business is Business."

Others conceive of their business as providing them an opportunity to serve humanity. They assert that to the extent that this becomes the controlling ideal, the business will be a success. Fair play and unselfish service to the community are basic with them, for often they subordinate profits to these things.

I wonder if the two banks of the river are not here shown again and if our best course does not lie between them like the course of the river? What part of each attitude should we take? Does it not depend upon circumstances?

Can any formula I might invent guide you? I think not, for there is no known substitute for plain wisdom, insight, tact, common sense, and the power that comes from the knowledge that you are doing what is right.

In a discussion of what the telephone man should get into or stay out of, we should not forget that in some cases it is impossible to be neutral. We either resolve to do or, by default, resolve not to do.

Aesop, the fabulist, feigned that two frogs consulted together in time of drought what was to be done. The one proposed going down into a deep well because probably the water would not fail there, but the other said, "If it should fail there, too, how shall we get up again?" Then Bacon came along and philosophized on this as follows: "Not to resolve is to resolve; so that irresolution frequently entangles us in necessity more than resolution."

Many men believe that community service is the price they pay for the space they occupy here on earth; and they cannot be happy if the only aim were an accumulation of material things, because to them there is something deeper in life—"a sure and sensitive taste which loves right and shrinks from wrong, which feels instinctively that life's spiritual values, its purities and fidelities and truths are too fine to be profaned."

So, often I like to think that the vocational life of a telephone man flows along like a river between two banks.

ANYWAY, DON'T BE A BLANK CARD.

By Miss Anne Barnes

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

There's a whole lot of people who like us,
And a whole lot of people who don't;
There's a whole lot of people who learn to,
And a whole lot of people who won't.

Instead of fretting about the people who don't and won't like us, we should be making ourselves more worthy for the people who do like us.

How true is the old saying: "A bird in the hand is worth two in the bush." The thing to avoid is losing the esteem of those who do like us. People learn to like us because of our positive qualities, not because of our negative qualities. Generally, the people who do not like us do not understand us; or possibly we have displayed to them some negative quality.

Some people have become prejudiced against us because the seed of distrust has been sown in their minds by another, actuated by jealousy, or a lack of understanding. However, normal people ordinarily draw their own conclusions—which, of course, are based on the results we attain in our work.

The company at Four Corners had always given a very personal service to its patrons. In the course of time, it became impossible to give this very personal service satisfactorily, although the manager still insisted that it should be given. As it had become a custom, he could not see how it could be discontinued.

The patrons grudgingly accepted the service and were frequently unpleasant to the operators who, as they expressed it, "worked their heads off"; but the patrons did not realize how much busier the board was than in former years.

Most of the operators on the force were operators old in the service. As time went on, these operators came to believe that they were underpaid and overworked. The fact was that they were paid enough for the kind of service the public was getting, but they were underpaid according to the amount of work they were inefficiently trying to do. The board of directors, which comprised wide-awake men, realized that a change must be made in the service.

About this time, the manager resigned to enter business for himself. A new manager, a woman, was hired. She was very much alive and had always kept abreast of the times. Some of her old patrons at Crescent could relate stories about the very personal service they *used* to get.

"Annie, how are eggs selling at the grocery? Find out and call me."

"Annie, I want to take a nap. Take any message and call me when I wake up."

"Annie, we are planning to go over to Hocum Sunday. Find out how the roads are and call me."

"You say Johnnie is calling and wants me to pay for the message? Well, I will if he wants to talk to me about his laundry; otherwise, you tell him he must wait 'til he comes home."

No, only the old timers at Crescent could tell these stories. But this was the kind of service the Four Corners Telephone Co. was giving when Miss Justus took over the managership. Before she had been there 24 hours, she saw that all this company lacked was system. Then, she set about putting her house in order. Of course, trouble started immediately.

"Do without the time of day; call by number, and a hundred other new-fangled ideas. Well I guess not." These were some of the daily positive statements of the subscribers.

A newspaper woman, who has long since learned to like this manager and her new-fangled methods, told me that she had been the hardest customer the manager had to deal with. She said she had ridiculed the new methods through the press and to people in person.

During all those trying months, this manager stood firm. She wanted to give a service which was uniformly good 24 hours a day—she did.

This newspaper woman has become one of the staunchest friends and one of the best boosters the telephone company has. So,

Here's to the people who like us,
And here's to the people who don't;
And here's to the people who learn to,
And here's to the people who won't.

I. C. C. Accounting Requirements

Statement Made to Directors of United States Independent Telephone Association by President MacKinnon Regarding Accounting Requirements of Interstate Commerce Commission for B, C and D Class Companies

The question of what modifications should be made by the Interstate Commerce Commission in its requirements as to accounting from Class B, C and D telephone companies being under discussion by the board of directors of the United States Independent Telephone Association, at a meeting of the board held in Washington, D. C., April 30, 1923, President F. B. MacKinnon, of the association, submitted the following statement:

"For some time it has been evident that the regulations of the Interstate Commerce Commission as to accounting and reporting requirements from Class C and D and perhaps Class B telephone companies, should be modified. The question has been put squarely up to the association since the issuance of Interstate Commerce Commission Order No. 14700, requiring further reports and accounting detail of Class A, B and C companies in connection with the proposed depreciation procedure.

Many members of the association in the past few years have expressed themselves as believing that Class C and D companies should be relieved entirely from the Interstate Commerce Commission accounting requirements; that in view of the accounting systems prescribed by the various state commissions, it is unnecessary, in the interest of regulation, for these companies to be required also to make reports to the Interstate Commerce Commission and keep their accounts as prescribed by that commission.

It is therefore apparent that this association, through its board of directors, should take some positive stand and action looking to a proper solution of this, which must be regarded as a serious problem.

In view of the fact that numbers of the companies and some of the state associations have expressed a view that the Interstate Commerce Commission should have no jurisdiction over anything but the toll line operations of telephone companies, and have also expressed a view that the present procedure is based upon the Interstate Commerce Commission's desire to extend its jurisdiction and control over telephone operations, it is highly desirable that at this time a clear statement of the history of the Interstate Commerce Commission's control over telephone companies should be set forth.

In June, 1910, an amendment to the interstate commerce act went into effect which provided that the provisions of the interstate commerce act should apply to 'telegraph, telephone and cable companies,

(whether wire or wireless) engaged in sending messages from one state, territory, or district of the United States, to any other state, territory, or district of the United States, or to any foreign country, who shall be considered and held to be common carriers, in the meaning and purpose of this act, provided, however, that the provisions of the act shall not apply

AGITATE AT THE POLLS.

If we would have government continued, we must respect and hold up the hands of our public officials. Let us agitate at the polls, but after the election it is our duty to hold up the hands of those elected.—John D. Rockefeller, Jr.

to the transmission of messages by telegraph and telephone companies wholly within one state, and in transmission to or from a foreign country from or to any state or territory.'

On December 1, 1910, the Interstate Commerce Commission held a conference with representatives of the telegraph and telephone companies upon the jurisdiction of the commission over telephone and telegraph companies under the interstate commerce act, as amended. On March 13, 1911, the Interstate Commerce Commission issued its order, which has been known as "Conference Ruling 305," which stated the commission's interpretation of the act as being that if a telephone company whose line was wholly within a single state participated in the continuous transmission of a message from a point on its line to a point on a line of some other company in another state, by that participation it engaged in interstate commerce, and was under the jurisdiction of the Interstate Commerce Commission.

The commission, therefore, held that companies so participating in the transmission of messages must conform to the provisions of Section 1 of the act to regulate commerce as it then existed, requiring all rates and charges to be reasonable and just, etc., and that Section 3 of the act, forbidding discrimination, applied to telephone companies; also Section 15 of the act and Section 20 of the act, which gave the commission authority to require carriers subject to its jurisdiction, to keep accounts and make reports.

Section 20 authorizes the commission to require annual reports from all carriers

subject to the act, and the commission may, in its discretion, prescribe the forms of any and all accounts, records and memoranda, to be kept by the carriers.

In February, 1920, Congress further amended the interstate commerce act, and by these amendments it defined the carriers subject to the act and the definition of transmission of intelligence by wire or wireless was made clear, and in addition added to Section 20 the depreciation section which is now under discussion under Interstate Commerce Commission Order No. 14700.

On January 1, 1913, there took effect the uniform system of accounts for Class A and B telephone companies, and on January 1, 1915, the uniform system of accounts for Class C telephone companies. No system of accounts has been adopted for Class D companies. Class A telephone companies were first required to make annual reports for the year 1914; Class B for the year 1915, and Class C for the year 1916. Class D companies have been asked since 1916 to file annually a brief form of report showing the extent of operations of the company, so as to enable the commission to properly classify them.

I am informed that the commission's authority to require companies to report to it on interstate business and the authority of the commission to prescribe the system of accounts covering the intrastate as well as the interstate business of the companies, is based upon a decision of the Supreme Court of the United States, handed down April 1, 1912, in the case of Interstate Commerce Commission vs. the Goodrich Transit Co., which company had filed bills to enjoin the enforcement of orders of the Interstate Commerce Commission requiring the company to report both intrastate and interstate business to the commission and to keep its accounts in compliance with Interstate Commerce Commission orders.

In this decision the supreme court says: 'Congress in Section 20 has authorized the commission to inquire as to the business the carrier does and to require the keeping of uniform accounts, in order that the commission may know just how the business is carried on, with a view to regulating that which is confessedly within its power' and 'bookkeeping, it is said, is not interstate commerce.

'True, it is not. But bookkeeping may and ought to show how the business which, in part at least, is interstate commerce, is carried on, in order that the commis-

sion, charged with the duty of making reasonable rates and prohibiting unfair and unreasonable ones, may know the nature and extent of the business of the corporation, the cost of its interstate transactions and otherwise to inform itself so as to enable it to properly regulate the matters which are within its authority. We think the uniform system of accounts prescribed and the reports called for, are such as it is within the power of the commission to require under Section 20 of the act. Nor do the requirements exceed the constitutional authority of Congress to pass such a law.'

The question apparently is not one as to the authority of the commission to require reports and prescribe accounting systems, if it considers that such reports and the keeping of such accounts by telephone companies are necessary in order to enable the commission to properly exercise its jurisdiction over the interstate business of those companies.

The question, therefore, before us today is not a legal one, but a practical one, and is: Is it necessary in view of regulations and conditions today, for the Interstate Commerce Commission to require all classes of telephone companies to comply with its prescribed system of accounts and to make annual reports to it?

I think it will be conceded that Class A telephone companies, on account of the volume of both interstate and intrastate business done by them, should have accounting regulations prescribed for them by the commission and be required to make annual reports to the commission, but on account of the extension of state commission control built up in part by virtue of the accounting system promulgated by the Interstate Commerce Commission, it seems that the point has been reached in the telephone industry where that state control, if it includes accounting and report requirements, is sufficient to enable the companies to properly explain their transactions to the public and public authorities, and to enable all companies to function coöperatively with the industry as a whole, and that the Interstate Commerce Commission, exercising the discretion allowed it by the act to regulate commerce, should relieve B, C and D class companies from its accounting and report requirements where those companies are required by a state commission to make reports to that state commission and keep their accounts under a prescribed system.

It seems to me, therefore, that this association, through its board of directors, should formally express to the Interstate Commerce Commission its opinion and desire, on behalf of its members, that the commission should enter an order relieving the B, C and D class companies from its accounting and report requirements.

The association, speaking for its members, can in all propriety, make this recom-

mendation, because the association was mainly responsible for the enactment of the legislation by Congress in 1910, which placed the interstate business of the telephone companies under the jurisdiction of the Interstate Commerce Commission, and the association, through its officers, participated in the conference in December, 1910, and presented the view of the association that the commission, by the law, was granted authority to exercise jurisdiction over all telephone companies participating in the transmission of an interstate message, and the association from time to time has coöperated with the commission in the preparation and enforcement of accounting and report orders.

At the time of the enactment of the amendment of 1910 it should be remembered that competition between the Independent group and the Bell group was at its height. The Independent group was organizing and planning to put into operation a nation-wide toll system.

Opinion had crystallized among the leaders of the Independent group that by the enactment of legislation looking to federal

GO AFTER WHAT YOU WANT

When a young man tells me that modern industry is a machine and that there is no way for a man to find himself and express himself fully, I agree. As far as the average is concerned, there is no way to judge whether one job wouldn't be better for him than the next. That, however, is the point where the unusual differs from the average.

No man who has the spark of power within him waits for an organization to shift him from place to place until he is satisfied. He goes after what he wants and cuts the way before him.—General W. W. Atterbury, vice-president, Pennsylvania Railroad Co.

control by the Interstate Commerce Commission over the interstate toll business a further restriction over the operations of the Bell group could be obtained; and, in the minds of the Independent leaders, fairer treatment be obtained for the Independent companies from that Bell group and protection of the Independent interstate toll lines guaranteed.

In this belief, the association asked for the legislation which resulted in the amendment of the interstate commerce act of 1910. Examination of the resolutions adopted by the national association and the discussions at the annual conventions of that organization in the years preceding 1910, and immediately subsequent to that date, discloses the fact that during those years the association looked to the Interstate Commerce Commission as its means of security against unfair practices by its competitor.

Conditions in the telephone industry have

greatly changed, as they have also in the matter of regulation of the industry by state authorities. Since 1910 state after state has established a commission having control over telephone business in that state, and we now have a fairly comprehensive system of regulation through state commissions and the Interstate Commerce Commission.

In the 13 years that have elapsed since the enactment of the amendment of 1910 to the interstate commerce act, the Interstate Commerce Commission has held but three hearings on telephone matters and three on telegraph matters. The three telephone hearings are: No. 3596 of April 3, 1911, in connection with the rates to be charged by the Chesapeake & Potomac Telephone Co. to subscribers of its District of Columbia exchanges living outside of the District; No. 5464, decided June 18, 1913, being a complaint against local commercial telephone service in Pittsburgh, Pa., which complaint, the commission after a hearing, dismissed through lack of jurisdiction; and No. 8345, complaint against the New York Telephone Co. on account of toll rates to New Hampshire. This case was decided June, 1916.

For seven years, therefore, the commission has not had a formal telephone case before it. This should not be taken to mean that the commission has not had hundreds of informal complaints against telephone companies submitted to it. Hundreds of companies are so located that part of their property and, therefore, part of their subscribers are in a state other than that in which is located the switchboard to which those subscribers are directly connected, and, therefore, these hundreds of companies are actually engaged every day in interstate business and the Interstate Commerce Commission is the only regulatory body with whom complaints can be filed against these companies or by these companies on matters concerning interstate traffic.

Thousands of toll lines cross state lines. The interstate rates on those lines can only be controlled by the Interstate Commerce Commission. Therefore, it should not be argued that, because so few formal complaints have been filed with the commission, there is no necessity for the Interstate Commerce Commission jurisdiction over interstate business of telephone companies.

The fact that there have been so few formal cases should be pointed to rather as an evidence of the efficient way in which the commission has functioned in handling complaints of these companies and between them, so that those matters have been satisfactorily arranged without formal procedure. The telephone companies are to be commended because they have allowed so few cases to come to formal hearings and have co-operated with the commission in making satisfactory settlements with complaining subscribers.

To modify the law so that these hundreds of companies just described, whose property lies in two states, shall not be under the jurisdiction of the Interstate Commerce Commission, will work a very great hardship to those companies and to the public. How the companies operating only exchanges can be taken out from the jurisdiction of the commission without occasioning very great disturbance over the rate situation of those that we call 'state line' companies, is hard to understand.

It is, therefore, my opinion that this association, which in the first place requested Congress to give the Interstate Commerce Commission authority over the interstate business of telephone companies, and for years viewed that control as essential and desirable, should now formally state to the commission its opinion that the telephone industry will function effectively, if the commission, exercising the discretion granted it by Congress, shall release the Class B, C and D companies from Interstate Commerce Commission accounting and report requirements, providing a report is required of those companies in those states where state commission accounting and report requirements are in force, so that there may be available to the Interstate Commerce Commission information as to the complete operation of any telephone company."

At a subsequent meeting of the board of directors held in Washington, D. C., May 2, 1923, the board voted that the officers be instructed to present to the Interstate Commerce Commission the opinion of the board that Class B, C and D telephone companies should be relieved from Interstate Commerce Commission accounting requirements in all states where a state regulatory body requires accounting and reports from those companies, and that in the opinion of the board the classification of telephone companies by the Interstate Commerce Commission should be changed so that the dividing line between D and C class companies should be \$25,000 annual operating revenues instead of \$10,000 operating revenues, as at present.

In accordance with these instructions, the following letter was sent to the Interstate Commerce Commission:

"Washington, D. C., May 9, 1923.

INTERSTATE COMMERCE COMMISSION,

Washington, D. C.

Sirs:

At a meeting of the board of directors of the United States Independent Telephone Association held in Washington, D. C., on May 2, 1923, the officers were instructed by the board to present to the Interstate Commerce Commission the conclusions of the board as to changes in the Interstate Commerce Commission's accounting and report requirements from

Class B, C and D telephone companies. These conclusions, to which the association requests consideration be given by the commission, are:

First: That in those states where telephone companies are required by the state regulatory body to keep their accounts in compliance with a system of accounts similar to that prescribed by the Interstate Commerce Commission and to make to that state regulatory body annual and special reports similar to those required by the Interstate Commerce Commission,

MAKING USE OF TROUBLE.

Every trouble is an opportunity to win the grace of strength. A trouble is a moral and spiritual task. It is something which is hard to do. Strength is increased by encounter with the difficult. Every day we are blessed with new opportunities for the development of strength of soul.—George Hodges.

that the Interstate Commerce Commission should relieve the Class B, C and D telephone companies from making reports direct to the Interstate Commerce Commission and from complying with the Interstate Commerce Commission's system of accounts.

Second: That the classification of telephone companies by the Interstate Commerce Commission be modified so that Class C companies shall be those that have average annual operating revenues exceeding \$25,000, but not more than \$50,000, and Class D companies shall be those having average annual operating revenues of \$25,000 or less.

It has been evident for some time that the modifications suggested by the board of directors are desirable from the standpoint of the industry in that it will relieve the smaller telephone companies from the necessity of making reports both to the Interstate Commerce Commission and state regulatory bodies, and by the change in classification will greatly relieve many of the smaller companies that are now classified as Class C companies.

The first proposition carries with it the expectation that the Interstate Commerce Commission will continue to require the making of reports direct to the Interstate Commerce Commission and compliance with the commission's system of accounts from companies operating in all states where the state regulatory body has no authority to prescribe a system of accounts for telephone companies or to require reports from those companies. Thus by the proposed procedure complete data as to the operation of all telephone companies will always be available to the commission either in the commission's own files or in the files of the state commissions.

In the opinion of the directors of this association conditions in the telephone

industry are such that the proposed changes should be adopted in the interest of both the telephone companies and the interstate and state regulatory bodies.

Respectfully submitted,

UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION,

F. B. MacKINNON, President."

Indiana Company Making Central Office and Plant Extensions.

Extensive improvements involving an expenditure of approximately \$30,000 will be made this year by the Connersville Telephone Co., Connersville, Ind., according to an announcement by L. A. Frazee, president of the company. The work, which was started some time ago, includes additions to and alterations in the office building, increases in the switchboard equipment and extensions of the underground cable system.

Approximately \$15,000 will be expended in increasing the local and toll switchboard equipment, it was stated. About \$6,000 will go to constructing an addition to the building and increasing the office accommodations. The remainder of the expenditures will be for the underground cable system.

Illinois Bell Begins Part of Extension Program in Moline.

Improvements costing about \$100,000 and providing for ten years' growth were started in Moline, Ill., a few weeks ago by the Illinois Bell Telephone Co.

Increased demand for telephones has necessitated the placing of new panels in the Moline switchboard and the laying of a new 1800-wire cable from the main office.

A few years ago Moline had 1,000 stations, but the number is now near the 6,000 mark.

Preparatory to the improvement work, switchboard facilities in the local office have been increased. Improvements, costing approximately \$15,000 and requiring three months for completion, have been made.

Eight Oregon Companies Have \$10,000 to \$50,000 Revenues.

There are eight telephone companies in Oregon having operating revenues of more than \$10,000 and less than \$50,000.

They include the Hillsboro Telephone Co., of Hillsboro; Independent Telephone Co., Interurban Telephone Co. of Silverton; Klamath Falls Telegraph & Telephone Co.; Lebanon Mutual Telephone Co. of Lebanon; Malheur Home Telephone Co., of Ontario; McMinnville Local & Long Distance Telephone Co., of McMinnville; Multnomah & Clackamas Co., Mutual Telephone Co., of Gresham; Western Oregon Telephone & Telegraph Co., of Forest Grove, and the Willamette Telephone Co., of Dallas.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

Lucious berries, ripe and red,
Picked at morn from dewy bed,
Served alone or in a cake
Just like mother used to make,
Flooded o'er with golden cream
How of't we get them—in a dream.

How much of the old-time enjoyment of a good old-fashioned home-made shortcake was due to the berries themselves, or to the way they were served, due allowance being made for youthful appetites? Berries are berries now as then, but it makes a vast difference whether they have been picked for days and confined to tight boxes with all the big ones on top shutting off the air, or whether they are fresh picked when just ripe.

The foundation works of the shortcake also depends for taste on whether it is made by mother in the old kitchen back home with real butter, fresh eggs and Jersey cream, or whether it is made of skim milk, butter substitutes and once eggs. The latter leave a taste that reminds one of sawdust. There are all kinds of shortcakes, but only one good kind—and there are all degrees of fitness of berries with only one just right condition.

What is the difference? Service! It's in the service. The right materials are essential to start with, but it's the service that counts a large percentage in the aggregate of satisfaction resulting.

A telephone may be of the best, the lines in perfect order and the transmission all one could hope for, but without quick, courteous service on the part of the operator, all else fails to fill the bill.

Imagine mother serving the kids a nice luscious shortcake, all dripping with richness, with a frown on her face or a snarl

You must be able to get connections quickly and have the transaction handled in a pleasant manner, or else all is spoiled or its value greatly reduced. When the lines are to blame, the operator can help a lot by being pleasant and prompt in answering.

A long-delayed answer from Central, given in a drawling, careless manner, leads one to surmise that the operator is not efficient nor painstaking.

A sharp, nervous imperious way of answering is also to be condemned as it does not soothe or help. If often—most generally does—"rile" the calling party a little, especially if the service has not been prompt. You not only wish to enjoy the eating of your shortcake, but you wish to enjoy the digestive period afterwards.

Service which leaves a pain is not pleasant service, or profitable to either the serving or the served. Much can be made up for the shortcomings of poor equipment if there is a smile and a conviction of a willingness to serve in the tone of voice. The answer to willingness to serve is made in prompt responses.

Service over the lines is not the only avenue by which one can travel into the open spaces of popular favor and esteem. Service is also the prompt repairing of lines that are out of order, of prompt installations of instruments, of prompt rendering of adequately itemized service bills, of courteous treatment of complaints, of cooperation of the plant men in moving poles on highway jobs or for public improvements.

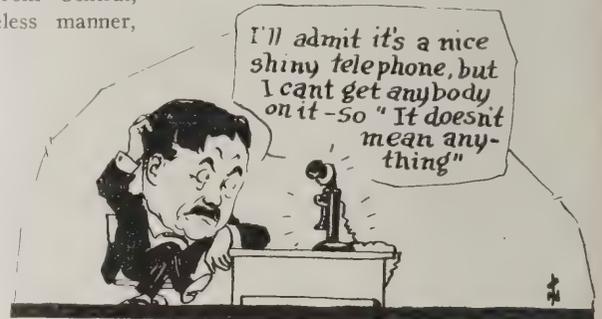
All have their influence in no small measure in helping to flavor the cake of good will.

On another angle must we be careful—and that is to so manage our plants that all the hungry stockholders will not have reason to kick at the annual banquet of dividends because there is no piece of shortcake for them, or because it is too small to more than whet the appetite for something more substantial but does not satisfy it.

Those operators or linemen, or plant men or other operatives or executives, who smile and hustle about only when they think superiors are taking notice of how

they are doing their work, are putting all the biggest and nicest berries on top of the box.

But down underneath the fine show of the moment, you must make up your mind that you will find a quantity of small, un-



Without Quick, Courteous Service by the Operator, All Else Fails to Fill the Bill.

ripe, weakened, sour little fruit which will disappoint you.

Some people are letting the service fix the price while others are letting the price determine the service. Give the service and get the price.

APHORISM: A good grade holds the trade.

District Meetings of the Minnesota Association for June.

The month of June has been set aside by the Minnesota Telephone Association for district meetings in the southern part of the state. It is expected that those in the northern part will be held during the latter part of July. The places and dates of the June meetings are:

Zumbrota, Tuesday, June 12; Spring Valley, Wednesday, the 13th; Waseca, Thursday, the 14th, and Blue Earth, Friday, the 15th.

Hutchinson, Monday, June 18; Granite Falls, Tuesday, the 19th; Tracy, Wednesday, the 20th; Worthington, Thursday, the 21st, and New Ulm, Friday, the 22nd.

The meetings will start promptly at 10 a. m. and adjourn at 4 p. m. There will be a talk on "What Can Be Accomplished by Coöperation," by Secretary J. C. Crowley, Jr., and "Some Suggestions to the Officers and Managers of Telephone Companies" will be offered by J. W. Howatt, supervisor of telephones for the Minnesota Railroad and Warehouse Commission.

Plant construction and maintenance, transmission losses, accounting, and such other questions as may be brought before the meeting by those attending will be thoroughly discussed.



Service on the Telephone, to Be Valuable or Desirable, Must Be Prompt and Efficient.

in her voice. It can't be done! It was the service we remember; we do not remember anything at all about the cost.

Service on the telephone to be valuable or desirable must be prompt and efficient.

The operators—and this means both local and long distance—will have a part in the proceedings. There will be talks on traffic, schools of instruction, and an opportunity to meet other operators with whom they have frequent intercourse but have never met.

Mr. Crowley wants the member companies to call the officers of their rural connecting companies and advise them to attend one of the meetings—as it will be of profit to both companies. He also wishes them to invite neighboring managers who are not members to attend.

Negotiating for Bell Purchase of Louisville, Ky., Company.

Action, looking to the merger of the Central Home Telephone & Telegraph Co., of Louisville, Ky., with the Cumberland Telephone & Telegraph Co., was taken in the offices of Mayor Huston Quin May 31, at the first of a series of executive conferences between representatives of the two companies and representatives of certain civic organizations.

Rates that would be required by the unification was the main subject of discussion.

No conclusion of any kind was reached in this regard, the mayor said in a statement issued afterward, but it was finally determined that the engineers of the two companies should meet with George W. Hubley, public utilities engineer for the city, to ascertain basic facts. The next conference of company and city representatives will await the report of the engineers.

The mayor said that higher rates must be expected for unified service. A merger would extend a broader service to the subscriber, he pointed out, and operating expenses because of the extension would be greater.

In issuing the call for the meeting, Mayor Quin gave out a statement which explains the result of negotiations started several weeks ago. He said in part:

"Negotiations looking to the unification of telephone service in the city of Louisville are in this condition:

"We approached each of the companies separately and stated that it is our purpose to bring about a single telephone service and asked that a conference be had between representatives of both companies for a full preliminary discussion of the subject.

"Neither company had any hand whatever in initiating the movement, and each company seemed to be content with the present status. Under these circumstances, however, and at our earnest solicitation, a joint conference of representatives of both companies was held, at which there was a full and frank discussion of all the phases of the subject.

"It developed that there were many difficulties in the way of accomplishing the

desired result, among them the fact that the Home company owns or controls a number of companies operating in other towns of the state and southern Indiana, together with long distance lines connecting them with Louisville, and the Home company declined to enter upon the negotiations unless its outside holdings were also involved.

"The up-shot, however, was that the Cumberland company refused to consider the purchase of the stocks and bonds of the Home company, or any other company, but expressed a willingness to consider the purchase of all the physical property of the company in Louisville, and also all the physical property of all other companies in the state and southern Indiana, which the Home company owns or in which it is interested, and the Home company upon its part expressed a willingness to sell all such physical property.

"Thereupon the Home undertook to make an inventory of all physical property involved, which it did, and submitted the inventory to the Cumberland. After some weeks of consideration of the inventory by the Cumberland, representatives of both companies came together for the purpose of undertaking to agree upon terms, and they are now engaged in this work.

"If and when the two companies agree upon the terms of purchase and sale, it will become necessary for the city of Louisville to reach an agreement with the proposed purchaser regarding rates and many other matters necessary to safeguard the interests of the citizens."

Appearing in the interests of the companies were: P. S. Pogue, president of the Home company; Hunt Chipley, general counsel; F. L. Woodruff, general manager; F. H. Reid, vice-president, and L. K. Webb, manager, all of the Cumberland company.

Besides representatives of the companies and the city, there were present at the meeting representatives of the Louisville Board of Trade, the Round Table, and the Business Men's Advisory Committee, all of whom are showing great interest in bringing about the merger of the two telephone systems.

Telephone Activities of California Commission During May.

The telephone department of the California Railroad Commission received 266 informal complaints, of which 178 were decided in favor of the complainants, during the month of May, according to a progress report filed June 1 with the commission.

The department returned decisions in 11 formal proceedings and had 18 formal proceedings pending at the close of the month.

The more important investigations now being carried on by the telephone division of the commission are:

Southern California Telephone Co., Los Angeles; delayed installations, plans for improvement of service.

Southwestern Home Telephone Co.; establishment of toll stations at Perris and Wild Omar; establishment of exchange service at Murrietta; service installations at Perris; service complaints at Elsinore.

Pacific Telephone & Telegraph Co.; delayed installations, San Francisco, Oakland, Berkeley and Alameda; transmission, Los Angeles to Burbank; service investigation at Montebello.

Huntington Beach Telephone Co., Huntington Beach; valuation of properties.

During the month engineers of the telephone division appeared before the following organizations and discussed telephone matters of local interest: Chamber of Commerce of El Monte; city council of San Leandro; Chamber of Commerce of Glendale; subscribers of Southwestern Home Telephone Co., at Elsinore.

Complaint having been made that certain residents of the tract known as Broadmoor were unable to obtain service from the Pacific Telephone & Telegraph Co., an investigation of the matter by the commission disclosed the fact that these services were being withheld on account of proposed reconstruction work by the company.

At present the public utility lines are located in the rear of the lots in this district and are not allowed on the streets. The company was desirous, during reconstruction, of re-locating their circuits on the streets.

Upon invitation of the city council of San Leandro, Engineers Dodge, Fry and McCaffrey of the telephone and telegraph divisions of the commission, and representatives of the public utility corporations held a conference on the proposed relocation of these lines. The commission's engineers pointed out the methods of rendering service, both from lines located in the rear of the lots, and from lines located on the streets, and the advantages of each, but left it to the city officials to decide which method they should adopt.

The engineers advised the city officials that as soon as they—the city officials—would inform the commission regarding their action in granting or denying the permission requested by the power and telephone companies to construct their lines on the streets, the commission would take steps to see that the service requested by the applicants in this district would be furnished.

In conformity with this instruction the commission has been advised by the city of San Leandro that permission has been denied to the utilities for the construction of their lines along the streets.

The commission is now starting an investigation to ascertain why the telephone service requested by Broadmoor residents should not be furnished immediately.

What Is Your Company Doing?

Chats About Company Doings,

By Stanley R. Edwards.

For the purpose of encouraging a more liberal use of its long distance service in the buying and selling of commodities, the Louisville Home Telephone Co., Louisville, Ky., compiled a telephone business list of merchants and professional men of Louisville, Ky., and New Albany, Ind.

This list is sent to the business and professional men in the 50 towns in Kentucky where the Independent company operates exchanges. At the same time that the pamphlet was sent out a letter was mailed to the various jobbers and manufacturers in Louisville who are subscribers to the company's service. This letter read:

We believe you will be interested to know that we are circulating among the Merchants and Buying Public in some 50 towns in the State of Kentucky, where the Independent company operates exchanges, a classified Home Telephone Business List. This publication contains a list of merchants and professional men of the City of Louisville, Ky., and New Albany, Ind., that may be reached over our Long Distance toll lines.

This is done to divert trade to Louisville where we believe it rightfully belongs and where the market is complete in every detail, covering all requirements of the consumer.

You may anticipate and will most likely receive long distance calls from new trade, as well as from old customers, due to this publicity. Orders coming through such channels will in all probability call for prompt action.

This avenue of sales production through the use of the Home Long Distance Service affords a great saving of time. Thus we feel sure that you will agree that the idea is worth while and we ask your cooperation in this evident mutually advantageous plan.

In the event you have occasion to call any of your customers over Long Distance, we trust that we may have the opportunity of serving you as we connect with numerous important points not only in the State of Kentucky but the City of Indianapolis and many other cities and towns in the State of Indiana.

With assurance that we are always at your service and soliciting your Long Distance patronage, we are,

Yours truly,

THE LOUISVILLE HOME TELEPHONE
COMPANY.

W. B. FISHER, Secretary.

Included with the letters was a printed slip addressed to subscribers which said:

"We will take pleasure in sending a copy of this classified reference guide of Home Telephone users to any of your customers on request, provided the customers are located at points reached over our toll lines. At the same time we will, if desired, make mention that the publication is sent on the request of the subscriber so ordering."

A line at the bottom of the slip suggests: "Try a sales campaign over the Home Long Distance toll lines."

"While this list has not been tried out sufficiently to prove its effectiveness," says W. B. Fisher, secretary of the Home Telephone Co., in a recent letter, "at the same time we have had some very favorable comments from merchants who welcome this method of encouraging the use of the toll lines, which unquestionably is more economical than the travelling method in many instances."

The use of the long distance telephone in business transactions is now most common and during the past few years of high travelling expenses business concerns, in various parts of the country, have come to use it quite extensively for the solicitation of orders. Thus this list for the use of both sellers and buyers in the market territory of Louisville is not only a great convenience to them but it also should be the means of directing an increasing amount of business to the long distance system of the Home company.

"I am rather fond of the enclosed 'dailygrams', and thought you, too, might like them," writes Manta J. Elder, chief operator of the Kansas Telephone Co., Ottawa, Kans.

"This idea did not originate in our office. Another office sent us a list of these little sayings. We posted them on our restroom bulletin board, and our operators enjoyed them so much and were so interested that we offered prizes for the three best ones written by our girls.

The enclosed are copies of the three prize winners; also two other articles which, although not in dailygram form, we considered very good.

Dailygrams.

First prize, Mildred Bryant, Local and Toll Operator, Ottawa, Kans.

This morning it is my duty to plant flower seeds in my garden.

My garden is my switchboard.

My seeds are words of kindness and cheer, that I sow in each small row.

My garden is being nourished by showers of Gladtone and Sweetone.

My seeds are growing.

It is my duty to properly nourish them.

I know the flowers will be beautiful because I have sown good seeds.

Horrors! My flowers are up and growing, but so are the weeds;

Their names are Grouchtone, Sarcastictone and Worriedtone.

How shall I get rid of them?

Somehow the seeds of Bluetone, Hurriedtone and Carelesstone have been planted.

I shall employ my Sweetone and do away with them, for there must be no weeds.

Joy of joys! My flowers are beginning to bloom.

They are going to be beautiful.

It is good to know that they are result of my labors—the reflection of my daily care,

For these lovely flowers are the voices of my people.

They are all of different colors and kinds, but each one is as beautiful as the other.

Among them are Sunnystone, Patientone, Politetone, Truthstone, and Gladstone.

Even when the bloom is gone, my flowers will still be there to bloom thicker and better each time.

For my seeds of Goodwill will be multiplied.

* * * *

Second Prize, Naomi Dutro, Toll Supervisor, Ottawa, Kans.

Today we are Tourists;

Our subscribers shall choose our trails.

Our tickets shall be our maps,

Our routing our guide.

For N. C. and B. Y. we will have to slacken our speed.

Detour, O. D. circuit, caused the delay.

Indifference and Sarcasm you meet once in awhile,

But it is surprising if you smile the friendliness to meet along the way.

* * * *

Third Prize, Grace Haas, Local and Toll Operator, Ottawa, Kans.

Today I am a Gardener,
Every light on my board is a weed in my garden.

I must hurry and destroy these weeds or they will destroy my beautiful flowers.

Every light that I answer is a weed destroyed.

Every wrong phrase that I use, or wrong number I ring, is a flower destroyed, and a weed added to my garden.

I must be more careful.

* * * *

Spirits of Phone Land.

By Minnie Clark O'Rourke, Local Operator, Ottawa, Kans.

As I sit at my position, while the world goes rushing by,

I imagine that the elfins of some magic land are nigh.

Each bulb within my vision seems a globe alive with fire.

Revealing with its flashing a spirit of the wire.

There's the elf who talks for Mother to a distant, loving son;

There's the one who tells with sorrow of a dear friend who is gone;

Another flash—a merry little sprite in elfin glee,

Tells chummie of a party, and a most transcendent "He"!

Another flash, and Johnnie, a roguish elfin blade,

Wants a "date" with me! Consider—and I, a "Central" maid!

So the flashes keep on coming, every one a living thing,
To tell of joys, and sorrows, of love and suffering,
Of business, war and weddings, of accidents and crimes—
In fact, these elfin messengers are Spirits of the Times,
And without our telephonic help their efforts would be lost.

* * * *

A Plug.

By Mildred Bryant, Local and Toll Operator, Ottawa, Kans.

I am a very small article in the big scheme of things, but I play a very large part, nevertheless.

I am the connecting link between every kind and phase of life.

I carry messages of hope, cheer and comfort, also sorrow and death.

I am very unhappy when I carry sorrowful messages, but I thrill with joy when I help to spread happiness.

In spite of my usefulness I am sometimes treated very badly.

I am not only plugged in on busy numbers, but I am jerked from my multiple by the cord.

If only my operator knew how that shortens my life and causes my exterior to become ruffled and bedraggled,

She would not be quite so rude to me.

I am very glad to say, however, that she is becoming much more careful of me each day.

I am certainly grateful to her.

My two greatest friends are the supervisors and wire chief.

The supervisor does her utmost to keep me from being abused daily.

The wire chief does his utmost to keep me well-mended and in good shape for my unceasing work.

Perhaps by this time you have guessed my name.

Please do not think of me as a mere "plug"—a combination of paper and metal.

When you establish a connection, think of me each time as being a carrier of news.

A true helpmate without which every other phase of your office would practically be useless.

(Signed) A. PLUG.

* * * *

"The dailygrams that were sent to us were a real help to the operators," continued Miss Elder, "because they gave them a different viewpoint on their work—and as for our own dailygrams, the time and thought necessary to write one is bound to produce good results.

"The little, out-of-the-ordinary items count for much in our everyday lines and put a new spirit into our work."

Some time ago we listened to a most interesting talk on matters of management. The big problem of management was declared to be the problem of increasing the desire of people—men and women—to work. These six things were presented as things the management must do to make people glad to work:

1. Provide a fair wage.
2. Assure security of position.

3. Provide opportunity for advancement.
4. Provide good working conditions.
5. Provide scope for self advancement.
6. Give inspiring leadership.

Thinking for a lot of people is a painful process and that is one reason why so many persons fail to make good when placed in executive positions.

In the telephone operating room may be found all of these conditions. In most exchanges, the first four items listed are generally pretty well covered, but in the latter two conditions, particularly in the smaller exchanges, not much has been done. So we are always glad to receive a letter from Miss Elder, for she is one of the telephone executives whom we know is really "thinking for a lot of people" to increase their desire to work, and incidentally to work out something towards the fulfilment of the last two conditions named.

Her "girls" will tell you that she is a real "chief" not only in the operating room but outside as well, for her interest in them does not cease when they leave their positions at the switchboard. And it might be added that Miss Elder sees to it that the Bible is kept on the top of the library table in the restroom. We wonder how many operators' restrooms have Bibles in them.

Recently H. B. Shoemaker, manager of the Tama Telephone Co., Tama, Iowa, talked to the local newspaper man about peg-counts. The result was a front-page story nearly a column in length. Here is part of what was published, Mr. Shoemaker being quoted by the newspaper in speaking about the peg-count record:

"An analysis of this record," says Mr. Shoemaker, "produces some very interesting information. The peg-counts for the year 1922 shows that if each day had maintained an average load of number of calls, the number of completed calls going through the central office would have been 942,558. In view of the fact that the average included no holidays or days of extremely heavy traffic it is safe to conclude that an accurate day-by-day count for the entire year would have shown more than a million calls.

"It is interesting to note that the heavy period of the day is from 9 to 10 a. m. in the colder season of the year (from October to May) but during the months of June, July, August and September the heaviest hour is from 8 to 9 a. m.

"The telephone load is subject to unusual and unexpected increases. Recently the sudden and unexpected death of a prominent member of our community caused a sudden influx of traffic for two or three hours which taxed the capacity of our equipment and strained the endurance of our operators. This often happens in case of accident or some un-

expected occurrence of interest to the community.

"It is also interesting to note that the people of the community talk on the telephone less on extremely hot days. In cases of stormy weather, however, and especially on Sunday, our people use the telephone much more than on an average day.

"In addition to handling the million or more local calls last year, our central office handled 41,130 long distance calls.

"Our records show that last year of the number of long distance calls offered us, we completed 90.5 per cent, thus showing that if a subscriber places with us a call to a person in another town the chances are better than nine in ten that we will secure the party for him and the conversation will be completed. In addition, our record shows that in 1922 we completed 94.6 per cent of calls placed with us for parties in the neighboring exchange of Toledo.

"We are constantly endeavoring," said Mr. Shoemaker in conclusion, "to improve our methods of handling traffic and expect to make a better record in 1923."

The four public utilities of Louisville—the Louisville Home Telephone Co., Cumberland Telephone & Telegraph Co., Louisville Railway Co., and Louisville Gas & Electric Co., assisted by the Standard Oil Co., Louisville Auto Dealers' Association, Louisville Taxi & Transfer Co., principally, filled the newspapers with 6-inch by 6-inch advertisements featuring Safety Week, June 4 to 9.

A lot of money was spent in this advertising campaign in an effort to reduce accidents. More than 30 motor accidents in Louisville have resulted in death so far this year. The advertising reached a point where almost every page of the papers carried one of these advertisements, from either one or the other of the back-ers of the movement.

Large P. B. X. in State Building in San Francisco Civic Center.

The largest private telephone exchange in California, according to officials of the telephone company, has been installed in the new \$2,000,000 state building recently completed in the San Francisco Civic Center, which was built to house the many state offices and commissions now scattered about the city.

The new system contains a four-position multiple switchboard which has a capacity of 640 stations. This is the first board of its type to be installed in San Francisco. It can be used for either mechanical or manual telephone systems.

The board communicates with all the state commissions, courts and departments, many of which are scattered over the downtown district, space in the new building not being available for all the units of state government in San Francisco.

Fitting the Eyes of the Public

Publicity Used and Abused—Enabling the Public to See the Telephone Industry as It Actually Exists—What Should Be Advertised—Talk Given Before the Annual Convention of the Kansas Association at Ottawa

By M. S. Eisenhower

Bureau of Public Relations, United Telephone Co., Abilene, Kans.

Let me assume at the outset that the public is just as human as we are, that our problems are mutual, and that, if presented properly, our relation to them will be that of a true public servant and not a band of cut-throats. The problem for us, then, is to give the public the facts through the proper kinds of publicity, combating at the same time the small, untrue story that creeps about and grows to mighty proportions, but which, when traced out, is found to have originated with an urchin and ended in the mind of the public.

The word "publicity" is one of the most abused words in the English language—yet it represents one of the greatest professions, one of the most useful and honorable callings to which men and women can dedicate their lives.

Publicity, properly directed, cleaned out the bend in New York; it replaced the tenements with play grounds. However, every press agent, every propagandist, every seeker after personal notoriety has camouflaged his operations under the title, "publicity," until many people find it hard to distinguish between publicity and that which is plain selfish propaganda, or out-and-out advertising seeking free space.

To be a successful publicity man, one must realize that his responsibility is a double one—the faithful and honest presentation of his client's case without the violation of the public trust in which he is placed by virtue of his calling. The same code that surrounds the legal profession, the medical profession, or any other calling that is affected with personal confidence of clients, governs the successful publicity director except that the publicity man has two sets of clients, many times diametrically opposed, whom he must serve as one.

The work of public relations in connection with the telephone industry is one of the chief problems, for our business depends on the good will of those we serve. All the leading telephone companies in the country have established bureaus to take care of the advertising and public relation work, and I believe the United Telephone Co. is one of the smallest to make this venture. But after two years, we find that it does pay to go to considerable expense to fit eyes of public with glasses which will let them see the telephone as it is and not as it is pictured by the political demagogue.

Advertising is the first consideration for

your budget. Where shall the money be spent? The first selection, of course, is the newspaper. The advertising in the newspapers should be true, straightforward, consistent and constant. Then there is the directory, the telephone transmitter, toll booths, circular letters, the billboard—which by the way we have found to be good for toll advertising—monthly state-

Virtues Weed Out Faults.

You will find it less easy to uproot faults than to choke them by gaining virtues. Do not think of your faults, still less of others' faults.

In every person who comes near you look for what is good and strong; honor that; try to imitate it, and your faults will drop off like dead leaves when their time comes.—Ruskin.

ments and receipts, window displays, and many other methods.

And what should be advertised? Good will. Toll business, especially evening and night station-to-station service, and, by the way, such advertising can accomplish ten-fold as much good if it is worked on a co-operative basis. We have in this convention many Independent exchanges, all of which would be benefited if the same style and same-toned advertising were appearing in the various territories.

And now what constitutes public relations? That is most easily answered by saying "our every-day actions." Not long ago a stock salesman for the United Telephone Co. met a man at Centralia, Kans., and after a short conversation succeeded in selling \$6,000 worth of the company's preferred stock.

The salesman was about to step his ego up a notch when the purchaser brought him back with: "Let me tell you something. It was not you who sold me this stock. Yesterday I met a gang of six men—telephone men—working on a toll lead just west of here. The foreman was not with them but they were working with the most honest endeavor I have ever seen. Later I learned that every one of those men is a stockholder in your company. That, sir, is why I know you offer a good investment."

The policies of the company itself exert their influence on public relations. We have long maintained sick, accident and death

benefits for all employes, but it was only last July that the United Telephone Co., in connection with the United Light & Power System, conceived and started what I believe to be one of the best things ever instituted into American industry.

It is the compulsory thrift plan—the plan which makes tenure of position for every one of our 1,200 employes dependent upon his saving at least 10 per cent of his income each month. But the plan does not stop there. A committee of seven successful business men and women see to it that the plan is enforced.

They pass upon the investments, and you can rest assured that wild oil schemes and similar ventures are not on the approved list. No, only safe interest-bearing securities—such as government bonds, building and loan stock, insurance, our own preferred securities, etc.—are approved.

And now after eight months' operation of the plan, what do we find? We see our linemen and troubleshooters prospering, our operators becoming independent, and—take notice of the public relations value in this—we find our managers joining the Chamber of Commerce, Rotary Club, Business Men's Association.

They are becoming an influence in their communities. Their own increasing prosperity has made them realize that they can be of some benefit in the upbuilding of their towns only by co-operating with the other merchants in pushing the movements for improvements. Without exception, I believe, our employes are voting for better water systems, better sewage, better schools, even though the increased taxes strike the telephone company as hard or harder than any other industry in the city.

All public relations are not good, however. Each of us has a conscience. No, we are not born with it. It was cultivated. I cannot analyze your conscience for you, because many of you do not do it yourselves.

But listen to your own conscience for a moment. Have you ever had an employe install a telephone and leave shavings all over the floor? Have you ever had a troublemaker walk into a home with mud on his shoes? Has a subscriber ever said to one of your employes, "These rates are too high?" given in no uncertain language, and your employe made no attempt to explain?

No, all public relations are not the very

best; and it is the work of us all to see to it that an ever-increasing proportion of the people and the material things that come in contact with the public, leave impressions which are favorable for the company.

When the enraged customer comes in and says that his bill is too high, that you are charging just 25 cents too much on each telephone, which for 4,000 telephones makes a thousand dollars per month that you are getting fraudulently, meet the man with facts. Then add a few more facts, and then serve facts for dessert.

As your telephone employe walks down the street, does he take the pains to treat patrons with the courtesy and the attention that a grocer does in order to draw trade? If he doesn't, he isn't fulfilling his job.

Are there any of your men who spend the morning chewing cigars and the afternoon playing golf? Now golf is a gentleman's game, but there are times when it should, and times when it should not be played; your patrons usually know if you are a worker or a golf star.

If your men and women must loaf, let them do it at Commercial Clubs, Ladies' Federation teas, Chambers of Commerce, Rotary—any place where, through good intelligent conversation, they can keep increasing the respect with which your company is considered.

Not long ago a man said to me: "Eisenhower, I had the greatest regard for all public utilities until recently a stock salesman tried to sell me some stock, and in doing so, said I was a fool to buy government bonds at 4¼ per cent interest when other investments paid better!"

Let me say to you that if there is a man in the utility business who is un-American, get him out! Fire him! Kick him out! Don't wait to make out his paycheck—you can mail that to him!

And another thing, which I know happens time and time again. A telephone exchange has rather a difficult time prospering on the rates which have been allowed by the utilities commission. The manager becomes soured and commences knocking his town. That signs his death warrant. Again, if the town is not good enough for the man, he should get out! A public utility, above all, must have the good will of all—and it cannot be secured by hammering the very citizens who use your service.

To return to the advertising proposition: Advertising pays. If it didn't, the hard-headed storekeeper down the way who has built his trade from a miniature to the largest in your city would never have advertised. But he did. So does every successful business.

There is good advertising, and there is more bad advertising. The kind we want

is that which sells our goods—service, every class of it. No matter whether it is local service, station-to-station calls, day toll calls, you can sell them by using the various advertising media. And then when you have some material which is worthy of a news story, see to it that the editors have a chance to use it. If it is news, certainly they will be glad to have a tip to the situation.

The Bureau of Public Relations of the United Telephone Co. will be glad to furnish advertising copy at cost to any Independent telephone exchanges in Kansas. It may be that the material which we have gives us the opportunity of producing copy that would be beneficial to your business. You can secure this copy regularly by paying the postage and the expenses of printing the proofs.

I hope, if this offer is attractive to any of you, that you will not hesitate to take advantage of it.

And now after boiling around in this proposition for some 15 minutes, we find in the residue just this: Be human. Fit yourself into the business and social whirl of your community, minding that your every action is cause for comment; they can bring you good or outlandish criticism. Put confidence instead of fight into your public, and I am sure that you will discover that the public and you are, after all, on the same plane.

Personal and Biographical Notes

H. E. Bradley, president, the Pennsylvania State Telephone & Traffic Association, Harrisburg, Pa., and **P. C. Staples**, vice-president, the Bell Telephone Co. of Pennsylvania, Philadelphia, are members of the recently organized Pennsylvania Public Service Information Committee.

Frederick C. Stevens, a member of congress from Minnesota from 1897 to 1917, is seriously ill in a St. Paul hospital. He has never fully recovered from a paralytic stroke suffered shortly after he attended the funeral of Senator Knute Nelson.

Congressman Stevens is well known to many telephone men, for he has acted as general counsel of the United States Independent Telephone Association since 1918. He has been in poor health for about a year.

Wm. M. Marean, of Belvidere, Ill., has been made manager of the Belvidere Telephone Co., to succeed the late C. L. Brown.

Mr. Marean has been connected with the telephone company since its organization nearly 30 years ago. He was one of the organizers and stockholders of the en-

terprise and has been identified with the company either as secretary or treasurer since October, 1894, when the company came into existence.

He is thoroughly experienced in the electrical and telephone field. When Belvidere got its first electric plant he was its superintendent and manager, continuing in that position for a number of years. He has always kept in close touch with the telephone business.

Obituary.

C. L. Brown, manager of the Belvidere Telephone Co., Belvidere, Ill., died Saturday evening, May 19, at 10:30 at his home in Belvidere. He had suffered a stroke of paralysis on the preceding Wednesday.

He was born at Olney, Ill., 60 years ago and lived in Belvidere for 30 years, being manager of the telephone company for 29 years.

He is survived by his widow and several brothers and sisters.

Mr. Brown was a member of the Masonic fraternity and of the Royal Arcanum.

Commissioner Hugh McIndoe of the Missouri Public Service Commission, for-

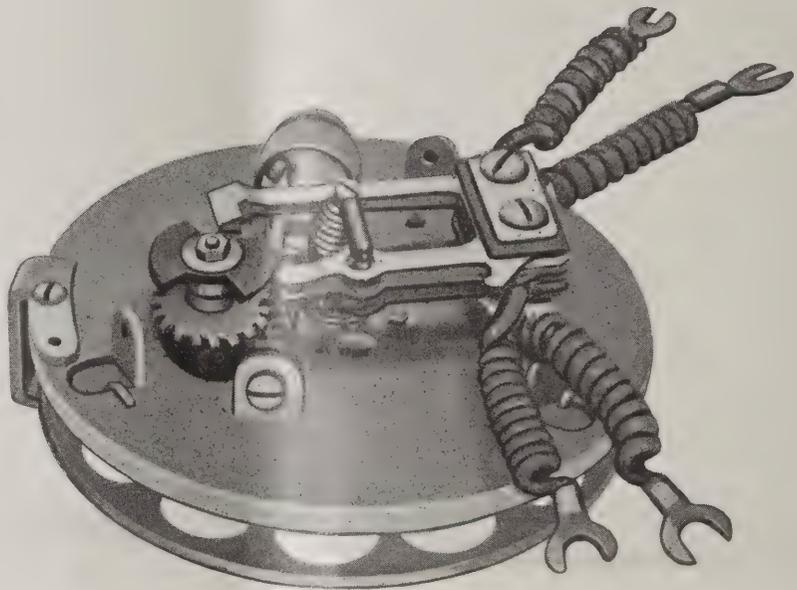
mer member of the state senate and one time mayor of Joplin, Mo., died unexpectedly May 28 at St. Mary's hospital in Jefferson City, from an internal hemorrhage.

Commissioner McIndoe, who would have been 60 years old on July 24, was found unconscious in his room by W. W. Johnson, telephone expert for the commission. He was taken to the hospital but did not rally.

The commissioner was appointed two years ago by Governor Hyde, and his term would not have expired until April, 1925. Mr. McIndoe, who was a leader in Republican politics in Southwest Missouri, was born at Wausau, Wis. He was graduated from the law school of Northwestern University in 1891, and began the practice of law at Joplin. He was the first mayor elected in Missouri under the commission form of government.

Mr. McIndoe served in the state senate in the forty-second and forty-third general assemblies. He was author of the bill in 1905 which created the state normal school at Springfield.

He is survived by a married daughter and two sons.

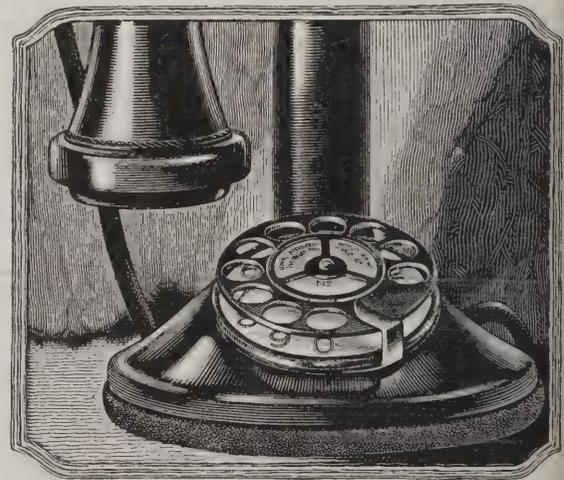


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Sturdily Constructed.

Pleasing and Convenient
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Inexpensive to Maintain.



Made by Those Who Know How

A thoroughly satisfactory and reliable dial cannot be designed and perfected overnight. It requires years of constant research and long experience in actual use to bring about the necessary refinements that result in long life and low maintenance expense.

Automatic Electric Company's dial has been designed and perfected by the same master minds that developed Strowger Automatic central office equipment. Embodied in it are all the improvements and refinements that years of actual use and an intimate knowledge of the requirements and conditions of service in all kinds of telephone exchanges can bring.

Remember that service in an automatic exchange can never be more reliable than the subscribers' dials, and that it is dangerous to experiment with unstandard or untried dials. Automatic Electric Company's dials are built by these who know how, and have stood the test of years of actual use.

Automatic Electric Company

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International Automatic Telephone Company, Ltd., Compagnie Francaise pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool.

Automatic Telephones, Australasia, Ltd., Sydney



How Pennsylvania Operators Do It

An Introduction of the Different Toll Calls—Parts Taken by the Various Toll Operators—and How Co-operation Improves the Service—Papers Presented at Annual Convention of the Pennsylvania Association in Harrisburg

Different Kinds of Toll Calls.

Miss Maude Strayer,

Chief Operator, United Telephone & Telegraph Co., Lancaster, Penna.

It has been my experience the past year or more in calling a station going through two or more other stations that operators do not state their stations. Thus it happens at times that intermediate operators between originating and terminating points take down connections on a call before a through connection has been established.

When the intermediate operators do supervise, they do not state their station, but come in on the line with "waiting."

Thus the originating operator does not know how far her call has progressed. After a connection has been established and the parties are conversing, operators talk in on the line before listening-in, and thus interrupt the conversation.

Through lack of supervision connections are often left up at the terminating station after conversation has ceased and, when another call is attempted from the originating station of first call, the terminating operator refuses to take the second call and announces a call for the originating operator.

Of the numerous calls which pass through a telephone central office, toll calls form a very important part. Toll calls may be divided into sent, received, collect, messenger and appointment calls.

In handling these calls, we have two methods, namely, two-ticket and single-ticket.

In handling a two-ticket call the originating operator passes the details of the ticket to the terminating operator. The terminating operator records the details on a received ticket and immediately rings the number called and gets the particular person called to the telephone. In passing a call, the operator should read the details of the call as recorded on the ticket—"Camden ticket 10, calling 3412, Mr. Harry A. Jones."

In passing a collect, messenger or appointment call, the originating operator should also give the name of the party calling "Camden collect ticket 10, Mr. Green calling 3412, Mr. Harry Jones." The terminating operator then gives WHOKKL to the originating operator and puts the party called on the line.

In the single-ticket method, the originating operator does not give a ticket, but asks for the number. When the number answers, she gets the particular person to the telephone. When calling for a number, she should always state her sta-

tion before asking for the number—"Harrisburg, calling 391." In case of a cut-off, the terminating operator can re-establish the connection.

On a collect, messenger and appointment call the terminating operator must handle these calls the same as in the two-ticket method.

It is my opinion that on all kinds of calls supervisions should be watched very closely. This is an important factor of good operating, and I do think not enough stress can be laid upon the supervision of calls.

When supervising on a line making connections through two or more stations, the operator should always state her station first and should not take a connection down before ringing back, and asking the next station toward the originating or terminating stations whether or not the circuit is clear.

If supervision is carefully maintained on all toll calls, the satisfaction with the service rendered will be greatly increased.

The Tributary Office Operator and Her Duties.

By Miss Marion Lacey,

Chief Toll Operator, Mutual Telephone Co., Erie, Penn.

A tributary office is an office, some or all of whose toll traffic is handled and timed by another office known as a toll center.

During my experience in telephone work I have found that the most important thing is to see that all necessary information for reaching the called party has been obtained. The operator should be careful to speak with reasonable slowness, a natural inflection and pronounce her words distinctly.

The tributary office should be particular when recording the tickets to have correct names, initials and addresses, especially the called party's name; failure in having this and the proper initials often results in receiving reports of NF from the terminating toll centers, causing criticism from the subscriber and a loss of valuable circuit time.

Long distance work calls for accuracy and speed for, unless the worker is accurate in recording the call, there is much lost time, particularly with the busy business places when they are called unnecessarily for information which should have been obtained the first time the call was given. The tributary office should always insist on the call being repeated after it is passed to the toll center, correcting

any possible errors the operator might have made in taking the call from the originating office.

A toll center is a station that handles its own toll traffic and the toll traffic of the tributary offices as well, and makes from such traffic the tickets from which the subscribers are billed. The toll centers have been given a greater responsibility in handling tributary work. The responsibility which a tributary office formerly had now lies with the toll center; that is, the new duties of the toll center will be to give the reports received by her from the called station, to the calling station, see that they are accepted and keep the calling station posted for reasons of delay.

The first of these reports should occur within ten minutes after the call has been passed to the toll center, followed by other reports if the call is not completed immediately.

The tributary office should be satisfied with all reports given and not say, as I've heard operators say, "Operator, where did you get that report?" in a highly, incredible tone. This is not fair to the toll center. Even if the report passed to you is not one to your liking, remember she didn't originate it in the first place, and that she is putting forth every effort to complete your call just as she would for one of her own subscribers.

The prompt establishment of toll connections is an important factor of good service. The operators must be taught to handle calls efficiently and quickly, which can only be accomplished by a complete and thorough knowledge of codes and rules which will come with experience in the work.

Accuracy in the major and minor details of the completed ticket also figure prominently in either good or bad service; for instance, where charges have to be readjusted or withdrawn. Often when the trouble is traced, it is found that poor ticket work was the original cause. Taking, for example, mistakes in figuring and quoting overtime, if the operator overcharges it means an endless amount of in the other departments as well, because trouble not only in her department, but new bills have to be made and old records destroyed; on the other hand, if she fails to quote the correct number of minutes, the company is at another loss.

So in conclusion let me say that the mark of an efficient operator is her number of completed calls. It requires determination, persistence, loyalty to the company and even sweetness of disposi-

tion to finally complete a call; but the hardship is noticeably lessened if we all do our duty, to help and assist others, promoting happiness and harmony in our work.

Make two smiles grow where one frown grew before and take Elbert Hubbard's advice, "I may make mistakes, but I do not respond to encores."

Building, Supervision and Clearance of Toll Circuits.

By Mrs. Margaret Marshall,

Chief Operator, Consolidated Telephone Company, Reading, Penn.

We must have official advice and rules to follow in order that all offices handle their calls in a like manner, to help in adjusting complaints and in the proper understanding of the various complications which do arise between operators at connecting stations.

Hard work only gets harder when you do not know what you are doing or what you have to do with. A workable plan simplifies and lightens the work and today's need in our office management is a practical plan, a schedule, definite duties performed in a definite way. The rules we have had in use for long distance work are splendidly efficient and required a great deal of common sense in their making, but common sense is needed just as badly in observing those rules.

The use of common sense added to the rules means greater efficiency, better toll revenue, better operators and better results in every way for the companies who employ us.

In building a circuit, our first thought should be to reach the desired station in the easiest and shortest way, with the greatest possible speed and economy of circuit use. Our first route or an alternate route shall be used at once if available. A second route, as a rule, is an inferior route and our rules call for a ten-minute delay if the first and alternate routes are in use.

Of course, should the first and alternate routes be out of order, the second route shall be used at once if available. Very often it is to the subscriber's benefit to delay the call for a period of ten minutes, but it is here that the good judgment of toll operators and toll supervisors plays a big part. Many times it is a choice between a poor connection established quickly, or a good connection established after a short delay. My experience is that the subscribers will wait a reasonable time for a good connection if given the proper reports of a delay on his call.

Another thing to be considered in unusual routings is that their use is likely to interfere with the business which would ordinarily be going over those lines. I wonder if we fully realize what an enormous amount of money can be invested in toll circuits. An official of our company told me a toll line from Reading to Philadelphia, a distance of 60 miles, would

cost for the materials alone about \$40,000.

If we could impress on our operators what a valuable thing a toll circuit is, they would handle their calls more expeditiously in order to derive more revenue from their company's investment.

Another thing that helps speed up service on toll lines is the proper use of our code symbols between operators. I find it necessary to keep constantly impressing on toll workers the necessity of being brief, that we may increase the capacity of the lines. The chief offenders against the code rule are the smaller exchanges.

Supervision.

More important than building the circuit is the supervision. The originating operator is responsible for proper supervising on all sent paid messages. However, when calls are sent collect, the supervision is up to the terminating operator, in other words, the station to which the message is charged is responsible for supervising the connection and endeavoring to correct any trouble arising.

Operators should assist in getting conversation started in order to avoid unnecessary holding of the lines but should not repeat the message unless it can be completed in no other way.

Proper supervision will reduce cut-offs, noisy connections and "can't hear" complaints to a minimum, for the trouble very often can be located in the switchboard or subscriber's telephone, not always being due to poor toll circuits.

Clearance.

On the subject of clearing toll circuits, I believe that operators are more negligent of that rule than of any other we have. The all-important in their minds is the building of the circuit; they are very anxious to complete their calls and they know and believe that supervision is a big factor in good toll service, but it seems harder to convince them of the importance of clearing circuits.

They seem to feel many times that when the subscribers' conversation is finished satisfactorily, that ends their responsibility. Here again the responsibility lies with the originating operator, except on collect calls, and it is her duty to promptly issue a clearance order on tandem circuits. Clearance orders are most important as neglect to clear circuits may leave two or more circuits held out of service.

One thing I feel we must do before we successfully build toll circuits is to build character in our operators, teach them to play fair, instill in them the altruistic idea of the greatest good for all, forgetting personal desire in achieving results for the company. Teach them that their work is co-operative instead of competitive—and you lay a foundation for good builders of toll circuits.

I am reminded of a story told about a man whose wife had been away for an extended vacation. He was asked how he was getting along and he replied: "Fine,

I've reached the height of efficiency—I can now put my socks on from either end."

Chief operators and supervisors! Let us work together that we, too, may attain the highest degree of efficiency and be able to put our socks on from either end. The past is gone and the future leads the way.

Great possibilities are before us all, and my sincere hope is that every telephone employe in this state may rise to the opportunities offered and by giving and forgiving, by being tolerant and considerate in thought and act, gather for herself and those about her, both in and out of her company, all the good things which come to those who do their best.

Overlapping—Teamwork and Co-operation.

Miss Nellie B. Walsh,

Chief Operator, Consolidated Telephone Co., Allentown, Penna.

Co-operation: The harmonious joining of effort to produce a result which is satisfactory to all. The act of working jointly together. Co-operation is the life of good business.

Overlapping: The same work done by two or more people or groups that could be done by one or the other.

The best illustration of overlapping that I ever knew was in the late World War, where meetings of men and women in the hundreds were called—sometimes in the same building—all doing not the same kind of work, but the same work. There were more papers prepared, meetings called and reports demanded by same committees on the same work than there were men in the trenches. More paper was used or wasted rather than would clothe the U. S. Army.

In the toll room of any telephone exchange, overlapping can be avoided by the least possible number of operators handling one call. Keeping too many records on one kind of work or on one telephone, too many errors made in repeating numbers—or in *not repeating numbers*—thereby necessitating a connection being re-established by one or more operators.

Teamwork: Work done by a number of associates, usually each doing a clearly defined portion.

These three words—Co-operation, Overlapping and Teamwork—are really synonymous, as we must co-operate to effect teamwork, and we must have teamwork to avoid overlapping. As they are so closely allied, I will endeavor to briefly present a few thoughts dealing with the subject jointly, by using the theme "Common sense in operating."

Common Sense Plus Good Judgment Spells Co-operation.

We may have all the speed and intelligence and training and all the information ever written in the book of "Rules and Regulations," but, we must first realize

the importance of our work—that of establishing a connection for the interchange of human intelligence. The connection may be for the transaction involving a large sum of money, or possibly the employment of many people, or it may be a call to the bedside of some one very dear who is facing Eternity; but in each case the operator is the connecting link that makes possible that which is essential and important.

It is true that many calls are passed that are of a frivolous and unimportant nature, but the operator is not in the position to determine; so all calls must be handled accurately and speedily for the public, who look to us for service.

In our daily routine, we are dealing continually with the greatest of all elements—the human element.

Have you ever stopped for a few

minutes to review at the end of one of those "perfectly awful" busy days and slurred over the many pleasant experiences you had, only remembering the man with the grouch or the especially cantankerous man?

Why he might have been the victim of defeat, or something of a similiar nature; he never realized the terrible anguish he caused some hyper-sensitive operator, or nearly caused one of our teams of operators to "bolt," nearly blocking traffic for the rest of the day. He probably would be a very much surprised and ashamed man if he knew what he had caused, but nothing short of good common sense, and sound judgment can overcome conditions of that kind.

There is always tomorrow, and every day may be different; it generally is in the telephone world—that's the advantage

of the work, it is never monotonous never lags, always interesting.

- C. Courtesy.
- O. Optimism towards results.
- O. Openmindedness.
- P. Patience towards the other fellow.
- E. Earnestness in our endeavors.
- R. Realization of our responsibility towards the public and our co-workers.
- A. Alertness—always.
- T. Tolerance of the other fellow's lack of speed and knowledge of teamwork.
- I. Interest one must cultivate and hold onto in business.
- O. Overlooking petty differences.
- N. Nothing too small to give some consideration and nothing less than common sense plus sound judgment will make co-operation.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Supreme Court Decision Quoted in Nebraska Case.

Considerable progress was made last week in the hearing at Omaha before Federal Court Master Dunham of the case of the Northwestern Bell Telephone Co. against the Nebraska State Railway Commission over exchange rates. The company presented to the attention of the master the recent decision of the United States Supreme Court in the Southwestern Bell case against the Missouri Public Service Commission, and suggested that this took from out of the case any further consideration of the contract with the American Telephone & Telegraph Co. by which it gets 4½ per cent of the Northwestern's gross revenues.

It was urged by attorneys for the Bell that, as this amount was voluntarily paid by the Northwestern, no bad faith was shown or claimed in the making of the contract, and that this did not constitute an abuse of discretion that would justify the commission in reviewing the contract, it should be taken out of the case. The federal supreme court held that the making of such a contract is an exercise of business judgment and was an act of management that could not be reviewed by state authorities. The court said that while the state may regulate with a view to enforcing reasonable rates and charges, it is not clothed with the general power of management incident to the ownership of public utilities.

On the ground that the commission cannot substitute its judgement for that of the board of directors and cannot ignore items charged by the utility as expenses, it was urged that this part of the inquiry

be closed. The master was inclined to agree with the Bell attorneys, but was induced to change his mind after vigorous objections and arguments had been submitted by the representatives of the commission.

They pointed out that the 4½ per cent contract was in issue only as to whether it is a reasonable payment for the services rendered, and that as the American Bell owned the Northwestern it was in the attitude of dealing with itself, and that the commission had a right to inquire into the reasonableness of the percentage charged.

Commissioner Browne is well pleased with the opinion of the United States Supreme Court in the Southwestern Bell case, as it is a substantial affirmation of a theory he fought for and secured recognition at the hands of the Nebraska commission first in the Platte County Telephone Co. case. Former members of the commission were divided in opinion as to what elements should be considered in arriving at the valuation of property of a public utility.

Former Commissioner Hall contended always that not only was the company limited to earning upon the actual dollars that had gone into the property, but that it must prove that none of these dollars came out of earnings. Former Commissioner Wilson held with him generally on this proposition for a time. Commissioner Taylor contended for a time that the proper measure was the reproduction cost minus depreciation.

Mr. Browne had some difficulty in getting Mr. Taylor converted to his theory that reproduction costs are a highly important, but not necessarily the governing, factor in arriving at a valuation. Up to

the time that the Platte County company case was decided, the commission had adhered to the historical cost basis. It was evident that the company was presenting the case with a view to an appeal, and this led the commission to go more thoroughly into the matter.

The result was a decision from which no appeal was taken, and one which, in the view of the federal supreme court decision, would have been sustained by the courts. Mr. Browne points out that that court did not accept reproduction new, less depreciation, as the basis of valuation, since its findings of value are about halfway between the sum fixed by the state commission and the reproduction new, less depreciation, figures of the company.

The matter of valuation does not cut any figure in the Nebraska case. It was stipulated between the parties to the controversy that the valuation upon which the company is entitled to earn should be the total sum invested in property. No deduction for depreciation was made and no addition made for appreciation in value because of the increased cost of reproduction new. These two items were allowed to balance each other. In view of this fact the recent federal court decision will have no effect upon the determination of this case.

Rates of Southern Bell Are Reduced Throughout Alabama.

Following a conference with Edward D. Smith of Atlanta, Ga., general counsel of the Southern Bell Telephone & Telegraph Co., and Col. W. E. Bare, of Birmingham, Alabama manager of the company, the

Alabama Public Service Commission passed an order on May 23, lowering rates of the company in the state.

The reduction, which went into effect June 1, approximates 11½ per cent, but 55 towns received a reduction of 20 per cent and returned to the rates prescribed by the postmaster general when the telephone companies were taken over by the government during the war.

The decision of the commission reducing rates came after many informal conferences with officials of the company, and the rates prescribed were accepted by the utility, although it insisted that the reduction in earnings will be too great under the new schedule. Information was submitted to the commission to show that the company's earnings will be reduced \$218,000 annually through the establishment of the new rates.

In an opinion prepared by H. F. Lee, associate commissioner, the commission stated that the company officials were fair and frank in presenting their records for the inspection of the commission and that all investigations convinced the commission that no greater reduction would be possible at this time.

Speaking for the commission, President A. G. Patterson issued the following statement when the order was made public:

"Almost immediately after the present commission was organized the matter was taken up with the officials of the telephone company. Their willingness to make accessible to the commission and its auditors and engineers all of their books and records, made it possible for the commission to arrive at the facts of the telephone situation many months sooner than if a contested and prolonged hearing had resulted.

"This direct and practical method saves thousands of dollars of expense to the state and to the telephone company, all of which is a direct saving to the people, as the expense incurred—not only by the state, but by the telephone company—in the end comes from the people of the state.

"The rates at all of the exchanges operated by the company in the state have been substantially reduced. The commissioners insisted upon the introduction of four-party line residence service in the exchange areas at all exchanges.

"The telephone business is far from a completed industry. Not only is the demand for service increased because of the increase in population, but a larger per cent of the population is requiring service. Therefore, one of the many important functions of the commission is to see that the people of the state are provided with adequate and efficient telephone plant and service.

"During this investigation not only was the question of rates considered but the present and future plans of the telephone

company to develop, in accordance with the needs of the people of Alabama, adequate facilities and service. To do this in the proper way will require large investments of new and additional capital in the state. During this year for this purpose approximately \$920,000 and during the coming five years approximately \$5,750,000 of new money will be necessary."

Colonel Bare, state manager of the company, stated that the reduction in rates was much more than the company had contemplated or thought necessary or justified at this time, but that the company would accept the order and make a faithful effort to maintain the service up to a high standard.

He also stated that some economies had been effected because of increased efficiency, due to the company's ability to maintain more stable forces following the war period and the unusual conditions existing for several years following the war. He further said the company, with the continued coöperation of the people and the authorities, would be able to extend and develop the telephone service and facilities in Alabama.

The business rate is reduced \$1 in Birmingham, and 50 cents in Montgomery and Mobile.

The new rates are:

BIRMINGHAM.

Business, one-party	\$8.50
Residence, one party	4.00
Residence, two-party	3.50
Residence, four-party	2.75
Measured service, 100 calls per month	6.00
Extra messages, each .....	.03
Rural, multi-party	6.00

MONTGOMERY AND MOBILE.

Business, one-party	\$6.00
Residence, one party	3.50
Residence, two-party	3.00
Residence, four-party	2.25
Measured service, 90 calls per month.	4.50
Extra messages, each .....	.03
Rural, multi-party	4.00

CALERA, CARBON HILL, CLANTON, DORA, FALKVILLE, FAIRHOPE, FLOMATON, FORT DEPOSIT, GOODWATER, GURLEY, HANCEVILLE, HILLSBORO, LEIGHTON, MOORESVILLE, PICKNEY CITY, TOWN CREEK, WARRIOR, BRIDGEPORT, CENTERVILLE, CITRONELLE, CORDOVA, COURTLAND, COLUMBIANA, DADDEVILLE, HURTSBORO, LIVINGSTON, MONTEVALLO, MOULTON, PIEDMONT, STEVENSON, THOMASVILLE, AND YORK.

Business, one-party	\$3.00
Residence, one-party	2.00

ALEXANDER CITY, ALBERTVILLE, BAY MINETTE, BREWTON, CLAYTON, EUTAW, EVERGREEN, FORT PAYNE, GREESBORO, GUNTERSVILLE, HARTSELLE, JACKSON, JACKSONVILLE, LAFAYETTE, MARION, PRATTVILLE, RUSSELLVILLE, SYLACAUGA, TUSKEGEE, WEST BLOCTON, AND WETUMKA.

Business, one-party	\$3.25
Residence, one-party	2.00

ATTALLA.

Business, one-party	\$3.25
Business service to Gadsden.....	4.00
Residence, one-party	2.00
Residence service to Gadsden.....	2.75

AUBURN.

Business, one-party	\$3.50
Residence, one-party	2.25

ATHENS, CULLMAN, EUFAULA, JASPER, AND TALLADEGA.

Business, one-party	\$3.85
Residence, one-party	2.50

ALBANY, DECATUR, FLORENCE, OPELIKA, OXFORD, SHEFFIELD, AND TROY.

Business, one-party	\$4.40
Residence, one-party	2.75

ANNISTON, BESSEMER, GADSDEN, HUNTSVILLE, SELMA, AND TUSCALOOSA.

Business, one-party	\$4.85
Residence, one-party	3.00

In addition to the general reduction in rates, the order of the commission provides that the Southern Bell may charge only 5 cents for a connection between telephones in Birmingham and Bessemer. In the past this charge has been 10 cents.

Indiana Bell Case Re-opened for Cross-Examination on Valuation.

When the Indiana Bell Telephone Co. consolidated rate case before the Indiana Public Service Commission was reopened May 25 to permit W. H. Thompson, attorney for the company, to cross-examine Earl Carter, chief engineer of the commission, on his revised estimate of per cent condition of the property, which lowered the appraisal of physical valuation more than \$600,000, Mr. Thompson took occasion to call the commission's attention to the recent decision of the United States Supreme Court in the case of the Southwestern Bell Telephone Co. vs. the Missouri Public Service Commission.

He said the valuation claimed by the Indiana Bell is 20 per cent less than reproduction new cost, and is the minimum on which a return should be allowed.

The United States Supreme Court said there was "nothing to indicate bad faith" in the 4½ per cent contract of the A. T. & T. Co. It said the directors of the Southwestern Bell Telephone Co., "so far as appears," exercised "a proper discretion about this matter requiring business judgment."

Frederick W. Van Nuys, who, with Carl Mote, appeared for the commission, observed that he saw nothing new in the Missouri case. He called attention to the words "so far as appears" in the court decision, and recalled that the evidence in the Indiana Bell case is that at least one of the directors testified he knew nothing about the 4½ per cent contract, and hence it could not be said such a director exercised discretion in approving it.

Mr. Thompson said he was not contending there was anything new in the Southwestern Bell case. He also said he had never asserted that the public service commission is bound by reproduction cost.

The Indiana case, according to attorneys for the commission, is different from the Missouri case, in that in the Indiana case evidence at length has been introduced by the commission on points where, in the Missouri case, according to the supreme court decision, the commission evidence did

not dispute the evidence of the company. Attorneys for the Indiana commission also say that the supreme court decision does not state that investment costs shall not be considered, but does say the Missouri case did not give adequate consideration to costs of the present time.

Mr. Thompson asked Mr. Carter many questions as to how he arrived at a reduction of per cent condition below his original estimate. The cut in per cent condition by Mr. Carter was from about 89 to 87. This reduced physical appraisal valuation, \$626,958, or from \$26,120,850 to \$25,493,892, was on the ten-year average cost basis 1913-1922, inclusive. Mr. Carter also cut out about \$54,000 because of not used and useful duplicated property in the Indianapolis, South Bend and New Albany exchanges.

Mr. Carter said his new per cent condition was arrived at by finding the weighted average age of the property, capital conditions of recent years, and also by considering results of specific inspections some time ago, together with estimated life of telephone property. He said he put in recent capital additions at 100 per cent condition, and might have discounted those additions somewhat, but he decided to be safely on the side of fairness.

Commissioner Glenn Van Auken, presiding, directed the company to file exhibits showing capital additions up to April 30, 1923, also work under construction at that time, also an income account down to April 30.

Illinois Bell Authorized to Buy Murphysboro Company Bonds.

Authority was given the Illinois Bell Telephone Co. on May 9 by the Illinois Commerce Commission to acquire by purchase \$100,000 aggregate principal amount of the first mortgage, 6 per cent, gold bonds, series "C," of the Murphysboro Telephone Co., of Murphysboro.

The bonds are dated May 1, 1917, and mature May 1, 1937. They are to be sold to the Illinois Bell at not less than 93 per cent of their face value.

\$10,000,000 Capital Stock Issue Approved for Illinois Bell.

The Illinois Commerce Commission gave its approval, on May 9, to the application of the Illinois Bell Telephone Co. for authority to issue and sell \$10,000,000 aggregate par amount of its capital stock.

The issue is for the purpose of paying for additions and betterments to the company's plant within five years next prior to the filing of the application.

Iowa Commission Holds Hearing on Power Line Interference.

Hearing of a case involving alleged overbuilding of a power transmission line by Carpenter & Whitney, so as to interfere with the lines of the Miles and Sabula

companies, took place in Clinton, Iowa, May 23, before the Iowa Railroad Commission.

An investigation had previously been made by the commission, the results of which are to be used in rendering the decision.

Construction of these lines must conform with the rules of the commission, and it was pointed out at the hearing that there is hazard when the rules are not followed, and that high power transmission lines above telephone lines are dangerous, inasmuch as the wires may fall onto the telephone lines and transmit their heavy electrical currents to the telephone wires.

Subscribers of Maine Company Challenge Exchange Area Rates.

A complaint, charging that the rates of the Katahdin Farmers Telephone Co., of Island Falls, for service on the Patten-Trout Brook line, are unjust and discriminatory, has been filed with the Maine Public Utilities Commission by Z. L. Harvey and others living at Patten and Shin Pond. The commission set the hearing for June 8.

It was alleged that some of the patrons are compelled by the company to pay a toll rate charge and in addition thereto an exchange service charge, whereas the general public using the telephones in the same territory is only charged the toll rate.

The complaint also states that in many cases the charge for exchange service is made where there is in fact no exchange service area, and that the charge is made without authority.

Some of the patrons of the line have refused to pay the exchange service charge until the company provides a reasonable exchange service area within which they can communicate without being subject to the payment of the toll charge. The company notified them that unless the charge for exchange service was paid, service would be cut off.

Michigan Company Does Not Have to Rebuild Rural Lines.

A ruling of the Michigan Public Utilities Commission, recently issued, relieved the Union Telephone Co., of Mt. Pleasant, from the obligation of rebuilding rural lines in Isabella County, which were destroyed by the severe sleet storms in February, 1922.

One of the contentions of the company was that the rebuilding of the lines would be so costly that it would render necessary an increase in rates.

The commission said in its opinion:

"Unless the benefit to be derived by the subscribers to the service of the Union Telephone Co. in the city of Mt. Pleasant is sufficient to compensate them for paying higher telephone rates for the purpose of sustaining the investment in rural telephone lines in that vicinity, then such

higher rates in the city ought not to be paid, and of this we think the subscribers to the telephone service of the Union Telephone Co. in Mt. Pleasant and vicinity should be the judge."

Minnesota Company Gets Rate Advance, Will Improve Plant.

The advanced rate schedule proposed by the Blackduck Telephone Co., for service from its Blackduck exchange, was approved by the Minnesota Railroad and Warehouse Commission on May 31 and became effective June 1.

The Blackduck Telephone Co. operates the telephone property previously doing business under the name of Blackduck Electric & Telephone Co., which was incorporated and began operation in 1901. A separation of the telephone and electric properties was made in January of this year.

The company serves 46 town stations and performs switching service for 141 rural connecting company stations.

Evidence was offered showing a plant value of \$2,475, and the company proposes to relocate the central office and reconstruct certain portions of the plant, making some new additions, which will involve an expenditure of about \$1,500 to \$1,800.

From a review of the statement of operations for last year, the commission deemed the proposed rates to be reasonable. They are shown below together with the old rates:

	Old rates.	New rates.
Business:		
One-party	\$2.50	\$2.75
Two-party		1.75
Residence:		
One-party	1.25	1.75
Two-party		1.50
Rural:		
Multi-party		1.50
Switching service .....	.25	.33

Minnesota Rural Company Authorized to Increase Rates.

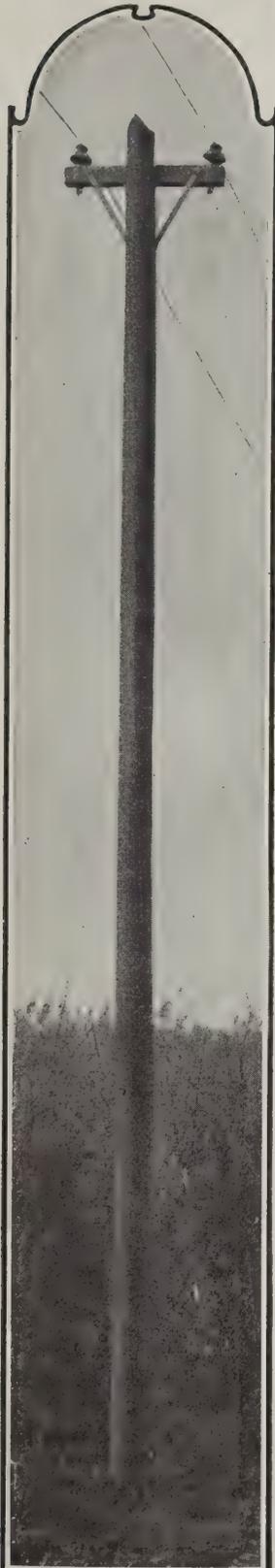
An order issued May 31 by the Minnesota Railroad and Warehouse Commission gave the Farmers Telephone Co. permission to increase the rate for rural service on lines out of Stockholm from \$1 per month to \$1.25 for the grounded circuit lines and \$1 for metallic circuit. The new rates became effective June 1.

The Farmers company operates rural lines in Stockholm and Cokato townships and extending into McLeod County. It serves 114 rural stations connected with a switchboard in Stockholm and maintains two trunk lines to Cokato, over which a switching service with that town is conducted.

Lower Rates Go Into Effect at Bell Exchanges in Mississippi.

Lower rates in the Cumberland Bell exchanges in Mississippi became effective May 23, as a result of the writ of certiorari obtained May 21 in the circuit court

Value!



LONG-BELL Creosoted Yellow Pine Pole in distribution service of the Kansas City Power & Light Company, near Olathe, Kansas.

There is honest, satisfying value in Long-Bell Creosoted Yellow Pine Poles. Value in strength. Value in durability. Value in appearance. Value in the fact that once placed they are there to stay!

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in Jackson by State Attorney-General Potter.

The writ sets aside the increase in rates which became effective on Jan. 1.

The attorney-general in applying for the writ argued that the Mississippi Railroad Commission, in granting the increase the first of the year, did so without obtaining sufficient evidence to show the reasonableness of the old schedule, a contention which the court upheld.

Increased Rates Allowed, Application Regarding Tolls Denied.

The application of the Edina Telephone Co., of Edina, for increased rates was granted by the Missouri Public Service Commission on May 25, to take effect June 11.

The company was refused authority to eliminate free exchange service between its exchange in Edina and its exchanges at Hurdland, Kenwood, Knox City, Hedge City and Plevna, and to install a ten-cent toll charge.

Its petition regarding the collection of tolls by other companies was also refused by the commission.

Authority to charge \$1 for restoring service that has been discontinued because of non-payment, and \$2 for reconnecting a party line disconnected for the same reason, was granted.

Rates Continued Indefinitely Account of Sleet Storm Damage.

The Holbrook Central Telephone Association of Nebraska has been given permission by the state railway commission to continue indefinitely the schedule of rates that it was allowed to charge beginning on June 1, 1922. The company suffered from a sleet storm at that time that cost it \$1,700 to repair damages, and as it has a capital stock only of \$1,180, this made a big inroad on the property. In past years it has accumulated considerable property by not paying dividends, but even with the increased rates last year it made, above expenses, taxes and interest, but \$108.

The commission says that the company should have devoted a part of surplus earnings to building up a depreciation reserve to take care of emergencies like a sleet storm, but having used it for building additional property it is proper that the cost of the replacements should come from revenues. In view of this fact it is quite evident that it should be permitted to continue to charge the present rates for an indefinite period.

It Will Be Difficult to Convince the Commission.

If the story as told by John Wiede, a resident of the town of Redbird, Boyd county, Neb., is true, then there are some exceptions to the loyalty of service among exchange operators. Nebraska has been

visited in recent weeks by heavy rainstorms that flooded the land and raised the rivers to dangerous heights.

Wiede writes to the state railway commission to complain that one night he noticed that the waters of the Niobrara river were menacing the safety of an important bridge, and he called up Central to secure a connection with the county officials who have charge of bridges. He says she told him it was after 10 o'clock and that she could not, under the rules, handle any calls. He says his protestations as to the importance of his message fell on deaf ears, and he didn't get the call through and the bridge was washed out.

Commission Denies Rate Increase for Delaware, Ohio, Company.

The application of the Citizens' Telephone Co. of Delaware, for increased rates was denied by the Ohio Public Utilities Commission, May 10, on the ground that the company failed to show the reasonableness of the proposed increase.

The company had asked for an increase of 25 cents a month on business and residence rates.

Should Use More Than Ordinary Care in Protecting Employes.

It was the duty of the telephone company to employ care with respect to hook which suspended a hand line used by the employe in descending from a platform to the ground.

The company was not required merely to furnish or to use ordinary care to furnish a hook ordinarily and generally used and found safe by others in the telephone business. It should have used such care and caution in furnishing a hook as an ordinarily prudent person would have used under the circumstances. Southwestern Telephone & Telegraph Co. vs. French; Court of Civil Appeals of Texas, 245 Southwestern, 997.

Texas House Passes Bill Increasing Telephone Company Taxes.

The Culp bill, providing for a graduated increase in the gross receipts tax on telephone companies and giving further exemptions to companies in towns of under 1,000 population, was passed finally in the Texas house of representatives May 24. It carried an amendment by Mr. Lackney which provided that in any case where a telephone company makes and collects a service or report charge of more than 10 cents, 90 per cent of such charge shall be remitted to the state.

Of the total of \$76,106 collectible under this bill, the author said, three companies would pay \$59,000, one company \$2,798 and the balance would be distributed among the smaller companies.

An amendment offered by Mr. Pope, who termed the report or service charge a "pernicious hold-up," would have limited

such charge to 10 cents and required 9 cents of the charge to be paid the state. He withdrew this amendment after Mr. Lackney had offered his amendment as a substitute.

Interstate Utilities Tries Out New Long Distance Schedule.

Some changes in its schedule of long distance rates were placed in effect on May 27 by the Interstate Utilities Co. exchanges in north Idaho, western Montana and a few in eastern Washington.

On May 19 the Washington Department of Public Works granted the company's application for a 90 days' trial of the proposed schedule. The commissions of Idaho and Montana granted similar applications two or three weeks previous.

The half rate which has been in effect from 8:30 p. m. to midnight every night is extended to cover Sunday, so that the rate is in effect from 8:30 Saturday night to 4:30 Monday morning. The half rate which has been in effect for station-to-station calls is extended to include person-to-person calls from 8:30 p. m. to 4:30 a. m. and for all day Sunday.

This rate applies only to service wholly on the company's own lines, and not where connection with another company's lines is required.

La Crosse, Wis., Company to Issue \$17,000 Preferred Stock.

On May 22 the Wisconsin Commission authorized the La Crosse Telephone Co., of La Crosse, to issue \$17,000 par value of its preferred stock. It is divided into 170 shares of the par value of \$100 each, the funds derived therefrom to be used in paying for additions and extensions to its property and plant.

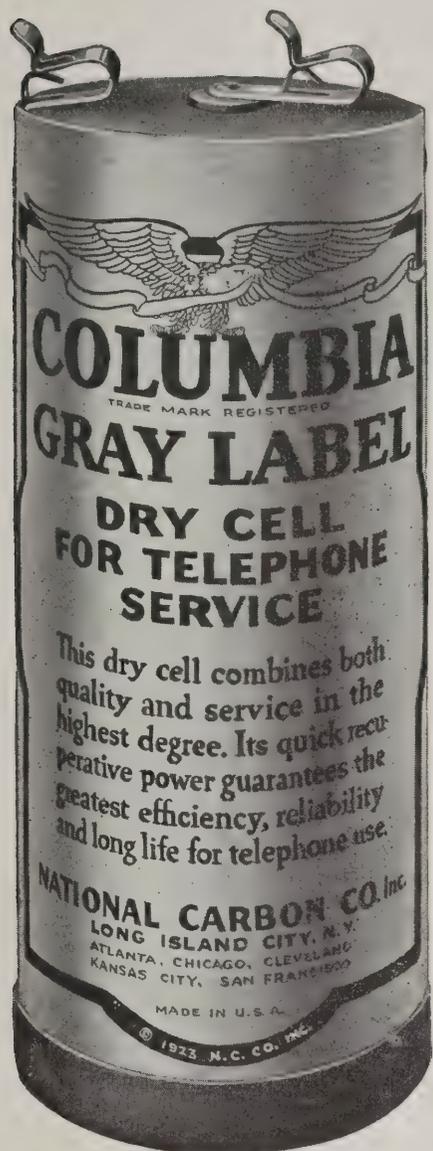
No Guarantee of Good Service—Advanced Rates Refused.

Declaring that it would issue no order granting increased rates to the Grant County Telephone Co., of Livingston, Wis., until the stockholders—who constitute almost 90 per cent of the subscribers—recognize their responsibility to put the system in shape and undertake to furnish a reasonable grade of service, the Wisconsin Railroad Commission dismissed the company's application on May 28.

However, if the company will carry through a plan of reorganization and rebuilding, the commission stated, it will enter an order allowing an adequate schedule of rates.

Certain of the company's rules were not enforced, accounts are unpaid, and the finances are in a bad way.

The available records showed as earnings only the cash receipts, and 1922 records showed that there was received from subscribers' accounts for exchange service \$1,195, while the legal rate of the company should have produced about \$1,700.



The intermittent nature of telephone use requires batteries to remain idle much more than they actually work. How they spend their spare time is therefore very important. Columbia Gray Label Batteries save their energy by quitting when the talk is over, by doing nothing at all to deplete their power while the receiver is on the hook.

It's the secret of why Columbias cost less per month of service. Fahnestock Spring Clip Binding Posts at no extra charge.

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Columbia Gray Label Batteries now have a jacket of the new design shown here

Columbia Telephone Batteries

“less cost per month of service”

There were discrepancies in the financial statements which were submitted and no conclusion could be reached through them.

The company is not only hard up financially, the commission said, but its affairs have been neglected and the resulting condition is almost chaotic. Service is poor, the company is without resources to rebuild the lines, and subscribers will not pay their accounts.

The lines are mostly grounded and instruments are furnished by the subscribers.

The commission said it could not authorize a rate which would be proper for good service, with no guarantee that such service will be furnished.

Summary of Commission Rulings and Schedule of Hearings.

ALABAMA.

May 23: Order entered reducing the rates of the Southern Bell Telephone & Telegraph Co. throughout the state; effective June 1.

CALIFORNIA.

May 25: Application filed by the Turlock Home Telephone & Telegraph Co., of Turlock, for authority to execute a promissory note to C. R. Mollard for \$16,500, the note to mature one year from date of execution and to bear interest at 7 per cent per annum; also to execute a first chattel mortgage on its entire plant and equipment to secure the payment of the note, in the principal sum of \$8,650.

ILLINOIS.

May 3: Approval given to agreement dated March 1, 1923, between Illinois Bell Telephone Co. and the Cantop Home Telephone Co., of Canton, eliminating the toll station at Piatt.

May 3: Approval given to agreement dated December 31, 1922, between Illinois Bell Telephone Co. and Cerro Gordo Telephone Co., of Cerro Gordo, providing for modification of toll line traffic agreement dated February 21, 1919.

May 3: Agreement dated February 1, 1923, between C. B. & Q. R. R. C. and the Mutual Telephone Co., of Girard, as relates to an upgrade telephone line crossing near McVey; approved.

May 9: Illinois Bell Telephone Co. authorized to acquire by purchase \$100,000 aggregate principal amount of first mortgage, 6 per cent gold bonds, series "C" of the Murphysboro Telephone Co., dated May 1, 1917, maturing May 1, 1937, at not less than 93 per cent of face value.

May 9: Illinois Bell Telephone Co. authorized to issue and sell \$10,000,000 aggregate par amount of its capital stock to pay for additions and betterments to its facilities within five years next prior to filing of the application.

May 15: Rate schedule I. C. C. No. 3 filed by Danvers Telephone Co. for service in Danvers.

May 15: Schedule IPUC No. 4 filed by Coon Brothers Telephone Co. for service in Gifford, Penfield and Rantoul.

May 15: Motion carried that case relative to application of the Illinois Bell Telephone Co., for increased rates in Sterling and Rock Falls, be reopened and set for further hearing.

May 15: Submitted to the commission—letter from Attorney General Brundage reciting the action of the United States District Court at East St. Louis in the case of the Commercial Telephone & Telegraph Co., of Olney, against Edward J. Brundage, attorney general, Illinois Commerce Commission, and others.

May 15: Central Telephone & Telegraph Co. authorized to continue using schedule IPUC No. 2 for service in Paxton and vicinity, which was approved November 18, 1920, applying to Paxton.

May 15: Application of the Vermilion County Telephone Co., of Danville, for authority to change rates, dismissed with leave to reinstate.

May 15: Complaint of Andrews and others relative to the service of the Cadwallade Telephone Co., dismissed with leave to reinstate.

May 15: Complaint of Fayette Home Telephone Co., of Fayette, relative to invasion of territory by St. James Rural Telephone Co., of St. James, dismissed with leave to reinstate.

May 15: Order entered vacating order of December 14, 1922, which suspended schedule of rates, rules and regulations filed by the Farmers & Merchants Telephone Co., of Moultrie County, until April 30, 1923.

May 16: Order entered directing that the period of suspension of the proposed rates for service by the Shiloh Mutual Telephone Co. in Huntsville be extended to December 1, 1923.

May 16: Ordered that a valuation be made of the property of the Automatic Home Telephone Co., of Pontiac, in connection with its motion for an order requiring the Cornell Telephone Co., of Cornell, to comply with previous orders of the commission, or for authority for the Automatic company to discontinue service.

May 17: Order entered extending until July 1 the period of suspension of proposed rates for service by the Canton Home Telephone Co. in Canton.

May 17: Order entered extending until July 22 period of suspension of proposed rates for services in Belvidere by the Belvidere Telephone Co.

May 17: LaHarpe Telephone Co., of LaHarpe, authorized to file its rate schedule I. C. C. No. 4 for service in LaHarpe, effective June 1.

May 17: Suspension order affecting schedule I. C. C. No. 2 of the Young Telephone System for service in Glasgow; vacated and company authorized to place the rates in effect June 1.

June 5: Hearing held at Springfield on Illinois Telephone Co.'s rate schedule I. C. C. No. 1, stating rates for toll service from all exchanges and toll stations, effective June 21.

IOWA.

May 23: Hearing held in Clinton in the matter of interference of power lines built by Carpenter & Whitney with the lines of the Miles and Sabula telephone companies.

KANSAS.

May 4: In the matter of complaint of the citizens of Potter against the Potter Telephone Co., alleging poor service—it appearing that the exchange has been sold to E. C. Yoakum and that the new owner has already started to put the exchange in condition for better service, hearing postponed for 30 days.

May 5: Jamestown Telephone Co., of Jamestown, authorized to establish a 10-cent toll charge on its toll line between Jamestown and Scottsville.

May 14: Shawnee Independent Telephone Co. granted a certificate relating to the proposed issue of its preferred stock in the amount of \$6,000.

MAINE.

June 8: Hearing held on complaint of Z. L. Harvey and others against the rates of the Katahdin Farmers Telephone Co., of Island Falls, for service on the Patten-Trout Brook line.

MICHIGAN.

May 15: Order entered declaring it unnecessary for Union Telephone Co., of Mt. Pleasant, to rebuild rural lines which were destroyed by storms during 1922.

May 28: Hearing held on application of the Union Telephone Co. for increased rates for service from its exchange at Mt. Pleasant.

MINNESOTA.

May 28: Sanborn Telephone Co., of Sanborn, authorized to establish, as of June 1, schedule of increased rates.

May 31: Authority granted Farmers Telephone Co. to increase its rural rates at Stockholm, effective June 1.

May 31: Increased rate schedule, effective June 1, authorized for Blackduck Telephone Co., of Blackduck.

June 19: Hearing to be held at Starbuck on application of the White Bear Lake Telephone Co. for authority to increase its local and rural rates at Starbuck.

MISSOURI.

May 25: Edina Telephone Co., of Edina, denied permission to increase its rates or to eliminate free exchange service between Edina and certain other exchanges; application regarding change in toll rules also refused; authorized to establish a charge of \$1 for reconnecting an instrument disconnected because of non-payment; effective June 11.

NEBRASKA.

May 28: Application of the Holbrook Central Telephone Association for permission to continue present rates indefinitely, found to be reasonable and necessary, and order issued accordingly.

May 29: Complaint filed by John Wilde, of Redbird, against Lynch Telephone Co., with respect to emergency call service.

NORTH DAKOTA.

May 28: Complaint of the Oliver-Mercer Telephone Co. against the Mercer County Telephone Co. for a decrease in switching rates, withdrawn.

May 28: Star Telephone Co., of Pisek, allowed to discontinue operation of Pisek exchange on July 1.

OHIO.

May 21: Hearing started in Columbus to determine the reasonableness of rates charged by the Cincinnati & Suburban Telephone Co. since August 1, 1920.

PENNSYLVANIA.

May 19: Bell Telephone Co. of Pennsylvania authorized to sell certain property in Upper and Lower Milford townships, Lehigh County, to the Emaus Telephone Co.

May 19: Approval given to the sale of certain property in Durham township, Bucks County, by the Bell Telephone Co. of Pennsylvania to the Easton Transit Co.

WASHINGTON.

May 19: Authority given the Interstate Utilities Co., of Spokane, to try out, for a period of 90 days, its proposed long distance rates.

WISCONSIN.

May 28: Application of the Grant County Telephone Co., operating in Livingston and vicinity, for increased rates, dismissed.

May 31: In the matter of investigation on motion of the commission as to terms and conditions of operation of Foley's switch, between the lines of the Annaton-Preston Telephone Co. and the Muscoda Telephone Co.; it appearing that the present rate applied by the Muscoda company to the Annaton-Preston company for service rendered through the switch is reasonable and in accordance with agreement of February 26, 1920, no order entered; suggested, however, that the switch be discontinued and other arrangements made.

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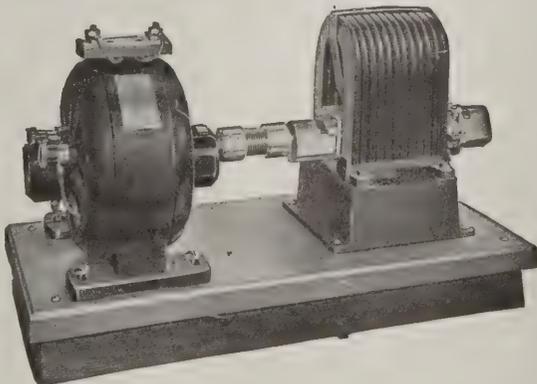
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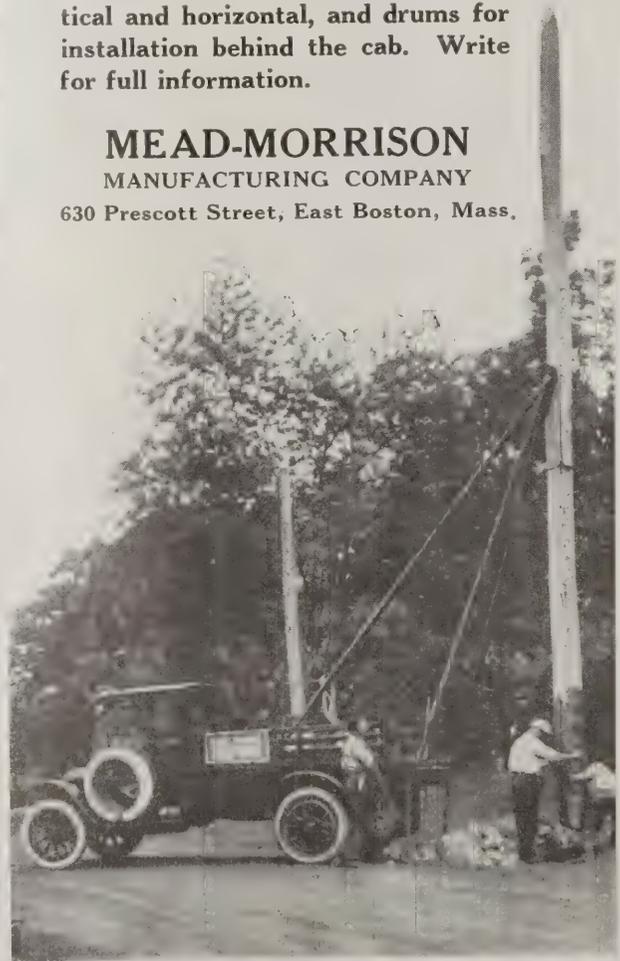
The cast steel niggerheads pull underground and aerial, assuring the laying of 50% more underground cable than any other method. The drum loads reels and handles poles.

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The Rubber Insulated Metals Corp., with offices and factory at 18 Oliver street, Newark, N. J., manufacturer of Rimco rubber insulated products, has selected the special assortment of Rimco insulated pliers and screwdriver, shown in the illustration, for dealers' displays. Known as assortment B, these tools are specially adapted to the hardware and electrical supply trade because of the constant demand from electricians for safety tools, and because the handling of the line does not

is bonded to the handles by the Elchemco process which establishes a permanent chemical union; therefore, it cannot come off and cannot crack or break if dropped on a hard surface or from the arm of a pole. The finest tool steel is used.

Book Reviews.

PRINTING TELEGRAPH SYSTEMS AND MECHANISMS, by H. H. Harrison, Published by Longmans, Green & Co., 55 Fifth Ave., New York. 435 pages, 5¼ ins. x 8½ ins., with 420 diagrams. Price \$7 net.

Written by one of the foremost authori-



The "Safety" Tools, Assortment B, of the Rubber Insulated Metals Corp.

conflict with the sale of other tools, it being in a class by itself, without competition. It is sold to the dealer through the jobber.

In a description of this assortment B, the makers add these facts: It consists of a bird's eye maple counter display easel 12 inches by 18 inches and 15 tools with hanging signs and circulars.

The complete line of seven tools are mounted on the board: Three pair six-inch pliers; one pair seven-inch pliers, three pair eight-inch pliers; one pair nine-inch pliers; two 7½-inch screwdrivers and three 10½-inch screwdrivers.

Of the goods themselves, the manufacturer adds: Rimco rubber insulated pliers and screwdrivers are in a class by themselves as they carry a "tested and passed" guarantee tag. Everyone of these tools is tested and passed by the Electrical Testing Laboratories of New York City, the plier at 10,000 volts and the screwdriver at 5,000 volts, the voltage being applied for five full minutes. This statement, stamped on every tool, is a guarantee of its test.

The insulation is semi-soft rubber and

ties on telegraphy, this new volume in the series of Manuals of Telegraph and Telephone, edited by Sir William Slingo, will undoubtedly rank as the book of books on telegraph printing systems.

In the seven chapters of this volume Mr. Harrison set forth with care and precision the evolution of the printing telegraphs to the present day efficient equipment. Writing with a view to the book being of use as a work of reference to the designer of telegraph machinery and also as a textbook, the author has combined with the chronological presentation a separate study of every principle, function, organ, or mechanical device which in any way concerns the conversion of electrical signals into the printed word.

The list of chapter headings only inadequately conveys an insight of the complete information contained in this volume. First, the elementary printing telegraph is taken up, followed by chapters on mechanisms, stock and bulletin printers, the Hughes printer, printing telegraph mechanisms, single-channel low-capacity systems, and high capacity systems.

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The "P & H" Guaranteed Penetration Process

is the original and strongest Guaranteed Penetration Process of butt-treatment. We agree to refund, without quibbling, the entire butt-treating price on every pole that does not show the specified half inch uniform penetration.

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Penetration
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in lines of the Pawnee
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Omaha, Neb., 513 Electric Bldg.

Houston, Texas, 1111 Carter Bldg.
Dallas, Texas, 311 Sumpter Bldg.

Buffalo, N. Y., 950 Ellicott Sq. Bldg.
Louisville, Ky., 1416 Starke Bldg.

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The Valentine-Clark Co. preserved the butt of this pole in 1910 for the Peoples Light Co., of Davenport, Ia. (Specification "A").* Note that portion of the butt where the earth has been removed at the ground line and about one foot below. There is absolutely no sign of decay.

*Preservative Treatment "A" provides for a continuous submersion in hot Carbolineum for a minimum duration of fifteen minutes.



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Students of telegraphy, engineers, and in fact anyone working with printing telegraph systems will find this an invaluable work for either study or reference.

YOUR TELEPHONE—THE VOICE OF YOUR BUSINESS, by Pauline Dunstan Belden. Published by the Blodgett Press, St. Paul, Minn. 72 pages, 3¾ ins. by 5¾ ins. Price 50 cents.

At last, a book that telephone people—operators particularly—are glad to see on the market. It's a little book but it contains many points that emphasize the value of the personality of a business concern as impressed upon the customer entering through the telephone door. And, of course, any book that will cause people to practice proper telephone etiquette is welcomed by telephone people.

"The voice of your business," it is stated, "is broadcasted many times daily through the telephone. The telephone may be made a builder or destroyer of business." That describes the purpose of the book—to establish enduring business friendships in using the telephone.

It is advocated that the book be used for training private branch exchange operators and that every member of a business concern's sales organization and every person who speaks for the business have a personal copy.

Leich Electric Co. Increasing Their Sales Force.

It has just been announced that the Leich Electric Co., well-known telephone manufacturers of Genoa, Ill., will now be represented in Kentucky and Tennessee by



Claude L. Prueitt, Kentucky and Tennessee Representative of the Leich Electric Co.

Claude L. Prueitt. Mr. Prueitt is well acquainted with the local conditions in this territory, is well versed in telephone equipment, and will be of valuable assistance to the operating companies in recommending the type of equipment that will pro-

vide the best service under the conditions it will operate.

In addition to telephone apparatus, Mr. Prueitt will introduce the Radd spark-plug and Leich magnetic timer, also radio specialties including non-tune radio rectifier.

Traveling will be by car, so all telephone companies, no matter how small or where located, will receive proper attention. Leich customers in the territory of Kentucky and Tennessee will welcome this new arrangement of having a factory representative assist them in solving problems.

2,000 Soldiers and Sailors Use Telephones.

In the city of Quincy, Ill., is located one of the largest institutions operated by the



New Stromberg P.B.X. Board in Soldiers' and Sailors' Home at Quincy, Ill.

state of Illinois—the Soldiers' and Sailors' Home.

Every effort is made to bring comfort to the 2,000 soldiers and sailors who live in that institution. One of the recent additions, with the view of complete comfort in mind, is the telephone system which is now in service. It is comprised of a Stromberg-Carlson No. 101 P. B. X. switchboard, 30 Stromberg-Carlson metal residence telephones and an all-cable plant which reaches every part of the institution.

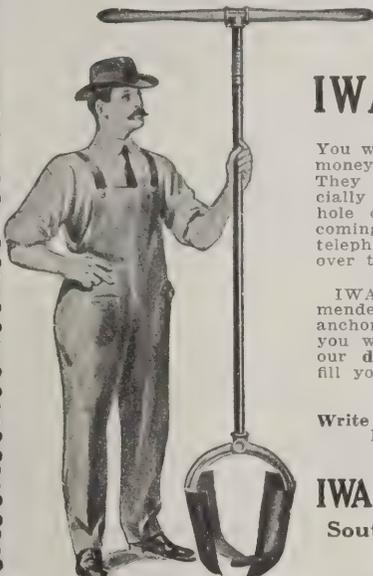
New Monarch Representative in Western Iowa and Nebraska.

Z. A. Kimbro has been chosen to succeed W. J. Stanton, resigned, as the Monarch representative in Western Iowa and Nebraska, and will make his headquarters at Sioux City. Some 20 years ago, Mr. Kimbro started his telephone career with the telephone company at Brookhaven, Miss., where he remained for several years. He was desirous of learning more of the business and left Brookhaven to get a knowledge of the assembly of telephones and switchboards in the shops of the Cumberland Telephone & Telegraph Co. at Nashville, Tenn.

After several years at Nashville, this

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For cleaning telephone equipment, by suction, use the end of the rubber hose, the bristle brush tool or the small rubber tool. When you desire to use the PREMIER HANDY as a blower, simply remove the bag, attach the blower coupling, put on the hose and you then have a powerful blower for cleaning surfaces inaccessible to the suction tools.

The Premier Handy has been tested in scores of exchanges, and has been found to be practically indispensable for cleaning switchboards, cable runways, relay racks, distributing frames, and for general cleaning of telephone equipment and apparatus.

The price of the PREMIER HANDY with all the equipment, as described, is only \$35.00. This is about half the price of many standard electric vacuum cleaners with attachments and only a **very small** fraction of the cost of a Pump Type Vacuum Cleaner truck equipment or an installed Vacuum Cleaner System.

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Ottawa, Ill.

company sent him to Lake Providence, La., as manager. Later on he was transferred to the Enterprise and Newton, Miss., offices as manager, and finally to the more important office at Granger, Texas. From



Z. A. Kimbro, New Representative of Monarch Company in Western Iowa and Nebraska.

1918 to 1921 he was telephone and telegraph inspector for the Interstate Commerce Commission, with headquarters at Kansas City.

Mr. Kimbro comes to Monarch company from the Platte County Independent Telephone Co. of Columbus, Neb., where he had served as manager.

A Telephone Desk-Stand Finish That Stays Put.

Do you remember away back when—your desk telephones, after having been in service for a few years, would begin to show a yellow streak where the hand grasped it?

In the manufacture of Automatic Elec-

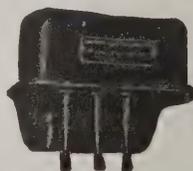
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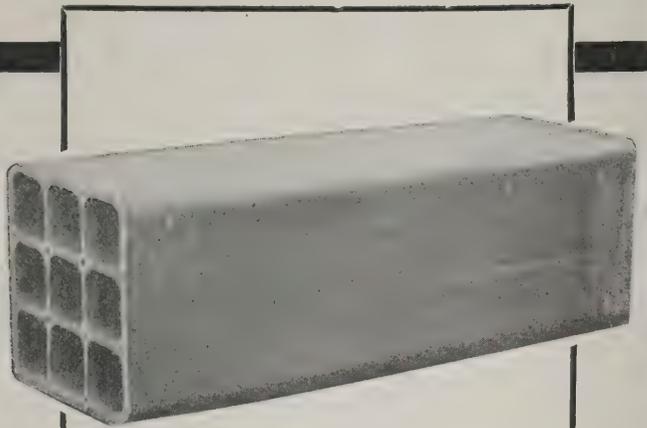
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NORTHWESTERN ELECTRIC
EQUIPMENT COMPANY
SAINT PAUL AND DULUTH, MINNESOTA



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Guaranteed to possess all the characteristics for *satisfactory* and *permanent* service.

We carry large stocks of round singles, square singles, two, three, four, six and nine duct, in standard and short lengths, in splits, mitres, and bends.

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JUNE 16

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Bonitas for Economy



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AS a type of construction, Orangeburg Fibre Conduit represents the most reliable protection your cables can get—no ordinary hazard can reduce its safety.

As a trade-marked product, Orangeburg Fibre Conduit is the result of over twenty-five years manufacturing experience by the original makers of fibre conduit.

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tric Co.'s Type 21 telephone, this disadvantage has been overcome by an adaptation of the process of sand blasting. This sand-blasting process serves to prepare the metal for the rubber Japan finish, and is very similar to the method used to clean



Automatic Electric Co.'s New Type Desk Stand. Its Finish Stays Put.

certain kinds of buildings by spraying the stone with a fine white sand, forced through a hose under terrific pressure. This method gives the parts a rough finish, or what is known as a "body." This is followed by parkerizing and cleaning.

After this they are sprayed with rubber Japan and baked for 30 minutes in an oven, at an average temperature of 400 degrees Fahrenheit. After cooling, this process is repeated, making doubly sure

that the luster and finish are permanent. To remove the finish from parts not passed by the inspectors, it is necessary to boil them for three hours in a potash solution equal in strength to concentrated lye.

That the telephones of today are better than the telephones of yesterday is often taken as a matter of course. The years of painstaking research and experimentation necessary to make them better is too often forgotten.

Good Advice for Everybody.

The Indiana Steel & Wire Co., Muncie, Ind., recently sent out a folder that contains 13 paragraphs, short but as full of truth and good sense as an egg is of meat. They touch on points that will apply particularly well to the telephone business, so it is reasonable to suppose that Messrs. Miller and Hartman had a hand in compiling them. Here they are:

"We hold these truths to be self-evident:

That honesty is not only the best policy, but the most profitable policy;

That a business succeeds only as it serves;

That no business can long exist unless it performs some service, either better or more cheaply than any other agent;

That retaining the business of an old customer is more important than getting the business of a new customer of the same size;

That courtesy pays dividends regularly and promptly;

That a business which is being operated without a knowledge of the cost is riding to ruin;

That the best salesmen a business can have are its customers;

That the greatest asset of a man or business is the reputation for fair dealing;

That the good-will of our own employes is just as desirable as the good-will of the trade;

That all the advertising in the world will not create a permanent demand for an inferior product;

That success in business is more often won by men who are steady, conscientious pluggers than by the brilliant on-again, off-again boys;

That common sense is the rarest commodity on the market;

That the prizes in this world go to those who are ordinary, industrious, fair and temperate."

Prices in the Metal Markets.

New York, June 4—Copper—Quiet; electrolytic, spot and futures, 15c. Tin—Easier; spot and futures, \$41.62. Iron—Steady; No. 1 northern, \$29.50@31.00; No. 2 northern, \$28.50@30.00; No. 2 southern, \$27.00. Lead—Steady; spot, \$7.25@7.37. Zinc—Quiet; East St. Louis, spot and nearby, \$6.40@6.45. Antimony—Spot, \$7.00.

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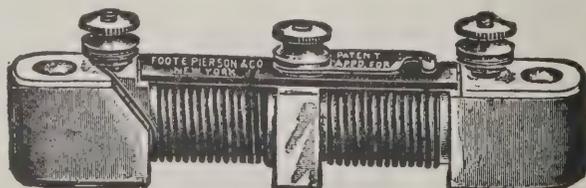
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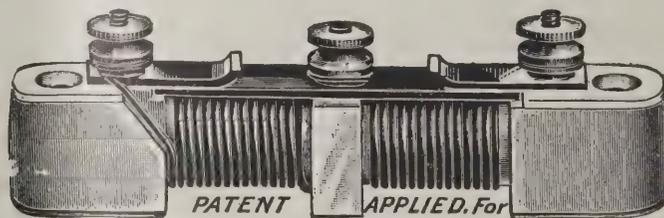
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TYPE "C" COMBINED ARGUS LIGHTNING ARRESTER AND HIGH TENSION PROTECTOR

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Telephony

THE AMERICAN TELEPHONE JOURNAL

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PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
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Number 24

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\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

One of the most significant features of the conference

HELPING THE SMALLER COMPANIES

of officers of state telephone associations—held in Chicago June 8 and 9, and reported in this issue—was the manifest appreciation of the importance of affording more help to the smaller operating companies.

Both the leaders of the various state organizations present and the officers of the United States Independent Telephone Association, under whose auspices the meeting was held, emphasized their increasing belief that the most effective way to build up the telephone industry is to extend organized help to the smaller operating units.

This is sound sense, assaying 16 ounces to the pound. It is gratifying to observe this anxiety on the part of association leaders to render practical aid to the small exchange in the many matters in which it needs counsel and assistance, such as financing, handling of employes, commission hearings and the like.

* * * *

In the past there has been a tendency to proceed on the theory that what was beneficial to the larger companies would also help the smaller ones, which is true in a general way, but rigid adherence to this idea alone has necessarily left the small exchanges to shift for themselves with regard to questions which applied vitally to them but did not especially concern the larger organizations.

As was frequently emphasized at the Chicago conference last week, there are many problems concerning which the smaller exchanges need help from the or-

ganizations, that are automatically handled by the big companies for themselves without association coöperation.

For the good of the entire industry, the associations should meet these particular needs of the smaller companies, and it is encouraging to note their disposition to do so.

* * * *

Men having extensive holdings in the telephone business, operating a group of important exchanges, should know that it is to their interest to have the small companies in their territory successful and contented. Such a condition tends toward good service in the district, helps public relations generally and is beneficial all around.

* * * *

The president of one important state association outlined the matter very sensibly when he said:

"The small companies need help in handling many problems and it is to the interest of all of us to see that they get that help. The telephone business is a good business—none better—and nothing should be left undone by the associations and the larger companies to coöperate with the small exchanges and lend them a hand, for that will contribute to the general success of all.

"When the little fellow gets up against a tough problem he does not know how to handle, it is natural for him to get discouraged, let things sag, and finally want to sell out. Some practical help at the right time will avoid such a condition,

save the situation and benefit the whole industry."

One association has adopted a good idea in sending out a questionnaire to all the telephone companies in the state to collect complete information on many useful points. Among the queries asked is: "Does the company desire to sell out? If so, for what reason?"

The answers should disclose information of vital value to the association and its member companies occupying that territory. They could then take action to see that the property passed into competent hands, or, possibly, supply the remedy needed to tide over the difficulty, that might be only temporary, and prevent a change of ownership if that were preferable.

As a preliminary towards helpful coöperation with all companies, the plan promises good results.

* * * *

One problem common to both large and small telephone companies—and, in fact, to concerns in all lines of business—is the holding of competent employes in the organization.

The expense resulting from the turn-over in employment is a factor that disturbs all business men, and ways and means to reduce it to the minimum are always being sought. In fact, the success with which this turn-over is held down often determines whether the concern's operations show a profit or not.

This is why employes' benefit plans, including retirement pensions and similar measures to encourage employes to stay with a company, knowing that their faithful work and long service will be re-

warded, have been adopted by the largest business organizations of the country, and are a live topic with nearly all concerns of any size.

* * * *

Since the last national telephone convention association leaders have given this subject much serious consideration. They see the necessity of planting in the minds of all telephone employes a belief that they are engaged in an important and permanent line of work, and that loyalty and fidelity in its performance will bring them suitable reward and advancement.

In the Bell organization the associated companies have their employment benefit associations, with a secretary in charge, which are working in conjunction with the corporation management with considerable success.

In the Independent group there are thousands of small companies, which, acting individually, probably could not proceed along those lines; but it is hoped that taking them by states, districts or groups of some sort, a plan may be formulated that will help such companies to handle the employe problem satisfactorily.

* * * *

One decided advantage that an employe of the smaller company has, however, is that he ordinarily has an opportunity to acquire a financial interest in the business, and frequently become its owner. Many properties of various sizes are now controlled by men who, because of advancing years, would like to turn them over to the man on the job who has shown his worth.

Helping to finance such a transaction—

enabling a good telephone man to take over a plant from an owner desiring to retire—is one of the ways that valuable coöperation could be extended from association headquarters.

* * * *

In the opinion of those at the conference, the financing plan—based on the principle of building and loan associations—which the Texas association is arranging to try out, offers great possibilities, and its operation in Texas will be carefully watched.

So important did the conference consider the matters of plans for employe benefits and for financing, that a resolution was adopted requesting that these topics be included in the program for the convention of the national association to be held in Chicago in late October.

State Association Executives Meet

Semi-Annual Conference of Executives of State Telephone Associations Held in Chicago Last Week—Thorough Discussions Had of Employe-Benefit and Pension Plans and the Financing of the Smaller Companies

Friday and Saturday, June 8 and 9, executives of the various state telephone associations held their semi-annual conference at Hotel Sherman, Chicago. Representatives from 13 state associations were present, and discussed various topics as affecting the industry and the associations.

The major portion of the time was devoted to discussion of employe-benefit plans and the financing of the smaller telephone companies, while inductive interference and the relation of the state associations to manufacturers and other exhibitors received considerable attention. There were definite expressions of opinions that the state organizations were endeavoring to concentrate their efforts on advancement of the interests of the small companies.

The conference, which was held under the auspices of the United States Independent Telephone Association, was presided over by President F. B. MacKinnon, of the national organization, and Charles C. Deering, of Des Moines, Iowa, secretary of the national organization and also of the Iowa association, acted as secretary.

The first session was called to order about 11 o'clock Friday morning by President MacKinnon, who stated that the meeting would be entirely informal; that there were two principal problems to be considered—employes' benefit plans and the financing of the small exchanges.

He declared it important to interest the employe to retain him in service and to provide a system of benefits and a pension for his old age.



President F. B. MacKinnon, of the National Organization, under the Auspices of Which the Conference Was Held, Presided at the Sessions.

"If this cannot be done," declared President MacKinnon, "We shall lose employes and cannot attract new ones. The officers of the association have investigated the matter and arrived at the conclusion that the national association cannot handle it but that it must be done through the state organizations.

"What are you going to do with the small exchange of 100 to 250 subscribers, which must be operated by an individual?"

asked Mr. MacKinnon. "A number of suggestions have been made," he continued, "and the most feasible plan is that a good man be placed there and allowed to acquire an interest in the plant."

The chairman referred to the plan suggested by Judge S. A. Lindsey, of Tyler, Texas, at the convention of the Texas Independent Telephone Association last March, and stated that details of it would be taken up later.

The problems of financing the smaller companies, Mr. MacKinnon stated, should be handled through the state organizations. Additional questions which he mentioned as subjects which could be discussed were inductive interference, long distance operating rules, income tax procedure, and others.

Preliminary to the discussions of the various questions, President MacKinnon called upon each one present to briefly introduce himself and state his connection.

L. M. Kraege, of Topeka, Kan., secretary of the Kansas Independent Telephone Association, was the first in the circle to speak. He told of some of the problems which the Kansas telephone men have, mentioning particularly that of the state taxes, which will soon come up. Kansas conditions he reported as improving, and he looks for better financing than has been the case in a number of years. The association is paying particular attention to the requirements of the smaller companies.

J. G. Ihmsen, of Albany, N. Y., vice-president and general manager of the Up-

State Telephone Association of New York, expressed himself as heartily in favor of the meetings of state executives twice a year, as things can be learned which are very beneficial. The problems in New York are not the same as those in the West, but in his opinion the matter of protecting the smaller companies has advanced farther than in the West. He reported that not one bill reached the floor of the state legislature that was detrimental to the telephone companies.

A number of the New York companies are working on benefit and pension plans, but they have not been generally adopted by the small companies. Financing has not been taken up systematically, Mr. Ihmsen stated, and there is great room for improvement.

Although only two years old, the New York association is regarded as a great success, and no one resigns after joining the association, although it is difficult to get them to join and attend meetings. This year, the association has adopted a plan of having small one-day meetings, which will be held not closer than one week apart.

Although not representatives of state telephone association, H. D. Fargo, president, and S. R. Edwards, editor, of TELEPHONY, expressed their sympathy with the difficulties and problems of the managers of telephone companies and stated their readiness to assist in every way possible in solving the problems and aiding the

have all the legislative problems of the other associations and then some more. So far, they have had four 30-day sessions of the legislature, and the end is not yet.

The association is particularly interested in the financing of small companies, and has already started preliminary work in the carrying out of a financing plan.

F. V. Newman, of La Porte, Ind., general manager of the La Porte Telephone Co., expressed interest in the employes' benefit, in traffic, and in labor turnover.

R. W. Hedrick, Jefferson City, Mo., secretary of the Missouri Telephone Association, stated that the Missouri companies have many troubles and different kinds of problems.

Jay G. Mitchell, Springfield, Ill., secretary-treasurer of the Illinois Telephone

fact, the 25th anniversary of its organization was celebrated last spring.

The association devotes much time to operators' schools, and he expressed the opinion that the organization does a big work in this direction. Miss Anne Barnes is em-



J. G. Ihmsen, Vice-President and General Manager of the New York Association, Told How "New York Does It."

ployed by the association as traveling chief operator, and her services are always at the command of the Iowa companies. During the spring months, Miss Barnes conducts operators' schools for the Iowa State College, the last of which are being held this month.

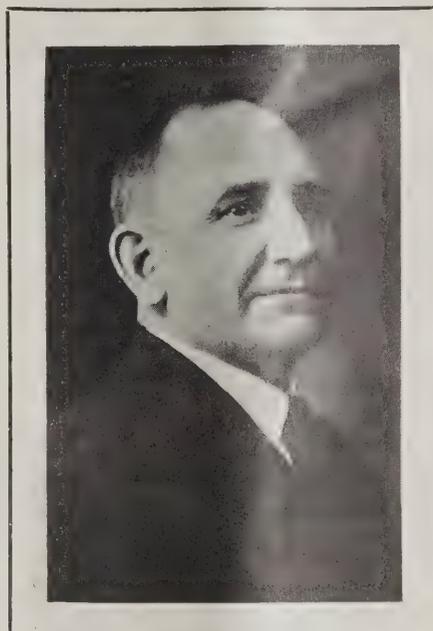
H. E. Bradley, Harrisburg, Pa., president of the Pennsylvania State Telephone & Traffic Association, declared that toll work is the principal interest of the 21-year old state organization. It clears for all the Independent companies which exchange business with the Bell companies in the surrounding seven states, and also clears for the Bell companies. Because of this latter fact, the Bell companies appear on the association lists as members, but they are members for toll clearing purposes only.

While there were some bills introduced in the legislature, there were none which were passed that would cause trouble to the companies.

Mr. Bradley spoke briefly on the Independent Pioneers' organization and outlined plans for increasing its membership and activities.

Frank A. Knapp, of Bellevue, Ohio, president of the Ohio Independent Telephone Association, reported the Ohio organization as running as smoothly as ever, with the legislature adjourned. The tax commission has been fair to the Ohio companies, and the public utilities commission is treating the companies fairly.

The Ohio organization aims to take care of the small companies, for it wants to



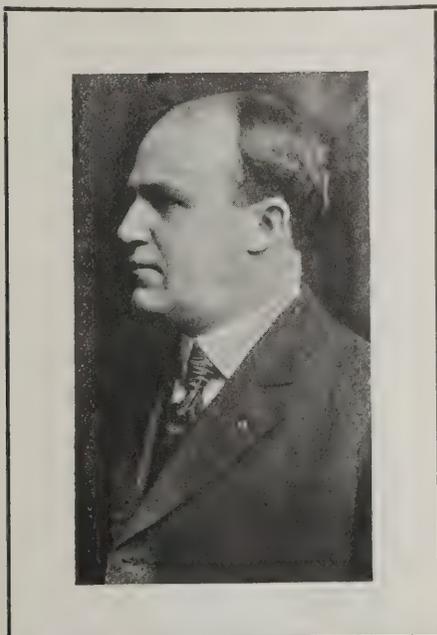
R. B. Still, President of Texas Association, Related Details of Financing Plan Texas Is Placing in Operation.

Association, said there are \$150,000,000 invested in the telephone business in Illinois. He invited everyone to attend the Illinois convention, which is to be held at Decatur in November.

Houck McHenry, Jefferson City, Mo., president of the Missouri Telephone Association, although many years in the business, came to the meeting to learn, for he is interested in all of the problems which were mentioned by President MacKinnon.

C. L. Kelly, of North Bend, Neb., president, Nebraska Telephone Association, said that although there are about 200 companies in Nebraska, the association's work has not been very extensive. At the present time, there are about 100 companies members of the state association, which is a greater membership than ever before.

F. M. Boardman, Nevada, Iowa, president, Iowa Independent Telephone Association, announced that there has been a state association in Iowa for many years. In



Charles C. Deering, Secretary of the National Association, Told of Investigations of Employee-Benefit and Pension Plans.

associations and companies, individually or collectively.

R. B. Still, of Tyler, Texas, president of the Texas Independent Telephone Association, declared that with no paid officers the Texas association is making a real live job of its work. In Texas they

keep them in the business. He stated that a questionnaire is now being sent out with the idea of collecting information relative to the companies, in order that the association may be in a better position to aid them. Illustrative of the questions asked is one which inquires whether a plant is for sale, the idea being that the association may be of assistance in keeping it in the Independent ranks.

J. C. Crowley, Jr., of St. Paul, Minn., secretary-treasurer of the Minnesota Telephone Association, declared that in Minnesota all the troubles experienced by companies in other states are present. He mentioned some of the 27 bills which had been introduced into the legislature. Among them was a bill providing for the regulation of inductive interference. This passed the senate and was second on the calendar in the house and would have been passed if it had been brought up on the floor. Mr. Crowley referred to the small companies and the activities of the association in their behalf.

Jay Greaves, of Glencoe, Minn., president, Minnesota Telephone Association, reported that although all of the telephone companies in Minnesota are in the association, its activities are those of the small companies. The large companies are not represented on the board of directors, but cooperate with the officers in every possible way.

J. A. Steninger, of Parker, S. D., ex-president of the South Dakota Telephone Association, spoke briefly of the legislative

district organization in that state. There are about 600 Independent companies, many of them very small. Over 200 belong to the state association, and about 500 to the district associations.

While there were many bills detrimental to utilities introduced into the state legislature, most of them were killed. The telephone industry in Indiana is in as good shape as it ever has been, Mr. Cuppy reported. The small companies are in less need of financial aid than the larger companies, as the small owner can usually finance himself. He stated that the Indiana utilities are all cooperating with one another.

Dr. R. E. Gordon, El Paso, Ill., president of the Illinois Telephone Association, expressed the opinion that, on the whole, Illinois is getting along favorably now. It has been worried by legislative affairs, but at the present time the eight-hour law—a pet measure in the legislature—is the only menacing bill.

District organizations have not met with success in Illinois, but there have been good sessions held when it has been possible to get the men together. The state association is in a very strong position. In the case of small companies which are not able to pay for the making out of reports, etc., the association has arranged that free service be given to them.

All present having briefly reported, a recess was taken for lunch, which was served in an adjoining room.

The Friday afternoon session opened

gether, so that it was difficult for the exhibitors to get their exhibits shipped from one convention city to another. He stated that there were several of the exhibitors present and called upon Frank L. Eldridge, of Chicago, general sales representative of the French Battery & Carbon Co., to start the discussion.

During the past two or three years, Mr. Eldridge stated, manufacturers and jobbers have been put to considerable expense due to duplicate dates of conventions or conventions in widely separated states being too close together. He expressed the desire that some schedule of convention dates be worked out whereby conflicting dates would be eliminated and dates for conventions in widely separated states be arranged with the idea of facilitating getting exhibits from one city to another.

He said that there was much dissatisfaction among exhibitors owing to the irregularity in the convention dates, particularly during the past season.

George R. Folds, president, Cook Electric Co., Chicago, said that his company had two convention exhibits, but found that two are not enough, and he cited illustrations where it was impossible to make the conventions with two exhibits traveling all the time. He also brought up the point that some of the exhibitors do not have enough men to send to the conventions when two are held on the same dates.

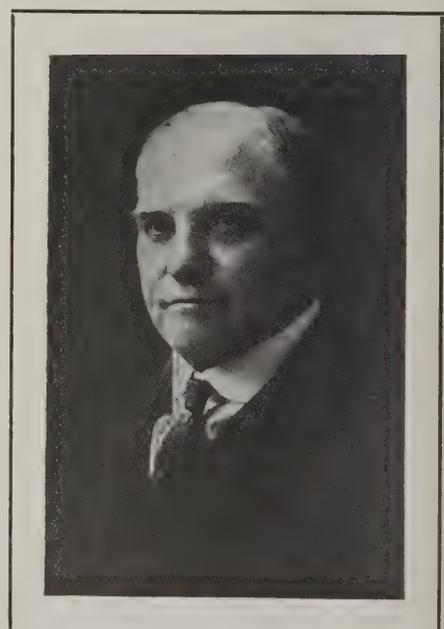
Mr. Eldridge brought a laugh when he said that there was talk of the manufac-



J. A. Steninger, of Parker, Ex-President of the South Dakota Association.



Jay Greaves, of Glencoe, President of the Minnesota Telephone Association.



L. M. Kraege, Secretary of the Kansas Independent Telephone Association.

activities in South Dakota. About 50 of the South Dakota companies are now members of the association.

F. O. Cuppy, Lafayette, Ind., secretary of the Indiana Telephone Association, outlined the organization of the state association, and declared that they are strong on

with a discussion of convention dates. President MacKinnon brought up the matter by stating that there had been considerable dissatisfaction created among the manufacturers and other exhibitors at state conventions owing to conflicts in the dates or having the dates too close to-

turers holding conventions and having customers follow them around—in other words, reverse the tables.

O. V. Dodge, of Chicago, sales manager, Automatic Electric Co., spoke of the efforts made by his company to follow the conventions and have exhibits at each.

H. E. Bradley, of Pennsylvania, stressed the importance of exhibits at the state conventions and advocated coöperation with the exhibitors. He thought that if the national association officers are notified away in advance of dates, conflicts can be avoided.

Jay Greaves, of Minnesota, pointed out

Illinois convention to be held at Decatur in November.

J. C. Crowley, of Minnesota, also extended a like invitation.

President Folds, of the Cook Electric Co., brought up the matter of truck and porter service at the hotels, and John F. Jaap, sales manager of the Cook company,

compensation insurance, and he declared the Bell benefit plan more liberal than the compensation law. Several of the larger Independent companies have payrolls of sufficient size to provide an average experience and have put in employes' benefit plans.

It had been thought, he stated, that the



H. E. Bradley, of Harrisburg, President of the Pennsylvania Association.



Houck McHenry, of Jefferson City, President of the Missouri Association.



F. A. Knapp, of Bellevue, President of the Ohio Independent Telephone Association.

that there are factors which enter into the dates which have to be considered. He cited the case of Minnesota, where the legislature meets every two years. It has been found that if the convention is held before the legislature meets, the companies are awakened and more effective work is done. He expressed the opinion that the one remedy is for all the states to fix tentative dates at least six months in advance and then conflicts could be adjusted.

R. B. Still, of Texas, endorsed the idea of fixing tentative dates. If the by-laws of the state association set the time and it is found necessary to change, it could be done.

L. M. Kraege, of Kansas, declared that the state organizations ought to do everything possible to help the exhibitors.

C. C. Deering, of Iowa, stated that it was only a few years ago that an effort was made to get the dates fixed through advance correspondence, and this worked out fairly well. The past year, however, there had been a worse muddle than for some years. Mr. Deering brought out the fact that when there are conflicts, the smaller conventions, which most need the help that good exhibits give, lose out for it is only natural that the best exhibits go to the convention that has a larger attendance.

Jay G. Mitchell, of Illinois, stated that Illinois was probably the worst offender, as it has been dodging both national and state conventions. He requested the manufacturers to aid in fixing the dates for the

told of experiences in getting exhibits to the exhibit rooms.

Jay G. Mitchell, of Illinois, said that the hotels claimed exhibitors damage hotels and furniture. This made it difficult to make arrangements for conventions. He asked for the coöperation of exhibitors in using care not to cause damage to the rooms. He stated that the Illinois association has guaranteed the hotel in Decatur to make good on any damage caused by the exhibitors.

H. E. Bradley, Pennsylvania, related his experiences in that the hotel told him what the exhibitors could not do and he in turn notified them—and they didn't do them. He declared that a great deal can be accomplished by such notification.

President MacKinnon expressed his belief that if the difficulty of the associations in dealing with hotels be impressed upon exhibitors, there would be much good accomplished. He commended Mr. Greaves' suggestion relative to fixing the convention dates at least six months in advance, and thought that the difficulties complained of could be thus eliminated to a large extent.

He then called upon Secretary Deering to open the discussion on the employes' benefit plan.

Mr. Deering told of the investigation which had been made, pointing out that most of the states have compensation laws, the provisions of which vary in the different states. As a result of this, practically all of the companies are forced to carry

national association could inaugurate a plan and carry it out the same as the Bell companies have done. Investigation, however, has convinced the officers that it is not feasible because of the difference in the various state compensation laws and also the expense which would be involved in making investigations if the companies were scattered all over the country.

It is thought that a workable scheme can be established and handled in a very satisfactory way by an organization in one state or a group of adjoining states. Mr. Deering presented statistics showing the costs of several of the companies, which revealed that the expense is very little, if any, over the rate for carrying compensation insurance, while the benefits to employes are greater than the compensation laws provide.

There was an extended discussion in which all present participated, during which the many difficulties and factors that are encountered in the establishment of an employes' benefit plan for the Independent companies were brought out. It was the general opinion that a plan of some kind is most desirable and that some practical plan can be worked out.

The suggestion was advanced that possibly, if the requirements which are desired were all drawn up and submitted to insurance companies, some insurance company would make a special rate, based upon the acceptance of a great number of the Independent companies.

The session adjourned at 5 p. m., Presi-



Dr. R. E. Gordon, of El Paso, President of the Illinois Telephone Association.



F. M. Boardman, President of the Iowa Independent Telephone Association.



C. L. Kelly, of North Bend, President of the Nebraska Telephone Association.

dent MacKinnon announcing that the Saturday morning session would first consider the financing of telephone companies.

In the evening the executives were guests of the United States Independent Telephone Association at a theater party.

Immediately upon the opening of the Saturday session, President MacKinnon called upon R. B. Still, of Texas, to present the plan originated by Judge S. A. Lindsey, of Tyler, Texas, for financing the smaller telephone companies. This plan, which is based upon the building and loan idea, was outlined in TELEPHONY of April 7.

Mr. Still stated that the details are difficult to work out, such as organization, incorporation under the state laws, etc. However, Judge Lindsey and other

backers are going ahead with it and, in fact, since the March Texas convention, have loaned practically \$40,000 under the plan. These loans will be turned over to the loan association when it is formed.

As an instance of what has been done, Mr. Still said that \$25,000 has been loaned on one property for the purchase and installation of a new switchboard, substation equipment, etc. If this money could not have been obtained, the owner would have been forced to sell.

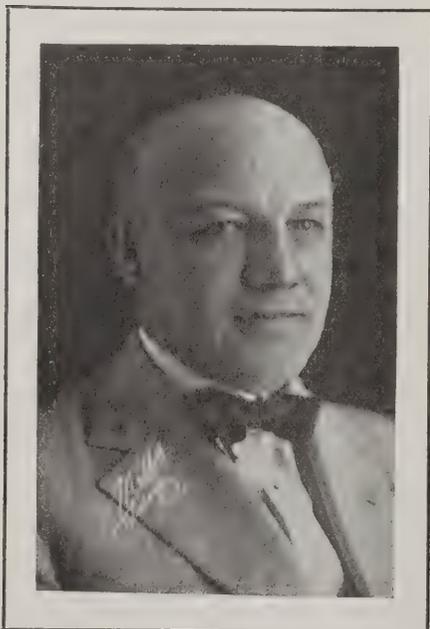
Mr. Still indicated that the plan has been copied so far as possible from the building and loan idea, which has been thoroughly tried out.

To pay out a loan, 90 monthly payments are required, each payment being \$15.83 per \$1,000 borrowed. This includes in-

terest and a payment on the principal. To start with, payments on the interest are greater than on the loan, but toward the end of the 90-month period, practically all the payment applies to the principal with very little for interest.

As illustrative of this, Mr. Still stated that the interest the first month would be \$8.33 and the payment on principal \$7.50. The 45th month, the interest payment would be \$5.03, and the payment on principal \$10.80. The interest payment the 70th month would be \$2.54, and the payment on principal \$13.29. The interest on the 90th month is 14 cents and the payment on principal \$15.69.

The interest charged nets 10 per cent on the actual amount outstanding. When it is taken into consideration that 10 per



J. A. Pratt, of Madison, Secretary of the Wisconsin State Telephone Association.



F. V. Newman, of La Porte, Ind., General Manager of the La Porte Telephone Co.



F. O. Cuppy, of Lafayette, Secretary of the Indiana Telephone Association.

cent interest is paid only on money needed, this rate really is no more than paid on regular loans, where interest is paid on the entire sum. Any telephone company can figure that it can complete the payment in 90 months.

The loans are secured by a water-tight deed of trust mortgage on the property. As a tighter rein is required on a small property than on a large property, provision is made to insure proper spending of the money, and the association holds the right to see that all taxes are paid and that the loan is otherwise protected.

With an experienced telephone man in charge, it is believed that the investment is as safe as government bonds, year in and year out.

Mr. Still is very enthusiastic over the plan and expects that it will not be diffi-

a general market can be created through the standardization.

The matter of inductive interference was then brought up, President MacKinnon stating his belief that the enactment of definite laws would settle the question by providing a definite procedure to be followed by both power and telephone companies.

Jay Greaves, of Minnesota, outlined conditions in that state. He told of the bill which was introduced in the legislature through the efforts of the association and that it had passed the senate and would have gone through the house if it had been voted upon. Since the legislature adjourned, the attitude of the power companies has changed and there is every indication that they desire to cooperate.

In the discussion it was brought out

benefit of companies in states where the compensation insurance has to be placed with the state department. This motion being seconded, was likewise carried.

After a unanimous motion of thanks to the officers of the association for the entertainment provided and the successful meeting, the conference adjourned.

Vermont Association Will Have Annual Meeting June 28-29.

Arrangements which are being completed for the third annual convention of the Telephone Association of Vermont indicate that it's going to be a very interesting meeting. It will be held in Burlington, at the Hotel Van Ness, on Thursday and Friday, June 28 and 29.

Secretary C. L. Ovitt, of Enosburg Falls, who is "in the know" of what the



J. C. Crowley, Jr., of St. Paul, Secy.-Treas. of the Minnesota Association.



Jay G. Mitchell, of Springfield, Secy.-Treas. of the Illinois Association.



R. W. Hedrick, of Jefferson City, Secretary of the Missouri Telephone Association.

cult to interest people in order to obtain money to make the loans to the companies. It is figured that of the 10 per cent interest charged, about 2 per cent will go for administration and 8 per cent to the investor.

The Texas association is determined to give the country an example of what can be done in the line of an industry financing itself, and Mr. Still hopes to report some definite results within the next few months. He was asked a number of questions regarding the various details of the plan and a great deal of interest was manifested in it. The plan was generally commended and the Texas experiment will be very closely watched.

President MacKinnon, in closing the discussion, declared the plan the most constructive that has been submitted.

Jay G. Mitchell, of Illinois, in relating experiences in Illinois, brought up the point of standardizing the trust deed so that a bond of one telephone company will be exactly like that of another, and thus

that Illinois, Indiana, Missouri, Nebraska, and Pennsylvania have the matter of interference handled by their state commissions and that it is working quite satisfactorily.

It apparently was the general opinion that the best solution of the question is the agreement of power and telephone companies to a definite procedure and then the enacting of this into a law whereby the state commissions will have the enforcing of the procedure.

J. C. Crowley, Jr., of Minnesota, moved that it be the sense of the meeting that the benefit and finance plans should be made the leading subjects for the program at the national convention in October. This was unanimously carried.

J. G. Ihmsen, of New York, moved that the investigation being made by the officers of the association of the employes' benefit plans be extended to obtain information from insurance companies to cover all the benefits and pension requirements, and also without compensation insurance for the

committee in charge is planning, prophesies a large attendance, for matters of importance to all telephone men in Vermont will be taken up and there will be many benefits to be gained by being present. He urges that plans to attend be made early.

There will be, in addition, a very fine exhibit of all that is latest in equipment for telephone systems.

District Meetings for This Year Started in Oklahoma.

The telephone division of the Oklahoma Utilities Association recently held the first of the district conferences for this year. The meeting was at Broken Arrow, and J. W. Walton, manager of the Broken Arrow Telephone Co. and chairman of the telephone division, was in charge. The conferences last year proved of great value to the telephone companies, and plans for the gatherings this year assure both greater interest and greater benefits. Addresses and discussions, followed by a banquet made up the program for the day.

In Partnership With the Public

What Constitutes the Subscriber's Impression of the Company—How the Operators Can Create a Better Understanding of the Company by the Patron—Paper Presented at a Recent Operators' School in North Dakota

By Miss Hannah Cronin

Chief Operator, Ryder, N. Dak.

Before getting down to any definite suggestions as to the relations which we should undertake to cultivate and develop between the public and ourselves, let us look first at conditions as they exist and consider what is the theoretical relation between the public and the public service corporations from the company's point of view, and from the point of view of the public.

The relation of the company to the public has been likened to a partnership. The transmission of freight, individuals and so forth from one part of the country to another, or from one state to another, is a public service.

The facilities for the public service might theoretically be furnished by the government, either state or municipal. This is the method in this country as far as public roads are concerned. It is generally the case in the furnishing of water supply, sewer facilities and so forth.

The demand for other classes of public service came so much faster than the government authorities were ready to undertake them that private individuals assumed the risk and responsibility and therein was developed the great privately-owned railroad and transportation services and later the privately-owned telegraph and telephone. These corporations organized to furnish this service and as soon as they functioned as such they became public service corporations.

What then is our relation to a public service corporation? To the public? We form a certain partnership with the public. They furnish us rights in the streets, etc. It is to them that we must try to give first-class service.

By first-class service I mean service that is just as good as human ingenuity can devise and produce at a fair cost to the consumer. In other words, just as good service as can be expected. By comprehensive service, I mean service which, within reason, is within reach of the entire public. We cannot simply touch the high spots and take all of the cream.

The popular outcry of the public has been against corporations. The public considers them all the same; if some have been bad, all are bad. The public who raise this outcry have never become well enough acquainted with us to know that we are not bad; at least, that our intentions are of the very best.

Again, we are a monopoly. What does

it mean to one of the public when he classes us as a monopoly? He begins to get angry right away. He cannot look around and decide for himself what people he wants to do business with in regard to his telephone service. He has to do business with us or none at all, and having no choice grates on him.

He believes that the price has been fixed and, having no other recourse in case he does not like the product, thinks that the company is bound to make an extortionate

WORKING TO ONE END.

There are three factors in our economic system today that must be taken into consideration in our work—the shareholders, the employes, the community.

If we can develop right relations and conditions in industry, we shall have a much more satisfactory relation—not only between capital and labor, between employer and employes, but also between the community as a whole and the various parts of that community, for we shall all be working to one end.—Gerard Swope, President, General Electric Co.

profit by furnishing him a cheaper article than he is entitled to for the price. This we know to be a misapprehension on the part of the interested public. The fact is that with the price fixing, the public service corporations are striving for an existence, let alone seeking any investments for profits. It is this misapprehension that brings about many of the misunderstandings between the company and the subscriber which we have to "iron out" with tact.

We must use *tact* always. Lack of tact when dealing with a subscriber has been the cause of trouble in a great many cases. Subordinates, while they cannot be taught so that they will be infallible in tactful treatment to the public, must be courteous—and more can be done in that line in the future than has been done in the past.

Just remember when a man comes to the telephone office, or calls to ask for a change, or to register a complaint, that he has a perfect right to do so.

He should be waited upon and attended to courteously and not be referred around from one office to another. Why treat a

man who is angry in an angry way? He is not going to leave until he gets this grievance out of his system. Use him courteously. Use tact. Do not irritate our troubles. Don't make them any worse.

Bear in mind every day that you are "serving the public." And always bear in mind that service means not only furnishing the public with telephone connections, but waiting upon them courteously when they come to the office and giving them the same cordial treatment in looking after the smaller things and the many details that we try to give them on the main proposition.

We must remove all misunderstanding as far as possible. We must let them know that our problems are simply the difficulties we encounter in their service. They should understand that all our problems and difficulties and trouble come in attempting to give them service. If we can make them understand this, it will simplify matters appreciably. The nearer we get to a complete understanding, the better.

We should ever keep in mind that we are "serving the public" and try to secure the respect of every member of the public with whom we come in contact. Win respect for yourself and respect for the company. If the subscriber is in any way fair-minded, you can get his respect if you spend time and tact enough—and once you get their confidence you remove their distrust.

Treat your subscriber a little bit better than he expects to be treated. Surprise him! Leave the obligation on his part. You then have done something worth while. Use the same kind of gilt-edged treatment in cases of minor importance that you use in cases of fire, death, sickness, etc. In this way we will make many lasting friends for the company and will help to solve the question of public relations.

It has been said that human nature divides people into two different groups—reasonable and unreasonable—but we have never seen anything within the law which limits the duty of a public service corporation to merely serving reasonable people—it is up to us to serve unreasonable people as well. As the unreasonable people are the ones who are most likely to make trouble for us, we ought to be more anxious to meet and explain to them than to the others who are very likely to look at things reasonably without detailed explanation.

Every subscriber in this vast territory of ours hears the voice of some telephone operator every day. That is the operator's contact. This is where the smile in the voice acts as the public crier for the company. Thrice blessed is the operator who has a "smile" voice. This accomplishment may be acquired, and we must work every day and never forget that we are striving to attain that musical voice.

In closing let me say that the public will respond to reasonableness, courteousness and good will; but we, as employes, must feel those elements within ourselves before we can extend them to the public. Re-

member the "smile" voice. The poet says:

When time, life's adviser,
Has made you much wiser,
You won't be so quick with the blow;
You won't be so willing
To fight for a shilling,
And change a good friend to a foe.

Summing the whole in one rule, I would say, "Always put yourself in the other person's place, and when in doubt, apply the Golden Rule."

That is fairly simple. Put yourself right in his place, look at it from his viewpoint, and then treat him fairly with his point of view and never let a man get away

from you without leaving in his mind a feeling of respect toward you and the company.

"Let every individual treat the public as if he, himself, were the whole company and had the whole responsibility, present and future. We should try every day as a public service corporation to be just a little different and a little better than the average.

It may be a task to do those things at first—to remember to do them—but after awhile they will come naturally to us, and then we'll be surprised at the pleasure it gives us to do them.

Problems of a Small Town Operator

The Operator as a Servant of the People and of Her Company—Courtesy, Patience and Other Qualities Which Will Lighten Her Work—Paper Read at Operators' School Held Under Auspices of North Dakota Association

By Miss Freida Hirsch

Chief Operator, Anamoose, N. Dak.

The problems of an operator cannot be laid out as exact concrete facts because of the varying conditions of villages of this size, and also the variations of the characters of the people of the different communities cause all business concerns to deal with them in a little different way. As my work has been in one of the small exchanges, I can speak of my experience in a small-town way. I will discuss this matter from the standpoint of an operator as a servant to the people; then I shall deal with her duties as a servant to the company.

To begin with, what does the public expect of the girl at the switchboard? Some people expect far too much; others understand and are satisfied with the service as required by the company; and others do not care.

The first group is the hardest to deal with and sometimes very trying to one's nerves. They do not realize how tedious and tiresome it is for an operator to sit at the switchboard all day long; but they imagine her to be a careless, ambitious, gum-chewing girl, who has nothing to do but sit around looking wise. Even when things are running at their smoothest, they display their unfortunate dispositions over the wire.

Our rebellious characters are sometimes heated to a burning point, but if we are of a good metal, we can control ourselves and meet the worst with a smile. Of course, there are extremes which must be met in a ladylike and congenial manner, and the necessary explanations will generally settle the dispute.

You all know that one of the first things you are taught when becoming an operator is to be courteous to your subscribers. How many times have you tried

your best to give service to a subscriber and gone out of your way to accommodate him and jeopardize the business of the entire exchange by waiting on his call, only to have him make the statement over the telephone to one of his friends that he "couldn't get any service"?

We all have our troubles with the subscriber who takes down the receiver and holding down the switchhook gives a ring and expects us to answer before he can say anything. He is the subscriber who believes that the operator is nothing more or less than a mechanical being, and his whole thought is of his own problems to the exclusion of the operator.

Requests for correct time are numerous in small exchanges and sometimes they do interfere with the service; but if they become too numerous, the subscriber should be tactfully informed as to the rules of the company and possibly the reasons for such. Other requests for information should be dealt with in a like manner. Visitors at the exchange should be treated with respect and in a courteous manner.

Only occasionally a visitor becomes a nuisance by trying to use the central office as a loafing place. In a case like this, the visitor should be informed that the exchange is a place of business and not a restroom. The operator should strive to show the people that the telephone company is a business concern and does all of its business in a business-like manner; at the same time she should show them that the company is giving them its highest service to the best of its ability.

Corporations are judged to a certain extent by their employes, so it again remains our duty to make an impression on the public, learn to know them, mix with them, and make them feel that we are in-

terested in their affairs as well as our own. If we make a good impression among the citizens, they will respect us and the company for it. Any company which has gained the respect of the people will be forgiven for minor offenses, but if disrespected, it will often be condemned for unjust causes.

This question arises in the minds of many employers: "Are my employes working for a salary, or are they working for the good of the concern?"

If they are working merely for the pennies, they are tramping on their own toes as well as their employers'. It is the person who faithfully works for the good of the concern and love of his work who succeeds, and the higher salaries and the success of the company follow close behind.

How is an operator going to do this in her position? It is easy enough if she will imagine herself owner of her own exchange and the company as a sort of director or guardian.

In a town the size of Anamoose, it is necessary for the operator to be at the exchange so long each day that she can almost call it her home. Therefore, it remains her duty and the duty of the company to make the office as homelike and comfortable as possible.

Agreeable location and quarters should be provided with homelike fixtures and other necessities which go to make things comfortable and agreeable. After these things are provided by the company the duty falls on the operator to care for and keep things just as tidy as she would have it in her own home.

Surroundings play a great part on one's disposition, and as a telephone girl must have a good disposition, clean, wholesome and agreeable surroundings are necessary.

Then comes the operator's duty to the switchboard. She should feel the same as an engineer does toward his engine—"These are mine. I will give them the best of care and they will give me the best of service."

The switchboard should be dusted often; care should be taken that it is not damaged or marred, nor any liquid or sticky substances spilled on it. She should become interested and know the switchboard

and other central-office equipment so that she understands it and knows the parts.

She should be able to make minor repairs, such as replacing defective fuses and heat coils, making connections and tests for the benefit of the testman. She should always be on the lookout for any defects in the service and report the trouble promptly, giving its nature, location and other necessary details as accurately as possible, so that it can be taken care of

with the least possible delay and annoyance to the subscriber.

Personally, I think that an operator must fight her own problems, meeting them with a level head—which she must have if she is to make a success of her work—and I believe that a consistent policy of fairness will mean much to her success.

Imagine everything the company owns at your exchange as your own; therefore, it should receive the best of care.

Value of System and Co-operation

No Enterprise Can Afford to Ignore These Watchwords—There Must Be Co-operation Between All Factors—Each Person Is an Important Part of the Whole—Paper Read at Operators' School of the North Dakota Association

By Mrs. Eva Clyde

Chief Operator, Ashley, N. Dak.

System and coöperation are the two main watchwords in all fields of present-day activity. It was system and coöperation, as well as their highly-trained armies, upon which the Central Powers relied to win the war. And it was not until the Allies had grasped to the fullest extent and remedied their lack of these two fundamentals that they were successful in overcoming the enemy.

There is no enterprise so great—none so small—that it can afford to ignore the importance of applying these watchwords as necessary factors to its success. By "applying," I mean translating them into action.

The telephone business is daily growing in importance. Daily, everywhere, it is becoming an indispensable adjunct to the business and social worlds. It is an indispensable concomitant of the paraphernalia which, before its advent, was considered sufficient to the efficient running of a business. This being so, let us examine what can be done to improve our system and coöperation.

I hold that the first thing to keep in mind is coöperation between the company and its employes. If the company works hand-in-hand with its employes, and the employes with the company, there will soon grow up a system which will be unbeatable. If the company stands aloof and, by its aloofness, discourages confidence; or if it adopts an attitude of indifference towards suggestions, it will fall short of its object of attaining full coöperation.

The second item of importance in this discussion is coöperation between the employes. Quick, efficient, cheerful service, first by each individual operator; second, between the operators at the respective exchanges.

There should be no indifference to the requirements of either a nearby or a distant station; no jostling or shunting along the line. The "line" is the property of the

company—not of any single operator. The "line" is for the service of patrons, and each operator should, so to speak, toss her ball of efficiency to every other operator with whom she comes into contact along the line. Keep on tossing that ball, and the public will have no just cause to complain on the score of inefficiency.

Let us all pull together! Let us understand the kind of service we are selling; be prompt in delivering it; be quick in connecting at connection points, and equally prompt in disconnecting. A loyal attention to these points will save many minutes, even hours of time.

As part of system and coöperation, I would like to suggest the value of giving a definite answer at once, whenever feasible.

There is one party who is interested in this discussion, though he may not take part in it. I mean the "dear public." The public is, as a whole, as ignorant of the operation of the service he demands as a child is of the mechanism of a watch.

Whenever possible, try to bring this party to the point where he also will coöperate; also become part of the desired perfection in system. To achieve such an end, cultivate personality.

Personality will make itself felt in most cases. The knowledge that the voice at the other end of the line belongs to someone who is not an automaton, but who really and truly desires to render service, will soon be effective in removing a great deal of discontent, which is principally due to ignorance.

Also, I would remind you of the precept: "A soft answer turneth away wrath."

We have to deal with all sorts and conditions of men and women. Courtesy, even under the most trying circumstances, should be shown towards all; for, if you are duly performing your bond with the company, you can afford to overlook remarks that seem directed personally to you.

And if we are pestered with "fool" questions once in awhile, remember the command: "And whosoever shall compel thee to go a mile; go with him twain." Often, we have not only to perform our whole duty, but a good deal more than is actually required of us.

To sum up then: Let each individual operator keep in view what it devolves especially upon her to perform. Let the company bring its full quota of coöperation in the common work. Let each station bear in mind that it is only a part of a magnificent whole; that a call from any station to another is as important a cog in the wheel of system as any other call.

In unity is strength. Then let us not work deviously, as though we had no responsibility for our fellow workers, but unitedly, conscious that we are together operating a machine which is conferring untold blessings upon mankind, and that the complete success of that machine depends: First, upon our individual efficiency; second, upon the hearty coöperation between all who are engaged in running that machine. We shall then have system in the complete sense of the word.

Change In Billing Toll Charges By Bell Connecting Companies.

The Northwestern Bell Telephone Co. has been making a number of new contracts with Nebraska connecting companies covering the handling of toll traffic originating on the latter's exchanges. In order to save considerable circuit time, a new method of accounting has been devised. Under this plan it will not be necessary, except in unusual cases, to furnish the connecting company operator with the time and charges of the call.

Under the old plan the charge tickets prepared by the connecting company were used to bill its subscribers, while the Bell company made out a ticket that it employed in settlement with the originating

company. Under the new plan the connecting company makes out no tickets, while those of the Bell are made in duplicate, one going to the connecting company for use in billing its subscribers and the other to the accounting department for recording and settlement with the connecting company. As this is a time saver for the smaller companies, they are generally accepting the proposition.

District Meeting of New York Up-State Association June 22.

The Up-State Telephone Association of New York will have a district meeting at Vernon, Oneida County, on Friday, June 22. It will be held at the Sconodoa Inn, and will commence promptly at 10 a. m., standard time. There will also be a traffic conference for the operators, in connection with the meeting.

J. G. Ihmsen, vice-president and general manager of the association, is continually striving to make each district meeting better than the preceding ones, and he wants every telephone company within the district to send several representatives and as many operators as possible to the meeting.

Southern New England Company to Increase Stock \$20,000,000.

A special meeting of the Southern New England Telephone Co. has been called for June 25 to increase the authorized stock from \$20,000,000 to \$40,000,000. It is proposed to increase the amount of the issued stock from \$20,000,000 to \$30,000,000.

It is expected that the directors will offer \$3,000,000 in stock next fall to the present stockholders, payable in full on January 3, 1924, or in two installments in January and April of next year.

Northwestern Bell Plant Engineers Discuss Future Extensions.

Thirty of the Northwestern Bell Telephone Co.'s plant engineers met at Omaha, Neb., recently to plan the expenditure of the \$30,000,000 which that corporation expects to spend within the next few years for new property and plant extensions in its territory. The meeting was presided over by H. I. Dodson, at the head of the outside construction staff in the chief engineer's office, who said that the object of the meeting was to prepare the engineers for the expenditure of the money in the most economical way possible.

One of the interesting features of the gathering was the discussion of a standardized outside plant engineering practice book, just put out by the plant engineering department of the American Telephone & Telegraph Co. and submitted for consideration and criticism. The book furnishes a uniform basis for engineering analysis and encourages the exercise of judgment upon problems that grow out of experience.

A number of the more important of-

AN ILLUSTRATED LESSON.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

Riding on trains these beautiful spring days is not dull and tiresome; nor does one need a book to read, to pass away the hours. Nature's great open book, full of wonderful pictures, lies spread outside of the car windows for our pleasure and comfort as we travel.

Only a few months ago the trees stood stark and brown, their branches laden with snow. The branches, which still cradled deserted bird nests, rocked back and forth in the wind and crooned mournful lullabies—even as a broken-hearted mother might rock the cradle of her lost baby.

But Nature bent to the cold winds and the snow unresistingly.

Then, in the fullness of time, old Mother Earth sent up the sap of life into Nature, and it soon budded, leaved, and blossomed into existence again. Thus Nature knew, waited, and fulfilled its mission. Those same trees which had bent to the winds, and crooned a mournful lullaby over the empty bird nests cuddled in their bare arms, are today beautiful green homes—homes for tiny birdlings cradled and soothed to sleep by the fluttering of leaves in the breezes.

Life has burst through the dead brown shrubbery and grasses of last year. Buttercups, violets, and other gifts of spring nod at us as we pass by.

Out in the fields, the farmers are planting their seeds. Where today we see only black earth, we shall soon see wheat, oats and corn waving in the breezes. Later the picture will shift to the harvest time.

Thus, Nature submissively waits until old Mother Earth unlocks the door for Spring to enter; Spring starts all nature to growing, and then invites Summer; Summer, with her rain and sunshine alternating, causes all nature to grow and bear fruit; then Summer invites Fall to burnish nature in red and gold—a sign to Man that the harvest time is ready.

And *we* talk of Heaven! If we only had faith enough, Heaven is here—in Iowa first, and then everywhere else.

The only difference that I can see between nature and human nature is that each one of us human beings is expected personally to make the grade—the accomplishment of some purpose, while Nature is guided by other forces. Nature is dormant.

The grade which each of us is expected to make has four steps: Inspiration, aspiration, desperation, and perspiration—and the greatest of these is perspiration.

In other words, we must be inspired with a purpose to accomplish some definite work; we must aspire, take pleasure, in the thought of accomplishment; we must be desperately anxious to accomplish that purpose; and we must perspiringly set our shoulders to the work, if it is to be accomplished only through great effort.

ficials addressed the conference on the general topic of cooperation of all departments with a view to uniform development of the service.

Newark, Ohio, Company Has Been and Is Now Progressing.

President and General Manager W. L. Cary, of the Newark Telephone Co., Newark, Ohio, announces that the improvement of the company's outside plant will be started within a very short time. Extensive work is to be done and it will keep the men busy for a considerable period.

The Newark company started operation about 30 years ago, being in the Smucker building in East Church street. Warren S. Weiant was promoter of the enterprise. He interested a number of local men in organizing the company and obtained a franchise from the city council.

The exchange started with 200 telephones and the rate was just half the rate that the public had been paying for the Bell service. This rate was unchanged until 1910 when a slight increase was given, and from 1910 until May 1 of this year the rates remained the same, though the number of subscribers had increased to about 7,000, with branch exchanges in several other towns.

The company outgrew two or three offices in Newark and finally—after having previously obtained a long-time lease on some vacant property—erected a two-story fireproof building to house its general offices and the automatic telephone equipment.

This was in addition to its quarters in the Arcade building, which were later supplemented by adding another story to that building.

Chicago Calls by Machine-Switching

First Panel Type Automatic Equipment Cut Over in Chicago on June 9 on "Central" Office—Thousands of Test Calls Were Made Preliminary to Cut Over—How the Subscribers Were Instructed in Dialing Their Calls

Chicago had its first use of "machine switching" telephone service at midnight, Saturday night, June 9, one manual office having been cutover at that time. The change affects only the subscribers having CENTRAL numbers, and the rest of Chicago's 654,000 telephones will be operated as heretofore.

All the telephones having CENTRAL numbers were equipped with dials, and since the cutover, calls from these telephones are made by dialing instead of with the aid of operators.

This cutover involved the transfer of the service of 15,000 telephones and 550 private branch exchange switchboards from the CENTRAL manual office at 69 West Washington Street, to the machine-switching equipment in the Franklin Building at 311 West Washington Street. At the same time 2,400 trunk lines connecting

the so-called "panel type," manufactured in Chicago by the Western Electric Co. It is this type of machine-switching equipment that is in use in Omaha, Kansas City, Mo., Philadelphia, Buffalo, Providence, Seattle and New York City.

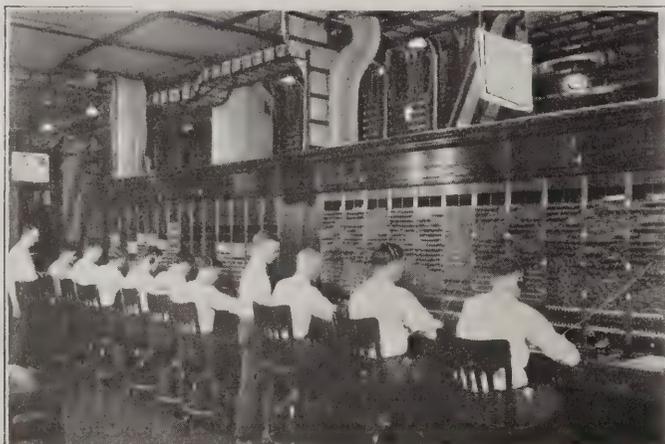
Another cutover, which is expected to be made later this year, will be 8,500 STATE telephones and 332 P. B. X. switchboards to the new STATE machine-switching unit, which is housed in the Illinois Bell Telephone Co.'s building at 311 West Washington Street.

The introduction of the machine-switching telephones did not cause any operators to lose their jobs. It will be a great many years before all the offices are changed over, and the usual turnover in the operating force will automatically take care of any reduction in force. Even with machine-switching operators will



Central Machine Switching Cutover—Service Observing Desk.

or incomplete dialing or other improper manipulation in the use of the telephone by



Out Trunk Test Desk at the Right, and Sender Monitor Position at the Left.



Cordless "B" Switchboard—"Central" on the Left, "State" on the Right.

CENTRAL with the 75 other offices in the city were transferred.

The machine-switching equipment is of



Central Machine Switching Cutover—Semi-Mechanical "A" Switchboard.

always be required to handle special calls, toll calls, information and similar traffic.

Previous to the cutover last Saturday, the apparatus had been conditioned and made ready for service and then proven by sending several million test calls through it. One hundred fifty women were employed in sending and receiving these test calls which were sent to and received from all offices.

There is a special switchboard provided where operators will complete calls to nearby toll points, such as Oak Park and Evanston, and where subscribers, who are unable for any reason to dial numbers for themselves, may receive assistance. Calls for not working or disconnected numbers will also be intercepted at this switchboard.

The system is thoroughly protected with so-called "time measure alarms." In the event of either failure of the apparatus

the subscriber, after a predetermined time interval, alarms are given at suitable locations in the switchrooms, calling attendants to the assistance of subscribers who may be in difficulty. The time measure system is uncanny in its accuracy and almost human in its ability to call attention to matters requiring it.

All CENTRAL subscribers using the new system were instructed how to use the dial telephones. This was done by sending instructors to visit each subscriber and by actual demonstration, accomplished by having the subscriber's line temporarily connected to the machine-switching office, showing the subscriber just how calls should be made. Subscribers were also encouraged to make practice calls.

Within a few seconds after a subscriber removes the receiver from a telephone he hears the "dial tone," the equivalent of the operators' "Number, please?" which

indicates that the apparatus is ready to receive the dialing. The subscriber then dials the first three letters, which are capitalized in the directory, of the exchange name followed by the four figures of the telephone number proper.

The dialing is recorded on rotary switches in a complicated device employing many pieces of apparatus called a "sender." Associated with the sender is a "translator," which serves to translate the subscriber's dialing into information which the apparatus can use in selecting an idle trunk line to the office which is being called. This selection is made almost immediately after the first three letters have been dialed. As soon as the dialing has been completed, a lamp associated with the selected trunk line lights in front of the operator, who sits before it at its distant end, indicating to her that a call has arrived on the trunk. The operator then depresses a key and the number being called appears in lighted numerals before her, and she then completes the connection in her board to the number indicated.

If the call is for another machine-switching telephone in CENTRAL office, the equipment is directed to find an idle trunk to the particular group of 500 lines which includes the called number. Within this group the particular hundred, ten and unit identifying the called line is selected and the connecting apparatus, called a "final selector," moves to the line terminal. Before it establishes connection, however, it tests the line to see if it is busy. If it is busy, the busy signal is given to the calling subscriber. If the line is not busy, con-

nection is established and ringing starts.

Calls coming from manual offices are completed by operators who use a key set like an adding machine to set up the number being called.

To call long distance, subscribers dial "211" and the sender then directs the apparatus to find an idle line to the long distance operator.

In the building at 311 West Washington Street the machine-switching equipment is located as follows:

FIRST FLOOR: Main distributing frames where all the underground cables are terminated on lightning arresters.

Power plant. Three 1,500-ampere direct-connected, charging generators and several smaller machines. These are all used for charging the storage batteries.

Ringing and tone machines. These machines furnish the various tones required, such as the "dial" and "busy" tones, and provide the current that rings subscribers.

Storage battery. Two large storage batteries. These furnish the power to run the office at such times as the charging generators are not in operation.

Repair department. Here are received reports of trouble on subscribers' lines.

Local test desk, 8 positions from where trouble on subscribers' lines is identified and located and troublemen are dispatched to clear the trouble.

SECOND FLOOR: Entirely devoted to the major apparatus comprising the "STATE" machine-switching office.

THIRD FLOOR: The major apparatus of the "CENTRAL" machine-switching office is on this floor.

Sender monitors, where all trouble indicated in senders, because of improper dialing, is cared for by men who can establish contact with the subscriber affected and help him to get his party.

"Out" trunk test desk, where all the outgoing trunk lines to other offices appear so that they may be tested periodically.

FIFTH FLOOR: Intercepting positions. Six of these to answer calls for not working or disconnected telephones and to verify reports of "busy," etc., for other operators.

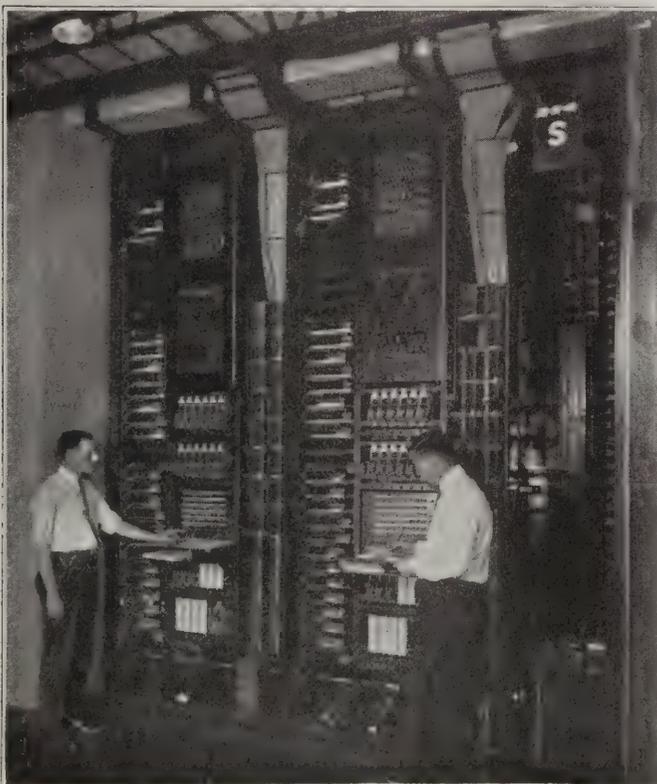
Ten special service positions to complete calls to nearby toll points and to assist subscribers who are, for any reason, unable to dial numbers for themselves.

Cordless "B" position—27 CENTRAL and 30 STATE to complete incoming calls from manual offices to the respective machine-switching offices.

Fire Cuts Off Toll Lines But Manager Soon Restores Them.

Considerable damage was caused in the business section of Granville, Ill., last month by a fire which was supposed to have started in the telephone building.

For a time, the entire business district was in danger, and the three 75-pair cables and three toll lines coming into the exchange were burned out. However, U. S. Wilson, manager of the exchange, was quick to handle the emergency. He started to work and had the toll lines in order before the fire was out. The cables serving the local subscribers were next taken care of and all but 20 lines were working within a few hours.

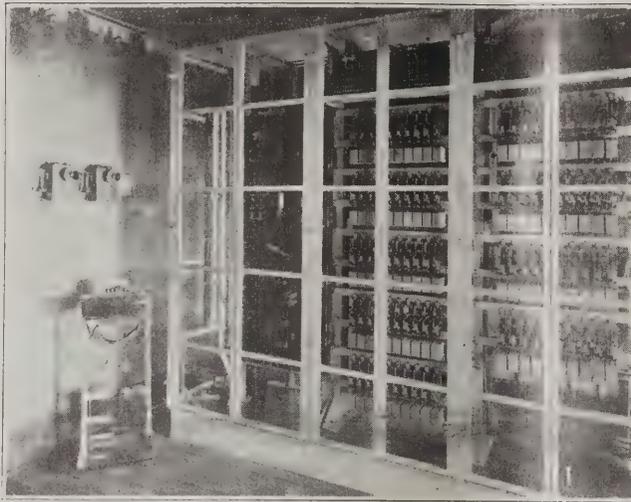


Automatic Sender Testing Equipment in Chicago's First Machine-Switching Office Which Was Cut-over Last Saturday.



Final Frame, Showing "Tea Wagon" Test Set in the New CENTRAL Office in Chicago.

There Is One



The C. A. X. at Union Mills, Indiana, provides for full automatic service for all local calls, and direct connection (by means of the dial) either to the company's headquarters at LaPorte, or any one of the other exchanges of the system.

to give reliable, accurate, pleasing and efficient service to all villages.

There are many ways of giving service. You can use a manual switchboard and expect to do that it is not likely that you can operate 24 hours a day and still make money.

Or you can use equipment that operates mechanically under the control of operators. You can do that there is a three-fold danger: first, you need operators for service; second, there is a tendency to neglect your small town service in favor of the big city; third, if the control wire goes down there can be no small town service at all. The C. A. X. is applied.

The C. A. X. installed in your exchange gives you all the advantages of automatic operation without any operator system,—quick, accurate, and reliable a day, every day of the year.

Your subscribers can give the telephone a rest. Your profits are greater because there is no trunk line between the small exchanges. No transmission, all local service continues uninterrupted.

The C. A. X. can be operated in any size exchange, automatic toll centers. Our booklet, "The C. A. X.," will give you further details. We will be glad to send you a copy.

Automatic Electric

FACTORY AND GENERAL OFFICES

BRANCH OFFICES IN

ASSOCIATED

INTERNATIONAL TELEPHONE SALES AND SERVICE COMPANY, Ltd., London
 International Automatic Telephone Company, Ltd., London
 Automatic Telephone Mfg. Co., Ltd., Liverpool



One Way

fitable service in small towns and

adequate service, of course. You
one or more operators. If you
satisfactory service twenty-four

ill set up your local connections
at some distant point. If you
first, you still have to depend on
be a tendency for the operators
of your central office calls; and
otherwise put out of commission,
ver until some sort of makeshift

l town exchange gives you all of
th none of the disadvantages of
failing service twenty-four hours

es the kind of service they want.
no operators to pay. Even if the
d the toll center is out of com-
ted.

onnection with either manual or
Community Automatic Exchange”
lad to send it without obligation.

The C. A. X. switchboard can be housed in very inexpensive quarters; in fact, it is seldom necessary to erect a special building for the purpose, a rented room often being adequate. Below is shown the C. A. X. at Boston, Indiana.



ric Company

IS: CHICAGO, ILLINOIS

PRINCIPAL CITIES

PANIES

ERING CORPORATION, New York
neaise pour l'Exploitation des Procédés Thomson-
Houston, Paris
Automatic Telephones, Australasia, Ltd., Sydney



Valuation of Telephone Properties

Discussion of the Various Features Which Enter Into an Appraisal of the Properties of Public Utilities—Address Delivered at the Annual Convention of the Up-State Telephone Association of New York at Rochester

By H. M. Engh

American Appraisal Co., Milwaukee, Wis.

Generally speaking, appraisals may be divided into two classes: First, those made by individuals, usually engineers, having an engineering or accounting knowledge of the properties they are called upon to value; and, second, those which are the product of the organized, concerted effort of many men, each of them a specialist in some recognized phase of valuation.

The appraisal of the first class is usually based upon an opinion; in most cases a sound, well-reasoned and reliable opinion, but at best the judgment of only one man, supported only by the facts and experience that have come within his purview.

The conclusions of the organization appraisal are rooted in the experience of each and every man who participates in the appraisal, all of their work being checked, proven and backed up by the statistics, records and analyses accumulated by the organization's analytical staff from hundreds of different sources.

Opinion values, if we may use that term in definition of the first of these classes, are perfectly legitimate and have many uses. In financing, for instance, or checking one's own belief as to the value of a property in which one may be interested or whose purchase one may contemplate, opinion values may serve as a guide.

Opinion values must be accepted on the authority of and confidence in the individual. If that individual should die, move away or go out of business, it would be difficult to secure his assistance in convincing a critical examiner of the legitimacy of his opinion. And even though he may be accessible, convincing and able to substantiate his opinion, cold, hard facts presented by those in opposition to his conclusion may largely discredit his valuation.

On the other hand, the organization appraisal, basing its conclusion only upon proven and accepted facts, and backing these facts with the records and statistics of years of experience in like cases, is always in a position to substantiate its conclusions from its records.

In this connection there has been recently issued by the Internal Revenue Bureau a recommendation by its Committee of Appeals and Awards (No. 747) as to the conditions under which an appraisal would be accepted in the determination of invested capital, and I would like to depart from my subject long enough to read an extract from this recommendation.

"The values as stated in the four sets of appraisals mentioned above were apparently fixed by men who were well qualified for the work, but a different value is stated in each appraisal which indicates the difficulties experienced in carrying out such a task and the practical difficulty in establishing cost. The first appraisal being taken at 1917 values, and the affidavits comprising the second and third appraisals, so called, being nothing more than general statements, cannot be accepted."

As opposed to this, the recommendation advises that:

"Retrospective appraisals be accepted when made upon the basis herein outlined, and the facts upon which the appraisals are based have been established by proof."

It should be apparent from this that there cannot be the same degree of usefulness to the utility corporation in an opinion appraisal and in an organization appraisal. It has well been said that "facts are stubborn things," and an appraisal which is backed up by ascertained and provable facts will offer the most stubborn resistance to any attempt to discredit it.

Public Regulation.

Government regulation of public utility properties originated in Wisconsin, and I believe that most states try to regulate some, if not all public utilities within their borders. You all, of course, are familiar with the policies of the New York commission and the rules which they impose upon you in matters of accounting, rate making and financing.

It is a well recognized fact that a public utility is as much entitled to a fair return upon the fair value of its property as is any person engaged in private industry. The nub of the whole question of government regulation of public utilities is the valuation upon which they are entitled to earn a fair return, and any rule or act of government expressed through its commissions or other agencies, which impose upon a utility the necessity of rendering a service at an inadequate rate, is entirely opposed to all the principles of equity and justice.

I believe it is the present intent and practice of all regulatory bodies to exercise a fair discrimination between rights of the investors in public utility properties and the public who make use of their service. A review of all the cases decided by commission rulings shows that it has been

their constant endeavor to hold the scales of justice level as between the producer and the consumer.

The value upon which a utility is entitled to its return may be loosely defined as the "going value." The courts have stated explicitly the elements composing this value.

To state it briefly, a going value must include all of those costs necessary to create and develop a business to its present living operation condition. It must go—must move—for without the animating flow of production and consumption a property, no matter how many thousands of dollars have been spent in assembling and constructing its physical parts, is but an empty shell, of no value to anyone until it moves and serves and thus justifies its existence.

The elements of value are classed as tangible and intangible and, since I am talking of physical valuation, I can only refer in passing to the intangible factors of a utility value, some of them being expense of organization, expense of securing business or subscribers, raising of capital, and so on.

The tangible property, the physical expressions of the going value, includes each and every item of construction and equipment, used and useful, constituting the permanent operating plant. In determining the value of the physical properties, however, a factor often forgotten or ignored is the fees of the engineers who design and supervise the construction of the plant, and the expense of maintaining an office staff before there are any revenues to pay them, and last but not least, the interest paid upon the money used during the construction period.

Many times we have seen home-made appraisals that were models of exact inventories and accurate costs but which omitted any consideration of these important factors, the importance of which may be appreciated from commission rulings which have made allowances for overhead charges, ranging from 10 per cent to 20 per cent upon the bare cost of the property.

Fair Value.

Before proceeding further let us discuss the term "fair value," the most important term in utility value terminology for it is the law and the ruling of the commission that states a utility is entitled to a fair return upon its fair value over and above the expenses of operation.

Most of us believe that we understand the meaning of the term "value," but the term "fair value" when applied to property of a public utility depends upon so many conditions and is used in so many different ways as to almost defy definition.

The rulings of the commission and the courts have consistently refused to place a hard and fast definition on this term, the conditions under which the valuation is to be determined in any two cases being so variable that a method used in one case might be extremely unreasonable and unfair in the other. So far as the physical property of a company is concerned, it has been held that its fair value is covered by one or more of the following elements.

The original cost of the plant, the original cost less accrued depreciation, the original cost as modified by the cost of subsequent additions, the cost of reproduction based upon an average for a certain term of years, the cost of reproduction new less depreciation, the book cost, the purchase price, all of these items are sometimes considered in determining fair value.

The courts have, in fact, held that all of the factors mentioned, together with the capitalization, gross and net earnings of the plant, should receive consideration in determining the fair value of a public utility property.

Depreciation.

In any case, no matter how the basis of valuation is determined, the depreciation of the property is a vital factor in determining its value. Value is not cost—it may be higher or lower than cost—and is a thing altogether dependent upon the conditions of time and of place. Neither can we say that the value of a property is its cost less the accrued depreciation, but for all general purposes, when consideration is given to the other factors, a valuation may be determined by first ascertaining the cost of reproduction new at the present time, or upon an average cost for a period of years, and deducting therefrom the depreciation which has accrued from physical deterioration, inadequacy and obsolescence.

The subject of depreciation is generally considered from two viewpoints; one that the owner of the property is entitled to set aside from his earnings an annual amount which would be sufficient to replace practically in kind any of the items of his property which might be worn out in service. The second theory, and the one which is most generally accepted by the courts and commissions, is that a depreciation reserve should be adequate only for the protection of the capital invested in the property, in order that those who have subscribed capital to the creation of the property may receive their capital back at the expiration of its use.

Another theory being advocated at the present time is that the accrued depreciation based upon the expected life of the

property should not be given such prominence, but that the property should be valued on the basis of its present operating efficiency, the contention being that a property which is maintained at 100 per cent efficiency should be valued upon the basis of its cost of production with no deduction for depreciation since depreciation has been made good through maintenance.

If, however, the property has not been kept up to this peak, its value should be reduced only by the amount that it has shrunk through neglect or deferred maintenance. As to the soundness of this theory, I express no opinion, but it will take a long campaign of education and argument before it is definitely accepted by the commissions.

Even if this theory is adopted, the depreciation accrued through deferred maintenance must still be determined, and the theory itself emphasizes the importance of a careful consideration of depreciation.

Variability of Depreciation.

An annual rate of depreciation which will be applicable to all telephone properties, no matter where located, cannot be determined, for the amount of depreciation to be applied varies so much with the local conditions under which any given exchange operates that it is necessary to make a careful investigation of the conditions surrounding the property before a fair rate of depreciation can be applied.

The telephone business is peculiar in that depreciation of its property requires a different treatment from that applied to any other public utility. A large portion of its property is made up of central office and substation equipment which is more or less fragile and delicate in character and construction. These parts are subject to hard usage and are, therefore, of a relatively short life as compared to the more substantial and rugged equipment used by other utilities.

In common with other utilities, however, a large percentage of telephone property is located upon grounds not under the company's control, such as public highways, streets, alleys, etc., and is therefore subject to the changing conditions affecting public property, as well as by the requirements of abutting private property. The company is also required to place a portion of its property in the premises of its individual patrons, and this class of property has, by the very nature of the business, a relatively short life necessitating frequent replacements.

In no other business are the items of inadequacy and obsolescence so prominent as in the telephone business, and while any company in planning its plant may provide facilities for the expected business, the trend of growth in the community may be such as to render its plant totally inadequate within a few years after its inception. As regards obsolescence, it has been

the experience of the industry that complete changes in plant equipment and methods have taken place in cycles of 10 and 15 years, such as changing from aerial wire to cable, aerial plant to underground, magneto central office equipment to common battery, then to automatic, and so on.

Obsolescence.

The physical factor in the depreciation of the differing classes of equipment can be easily determined by an inspection of its present condition of serviceability and a computation of its expired and future serviceable life. The factors of inadequacy and obsolescence are, however, quite different, and unless it can be shown definitely that a given equipment will become obsolete at a given time, no provision can be made for a depreciation allowance to cover this contingency.

As an example of determinable obsolescence, we may consider the case of an exchange having aerial wires in a growing city which has decided to pave and otherwise improve the streets of its business district. The fact of paving alone demonstrates the importance of the street and because of its importance objection is made to poles with aerial wires or cables along the street. Despite the fact that many years of useful life remain in the poles, wires and cable, the telephone company is required to remove them to a new location or to replace them with underground structures.

It would seem only fair that, if the subscribers of the community force such an issue upon the telephone company, they should pay for the cost of this removal through increased rates which would enable the company to pay for this cost and reimburse it for the unused life of the superseded equipment. And in this case a depreciation amount, additional to the physical depreciation, should be imposed.

I have not the time to discuss the matter of depreciation completely, but believe that enough has been said to show that a rate of depreciation applicable to a telephone company is a local affair to be determined only after an examination of all the factors for the particular company under consideration. Recently the Interstate Commerce Commission, under the amended section No. 20 of the Interstate Commerce Act, requested a statement of the various telephone companies as to what would constitute a fair rate of depreciation upon telephone properties.

The reply of the United States Independent Telephone Association was practically the same as has been set forth. It recommended to the commission that each telephone company be allowed to determine its own rate according to the local conditions, the rate varying between a minimum of 4 per cent and a maximum of 8 per cent, annually. This is the view

that has been held by the appraisal profession for a number of years and coincides with the practice of the skilled appraiser.

Careful consideration should be given to unit costs of each class of property and it is at this point that the organization appraisal shows its superiority over the opinion appraisal. From records and statistics running back for many years, the organization can determine the cost of any of the materials and labor at any given time; and, from records of the experience of various telephone companies and statistics compiled from many different sources, can justify and explain the cost or value which may be placed upon the property of the company.

Again, as an instance, let us consider the setting of the unit price upon the poles. We have, first, the cost of the pole at its shipping point.

To this must be added the freight necessary to deliver it to its place of use, the cost of unloading it from the cars, the cost of shaving it and transporting it either by team or truck to the location where it is to be set, the cost of framing the pole, the cost of digging the hole, the cost of setting the pole; and in determining all of these costs consideration must be given to the manner in which the work is carried on, the size of the gang used, the percentage of superintendence, the control which must be added.

After the unit cost of setting the pole has been determined, there must be added to this cost a percentage sufficient to cover the cost of engineering and other overhead charges. This same process must be carried out for each and every class of equipment, in order that the facts set up in the appraisal, no matter how minute, may be easily and directly proven.

After the completion of the field inspection, all of the notes and records are sent to the home office of the organization and are subjected to a searching check and comparison, the quantities listed in the appraisal of the buildings are compared with drawings prepared by the field man, pole line maps are verified, checked and traced, unit prices are verified and the computation checked, summaries are prepared for all of the different classes of property of their cost of reproduction, depreciated value and a statement prepared of the depreciation rates applicable.

Each step in the computation of the value is checked and rechecked and finally the report is delivered to you a lasting, unimpeachable record of your property costs and values that may be used for any of the purposes for which value is needed.

Rate Making.

Some of you may have had experience with the commission in requesting authority to increase rates. If you have, you have undoubtedly learned that all of the commissioners were from Missouri. They had to be shown.

In preparing an appeal for a readjustment of rates, the physical valuation of the property which we have spoken of is but one of the many evidences that must be prepared. Many other facts must be presented, such as the intangible values created during the early history of the utility, the records of which are almost invariably missing, the cost of different classes of service, an analysis of the actual accrued depreciation and its relation to depreciation reserves established, an estimate of future depreciation to be provided for, a forecast of the future operations of the utility, the actual capital investment and the returns received from it in the

past and expected in the future, and so on.

To gather this evidence and to present the facts and conclusions, are the functions of the appraisal organization. The problems of any given case are so intricate and so apt to modification by the local conditions governing any particular utility that it requires a wide range of knowledge and experience in similar cases to successfully put the case over.

Volumes have been written upon the subject of physical valuation. The library belonging to the organization which I represent comprises some 5,000 volumes, the greater part of which have a bearing either directly or indirectly on valuation problems. The extent of this library is only one of the evidences of the magnitude of this subject and an indication of the extremely widespread interest in your problems and in the technique which has grown up to serve you.

The thought that I have tried to convey and want to leave with you is this—that no matter how well you may keep your books, no matter how good a guesser on values you may be, or no matter how good a home-made inventory you may have, you still need a disinterested, accurate appraisal of your property made by experts who understand and who handle as a matter of daily practice the intricate and varied problems of valuation. The organization appraisal offers you the vitally necessary attributes of authoritativeness, disinterestedness and provability.

Disregarding the specific problems of the public utility, without these elements back of your statement of property values, the promises of intelligent property accounts, financial strength and protection from loss through confiscation, which you have made either directly or by implication to your investors, cannot assuredly be fulfilled.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Power Transmission Line Conflict Settled By Conference.

The right of the Firth Telephone Co. to call itself in law a telephone company because it operates a grounded line circuit was challenged before the Nebraska State Railway Commission in a recent hearing, where it had objected to the Blue River Power Co. paralleling its lines from the south into Firth.

The power company contends that a company that operates an out-of-date and obsolete type of equipment cannot plead that use as a reason for denying it the right to occupy the most available highway for its own purposes when that highway is the one used by the telephone company.

Commissioner Randall, who heard the case, made unnecessary any decision by the commission on this question by securing a conference between the contending parties' representatives, out of which grew a stipulation for the withdrawal of the objections if the power company will move all of the telephone company's poles to one side of the road. Having been cheaply built years ago the rural lines zigzag back and forth across the road in order to avoid the expense of tree trimming.

The Iowa commission ruled some time ago that a transmission company desiring to use a highway which had long been occupied by a telephone company was bound to make only such use of it as

would not interfere with the proper operation of the telephone plant, and that as the company was operating a grounded equipment, it must pay the cost of making it over into a metallic plant.

The Nebraska commission has been successful in avoiding any definite position on the matter by reason of its policy of insisting upon the transmission and telephone companies engaging in a conference with its own engineer present to advise. This has resulted each time in the problem being amicably solved. It has invariably included in its authorization to the transmission lines that if later trouble should develop in the operation of the telephone lines, nothing in the order should preclude

the telephone company from again presenting the matter to the commission for whatever relief it may find necessary and proper to give it.

Government Map Exaggerated Distance—Toll Rates Reduced.

The Pacific Telephone & Telegraph Co. advised the California Railroad Commission on May 29 that it would file for immediate effect rates conforming to the general schedules based upon a distance of 12 miles or less for the town of Mill Valley for exchange service to and from San Francisco.

The new station-to-station rate is 10 cents, effective as of June 1. This is 50 per cent reduction of the old rate which was based on the station-to-station schedule for distances from 12 to 18 miles, or 15 cents, plus 5 cents war tax. The 10-cent rate applies for the first five minutes of conversation and 5 cents is charged for each three minutes thereafter. No war tax is added to the 10-cent rate.

The complaint of the town of Mill Valley has been dismissed upon the agreement of the company to charge the rate which places Mill Valley on the same basis with towns equally distant from San Francisco.

The old rate was based on the government post route map. This showed Mill Valley to be in excess of 12 miles from San Francisco, but later survey showed it to be incorrect.

Asks Leave to Build System in Riley Peak, Colo., District.

John J. Mullen, a rancher of Conifer, has asked the Colorado Public Utilities Commission for authority to build a telephone line between Conifer and Shaeffer's Crossing, up Turkey Creek Canon, and from Shaeffer's Crossing through Cub Green Canon, connecting all places in the entire Riley Peak district. The commission has taken the case under advisement.

The territory this line would cover is in the heart of the mountains, where travel by automobile is very heavy during the summer months.

There are places where the Mullen line might compete with the Mountain States company lines, while at other places there is now no telephone service.

Ft. Wayne, Ind., Company Asks to Issue Stock and Bonds.

Authority to issue \$1,000,000 of 6 per cent bonds, \$1,188,250 of 7 per cent preferred stock, and to sell \$311,750 of 7 per cent preferred stock to exchange for an equal amount of 6 per cent preferred now outstanding, is requested in the petition recently filed with the Indiana Public Service Commission by the Home Telephone & Telegraph Co., of Ft. Wayne, Ind.

The petition also requests that the com-

mission make an evaluation and fix new telephone rates for the Home company. Rates now in effect in Ft. Wayne are charged under authority of the local federal court, which some time ago set aside as too low the rates fixed by the commission.

Preliminary Hearing on Increased Rates for Michigan Company.

Commissioner W. M. Smith, of the Michigan Public Utilities Commission, conducted the preliminary hearing May 28, in Lansing, on the application of the Union Telephone Co., of Owosso, for increased rates in 19 towns served by it.

The commissioner instructed General Manager W. J. Melchers of the Union company to furnish copies of the rate petition to all municipalities affected; also to furnish a detailed financial statement to City Attorney Frank McNamara and Attorney Nugent Dodds, representing Mt. Pleasant and the chamber of commerce of that city, together with copies of exhibits to be introduced when the case finally comes up for determination.

Michigan Commission Fixes Rates for Citizens-Bell Merger.

Rates to go into effect with the consolidation of the Citizens Telephone Co., of Grand Rapids, Mich., with the Michigan State Telephone Co., were fixed by the Michigan Public Utilities Commission on May 29. The consolidated rate order is based, the commission says, upon the rate scale provided last August, with allowance for the subscribers' share of the consolidation costs and anticipated increased service.

It will probably be a long time before the new rates go into effect. It was the plan of the Michigan State company to bring about the consolidation at an early date by making temporary physical connections at the outset, but the commission specified in its order that the increased rates will not go into effect until all obsolete equipment is eliminated and the consolidated plants have installed modern equipment.

When an exchange is equipped to give a good grade of unified service, the commission is to be notified. It will then make an investigation and, if it sees fit, will authorize the rates to become effective.

The Michigan State company now has pending in the supreme court an appeal from an order of the commission, effective last August, fixing reduced rates in its exchanges. The order of the commission approving the sale contract of the Citizens company with the Michigan State company is also in the court.

The rates ordered for Lansing are:

Business, one-party	\$6.50
Business, two-party	6.00
Residence, one-party	3.50

Residence, two-party	3.00
Residence, four-party	2.50

These rates are specified for unlimited service. For business, coin-box service—12 cents per day to be guaranteed by the subscriber—a charge of 5 cents is provided for local messages, with a refund of one cent per message on local message charges in excess of the guarantee.

Higher Rate Schedule Approved for Sanborn, Minn., Company.

An increase of 75 cents a month in the business and 25 cents in the residence and rural rates of the Sanborn Telephone Co., of Sanborn, were allowed on May 28—effective June 1—by the Minnesota Railroad and Warehouse Commission.

The company operates a magneto exchange at Sanborn, serving approximately 95 town and 139 rural stations.

An exhibit presented at the hearing showed that the operating expense of the company has been normal and that the revenue from the rates under which it has been operating was inadequate. The old and new schedules are as follows:

	Old rates.	New rates.
Business, one-party.....	\$1.50	\$2.25
Residence, one-party.....	1.00	1.25
Rural, multi-party.....	1.25	1.50

Doesn't Know Which Rates Are Legal—Suspends Collections.

Suspension of all collections on telephone rentals of the Cumberland Telephone & Telegraph Co. in Mississippi was ordered on May 25 by W. A. Deale, state manager of the company, following the decree issued by the circuit court on May 21, which set aside the increased rates.

"We don't know which rate is legal," said Deale. "The Mississippi Railroad Commission granted an increase; the circuit court has decided on another rate. Suspension of collections will have to be made until we know what rate to collect."

Approximately 180 telephone exchanges in the state are affected by this order.

Judge Wiley H. Potter, of the circuit court, granted a writ of certiorari on May 21 which would compel the company to reduce the rates to the schedule in effect prior to January 1, 1923.

The rates which were set aside by the court order were granted by the Mississippi commission but the ruling of the court was on the grounds that the commission had not determined whether the increased rates were "reasonable rates for the service rendered."

Business In Country—Wants Individual Lines.

As illustrating the value of telephone service even to rural patrons, witness a recent complaint filed by W. O. True,

with the Nebraska State Railway Commission. True is a chicken farmer who has discovered a lucrative way of marketing his chickens, turkeys and geese. He is located along a pleasant road within ten miles of the populous and prosperous part of Omaha, and cleans up several thousand dollars a year serving fowl dinners to automobile parties from the city.

Many of these patrons make their appointments by telephone. As True is located on a party line he misses out on a number of orders because his line is busy when a call is put in. He wants the Northwestern Bell to give him individual service to Omaha, but it has declined on account of the investment necessary to furnish service.

Mr. True wants the commission to order the line built, and says he is willing to pay almost any price for the service because of the big returns from it.

Asks Commission to Settle Toll Line Charge Dispute.

The Sod Town Telephone Co., of St. Michael, has appealed to the Nebraska State Railway Commission for an order enjoining the Northwestern Bell Telephone Co. from discontinuing service between its exchange and that of the Bell at Cairo. Years ago the Sod Town company made a deal with the Nebraska Telephone Co., predecessor of the Northwestern, whereby it was allowed to string its wires for the ten miles on Bell poles, and use them as a toll line with a ten-cent charge.

Recently, it says, the Northwestern told it that it would have to pay a yearly rental charge of from 17 cents to 22 cents a

pole, and when the Sod Town company declined, the Bell ordered the wires taken down. When this was refused, it ordered the service discontinued between the two exchanges and has increased the toll rate to 25 cents, including war tax.

Alleging that this is unjust and unreasonable the Sod Town company asks that the Bell be restrained from denying the old service until such time as a hearing can be had.

Ordered to Repair Rural Line and Give It Direct Connection.

The application of the Scholls Telephone Co., of Scholls, Ore., for permission to discontinue the so-called Hill line, was denied by the Oregon Public Service Commission on May 4. Instead, the company was ordered to reconstruct the line and maintain it in proper condition to serve the 14 or 15 subscribers on it, and to build the line necessary to connect them to its switchboard at Scholls.

The Hill line is not directly connected with the switchboard of the Scholls company, but is owned by that company and receives switching service through the Cornelius exchange of the Western Oregon Telephone & Telegraph Co.

The company stated that it would require the building of some 12 miles of lead in order to connect the Hill line to its exchange and that the revenue from the line is not sufficient to justify the extension. It also contended that the extension would be into territory already served by the Cornelius exchange.

The arrangement of billing the subscri-

ers on this line at a rate of \$1.50 a month each for service which the company was not in a position to render, and in turn paying the Western Oregon company 50 cents a month for rendering the service, was termed by the Scholls company as "a freak arrangement."

The company desired to turn the line over to the subscribers connected to it. Several of the patrons entered objections to this, however.

The commission found that all of the objectors were also stockholders in the Scholls company, as they were required, when the line was installed, to subscribe \$35 each for one share of stock in the company, and to buy an instrument from the company, paying \$15 for it. In consideration of this, the company agreed to maintain the line and give them service over it at reasonable rates while they continued to be stockholders.

The objectors contended that when the line was installed and while properly maintained the service was satisfactory, but that in later years it had been allowed to get into a very run-down condition, so that the service has been very poor.

The Scholls company, they said, has regularly charged and collected \$1.50 per month less 25 cents each—which the company allowed as monthly rental for the instrument—during a period of about 15 years, except that in 1921 the service became so grossly inadequate that some of the subscribers refused to pay until the line was put in condition.

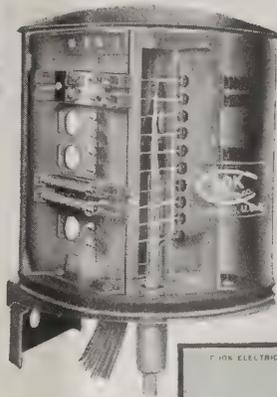
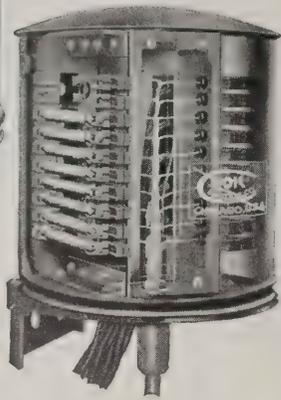
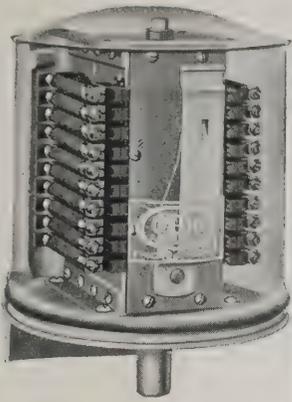
The commission declared that the present condition of the line is due to the neglect of the company, and that it is the

Name of Company.	City or Town.	Population.	Type of equipment.	Total No. of tele-phones.	Net rate per annum—				Rural busi-ness.	Rural resi-dence.	Rural switch-ing ser-vice.			
					1-party busi-ness.	2-party busi-ness.	3-party busi-ness.	4-party resi-dence.						
Ill. Bell, Ind.	Lowell	1,197	Mag.	.....	\$48.00	\$42.00	\$.....	\$33.00	\$27.00	\$.....	\$24.00	\$.....	\$.....	\$.....
Paola Telo., Kans.	Paola	3,233	Mag. and C. B.	.....	\$33.00	.....	.....	\$24.00	\$19.80	\$16.20	.....	.....	15.00	6.00
Carbondale, Kans.	Carbondale	383	Mag.	.....	\$24.00	.....	.....	\$18.00	\$15.00	.....	.....	.....	.....	6.00
Otis Telo., Kans.	Otis	505	Mag.	.....	\$21.00	.....	.....	\$15.00	.....	.....	.....	.....	.....	6.00
Shaw Telo., Wis.	Cleghorn	100	Mag. and C. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.00
Oketo Mut., Kans.	Oketo	225	Mag.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$12.00
Farmers' Mut., Kans.	Beattie	452	Mag.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$15.00
Farmers' Telo., Kans.	Rush County	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
United Telo., Kans.	Belleville	2,254	Mag.	.....	33.00	.....	.....	21.00	.....	.....	.....	.....	.....	.....
Cassville Telo., Mo.	Cassville	1,002	Mag.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00
Campbell Telo., Neb.	Campbell	561	Mag.	.....	21.00	18.00	.....	15.60	.....	.....	15.00	.....	.....	15.00
Lima Telo., Wis.	.....	.....	.....	192	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.00
Garretson Coop., S. D.	Garretson	715	Mag.	173	\$21.00	.....	.....	\$15.00	.....	.....	.....	.....	.....	12.00
Eastern Wis., Wis.	Mt. Calvary	200	Mag.	107	21.00	.....	.....	18.00	.....	.....	.....	.....	.....	21.00
Zenas Telo., Ind.	Nebraska	150	Mag.	174	12.00	.....	.....	9.00	.....	.....	.....	.....	.....	18.00
.....	Amazonia	367	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Avenue City	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Eolckow	344	Mag.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Caewood	.....	Mag. and C. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Cosby	163	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Fillmore	272	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Andrew Co., Mo.	Flag Springs	.....	.....	.....	\$18.00	.....	.....	\$15.00	\$13.80	.....	12.00	.....	.....	.....
.....	Helena	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Nodaway	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rea	127	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rochester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rosendale	329	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Whitesville	275	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pewaukee-Sussex, Wis.	Pewaukee	800	Mag.	417	\$21.00	.....	.....	\$18.00	\$15.00	.....	\$12.00	.....	.....	.....
Annoton-Preston, Wis.	Stitzer	175	Mag.	.....	20.00	.....	.....	16.00	.....	.....	.....	.....	.....	16.00
Barrett Rural, Minn.	Barrett	353	Mag.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.00

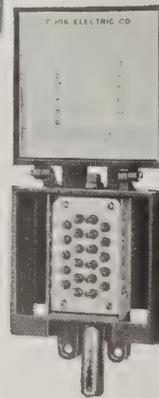
*Desk sets \$3 per year extra.
 1Reduced rates.

2Subscriber-owned instruments, \$3 less.
 3Subscriber-owned, \$4.80 less.

4Subscriber-owned: Business, \$15; residence, \$12.
 5Rates for summer season of five months.



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legal duty of the company to keep the line in good condition and furnish adequate service.

Regarding the arrangement by which the switchboard at Cornelius was used to serve the subscribers on the Hill line, the commission said this was the company's own affair, entered into for its own convenience and to save expense.

It was shown that from Cornelius southward for about 2½ miles the Hill line is in good condition, but the balance—amounting to seven or eight miles—is in a delapidated condition and must be reconstructed.

The subscribers on the Hill line, the commission stated, were entitled to the use of the company's switchboard at Scholls.

The last annual report of the Scholls company showed that its authorized capital stock was \$7,000, of which about \$6,000 had been issued and outstanding; that it had total assets of \$10,100, with liabilities of only \$1,300, and that for last year its operating revenues were \$12,355, expenses \$7,425, leaving \$4,930 as net operating revenues.

It has furnished service since November 10, 1902, has 498 subscribers, and it operates about 300 miles of line.

Town Says Service Is Good— Commission Approves Increase.

The Ohio Public Utilities Commission on May 31 granted an increase in rates to the Galion Telephone Co., of Galion. The rates became effective June 1, and are as follows:

Business	\$4.00
Residence, one-party.....	2.50
Residence, two-party.....	2.00

That the service rendered by the Galion company is of a good grade is indicated by the fact that the mayor, city solicitor and a committee appointed to investigate the reasonableness of the rates asked for, endorsed the advance.

Frank A. Knapp, of Bellevue, is president and general manager of the company.

Approves Sale of Certain Bell Property in Pennsylvania.

The Pennsylvania Public Service Commission gave its approval on May 19 to the sale of certain property in Upper Milford and Lower Milford townships, Lehigh County, by the Bell Telephone Co. of Pennsylvania to the Emaus Telephone Co.

Greenville, Tex., City Council Fixes Rates for Three Years.

An ordinance passed May 31 by the city council of Greenville, Texas, fixes the rates of the local telephone company for a period of three years.

No increase in subscriber station rates is allowed, but an installation charge is authorized. The ordinance also provides for a local charge of five cents for using

an instrument to make a long distance call, when the call originates at the telephone of or is charged to the account of the subscriber.

Wisconsin Commission Suggests Rearrangement of Lines.

Following an investigation, the Wisconsin Railroad Commission decided—on May 31—that the rate for service over the so-called Foley's switch is not unreasonable and that its application is in accordance with the agreement of February 26, 1920. However, a rearrangement of the lines involved was suggested, as the present system is unsatisfactory.

Foley's switch operates between the lines of the Annaton-Preston Telephone Co., of Montfort, and the Muscoda Telephone Co., of Muscoda. It is located in the home of John Foley near the town of Castle Rock, and its original installation dates back to 1901 when two lines of the Muscoda company connected through this switch.

Later, two farmer lines were also connected to the switch, without authority of the Muscoda company, and after some disagreement the service through the switch was suspended.

Several farmer lines which depended upon the switch for connection with Muscoda were connected to the lines of the Annaton-Preston, and that company made an agreement on February 26, 1920, with the Muscoda company, whereby the latter agreed to reinstall the Foley switch, and the former agreed to operate the switch and pay \$2.25 per year, or one-half of the regular Muscoda switching rate, for each subscriber connected directly thereto.

On January 1, 1921, the switching rate of the Muscoda company was increased to \$6 per year, and the Annaton-Preston company was billed \$3—which increased its bill from \$67.50 to \$90 per year. The Annaton-Preston company objected to this charge, and the commission instituted an investigation.

As the switch was reinstalled for the benefit of persons connected to the Annaton-Preston company's lines and the Muscoda company's subscribers had not asked for its installation, it appeared that the burden of the costs should rest with the Annaton subscribers. The charge did not seem to be unreasonable, being only one-half of the regular switching charge.

However, the commission did not approve of the manner in which the service was rendered, and suggested that the switch be discontinued. The two companies concerned, it said, should agree to a rearrangement of their lines, whereby all subscribers desiring Muscoda service in preference to Montfort should be carried on lines centering at Muscoda, and those desiring Montfort services should be carried on lines centering at that town. Regular toll service over clear lines should then

be established, the commission declared.

Subscribers desiring Muscoda service should assign their interest in their lines and equipment to the Muscoda company, the commission stated, and that company could then serve them over its rural lines in the same manner as it serves its other rural subscribers.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

May 1: Complaint filed by Farmers Telephone Co., operating in Grant County, Wis., against the manner in which long distance calls are handled by the Northwestern Bell Telephone Co.

ALABAMA.

June 11: Hearing held at Montgomery on petition of the Greenville Telephone Exchange for authority to increase its rates at Greenville.

CALIFORNIA.

May 29: Complaint of the town of Mill Valley against the Pacific Telephone & Telegraph Co. dismissed, the Pacific Bell having advised the commission that it would file rates—for service with San Francisco—conforming to the general schedules based upon a distance of 12 miles or less.

June 5: Santa Barbara Telephone Co., of Santa Barbara, granted an extension of time in which to sell \$60,000 of its first mortgage, 5 per cent, 30-year, sinking fund, gold bonds, from December 29, 1922, to December 31, 1923.

June 5: Application filed by the Reedley Telephone Co. for authority to change its Reedley-Pinehurst line from a combination suburban and toll line to a toll line; also for a certificate to establish exchanges at Squaw Valley, Dunlap and Pinehurst.

COLORADO.

May 31: In the matter of application of John J. Mullen, of Conifer, for authority to build a telephone system in the Riley Peak district, taken under advisement.

ILLINOIS.

June 5: Hearing held at Springfield on proposed rates of Illinois Telephone Co., of Jacksonville, for toll service from its exchange and toll stations at Jacksonville and other points.

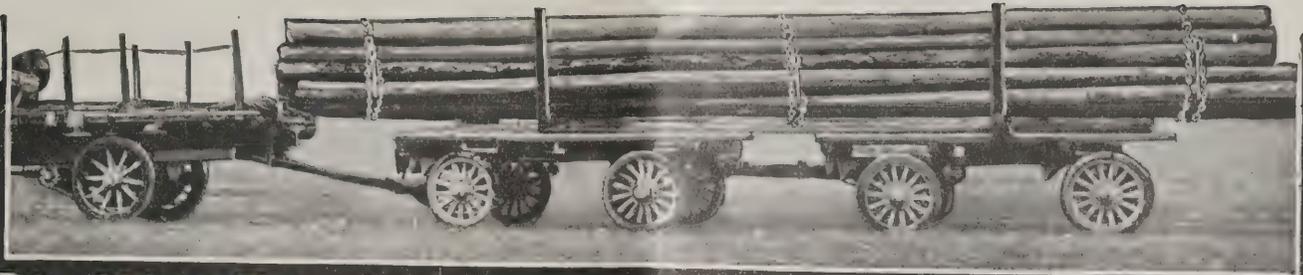
June 5: Hearing held at Springfield on application of the Macomb Telephone Co. for a certificate of convenience and necessity to operate an exchange for toll lines from Macomb to Adair, Table Grove, Vermont, Astoria and Ray.

June 5: Hearing held at Springfield on petition of W. J. Rossilott for the establishment of physical connection between Commercial Telephone & Telegraph Co. and Independent Telephone Co. in the northern and southern parts of Gallatin County.

June 6: Hearing held at Springfield on application of Canton Home Telephone Co. for authority to charge increased rates for service in Canton.

June 6: Hearing held at Springfield on joint application of the Central Telephone & Telegraph Co. and the Illinois Bell Telephone Co. for approval of purchase by the Illinois Bell company of certain sections of toll circuits in the vicinity of Paxton.

June 7: Hearing held at Springfield on petition of the National Telephone & Electric Co. for authority to issue its five-year, 7 per cent, convertible notes in the aggregate amount of \$75,000, and for authority to execute its trust agreement to secure the issue by a deposit of \$100,000 par



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MR. EUGENE C. STACY,
Tiffin, Ohio.

Dear Sir:—I will state the question of using the Load Binder, as described in your circular, was taken up at our Accident Prevention Committee Meeting and everybody agreed that they were O. K., and instructions have been issued to order as many as necessary.

The Chairman of the General Accident Prevention Committee has been trying them out, and my last report was that they were entirely satisfactory and that they would be made standard and would replace all boom poles.

If you have not received any orders direct, you will probably receive same from the Western Electric Company, as all of our material is ordered through them.

Yours very truly,
(Name on request)
Dist. Superintendent of Plant.

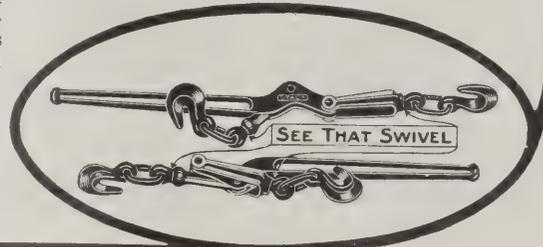


Telephone companies find Stacy Load Binders big time and labor savers—also a big factor in preventing serious and expensive accidents caused by loads slipping. You simply pass chain around load—hook the ends of the Stacy Binder in links of chain—one pull of the handle and load is bound securely and safely—one man can bind any load in a jiffy.

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Stacy Load Binders are built strong and durable—last indefinitely—never break. Made in two sizes. Regular size and Jumbo size. Regular size sells for \$2.50 each, \$5.00 per pair. Jumbo size \$3.75 each, \$7.00 per pair. Sold by leading hardware dealers and hardware jobbers—if yours can't supply you order direct from

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1001 Main St. - - - - Dallas, Texas

value of its 7 per cent preferred stock.

June 14: Hearing held at Chicago in the matter of proposed advance in the rates of the Illinois Bell Telephone Co. for service in Sterling Falls and vicinity.

INDIANA.

May 25: Application filed by Home Telephone & Telegraph Co., of Fort Wayne, for a new rate schedule; also for authority to issue bonds and preferred stock.

MICHIGAN.

May 28: Preliminary hearing held in Lansing on application of the Union Telephone Co., of Owosso, for increased rates in 19 towns served by it.

May 29: Order entered fixing rates which are to be charged by the Michigan State Telephone Co. in the towns affected by the consolidation with the Citizens Telephone Co., of Grand Rapids, after the unified service is in operation.

NEBRASKA.

June 4: In the matter of the application of the Lincoln Telephone & Telegraph Co. for permission to close toll station at Princeton; it appearing that the present location is no longer available and that no other is to be had, application granted, toll service to be furnished over party lines.

June 5: In the matter of the protest of the Edison Telephone Co. against recent order of the commission permitting an increase in switching rates at Edison of the Beaver City Telephone Co. from 25 to 50 cents, ordered that matter be set for hearing at Edison on June 27.

June 6: Complaint filed by H. L. Webster on behalf of the Farmers' Telephone Co., of Tekamah, alleging poor service by

the Northwestern Bell over rural lines.

June 6: Complaint filed by W. O. True, of Omaha, alleging inability to secure individual service from Northwestern Bell Telephone Co.

June 8: Complaint filed by Sod Town Telephone Co. against Northwestern Bell company asking that it be enjoined from discontinuing service because of failure to agree as to joint use of pole lines.

OHIO.

May 31: Higher rate schedule approved for service by the Galion Telephone Co. in Galion.

OREGON.

May 4: Petition of Scholls Telephone Co., of Scholls, for authority to discontinue the Hill line, denied; ordered to repair the line and connect it directly to the switchboard at Scholls.

PENNSYLVANIA.

May 27: Complaint filed by the Stuben Telephone Co. against the Farmers Mutual Telephone Co., alleging that the latter is constructing a line from the Nelson post-office to the borough of Elkland. The complaint states that if the line is permitted to be completed it will add to the competition in the territory, without material aid to the service of the public, and asks that a restraining order be issued.

TENNESSEE.

June 12: Hearing held in Nashville on the rates of the Cumberland Telephone & Telegraph Co.

WISCONSIN.

June 2: Authority given Deerfield Telephone Co., of Deerfield, to issue 332 shares of its capital stock at a par value of \$10 a share, making a total issue of \$3,320.

June 8: Hearing held at Madison on application of the Alliance Telephone Co., of Minong, for increased rates.

June 15: Hearing held at Madison on petition of the New Auburn Telephone Co., of New Auburn, for authority to increase its rates.

June 15: Hearing held at Madison on application of the Fennimore Telephone Co., of Fennimore, for a rate increase.

June 18: Hearing to be held in Madison on petition of the Wise Telephone Co., of Birchwood, for an advance in rates.

June 22: Hearing to be held at Collins in the matter of complaint of J. C. Voss and others against the New Rockland Telephone Co. and others, relative to the exchange at Collins.

June 22: Hearing to be held in Potter on complaint of Alves & Harmes Co. and others against the Soo Ry. Co. and the Tantoul Telephone Co. relative to a telephone in the depot at Potter.

June 23: Hearing to be held at Green Bay in the matter of investigation relative to discontinuance of telephone service to B. H. Dinny by the Oneida Telephone Co. and the Freedom Mutual Telephone Co.

June 29: Hearing to be held at Kilbourn on application of the Farmers Inter-County Mutual Telephone Co. for authority to discontinue connection of its line No. 4 to the Grossman Central at Lewiston.

July 6: Hearing to be held at Kiel on complaint of the Kiel Woodware Co. and others against the Eastern Wisconsin Telephone Co., the Mosel Centerville Telephone Co. and the Wisconsin Telephone Co.

From Factory and Salesroom

What Do You Want to Know? Buchan Records Give the Answer.

Telephone people will be interested in an announcement which comes from St. Louis, Mo., of the formation of the Buchan Telephone Records Co. As its name implies, the business of this company is the design and manufacture of the great variety of forms, binders and indexes used in keeping the information and other records of telephone companies.

Although the company itself is new, the men who compose it are all thoroughly experienced in their chosen field.

H. G. Buchan, the president, was formerly connected with the Buchan-Murphy Co., of New York. He has been a manufacturer of telephone records for 15 years. W. F. Flynn, the sales manager, brings to the new organization an

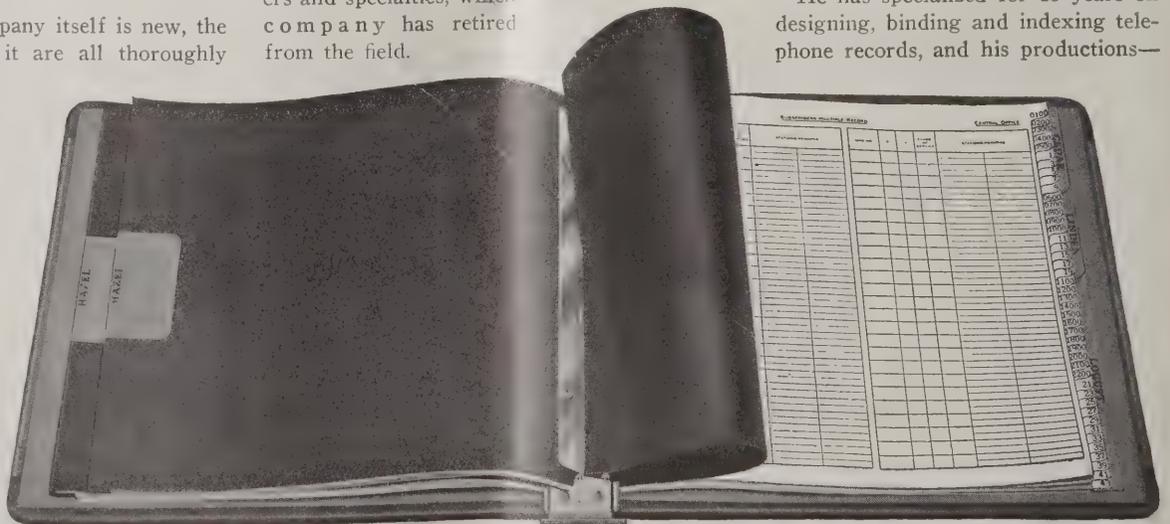
experience of 20 years in the loose-leaf business. For the last seven years he has been perfecting his knowledge of the sales end, serving first as assistant sales manager and later as general sales manager of the Wilson-Jones Loose Leaf Co., of Chicago.

P. B. White, the treasurer, occupied a similar position with the Dawson Mfg. Co., of St. Louis, manufacturer of binders and specialties, which company has retired from the field.

Mr. Buchan, it will be recalled, is the inventor and patentee of the condensed numerical record bearing his name, the well-known Buchan binders and other telephone specialties which are standard equipment with many of the Bell companies.

His latest contribution to the art, the Buchan patent visible jack and panel system, already adopted by Bell companies in several states is shown on this page.

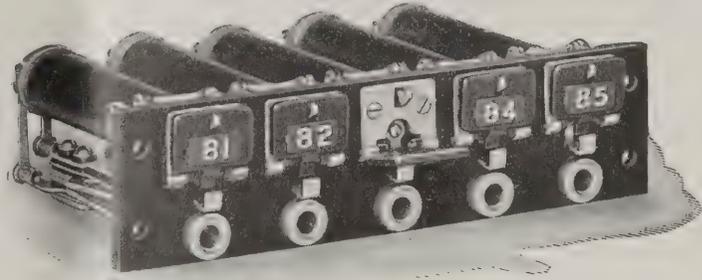
He has specialized for 15 years on designing, binding and indexing telephone records, and his productions—



Buchan Records Are Welcomed in the Telephone Office for Facility in Locating Information.

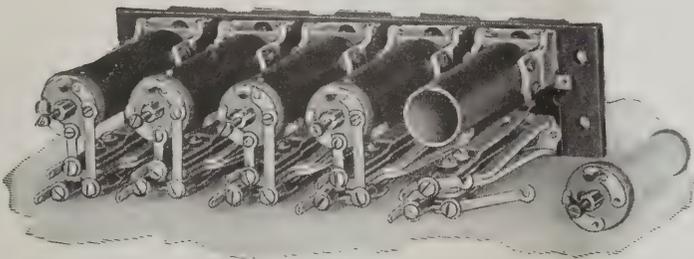
Mechanically And Electrically Strong

Permanently Adjusted
Unusually Sensitive
Kick-Down Feature
Armature Cannot Stick
Convenient Connections



The telephone man recognizes immediately, the fact that Monarch drops and jacks are exceedingly strong, both mechanically and electrically. The adjustment of the armature and all other parts is permanent, because more delicate parts are fully protected, while others are held rigidly in place. The armature is short, and is so constructed and adjusted that a perfect balance is secured. The armature swings freely so that the slightest pull of the magnet **kicks** the shutter down, insuring a sensitiveness that could be secured in no other way.

No soldered connection need ever be broken in removing a drop coil, the entire jack, or any other part of our combined drop and jack. This is one of the outstanding features of Monarch equipment.



We have literature illustrating and describing each and every part of this equipment. Bulletin No. 35 will be sent free upon your request.

Monarch Telephone Manufacturing Co.

GENERAL OFFICES AND FACTORY

951 W. Van Buren St., Chicago, Ill.

Tel-Electric Co., Houston, Texas

DISTRIBUTORS

Electrical Supply Co., New Orleans, La.

Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Coker Electric Supply Co., Los Angeles, Cal.

Every Variation of

FOR the past forty years the North Electric Manufacturing Company has been a pioneer in the development of telephone equipment. As a result of this long period of practical study of telephone operation, we have developed two variations of machine switching apparatus which meet every traffic requirement, large or small.

Both of these variations are based on the same fundamental switching equipment; practically the only difference in operation is that one set of apparatus is driven by an automanual keyset, while the other is driven by a dial.

North Automanual systems provide a keyset, an ultra-rapid form of the dial, located in the exchange and operated with extreme rapidity and accuracy by a trained employee. This apparatus has for many years been used successfully by independent telephone companies in the United States. This system gives all of the advantages of machine switching without necessitating any change in ordinary common battery outside plant. It permits operation of



The North Dial

Precision in making parts and accuracy in assembly that rival the skill of the finest watchmakers—care in selecting materials to assure only the best.

The North Finger Wheel is solid rust-proof Monel-Metal. If worn clear thru it would retain its original lustre. The governor and spindle bearings are carefully housed in a dust proof case to assure long service.

The North Dial may be used to operate any type of machine switching system—its application is universal.

The price is surprisingly low for a mechanism so fine.

The NORTH ELECTRIC

Manufacturers of Telephone Equipment Since 1880

Machine Switching

small exchanges from a desk in the main office, many miles away, and facilitates toll operation, in addition to its many economies for handling local traffic.

The North Keyboard replaces all cords and jacks. The work of the operator is confined to setting up the numbers on the keys. The ringing, busy buzz and disconnect are automatic. Operators easily handle as high as 1250 calls per hour with Automanual.

Dial Automatic systems, in which subscribers do the switching, have been or are being adopted in Chicago, New York and elsewhere. It is particularly significant that the advantages of this method have justified the tremendous investment that must necessarily be made in these cities.

Many Dial Automatic systems have been manufactured by the North Company for operation in Scotland and in India. Telephone Companies contemplating the Dial Automatic system will appreciate the significance of the *satisfactory performance* of North equipment so far from the factory in which it was made, and under the climate conditions to which telephone equipment in India is subjected.

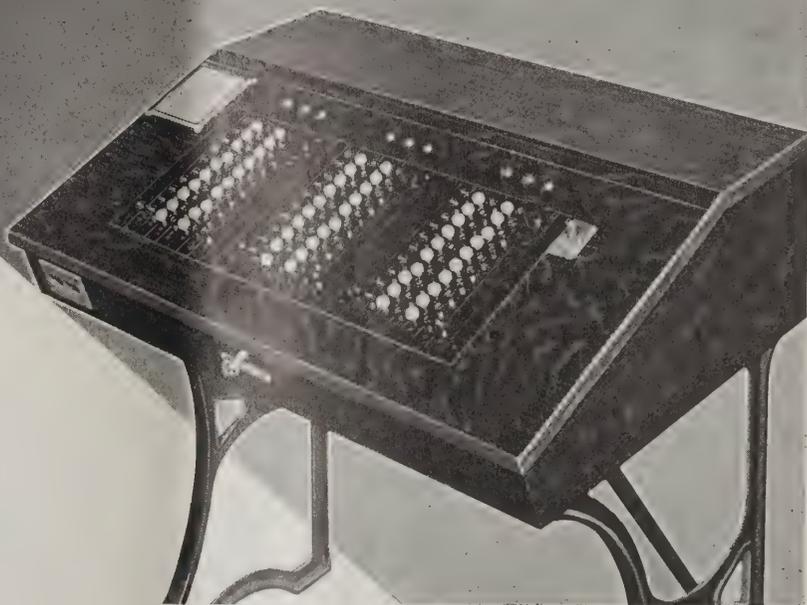
The North line offers every variation of machine switching telephone service—tried by time, both here and abroad. We can help you select the system best suited to your traffic requirements.

North Automanual

Speedy operation is one outstanding feature of North Automanual. The North Keyboard operates very much like an electric adding machine.

Each desk is equipped with three banks of keys, similar to those on an adding machine. As numbers are given, the operator depresses the corresponding keys, pushes the start key, and takes the next call.

Because it's so easy, an inexperienced girl will, in a few days, be able to set up the numbers as fast as they are given, and do it with uncanny accuracy.



MANUFACTURING COMPANY

ALION, OHIO



Here's the Telephone Packet

Dust proof, germ proof, self contained, ready for use.

COMPACT EMERGENCY DRESSINGS are **complete** First Aid treatments, scientifically prepared and so compact they take up a minimum of space.

Put up in kits to meet special hazards of indoor and outdoor telephone work. Used by the largest telephone system of the world.

Send for Booklet T-6



First Aid Specialty Company, Inc.
35 Nassau St., New York

which combine extreme sturdiness of construction and ease of reference with the minimum of weight—have made for themselves a good reputation in the trade.

The Buchan Telephone Records Co. has collected a staff of experts on fundamental telephone records and has arranged to offer an unique service to telephone managers.

While it has complete standard sets of records for practically all telephone purposes—including information, line assignment, multiple working and cable records, etc.—suitable for exchanges of various sizes and types of equipment, which can be furnished on short notice, it recognizes that conditions in some exchanges make individual records necessary. Therefore, it offers the services of its staff in designing records to meet special requirements.

Managers requiring such services are invited to write to the company giving their approximate requirements and estimates and samples will be furnished them.

The Buchan company has the plates from which were made many of the forms now in use by both Bell and Independent companies. Companies which can use these standard forms will thus be spared the expense of having plates made.

The Buchan staff keeps in constant touch with developments in information practices and works continually to devise methods which make for greater facility in obtaining information.

The new Buchan visible jack and panel record has several important features and is heralded as "a short-cut to instantaneous information." It is easy to operate—one movement of the hand exposing the record for reference or corrections, doing away with the delay of thumbing the sheets. Its loose-leaf construction makes additions and replacements a simple matter.

The materials and workmanship which enter into the production of Buchan equipment are guaranteed by the company to be the best obtainable.

Every article turned out is especially designed for its purpose. Thus, where equipment does not have to stand hard usage—for example, an alphabetical information record in an exchange of 500 or less subscribers—an article which will give the required service and present a good appearance but which will at the same time be inexpensive, is offered by the company.

Where the records are bulky and are handled constantly, every effort is made to build equipment which will stand up under the strain—the protection of the records and the cost of reference being the primary consideration. It is recognized that the expense of such records lies not in the first cost, but rather in replacement cost and cost of clerical labor in maintaining them.

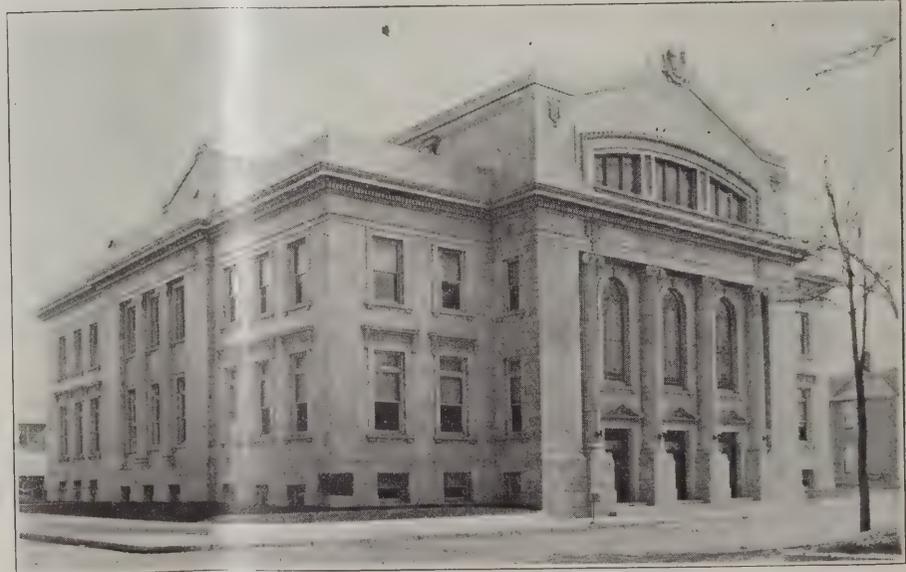
The plant of this company—which is located at 314 North Second street, St. Louis, Mo.—includes a print shop, metal and leather goods factory, bindery, and plating works, all equipped to give prompt delivery of complete equipment for handling an infinite variety of records.

Here are just a few suggestions of the lines carried: Equipment for alphabetical, numerical and street address information records; condensed numerical records, cable records, bookkeeping systems, ring books, etc., and binders and covers for pay station and hotel directories, magazines, operating instructions, tariff and route books, block rate charts, toll point directories, and many other purposes.

Supply bags, leather portfolios, pigskin wallets, tool bags and tool rolls, especially designed for the telephone trade, are also manufactured.

Scottish Rite Temple at Joplin, Mo., Equipped with P. B. X.

The Scottish Rite Temple at Joplin, Mo., dedicated early this year, is—with the exception of the Holy Temple in Washington, D. C.—one of the finest in the United States, from the standpoint of art



The New Scottish Rite Temple at Joplin, Mo., is Equipped with a Stromberg-Carlson P. B. X. Board.



YES!

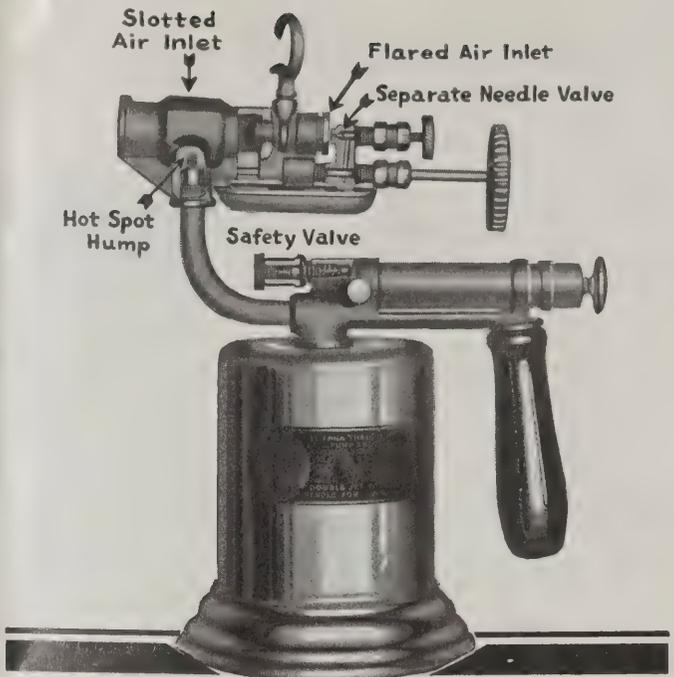
You should have Vac-M Arresters if you would have effective service the whole year 'round.

They successfully balk lightning and crosses with high tension circuits and in their metal containers are proof against wind and weather.

Endorsed by telephone men the country over.

At prices that you'll like.

NATIONAL ELECTRIC SPECIALTY CO.
Toledo, Ohio



*There's no excuse now
for using an unsafe
Blow Torch*

Safety with a blow torch is no longer a question of daily concern. Lives, limbs and eyes can now be safeguarded. Likewise there remains not an atom of doubt as to where to find the very maximum of blow torch efficiency, no matter where and how you wish to use it:

TURNER BLOW TORCH
"Safe as a Candle"

is truly a distinguishing piece of fine engineering. A striking example of seasoned thought and keen determination on the part of men who know Blow Torches, and the blow torch problem.

Fuel, Heat and Metal, Pressures, Turbulence and Vaporization were problems the designers faced, and not one question of doubt remained when the name "Turner" went on it.

Eleven patented and exclusively "Turner" features are a part of it. There are no seams or soldered connections in the fuel tank. It's a solid piece with but one opening and that above the fuel line.

It burns kerosene or gasoline, and the flame ejected is 400° hotter than the torch you were fearful to use. The safety valve is noticeably there—another symbol of Turner ingenuity.

Great "Turner" production has made possible an unbelievably low price.

Our No. 2 Firepot has no equal.
May we quote you today?

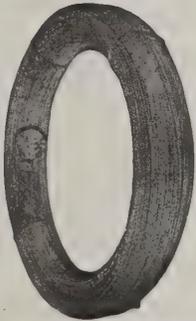
THE TURNER BRASS WORKS
Park Ave., Sycamore, Ill.

The World's Largest Exclusive Manufacturers of Blow Torches, Fire Pots and Brazers
DISTRICT REPRESENTATIVES

- RICE-HITT CO., 709 Mission Street San Francisco, Calif.
- RICE-HITT CO., 416 Hibernian Bldg. Los Angeles, Calif.
- RICE-HITT CO., 1427 L. C. Smith Bldg. Seattle, Wash.
- THE TURNER BRASS WORKS, 36 Murray St., New York, N. Y.
- A. H. Deveney & Co., Fourth National Bank Bldg., Atlanta, Ga.

ROEBLING

TELEPHONE WIRE



Covered with the heaviest practical coat of spelter. Highest electrical and mechanical properties.

E. B. B., B. B. and STEEL GRADES
JOHN A. ROEBLING'S SONS CO.
TRENTON, NEW JERSEY



Note Protection at Corners

Blake Insulated Staples

Unequaled for telephone and bell wiring. The fibre insulation prevents troublesome short circuits and grounds.

4 Sizes Pat. Nov., 1900

Write for Samples

Blake Signal & Mfg. Co.
BOSTON, MASS.

Please tell the Advertiser you saw his Advertisement in TELEPHONY.

Valuations—Supervision—Plant—Inductive Interference
Expert Administrative Counsel for Utilities

JAY G. MITCHELL
TELEPHONE ENGINEER
Member A. T. F. E.

1042 W. Monroe St. Springfield, Ill.

Frank F. Fowle & Co.
Electrical and Mechanical
ENGINEERS

Menadnock Building CHICAGO

Appraisals Rate Investigations

The American Appraisal Co.
A Quarter Century of Service

MILWAUKEE NEW YORK CITY
Financial Reports

HAROLD L. BEYER CHARLES M. MANLY

BEYER & MANLY
Attorneys and Counselors at Law
Specializing in Telephone Law and
Procedure and Income Tax Practice

815½ Fourth Ave. Grinnell, Iowa

W. C. POLK
CONSULTING TELEPHONE ENGINEER

Plans, Estimates and Reports,
Appraisal and Supervision

Can arrange a moderate amount of financing.
Telephone Bldg. Kansas City, Mo.

W. H. CRUMB
Telephone Engineer

9 South Clinton St. Chicago



CHAPMAN
LIGHTNING ARRESTERS

Manufactured by
MINNESOTA ELECTRIC CO.
Minneapolis, Minn.

CEDAR POLES
Northern White and Western Red

C. P. TINKHAM
1400 Majestic Bldg.
MILWAUKEE WIS.

and convenience. The structure cost \$350,000.

A Stromberg-Carlson No. 101-B, P. B. X. switchboard, equipped with 20 lines and four trunks, is installed in the build-



Close-Up of the No. 101-B, P. B. X. Stromberg-Carlson Board in the Temple in Joplin, Mo.

ing. At the time of the installation, 12 stations of the Stromberg-Carlson hotel type were placed in various parts of the building.

The officers of the lodge are well pleased with the handsome appearance of the board and the efficiency of its operation.

Cook Electric Co. Issues Handsome New Catalog.

The Cook Electric Co., 2700 Southport avenue, Chicago, has just issued a new catalog and price list of its various products.

President G. R. Folds in a brief outline of the company's history, states that since 1915—when he became responsible for the company's management—special efforts have been made to simplify and perfect the apparatus put out by the company, and the new catalog shows the results of this work.

Exceptionally clear illustrations and diagrams are utilized to supplement the printed descriptions of the various cable terminals distributing frames, terminals, and central office protective equipment. The various types of substation protectors and lightning arresters and also a radio protector are likewise illustrated and described.

The catalog includes descriptions and data covering other Cook products such as copper and tinned steel sleeves, fuses, connecting strips, test connectors, guy clamps and the Cook electric soldering iron.

Telephone managers will naturally want



The "STEWART" Test Cabinet

Tells you if your line is short, crosses, or grounded and how many miles it is from you. So simple the operator can use it as easily as the men. Reads direct.

Sent on trial?
STEWART BROTHERS
Ottawa, Ill.

KESTER Acid-Core WIRE SOLDER



CHICAGO SOLDER CO. 4201 Wrightwood Ave.
CHICAGO, ILL.

TELEPHONE ACCOUNTING
"COFFEY SYSTEM"
The Independent Standard

Coffey System and Audit Co., C. P. A.
118 E. New York Street
Indianapolis, Ind.

Exclusive Telephone Accountants

American Electric

TELEPHONES
SWITCHBOARDS and SUPPLIES

Carried in Stock by
Southern Electric Supply Co.
Atlanta, Ga.



GOVERNMENT ACCOUNTANT During Federal Control

Systems of accounts installed to meet the requirements of Federal and State regulatory bodies, annual audits, financial reports, income tax matters, rate case material prepared, filed and presented.

CARLTON G. VAN EMON
PUBLIC UTILITY ACCOUNTING
921 Fifteenth St. N. W., Washington, D. C.

GUSTAV HIRSCH, M.E.
CONSULTING ENGINEER
COLUMBUS, OHIO

Appraisal Construction Reports

J. G. WRAY & CO.
Telephone Engineers

Specialists in Appraisals, Rate Surveys,
Financial Investigations, Organization, and
Operation of Telephone Companies.

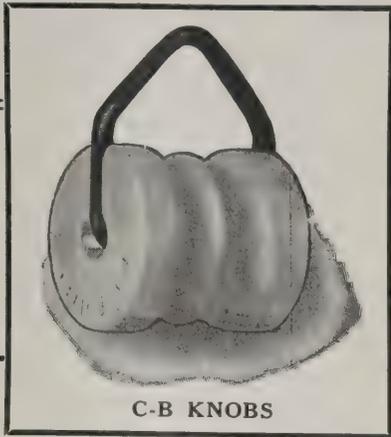
J. G. Wray, Fellow A. I. E. E.
Cyrus G. Hill

1217 First National Bank Bldg., Chicago

CONSULTING
Telephone Engineer
GARRISON BABCOCK

800—20 East Jackson Blvd., Chicago, Ill.
Telephone Wabash 5217

NATIONAL



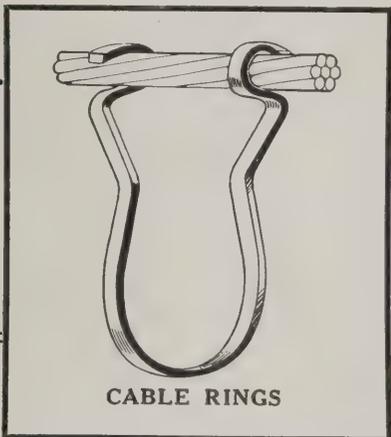
C-B KNOBS



AFTER TWISTING



DOUBLE-TUBE SLEEVES



CABLE RINGS

TELEPHONE

Here are some construction specialties that command the respect of every lineman and others interested in practical methods of economical and simple installations.

NATIONAL C-B KNOBS

In place of the old-style rigid insulators which cannot help but wear away drop-wires and wear on the nerves of your linemen, these knobs adjust themselves automatically to any strain and are ruggedly built to withstand abuse.

NATIONAL DOUBLE-TUBE SLEEVES

Ever since these sleeves have been in use by telephone companies they have been looked upon as standard equipment because of the simplicity, strength and accuracy that can always be relied on. When twisted, the sleeve forms practically a welded joint.

NATIONAL JUNIOR CABLE-RINGS

"The Ring With the Tension Grip"

An appliance that can be installed with one hand—quickly and easily. The two prongs grip the messenger with a regular strangle-hold, the harder they are pulled the greater the tension. Ample space for re-clipping a feature.

Construction Specialties

Manufactured by

The National Telephone Supply Co.
5100 Superior Ave. Cleveland, O.



YOU NEED THE UTILITY

This combination Cable Reel Carrier and Pole Dolly simple in design—perfect in operation—is immeasurably practical and useful for the telephone company. Of finest materials. Splendid construction. Pole Dolly bunks furnished without extra charge. Complete line of two and four wheel trailer equipment—specially designed for telephone use. More "Utility" trailers in use with telephone companies in western U. S. than all other makes combined. Interesting catalog on request. Write now.

UTILITY TRAILER MANUFACTURING CO.

(Formerly Los Angeles Trailer Company)

1328 Palmetto St.

Los Angeles, Calif.

You fellows are all busy on line work
and don't have much time to read

BUT HOW ABOUT

"COPPERWELD"

LINE WIRE
TWISTED PAIR
AND
GROUND RODS

for your new and replacement jobs?
Use it and you will not have to worry
about future Rust Troubles, Sleet Storms
or Drop Wire Failures

Value is determined by service—Copperweld gives service

DO IT RIGHT AND AVOID REPLACEMENT
AND MAINTENANCE COSTS

WRITE NOW

COPPER CLAD STEEL COMPANY

NEW YORK SALES OFFICE:
30 CHURCH STREET, NEW YORK

CHICAGO SALES OFFICE:
129 S. JEFFERSON ST., CHICAGO

MAIN OFFICE AND WORKS: BRADDOCK P. O. RANKIN, PA.

a copy of this catalog. If one has not already been received, a copy may be obtained upon request to the Cook Electric Co., 2700 Southport avenue, Chicago.

Sheffield, World Famous City, to Have Automatic.

A contract has recently been placed by the British Postoffice for equipping Sheffield with an automatic telephone system. This will be the largest automatic area in England and will comprise an initial equipment of 12,451 lines distributed between one main exchange of 5,988 lines and eight subsidiary exchanges.

There will also be a toll board for handling long distance calls, as well as a manual board for records, local trunks, etc., the whole comprising a switchboard of 50 positions.

The contract has been awarded to Siemens Bros. & Co., Ltd., who have recently completed an automatic exchange at Southampton and are now installing automatics at Swansea and Sketty.

Mountain States to Build Denver-to-Pacific Coast Line.

The Mountain States Telephone & Telegraph Co. announces that it will build another telephone line from Denver to the Pacific Coast. The cost is estimated at \$2,000,000.

The present transcontinental line from New York to San Francisco via Denver, is routed via Cheyenne and Salt Lake, while the one to be built will be routed via Albuquerque, El Paso and Phoenix.

Not only will the new southern route

be away from the area of the winter storms, but it adds the safety of having such an important line on an entirely different route so that any prostration of one route leaves the other for a fall-back.

Increased demand for telephone service from New York to the Coast necessitates the early completion of the second transcontinental circuit, it is said.

Prices in Metal Markets.

New York, June 11.—Copper—Steady; electrolytic, spot and future, 15.00c. Tin—Easy; spot and nearby, \$42.12; futures, \$41.87. Iron—Steady; No. 1 northern, \$29.00@31.00; No. 2 northern, \$28.50@30.00; No. 2 southern, \$27.00. Lead—Steady; spot, \$7.25. Zinc—Easy; East St. Louis spot and nearby delivery, \$6.20. Antimony—Spot, \$6.75.

Bell Improving Long Distance Facilities in Washington.

Work is to begin some time this month on 83 loop lines—two-wire service—of additional long distance lines in Washington, between Spokane and Lewiston, costing in excess of \$82,000, according to announcement of the Pacific Telephone & Telegraph Co. The job will be completed about October 1.

Additional copper circuits are to be provided and a net total of about 83 miles of wire will be placed.

The contemplated improvements will provide three additional circuits between Pullman and Lewiston, one additional between Colfax and Pullman and one additional between Colfax and Spokane.

Part of this last improvement between Rosalia and Spokane has already been completed as part of the early spring

Dakota Central to Take Over Potter County Telephone Company July 1.

On July 1 the property of the Potter County Telephone Co., with headquarters in Gettysburg, S. D., will be transferred to the Dakota Central Telephone Co., Aberdeen, in accordance with the recommendation of the stockholders, who confirm the sale made by the officers of the Gettysburg company.

POSITION WANTED

POSITION WANTED—Sixteen years' practical experience in plant, commercial, engineering and traffic work, backed by technical education. Pleasing personality and clean record. Will produce results you expect. Give details of position and salary. Address 5318, care of TELEPHONY.

HELP WANTED

WANTED—First class cable man with or without bridge experience. Address Peninsular Telephone Co., Tampa, Fla.

WANTED—First class all around switchman. Address Peninsular Telephone Co., Tampa, Fla.

WANTED TO BUY

WANTED—Kellogg magneto switchboard equipped with at least 50 drops, and 10 cord pairs. Give condition and price. Address A. H. Skinner, Gen. Mgr., Citizens Telo. Co., New Castle, Pa.

SOLDERING

The delicate connections, small units and all fine work in general is as simple as writing with a lead pencil, if you use

THE POST SOLDERING IRON

PLATINUM HEATING ELEMENT—INTERCHANGEABLE TIPS—WORKS ON ANY CURRENT
(Large and Small)



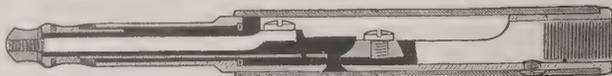
The smallest electric soldering instrument on the market

One Half Actual Size

List price \$6.00

FROM YOUR JOBBER OR WRITE

POST ELECTRIC CO., Mf'rs Dept. G, 30 E. 42nd St., NEW YORK, N. Y.



Switchboard Plugs, All Types, U. S. Patent 1302471
INSULATION IN ONE UNIT. IN USE IN FIVE CONTINENTS

TELEFON FABRIK AUTOMATIC

7 AMALIEGADE,

COPENHAGEN,

DENMARK

NORTHERN POLE
and
LUMBER COMPANY

SERVICE

POLE

DULUTH
MINNESOTA

Hot Galvanized Pole Line Hardware

M. LANZ BOLT CO.

PITTSBURGH, PA.

To insure delivery on time order your poles as early as possible.

Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
608 S. Dearborn St. Chicago

H. D. FARGO, PRESIDENT AND TREASURER.
S. R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 25

CHICAGO, SATURDAY, JUNE 23, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

There is no slackening of the public demand for tele-

phone service, apparently, either in the cities or in the smaller communities and rural districts. Wherever a thrifty citizen builds a home, or a group of enterprising Americans starts either a town or even a factory, there at once is created an opportunity for additional telephones.

The federal government, in describing the big irrigation projects in the Western States, refers to the enlarged opportunities for farming thereby furnished, and especially reminds the telephone interests that the opening of these districts will be immediately followed by a demand for telephone lines.

The press bulletin issued by the Illinois Bell Telephone Co. states that the estimated telephone growth of the next five years exceeds all previous records for a like period. This forecast is probably based on the surveys which the parent organization makes in order to provide for future requirements. Los Angeles, Calif., expects to double its 196,000 telephones in the next five years.

* * * *

If the demands for service in the next five years outstrip past records, the whole telephone industry will have need of all its resources to meet the situation—in capital, in manufacturing output and in men to handle the job.

Since 1900, the figures show, the population of the United States has increased 45 per cent, while the increase in the number of telephones has been about 1,240 per cent. According to the statistical experts

STATISTICS ON TELEPHONE GROWTH

the present growth of telephones is at a rate three times as rapid as the rise in population, but we doubt the absolute accuracy of this assertion.

The telephone follows population. A booming town, growing in population overnight, clamors for telephones. When for some reason wholesale desertions befall a community, telephones are taken out. Probably they eventually re-appear at other places where the shifting population locates, so that the net loss the country over is negligible.

In affirming that the telephone growth is three times as rapid as the increase in population, the Bell bulletin adds that "saturation is still far off."

* * * *

Statistics showing the magnitude of their industry are always of interest to telephone men.

January 1, 1923, New York City had 1,072,632 telephones in service, which is more than there are in the entire country of Great Britain, which had 1,028,258. Chicago, with more than 650,000, has more telephones than all of France. Philadelphia, alone, with close to 300,000, has more telephones than both Belgium and The Netherlands. Boston has more than Philadelphia. Pittsburgh has a little less than 200,000, but has more than all of Italy.

Los Angeles, San Francisco, Detroit, Cleveland and St. Louis are now approaching the 200,000 mark.

But it is in the smaller towns and the farming districts that American telephone

development towers still more impressively over that of

all other countries. Its influence is plainly noticeable across the border in Canada.

* * * *

There are only 4,400 telephones on all the farms in Great Britain, according to the latest statistics. In the Canadian province of Saskatchewan there are 58,000 rural telephones, which is about one to every nine people in the province. Canada, it seems, patterns after the United States rather than England, in the matter of rural telephone development, and finds it pays.

In Saskatchewan the distances are wide and the population meager, but the telephone lines reconcile the settlers in the newly-opened sections to a life which otherwise would be extremely lonely. More than 4,000 miles of new rural telephone lines were constructed in Saskatchewan and Alberta alone last year.

* * * *

Government figures say there are 3,000,000 farm telephones in the United States. This is believed to be short of the actual number. The extensive irrigation projects in the West and Southwest will open millions of acres to farmers and fruit-raisers within the next two years, and create a demand for much additional telephone equipment, as telephone service is one of the first things they plan for in their new homes.

* * * *

In Great Britain the telephone system, it will be remembered, is operated by the government whose management has not succeeded in popularizing the service. The

superiority of American service (which is admitted by the English) no doubt is an important reason for the United States' supremacy, but the comparative figures bear testimony to the fact that private ownership does a better job than government administration.

* * * *

The fact that there are 13.6 telephones in the United States to every 100 population, whereas in Britain there are but two telephones per 100 people, is a discomforting fact to the English observers. A recent editorial in the *London Daily Telegraph* discusses the matter in a fashion which reveals considerable disquietude.

"Figures demonstrate," it says, "what every one familiar with life in the United States and Canada has discovered by observation, that we are far behind in the

application of the telephone to daily life. In Great Britain, according to the latest statistics, there are only two telephones per 100 people, while in the United States there are 13.6 telephones; in Sweden, 6.4, and even in Norway 4.4.

There is no denying this evidence that, from whatever cause, the telephone is not as much used in this country as in others which, we may be allowed to believe, are not more highly developed or better organized."

The editorial goes on to say that it would be superfluous to argue about the advantage of increased development and greater use of the telephone, and then asks: "Why, then, is it that we have set up less than half the telephones per 100 of us that Norway needs, and less than one-sixth of the number they demand in America?"

In answering this query the editor places the blame on the government management, as he adds: "The main reason, we take it, is that the post office has not yet put the telephone within the reach of more than a limited number of the population. A secondary reason is that the service offered is not sufficiently good to tempt those who can manage their affairs without it."

* * * *

Better service, lower rates and the private initiative which seeks to extend its business and please and keep its patrons, are the reasons why the American telephone industry has outstripped the achievements of the European governments that are in control of the business "over there."

That is why the United States has 65 per cent of all the telephones in the world.

Discussion of Reproduction Cost

Complete Text of Dissenting Opinion in the Case of the Southwestern Bell Telephone Co. vs Missouri Public Service Commission Filed by Justice Brandeis and Concurred In by Justice Holmes of U. S. Supreme Court

I concur in the judgment of reversal. But I do so on the ground that the order of the state commission prevents the utility from earning a fair return on the amount prudently¹ invested in it. Thus, I differ fundamentally from my brethren concerning the rule to be applied in determining whether a prescribed rate is confiscatory. The court, adhering to the so-called rule of *Smyth v. Ames*, and further defining it, declares that what is termed value must be ascertained by giving weight, among other things, to estimates of what it would cost to reproduce the property at the time of the rate hearing.

The so-called rule of *Smyth v. Ames* is, in my opinion, legally and economically unsound. The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return.² Thus, it sets the limit to the power of the state to regulate rates.

The Constitution does not guarantee to the utility the opportunity to earn a return on the value of all items of property used by the utility, or of any of them. The several items of property constituting the utility, taken singly, and freed from the public use, may conceivably have an aggregate value greater than if the items are used in combination. The owner is at liberty, in the absence of controlling statutory provision, to withdraw his property

from the public service; and, if he does so, may obtain for it exchange value. Compare *Brooks-Scanlan Co. v. Railroad Commission of Louisiana*, 251 U. S. 396; *Erie Railroad Co. v. Public Utility Commissioners*, 254 U. S. 394, 411; *Texas v. Eastern Texas R. R. Co.*, 258 U. S. 204. But so long as the specific items of property are employed by the utility, their exchange value is not of legal significance.

The investor agrees, by embarking capital in a utility, that its charges to the public shall be reasonable. His company is the substitute for the state in the performance of the public service; thus becoming a public servant. The compensation which the Constitution guarantees an opportunity to earn is the reasonable cost of conducting the business.

Cost includes not only operating expenses, but also capital charges. Capital charges cover the allowance, by way of interest, for the use of the capital, whatever the nature of the security issued

¹The term prudent investment is not used in a critical sense. There should not be excluded from the finding of the base, investments which, under ordinary circumstances, would be deemed reasonable. The term is applied for the purpose of excluding what might be found to be dishonest or obviously wasteful or imprudent expenditures. Every investment may be assumed to have been made in the exercise of reasonable judgment, unless the contrary is shown.

²Except that rates may, in no event, be prohibitive, exorbitant, or unduly burdensome to the public. *Covington & Lexington Turnpike Co. v. Sanford*, 164 U. S. 578, 596; *Smyth v. Ames*, 169 U. S. 466, 544; *San Diego Land & Town Co. v. National City*, 174 U. S. 739, 757; *Minnesota Rate Cases*, 230 U. S. 353, 454; *Mr. Justice Miller in Chicago, Milwaukee & St. Paul Ry. Co. v. Minnesota*, 134 U. S. 418, 459.

therefor; the allowance for risk incurred; and enough more to attract capital. The reasonable rate to be prescribed by a commission may allow an efficiently managed utility much more. But a rate is constitutionally compensatory, if it allows to the utility the opportunity to earn the cost of the service as thus defined.

To decide whether a proposed rate is confiscatory, the tribunal must determine both what sum would be earned under it, and whether that sum would be a fair return. The decision involves ordinarily the making of four subsidiary ones:

1. What the gross earnings from operating the utility under the rate in controversy would be. (A prediction.)
2. What the operating expenses and charges, while so operating, would be. (A prediction.)
3. The rate base, that is, what the amount is on which a return should be earned. (Under *Smyth v. Ames*, an opinion, largely.)
4. What rate of return should be deemed fair. (An opinion, largely.)

A decision that a ratio is confiscatory (or compensatory) is thus the resultant of four subsidiary determinations. Each of the four involves forming a judgment, as distinguished from ascertaining facts. And as to each factor, there is usually room or difference in judgment. But the first two factors do not ordinarily present serious difficulties.

The doubts and uncertainties incident to prophecy, which affect them, can, often, be resolved by a test period; and meanwhile

protection may be afforded by giving a bond. *Knoxville v. Knoxville Water Co.*, 212 U. S. 1, 18, 19; *St. Louis, Iron Mountain & Southern Railway Co. v. McKnight*, 244 U. S. 368. The doubts and uncertainties incident to the last two factors can be eliminated, or lessened, only by redefining the rate base, called value, and the measure of fairness in return, now applied under the rule of *Smyth v. Ames*.

The experience of the 25 years since that case was decided has demonstrated that the rule there enunciated is delusive. In the attempt to apply it, insuperable obstacles have been encountered. It has failed to afford adequate protection either to capital or to the public. It leaves open the door to grave injustice.

To give to capital embarked in public utilities the protection guaranteed by the Constitution, and to secure for the public reasonable rates it is essential that the rate base be definite, stable, and readily ascertainable; and that the percentage to be earned on the rate base be measured by the cost, or charge, of the capital employed in the enterprise. It is consistent with the Federal Constitution for this court now to lay down a rule which will establish such a rate base and such a measure of the rate of return deemed fair. In my opinion, it should do so.

The rule of *Smyth v. Ames* sets the laborious and baffling task of finding the present value of the utility. It is impossible to find an exchange value for a utility, since utilities, unlike merchandise or land, are not commonly bought and sold in the market. Nor can the present value of the utility be determined by capitalizing its net earnings, since the earnings are determined, in large measure, by the rate which the company will be permitted to charge; and, thus, the vicious circle would be encountered.

So, under the rule of *Smyth v. Ames*, it is usually sought to prove the present value of a utility by ascertaining what it actually cost to construct and install it; or by estimating what it should have cost; or by estimating what it would cost to reproduce, or to replace it. To this end an enumeration is made of the component elements of the utility, tangible, and intangible.³ Then the actual, or the proper, cost of producing, or of reproducing, each part is sought. And finally, it is estimated how much less than the new each part, or the whole, is worth; that is, the depreciation is estimated.⁴

Obviously each step in the process of estimating the cost of reproduction, or replacement, involves forming an opinion, or exercising judgment, as distinguished from merely ascertaining facts. And this is true, also, of each step in the process of estimating how much less the existing plant is worth, than if it were new.

There is another potent reason why, under the rule of *Smyth v. Ames*, the room

for difference in opinion as to the present value of a utility is so wide. The rule does not measure the present value either by what the utility cost to produce; or by what it should have cost; or by what it would cost to reproduce, or to replace it.⁵ Under that rule the tribunal is directed, in forming its judgment, to take into consideration all those and also, other elements, called relevant facts.⁶

Obviously "value" cannot be a composite of all these elements. Nor can it be arrived at on all these bases. They are very different; and must, when applied in a particular case, lead to widely different results. The rule of *Smyth v. Ames*, as interpreted and applied, means merely that all must be considered. What, if any, weight shall be given to any one, must practically rest in the judicial discretion of the tribunal which makes the determination. Whether a desired result is reached may depend upon how any one of many elements is treated.

It is true that the decision is usually rested largely on records of financial transactions, on statistics and calculations. But as stated in *Louisville v. Cumberland Tele-*

³In estimating replacement cost the first step is to determine what part of the property owned is used and useful in the public service. That involves, among other things, a consideration of retired or discarded property and the question whether the size and capacity of the plant are, in part, excessive.

The property included in the valuation is commonly treated under the following heads (See Report of Special Committee on Valuation, Amer. Society of Civil Engineers, October 28, 1916, 42 Proceedings, pp. 1708-1938):

- A. Tangibles:
 - (a) Land and buildings.
 - (b) Plant.
- B. Incidentals during construction:
 - (a) Administration.
 - (b) Engineering and superintendence.
 - (c) Legal Expenses.
 - (d) Brokerage.
 - (e) Promotion fees.
 - (f) Insurance.
 - (g) Taxes.
 - (h) Bond discount.
 - (i) Contingencies.
- C. Intangibles:
 - (a) Good will.
 - (b) Franchise value.
 - (c) Going concern value.
 - (d) Working capital.

"Going value" was declared by the special report (p. 1727) to embrace, among other things, "efficiency, favorable business arrangements and design"; intangibles to include also "leases, easements, water rights, traffic and operating agreements, strategic location and advantages and other privileges."

⁴Several different methods are used for measuring depreciation: (1) The replacement method; (2) the straight-line method; (3) the compound interest method; (4) the sinking fund method; (5) the unit cost method. It is largely a matter of judgment whether, and to what extent, any one of these several methods of depreciation should be applied. They may give widely different results. Special report, October 28, 1916, Valuation of Public Utilities, Amer. Society of Civil Engineers, Vol. 42 Proceedings, pp. 1723-1727; 1846-1900.

⁵This court declared in *Smyth v. Ames*, 169 U. S. 466, 547, that "present as compared with original cost of construction" is to be considered; and in *Minnesota Rate Cases*, 230 U. S. 352, 452, that "the cost-of-reproduction method is of service in ascertaining the present value of the plant, when it is reasonably applied and when the cost of reproducing the property may be ascertained with a proper degree of certainty." Reproduction cost was thus held to be evidence of value. But it has never been held to be the measure of value.

graph & Telephone Co., 225 U. S. 430, 436, "every figure . . . that we have set down with delusive exactness" is "speculative."

The efforts of courts to control commissions' findings of value have largely failed. The reason lies in the character of the rule declared in *Smyth v. Ames*. The rule there stated was to be applied solely as a means of determining whether rates already prescribed by the legislature were confiscatory. It was to be applied judicially after the rate had been made; and by a court which had had no part in making the rate. When applied under such circumstances the rule, although cumbersome, may occasionally be effective in destroying an obstruction to justice, as the action of a court is, when it sets aside the verdict of a jury. But the commissions undertook to make the rule their standard for constructive action.

They used it as a guide for making, or approving, rates. And the tendency developed to fix as reasonable the rate which is not so low as to be confiscatory.⁷ Thus the rule which assumes that rates of utilities will ordinarily be higher than the minimum required by the Constitution has, by the practice of the commissions, eliminated the margin between a reasonable rate and a merely compensatory rate; and, in the process of rate making, effective judi-

⁶Some of these so-called relevant facts are, as the rule has been applied:

(a) Capitalization, i. e., bonds, stock and other securities outstanding.

(b) Book cost, i. e., the investment account as shown on the books.

(c) Actual cost, i. e., amounts actually paid in cash for installing the original plant and business, and the additions thereto.

(d) Historical cost, i. e., the proper cost of the existing plant and business, estimated on the basis of the price levels existing at the respective dates when the plant and the additions were constructed. This is often called prudent investment. Historical cost would, under normal conditions, be equal in amount to the original cost. The phrases are sometimes used to denote the same thing. But they are not the same; and they are often ascertained by different processes.

Original cost is the amount actually paid to establish the utility. The amount is ascertained, where possible, by inspection of books and vouchers, and by other direct evidence. If this class of evidence is not complete, it may be necessary to supplement it by evidence as to what was probably paid for some items, by showing prices prevailing for work and materials at the time the same were supplied. But the evidence of these prices is merely circumstantial, or corroborative, evidence of the amount actually paid.

In determining actual cost, whatever the evidence, there is no attempt to determine whether the expenditure was wise or foolish, or whether it was useful or wasteful. Historical cost, on the other hand, is the amount which normally should have been paid for all the property which is usefully devoted to the public service. It is, in effect, what is termed the prudent investment. In enterprises efficiently launched and developed, historical cost and original cost would practically coincide both in items included and in amounts paid. That is, the subjects of expenditure would coincide; and the cost at prices prevailing at the time of installation would substantially coincide with the actual cost.

(e) Reproduction cost of plant and business—estimated on price levels prevailing at the date of valuation.

(f) Reproduction cost of plant and business, estimated on average price levels prevailing during periods of, say, five to ten years preceding the valuation.

⁷This, it appears, was the purpose of the board in *Galveston Electric Co. v. City of Galveston*, 258 U. S. 388.

cial review is very often rendered impossible.⁸ The result, inherent in the rule itself, is arbitrary action, on the part of the rate regulating body. For the rule not only fails to furnish any applicable standard of judgment, but direct consideration of so many elements, that almost any result may be justified.

The adoption of present value of the utility's property, as the rate base, was urged in 1893, on behalf of the community; and it was adopted by the courts, largely as a protection against inflated claims based on what were then deemed inflated prices of the past. See argument in *Smyth v. Ames*, 169 U. S. 466, 479, 480; *San Diego Land & Town Co. v. National City*, 174 U. S. 739, 757, 758; *San Diego Land & Town Co. v. Jasper*, 189 U. S. 439, 442, 443; *Stanislaus County v. San Joaquin & Kings River Canal & Irrigation Co.*, 192 U. S. 201, 214.

Reproduction cost, as the measure, or as evidence, of present value was, also, pressed then by representatives of the

⁸A rate order will not be set aside, unless the evidence compels conviction that a fair-minded board could not have reached the conclusion that the rate would prove adequate. *San Diego Land & Town Co. v. National City*, 174 U. S. 739, 754; *San Diego Land & Town Co. v. Jasper*, 189 U. S. 439, 442; *Knoxville v. Knoxville Water Co.*, 212 U. S. 1, 17; *Van Dyke v. Geary*, 244 U. S. 39, 49; *Galveston Electric Co. v. Galveston*, 258 U. S. 388, 401, 402. The range for difference of opinion on each of the many factors to be taken into consideration in fixing the rate base is so wide that such compelling evidence can rarely be adduced, where the report filed recites that, after full hearing, all the so-called relevant facts were given consideration by the commission in reaching the decision made.

There may often be found in opinions of utility commissions, after a lengthy and detailed discussion of a vast quantity of expert opinion, a conclusion like the following from *Re Illinois Northern Utilities Co.*, P. U. R. 1920 D, 979, 999:

"After considering all the evidence and arguments of counsel in this case, bearing upon the valuation of the properties herein involved, the investment therein, their original costs, cost to reproduce, and present values, including all overheads; preliminary costs; cost of engineering; supervision, interest, insurance, organization and legal expenses during construction; working capital; materials and supplies; and all other elements of value, tangible and intangible, and considering the plants are now going concerns in successful operation, the commission finds. . . . for the purpose of this proceeding, and for those purposes only, the fair rate-making values . . . as follows."

Hence, a commission's order must ordinarily be allowed to stand, unless it appears that there was some irregularity in the proceedings or that some erroneous rule of law was applied.

Since *Smyth v. Ames* this court has dealt with the validity (under the Fourteenth Amendment) of rate regulation by the states in over 50 cases. In only 25 of these has the court passed upon the question whether a rate fixed, or approved, by a state commission denied to the utility the opportunity of earning a fair return upon the fair value of the property. In none of these 25 cases has an order of a state commission, made after a full hearing, been declared void by this court, on the ground that the finding of the rate-base, or value, was too low. In none of them has the order been declared void on the ground that the commission fixed too low a percentage of return. Lower federal courts and state courts have occasionally intervened with effect. But the instances are relatively few as compared with the number of adverse decisions of the commissions. Even where orders fixing rates have been set aside for irregularity or error, the result of the new hearing is not always advantageous to the company.

public who sought to justify legislative reductions of railroad rates.⁹ The long depression which followed the panic of 1893 had brought prices to the lowest level reached in the 19th century. Insistence upon reproduction cost was the shippers' protest against burdens believed to have resulted from watered stocks, reckless financing, and unconscionable construction contracts. Those were the days before state legislation prohibited the issue of public utility securities without authorization from state officials; before accounting was prescribed and supervised; when outstanding bonds and stocks were hardly an indication of the amount of capital embarked in the enterprise; when depreciation accounts were unknown; and when book values, or property accounts, furnished no trustworthy evidence either of cost or of real value.

Estimates of reproduction cost were then offered, largely as a means, either of supplying lacks in the proof of actual cost and investment, or of testing the credibility of evidence adduced, or of showing that the cost of installation had been wasteful. For these purposes, evidence of the cost of reproduction is obviously appropriate.

At first reproduction cost was welcomed by commissions as evidence of present value. Perhaps it was because the estimates then indicated values lower than the actual cost of installation. For, even after the price level had begun to rise, improved machinery and new devices tended for some years to reduce construction costs.¹⁰

Evidence of reproduction costs was certainly welcomed, because it seemed to offer a reliable means for performing the difficult task of fixing, in obedience to *Smyth v. Ames*, the value of a new species of property to which the old tests—selling price or net earnings—were not applicable. The engineer spoke in figures—a language implying certitude. His estimates seemed to be free of the infirmities which had stamped as untrustworthy the opinion evidence of experts common in condemnation cases.

Thus, for some time, replacement cost, on the basis of prices prevailing at the date of the valuation, was often adopted by state commissions as the standard for fixing the rate base. But gradually it came to be realized that the definiteness of the engineer's calculations was delusive; that they rested upon shifting theories; and that their estimates varied so widely as to intensify, rather than to allay doubts.¹¹

When the price levels had risen largely, and estimates of replacement cost indicated

values much greater than the actual cost of installation, many commissions refused to consider valuable what one declared to be assumptions based on things that never happened and estimates requiring the projection of the engineer's imagination into the future and methods of construction and installation that have never been and never will be adopted by sane men.¹²

Finally, the great fluctuation in price levels incident to the World War led to the transfusion of the engineer's estimate of cost with the economist's prophecies concerning the future price plateaus. Then, the view that these estimates were not to be trusted as evidence of present value was frequently expressed. And state utility commissions, while admitting the evidence in obedience to *Smyth v. Ames*, failed, in ever-increasing numbers, to pay heed to it in fixing the rate base.¹³

The conviction is widespread that a sound conclusion as to the actual value of a utility is not to be reached by a meticulous study of conflicting estimates of the cost of reproducing new the congerie of old

¹¹Thus in *In re Marin Municipal Water District (Calif.)*, P. U. R. 1915 C, 433, 452, the several valuations of five experts were: \$670,163; \$723,001.85; \$763,028; \$919,204; \$1,031,436. In *Springfield v. Springfield Gas & Electric Co. (Ill.)*, P. U. R. 1916 C, 281, 307, the several valuations of five experts were \$547,488; \$588,262; \$806,404; \$898,785; \$940,988. In *Duluth Street Ry. Co. v. Railroad Commission (Wis.)*, P. U. R. 1915 D, 211, the valuations of two experts, both employed by the state, were \$600,000 and \$1,100,000.

¹²15 Mich. Law Rev. 205, 216; *Re Grafton County Electric Light & Power Co. (N. H.)*, P. U. R. 1916 E, 879, 885-888. Compare *Appleton Water Works Co. v. Railroad Commission*, 154 Wis. 121, 154, quoting: "Skilled witnesses came with such prejudice in their minds that hardly any weight should be given to their evidence."

In *Danbury v. Danbury & Bethel Gas & Electric Light Co.*, P. U. R. 1921 D, 193 at 206 (Conn.), the commission said:

"This method [reproduction at prices prevailing at time of valuation] of determining value usually includes percentages for engineering services never rendered, hypothetical efficiency of unknown labor, conjectured depreciation, opinion as to the condition of property, the supposed action of the elements; and, of course, its correctness depends upon whether superintendence was or would be wise or foolish; the investment improvident or frugal. It is based upon prophecy instead of reality, and depends so much upon half truths that it bears only a remote resemblance to fact, and rises at best, only to the plane of a dignified guess."

In *Public Service Commission v. Pacific Telephone & Telegraph Co.*, P. U. R. 1916 D, 947, 955, the commission said: "The old methods have proven uncertain, indefinite and unsatisfactory to honest utilities and commissions alike."

See also *In re Northampton Gas Petition (Mass.)*, P. U. R. 1915 A, 618, 626; *Public Service Commission v. Pacific Telephone & Telegraph Co.*, P. U. R. 1916 D, 947, 955.

¹³Their action is in accord with views commonly held by legal writers. Compare *Edwin C. Goddard*, "Public Utility Valuation," 15 Mich. Law Rev. 205; *Robert L. Hale*, "The 'Physical Value' Fallacy in Rate Cases," 30 Yale Law Journal, 710; *Donald R. Richberg*, "A Permanent Basis for Rate Regulation," 31 Yale Law Journal, 263; *Robert H. Whitten*, "Fair Value for Rate Purposes," 27 Harv. Law Rev. 419; *Henry W. Edgerton*, "Value of the Service as a Factor in Rate Making," 32 Harv. Law Rev. 516; *Gerard C. Henderson*, "Railway Valuation and the Courts," 33 Harv. Law Rev. 902, 1031; *Armstead M. Dobie*, "Judicial Review of Administrative Action in Virginia," 8 Va. Law Rev. 477, 504. See also 32 Yale Law Journal, 390, 393; 19 Mich. Law Rev. 849.

⁹See *Steenerson v. Great Northern Ry. Co.*, 69 Minn. 353, 374; *San Diego Water Co. v. San Diego*, 118 Calif. 556, 568; *Metropolitan Trust Co. v. Houston & Texas Central R. R. Co.*, 90 Fed., 687, 688.

¹⁰Compare *Mr. Justice Field in Railroad Commission Cases*, 116 U. S. 307, 343, 344; *Steenerson v. Great Northern Ry.*, 69 Minn. 353, 374.

machinery and equipment, called the plant, and the still more fanciful estimates concerning the value of the intangible elements of an established business.¹⁴ Many commissions, like that of Massachusetts, have declared recently that "capital honestly and prudently invested must, under normal conditions, be taken as the controlling factor in fixing the basis for computing fair and reasonable rates."¹⁵

To require that reproduction cost at the date of the rate hearing be given weight in fixing the rate base, may subject investors to heavy losses when the high war and post-war price levels pass—and the price trend is again downward.¹⁶

The aggregate of the investments which have already been made at high costs since

1914, and of those which will be made before prices and costs can fall heavily, may soon exceed by far the depreciated value of all the public utility investments made therefore at relatively low cost. For it must be borne in mind that depreciation is an annual charge. That accrued on plants constructed in the long years prior to 1914 is much larger than that accruing on the properties installed in the shorter period since.¹⁷

That part of the rule of *Smyth v. Ames* which fixes the rate of return deemed fair, at the percentage customarily paid on similar investments at the time of the rate hearing also exposes the investor and the public to danger of serious injustice. If the replacement-cost measure of value and

the prevailing-rate measure of fairness of return should be applied, a company which raised, in 1920, for additions to plant, \$1,000,000 on a 9 per cent basis, by a stock issue, or by long-term bond issue, may find a decade later that the value of the plant (disregarding depreciation) is only \$600,000, and that the fair return on money then invested in such enterprise is only 6 per cent.

Under the test of a compensatory rate, urged in reliance upon *Smyth v. Ames*, a prescribed rate would not be confiscatory, if it appeared that the utility could earn under it \$36,000 a year; whereas \$90,000 would be required to earn the capital charges. On the other hand, if a plant had been built in times of low costs, at \$1,000,000 and the capital had been raised to the extent of \$750,000 by an issue at par of 5 per cent 30-year bonds and to the extent of \$250,000 by stock at par, and ten years later the price level was 75 per cent higher and the interest rates 8 per cent, it would be a fantastic result to hold that a rate was confiscatory, unless it yielded 8 per cent on the then reproduction cost of \$1,750,000. For that would yield an income of \$140,000, which would give the bondholders \$37,500; and to the holders of the \$250,000 stock \$102,500, a return of 41 per cent per annum. Money required to establish in 1920 many necessary plants has cost the utility 10 per cent on 30-year bonds.

These long-time securities, issued to raise needed capital, will in 1930 and thereafter continue to bear the extra high rates of interest, which it was necessary to offer in 1920 in order to secure the required capital. The prevailing rate for such investments may in 1930 be only 7 per cent; or indeed 6 per cent; as it was found to be in 1904, in *Stanislaus County v. San Joaquin Co.*, 192 U. S. 201; in 1909, in *Knoxville v. Knoxville Water Co.*, 212 U. S. 1; and in 1912, in *Cedar Rapids Gas Co. v. Cedar Rapids*, 223 U. S. 655, 670. A rule which limits the guaranteed rate of return on utility investments to that which may prevail at the time of the rate hearing, may fall far short of the capital charge then resting upon the company.

In essence, there is no difference between the capital charge and operating expenses, depreciation and taxes. Each is a part of the current cost of supplying the service; and each should be met from current income. When the capital charges are for interest on the floating debt paid at the current rate, this is readily seen. But it is no less true of a legal obligation to pay interest on long-term bonds, entered into years before the rate hearing and to continue for years thereafter; and it is true also of the economic obligation to pay dividends on stock preferred or common.

The necessary cost, and hence the capital charge, of the money embarked recently in utilities, and of that which may be in-

¹⁴The Public Utility Reports for 1920, 1921, 1922 and 1923 (to March 1) contain 363 cases in which the rate-base or value was passed upon. Reproduction cost at unit prices prevailing at the date of valuation appears to have been the predominant element in fixing the rate base in only five. In 63 the commission severely criticised, or expressly repudiated, this measure of value. In nearly all of the 363 cases, except five, the commission either refused to pay heed to this factor as the measure of value, or indeed as evidence of any great weight.

The following summary shows the predominant element in fixing the rate base in the several cases:

In 5 cases: Reproduction cost at unit prices prevailing at the date of the valuation.

In 28 cases: Reproduction cost at unit prices prevailing at some date, or the average of some period, prior to the date of the valuation.

In 12 cases: Reproduction cost at unit prices prevailing at some date not specifically stated.

In 22 cases: Reproduction cost of an inventory of a prior date at prices prevailing at that date or prior thereto, plus subsequent additions at actual cost (so-called split inventory method).

In 3 cases: Reproduction cost on basis of future predicted prices (so-called trend prices, or new plateau method).

In 102 cases: A prior valuation by the commission plus the actual cost of subsequent additions.

In 85 cases: The actual original cost (including both initial cost and additions).

In 6 cases: Original cost arbitrarily appreciated.

In 27 cases: The historical cost or prudent investment.

In 28 cases: Book cost or investment.

In 12 cases: Bond and stock capitalization.

In 36 cases: Determination and classification of method impossible.

¹⁵*Bay State Rate Case*, P. U. R. 1916 F, 221, 233. And see *ibid* for a quotation from an address delivered at the "Conference on Valuation" in Philadelphia, November, 1915, in which the late John M. Eshleman, first president of the California Railroad Commission, said:

"If we had this problem at the beginning and were not attacking it in the middle, we would have no difficulty in agreeing with the holder of capital upon this subject, for he would quite readily agree to take the cost of doing the business plus an earning upon the money actually invested comparable to the earning offered in other available investments. Therefore, the cost of doing the business, plus a return upon the capital necessarily invested in the business, which return shall be as great as is offered in other businesses of similar hazard, is all that ought to be accorded for the future, and it is all that will be accorded if the public has any business sense. And if more is asked by the private owner, then he may expect no sympathy when he finds the public his competitor and his earning power impaired."

No case involving the fixing of rates by a commission has ever come to this court from New England. The only case involving in any way the validity of rates is *Interstate Consolidated Street Ry. Co. v. Massachusetts*, 207 U. S. 79.

See also *Re Cripple Creek Water Co. (Colo.)*, P. U. R. 1916 C, 788, 799, 800; *Butler v. Lewiston, Augusta & Waterville St. Ry. (Maine)*, P. U. R. 1916 D, 25, 35.

¹⁶Engineers testifying in recent rate cases have assumed that there will be a new plateau of prices. In *Galveston Electric Co. v. Galveston*, 258 U. S. 388, the company contended that a plateau 70 per cent above the price level of 1914 should be accepted, and a plateau 33 1/3 per cent above was found probable by the master and assumed to be such by the lower court. In *Bluefield Water Works & Improvement Co. v. Public Service Commission (No. 256, October Term, 1922)*, one 50 per cent above the 1914 level was contended for; in the case at bar a plateau 25 per cent above.

But for the assumption that there will be a plateau, there is no basis in American experience. The course of prices for the last 112 years indicates, on the contrary, that there may be a practically continuous decline for nearly a generation; that the present price level may fall to that of 1914 within a decade; and that, later, it may fall much lower. Prices rose steadily (with but slight and short recessions) for the 20 years before the United States entered the World War. From the low level of 1897 they rose 21 per cent to 1900; then rose further (with minor fluctuations, representing times of good business or bad) and reached in 1914 a point 50 per cent above the 1897 level. Then the great rise incident to the war set in. "Wholesale Prices, 1890 to 1921," U. S. Department of Labor, Bureau of Labor Statistics, Bulletin No. 320, pp. 9-26. These are averages of the wholesale prices of all commodities. In the Bureau chart the 1913 prices are taken as the datum line (100). As compared with them the 1897 level was 67, the 1900 level 81. The chart on page 19 of the pamphlet, entitled "Price Changes and Business Prospects," published by the Cleveland Trust Co., gives price fluctuations for the 110 years prior to 1921. It shows three abrupt rises in the price level, by reason of war; and some less abrupt falls, by reason of financial panic. These may be called abnormal. But the normal has never been a plateau. The chart shows that the peak price levels were practically the same during the War of 1812, the Civil War, and the World War; and it shows that practically continuous declines, for about 30 years, followed the first two wars. The experience after the third may be similar.

¹⁷The new enterprises undertaken at the present high level, or projected, are many; among them, development and long distance transmission of hydroelectric power, and of electric power generated at the coal mines. Moreover, nearly every utility now existing must make expenditures upon its plant to provide improvements, additions, or extensions. The growth of our communities, and increase in the demands of the individual, constantly compel enlargement of a utility's facilities.

The present annual investment in public utility enterprises is much greater in amount than at any time in the past. Some of the construction done during the war was at prices for labor and materials 120 per cent above those prevailing in 1914. Recent construction was at prices 70 per cent higher. If replacement cost should become the measure of the rate base, the return on enterprises entered upon after 1914 would, obviously, be imperilled. And a serious decline of the price level would subject the return on many utilities established earlier to like dangers. A collapse of public utility values might result. And the impairment of public utility credit might be followed by the cessation of extensions and new undertakings.

vested in the near future, may be more, as it may be less, than the prevailing rate of return required to induce capital to enter upon like enterprises at the time of a rate hearing ten years hence. To fix the return by the rate which happens to prevail at such future day, opens the door to great hardships. Where the financing has been proper, the cost to the utility of the capital, required to construct, equip and operate its plant, should measure the rate of return which the Constitution guarantees opportunity to earn.¹⁸

The adoption of the amount prudently invested as the rate base and the amount of the capital charge as the measure of the rate of return would give definiteness to these two factors involved in rate controversies which are now shifting and treacherous, and which render the proceedings peculiarly burdensome and largely futile. Such measures offer a basis for decision which is certain and stable.

The rate base would be ascertained as a fact, not determined as matter of opinion. It would not fluctuate with the market price of labor, or materials, or money. It would not change with hard times or shifting populations. It would not be distorted by the fickle and varying judgments of appraisers, commissions, or courts. It would, when once made in respect to any utility, be fixed, for all time, subject only to increases to represent additions to plant, after allowance for the depreciation included in the annual operating charges. The wild uncertainties of the present method of fixing the rate base under the so-called rule of *Smyth v. Ames* would be avoided; and likewise the fluctuations which introduce into the enterprise unnecessary elements of speculation, create useless expense, and impose upon the public a heavy, unnecessary burden.

In speculative enterprises the capital cost of money is always high; partly because the risks involved must be covered; partly because speculative enterprises appeal only to the relatively small number of investors who are unwilling to accept a low return on their capital. It is to the interest both of the utility and of the community that the capital be obtained at as low a cost as possible.

About 75 per cent of the capital invested in utilities is represented by bonds. He who buys bonds seeks primarily safety. If he can obtain it, he is content with a low rate of interest. Through a fluctuating rate base the bondholder can only lose. He can receive no benefit from a rule which increases the rate base as the price level rises, for his return, expressed in dollars, would be the same, whatever the income of the company.¹⁹ That the stockholder does not, in fact, receive an increased re-

¹⁸The community may, of course, demand, in respect to financing, as in respect to operation, that the right to earn a fair return be limited by the requirement that reasonable efficiency be exercised.

turn in time of rapidly rising prices under the rule of *Smyth v. Ames*, as applied, the financial record of the last six years demonstrates. But the burden upon the community is heavy because the risk makes the capital cost high.

The expense and loss now incident to recurrent rate controversies is also very large. The most serious vice of the present rule for fixing the rate base is not the existing uncertainty; but that the method does not lead to certainty. Under it, the value for rate-making purposes must ever be an unstable factor. Instability is a standing menace of renewed controversy. The direct expense to the utility of maintaining an army of experts and of counsel is appalling. The indirect cost is far greater. The attention of officials high and low is, necessarily, diverted from the constructive tasks of efficient operation and of development.

The public relations of the utility to the community are apt to become more and more strained. And a victory for the utility may in the end prove more disastrous than defeat would have been. The community defeated, but unconvinced, remembers; and may refuse aid when the company has occasion later to require its consent or co-operation in the conduct and development of its enterprise.

Controversy with utilities is obviously injurious also to the public interest. The prime needs of the community are that facilities be ample and that rates be as low and as stable as possible. The community can get cheap service from private companies, only through cheap capital. It can get efficient service only if managers of the utility are free to devote themselves to problems of operation and of development. It can get ample service through private companies only if investors may be assured of receiving continuously a fair return upon the investment.

What is now termed the prudent investment is, in essence, the same thing as that which the court has always sought to protect in using the term present value.²⁰ Twenty-five years ago, when *Smyth v. Ames* was decided, it was impossible to ascertain with accuracy, in respect to most of the utilities, in most of the states in

¹⁹Of course anyone who chances to have money to invest, when money rates are high, gets the advantage incident to investing in a favorable market. If he invests in utility bonds, the higher agreed return upon his capital would be provided for by a rule which measures fair return by capital charges, as suggested above. If he elects to invest in the stock, he would, under the rule suggested, have the opportunity of earning a return commensurate with the value of the capital at the time it was embarked as stock in the enterprise.

²⁰Compare *Mr. Justice Field in Railroad Commission Cases*, 116 U. S. 307, 343, 344; *Mr. Justice Harlan, ibid.*, p. 341; *Dow v. Beidelman*, 125 U. S. 680, 690, 691; and *Reagan v. Farmers Loan & Trust Co.*, 154 U. S. 362, 409, 412; where the necessity of limiting the broad power of regulation enunciated in *Munn v. Illinois*, 94 U. S. 113, was first given expression. See also "Public Utilities, Their Cost New, and Depreciation," by H. V. Hayes, pp. 255, 256.

which rate controversies arose, what it cost in money to establish the utility; or what the money cost with which the utility was established; or what income had been earned by it; or how the income had been expended.

It was, therefore, not feasible, then, to adopt, as the rate base, the amount properly invested or, as the rate of fair return, the amount of the capital charge. Now the situation is fundamentally different. These amounts are, now, readily ascertainable in respect to a large and rapidly increasing proportion of the utilities. The change in this respect is due to the enlargement, meanwhile, of the powers and functions of state utility commissions.

The issue of securities is now, and for many years has been, under the control of commissions, in the leading states. Hence the amount of capital raised (since the conferring of these powers) and its cost are definitely known, through current supervision and prescribed accounts, supplemented by inspection of the commission's engineering force. Like knowledge concerning the investment of that part of the capital raised and expended before these broad functions were exercised by the utility commissions has been secured, in many cases, through investigations undertaken later, in connection with the issue of new securities or the regulation of rates. The amount and disposition of current earnings of all the companies are also known. It is, therefore, feasible now to adopt as the measure of a compensatory rate—the annual cost, or charge, of the capital prudently invested in the utility.²¹ And, hence, it should be done.

Value is a word of many meanings. That with which commissions and courts in these proceedings are concerned, in so-called confiscation cases, is a special value for rate-making purposes, not exchange value. This is illustrated by our decisions which

²¹In 1898, when *Smyth v. Ames* was decided, only one state—Massachusetts—had control by commission of the issue of securities by all public utility companies. (New Hampshire controlled security issues of railroads and street railways; Maine and New York controlled increase of capital stock by railroads; and Connecticut, the issue of bonds by railroads.) In 1923 at least 24 states and the District of Columbia controlled through commissions the issue of securities of public utility companies. Legislation for 1923 and 1922 (in part) has not been available. Other states may have legislated on the subject in 1923 or 1922.

In 1898 no state had control by commission of the accounting of all public utilities. Massachusetts controlled the accounting of gas, electric light, street railway, and railroad companies; Iowa, of railways and carriers; New York, Texas and Vermont, of railroads only. In 1923 at least 36 states and the District of Columbia controlled through commissions the accounting of public utility companies.

In 1898, only one state—Massachusetts—exercised through a commission control of all public utilities. In 1923 such control is exercised in at least 39 states and the District of Columbia. This does not include those states exercising commission control over railroads and related utilities, such as street railways, express companies, telephone and telegraph companies. These states number 47. The number of states having commission control of railroads in 1898 was 27. In 1922 every state except Delaware had commission control of railroads.

deal with the elements to be included in fixing the rate base. In *Cedar Rapids Gas Co. v. Cedar Rapids*, 223 U. S. 635, 669; and *Des Moines Gas Co. v. Des Moines*, 238 U. S. 153, 165, good will and franchise value were excluded from the rate base in determining whether the prescribed charges of the public utility were confiscatory. In *Galveston Electric Co. v. Galveston*, 258 U. S. 388, the cost of developing the business as a financially successful concern was excluded from the rate base. In *Des Moines Gas Co. v. Des Moines*, 238 U. S. 153, 171, the fact that the street had been paved (and hence the reproduction cost of laying gas mains greatly increased), was not allowed as an element of value.

But, obviously, good will and franchise value are important elements when exchange value is involved. And where the community acquires a public utility by purchase or condemnation, compensation must be made for its good will and earning power; at least under some circumstances. *Omaha v. Omaha Water Co.*, 218 U. S. 180, 202, 203; *National Waterworks Co. v. Kansas City*, 62 Fed. 853, 865. Likewise, as between buyer and seller, the good will and earning power due to effective organization are often more important elements than tangible property.

These cases would seem to require rejection of a rule which measured the rate base by cost of reproduction or by value in its ordinary sense.

The rule by which the utilities are seeking to measure the return is, in essence, reproduction cost of the utility or prudent investment, whichever is the higher. This is indicated by the instructions contained in the special report on Valuation of Public Utilities, made to the American Society of Civil Engineers, October 28, 1916, Proceedings, Vol. 42:

So long as the company owner keeps a sum equivalent to the total investment at work for the public, either as property serving the public, or funds held in reserve for such property, no policy should be followed in estimating depreciation that will reduce the property to a value less than the investment, . . . (p. 1726).

Estimates of the cost of reproduction should be based on the assumption that the identical property is to be reproduced, rather than a substitute property (p. 1719),—although such a substitute property, much less costly than the existing plant, might furnish equal or better service, it is not reproduction of service, but of property, that is under consideration; and clearly the estimate should be of existing property created with public approval, rather than of a substituted property (p. 1772).

If the aim were to ascertain the value (in its ordinary sense) of the utility property, the enquiry would be, not what it would cost to reproduce the identical property, but what it would cost to establish a plant which could render the service, or in other words, at what cost could an equally efficient substitute be then produced.

Surely the cost of an equally efficient substitute must be the maximum of the rate base, if prudent investment be rejected as the measure. The utilities seem to claim that the constitutional protection against confiscation guarantees them a return both upon unearned increment and upon the cost of property rendered valueless by obsolescence.

Graphic Comparison Development of United States and Europe.

The best way to measure the relative extent of the development of telephone service in two places is to compare the population of each place with the number of telephones in use in that place. This has been done for the United States and Europe in the accompanying chart, which shows the number of telephones per 100 population from 1877 down to the latest date for which information is available.

The superiority of the telephone development of the United States over that of

the Granville Telephone Co., of Granville, N. Y. This will take place in the convention hall.

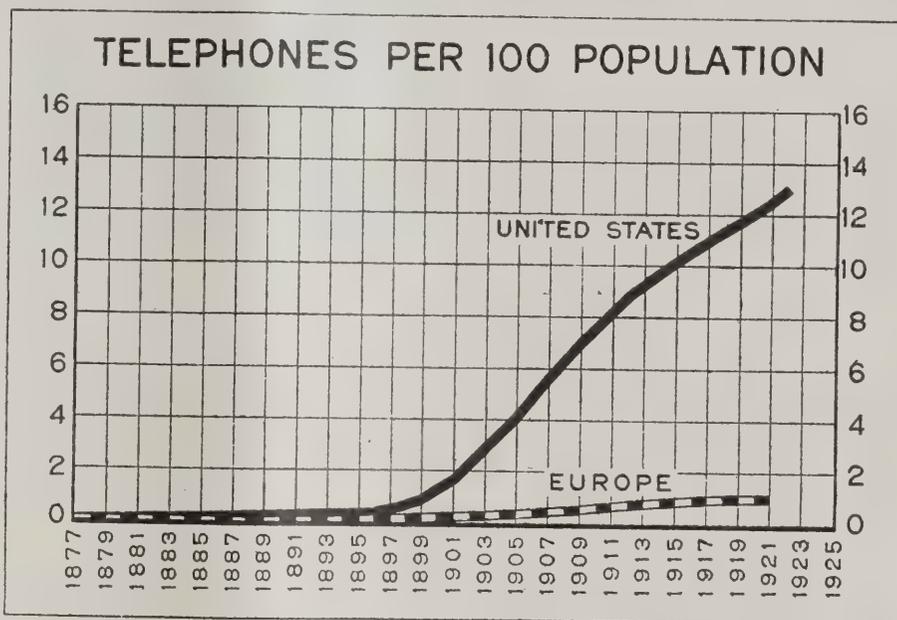
There will also be held, at the same time, in the reception parlor, an operators' conference in charge of Miss Lillian A. Vavasour, of Albany, N. Y.

So that everyone may be in attendance when the sessions open, the officers of the association urge that each person register early and secure a badge of identification and introduction.

Special papers are being prepared for the conferences, which will continue—with a brief intermission for lunch—until 4 o'clock.

At 4 o'clock there will be a demonstration of public address transmission, with prominent telephone men in Boston addressing the convention. This will be new to a Vermont audience and should not be missed.

It will be followed by a first aid demon-



Is Competition Responsible for This Difference in Telephonic Development?

Europe is clear. In proportion to population, there are ten times as many telephones in the United States as there are in Europe, and Europe today has succeeded only in making a point which was passed in the United States as early as 1900. In other words, telephonically speaking, Europe is 20 years behind the times.

Good Time and Beneficial Talks at Vermont Convention.

The program for the convention of the Vermont Telephone Association—which occurs June 28 and 29, at Burlington, with headquarters in the Hotel Van Ness—indicates that it's going to be an affair worth while going out of one's way to attend.

The convention will meet in the forenoon of Thursday, and after a brief session there will be a conference of managers and plant men, led by C. J. Knickerbocker, of

stration, and a visit to the operating rooms of the local exchange.

In the evening, the New England Telephone & Telegraph Co. will be host at a banquet.

J. G. Ihmsen, of Albany, N. Y., vice-president and general manager of the Up-State Telephone Association of New York, will be one of the speakers at the Friday morning session. He is well known for his ability in association work and the Vermont men expect to get some valuable ideas from his talk.

At noon there will be a trip to Ethan Allen Park, where a picnic lunch will be served, after which there will be a ball game.

Secretary-Treasurer C. L. Ovitt, of Enosburg Falls, requests those who are going to attend to let him know so that preparations can be made.

Suggestion System of Co-operation

Lincoln Telephone & Telegraph Co., Lincoln, Neb., Has Been Using "The Suggestion System" with Great Success—Plan for Securing Co-operation of Employees Adapted from Scheme Used by Large Industrial Organizations

The Lincoln Telephone & Telegraph Co. has been employing for nearly three months a system of co-operation with employes that has been markedly successful. It is an adaptation to the telephone business of a plan that has been developed in some of the large industrial organizations, and is called "the Suggestion System."

Briefly stated, it is a convenient method employed for the submission of suggestions by employes on all classes of improvements, the careful analysis and study of them by the supervisors of the organization, and their adoption in the most practical way, where this is found to be advisable. It also includes provision for the proper recognition of the value of the suggestion.

A form has been adopted for use in transmitting these suggestions. On this form, in a convenient place, are blanks which enable the management to keep a complete record of the progress of each one as it traverses the road of routine.

"We have adopted the suggestion system," said W. E. Bell, commercial superintendent, "as the best means of affording each and every employe a medium through which ideas may be submitted to the management, and to assure the proper receipt and disposition of them and to give proper credit for them.

"The opportunity is presented for the employe to exercise his initiative along the lines of constructive suggestion. Upon the enthusiasm and interest displayed depends the success of the system, and so far we have been greatly pleased with the result. We are trying to impress the employes with the fact that their development and progress means the development and progress of the company, and the proper appreciation of the opportunity means much in the future development of the individual employe as well.

"Our plan includes what we believe to be interesting features that will bring out ideas on improved methods, plans for the economical and efficient operation of our plants, and general suggestions pertaining to the successful conduct of our business."

CLASSIFICATION OF SUGGESTIONS.

Class A—Commercial Department.

1. Improvement in methods of commercial operation providing for a material decrease in expense or a considerable increase in revenue.

2. Improvement in commercial methods where a decrease in expense is effected, or an increase in revenue is realized, but where the improvement while valuable is relatively less important.

Class B—Plant Department.

1. Improvement in methods of operation, manner of doing work and design of equipment providing for increased safety of employes, decreased costs or more efficient operation.

2. Improvement in methods of operation, manner of doing work and design of equipment when such improvements are of considerable value but do not involve a material lessening of cost.

Class C—Traffic Department.

1. Improvement in method of operation, service conditions and reduction in cost of operation in those cases where the improvement is marked and considerable economy may be effected.

2. Improvement in operating methods and service conditions where the improve-

The New Ideal in Business.

The public utility industry has been revolutionized in its ethics and standards. Its ideal must be, and now is, **SERVICE**, and it is worth while devoting one's life to making this new ideal a reality to the people. There is a tremendous lot of fun in dealing directly and frankly and honorably with the people, and in striving to promulgate in the public utility world that state of mind which makes a man say, "What can I give?" instead of "What can I get?"—W. E. Creed, President, Pacific Gas. & Electric Company.

ment is marked but does not result in material lessening of operating costs.

Class D—Auditing Department.

1. Improvement in methods and auditing systems when the improvement results in material economy or increased efficiency.

2. Improvement in methods and auditing systems in those cases where improvement is marked but does not result in any actual cost reduction.

Class E—General.

1. Improvement in general practices, changes in policy, and in matters pertaining to the convenience of employes, where no reduction in cost of operation is involved or any increase in revenue is anticipated.

SUGGESTION RULES.

1. No person directly connected with the disposition of a suggestion shall be given credit for such suggestion.

2. Suggestions may be forwarded by all employes in the organization, including general office and district supervisors.

3. Should more than one suggestion be received on the same subject, the one first received will be accepted and the others will be filed without action being taken, and the employe forwarding the suggestion will be so advised.

4. It is understood that the person making the suggestion receives credit for what he suggests, subject however to the foregoing rules.

5. The above rules are subject to modification by the suggestion committee, after all facts bearing on the particular case have been taken into consideration.

A suggestion system committee has been named and it has entire supervision of the operation of the plan. It is made up of one member from each of the commercial, plant, traffic and auditing departments, with a secretary. It receives the suggestions, classifies them, refers them to the proper departments, studies and analyzes the questions proposed, and recommends action to be taken. In short, it conducts all details of operation and attends to the proper functioning of the plan. District managers or others to whom suggestions on the prescribed form are made are required to forward weekly all suggestions they receive.

"We make it plain in our frequent bulletins that the ideas of any employe," said Mr. Bell, "whether they pertain to improvements in the service, methods of doing work or use of safety devices, improvement in equipment or design or for the betterment of our general plan of operation are welcomed. We encourage the men to send them in whether they think very much of them themselves, for frequently an idea that at first glance may look to have little value will prove really worth while after it has been studied from various angles by men who look at the business from different viewpoints.

"We recognize that the most discouraging thing to an alert, active-minded man or woman with ideas is to have his next higher in command—either out of failure to appreciate the idea or indifference or carelessness—treat lightly suggestions made to him. Usually, after two or three such experiences, the employe quits suggesting. We have now provided a system by which he not only need not consider himself or herself bound to speak first to a superior officer, but provide a channel through which their ideas go direct to a committee whose business it is to study the suggestion and to get expert opinion upon its value.

"We are trying to impress upon our

employes that the company is constantly looking for better and improved ways of doing things in all of its departments, and that it is aware that suggestions from employes are valuable because industrial history shows they have been important factors in the solution of both large and small problems. So we take steps to provide against any division of credit for good suggestions, and by providing a form upon which the idea may be outlined and which provides thereon for a report, insures him that whatever he has to submit will not pigeon-holed or lost, but will be given a respectful hearing."

For the purpose of further enlisting the interest of employes the suggestion committee sends out monthly a bulletin listing the suggestions sent in during the 30 days previous, the author, department concerned and the exchange.

The committee has adopted the policy of immediately acknowledging the receipt of a suggestion, and has gone further than the original plan of notifying the employe of the final action on it. It will use the regular bulletin as a means of keeping him advised of the status of his suggestion and at the same time advise other employes of the details.

Illinois Eight-Hour Bill for Women Abandoned.

Proponents of legislation to limit the hours of women in industry in Illinois decided late last week to abandon further efforts at this session of the Illinois general assembly.

Senate opponents of an eight-hour-day bill, which passed the house by a wide margin, succeeded in amending the measure to provide that the industrial commission fix the hours of female labor in all commercial lines of endeavor. Until the commission acts, a nine-hour day and fifty-six-hour week would prevail. This change was objectionable to senate leaders for welfare legislation.

After an attempt on June 14 to suspend the rules and eliminate the industrial commission clause, which failed, it was decided to drop the fight. The bill remains on the calendar on second reading, but Senator Barr (Rep., Joliet) said no further move would be made in its behalf.

World's Longest Guided Radio Telephone and Telegraph.

The Pacific Gas & Electric Co. recently placed in operation the "World's longest guided radio telephone and telegraph system" between the Vaca-Dixon substation and Pit River power house No. 1, a distance of 202 miles. This system utilizes the twin circuit, 220,000-volt transmission lines between the two points for a conducting medium, a total distance of 202 miles, and will be for the sole purpose of directing the operation of the two stations, both under normal and emergency conditions.

The receiving equipment consists of a universal receiver which has been modified to make it a non-regenerative receiver, and a loud-speaking outfit using two stages of audio-frequency amplification.

One of the new and unusual features is the unique method of calling. This is accomplished by mounting a calling microphone in the horn of the loud speaker



Equipment Used in Experimenting with Guided Wire Radio.

which, when the calling circuit is completed, will oscillate and howl in much the same manner that the ordinary telephone will howl when the receiver is placed against the transmitter. This gives a very loud note, whose pitch will depend upon the natural period of oscillation of the diaphragms and is clearly audible in all parts of the station.

Ordinarily, it is not necessary to use the calling system as the receivers are always in service and the operator near the set so that the loud-speaker simply talks at him and he starts up his set and talks back. The system is arranged for simplex operation and all that is necessary is to operate a small telephone switch which energizes a contactor to connect either the transmitting or receiving set to the antenna, thus permitting talking or listening.

The system is coupled to the transmission line through a single wire antenna about 1,800 feet long. This wire is attached to the twin vertical circuit transmission towers at a point on the center line of the tower and at the elevation of the middle cross arm. Six suspension insulator units are used for dead-ending and supporting the antenna. The main station ground system is also used as a ground for the radio equipment.

The transmitting equipment is the vacuum tube telephone transmission equipment

similar to that used by the high-powered broadcasting stations. Four 250-watt and one 50-watt Radio Corp. of America radio-tube are employed, two of the tubes being used as oscillators and two as modulators with the 50-watt tube as a speech amplifier.

The engineers of the company have no doubt as to its dependability even with one of the 220 kv lines down and grounded. They expect to effect communication between the stations under conditions when the wire lines will be out of service.

All of the experimenting and development work necessary to place the equipment in a satisfactory operating condition was done under the direction and supervision of Dr. L. F. Fuller, one of the foremost authorities in the field of radio activity. The accompanying illustration shows the temporary equipment during the experimental stage at Pit River Plant No. 1.

Federal Supreme Court Again Favors Reproduction Costs.

The United States Supreme Court on June 11 again declared in favor of reproduction costs as a factor in determining rates of public utilities. An order of the West Virginia Public Service Commission fixing rates of the Bluefield Water Works & Improvement Co. was affirmed by the Supreme Court of Appeals of West Virginia and taken to the United States Supreme Court, which reversed the state supreme court.

"The records clearly show," said Justice Butler in the federal court's opinion, "that the commission in arriving at its final figures did not accord proper, if any weight to the greatly enhanced costs of construction in 1920 over those prevailing about 1915 and before the war as established by uncontradicted evidence and the company's detailed estimated cost of reproduction new, less depreciation of 1920 prices, appears to have been wholly disregarded. This was erroneous."

Further on in the opinion Justice Butler observed: "The question in the case is whether the rates prescribed are confiscatory and, therefore, beyond legislative power. Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to give the service are unjust, unreasonable and confiscatory and the enforcement deprives the public utility company of its property in violation of the Fourteenth amendment."

In affirming a decision of the District Court for the North District of Georgia, the United States Supreme Court, through Associate Justice Brandeis, in the case of Georgia Railway & Power Co. vs. the Georgia Railroad Commission, pointed out that consideration of reproduction costs of public utilities as well as of the original cost must be given in reaching a fair valuation of public utilities.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise,
On the Sunshine and Shadows of Telephone Work

By Well Clay

I love to seek the quiet nooks
Of some drowsy woodland glen,
To watch the cares of other worlds
Not ruled by restless men.

The busy bee flies to its work,
Nor keeps nor cares for hours,
Intent only on the job it likes,
Of robbing wildwood flowers.

The thrifty ant its way betakes,
Nor stops for rest nor pleasure,
Content to add for good of all
Some mite to the common measure.

Each spider spins a silken web
And puts the deadly snare,
In some likely spot to catch
Some flying insect unaware.

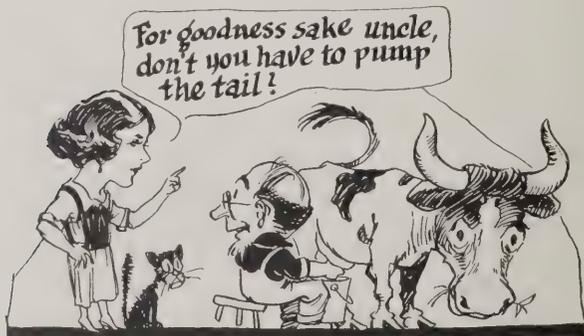
The nimble squirrel on leafy bough
Great things doth contemplate,
The cheerful cricket in the grass
Calls loudly to its mate.

Of each of these and others,
Few reckon the world of man,
Each hath a horizon all its own,
Each measures by its span.

Conceiving not of other worlds—
That's saved for man alone—
Each follows an ordained career
The why to God only is known.

We are apt in our wisdom to look down
on the insects, birds and beasts and, per-
haps, feel a mite superior to them, for the
reason that they are circumscribed in their
vision so as not to be aware of other
worlds and other spheres of life outside
their own; but how much better off are we
when we come right down to facts?

Even in our own lives among men it is
often a source of wonder that so little is
known by people in one line of work about
the inside workings of another occupation.



She Had Never Thought Much About It, But Had an
Idea They Took the Cow by the Tail and Pumped
Out the Milk.

The little girl on her first visit from the
city to a farm was amazed to see the cows
milked. She never had thought much about
it before, if any, but had a nebulous idea
that they took the cow by the tail and

pumped out the milk, the same as she had
seen water gotten from a pump.

We are much the same and do not often
stop to think of the technical side of the
other fellow's job.

The conductor of the
street car is human, when
you stop to get acquainted
with him, and not just a
part of the machine that we
are apt to get in the habit of
considering him. The jeweler
whom we see day after day
sitting with a magnifying
glass held like a monocle at
one eye, intently peering into
the inner works of watches,
has an occupation very much
different from ours, but he
has the same drawbacks in
it as we have in ours.

He is serving the public and, like the tel-
ephone man, if the machines he is fixing
go wrong, then he gets kicks and criticisms,
the same as we do when our machine—the
exchange—goes wrong. When our watch
goes wrong after having been repaired, we
are quite apt to kick and condemn the
watchmaker or the repairman, without stop-
ping to consider whether it is really his
fault, the fault of the materials and work-
manship of the watch itself or ours, due
to the way we carry and use it.

The loss or gain of time may be traced
to an imperfectly stamped balance wheel,
just as an error of telephone service may
be traced to an incompetent operator, a
careless lineman, or an indifferent third
party to the transaction. The watchmaker
may do his best but a fault in the construc-
tion, careless handling by the owner, or ex-
treme climatic conditions
may make his efforts go for
little at times.

We may do the same and
wonder why the general pub-
lic should not take the other
factors into consideration
when something goes wrong.
At the same time we may
unjustly condemn the watch
repairman when our Inger-
soll goes on the blink with-
out ever stopping to consider
that he is no more to blame
than you are when you are
asked to transmit through

your exchange a message to some distant
point via a series of grounded farm lines.

You may conscientiously try to do your
best with the means at hand, and yet fail
to give anything like a satisfactory service.

You say: "If I only could have a clear,
full metallic circuit all the way and good
telephones and connections, there would be
no trouble giving service; but how can the
public expect service over such lines?"



We Are All in the Same Game, Each with Handicaps
and Blind to the Handicaps of Those in
Other Occupations.

Then you go to your watchmaker friend
and complain because your dollar watch
has lost half an hour in a day or so. He
might tell you: "If you would only get
a good watch of a standard make and quit
using it for a hammer to crack nuts, I
could keep you out of trouble easily."

The automobile repairman has the same
problem, so has the butcher, the baker and
the golf stick maker. We do not stop to
consider when we kick; if we did we would
inquire carefully into the matter and then
reserve our criticisms to a large extent.

The farmer might say the same thing as
his brother in trouble, the watchmaker:
"Give me a fertile soil, no drawbacks in
the way of frost, bugs, hot winds, rust,
scab, floods or blight, and I will show you
a real service in the way of providing food
supplies, if I can get the help cheaply
enough and realize a better price.

Don't you see we are all in the same
game, each with handicaps and to a large
extent blind to the conditional handicaps of
those in other occupations? We see, and
understand fully, only those drawbacks
which affect our own walks of life.

The "white" hearse driver at a colored
folks' funeral is not apt to resort over-
much to the use of his pocket handker-
chief, if you have ever noticed; but with
his own color and family, it's different.

That is why we condemn the watchmaker
so thoughtlessly at times while bemoaning
the tendency of the public in their habit
of picking flaws with the brand of service
you are giving them. You know your own
handicaps, but you don't stop to consider
that the other fellow has any.

APHORISM: A slave is chafed only
by his own collar.

Precedence of Long Distance Calls

A Practical and Helpful Form of Instruction Used in the Iowa Telephone Operators' Schools to Show the Relative Importance and Order of Each of the Five Different Classes of Toll Calls—Method of Presentation

By Miss Anne Barnes

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

CLASS 1 ENTERS: "Good Morning! My name is 'Cut-Off.' You do not like me, I know. No one likes me—the company, the subscribers or the operators. And yet, I am the highest class call which travels over toll circuits.

"Why? I am rare, but that is not the reason. Well, it is because wherever or whenever a 'cut-off' on conversation occurs, connection must be re-established with as little loss of time as is possible. Therefore, an operator puts this work ahead of all other work on hand.

"When she says to any operator she meets out on the toll circuit. 'Cut-off,' these words act like magic. The circuit is open for my operator's use until she can get the parties who were talking into satisfactory conversation again. All other calls, orders and reports are held back to let me through, just as a fast train must have a clear track, and locals must wait.

"The reason the subscribers do not like me is because the connection has been broken in the midst, perhaps, of a business deal. Even when the connection is re-established, it is hard to continue where the conversation left off; in fact, there must be a little review of the subject under discussion. Thus, the subscriber loses, even though an allowance is made; besides, the telephone company often loses the confidence of this patron—perhaps, the next time, he will telegraph.

"The company can much better afford to lose the revenue than have a dissatisfied patron. You can see why the company does not like me. I am a revenue-loser and a confidence-loser.

"Of course, as soon as a conversation is 'cut-off,' the operator stamps off the ticket. But there is one situation in which she does not know immediately about a cut-off. That is when she has no *visual* supervision.

"In such a case, she must be sure to make enough allowance, and thus the company is likely to lose in the deal, for it is better that the company should lose than the subscriber should be penalized.

"No, there is no honor sitting in this Class 1 chair. I am humiliated by having to sit here today. But I wish you to ask me all the questions you want to. So if there is anything you want to know, ask me now!"

CLASS 2 ENTERS: "Good morning! My name is Appointment Call. I feel very sorry for poor old 'Cut-Off.' She is such

The tableau, the words of which are presented on this page, makes a very interesting and instructive presentation of "Precedence of Calls." Miss Barnes used it in several of the Iowa operators' schools this spring and it proved very helpful to operators.

The tableau is presented as follows: Average five chairs across the front of the room, placarded from left to right: "Class 1," "Class 2," "Class 3," "Class 4," "Class 5."

When each operator is to take her part on the program, she comes forward and stands behind the proper chair. She opens her talk with: "Good Morning," and then tells her story.

At the conclusion she advises her audience that she is ready to answer any questions which may be asked.

a trial to, and makes so much trouble for, the company, operators and subscribers, that we all stand aside when we see her coming.

"I am next in importance. Do you know why? I will tell you:

"You see, if a man down at Hocom wants to talk to a man up at Hustleville at a specified time, the telephone company takes it for granted that there are particular reasons why he wishes to talk at that time and no other; besides he is willing to pay a higher rate, called appointment rate.

"This rate is just double the station rate. You see I come high but sometimes they have to have me. I have often heard operators say, and maybe someone is thinking, 'I don't see why Appointment Call should have a higher rate.' Well, I will tell you a few things.

"Did you ever stop to think of the work I require? When I start out, I am no more important than any other call—I must take my time with other calls requiring the circuit. But when we arrive, my operator must arrange the appointment with the distant party personally.

"Sometimes he is reported out. In such a case my operator cannot arrange with anyone else at the distant telephone to inform the desired party that the calling party wants him. No—my operator must just leave word for the desired party to call when he does return. When he returns he is told to call 'Hocom.' Then my operator

has to arrange the appointment. If it is satisfactory, I wait in my proper compartment until five minutes before the time the parties arranged to talk.

"Now is the time that there is some class to me. I come right down on top of all of the tickets on the keyshelf, and I am *first out* on a circuit. If we meet any other operators on the circuit, my operator just mentions my name—and I get right of way over that circuit faster than the president of the company could.

"Can't you see my value *now* over other calls? And can't you see why that man who is willing to talk at a specified time must not be delayed?

"Here is an important fact: If that connection cannot be established within half an hour after the appointed time, and the fault is not the patron's, the telephone company cannot charge that high rate—after all of the work I have caused and the loss of circuit time.

"If you want to know anything more about me, ask me!"

CLASS 3 ENTERS: "Good morning! I see by your faces that you are glad to meet me—operators always are, as my name is 'WH.'

"The definition of my name means 'Ready'—ready to establish a conversation on a call which has experienced a delay previously; ready to deliver the goods; ready to make circuit time revenue bearing.

"Don't you think I deserve to belong in Class 3? That means that I usually belong on top of the delayed pack on the keyshelf. It means that, no matter what the operator has on hand—unless she has a cut-off to establish, or the completion of an appointment at the appointment time—if she has an available circuit she is going to start me quickly toward the originating office. If she meets any other operator on the circuit who challenges her right to the circuit, she is going to say. 'Mine is WH.'

"If you want to ask me any questions, do so!"

CLASS 4 ENTERS: "Good morning! We three belong to Class 4. You operators have been much better to us this last year than ever before. Now, since it has become ancient history, I can speak of it and no one will take offense. I will introduce ourselves:

"This is 'Miss Next Call Attempt to Secure a Busy Line.' Some distant operator has left a call order for a 'by' number at this office.

"This is 'Miss Next Call Attempt to Secure a Number Reported DA,' and a distant operator left a call order here.

"I am 'Miss Later Attempt to Reach a Calling Party for Whom Word has been Left.'

"We have long names, but what's in a name? We do not involve the use of a toll circuit until some kind of a report is gotten after the operator makes this subsequent attempt. Now I told you that you formerly did not treat us as well as you do now. It was like this:

"When that busy distant operator left you the call order, she had faith that she would hear from you at a certain time if you could *possibly* get back to her. She also knew that she must allow you a certain number of additional minutes, and then she could come back to you and make inquiry about her call order—one of these call orders here.

"When the time arrived to take up Called Party's line and to make an attempt to complete the distant operator's call, you first slipped in a call or two of your own. You knew she was so far away that she would never be the wiser.

"Now what might have happened if you had played square? You likely would have turned those 'BY' or 'DA' call orders right into 'WH' reports—and 'WH' has told you how important she is. So you see you must watch us 'Next Call Attempts.' We often 'bring home the bacon.'

"If you want to know anything more about us, ask us now!"

CLASS 5 ENTERS: "Good morning! You see there are four of us who belong to Class 5. Here is Miss New Call. She has never been away from home yet. This is Miss 'Ag on an Lw.' Rather a long name isn't it? Just because she has been clear to her destination one or more times doesn't make her one bit less important than Miss New Call. Some of you used to think so.

"Don't you remember, when an operator challenged you, you would say 'Mine is a new filing. Is yours an Ag?' You wouldn't think of doing that now, would you?"

"Here is 'Miss Aging a Call Order.' It looks as though some operator has forgotten her. I hope not.

"I am Miss 'Delayed Report to Pass.' I really do not get anyone anywhere—but I do make a subscriber feel better toward the company, if I travel to him, for he then knows the operators are working on his call.

"If you want to know anything more about us, ask us, please."

Wisconsin Association Will Hold Mid-Summer Meeting.

The mid-summer meeting of the Wisconsin State Telephone Association will give both benefit and enjoyment to those who attend. It will be held Friday and Saturday, June 29 and 30, in LaCrosse.

Among the important topics coming up

for discussion at the meeting are the application of the new electrical code of Wisconsin; the securing, through co-operative effort, of insurance covering compensation, public liability, and pensions, for companies which are not now able to secure all those forms of insurance.

There will also be a conference for the operators, at which there will be talks on traffic matters and suggestions for operators in small exchanges.

On the entertainment program is a boat ride on Saturday afternoon. As LaCrosse is ideally located in a territory unsurpassed for natural scenic beauty, the trip is certain to prove enjoyable.

Secretary J. A. Pratt of the association points out that this is a good opportunity to travel to LaCrosse by an automobile, and that state trunk highways 11, 12 and 33 all lead to that city.

He invites all telephone companies to send as many representatives as possible.

New York Operators' Conference Full of Interest.

Forty-three operators were present at the district conference of operators of the Up-State Telephone Association of New York held in Wellsville, June 4, in the Odd Fellows' rooms. It was a most successful meeting in every way. Delegates were present from numerous offices not only in Allegany county but Cattaraugus and Steuben as well, representing these organizations: Allegany County Telephone Co., Allegany Mutual Telephone Co., Cattaraugus Union Telephone Co., Fillmore Telephone Co., Friendship Telephone Co., Greenwood Telephone Co., and Whitesville Telephone Co.

Upon arrival the delegates were registered by Mrs. Thelma Walker and the morning session convened promptly. Miss Lillian A. Vavasour gave a short address setting forth the aims and purposes of the meeting, after which the fundamentals of good local service were carefully gone over and demonstrated by practice drills participated in by the delegates generally.

The details of ringing subscribers properly, enunciating distinctly, and correctly adjusting transmitters were discussed and their importance as direct aids to good service emphasized.

The best method of recording complaints was another subject of discussion and the importance and desirability of a prompt and satisfactory adjustment of them with subscribers was dwelt upon.

A special feature of this session was an address by Miss White, Traveling Chief Operator, Buffalo suburban, on repetition, enunciation and voice expression.

At one o'clock an adjournment was taken for dinner which was served by the ladies of the Rebekah Lodge with the compliments of the Allegany County company.

The afternoon session immediately after coming to order proceeded to a considera-

tion of operating practices used in the handling of toll calls. A special talk on this branch of the work was given by Miss White, which was most instructive and was followed with particular attention by the delegates.

Her subject dwelt on the proper routing, and rating of long distance calls. At its close the different steps involved were performed under her direction by various operators selected at random from the audience.

The offices participating in this conference, with their representatives, were:

Andover, Mrs. Edna Langworthy; Angelica, Mrs. Gibson, Mrs. Helmer; Belfast, Mrs. Coons, Miss Bucheister; Belmont, Miss Colligan, Mrs. Brooks, Mrs. Rice; Bolivar, Miss Reynolds, Miss Moses, Miss Skerritt, Miss Perry; Buffalo, Miss White; Cuba, Mrs. Lewis, Miss France, Miss Herrick, Miss McGraw; Ellicottville, Miss Holloran; Fillmore, Mr. and Mrs. Harris, Miss Stone, Miss Wheeler; Franklinville, Miss Kingsbury, Miss Williams; Friendship, Miss Doran, Miss Hickcox; Greenwood, Mrs. Youngs, Miss Waters; Hornell, Miss Hennessy; Olean, Miss Houghton; Rushford, Miss Cole; Salamanca, Miss Murrin; Wellsville, Miss Gonter, Mrs. Walker, Miss Connell, Miss Tanner, Miss O'Connell, Miss Gardner, Miss Hathaway, Miss Leonard, Miss McHale, Miss Stoll, Miss Perry; and Whitesville, Mrs. Ainsworth.

The Cuba conference on May 18 and the one at Wellsville were the first two meetings of the series inaugurated by the Up-State Telephone Association of New York during the current year and are the only ones that are planned for that immediate section of the state. The Allegany County Telephone Co. was selected to initiate the series and, aside from the honor thus conferred upon it, feels a genuine satisfaction in its efforts to improve the telephone service through the agency of these meetings.

Illinois Bell \$50,000,000 Bond Issue Goes on the Market.

The \$50,000,000 bond issue of the Illinois Bell Telephone Co. has been placed on the market.

The bonds are to run 33 years and are offered at 95¼ to yield 5.30 per cent. They are secured by a first mortgage on all property owned by the company, appraised at more than \$133,000,000, according to the statement of the company.

Proceeds from the bonds will be used to the extent of \$19,000,000 for refunding the issue of Chicago Bell Telephone Co. bonds assumed by the Illinois Bell company; \$15,000,000 for refunding an issue of American Telephone & Telegraph Co. bonds also assumed by the Illinois Bell; and \$16,000,000 as new capital. The new bonds will mature December 19, 1956, and are callable at 105 after 1929.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Indiana Company Moves to Halt Power Line Construction.

The Citizens Independent Telephone Co., of Terre Haute, Ind., filed an application in the circuit court, June 5, for an injunction against the T. H. I. & E. Traction Co., asking that the latter be restrained from erecting a high tension line in the Maple Ave. road from Terre Haute to the traction substation at Seelyville.

The injunction is asked on the grounds that the erection of the line would render totally ineffective the telephone company's line in the same road, causing damage to the extent of \$25,000.

According to the complaint, the traction company contemplates the erection of a high tension line carrying 66,000 volts and plans to abandon the present high tension line in the Fort Harrison road. The complaint also states that the work of erecting the poles has been started.

The telephone company declares that the new power line would render ineffective the telephone line to Seeleyville.

Illinois Farmers Mutual Company Asks Leave to Quit.

Authority to discontinue operating its service and to sell what equipment it owns, is asked for by the Farmers' Mutual Telephone Co. of Pike county in a petition filed with the Illinois Commerce Commission June 8. The owner is George W. Van Gundy of Bluffs, Scott County.

The company states that there is no demand for its services and that it has discontinued operation. It served a number of localities in Pike County.

Resume Hearings on Rates of the Illinois Bell in Chicago.

Considerable documentary evidence regarding the corporate articles of the Illinois Bell Telephone Co., was submitted by the city of Chicago, June 13 and 14, at a resumption of the hearings in Chicago before the Illinois Commerce Commission on the present rates of the company.

The attorneys for the city attempted to show that profits from allied industries, including the Western Electric Co., should be taken into consideration when the commission was considering the finances of the telephone company.

Several officials of the Western Electric and the American Telephone & Telegraph companies were placed on the stand during the hearing and were cross-examined as to the corporate relations of the companies.

Attorneys representing the city contended that more than 98 per cent of the stock of the Western Electric is controlled by the A. T. & T., and that fair prices are not set upon the material sold by the Western Electric, as all the profits go to the A. T. & T.

The 4½ per cent contract with the parent company was also attacked by the city's representatives.

Action Started Against New England Bell by "Common People."

A petition asking that the New England Telephone & Telegraph Co. be required to establish a one-cent-a-call schedule to replace the present contract system, has been filed with the Massachusetts Department of Public Utilities by Attorney A. P. Connor, representing the Common People, "an incorporated organization having in view better political and civic conditions." The hearing is set for June 26.

It is also asked in the petition that the company be ordered to reduce the salaries of its chief executives, and to discontinue the payment of the 4½ per cent to the A. T. & T. Co.

Court Says Mississippi Must Go Back to Lower Rate Schedule.

The motion of the Cumberland Telephone & Telegraph Co. to dismiss a writ of certiorari granted the attorney general of Mississippi, May 21—by which the Cumberland company was ordered to reduce telephone rates to the scale prior to January 1, 1923—was denied on May 27 by Judge Wiley Potter of the circuit court.

Judge Potter, in overruling the motion of the company, said that in his opinion the order of the Mississippi Railroad Commissioners was void, and that the company cannot legally collect the increase granted by the order.

"Dark Horses" Appointed to Missouri Service Body.

Thomas J. Brown of Charleston, Mississippi county, and R. H. Musser of Plattsburg, have been appointed members of the Missouri Public Service Commission by Governor Hyde.

Mr. Brown, a Republican and a member of the constitutional convention, was named to succeed Noah W. Simpson, of Labelle, Democrat, for a term ending April 15, 1929. Mr. Musser, a Democrat, was appointed to succeed the late Hugh McIndoe, Republican, of Joplin, for a term ending April 15, 1925.

Neither of the new commissioners has figured prominently in state politics, although Mr. Brown has been a member of the constitutional convention since May, 1922. He has been active in Republican politics in Southeast Missouri, and was tendered an appointment in the state insurance department by Governor Hyde last year, but declined. The appointments of the two men are effective immediately.

The term of Andrew J. O'Reilly of St. Louis expired April 15, but the governor has not announced when he will fill the place.

K. C. Long Distance Authorized to Sell Missouri Properties.

Approval was given on June 15 by the Missouri Public Service Commission to the transfer by the Kansas City Long Distance Telephone Co. to the Kansas City Telephone Co. of the local telephone properties serving Excelsior Springs, Richmond, Norborne and surrounding rural communities.

The consideration mentioned in the order is \$225,573, which is to be paid on or before January 1, 1925, with interest at the rate of 6 per cent from April 1, 1923, payable semi-annually on the 15th day of June and December of each year.

Commission Asked to Settle Dispute Regarding Poles.

The Columbus Railway & Light Co. has asked the Ohio Public Utilities Commission to intervene and settle a dispute it has with the Ohio Bell Telephone Co., Western Union Telegraph Co. and the American Telephone & Telegraph Co. over the building of a power line on the national highway from Bexley into Hibernia.

The Railway company, according to the application, has made an agreement with the Columbus, Newark & Zanesville Electric Co. to use its poles and has a franchise from the Franklin County commissioners for the power line. The telephone and telegraph companies, however, have all the available pole space, and it has been found impossible to reach an agreement relative to erecting higher poles for the power line, in accordance with power line regulations of the commission.

Propose Abolishing Oklahoma Corporation Commission.

Initiative petitions were filed June 8 with the secretary of state in Oklahoma having for their purpose an amendment to the state constitution abolishing the Oklahoma Corporation Commission. The



Keystone Telephone Company's Main Office, Philadelphia

STATEMENT OF EARNINGS OF
KEYSTONE TELEPHONE COMPANY

For twelve
months ending
Dec. 1922

Gross earnings	\$1,703,274
Operating expense and taxes	977,681
Net earnings.....	\$ 725,593
Less interest charges.....	501,235
Balance available for dividends, surplus and reserve	\$ 224,358



What Strowger Automatic Has Done for Keystone

it can do for your company too.

If the installation of Strowger Automatic equipment did nothing more than permit the rendering of a completely satisfactory and up-to-date telephone service, any company would be justified in adopting it.

But besides the furnishing of a uniformly satisfactory service to the user, Strowger Automatic can and *does* increase the profits of the company operating it. For example, just glance at the table on the opposite page, showing the statement of earnings of the Keystone Telephone Company for 1922. It is interesting to know that while the gross revenue of this company has increased less than 3% since 1919, the net profit has increased more than 14%.

To improve service is worth while. To increase profits is better. Strowger Automatic does both for Keystone, and *can* do both for you.

Let us show you how to do both,—now.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd. Compagnie Francaise pour l'Exploitation des procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



movement is backed by the Farmer-Labor-Reconstruction League and the farm labor group which is active in all departments of the state administration.

The proposed amendment would substitute for the corporate commission a commissioner of railroads and warehouses who would be elected for four years, the present governor to appoint, however, for the interim, which would mean the period expiring with the Walton administration. The proposed commissioner would receive a salary of \$5,000 a year.

The companion proposal would limit the legislature to an appropriation not to exceed \$75,000 a year for maintenance of the department. The movement is headed by Tom Latham, of Cleveland, who has opened headquarters in Oklahoma City. His argument in support of the project is that it would greatly reduce the financial outlay necessary in the regulation of railroads and such other business as might still be regulated.

Citizens Think They Should Share Cost of Improvements!

The Garber Telephone Co., of Garber, asked the Oklahoma Corporation Commission on June 14 to authorize an increase in rates for business and residence service.

The application is endorsed by city and chamber of commerce officials of Garber. Municipal improvements of extensive character, including street paving, are necessitating removal of the telephone lines from the streets to alleys and underground conduits and the citizens take the position that they should share with the telephone company the financial burden involved in this development.

E. E. Mills is president and general manager of the company.

Deerfield, Wis., Company to Issue \$3,320 Capital Stock.

A capital stock issue of \$3,320 was authorized for the Deerfield Telephone Co., of Deerfield, by the Wisconsin Railroad Commission on June 2.

The issue is divided into 332 shares of par value of \$10 each, and is to be sold for cash and at not less than its par value. The funds are to be used to pay for additions and extensions to its property and plant.

The company is required to file with the commission, within 30 days after the sale of the stock, a verified statement showing the proceeds, and later, a statement showing how the proceeds have been applied.

Wisconsin Company Complains of Bell Long Distance Service.

Telephone service between Grant County, Wis., and points outside of the state was discontinued over the lines of Farmers' Telephone Co. on May 1, when complaint was filed by the board of directors of that company with the Interstate Com-

merce Commission at Washington regarding the manner in which the Northwestern Bell Telephone Co. was handling long distance calls routed over its lines. Officials of both companies and business men of the locality held a conference but the situation has not been altered.

Must Obey City Ordinance Regarding Placing Telephone Poles.

An ordinance required telephone poles to be placed within or adjacent to the curb line of the street. The fact that the curb line and property line of an alley were the same, and that to place the poles adjacent to the curb line would cause cross-arms to extend over private property, is no justification for the company to set its poles out in the paving 2½ feet from the curb line.

The company may either construct its cross-arms to extend from one side of the pole only, or procure from private owners the right or permission for the overhang of cross-arms over their property.—Harris vs. Central Power Co., Supreme Court of Nebraska, 191 Northwestern, 711.

Duty of Illinois Commission to Establish Fair Rates.

While the Illinois Commerce Commission has no authority to make rates for a public utility in the first instance as the right lies with the utility—the commission, in order to prevent unjust discrimination, undue preferences, and extortionate rates and charges, is charged with the duty of establishing just, reasonable, and uniform rates.

In a hearing it is the commission's duty to establish the rates and the charges, classifications, contracts, practices, rules, or regulations proposed, in whole or in part, or others in lieu thereof, which it shall find to be just and reasonable. Illinois Bell Telephone Co. vs. Illinois Commerce Commission; Supreme Court of Illinois, 137 Northeastern, 449.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

June 2: Application filed by the Chesapeake & Potomac Telephone Co. of West Virginia for authority to purchase, for \$5,000, certain properties of the Trap Hill Telephone Co. located at Beckley and elsewhere in West Virginia.

ILLINOIS.

June 8: Petition for authority to establish a schedule of increased rates filed by the Auburn Telephone Co., of Auburn.

June 8: Application filed by the Farmers Mutual Telephone Co. of Pike County for authority to discontinue doing business and to sell its equipment.

June 13-14: Hearings resumed in Chicago on rates of the Illinois Bell Telephone Co. for service in that city.

June 19: Hearing held at Springfield on application of the Canton Home Telephone Co. for increased rates for service in Canton.

June 19: Hearing held at Springfield on

petition of W. J. Rossiloti for an order requiring the Commercial Telephone & Telegraph Co. and the Independent Telephone Co. to establish physical connection between their lines serving the northern and southern parts of Gallatin County.

June 20: Hearing held at Springfield on application of the Illinois Bell Telephone Co. for an advanced rate schedule for service in Alton and Wood River.

June 20: Hearing held at Springfield in the matter of proposed advance in the rates of the Illinois Bell Telephone Co. in Edwardsville and vicinity.

June 20: Hearing held at Springfield on petition of the Commercial Telephone & Telegraph Co., of Olney, for higher rates for service in Norris City, Galconda, Shawneetown, Ridgeway, Equality and Elizabethtown.

June 20: Hearing held at Springfield on petition of the Citizens Telephone Co. for authority to execute its deed of trust to secure an issue of \$250,000 of its first mortgage bonds, and for permission to issue \$200,000 of the bonds.

INDIANA.

June 5: Hearing held in Indianapolis on application of the Harrison County Telephone Co., of Elizabeth, for increased rates.

MASSACHUSETTS.

June 26: Hearing to be held in Boston on petition of A. P. Connor, representing an organization known as the "Common People," for an order requiring the New England Telephone & Telegraph Co. to establish a new schedule, reduce the salaries of its officers, and discontinue payments under the 4½ per cent contract with the American Telephone & Telegraph Co.

MISSOURI.

June 15: Authority given the Kansas City Long Distance Telephone Co. to transfer certain of its properties to the Kansas City Telephone Co.

NEBRASKA.

June 12: Complaint filed by McCaull-Dinsmore Company of Omaha against the Northwestern Bell alleging that the company insists upon holding complainant liable for long distance charge made by an employe from another station than that in complainant's office.

June 13: In the matter of the application of the Ames Creek Telephone Co., of Obert, serving 150 stations, for permission to increase rates; it appearing that the revenue needs of the company require a larger income, it is ordered that certain rates be increased 15 per cent, to apply to business and farm stations, the rate for the former to be \$2.30 a month, and for the latter \$1.15 a month.

June 21: Hearing at Arapahoe upon the application of the Arapahoe Telephone Co. for permission to issue additional stock.

OHIO.

June 7: Petition filed by the Columbus Railway & Light Co. asking commission to settle dispute with Ohio Bell Telephone Co., Western Union Telegraph Co. and American Telephone & Telegraph Co., relative to pole space.

June 18: Hearing held in Columbus in the matter of rates of the Ohio Bell Telephone Co. for service in Dayton; witnesses for the city of Dayton cross-examined by attorneys for the company.

June 25-26: Hearings to be held in Columbus in the matter of increased rates in Akron for service by the Ohio Bell Telephone Co.

OKLAHOMA.

June 14: Application for increased rates filed by Garber Telephone Co., of Garber.

Here and There in Telephone Work

Whose Job Is the Biggest?

By Layton E. Meadows.

It is a commendable ambition that prompts the desire to do big things. We all of us do or should, aspire to places of great responsibility. The way to realize that ambition is to make of the jobs we have the very biggest and greatest jobs in the world. Learn to do well the things your hand finds to do.

The fellows who make themselves indispensable are in the direct line of promotion and, consequently, of greater power and influence. The trouble with many of us is that we are inclined to begrudge the time and effort devoted to the necessary period of trial and apprenticeship. The top of the ladder is not reached in a day.

We all hope, perhaps, to some day emerge full-winged and well-equipped from the preparatory school of life, ready to accept large responsibilities. Doubtless when we step forth we are prepared for this, but we should remember that the opportunity given, no matter how seemingly unimportant in this great organization of ours where we find ourselves, is one of great responsibility.

As we make of our present job the biggest and most important job in the company, we prove our readiness to advance. Our position may not be regarded by everybody as the most important in the big scheme which is being made to function harmoniously, but it is the most important to ourselves because in it we are proving to ourselves the faith which is within us.

Look about you, if you will, and you will discover one fellow doing line work, one installing, one a laborer. It matters not if he is fitted for this seemingly unimportant work, he is making of his job the biggest job in the organization. He takes justifiable pride in 'doing' well the task which is his.

The rule is universal in its application. We get out of our job only what we put into it; and it is satisfying to remember, our own prejudices and complaints to the contrary, that we actually get all that we do put in. As there are exceptions to all rules, so there probably are exceptions to this, but it may be stated as a general proposition that those who complain of inadequate rewards are those who have failed to realize the importance to themselves of the jobs which they have undertaken.

There is a man in San Francisco who claims to have the biggest job in our company. He has. We telephone people are inclined to believe that the president of the A. T. & T. Co. has the biggest job. He has.

To them their jobs are the biggest because they are trying to do their work better than anybody else has ever performed tasks similar to those they have undertaken. Your job is the biggest and everyone else's is the biggest also—but this is true only as we, too, try to do our particular tasks better than they ever have been done before.

Missouri Company's Employees Have Quarterly Meetings.

An illustration on this page shows some of the employees of the Missouri Union Telephone Co., of Clinton, Mo., who took

was a percentage of 97.6 on collections for 1922.

The last meeting was held June 7 at Moultrie, at which there were present at least two employes from each of nine exchanges. The main part of the program was in the afternoon, following luncheon at the Russell Hotel.

After the talks by the employes, the president and the general manager, there was an automobile trip to a beautiful place in the "piney woods" where there is a lake, so that swimming and games made the afternoon pass quickly.

In the evening the crowd gathered



Group of Employees of Missouri Union Telephone Co., Who Gathered in Conference Recently at Clinton, Mo.

part recently in one of their quarterly conferences.

These meetings, held every three months, prove exceptionally helpful and a great deal of interest is taken in them. Problems which come up between meetings are discussed and viewpoints presented on various matters having to do with furnishing telephone service.

The Missouri Union company was organized in April, 1899, and now has seven exchanges—Clinton, Windsor, Calhoun, Deepwater, Montrose, LaDue and Urich. It operates 4,300 stations.

Employees' Meetings at Moultrie, Ga., Develop Loyalty.

An employees' meeting every once in a while—one that combines the business with the social side of life—is an excellent way to develop a spirit of loyalty and coöperation.

That has been the experience of the Consolidated Telephone & Telegraph Co., of Moultrie, Ga., and one of the very perceptible results of this coöperative spirit

around a large camp fire, and a basket supper was served. It was such an enjoyable affair that everyone was reluctant to go home, tired as he was.

The following informal talks were made at the conference:

"Effectiveness of Our Organization and What We May Accomplish in the Future," B. Y. Chambers, general manager, Moultrie.

"Proper Supervision of Toll Lines," Miss Eunice Hiers, toll supervisor, Moultrie.

"Service from a Plant Man's Standpoint," S. M. McCarty, manager, Boston.

"Satisfying the Public," Miss Ida Cone, chief operator, Barwick.

"What I Think of the Telephone Business," W. A. Pringle, president, Thomasville.

"Proper Discipline Essential to First Class Service in Operating Room," Miss Jewel Hester, assistant chief operator, Moultrie.

"Proper Use and Care of Central Office

Equipment," W. A. Lowder, superintendent, Moultrie.

"Handling Collections," Mrs. Allene Hester, cashier, Moultrie.

Extension of French Telephone System Urged at Conference.

At meetings during The Posts, Telegraph and Telephone Week, there was considerable criticism of those services in France, more especially of the telephone service, says a report from Commercial Attaché C. L. Jones, Paris, to the U. S. Department of Commerce.

Discussions indicated that the government appreciates the necessity for marked improvement in the service. Responsible officials commented very severely on the inferior service rendered by the telephone system. Toll lines were said to be so unsatisfactory that they may be said to be hardly a factor in communication in France. Rural service is in its infancy. Other speakers commented on the fact that the telephone was an instrument of everyday use in the United States and an item of luxury in France.

At the end of the sessions the conference expressed itself in favor of: (1) the replacement of aerial wires by cables in interurban service at the earliest possible date; (2) the installing of automatic telephone service; and (3) the development of the telephone service in the country through the organization of small coöperative companies.

The government has put before parliament a comprehensive plan for the development of the French telephone service involving the expenditure of 200,000,000 francs per year for ten years on new equipment.

The pledging of an amount so large as this under the financial conditions now obtaining in the republic has given rise to considerable comment. The plans received, however, the hearty support of all those in attendance at the conference, because of the great importance which the telephone should have in the economic life of the country. The bill authorizing the expenditures has passed the Chamber of Deputies and is now in the hands of the senate finance committee.

Unexpected Source of Trouble Found in "Buried" Cable.

Telephone companies that practice laying bare cable in the ground have more than a tile-man's spade and the elements to fear. The accompanying photograph shows a gopher who sharpened his teeth on the cable laid underground by the El Paso Telephone Co., El Paso, Ill.

He had built a nest right over the top of the cable and evidently took the 15-pair cable for a root of some tree and tried to cut it, but abandoned his purpose when he discovered he was interfering with public service.

The company had an interesting time discovering the cable trouble which came in shortly after a rain. At first it was thought to be in the aerial cable but it was soon discovered that it was underground.

As there had been no digging along the underground cable route, the troublemen were at a loss to account for the trouble.

By the use of a coil and tone test the



This Gopher Interfered with Public Service in El Paso, Ill., When He Was Engaged in "Underground Construction" Work.

approximate location was found and after digging down to the cable and following along it for a few feet, the gopher's nest was found and likewise the damaged cable. The illustration shows that both the trouble and its cause were removed.

Filter System Applied to Radio to Secure Secrecy.

One problem of radio telephony—privacy of conversations—has been solved by engineers of the Bell system, according to a recent announcement by the American Telephone & Telegraph Co., which reported that the invention was working successfully over a 30-mile stretch of ocean between Los Angeles and Catalina Island.

Secrecy for the "phantom wire," said the engineers, had been accomplished through an invention which "scrambles" the conversation at one end and "unscrambles" it at the hearer's end. The radio-telephonic talk is just a jumble to any one else who "listens-in" on the same wave length.

"The wireless 'talk bridge'" said an engineer of the company, "which has given telephone service across the 30-mile gap of water, was designed and installed in 1920 to permit two-way talking between the

mainland and the island. It has given satisfactory transmission day and night throughout the year.

"At the time the radio apparatus was installed a submarine cable could have been laid joining the island and mainland, which would have supplied a better grade of service at less expense. But the conditions at that time, which grew out of the war, were such that the manufacture of cable would have involved a long delay. However, suitable submarine cable will be available in the near future and will be laid to the island as soon as available, but not before the new private radio system has received a thorough trial.

The radio system, even with privacy assured, can only be considered somewhat in the nature of a temporary affair. A cable could handle the messages more economically.

The installation of the cable will make the ether wave lengths now used by the radio system available for broadcasting or essential radio service.

The wireless link connects Catalina Island not only with Los Angeles, but also, through the trunk lines of the Bell system, with every commercial center in the United States. After the laying of the telephone cable between Key West and Havana, the longest telephone circuit on record was set up between Catalina Island in the Pacific and the Island of Cuba in the Atlantic.

Starting from Catalina Island, the first 30 miles of this circuit were wireless; from Los Angeles to Key West, a distance of 5,000 miles, the transmission was by long distance wires of the Bell system, and from Key West to Havana by 110 miles of submarine telephone cable.

The Catalina Island radio link is the first to be equipped with the wireless telephone privacy system recently developed by the engineers of the Bell system. Heretofore talks over the Catalina Island link have been "picked up" by amateur receiving stations in the region. The talker could not tell how far afield his words might go. The privacy system was designed to remedy this.

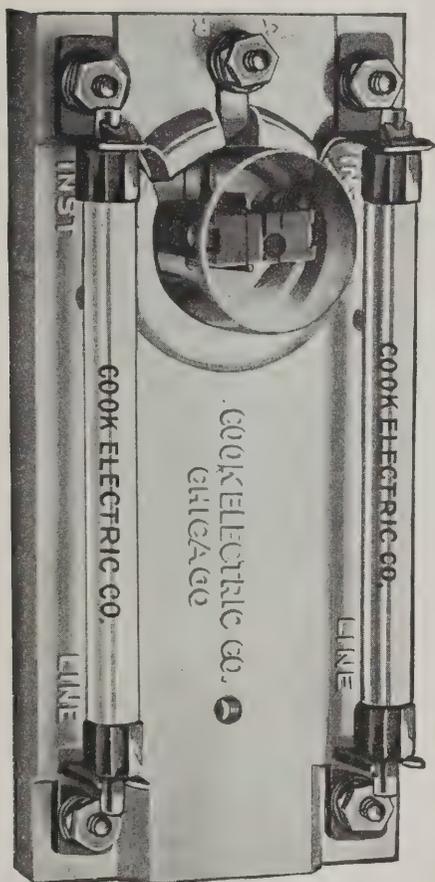
It is not claimed that the new system is absolutely secret, but at least privacy has been obtained, so that no one will inadvertently overhear the conversations which are transmitted.

The new radio equipment, before putting the messages on the air, will distort or "scramble" them, and no receiving set which is not specially designed or manipulated to "unscramble" them can obtain anything intelligible. While anyone familiar with the system, and possibly an ingenious person not familiar with it, might devise a set which could listen to the system, such a set would be much more complicated than the ordinary set, and the added complication would be of no value except for picking up transmission over this system. It is, therefore, not likely that many people will try it.

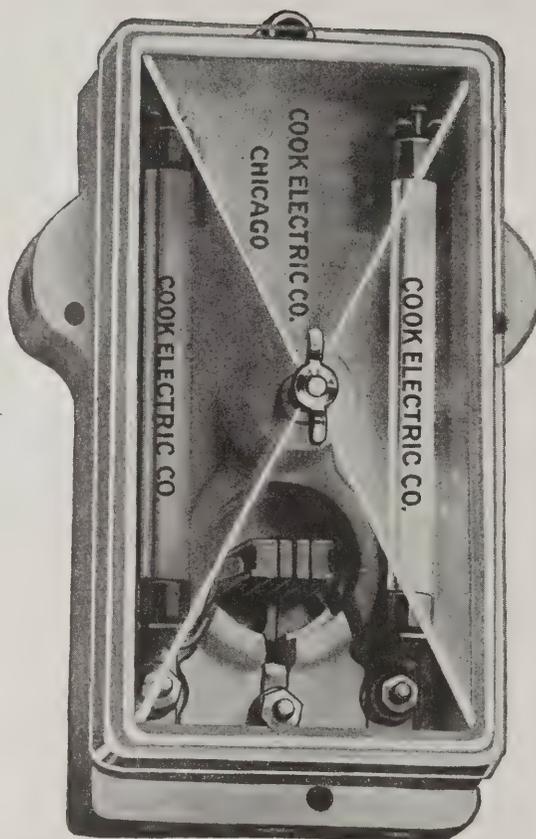


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Approved by Underwriters Laboratories



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B-9

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CHICAGO, ILL.

Independent Makers Deserve Credit

Stromberg-Carlson Company Has Contributed Many Improvements to the Telephone Art—"The Story of Electricity," Edited by T. Commerford Martin, Lists Some of the Accomplishments of the Rochester Concern

Reference was made recently in a TELEPHONY editorial to the important part played by Independent manufacturers in developing improved apparatus that help to make American telephone service the best in the world. Quotation was also made of a statement in an article appearing in the Nation's Business, which gave credit to the Independents for introducing many of the devices which have speeded up service and made it more efficient.

Among those who expressed approval of the comment made was W. Roy McCanne, treasurer and general manager of the Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y., who says in a letter to TELEPHONY that he is gratified to note such recognition of Independent contributions to the telephone art.

In his letter, Mr. McCanne quotes from "The Story of Electricity," edited by T. Commerford Martin and Stephen Leidy, which contains a chapter on "Independent Telephone Origin," that lists the principal achievements of the Stromberg-Carlson company in the development of apparatus.

This chapter (found in Volume 2) says:

"The Stromberg-Carlson company has been a pioneer and leader in many respects, and has produced equipment that at all times has been in step with its leadership of the development of the art. Some of its important advances that stand out are described below:

It was the first company to pay attention to mounting apparatus in switchboard cabinets so as to be accessible. Originally, relays, repeating coils, condensers and operator's circuit equipment, were mounted with apparent disregard for maintaining the equipment after the switchboard was installed.

In the early switchboards, it was necessary for the maintenance man to disturb the operator in getting at most of this apparatus, as panels had to be removed from the front of the cabinets to reach vital portions of the equipment.

Realizing through its customary close association with the operating companies the necessity of helping them solve operating and maintenance difficulties, the Stromberg company was quick to adopt schemes which would overcome such defects in switchboard design. Apparatus such as repeating coils and condensers were soon designed to mount on metal plates similar to relays, and later all of this apparatus was assembled on swinging relay gates, so that the maintenance man could get at both sides of the apparatus from the back of the switchboard and

without disturbing the telephone operator.

Another advantage of this swinging relay gate was the placing of more of the switchboard apparatus in the cabinet than was heretofore the standard practice. This resulted in economies in wiring and greatly simplified the maintenance. In the standardized Stromberg P. B. X. switchboards, this accessibility has been further improved by mounting the trunk circuit

THE JOY OF BUSINESS.

Any man who goes to business with but one thought, asking grimly how much he is going to get out of it in dollars and cents, will probably get actually less dollars and little, if any, of the joy of the man who approaches the business from a quiet and different angle—from the angle of doing something worth while, building, creating, serving.—James Simpson, President, Marshall Field & Co.

apparatus on removable plates, which allow extensions or replacements to be made without the use of soldering irons.

The four-relay cord circuit, developed by this company, is the fundamental cord circuit used in the Independent telephone field today.

As four-party line service was developed, it was found necessary to have a key that would show the operator which subscriber had been rung last and the Stromberg-Carlson company met this need by the development of the four-party, plunger type, indicating key. Until recently this has been standard on all modern party line manual boards.

The requirements for telephone service underground in mines resulted in the development of the first iron-clad, moisture-proof special mine telephone which is purely a Stromberg product.

The bridge type of substation circuits for use in central energy telephone systems was also a product of the Stromberg-Carlson company.

Next, its organization was responsible for the first commercial two-gong harmonic party line telephone. They followed the first harmonic converter ringing machine, which practically revolutionized selective ringing and made possible the present extensive use of the four-party bridged selective ringing system.

The first instantaneous disconnect manual cord circuit, which made it possible for a talking subscriber to sever the talk-

ing circuit at the switchboard and institute another call without requiring the operator to take down the first connecting cord circuit, also was developed by it.

Another development was the first small-size, but highly efficient relay, which effected great economies in mounting space, operating and first cost.

It is generally conceded that the Stromberg organization also developed or marketed the first removable lever switchhook. This type hook allowed the telephone to be packed for shipment in a more compact shape and thus avoided injury to the internal mechanism. It is now used by most manufacturers of telephone apparatus.

The demand for a disconnect signal on the keyshelf for a magneto switchboard, that would function similarly to the disconnect signal on a central energy system, was met by the Stromberg company in the development of the famous No. 169 key, which mechanically restores the two associated disconnect signals, when the operator throws the listening key forward to answer a call.

During the Great War, the Stromberg company led in standardization work under the War Service Board, and apparatus models were quickly reduced to necessary types. As a consequence, untold good was done to the telephone industry.

During this period the first standardized stock magneto switchboard was developed on which every cord circuit was of a universal type, allowing interchange of connections between the different types of lines found in the country exchanges today, and containing the key type, double clear-out signal in the keyshelf and line signal code alarm drop. These boards were so designed as to be built and carried in stock, and packed securely and ready for shipment—an ideal arrangement believed impossible previous to that time.

In like manner the Stromberg company developed the standardized stock private branch board containing a removable type of circuit plate which allowed adaptation to different classes of service.

One of the latest developments of this company is the master key selective ringing system, which was first installed and is now in operation at Fort Wayne, Ind., and in which each keyshelf possesses but a single four-button key for a plurality of cord circuits. This scheme allows more calls to be completed in a given time by the operator and with less fatigue.

The Stromberg company was the first to manufacture and use in the United States the combined receiver and trans-

"The Perfect Magneto Switchboard"



One of the largest users of Monarch equipment recently paid us the compliment of referring to the above switchboard, his most recent purchase, as the "PERFECT MAGNETO SWITCHBOARD."

*Wired to full capacity of 320 lines.
Each position wired for 15 cord equipments.
Breast Plate or Suspended type operators' sets.
Straight or code ringing type drops and jacks.
Complete with all necessary switching keys.
Cable may leave cabinet at place specified.*

Monarch Telephone Manufacturing Co.

GENERAL OFFICES AND FACTORY

951 W. Van Buren St., Chicago, Ill.

Tel-Electric Co., Houston, Texas

DISTRIBUTORS

Electrical Supply Co., New Orleans, La.

Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Coker Electric Supply Co., Los Angeles, Cal.

mitter telephone, known as the combination-phone or micro-telephone.

The Stromberg company also developed many unique features in the art of switchboard construction for better handling of increasing telephone traffic, among which was the installation at Knoxville, Tenn., in the year 1912. The fundamental principle of this installation was a lamp call-distributing system, in which the traffic was uniformly distributed to the idle operators by means of an automatic relay-controlled call order wire scheme. This produced quicker answering time, and more uniform service, as well as making an economical reduction in the operating force.

A further application of this system was made at Louisville, Ky., in which the lamp call-distributing equipment was principally used to handle the overflow traffic. It also facilitated the handling of the Sunday and night loads with a very much reduced operating force.

Later were produced the "concentrated lamp signals," where each line lamp with an associated jack is concentrated in one or two standard switchboard sections in the face equipment. These features were added to the switchboards in modern exchange installations such as Dixon, Ill., Oil City, Pa., and Fort Wayne, Ind. For the smaller exchanges the value of this ingenious arrangement resulted in the associated lamp signal multiple switchboard, which is standard today, ideal in economy of operating, and has improved the handling of telephone traffic.

A particular advance in the method of handling the problems today in traffic and operating practices has been developed by the Stromberg company in the cord circuit equipment installed at Fort Wayne, Ind.; Oskaloosa, Iowa; Mt. Vernon, Wash.; Mobile, Ala.; Bowling Green, Ky.; Franklin, Pa.; Lexington, Ky.; Centerville,

Iowa; Hanover, Pa.; Bari, Italy; Rio de Janeiro, South America; Manizales, Columbia, South America. This has revolutionized the former type of switchboard and affords a high standard of efficiency and economy.

The fundamental principle of this cord circuit retains the same basic four-relay system which played such an important part in the cord circuit design developed by Independent manufacturers. Additional features in this circuit were incorporated as labor-saving devices for the operators, permitting connections to be established with minimum physical effort. These improvements are as follows:

Machine ringing, which relieves operators of all manual ringing operations; flashing recall, which regains the operator's attention by an intermittent flashing signal on an established connection so as to promptly serve a subscriber's line that is plugged up and requires re-attention; keyless listening, which eliminates entirely the use of a listening key; operator's bar; advance plugging-in; operator's listening indication; operator's secret service; monotone ringing indication; instantaneous ringing cut-off; calling subscriber's ringing control; call registration; emergency ringing; and a master-key-controlled party line ringing by means of relay selection, which eliminates individual ringing keys per cord circuit.

These later developments in the art of switchboard construction are, it is asserted, by far more ingenious and helpful in advancing the art than any of the other early achievements in the recognized standards of telephone exchange switchboards."

Summaries of Reports of Class A Companies for March.

The 71 Class A telephone companies had 746,743 more stations in service at the end

of last March than at the end of March, 1922, according to the statement compiled by the bureau of statistics of the Interstate Commerce Commission. This was an increase of 7½ per cent.

Total operating revenues increased 11.7 per cent for the month, and about the same for the first three months of the year, while expenses advanced something more than 8 per cent.

The item in the revenue which showed the largest percentage increase—both for the month and for the quarter-year period—was message tolls. This amounted to 17 per cent for March and 18 per cent for the three months.

Taxes assignable to operations took about 17 per cent more from the funds for the first quarter than during the preceding year.

Operating income was 18½ per cent greater for March and 20 per cent greater for the quarter than during these periods in 1922, while the ratio of expenses to revenues has decreased about 2 per cent.

District Meetings of Oklahoma Associations Are Postponed.

The district conference of the telephone division of the Oklahoma Utilities Association which was scheduled to take place at Broken Arrow last week, has been postponed to July 19, on account of floods. This was to have been the first of the season and the one at Quinton on June 21 the second. The latter meeting has been postponed one month—to July 21—for the same reason.

The programs for the Oklahoma district meetings contemplate a full day. The morning sessions open with the first talk at 9:30 a. m., and continue until noon. The afternoon sessions convene at 1:00 o'clock and adjourn about 5:00. In the evening there is a banquet and informal talks.

Item.	For the month of March				For the three months ending with March.			
	1923.	1922.	Amount.	Ratio, Pct.	1923.	1922.	Amount.	Ratio, Pct.
Number of company stations in service at end of month	10,716,156	9,969,413	746,743	7.5	.....	.....	.....	.....
Revenues:								
Subscribers' station revenues	\$34,066,194	\$31,160,346	\$2,905,848	9.3	\$100,568,042	\$92,175,549	\$ 8,392,493	9.1
Public pay station revenues	2,536,467	2,230,900	305,567	13.7	7,156,792	6,349,686	807,106	12.7
Miscellaneous exchange service revenues	439,170	420,367	18,803	4.5	1,308,362	1,273,939	34,423	2.7
Message tolls	14,421,028	12,310,695	2,110,333	17.1	40,817,848	34,550,907	6,266,941	18.1
Miscellaneous toll line revenues	1,515,684	1,368,445	147,239	10.8	4,433,139	4,043,230	389,909	9.6
Sundry miscellaneous revenues	943,576	804,849	138,727	17.2	2,833,583	2,392,883	440,700	18.4
Licensee revenue—Cr.	1,968,824	1,753,738	215,086	12.3	5,835,595	5,229,002	606,593	11.5
Licensee revenue—Dr.	1,967,715	1,754,615	213,100	12.1	5,832,542	5,230,385	602,157	11.5
Telephone operating revenues	\$53,923,228	\$48,294,725	\$5,628,503	11.7	\$157,120,810	\$140,784,811	\$17,540,322	11.6
Expenses:								
Depreciation of plant and equipment	\$ 7,702,117	\$ 6,979,162	\$ 722,955	10.4	\$ 22,941,189	\$20,767,738	\$ 2,173,451	10.5
All other maintenance	7,240,127	6,794,967	445,160	6.6	21,583,981	19,798,427	1,785,554	9.0
Traffic expenses	14,451,934	13,216,686	1,235,248	9.3	41,849,843	38,733,993	3,115,850	8.0
Commercial expenses	4,758,047	4,503,430	254,617	5.7	13,850,442	13,211,177	639,265	4.8
General and miscellaneous expenses	2,543,129	2,253,733	289,396	12.8	7,266,531	6,788,357	478,174	7.0
Telephone operating expenses	\$36,695,354	\$33,747,978	\$2,947,376	8.7	\$107,491,986	\$99,299,692	\$ 8,192,294	8.3
Net telephone operating revenues	\$17,227,874	\$14,546,747	\$2,681,127	18.4	\$ 49,628,833	\$41,485,119	\$ 8,143,714	19.6
Other operating revenues	342	750	*408	*54.4	1,264	2,854	*1,590	*55.7
Other operating expenses	3,478	1,450	2,028	139.9	6,853	5,203	1,650	31.7
Uncollectible operating revenues	312,891	241,671	71,220	29.5	948,261	668,001	280,260	42.0
Operating income before deducting taxes	16,911,847	14,304,376	2,607,471	18.2	48,674,983	40,814,769	7,860,214	19.3
Taxes assignable to operations	4,231,472	3,608,071	623,401	17.3	12,622,523	10,791,305	1,831,218	17.0
Operating income	\$12,680,375	\$10,696,305	\$1,984,070	18.5	\$ 36,052,460	\$30,028,464	\$ 6,023,996	20.1
Ratio of expenses to revenues, per cent	68.05	69.88	*1.83	....	68.41	70.53	*2.12	....

Operating Statistics of Class A Telephone Companies for March, Compiled by Interstate Commerce Commission.



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No extra irons to carry and heat—no pre-heating—no climbing up and down—no irons cooling at the critical moment.

Prest-O-Lite is right on the job as long as you want it. It is the efficient tool of the efficient man.

Wherever there is line work there is one of the 22,000 Prest-O-Lite stations ready to furnish equipment and to exchange full tanks for empties. No charge except for gas. Write us for details and the name of your dealer.

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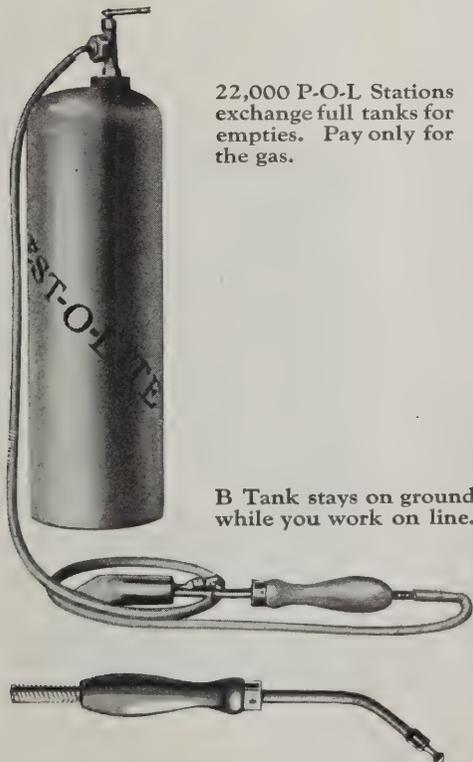
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Please tell the Advertiser you saw his Advertisement in TELEPHONY.



22,000 P-O-L Stations exchange full tanks for empties. Pay only for the gas.

B Tank stays on ground while you work on line.

From Factory and Salesroom

Officers of Automatic Electric and International Sales Corporation.

The annual meeting of the board of directors of the Automatic Electric Co. was held at the offices of the company in Chicago on June 12. The report submitted by the officers of the company showed that the corporation is operating on a very full schedule for the year with its output largely sold and with the prospect for future business most bright.

Several changes were made in the executive organization of the company: Theodore Gary retired as chairman of the board, but will continue to serve as chairman of the executive committee. Mr. Gary was succeeded as chairman of the board by A. F. Adams, who retired as president of the company in favor of H. L. Gary, and H. L. Harris was elected vice-president. Other officers who were re-elected are:

H. A. Harris, vice-president and general manager; A. E. Keith, vice-president in charge of development and research; Grant Pelton, vice-president in charge of production; Walter I. Patton, secretary; and W. F. Benoist, treasurer.

Theodore Gary's many activities, including the important work which he is carrying on as chairman of the Missouri Highway Commission, make it impossible for him to give as much time as formerly to the affairs of the Automatic Electric Co., although his position as chairman of the executive committee will continue to keep him in intimate touch with its affairs.

The election of H. L. Gary to the presidency of the Automatic Electric Co. is in

line with the policy which makes Mr. Gary the active executive head of the various Gary manufacturing enterprises. Mr. Gary is also president of the Monarch Telephone Mfg. Co. and of the International Telephone Sales & Engineering Corp.

H. L. Harris' election as vice-president of the Automatic Electric Co. is also in



Theodore Gary, Chairman of Executive Committee of Automatic Electric.

accordance with company policy, Mr. Harris being vice-president and executive officer of Theodore Gary & Co., as well as vice-president of the several other corporations associated with Theodore Gary

& Co. Mr. Harris' long experience in the telephone field, some eleven years of which were spent with the Dean, Garford and Stromberg-Carlson manufacturing companies, especially fits him for his enlarged duties.

As an executive vice-president of the Gary manufacturing properties, Mr. Harris will spend a portion of his time in Chicago as well as in Kansas City, where he will still retain his official connection with the Kansas City Telephone Co.

On the same day the annual meeting of the stockholders and directors of the International Telephone Sales & Engineering Corp. was held in Chicago, at which meeting the following directors were re-elected: Theodore Gary, A. F. Adams, H. L. Gary and H. L. Harris, all of Kansas City, Mo.; F. H. Woods of Lincoln, Neb., and H. A. Harris, Chicago.

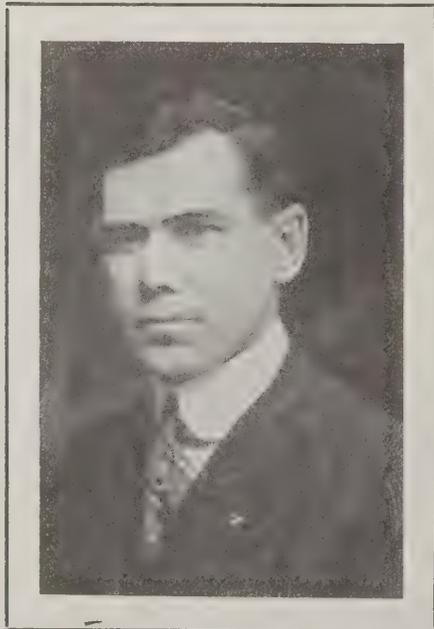
The directors elected the following officers for the ensuing year:

A. F. Adams, chairman of the board; H. L. Gary, president; H. A. Harris, vice-president; H. L. Harris, vice-president; C. A. Bennett, treasurer, and W. F. Benoist, secretary.

O. V. Dodge was appointed sales manager.

Business Is Good on Bierce Guy Wire Protectors and Augers.

The Specialty Device Co. of Cincinnati, Ohio, advises that, at the present time, it is enjoying a splendid business on Bierce guy wire protectors and standard earth augers. Both of these specialties are used extensively by telephone companies and other



H. L. Harris, Executive Vice-President of Manufacturing and Sales Organizations.



H. L. Gary, New President of Automatic and International Companies.



A. F. Adams, Chairman of Board, Automatic and International Organizations.



*Like Nigroli
Armor*

*Men had to be men
in the days when
fighting clothes often
weighed as much as
35 or 40 pounds.*

French Telephone Batteries Are Proof Against Hard Service

The skill of the old armor makers developed a fabric of steel links, soft and pliable like cloth yet capable of turning the thrust of a dagger. The force of the blow might stun the recipient but the blade could not penetrate. In the days when fighting was the principal business as well as pleasure, this armor was subjected to very severe service, but the work of the master armorers survives to this day.

French Telephone Batteries are designed and built with the peculiar demands of telephone service in view. They must deliver adequate current when in use, yet with idle loss reduced to the minimum. They must have long life. How well French has analyzed the needs of telephone service is clearly shown by the fact that thousands of telephone companies use French Telephone Batteries *exclusively*.

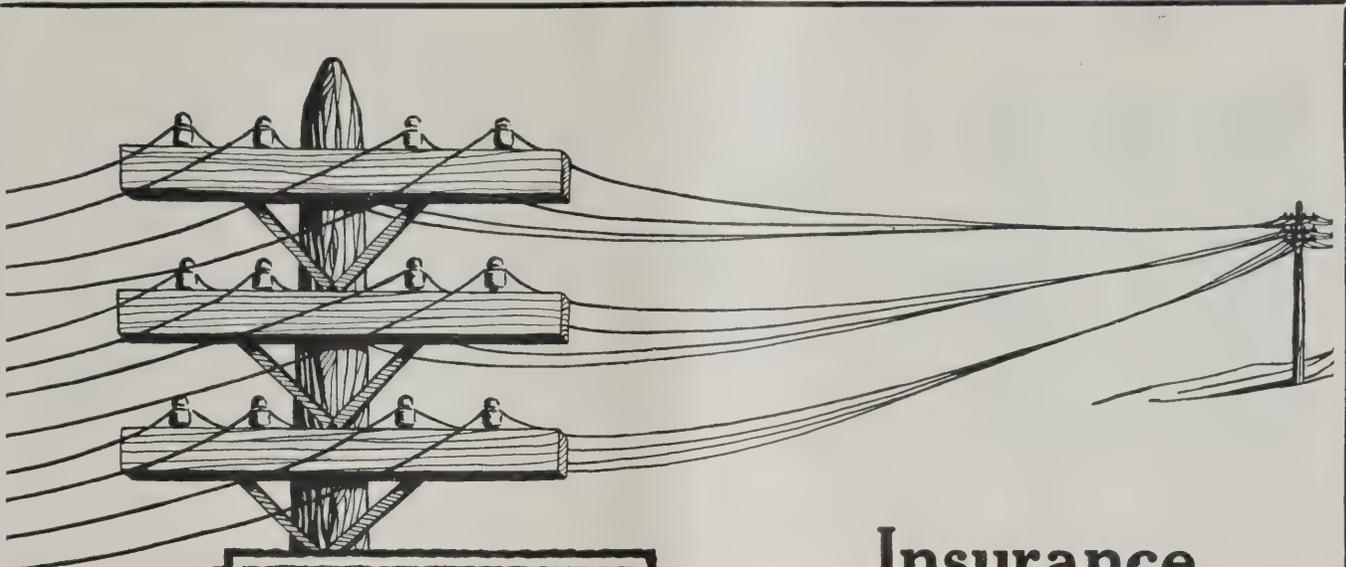
FRENCH BATTERY & CARBON COMPANY, *Madison, Wis.*

Atlanta Dallas Denver Chicago New York Minneapolis Kansas City



*For years French Telephone
Batteries have stood for the
highest development of
practical battery efficiency.*

FRENCH TELEPHONE BATTERIES



The Policy

Of Lynton T. Block & Co. is to issue the most satisfactory and comprehensive insurance to be had anywhere—

- Furnishing absolute protection at cost**
- Embodying all the standard features and more**
- Covering special classes and selected risks**
- Selling at established rates**
- Returning savings at the end of the policy period, depending upon the individual experience of the risk.**
- Giving a claims service that is not equalled elsewhere**

It is an honest policy, carried out in an honest way and gives a square deal under all conditions.

This forms the creed of every member of the organization and has built up the reputation of Lynton T. Block & Co. until it is one of the best and most favorably known in the Mississippi Valley.

Insurance at Cost



- WORKMEN'S COMPENSATION
- EMPLOYERS' LIABILITY
- PUBLIC LIABILITY
- TEAMS LIABILITY
- CONTRACTORS' LIABILITY
- ELEVATOR
- PLATE GLASS
- AUTOMOBILE

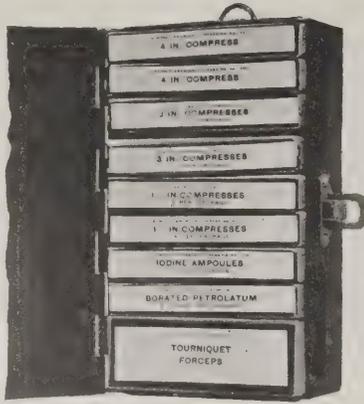


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Underwriters of
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Employers Indemnity Corporation

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ST. LOUIS, MO.



FOR THE SMALL GANG

engaged in cable splicing, drop wire installing and construction work—the gang that may be miles from hospital or surgeon when an accident happens—C. E. D. Kit No. 10 has been especially designed.

The Compact Emergency Dressings are fitted in a solid 16-Gauge Steel Case. Each dressing is a complete application for a specific injury and the No. 10 kit is supplied with sufficient dressings to treat the special hazards of this branch of telephone work.

We specialize in Industrial First Aid and our equipment is used by some of the largest industries in the world.



Send for Booklet T-6

First Aid Specialty Company, Inc.

35 Nassau Street

New York

offices, one operated by the Southwestern Bell Telephone Co., giving common battery service, and the other by the Joplin Home Telephone Co. giving magneto service. In response to public demand for the elimination of competition and for improved service standards, plans have been completed for the merging of the two systems and the replacement of both of the manual exchanges with a single Strowger automatic exchange.

The present common battery central office is located in rented quarters while the Home company's office building is company-owned. It fortunately happens that the latter building is so designed and situated that it is possible to effect such alterations and additions as may be required by the installation of the new equipment without great difficulty, thus avoiding the necessity for erecting an entirely new building.

In this way the Home company's building, with the extension now in course of construction, will house all of the automatic equipment necessary to care for the traffic of the merged system.

The automatic exchange will be of the four-digit type with the standard three-digit code for special services. The initial installation will consist of 1,700 plunger type line switches trunking to first selectors through 170 rotary secondary line switches. The connectors will be divided into 25 groups, providing 2,500 subscribers' terminals.

Each connector group will consist of seven combination toll and local connectors and one test connector. In this way both the Carthage subscribers and the toll operator will have access to all of the connectors in each group. The toll operator will have access to the connector equipment through a chain of toll selectors.

For private branch exchange service there will be installed a group of P. B. X. (rotary) connectors, three for the exclusive use of the toll operator and nine for local service only.

An intermediate distributing frame is to be provided so that any line switch may be cross-connected to any line in the office. Four-party service will be full selective on a jack-per-station basis, using two frequencies with two parties reversed on the line. Eight-party service will be semi-selective on a terminal per station basis, using two frequencies, reversed line, and one and two rings.

With the completion of the new telephone system, Carthage will have added another commercial and social advantage to the many it already possesses. Located in the Ozarks, Carthage is the center of a prosperous agricultural region as well as a rapidly growing dairy district. Carthage is also the home of the wonderful Carthage marble, a stone recognized by architects everywhere as one of the finest building materials available.

The Carthage business interests are represented by a Chamber of Commerce of more than 600 members, who, incidentally, registered their complete approval of automatic telephone service at a recent demonstration of Strowger equipment at one of their meetings.

Automatic Telephone Service on the S. S. "Conte Verde."

The automatic intercommunication telephone system on a liner is nowadays considered one of the most important features of the equipment, and an installation of the most modern type has now been fitted on the S. S. "Conte Verde" of the Lloyd Sabaude Line. This system was manufactured and installed by the Relay Automatic Telephone Co., Ltd., of Marconi House, London, a similar exchange being installed on the B. B. "Conte Rosso" last year with eminently satisfactory results.

The "Conte Verde" will carry an automatic exchange with 26 connections, the exchange, however, being capable of extension of the system up to 35 lines at any time without disturbing the existing service. Automatic telephones are fitted in the navigating offices, cabins, engineers' quarters, staterooms, smoke rooms, saloons, etc.

From a shipbuilding point of view, the simplicity of running only twin wires in lead-covered cables is a great advance on the multi-cables required in the old-fashioned inter-communication systems.

Condenser Making an Art with Automatic Electric Co.

Probably less thought is given by the average telephone man to the ordinary telephone condenser than any other piece of telephone equipment—yet to make a condenser that will stand up under all conditions of service it must be made of the best materials and with the utmost care. Realizing this, the Automatic Electric Co.'s engineers have made a special study of condenser construction, and their product is said to be one of the most scientifically constructed available.

The rice paper, tinfoil and thin sheet copper, of which their condensers are made, must be dry, clean and without a flaw or spot. Special machinery is required to wind the rice paper and tinfoil properly to obtain accurately the necessary number of turns. The thin copper contacts, that are later soldered to the terminals, are carefully cleaned with an acid before assembly.

At this stage it is placed in a "condenser baking oven," automatically kept at a temperature of 270 deg. Fahrenheit, for a period of 36 hours. The next operation is to place it in a "paraffine vacuum tank" where it is boiled in paraffine for 15 minutes. After being removed from the boiling paraffine and cooled, it becomes an extremely hard mass and is then placed in a tin container and its copper contacts are

Bind Any Load Securely and Safely



Stacy Load Binders eliminate all risk and danger of binding poles, lumber, etc., as with the old fashioned, dangerous boom poles. You simply pass chain around the load—attach the two hooks of the Stacy Binder in the links of the chain—pull down the lever and your load is *bound* and *bound* to stay.

Telephone companies find

Stacy Swivel Load Binders

big time and labor savers—also a big factor in preventing serious and expensive accidents caused by loads slipping off.

Stacy Load Binders are made in two sizes—Regular and Jumbo. Regular size sells for \$2.50 each—\$5.00 a pair. Jumbo size sells for \$3.75 each—\$7.50 a pair. For sale by leading hardware dealers and hardware jobbers. If your dealer can't supply, order direct from

EUGENE C. STACY, Manufacturer
TIFFIN, OHIO

Mr. Eugene C. Stacy,
Tiffin, Ohio.

Dear Sir:

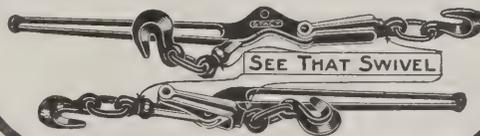
I will state the question of using the Load Binder, as described in your circular, was taken up at our Accident Prevention Committee Meeting and everybody agreed that they were O. K., and instructions have been issued to order as many as necessary.

The Chairman of the General Accident Prevention Committee has been trying them out, and my last report was that they were entirely satisfactory and that they would be made standard and would replace all boom poles.

If you have not received any orders direct, you will probably receive same from the Western Electric Company, as all our material is ordered through them.

Yours very truly,

(Name on Request)
Dist. Superintendent of Plant.



"INDIANA" TELEPHONE AND TELEGRAPH WIRE



PROVEN BEST BY TEST

Time and the aid of America's foremost engineers, have enabled us to develop and manufacture the highest grade wire known to the trade. It is greatest in conductivity and lasting qualities, due to the superior quality of material from which it is made, as well as its *Extra Double Galvanizing*, which insures longest life.



STEEL STRAND

Single and Double Galvanized, Standard, Siemens-Martin, High Strength and Extra High Strength Grades.

HANDLED BY MOST JOBBERS

MANUFACTURED BY

INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

No Tools Necessary



If you want quick work and a cable ring that is strong, safe, durable, economical, flexible, and serviceable, specify

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Expert Administrative Counsel for Utilities
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ENGINEERS
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Plans, Estimates and Reports,
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soldered to the terminal block. A boiling mixture of tar and oil is then poured in to fill the small space between the terminal block and lid.

The condenser is now absolutely moistureproof and airtight. Other operations, such as washing in benzine, wire brushing, painting, etc., are completed before the final severe breakdown tests of 500 volts direct current and 350 volts alternating current are applied.

Paragraphs.

JAMES B. NICHOLSON, of Sydney, Australia, chairman and managing director of Automatic Telephones, Australasia, Ltd., is in the United States on agency matters. Mr. Nicholson is spending considerable time at Kansas City, Mo., and Chicago in consultation with the officers of the Automatic Electric Co. with regard to the development of automatic telephony in his part of the world. He is accompanied by his wife, two daughters and a son.

A. A. BURCH, of Sydney, Australia, one of the representatives of the Automatic Electric Co. in Australia, is spending several weeks in Chicago. He reports that the automatic telephone is becoming more and more popular in Australia and New Zealand, where it is in successful operation.

LYMAN Q. TRUMBULL, general manager of the Monarch Telephone Mfg. Co., Chicago, and manager of sales for the manual division of the Automatic Electric Co., is making a six-weeks' trip through the Pacific Coast territory. He is accompanied by Mrs. Trumbull.

Prices in the Metal Markets.

New York, June 18.—Copper—Quiet; electrolytic spot and futures, 15 $\frac{1}{8}$ @15 $\frac{1}{4}$ c Tin—Easy; spot and nearby, \$40.62@40.75; futures, \$40.25@40.37.



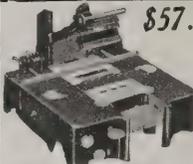
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Always shows you where you stand. We have solved the bookkeeping problem of a large number of companies.
Write us about our monthly audit.
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**KELLOGG TELEPHONES
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NORTHWESTERN ELECTRIC
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The "STEWART" Test Cabinet
Tells you if your line is short, crosses, or grounded and how many miles it is from you. So simple the operator can use it as easily as the men. Reads direct.
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\$57.50 Addressograph
"Typewrites" names, addresses and rates on bills. 1900-1500 an hour.
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Exclusive Telephone Accountants

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TELEPHONES
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**Southern Electric
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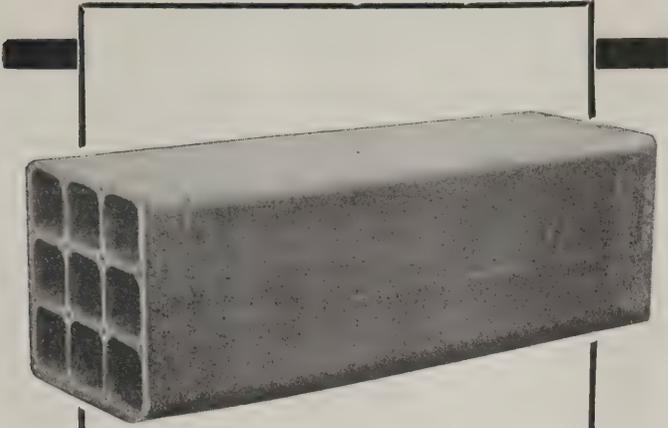


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Specialists in Appraisals, Rate Surveys, Financial Investigations, Organization, and Operation of Telephone Companies.
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Vitrified, Glazed, Clay Conduit

Guaranteed to possess all the characteristics for *satisfactory* and *permanent* service.

We carry large stocks of round singles, square singles, two, three, four, six and nine duct, in standard and short lengths, in splits, mitres, and bends.

Send today for complete particulars and prices.

THE CLAY PRODUCTS COMPANY

BRAZIL

INDIANA

The Right Tool for the Right Job

Every OSHKOSH Construction Tool is exactly designed and made to do a particular job, and do it well. Long experience has taught certain features of design which speed up the job. The efficiency of OSHKOSH Construction Tools is likened only to their quality, which is second to none.

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HAZARD

Rubber Insulated
TELEPHONE WIRE

Uniform in construction Hazard Insulated Wires and Cables give uniform service. Made of the best of materials and by highly skilled workmen. Experience, knowledge and honesty of purpose insure long life and ultimate economy.

1848—1922

HAZARD MANUFACTURING CO.

New York Pittsburgh Chicago
Denver Birmingham
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Makers of Quality Wire Rope since 1848

To the Telephone Trade:

We are in excellent shape to give prompt attention to your orders for any of the following specialties:

- “Bierce” Guy Anchors
- “Bierce” Guy Wire Protectors
- “Standard” Earth Augers

Many of the leading independent telephone companies have been using these articles for years and are thoroughly familiar with their merits. If you are not yet on our list, write for catalogs and prices.

The Specialty Device Co.
Cincinnati, Ohio

Manufacturers of patented specialties for the telephone trade.

Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and Incorporations.

DINUBA, CALIF.—The General Grant Park Telephone Co. has been organized with a capital stock of \$50,000, divided into 1,000 shares of \$50 par value each—\$250 of which is subscribed.

IOLA, KANS.—The Neosho Valley Telephone Co. has been organized with a capital of \$500.

RUSH CENTER, KANS.—The Rush Center Telephone Co. has been organized with \$5,000 capital stock.

RUSH, KY.—H. J. Ross, C. Bolt and W. Rife have incorporated the Bottsfork Telephone Co. with \$2,000 capital stock.

ORANGEVILLE, OHIO.—C. A. Hobart, R. F. Pruden, E. C. Boyd, J. H. Case and E. U. Hydr have organized the Jefferson & Warren Telephone Co. The capital stock mentioned is \$10,000.

PORTLAND, TENN.—An application for a charter has been filed by the Buntin Farm Mutual Telephone Lines, in which W. E. Freedle, M. Caudill, N. E. Armstrong, D. Potts and R. Harris are named as incorporators.

BUCKHANNON, W. VA.—Articles of incorporation have been filed for the Upshur Telephone Co. The incorporators are E. M. Anderson, M. Anderson, F. Kesling, W. O. Hinkle and A. L. Hinkle, and the capital is \$5,000.

Financial.

GROVER HILL, OHIO.—The Country Home Telephone Co. has declared its first dividend. The company has been in operation for years as a mutual concern.

Construction.

LEXINGTON, KY.—The Fayette Home Telephone Co. has announced its plan to place another section of its cables underground. The cost will be about \$45,000.

WASECA, MINN.—Improvements at a cost of between \$15,000 and \$20,000 are to be started soon by the Waseca Telephone Co. The plan includes installing about five miles of underground cable.

SANTA FE, N. MEX.—The Mountain States Telephone & Telegraph Co. has begun work on a new \$50,000 toll line from Santa Fe to Espanola. Telephone service to Nambe and Pojuaque, hitherto without service, will be added. It is the

plan to extend the Espanola line finally to Taos.

TARBORO, N. C.—An improvement which contemplates the expenditure of about \$500,000 has been started by the Carolina Telephone & Telegraph Co. It is planned to run new copper circuits to various towns in the district, as well as to improve the service at Fayetteville. An addition will be made to the exchange building in Fayetteville, a new building will be built at Dunn, and work has been started on a new exchange building at Washington.

ADA, OHIO.—A rehabilitation program, to be completed within six months, has been announced by D. H. Hering, general manager of the Ada Telephone Co.

NEWARK, OHIO.—Improvements to the outside plant of the Newark Telephone Co. are to be started within the near future.

HARRISBURG, PA.—The Cumberland Valley Telephone Co. will construct additional lines from Harrisburg through Penbrook and Progress to Linglestown, from Lemoyne through Camp Hill, to Chambersburg and to Enola, it has been announced. The cost is estimated at about \$200,000.

EMERY, S. D.—The Tri-County Mutual Telephone Co. is making many improvements to its system. Over six miles of new poles and wires have been installed to replace obsolete rural lines, and other improvements are being made right along.

FAITH, S. D.—A. N. Van Camp, of Highmore, who has purchased the exchange at Faith, has had a force of men busy for some time repairing, readjusting and overhauling the exchange.

BRISTOL, TENN.—The Intermountain Telephone Co. will start work soon on its new building, which is part of a large construction program planned for this year. New equipment will be installed, including a new common battery system.

COLUMBIA, TENN.—A new switchboard has been installed by the Citizens Telephone Co.

Elections.

CODELL, KANS.—At the recent annual meeting the following officers were elected for the Codell Telephone Co.: President, G. Zeigler; vice-president, R. W. Gilpin; secretary, E. N. Sidwell; treasurer, P. Matson. D. Brummett was elected a director.

HARRISBURG, PA.—At their recent annual meeting the stockholders of the Cumberland Valley Telephone Co. elected as directors: S. W. Foulkes, E. Clay Krebs, F. Zimmerman, W. E. Weller, A. E. Pendergast, J. C. Motter, C. L. Long, W. J. Lesure and W. F. Rauch. Officers for the coming year are: President, W. J. Lesure; vice-president, J. C. Motter; secretary-treasurer, O. K. Kines. S. W. Foulkes is chairman of the board, and C. L. Baer, general manager of the company.

Miscellaneous.

BERRYVILLE, ARK.—R. E. Norris has bought the controlling interest in the Berryville Telephone Co. and will assume management.

BANCROFT, MICH.—The Union Telephone Co., of Owosso, has purchased the property of the Shiawassee Mutual Telephone Co. in Bancroft.

ST. JAMES, MO.—C. A. McComb has sold the St. James Telephone Co. to W. E. McComb, at a stated price of \$12,000.

TIFFIN, OHIO.—By virtue of an ordinance recently approved, the Tiffin Consolidated Telephone Co. will commence work soon on its underground cable system.

HELP WANTED

WANTED—Manager for an exchange of 4,000 stations. Advise experience in telephone business and submit references with reply. Address 5327, care of TELEPHONY.

WANTED—Experienced automatic maintenance switchman familiar with two wire equipment. Salary \$165 month. Apply Santamonica Bay Home Telephone Co., Ocean Park, Calif.

HELP WANTED—Switchboard wiremen. We are in need of several first class telephone switchboard wiremen and cable layout men for factory work. Address Automatic Electric Co., 1001 W. Van Buren St., Chicago, Ill.

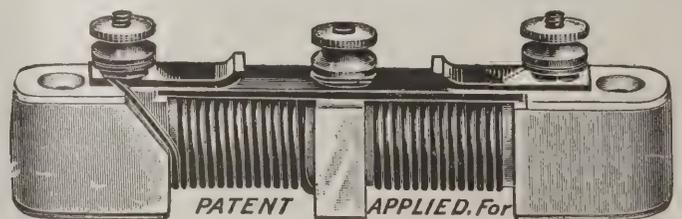
WANTED—First-class cable man. Must be able to locate trouble. Good wages and steady employment. H & C Telephone Co., Clearfield, Pa.

ARGUS PROTECTION MEETS EVERY REQUIREMENT

The dependability of ARGUS Arresters is almost proverbial among telephone men. When you install these economical but sure protectors, you enjoy real immunity from lightning and other electric troubles.



ARGUS STANDARD Type A



TYPE "C" COMBINED ARGUS LIGHTNING ARRESTER AND HIGH TENSION PROTECTOR

offers you adequate protection against high tension currents as well as the other proven features of Argus Arresters. Simple, foolproof, adaptable.

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160 DUANE STREET, NEW YORK CITY

Telephony

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
608 S. Dearborn St. Chicago

H. D. FARGO, PRESIDENT AND TREASURER.
S. R. EDWARDS, EDITOR AND SECRETARY.

J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER.
H. D. FARGO, JR., WESTERN ADVERTISING MANAGER.

Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1879.

Volume 84
Number 26

CHICAGO, SATURDAY, JUNE 30, 1923

Subscription—10 Cents a Copy
\$3 a Year U. S., Cuba and Mexico
\$4 Canada, \$5 Other Countries

Barring a few black spots on the map, where political

mischief-makers are still busy, the public utility business is steadily approaching more excellent condition all over the United States. In fact, the public service industry, as a whole, undoubtedly is fundamentally in better shape than ever before.

The relations between the public and the companies which furnish telephone, gas, electric and street car service are improving nearly everywhere, and the situation should yield satisfaction to the managers of utility enterprises who sense this important change in popular sentiment.

The belief is perceptibly increasing among the rank and file of the people that public service companies deserve more credit and consideration than they were accorded not very many years ago.

* * * *

Business men particularly, and, in fact, the substantial element of every community, have come to realize how indispensable the various utilities are to modern life, and they are insisting more and more on the necessity of giving them a fair deal.

The president of the Merchants' Association of New York, Lewis E. Pierson, in an address June 7 before the National Electric Light Association, described the situation very effectively. He asked what would happen if the electrical utilities were to suffer a complete break-down, and he answered his own query by saying:

* * * *

"With the telephone, the telegraph and the wireless gone, the world would step back half a century.

UTILITY SITUATION IS IMPROVING

The railway systems of the country would be thrown into hopeless confusion and food and freight shipments would immediately cease. The cities of the world would spring apart and the business man of Chicago would be to all practical intents farther from New York than China is at present.

Deprived of the telephone, local business would slow down to the pace of the leaden-footed messenger, and the modern office would revert to correspondence and the days of the quill pen.

This would hardly matter because only a small percentage of the millions that gather from distant homes into the business section of a city like New York, would be able to get to their offices in time to do more than turn around and walk home. For under this theoretical situation all surface cars, elevated and subway systems and suburban trains, operated by electricity, would be motionless.

As night drew on there would no doubt be a modicum of lighting from the houses that are still supplied with gas jets, but the streets would be even darker than the picture I am trying to paint.

In brief, if the electrical utilities were to cease functioning for a single day, modern life, as we know it, would come to a sudden halt."

* * * *

Statements like the foregoing make valuable publicity material for utility companies, and telephone men should broadcast them in their local press.

The speaker proceeded to stress the fact that it is in the public interest to see that service companies are provided with rates that will insure good service, and also protected from the attacks of politicians and theorists who for selfish reasons try to interfere with their operations.

An excellent point also made in the address was that the public takes utility service for granted, and seldom stops to think what lies back of the telephone, the electric light and the other utilities which are always "ready to serve."

The need of such companies educating the people as to their business problems and difficulties should continuously be borne in mind. It will influence the service users—which means the whole people—to appreciate the service rendered, and thereby enlist them as friends instead of permitting them to remain indifferent bystanders when political attacks are projected.

* * * *

The organization and effective work of committees on public utility information in many states have undoubtedly contributed a great deal toward improving the standing of service companies. In fact, they have accomplished so much genuine good that it is rather surprising to remember that it is only four or five years ago that the first committee was formed.

Telephone men have been and are active in these useful organizations. They should continue to cooperate in this work, and thus be able to help the telephone industry materially.

On the Illinois committee—which was the first to be organized—for instance, are the president and secretary of the Illinois Telephone Association, the editor of TELEPHONY, a representative of a large Independent group, and a representative of the Bell. The secretary of the Indiana Telephone Association and the president of the Indiana Bell are members of the Indiana committee, while on the list of the Ohio committee are two prominent Independent

telephone men and two Bell representatives.

In other states having committees on public utility information—there are 22 such committees—telephone men are participating in the work. In Pennsylvania and Texas the presidents of the Independent telephone associations are active members of such organizations, while in Kansas and Kentucky leading Independent operators are members of the committees.

Generally speaking, the purpose of these

committees is to inform the public on the fundamentals, and particularly the economics, of the public utility industry, to the end that a better understanding of the business may tend to facilitate the development of utility service for the people.

The telephone men associated with the committees can render operating companies a valuable service along this line, and should be encouraged to continue their coöperation in the work.

Keeping Up the Telephone Plant

Telephone Growth of the Future Will Be Marvelous—Several Matters to Be Considered in Planning for It—Paper Read at the Annual Convention of the Pennsylvania State Telephone & Traffic Association at Harrisburg

By Walter Spofford

Telephone Engineer, Public Service Commission of Pennsylvania

Less than 50 years ago the telephone plant of the world had just two telephones; today there are over 21 million telephones in service and 65 per cent of these, or more than 12 telephones per 100 of population, are in the United States. The creative genius, vision, enterprise and hard work that have linked together these United States alone constitute a remarkable series of achievements. When some few years ago transcontinental service became a commercial reality, it was thought by some that the advances of the telephone art had reached their supreme height; yet today there is commercial service under the sea to Cuba and over the sea to Catalina Island.

The radio telephone, especially in combination with wire lines, possesses great future possibilities. Radio connections have been set up through a radio station to a ship at sea and then by wires to a point as distant as San Francisco. The first public demonstration of the combined use of ship-to-shore radio, the regular telephone system and the telephone loud speaker was given in this room on April 6, 1922, when no less an authority than General John J. Carty declared that in due course of time a way will be found to construct a telephone system connecting the entire world.

What the Future Will Demand.

The future, however, is not by any means limited to advances in the art itself. The prospect for attaching additional stations, is equally dazzling, and while it has taken the telephone systems 45 years to acquire over 1,000,000 stations in Pennsylvania, it may be confidently anticipated that within the next decade there will be twice this number.

It is evident that future demands will necessitate not only a greatly enlarged telephone plant to meet the needs of each locality, but a plant that is capable of ren-

dering a more uniform grade of speech transmission to meet the ever-increasing demand for a more universal service. The telephone plant of the future must, therefore, conform not only to a standard for design, construction and installation, but

SERVICE FIRST.

I do not believe any merchant achieved success whose first thought was, "By doing this I shall become rich." Coming before the money-making idea, was the thought of rendering some benefit—of supplying better goods, or goods at a lower price, or of something that would be an improvement upon things then in use.

There is no implication here that business is philanthropy; a reward was anticipated by the service, or it probably would not have been conceived.—Joseph French Johnson.

must also be maintained in a more uniform condition.

Service—the product of a telephone utility—comprises the furnishing of the necessary plant and the operation of the same. Certain of the principal elements of service such as the adequacy of the service development with respect to the classes of service available to each locality, and the adequacy and dependability of speech transmission, largely determine the type and capacity of the plant to be provided.

The principal causes for the failure of a plant to function are usually to be found in the neglect of the little things.

The adequacy of plant facilities is closely related to the adequacy of classes of service, because plant must be available for each kind of service and in advance of actual need; otherwise great delays occur in establishing service for new connections.

Before any new or additional plant facilities, such as central offices, subways, cables or trunk lines, are provided, a comprehensive survey of the territory to be served should be made in order to obtain the prospects for additional lines and stations which determine the nature and amount of plant required within a reasonable future. And because a large proportion of the plant must be provided in advance of actual need, the greatest amount of foresight is required in order to economically construct and locate central offices and main conduits and cables involving large initial costs, and further, because such costs bear an important relation to the cost of the service.

While recently, due to congested plant facilities caused by the demands of war, it has been possible to restrict the sale of service in certain localities to particular classes of service, and in some localities to no service at all, it is quite probable that in the future, even in rural sections, all classes of service required by reasonable needs will be sold without restriction. Likewise delays in completing new contracts, removals and changes, regardless of cause, will be materially shortened.

Anticipate Needs of New Buildings.

Surely the time is approaching when it should be possible to anticipate the telephone needs of all new buildings and to provide them in advance of their need. At the present stage of development it has not been practicable for economic reasons to provide distributing facilities in advance for every potential subscriber, but when application is made for service outside of the area provided with facilities it is the duty of the utility to make a thorough survey of the locality involved.

An investigation should be made to determine the number who will contract for service at once, the probable additional number who will contract for service with-

in the near future, the estimated construction cost of the extension and the estimated revenue to be derived therefrom. With this information the utility can determine whether or not in its judgment the expenditure is warranted, since a well-managed utility knows how much out of each dollar of revenue received is required to pay operating costs and taxes.

This amount, usually termed the operating ratio, may be used as one of the tests in determining whether or not the extension should be made. However, this is not the only test to be applied, because in many instances the extension should be made regardless of whether or not it is directly supported by the return, so that no fixed rule relating to extensions is advisable and this conclusion is undoubtedly supported by the trend of court and commission decisions.

The current, which reproduces the human voice in a distant telephone, varies in strength corresponding to the original speech sounds spoken into the transmitter. The quality of transmission depends upon the degree of loudness of the reproduced speech, upon the accuracy of its reproduction and upon the degree of uniformity with respect to both.

The transmission efficiency of a telephone circuit, including subscribers' telephone sets at the ends, is determined by comparing it to a standard circuit, and the results obtained depend upon the judgment of the listener who may unconsciously assign greater or lesser weight to loudness than to intelligibility. The problem, therefore, is to obtain loudness without sacrifice of naturalness.

Much Depends on Plant Conditions.

Much depends upon plant conditions because the physical properties of the circuits or parts thereof which attenuate the transmission currents are seriously affected by certain plant conditions. All contracts which are a part of the switching apparatus are designed to afford ample conductivity and should be kept clean.

At the subscriber's station, all binding post connections should be made tight because any resistance in the battery supply to the transmitter will reduce the transmission efficiency of the telephone set. Likewise, service wires should be properly connected to binding posts in cable terminals and the terminals periodically inspected to eliminate loose connections which for mechanical reasons occur.

Wire joints are made on the basis that the resistance of each joint should be negligible and are subject to only slight deterioration if well made, but poorly-made joints seriously affect transmission. The practice of splicing line wires by hand, so frequently found in rural sections and elsewhere, cannot be too severely condemned. Hand connections are not only lacking in tensile strength, causing breaks in the line which might not otherwise occur, but also cause intermittent openings

of the circuit to the serious impairment of transmission.

The insulation of the outside lines, which are subject to weather conditions, also seriously affects transmission. Because of low insulation resistance, due frequently to broken or faulty insulators, current is allowed to escape. Inspections usually disclose many defective and broken insulators.

Batteries Must Not Be Neglected.

The dry cell batteries located at the subscribers' stations in local battery systems decrease continuously in ability to supply electric power for speech transmission as a result of both age and use, and good practice dictates that they be inspected at least annually in order that they may be replaced with new ones before the falling off in strength of current reaches a value below which good transmission is impossible.

Actual tests made disclose that batteries used five times a day for two-minute periods each will last 36 weeks. Neglect of the local batteries is responsible for much of the dissatisfaction expressed by rural subscribers and very largely accounts for their failure to hear the called party or the failure of the called party to hear the calling party. It will be appreciated that when one set of batteries is down, trouble is made for the other fellow and one fellow at least must raise his voice in order to be heard.

Inductive Interference.

Every telephone line in proximity to any other circuit of the alternating current type is subject to disturbances which are usually manifested as humming noises which impair the intelligibility of conversation. This phenomenon, termed "induction," is the transference of energy through space from one circuit to another circuit without any contact between the wires of the two circuits.

The transmission of power electrically by wire circuits requires a "current" of electricity and as all circuits offer more or less resistance to an electric current there must also be electric pressure or "voltage" in the circuit in order to make the electricity flow.

The voltage is accompanied by an electric field of force in the surrounding space and at the same time the corresponding electric current is accompanied by a magnetic field of force occupying the same surrounding space; their intensities are directly proportional to the voltage and to the current respectively. Thus any changes in the magnitude or direction of the voltage and current, such as in alternating currents, are accompanied by corresponding changes in their fields.

The intensity of these fields of force, in general, diminished very rapidly with increasing distances from the circuit. Conversely, any other circuit within these fields of force will have voltages and cur-

rents set up or "induced" on it when the voltage or current changes in the first circuit.

In telephone circuits the variation in current is extremely complex, the currents varying in frequency from about 100 to 4,000 cycles per second. In electric circuits of the type most commonly used in Pennsylvania the frequency is 60 cycles per second. This is the fundamental frequency, but there are also present in power circuits other voltages and currents, usually of relatively small magnitude of various higher frequencies up to several hundred frequencies per second.

These higher frequencies, or harmonics of the fundamental frequency, are the chief cause of interference to telephone circuits, since they cover a considerable portion of the range of frequencies of human speech, at which the telephone apparatus is most sensitive. Increasing the frequency, even when unaccompanied by increases in magnitude of the current, causes a rapid increase in the detrimental effect up to about 2,000 periods per second.

Designing Plant and Buildings.

The dependability of speech transmission is directly dependent upon the plant design, the plant construction and installation, and the condition of the plant. Plant should be designed to provide adequate mechanical strength and durability, and protected insofar as possible from mechanical, fire or electrical hazards.

Although central office buildings are frequently erected in sections, they should nevertheless be designed to accommodate the ultimate equipment to be installed therein. They should be as nearly fire-proof as it is practicable to make them and located, if possible, where the surrounding structures afford a minimum of fire hazard.

Central office equipment should be designed to economically meet the ultimate requirements of the area served and installed so that additions thereto may be added from time to time without interfering with the service. The service reactions caused by installing new or additional equipment is a problem which will require considerable attention in the future.

Poles and Wires.

The design of the outside plant is of prime importance because it is not only necessary that approved construction specifications be employed but that the plant be designed to meet the ultimate requirements for its expected life. For example, there have probably been more mistakes made in the design of pole lines than in any other class of plant, yet poles have a pretty well recognized useful life, depending of course upon the kind, the soil in which they are placed, the thickness especially at the butt, and upon the butt treatment.

It would appear that the height, thickness and butt treatment of the poles se-

lected would depend almost entirely upon the number of wires they may reasonably be expected to support during their normal life. However, the element of cost is also a determining factor in the design of pole lines because it may be more economical to erect an aerial cable instead of open wires; and in this event, although wires may be placed at the time of the initial construction, the line should be designed to support a cable.

The number of wires which can be economically placed before a cable should be erected, of course, varies with price levels. But as aerial cables are more dependable than open wires in times of sleet or other severe storms, they afford a service less subject to interruptions, and where it is possible to prove them in, aerial cables should be used in preference to open-wire lines.

Study the Matter from All Angles.

Careful study is thus necessary in planning pole lines in order that the greatest amount of economy, efficiency and continuity of service may be obtained. Good practice dictates that before providing outside plant facilities, careful studies should be made not only to show the initial construction costs of the different kinds of plant that could be used to serve the territory, but that a comparison should also be made of the fixed charges, such as interest on the investment, annual allowance for depreciation and the maintenance cost of the different kinds of plant considered.

The overhead plant should be located where possible to avoid mechanical injury such as occurs when vehicles accidentally or otherwise come into contact with poles. Poles in rural districts are less liable to injury when located well back from the traveled highway and in built-up districts when located opposite to building lines at street intersections rather than at the point of intersections of the respective curbs; that is, when the curbs intersect at 90 degrees.

It is also good practice where possible to locate aerial cables at such horizontal levels as will not interfere with the normal use of the buildings in front of which they may happen to be located, and likewise so as not to interfere with the placing of fire apparatus in the event of a conflagration.

Telephones which are served by outside lines that can in any manner come into contact with electric light or power lines, or which are exposed and thus subject to lightning discharges, are protected by a device called a protector. This includes all telephones served by drop wires from aerial cable terminals, open-wire lines and underground distributing poles located either upon public highways or upon private property and all ring wiring loops crossing public highways, alleys or light and power circuits carrying more than 250 volts.

It is the practice in some localities to omit the use of a protector at the subscriber's station when the drop loop is from aerial cable terminals located in public alleys more or less free from interference with electric light or power circuits and, in lieu thereof, to place protection at the cable terminal.

Although experience may prove that few, if any, persons or property are injured by reason of lightning discharges or extraneous currents entering the drop loop, such practice, however, is not as secure as the more approved method because the user of the telephone is not afforded all possible protection.

N. E. C. Rule on Protectors.

The regulations of the National Board of Underwriters, National Electric Code, provide that signaling systems, when hazardous because of liability to become crossed with electric light, heat or power circuits, "must be provided with an approved protective device located as near as possible to the entrance of wires to buildings. The protector must not be placed in the immediate vicinity of easily ignited stuff or where exposed to inflammable gases or dust of flying combustible materials."

In view of such requirements it would appear that if a telephone company provided protection at the subscriber's premises it had done all that it could be reasonably expected to do to protect the subscriber, the subscriber's property, and the telephone company's property from lightning or other electrical hazards which may be introduced by the presence of the telephone wires.

And although such a protective device is not designed to function positively against the effect of a direct flash of lightning, or against high voltage circuits which may possibly come into contact with the telephone lines, it does provide a reasonable amount of insurance to the telephone company; and, moreover, telephone lines are rarely struck by a direct flash of lightning and there are other means of guarding against contacts with high pressure electric circuits.

A protector comprises two fuses mounted usually in insulating tubes and two small carbon-block air gaps, covered with a metal cap and separated by protector micas, by means of which high pressure electric currents can pass through the fuses and air gaps to the earth.

The purpose of the air gaps is to provide a path to ground for any potentials in excess of 450 volts that may be impressed upon the telephone line. The foreign current will then flow through the carbon blocks and across the gap. This current tends to heat up both the telephone wires and the carbon blocks. To reduce to a minimum the possibility of any dangerous overheating of the telephone equipment, together with its consequent hazard to the subscriber's property,

the fuses were introduced between the outside lines and the carbon blocks. The operation of the fuse opens the circuit and breaks the current flow.

As a further means of reducing the overheating of the carbon blocks, the block on the ground side contains in its face a cup-shaped depression that is filled with an alloy which melts at a comparatively low temperature. The heating up of the carbon melts the fusible alloy permitting it to run down between the two blocks, bridge the gap and so put out the arc. This operation of the alloy also reduces the resistance of the path to ground and tends to hasten the operation of the fuses by increasing the current.

These protective devices, however, have a very bad habit of collecting dust and, when extraneous currents enter the telephone loop and are carried to ground, the dust which has collected on the carbon blocks frequently creates a path to ground with the result that the telephone is out of service until such time as the carbon blocks are cleaned.

Porcelain Blocks Help.

To overcome this difficulty porcelain blocks with a small carbon block mounted therein have been designed and are used in combination with a carbon block; that is, one of each type is used, the carbon block being on the ground wire side. These porcelain blocks have not only overcome this difficulty but have also eliminated the use of protector micas because the carbon blocks are inserted in such manner as to provide the necessary air gap without the use of a separator.

The use of porcelain blocks has not only resulted in a considerable saving in maintenance costs but has also reduced the number of interruptions to service caused by lightning discharges. The porcelain block has also eliminated the use of the fusible alloy in the carbon block. In its place the carbon insert of the porcelain block is cemented to the porcelain by a material that melts at a low temperature.

Any hazardous overheating of the block melts this material and permits the protector spring, pressing against the back of the carbon insert, to drive the insert against the face the carbon block on the ground wire side of the air gap. The result is the elimination of the arc between the blocks and the solid grounding of the telephone line.

One telephone company adopted the practice of mounting protectors of approved design on porches where they were more or less exposed to dampness and in place of the usual tubular fuse substituted therefor a piece of soft composition wire. This wire not only fused too readily, causing unnecessary openings in the circuit by currents which ordinarily would have been carried to ground, but by reason of too rapid corrosion at the point of contact with the fuse mountings failed mechanically also; that is, the wire broke off at the bind-

ing post under the slightest pressure. Thus a small initial saving was lost on account of increased maintenance costs and the continuity of the service also impaired.

The central office equipment to which the outside telephone plant is connected is more sensitive than the subscriber's station equipment insofar as extraneous currents are concerned. These currents may be impressed upon the equipment either directly, if the aerial plant is carried into the central office, or through the underground plant when such plant is utilized between the central office and the aerial plant.

Central Office Protection.

Accordingly central office protection should consist not only of fuses and carbon block air gaps similar to those used at the subscriber's station but an additional protective device known as a heat coil for each entering wire. The heat coil operates on a current of approximately 0.5 ampere, which is distinctly less than the current required to operate a fuse, and by grounding the line protects the central office equipment from small currents which would not be taken care of by the fuses or carbon block air gaps but which would be none the less a hazard.

The fuses used for central office protection should be placed at the office when the aerial plant is carried directly into the office, but for reasons of economy may be placed between the aerial and the underground plant when the latter is used between the central office and the aerial plant.

Open-wire lines in general are subject to more electrical hazards than any other form of construction, the chief hazard, of course, being lightning. While electric currents seldom damage open-wire lines, the wires are excellent conductors and carry the currents to cable terminals and, in turn, to the aerial and underground cables with the resultant possibility of damage to either or both.

Up to the present time it has been found impracticable to provide protection at the cable terminal which will materially reduce the damage to the telephone cable that may result from a cross between open telephone wires and electric light and power circuits. The practice of today, therefore, is to reduce the possibility of such crosses to a minimum by the type of construction employed in both the telephone plant and the electric light or power plant.

A second source of extraneous current which is a hazard to the cable plant is the current carried over the open wires, due to lightning discharges in their immediate vicinity.

As a protection against this sort of hazard all telephone loops of one-half mile or more in length should be connected to cable terminals through grounding devices. According to the most approved practice such devices are not a part of the cable terminal but are separate and mounted ad-

acent thereto and are similar to those used at the subscriber's telephone.

A plant may be designed with great skill, but unless it is constructed or installed according to the requirements of approved specifications, it is not always dependable. The experience of one company some winters ago will suffice to illustrate the value of constructing in accordance with approved specifications.

In this instance, repairmen were detailed to connect through certain lines which were down as a result of a severe storm. When the repairmen arrived at the job, they found the pole line lying across the road with scarcely a broken pole; in other words, the line had simply fallen over for about a mile or so. Investigation disclosed that because of a strata of soft rock located about three feet below the surface, these poles had been set to a depth of three feet only.

The plant, regardless of design or construction, is more or less subject to damage and is always subject to deterioration, due to the elements and to wear and tear of operation. The operation of the apparatus wears the moving parts and eventually compels replacements—notably in the case of switchboard cords and telephone cords—and damage may be caused by mechanical or electrical injury, fire or the elements and result in broken cross arms, attachments or poles. While they cannot be entirely eliminated, they may be reduced in amount to a degree dependent upon economic considerations.

Maintaining Plant Reasonably Dependable.

To maintain the plant so as to provide reasonable dependability requires efficient maintenance, and this involves preventive maintenance work as well as prompt and adequate repairs. External hazards and encroachments, such as dangerous overhanging tree limbs, underbrush and inflammable materials or structures, should be eliminated or avoided wherever possible.

Careful and periodic inspection and testing of parts of the plant which are liable to failure should be made and efficient repairs of defective parts, or replacements of the whole, made before actual failure occurs to cause interruptions to service.

At some localities where telephone lines and stations are owned and maintained by small mutual companies or clubs, which depend upon operating companies for their switching, the condition of the physical property is so wretched that a serious economic loss must result unless some measures are taken to rehabilitate the plant.

Such conditions are frequently the cause of serious complaints. While it is true that their members are responsible for the plant condition, it is also just as true that their energies are frequently not applied to advantage on account of the lack of men trained to make the needed repairs, with the result that reasonably adequate service is next to impossible.

It would appear in some of these cases that the condition of the plant is responsible for the alleged failure of the operator to answer signals when calls are originated and likewise for the alleged necessity of the calling party to ring many times before the operator answers. The divided responsibility which permits one or the other to evade its share of the maintenance is also a cause for frequent dissatisfaction with the service. It would appear to all that such conditions must be remedied.

And before leaving the subject of plant maintenance it cannot be too greatly emphasized that the moral effect upon the entire telephone organization, of maintaining the central office quarters and equipment in the best of condition, is worth the cost.

Safety.

The safety element of service is not confined to the user of the telephone but includes also the safety of employes and the public. Safety is a very large subject, and while the design and construction of the plant provides for this element there are certain special conditions when additional safeguards must be provided.

In the case of joint use of pole lines, consideration must be given to locating the different classes of circuits, the spacing of the wires to provide climbing space for employes, the vertical clearance between conductors, the insulation of the several classes of circuits to provide both mechanical and electrical safety, and the size and kind of wires to be used.

The specifications prepared by representatives of the engineering committee of the Pennsylvania Electric Association and the American Telephone & Telegraph Co., which were presented to the Pennsylvania Electric Association at its convention in 1919, may be profitably employed in designing and constructing joint pole lines.

Special construction is also required at the point of crossing of the wires of a telephone company, over or under the facilities of another public service company. The wire crossing specifications adopted by the Public Service Commission of Pennsylvania in its general order No. 13, provide the required standards for design and construction.

These specifications include a section for "Collinear Construction of Overhead Lines"; that is, as defined therein, "the condition where one line is built over, under, or alongside another line on separate supports so situated that one line is wholly, or partly, over the other line," but it is also stated in the specifications that "so far as practicable collinear construction shall be avoided except when joint construction is employed." It is the consensus of opinion of practically all joint committees which have considered this subject that joint line construction is preferable under any or all conditions to collinear construction.

Opportunity in the Independent Field

What the Chances for Advancement Are in the Independent Industry as Compared with the Bell—Employes in Independent in Close Relation to Manager—Things Which Are to Be Considered in Working for Success

It has been stated, and seems to be the opinion of some of the operating people in both the Bell and Independent fields, that the same opportunity for advancement to better positions and to acquire a comprehensive operating knowledge of telephony does not exist in the Independent field that exists in the Bell field. This condition is indeed debatable.

From the viewpoint of the writer, there does exist a far better opportunity for advancement for the young man in the Independent field who has the same requirements which he would have to have in order to be advanced to better positions in the Bell field. In addition, one must consider that the advancement to positions of relatively the same value in supervision and salary in the Independent field, is not restricted by routines and the lack of individual thought and effort, nor is the employe thrown into as keen competition due to the fact of a smaller number of people employed.

While there may be a lack of titles for positions in the Independent field, there is, however, the same relative value to the positions. As very few of the Independent companies are large enough to set up a functional operating arrangement, the positions in the smaller companies are more general in character requiring a greater working knowledge from the persons who hold such positions.

One can, therefore, readily see that, in order to hold the same relative position in the Independent field, it is necessary to have a better general knowledge of telephony. In the plants where the manager is required to handle all departments it is necessary for him to have a general understanding of not only the commercial problems, but also the technical and operating problems as well.

A man of this character has the opportunity of becoming much farther advanced than does the man in the Bell companies holding the same relative position, for the reason that most Bell company organizations are built up on a functional arrangement whereby it is neither necessary nor required that department heads of the various divisions and subdivisions have a comprehensive knowledge of any other functions of the business.

In the Independent field the employes are in very close relationship to the employer or manager, thereby having the advantage of having their work very closely supervised. In addition, the em-

ployer or manager has the facility to become acquainted with the temperament, habits and living conditions of the employes and can readily get a line on the ability of the employe under observation. This condition allows the manager to determine from his observations the relative merits of the employe, thereby allowing him to give his individual attention to the training of the employe.

There are a great number of men in the Independent field who have risen to the position of superintendent, manager, or owner who have worked their way up through the various steps in the

Words—and Something Else.

Some clever paragrapher has seen the say-it-with-flowers, say - it - with - candy, say-it-with-ink, and say-it-with-nearly-anything-handy, and calls things to a halt with the suggestion that we go back to saying it with words.

But we want to add that if you want to say **SUCCESS** the words to use are **STUDY** and **PREPARATION** and if you want to say **PROMOTION**, the words to use are **PREPARATION** and **STUDY**. But the words are no use unless mixed with (1) brains, (2) right attitude, (3) enthusiasm, and (4) action—lots of action.—Personal Efficiency.

same company in which they were originally employed. There are others, who have been promoted or have obtained better positions in the larger companies through their success in the smaller companies.

If one will look around in his immediate locality, he will find people in responsible positions in the Independent companies who have worked up to these positions through the very conditions which have been outlined.

There are many things which should be considered by those in the telephone field who are looking ahead for advancement. One should consider not only the monetary side, but should take into consideration the conditions under which he and his family or dependents must continue during a period of years.

To some, positions of title represent the height of their aim. By this, is meant that many people are satisfied with a title, compensation and working conditions being a secondary issue; and once they have secured a title, they are not in any manner concerned in getting farther along in the business. Others are concerned not

only with the compensation but also with their love of the game, and are not particularly concerned with a title except as to the value it has in being an anchor until such a time as they can advance to another position.

Some persons are not concerned particularly with their position and are only concerned with that position as long as it pays a fair salary and as long as the environment in which they work suits their ideas as to the requirements in life.

The man in a small telephone plant with a reasonable salary is no doubt better situated and in a much easier berth than those in a large city at a higher salary, as the balance between living expenses and salary at the end of the year is in a great many cases in the smaller companies, much greater than it is in the larger cities.

One must consider, that as he associates himself with the larger companies, he immediately loses his identity and individuality and becomes a part of a machine, with the prospects of never going much farther unless he is endowed with exceptional ability and a definite aim in life. This condition increases in ratio with the largeness of the company.

Opportunity in the telephone game is not so much of a chance that merely slips by and the knowing one grasps and hangs on, as it is first, ability; second, ambition; third, determination to go ahead.

An employe must be capable of "pulling himself up by his own boot straps," generally speaking, if he desires to go ahead. If he does not have the ability, ambition and determination, he will stay in relatively the same position throughout the remainder of his life.

There is no class of telephone employe better situated to progress than the employe in the Independent field, as he is not bound down by an set procedure in any division of the work. In other words, if he desires to progress, he must have some initiative and be able to do his own thinking under conditions which he meets with in every day work.

Should he run up against a condition which he cannot handle, he always has some one at hand who can direct him properly or at least give him the value of their judgment. This makes for a more self-reliant person and gives his mind the proper value of various conditions which he has to meet not only in the telephone work, but in many of his personal problems.

The great majority of Independent companies are single-unit companies and,

therefore, must be self-supporting within themselves. This gives the manager or superintendent the opportunity to develop business acumen and makes it necessary for him, if his company is to prosper, to apply such measures in all departments, as he finds necessary.

He is in a position to reduce his operating expense to a minimum by such methods as he may find desirable. In the final analysis, it is his judgment which governs the condition of his company. If

he makes a false step, the company may lose money; and if he makes the right step, the company can continue on a prosperous basis.

It is up to him to recommend to his board of directors the policies which he desires to follow out during the coming year.

If extensions are needed, he must sell to the board of directors the necessity of securing additional capital.

One can readily see that a manager in

the smaller companies who has all of the various functions of the business to contend with has a better opportunity for studying the general telephone situation in all of its branches than does the functional heads of departments in the larger companies where all of the financing, engineering and operating methods are determined by persons removed from the particular locality in which the financing, engineering and operating methods are to be used.

Northern Indiana at Lake Wawasee

Mid-Summer Meeting of Northern Indiana Telephone Association at Summer Resort Most Enjoyable and Profitable Affair—Many Interesting Papers Read and Addresses Made—Quarterly Meetings to Be Held—Officers Elected

The Northern Indiana Telephone Association's mid-summer convention was held at Lake Wawasee, Ind., at the South Shore Inn on June 12, 13 and 14. Indiana's largest fresh water lake and the commodious South Shore Inn is an ideal location for such a gathering, and it affords a splendid opportunity for those in attendance to become acquainted.

The program committee, of which F. V. Newman, of LaPorte, was chairman, planned the program so that social features were given prominence after the business of the convention had been attended to.

On the spacious porch on the evening of June 12, Colonel Seymore Bullock, of South Bend, addressed the gathering on the subject of "Woman." He particularly dwelt on the importance of women in the telephone business.

At 9:00 p. m. the social committee, consisting of Miss Marguerite Norris of LaPorte, chairman, and the Misses Belle Bernetha of Rochester, Ethel Payne of Logansport, Loretta Pesch of Plymouth, Ethel Anglin of Leesburg and Mrs. A. L. Miller of Syracuse, assumed charge of the

social festivities for the evening. They were ably assisted by the "peddlers," H. W. Hogue of the Kellogg company, C. W. Wilkins and Jack Harper of the National Carbon Co., Geo. W. Rodormer of the Reliable Electric Co., F. L. Eldridge and C. W. Hallen of the French Battery & Carbon Co. and Tom Guillon of the Leich Electric Co.

Dancing was indulged in until the wee small hours. Between dances solos were given by Miss Mary Bodley of Columbia City, Mrs. C. A. Breese of Indianapolis, the Anglin sisters quartette of Nappanee and Mr. Miller of Chicago.

On June 13 at 9 a. m. Henry Barnhart gave the address of welcome. He dwelt on the necessity of improvements and a better maintenance of toll lines. At 10 a. m. the operators' conference in charge of Miss Marguerite Norris of La Porte, was held. Sections of "Magneto Operating Rules" by Miss Anne Barnes of Iowa were read and the subject thoroughly discussed.

The value of having uniform operating rules in local work was also demonstrated.

The balance of the morning program was indeed interesting due to the fact that it was in charge of chief operators who read some very interesting papers—the first of which was by Miss Ethel Anglin, chief operator of the Public Service Telephone Co. at Leesburg, Ind. Her paper is as follows:

"What These Conventions Mean to Each of Us."

The first thought we might have when a convention is suggested is to get away from this daily task, or in other words, a "Spring Vacation." It is truly in one sense of the word a vacation, but when we stop to think of the good that really comes from these "get together" meetings we are more than eager for the time to come. We have the opportunity of hearing problems discussed that are facing us today, ideas exchanged, and the making of real friends.

Some of you may be able to call to mind operators who do not have the opportunity of coming to these conventions. When we come in contact with one of them in our daily work, we find her more selfish, never



Edith Anglin, of Leesburg; Belle Bernetha, Rochester; Ethel Anglin, Leesburg, and Max Hosea, Indianapolis.



Doris Kindie, Belle Bernetha and Dorothy Powell, All of the Exchange at Rochester.



Mildred Moran, Lillian Knoll and Laura Montague Assist in Giving Service to the LaPorte Territory.

willing to lend a hand; she does not have this "Voice with a Smile" that is so much talked of at these meetings. But did we ever stop to think that she may not be to blame. Let us not criticise her too severely, but think of the one whom we have met.

When we hear her voice our face fairly beams, and we are sure it is the same with her. She is always eager to serve us at any and all times. Yes, I hear you say, "Strive to give service always." That is true but there as a "Something"—I can't tell you what it is—that real friendship carries and which originates at these "Get together" meetings that makes service "quicker" and "easier."

President Harding said: "Service is the greatest thing in the human calendar, and the better we equip ourselves the better we serve, because in the expansion of the mind comes the better understanding of how best to serve."

Let me tell you young men and women, that no matter what your fortunes in life, the greatest compensation which will come to you tomorrow, or the next year, or the closing year of your life, will be the consciousness that you have been of service, either to your friends, your state, or your common country. This is the greatest thing that can happen.

I am sure there isn't a chief operator or an operator here but what appreciates this opportunity of coming here, which is afforded them by their managers—and when we go back to the work we love so much, let us show this appreciation by the work we do. The old proverb, "Actions speak louder than words," is a good one to remember. Teamwork is the secret of success. This meeting is not only good for the operators, but for the managers as well. May they feel that it is time and money well spent.

Girls, may we always stand back of our managers; we are their representatives. If our company is a failure, we are to blame; if it is a success, our efforts have not been wasted.

Last but not least, we cannot forget the "Peddlers" who help to make these conventions a success. They are all firm believers in the old proverb, "All work and no play makes Jack a dull boy."

In behalf of the operators I want to thank them for their part of this convention.

May we always remember:

"The value of Today;
Yesterday is an outlawed account;
Tomorrow is a risky promissory note,
Today is real money—invest it."

The second paper was read by Miss Belle Bernetha, chief operator of the Rochester Telephone Co., Rochester, Ind.

"Some of the Qualifications of An Operator."

In 27 years of work as an operator and chief operator, I have come in contact with many girls, and feel that I can tell the

making of a good operator when I see her.

If an applicant comes in with her mouth filled with chewing gum, dressed as a chorus girl and says, "I have nothing else to do just now, and thought I would come up to the telephone office until I can get something else to do," I do not consider her application. On the other hand, when a neatly-dressed girl comes in and asks if there is an opening, or if I would consider her when I need some one, that she has always been interested in the work and would like to learn, I always place her on the list of applicants. Appearance means much in any class of work.

"Interest" would be my first thought of a successful operator. Success is in the person who wins it, not in conditions. Interest means regularity and punctuality. Regularity in attendance is valuable to any organization, for work does not have to be assigned to other employes, in addition to their own responsibilities, during your absence.

There is nothing like a steadfast person in whom you can have confidence, one who is always found at her post, who arrives



Miss Margaret Norris, of LaPorte, Conducted the Operators' School at the Meeting.

punctually, and who can be trusted when you rely on her. Such persons are worth their weight in gold.

"Cheerfulness" and "courtesy" are two very valuable assets in an operator. Cheerfulness is almost as necessary as food, air or water. It stirs hearts as a pebble thrown into a lake sends ripples to every shore, returning again to you, making the heavy load lighter and the dark road brighter for all.

Cheerfulness is contagious. Did you ever have one of your grouchiest-of-grouchy subscribers say in his meanest-of-mean tone of voice something to you, and when you have answered in a sweet cheer-

ful tone his voice changes immediately and is as pleasant as it is possible for him to be?

Mr. Agnew gave me this little poem one day when I was just a little provoked over a complaint of a subscriber—but the subscriber did not know it. I had remarked that I did not have much patience with Mr. "B", as I did not like him.

You can never tell what your thoughts will do.

In beginning you hate or love;
For thoughts are things and their airy wings,

Are swift as a carrier dove.
They follow the law of the Universe,
Each thing must create its kind;
And they speed over the track to bring you back,

Whatever went out from your mind.

If we adopt the plan of making a better friend of every one we deal with, we will not have to wonder if we are courteous. It is the little courtesies that are of great value. The question that seems absurd to an operator is just as important to the one asking as numerous other questions that we deem important.

I admired one of my operators very much recently when she referred the party to me, who wanted the telephone number of Dorothy Babcock's aunt, who had been married twice. She did not even smile over the telephone, but said in an interested tone of voice, "I will give you Miss Bernetha, possibly she knows." We found the aunt all right.

Honesty and loyalty adds to efficiency. All combined means service.

Four things one must learn to do,
If you would make your record true;
To think without confusion, clearly;
To love your fellow men, sincerely;
To act from honest motives, purely;
To trust in God and Heaven, securely.

Following Miss Bernetha was a paper by Miss Loretta Pesch, chief operator of the Plymouth Telephone Co., Plymouth, as follows:

"Why Recording Operators Should Acquaint the Patron with the Different Classes of Long Distance Service."

The chief aim of the telephone company is to see that efficient service is rendered. One of the most important factors of good service is a better and wider knowledge on the part of the patrons of the best method of using the service.

Telephone companies have been trying for several years to educate the toll users to a thorough understanding of the economies and advantages of the different classes of toll service, which may now be obtained, so that the patron will get the most out of it and select the service best suited to his own particular needs. Therefore, it is quite important for the patron to know the different classes of business the company has to offer.

The recording operator takes all orders for long distance service, and if the patron

indicates that he is not familiar with the various classes of toll service she should make as complete an explanation as may be necessary to make the matter clear to him before dismissing him.

Telephone companies prefer to give station-to-station service rather than calls for particular persons. Although the charge is smaller, faster service can be maintained in this way and more economical use of the toll circuits may be obtained.

Person-to-person service requires a greater amount of operating effort and use of the toll circuits. The rate naturally is higher—about one-fourth higher than the station-to-station rate. Person-to-person calls are subject to a report charge under certain conditions.

The patron often feels that the report charge is unreasonable and long distance operators frequently have trouble in collecting report charges at pay stations; but we all know there is just as much effort, and sometimes more, in trying to locate the particular person as in cases where he answers the call and for that reason the report charge is fair and reasonable.

The public in general, I think, have become familiar with the different classes of toll service. Traveling men at pay stations know what class of service they want. Even our rural subscribers, when entering a call, show they are familiar with the classified service.

R. B. Still, of Tyler, Texas, president of the Texas Independent Telephone Association, addressed the convention at 2 p. m. on the question of financing the smaller Independent telephone plants. There was great interest manifested in Mr. Still's remarks.

Public Service Commissioner Edgar M. Blessing, of Indianapolis, urged the telephone companies to take every step possible for the improvement of the telephone service. He laid particular emphasis on this important phase of the work as the vital need of today. He urged the companies to adopt customer ownership and stressed the absolute need of devoting time to a satisfactory public relationship.

The speakers at the afternoon session of the operator's conference were E. L. Gaines of Ft. Wayne, A. M. Taylor of South Bend, D. H. Whitham of Indianapolis and J. Lowman of South Bend.

Through the courtesy of "the peddlers," the guests were given launch rides.

At 8 p. m. one of the most enjoyable illustrated talks on radio was given by E. F. Potter of the Kellogg Switchboard & Supply Co. of Chicago.

Paper novelty caps and decorations were used to a good advantage in the evening when dancing was again indulged in. Fred Thomas of Indianapolis called his famous "John Riley" dance.

On Thursday morning, June 14, during the business session the following officers

were elected: Wilbur F. Van Horn of Wabash was elected president, Sam Tomlinson of Plymouth, vice-president; Roscoe Pontius of Rochester, secretary and treasurer, and Walter J. Uhl of Logansport



Helen Zelse, Estelle Kotoske, Olinda Draves, Frances Kistler and Mildred Neblung, All of LaPorte.

and Frank V. Newman of LaPorte, directors.

An invitation was tendered by Henry Barnhart and accepted for a meeting in September at Rochester. It was also decided to hold four district meetings during the coming year for the purpose of interesting more telephone companies. The annual dues of \$5 were discontinued, there being a sufficient amount in the treasury to take care of all necessary expenses.

A vote of thanks was given President E. L. Miller and other retiring officers for their efforts during the past year.

Lincoln Company Purchases Two Exchanges in Butte Co., Neb.

The Lincoln Telephone & Telegraph Co. has purchased from the Surprise Telephone Co. the two remaining exchanges of the latter at Surprise and Rising City, in Butler county. This gives the former control of almost all exchanges in the county.

The Surprise company was formerly one of the big, strong Independent organizations of the state, serving a rich territory and receiving fair rates. It fell into the same error that has wrecked many other Independent enterprises in that it failed to make provision for depreciation. When rebuilding time came around, the management found that the stockholders, while they had been recipients of big dividends in the flush years, were unwilling to return any of the money for replacement purposes.

Five years ago the company sold four of its exchanges, David City, Garrison, Shelby and Bellwood, to the Lincoln company. It had been in competition with the latter company at the county seat, David City.

The company was capitalized at \$37,500, and has been operating 523 stations. Depreciation had reduced the value of the property to something like 75 per cent of

that total, and the purchase was made on that basis. The purchasing company has given stockholders the option of taking stock or cash, and a number have chosen the stock. Several factors entered into the determination of the 150 widely scattered stockholders to sell. The Lincoln company did not solicit the purchase, but the proposition came from the stockholders.

D. L. Sylvester has been manager and the main spirit in the enterprise for a number of years. He had notified the company that he intended to resign in the near future, and there was no one else to take his place. A sleet storm had damaged the property some months ago, and complaints of service that the company was in no position to better had been made to the commission. With a rebuilding program ahead, the stockholders unanimously voted to make the sale. Mr. Sylvester has agreed with the Lincoln company to remain for a year at Surprise, his home town. His managerial duties will be lighter, and his services during the transition period are considered valuable.

Ten thousand dollars' worth of the stock is held by the Nebraska Wesleyan University, located in a Lincoln suburb. It was given that institution, a Methodist college, by W. H. Greenslit, a wealthy lumberman of Surprise, for its permanent endowment fund.

It is not expected that any immediate change in rates will be asked, although business and party residence schedules are below normal.

Up-State Association District Meeting at Middleburgh, July 6.

Another of those district meetings from which the members of the New York Up-State Telephone Association derive so much benefit and at which they have such good times, will be held at the Baker Hotel in Middleburgh on July 6.

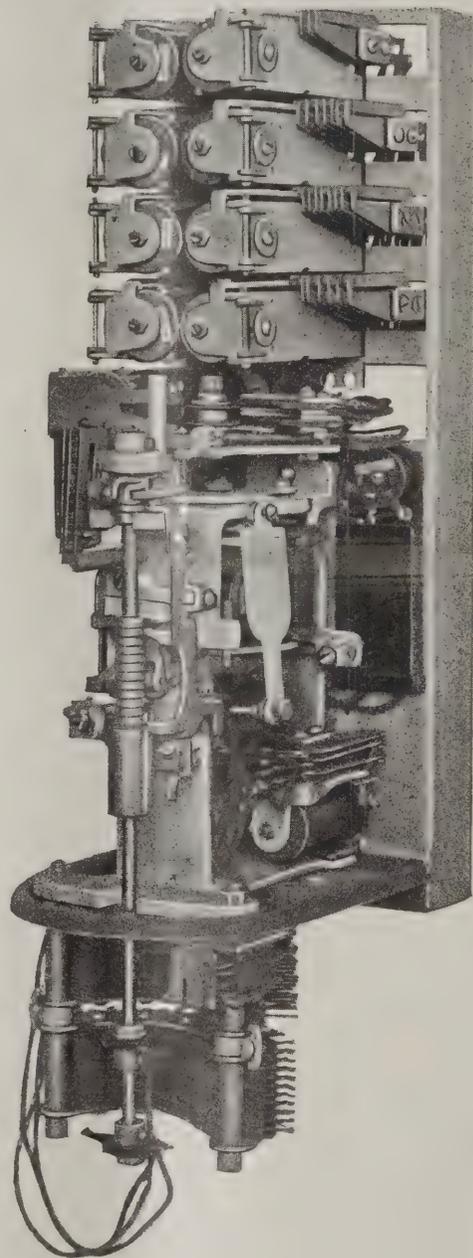
The operators will have a conference at the same time, at which there will be informal talks on traffic and discussions of the various problems which come up in telephone operating.

The sessions will begin promptly at 10 a. m., standard time, and Vice-President and General Manager J. G. Ihmsen wants every company within the district to send several representatives and as many operators as possible—and he wants everyone to be on time.

Illinois Bell Directors Approve Over Half-Million for Plant.

At its May meeting the directors of Illinois Bell Telephone Co. approved an expenditure of \$333,481 for new plant in the city of Chicago, and \$236,836 for Illinois outside of Chicago, making a total of \$570,317.00.

The total approved this year is \$6,681,009.



The Party Line "Ringing Key" of the Strowger Automatic System

Most telephone men are familiar with the various selective ringing key arrangements used with magneto and common battery manual cord circuits. Their usefulness in party line selection is generally accepted.

Not every telephone man knows that the same results are accomplished in Strowger Automatic exchanges in a very simple and satisfactory way.

Just glance at the switch shown opposite. Note that beneath the usual group of relays is mounted an auxiliary switch. This is the party line "ringing key" of the Strowger system.

Operated through the medium of an extra figure in the subscriber's call number, this switch selects the required ringing current, imposes it on the line, and so rings the bell of the one station desired.

Full selection up to ten stations per line is obtainable as well as all of the benefits of full automatic operation.

The use of this switch, (frequency selecting connector,) offers many benefits to the purchaser of Strowger Automatic central office equipment. Not the least of these is greatly lowered first cost. Let us give you the details.

Automatic Electric Company

FACTORY AND GENERAL OFFICES: CHICAGO, ILLINOIS

BRANCH OFFICES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

INTERNATIONAL TELEPHONE SALES AND ENGINEERING CORPORATION, New York

International Automatic Telephone Company, Ltd. Compagnie Française pour l'Exploitation des Procédés Thomson-Houston
London Paris

Automatic Telephone Mfg. Co., Ltd., Liverpool

Automatic Telephones, Australasia, Ltd., Sydney



What Is Your Company Doing?

Chats About Company Doings, By Stanley R. Edwards.

A recent Sunday issue of the La Crosse Tribune and Leader Press, La Crosse, Wis., carried an interesting article showing that there has been a great increase in the number of telephone calls made in La Cross—an increase of 28 per cent in the past 10 months. Here is the manner in which the information was presented:

"Residents of this city are talking more over the telephone than ever before.

This is a fast age. Notwithstanding the rapidly increasing number of automobiles and the facility with which citizens can journey to any place in the city to transact business or visit friends, people here are relying more and more on the local wire service.

A remarkable increase in the use of the telephone during the last year is revealed by a perusal of the books of the La Cross Telephone Co. In a period of ten months from July 1, 1922, to April 30, 1923, the increase in average daily calls through the local telephone exchange was 28 per cent, while during the same period the number of telephones increased only 4 per cent. The computation shows an average of seven daily calls per telephone for this period.

'I can't explain it,' said Manager W. F. Goodrich, 'except through the fact that since the company installed the new equipment last year, the service has been more prompt and citizens have learned they can make more calls over the telephone in a given period than formerly and are using the service more.

'As a result of this increased business in the exchange new equipment is being installed to take care of the calls. Right now the number of calls passing through the exchange equals two per day for every person living in La Cross.'

Following is the schedule of average daily calls by months and average calls per operator hour from July 1, 1922, to April 30, 1923:

Month	No. Tel.	Daily Av.	Per Aver.	Opr.Hr.
1922—				
July	8,536	48,277	401	
August	8,532	48,555	402	
September	8,594	51,747	394	
October	8,601	53,114	406	
November	8,662	55,555	414	
December	8,700	60,520	439	
1923				
January	8,757	60,221	436	
February	8,822	63,284	436	
March	8,866	61,636	446	
April	8,879	61,793	425	

Increase in average daily calls during period, 28 per cent.

Increase in average during period, 4 per cent.

Average number of daily calls per telephone, seven.

Speaking recently before the Executives' Club of Chicago, on the subject "Human Relationships in Business," O. W. Bartlett, a former president of the club, said many



"The Better Your Use of the Telephone the More Valuable Its Service Becomes"

The thought expressed in this title has been the theme for a series of advertisements designed to help telephone users realize the greatest benefits from the telephone in business and social activities.

This advertisement—the last of the series—gives the substance of correct telephone habits, and serves as a brief summary of the important points in preceding advertisements.

Outgoing Calls
Consult the telephone directory first to make sure you call the right number.
Give the central office name first and then the number and pronounce both clearly and distinctly.
Acknowledge the operator's repetition of the central office name and number by saying "right."
Hold the line until the person called answers.

Incoming Calls
Answer your telephone promptly and pleasantly, announcing your name and the name of your department.
If you require help in handling the call properly get it at once or politely transfer the call to the person who can best handle it.
If you answer for another person, offer to take the message and deliver it at the first opportunity.

General Suggestions
Give the courtesy and consideration you expect. Remember your telephone is a mirror that reflects your personality.
Talk directly into the transmitter; you must not more than an inch away.
Speak clearly and pleasantly, so that the listener may concentrate upon your message and repetition of words and sentences will be unnecessary.
To recall the operator, move the receiver hook up and down SLOWLY. Do not jiggle the hook rapidly.
When you have finished talking say "goodbye" and replace the receiver on the hook quietly.

"Correct Telephone Habits" in card form, may be secured from our business offices, or our Commercial Service Bureau.

New York Telephone Company



This Clever Advertisement in New York Metropolitan Newspapers Made Such An Impression That It Was Repeated, by Request.

things that are of interest to telephone people.

"Big and little concerns," said Mr. Bartlett, "are adopting higher business standards and using greater care in the selection of their executives.

The old-fashioned method, known as the 'rule of thumb,' is giving way to the modern 'smile and do it now' system. The personal equation is a greater factor in business, in professions and in the colleges than ever before.

Executives are learning that it pays big dividends to surround themselves with persons possessed of pleasing personalities, optimism, and 'I will' spirits.

If your batting form as an executive is only 50 to 75 per cent of what it should be, you can make yourself more valuable to your company and society in general by trying out these suggestions:

When you leave home in the morning for the office, smile and say 'Good Morning,' cheerfully to the newsboy and every friend and acquaintance you meet. Do the same thing whole heartedly when you

enter your office. This attitude helps you and others start the day right. Keep smiling. Don't be grouchy.

When you meet a friend, acquaintance, or are introduced to a stranger, shake hands as if you meant it. A wishy-washy shake is a good index of a man's character. Look the other chap in the eye and smile. Be cordial!

Don't go about your work with a chip on your shoulder. Men with axes make chips. Let someone else do the chopping and cussing. Saw wood.

If you have a half an hour to spare, don't spend it with someone who hasn't.

A good executive form is dependent upon a good nervous form, a good sleeping form, a good eating form, a good home form, a good playing form, a good thinking form, a good friendship form, a good office form, a good 'do it now' form and the Golden Rule form."

The Franklin County Telephone Co., with main offices at Rocky Mount, Va., has always believed that it pays to make improvements before being driven to it and also that the public is willing to pay a fair price for real service.

"At the present time," writes Manager B. L. Fisher, "we are preparing to replace all of our magneto equipment in our exchange at Rocky Mount with common battery. The telephones are already on the ground and the switchboard and power equipment are expected to arrive within the next few days. The installers are now half-tapping cables, etc., and the installation will be completed at the earliest possible moment.

Rocky Mount is a town of some 1,500 population and we believe that we are one of the very few towns of this size to enjoy common battery service.

Our present rates are: Residence, \$2 per month and business \$3 per month if paid not later than the tenth of the month in advance; after the tenth of the month, 25 cents in each case more.

When we got ready to install common battery the writer personally called on 40 of the business men of the town and explained what the change would mean to them. I frankly told them the extra expense it would mean for the company and asked that if they favored the change to sign accordingly with an increased rate of \$1 on business and 50 cents on residence service.

Thirty-seven signed in favor of the change; two were neutral. The other one favored it, but due to certain business relations stated that he would rather not sign. Most of these men had two telephones and some more than two.

This petition was turned in to our state corporation commission with a request that we be permitted to collect the extra rental when the installation has been finished. The request was granted and we were commended for being willing to improve our service in this way without being driven to it; also for the way in which we had handled our patrons in connection with the increased rates.

We also might add that our present system in the town of Rocky Mount is almost an all-cable one; and nearly all cables are underground, or buried direct in the ground. We have no street railway system and, consequently, are not bothered with electrolysis.

We are not changing because our mag-

neto equipment is not good, for it is. We have one of the very best magneto boards, equipped with supervisory pilot lamps, etc., that has been in service only about seven years, and our telephones are all in good order.

We knew that our folks would some time call for the change—in fact a few had already made inquiries as to when we would have telephones, so they could get Central by lifting the receiver off the hook—and thought best to do it with their consent before we were forced to it.

On Saturday noon, June 16, all of the male employes of the Jamestown Telephone Corp., Jamestown, N. Y.—more than 40 in number—were the guests of the company at a dinner served in the private dining room of the Black Bear Restaurant.

After the dinner, Dr. Hall G. Van Vlack was introduced. He is a Jamestown surgeon who served overseas in the British and American forces and has since been associated with Dr. George W. Cottis as a specialist in bone surgery and first aid.

After reviewing briefly the accidents

most common among plant men, the contents of first aid kits furnished by the telephone company were enumerated and the use of each item explained. Dr. Van Vlack emphasized in no uncertain language the importance of immediate attention in case of an accident and of calling some doctor if there were indications that the case was at all serious. Above all things, he declared, is the absolute necessity of keeping the fingers away from the wound to prevent infection.

By referring to a large first aid chart and using one of the men to work upon, demonstrations were given to show the proper method of applying bandages, tourniquette, slings, etc., and of restoring consciousness and natural breathing after

town Telephone Corp. has been exceedingly low. Last year there were only four accidents, none of which might be classed as serious. Up to the present time this year, only three accidents have occurred, one of which was serious. There has never been a fatal accident among the employes of the Jamestown Telephone Corp.

The policy of the company and the employes is to maintain this good record and improve it if it can possibly be done. In order to do this, as well as increase interest in the work and efficiency of each employe of the plant department, meetings will be held from time to time to discuss and explain subjects of special interest to telephone plant men.

Vice-President John H. Wright and his



This Group of 40 Plant Men of the Jamestown, N. Y., Company Had a Meeting to Study Accident Prevention and First Aid.

electric shock, drowning, etc., by means of artificial respiration.

This subject is one of special interest and importance to telephone men in general. The Jamestown employes showed by their careful attention and questions that they are anxious to learn all of the points explained in this talk and demonstration, which lasted for an hour.

After Dr. Van Vlack had finished his subject and all questions had been answered, a group photograph of all present was taken in front of the Third St. Bldg., formerly the Bell building but now owned by the Jamestown Telephone Corp. and used by the plant and traffic departments.

The meeting was entirely informal as may be judged from this extract from a bulletin board notice:

"Wear your working clothes, come prepared to eat a good dinner, smoke a good cigar and hear a good talk by one of Jamestown's best authorities and speakers on the subject, who will tell us how to prevent accidents and what to do if one does occur."

The number of accidents occurring among plant men employed by the James-

associates in the management and operation of the company are proud of the past record of employes and are strong for a better one.

Ohio Reports Decrease in Rural Telephones.

Records of the Ohio Public Utilities Commission show that the number of telephone users in Ohio at the start of 1923 was 739,778, a decrease of 4,717 from the preceding year. This decrease was entirely confined to the small rural companies which showed a falling off in telephone users of 7,887 as against a gain of 3,170 by the larger companies.

Prices in the Metal Markets.

New York, June 26.—Copper—Steady; electrolytic, spot and futures, 15c. Tin—Firm; spot and nearby, \$40.87; futures, \$40.37. Iron—Steady; No. 1 northern, \$29.00@31.00; No. 2 northern, \$28.50@30.00; No. 2 southern, \$26.00. Lead—Steady; spot, 7.00c. Zinc—Quiet; East St. Louis spot and nearby, 5.77c. Antimony—Spot, 6.90@7.00c.

Federal Court Authorizes New Rates

Illinois Commerce Commission Postponed Action on Increased Rate Schedule of Commercial Telephone & Telegraph Co. and Finally Suspended, Perpetually, the New Rates—Federal Court Orders Rates Increased

In ruling May 8 for the Commercial Telephone & Telegraph Co., of Olney, Ill., in the matter of rates, the United States District Court for the Eastern District of Illinois Judge George W. English, declared that certain sections of the Illinois Commerce Commission law are invalid, as applied to the Commercial company and its system and property, because they are confiscatory and contrary to the 14th amendment of the United States Constitution. The order, signed by Judge George W. English, was handed down on May 8. It gives the company higher rates.

The sections referred to provide that rate schedules which were in effect on July 1, 1921—the date on which the law creating the Illinois Commerce Commission became effective—must continue until the new commission should, in its discretion, change them. Heavy penalties are authorized to be inflicted for violation.

Not only were the commission, attorney general and other state officers permanently enjoined from enforcing the sections complained of against the Commercial company, and from interfering with the collection of the rates set forth in the schedule filed by the company with the commission on October 1, 1921, but the court held that even those rates were insufficient and stated in its order that it would retain jurisdiction for the purpose of considering any application for change in the decree. The federal court declares it has jurisdiction in the case because of it being a suit which involves a violation of the 14th amendment to the Constitution of the United States.

The court found that the Commercial company is a corporation organized under the laws of Illinois, with its principal office at Olney; that it has acquired and constructed a considerable amount of telephone property and plant in the southeastern portion of the state; and that on July 1, 1921, it was rendering long distance service and had local exchanges at Robinson, Mt. Carmel, Flat Rock, Olney, Clay City, Flora, Wayne City, Enfield, Salem, Kinmundy, Carlyle, Beckemeyer, Breeze, Aviston, Trenton, Germantown, and Fairfield, all in the jurisdiction of the Eastern District Court.

The present fair value of the property used and useful in the 17 exchanges mentioned devoted to the rendering of public telephone service, was found to be in excess of \$600,000.

On July 1, 1921, the company had in effect a schedule of rates which had been made under prior laws by filing schedules at various times—some previous to June 1, 1914, when the first law regulating telephone service in Illinois went into effect.

Giving consideration to the increasing costs of operating, the court said:

“Beginning with the World War, the prices and costs of material of all kinds

The Thoroughbred Goes Beyond the Limit.

There come times in the lives of all of us when we feel like giving up, when we are tempted to acknowledge to ourselves that we are defeated, when we sink into the “what’s-the-use?” state of despondency. It is when such a crisis, when such a test overtakes us that we either give up or start afresh to climb up.

Remember, always, that the difference between the scrub and the thoroughbred is that the scrub goes until he can’t go another yard, whereas the thoroughbred goes until he can’t go another yard—and then goes the other yard.—B. C. Forbes.

entering into the construction and maintenance of the plant, equipment and facilities of the telephone property of the complainant, and the prices and costs of labor—both skilled and unskilled—necessary to the construction, maintenance and operation of the telephone property of the complainant, have continually—from time to time and year to year—advanced.

“The complainant, in order to make necessary construction and properly maintain such property in a condition to render good public service, and to secure the necessary labor for operation of the plant, has been compelled from time to time and year to year to meet such advancing costs and prices.”

Regarding depreciation, the court said, “For the purpose of maintaining in an efficient manner the telephone property devoted to the public use, an amount of not less than 6 per cent should be annually set aside for depreciation.” It found, however, by the court that the Commercial company—after the payment of interest, labor, taxes and other fixed charges—had been unable for some years, (from January 1, 1917, to the present time) to set aside such necessary amount and that the

average set aside during that period had been 3 per cent.

The operation of the property was found to have been on an economical basis and yet, as a result of the low operating revenue, the company had been unable to pay dividends to its stockholders.

Regular reports of its operations, the court said, have been made to the Interstate Commerce Commission, the Illinois Public Utilities Commission and, later, the Illinois Commerce Commission, which reports “have been received and accepted without complaint or objections.”

Declaring that the rates as limited and fixed by the statute which became effective July 1, 1921, are confiscatory, the court said:

“The application and limitation of the maximum rates for the service, as fixed by the statute, operates to take the property of the complainant without just compensation and without due process of law, and denies to the complainant the equal protection of the law, and the enforcement thereof constitutes a violation of the 14th amendment to the Constitution of the United States.

The company was found to have outstanding stock, common and preferred, in the amount of \$449,400; outstanding bonds amounting to \$125,681; current indebtedness of bills payable and drawing interest, \$241,770; all of which items were used in the construction of the telephone property and system.

The net income for 1921, before setting aside an allowance for accruing depreciation of the property, was \$13,579—a return of a little more than 2 per cent on the fair value as found by the court.

The depreciation which should have been set aside, the court said, was \$36,834, and if this had been done there would have been a deficit of \$23,255 for 1921. Subsequent to that year, there was found to be an increasing deficiency in the net revenues of the company.

“The revenue which the complainant is able to earn and receive under the maximum rates established by said statute for rendering the telephone service mentioned,” the court held, “is wholly inadequate and insufficient to pay the operating expenses, depreciation upon physical property, and interest, taxes, and other fixed charges outstanding against the complainant.”

On October 1, 1921, the company filed with the commission a new schedule which would establish rates in excess of the maximum rates fixed at the time the statute be-

came effective, the proposed rates to take effect on November 1.

The commission, on October 18, 1921, suspended the schedule of proposed rates, filed by the Commercial company on October 1, 1921, determining to have a hearing on them. The hearing was commenced, continued and delayed, and the rates suspended from time to time, beyond the 120 days and six months fixed by law for such suspension.

Finally, on December 14, 1922, the commission entered a final order perpetually suspending the advanced rates, leaving as the only legal rates those which had been in effect on July 1, 1921, and which must, under the statute which went into effect on that date, continue until new ones were approved by the commission.

"By this administrative act," the court said, "the commission determined to continue the enforcement of said statute and thereby it did by such order confiscate the property of complainant and take the same for public use without just compensation, and denied it the equal protection of the laws; which said act of the Illinois Commerce Commission is in violation of the constitutional rights of complainant."

The court found that the rates in the schedule filed October 1, 1921, "would yield less than a fair and just return upon the fair value of the property of complainant used and useful in rendering telephone service. . . . and would not be extortionate nor unjust to the patrons."

The state officers and commission were permanently enjoined from instituting or prosecuting any action to recover any penalty for violation of the statute, by the Commercial company, and from making any order which would limit or restrain the company in the collection of the rates listed in the schedule filed October 1, 1921.

The decision closed with the statement: "It is further ordered that the parties to this cause may at any time hereafter apply to this court in this proceeding by supplemental bill, petition or otherwise, for any further order or decree and modification of this decree whenever it shall appear that by reason of a change in circumstances a modification thereof may be equitable or proper; for the purpose of hearing and determining any such application, the court hereby retains jurisdiction of this case."

Interstate Utilities Co. Buys Idaho Systems.

The purchase of all telephone property of the Clearwater Telephone Co., operating the telephone system of Clearwater County, Idaho, and of Elk River Telephone Co. at Elk River, Idaho, by the Interstate Utilities Co., of Spokane, Wash., was announced June 14.

The Clearwater Telephone Co., owned by Samson Snyder, of Orofino, Idaho, and with telephone connections reaching a score of communities in Nez Perce, Lewis,

OUR TOMORROWS—A LONG, LONG TRAIL.

By Miss Anne Barnes,

*Traveling Chief Operator, Iowa Independent Telephone Association,
Des Moines, Iowa*

"Mother, it's raining, you had better stand under the shed."

These words were spoken by a young lad about twelve years old, as he leaned from the car window. He was a bright-eyed little fellow and very clean and neat looking, although he wore his clothing as if he were not used to its kind on week days. His hair, too, looked as if it had had an unusual session with a comb and brush and was threatening to stand up for its rights almost any minute.

And the mother—how can I describe her appearance, when the only thing I can remember about her was the expression on her face. The tears in her eyes were so close to coming that the smile on her lips scarcely hid her anguish of heart. And as I watched her, I felt sure there was more cause for that pent-up grief expression on her face than the fact that her little boy was going away on the train, alone.

The rain came faster and harder, but there she stood close to the train looking up into the face of her little lad, who would soon be gone. As the train moved out of the station and he was beyond the gaze of those mother eyes, he slumped down in his seat and forgot all about his Sunday clothes and slicked down hair. He sat very quiet. I wondered if he was thinking about his mother.

After a little while, he seemed restless, so I offered him an apple. He was a friendly little chap. By way of continuing the conversation he said, "I don't know anyone on this train, but the conductor is going to tell me when to get off."

I queried, "You are going quite a distance from home, alone?"

He then told me that he had been to see a man in Des Moines, who was farming boys out for the summer, and he was given a job. He said he did not know the people who were hiring him.

That was a long chance for a little fellow to take, wasn't it? But it was a heart-rending chance for that poor mother to take, besides losing one summer of her boy's life.

Recently, I heard an operator say, "Yes, I am going to be married; then, good-bye to responsibility and this job of work, work, work."

I thought of that toil-worn mother standing in the rain—

Oh, there's a long, long trail awinding out into our tomorrows. Who knows what responsibilities we shall meet on the trail of our choice?

and Clearwater counties is one of the largest Independent telephone companies in the Inland Empire, and the sale of this property consummates one of the largest deals made in telephone property in several years in that section.

The property of the Clearwater Telephone Co. includes an exchange of 500 telephone subscribers at Orofino and a smaller exchange at Weippe. The Elk River Telephone Co. was purchased from Mike Smith of Elk River.

Plans are under way to connect the new property with the main system of the Interstate Utilities Co., probably through the construction of a toll line from Elk River to Clarkia, Idaho, the nearest point now reached by the Interstate company to its new property.

The new property of the Interstate company, including the exchange at Elk River, will be directly under A. Z. Hadley, of Orofino, with the title of district manager. Mr. Hadley has managed the telephone system for Samson Snyder for a number of years.

Telephones in Use in Historic Palestine.

Even in historical and picturesque Palestine the telephone has found its way. At the present time the system comprises 31 central offices to which are connected 1,130 instruments. The average number of conversations per year is about 3,300,000.

Benton Association (of Indiana) Picnic Meeting July 19.

The members of the Benton Telephone Association will hold their annual picnic on Thursday, July 19, at Gay Park—five miles east of Brookston, Ind.

The committee has been busy for some time with the arrangements and it is going to be the biggest and best affair the organization has ever had. Every company in the association should make plans early to have a good representation at the meeting, for inestimable benefits accrue to those who take part in these "get-togethers" of telephone folk.

Commissions, Courts and Councils

Discussion and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchise, Rates and Service

Fort Wayne Home Rates Continued Indefinitely.

An indefinite continuance of the present temporary telephone rates of the Home Telephone & Telegraph Co., of Fort Wayne, Ind., as the regular rates of the company, was ordered by the Indiana Public Service Commission June 21. The present rates were put in effect under the authority of the United States district court, on an appeal by the company from a previous action of the public service commission in declining to authorize higher rates.

The commission also found a rate base valuation of \$2,440,000 for the company, of which \$132,000 is going value and \$108,000 is working capital.

The commission's order was issued after a public hearing in Indianapolis June 11, and prior proceedings covering about two years. The order will enable the company to carry out an extensive expansion program in Fort Wayne and vicinity.

The commission also authorized the company to issue \$1,000,000 of 6 per cent bonds at not less than 95 per cent of par, and \$1,500,000 of 7 per cent preferred stock, at a commission of not more than 5 per cent. Of the preferred stock, \$311,750 will be used to retire a like sum of 6 per cent bonds, and the remaining securities will be used to reimburse the treasury for capital expenditures made and proposed.

The rates now in effect and which were authorized by the federal court in a temporary injunction are: Business, \$6.00 a month; single party, residence, \$2.75; four-party, residence, \$1.75 a month; farm line residence, \$1.75 a month.

The Home Telephone & Telegraph Co.'s improvement program provides for the erection of a new main exchange and general offices at Barr and Berry streets, a new south side exchange at Piqua avenue and Rudisell boulevard, new equipment for these exchanges and continuance throughout the city of the company's underground cable system. These improvements, it is said, will greatly improve telephone service in the community.

Relative to the decree continuing the rates authorized by the United States district court, the commission's order said:

"Petitioner's income account, prepared and checked by the commission's accounting department, which does not differ from the income account submitted by the petitioner, shows that for the last full year during which period the present rates have been in effect and during the three months ending April 30, 1923, petitioner has failed

to earn a reasonable return, so that the commission now finds that the schedule of rates now in effect should be continued as prayed for by the petitioner.

"These rates are now in effect by virtue of a judgment of the United States district court and are high, considering failure of the petitioner to provide adequate facilities and service in its territory, and are continued for the present on the assumption that these conditions will be remedied without delay by the completion of the financing and building program prescribed in this order.

"The continuation in effect by this commission of this schedule of rates is contingent upon a prompt, full and complete carrying out by petitioner of the building and construction of two fireproof exchange buildings and the installation therein of complete new central office equipment for the entire system, and rebuilding and replacement of underground and aerial outside plant, all in accordance with representations made by petitioner in federal court and in this case."

The commission's decree recites that one of the principal grounds set forth by the telephone company in asking the federal court to enjoin the commission from interfering with the proposed increased rates, recited in details its intention and determination to spend \$2,500,000 or more in the upbuilding of its property, and that it was stated at that time by officers of the company that the expenditure of such a sum of money was absolutely necessary in order that service might be continued.

The utility board's decision further says that it has found that the company now has upwards of 1,000 applicants for service which it cannot take care of and that two or three thousand more applicants will be received during the next year on account of the extraordinary growth and development of Fort Wayne.

In connection with the granting of permission to issue the large amount in securities, the commission's decree declares:

"The commission being sufficiently advised in the premises, finds that petitioner should be authorized to issue, sell and exchange bonds and preferred stock as prayed for in the petition.

"It is, therefore, ordered that the petitioner, the Home Telephone & Telegraph Co., be, and is, authorized to issue and sell at not less than 95 per cent of par, \$1,000,000 par value of its 6 per cent bonds; \$1,188,250 par value of its 7 per cent preferred stock, and to pay a selling commission for the sale of the same.

"It is further ordered that petitioner,

the Home Telephone & Telegraph Co., be and is authorized to issue and sell, or exchange at par, \$311,750 of its 7 per cent preferred stock, and to pay not to exceed 5 per cent commission for the sale or exchange of same.

"It is further ordered that the \$311,750 par value of 7 per cent stock above authorized, to be issued or exchanged, be used for the retirement of an equal amount in par value of 6 per cent preferred stock now outstanding."

The commission also orders that the proceeds derived from the sale of \$1,188,250 par value, preferred stock be used for the payment and retirement of \$500,000 of 7 per cent three-year notes now outstanding and for the payment and retirement of \$304,396 in 90-day notes now outstanding.

It is also ordered by the commission that the remainder of the proceeds derived from the sale of the securities, "such remainder amounting to at least \$2,258,854," be used among other things, for defraying the expense of the company's 2½ million dollar building program.

The commission further orders the telephone company on or before September 1, 1923, to file with the engineering department of the commission plans for two central office buildings to be constructed, and copy of the executed contract for the new central office equipment. The company is also ordered to file monthly reports on the amount of securities sold and the disposition made of the funds derived therefrom, as well as detail progress being made in consummating the company's extension program.

Would Take Off \$1,000,000 from Bell Reproduction Cost.

Hearings on the rates of the Cumberland Telephone & Telegraph Co. in Tennessee were resumed on June 12 in Nashville before the Tennessee Railroad Commission, the first day's session consisting mainly in taking the testimony of W. H. Corddry, telephone expert, who is a witness for the protestants to the increased rates.

Mr. Corddry said the company estimated its reproduction costs as of December 31, 1921, to be \$21,840,765, whereas his check of the company's books at Nashville and Atlanta revealed the figures should be \$20,450,539—a reduction of more than \$1,000,000. The proper reproduction cost for the five-year period from 1913 to 1917, inclusive, was \$13,741,305, he said, whereas the company's figures were \$15,503,789.

The witness had an exhibit showing the

Spool Fits the Hand



As shown above, the one pound spool fits the hand comfortably—likewise the one pound coil that comes in a carton. Both of these sizes are “handy” for the tool kit and for carrying from job for repair work and installation.

The five and ten pound spools are ideal for bench and routine work in telephone equipment manufacturing; besides they are a bit more economical.

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For cleaning telephone equipment, by suction, use the end of the rubber hose, the bristle brush tool or the small rubber tool. When you desire to use the PREMIER HANDY as a blower, remove the bag, attach blower coupling, put on the hose and you then have a powerful blower for cleaning surfaces inaccessible to the suction tools.

The Premier Handy has been tested in scores of exchanges, and has been found to be practically indispensable for cleaning switchboards, cable runways, relay racks, distributing frames, and for general cleaning of telephone equipment and apparatus.

The retail price of the PREMIER HANDY with all the equipment, as described, is only \$35.00. Write for trade discounts. This is about half the price of many standard electric vacuum cleaners with attachments and only a very small fraction of the cost of a Pump Type Vacuum Cleaner truck equipment or an installed Vacuum Cleaner System.

The Premier Handy will mean labor saving, convenience and economy in your exchange.

Order direct from us or from your jobber.

PREMIER HANDY DEPARTMENT

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Cleveland, Ohio

reproduction cost of the company's property as of December 31, 1921. He accepted the company's inventory as correct, except the item showing paving over underground conduits and other items. Mr. Corddry deducted \$221,274 from this valuation on the paving item and because of board, travel and team expense in the large cities, which, he said, was not an allowance item in the cities, where construction crews are at home.

The underground conduit valuation was reduced by \$183,644 because, he said, he was unable to check up the company's figures on conduit and the work prices were too high.

He reduced land and building valuations also when such were owned by the company, but not used in telephone operations. The land reductions totalled \$16,755 less than the company's inventory. The land is located in Nashville, Memphis and Humboldt, he said, while the reduction in the inventory on buildings was \$80,282.

The witness told of many other items his inventory revealed should be lowered making his estimate of the correct figures for the company's inventory as of December 31, 1921, stand at \$20,450,539 instead of \$21,840,765, as contended by the company.

Discussing the annual additions to the company's capital in its Tennessee operations, Mr. Corddry said the total additions to capital since 1911 have been \$16,638,558.

In the early years of the company, he said, it was evident the company had allowed replacements to accumulate and then build the plant up all at one time. In a 20-year period, he said, practically all the property would have to be replaced. The company owns no property now it owned when it started in 1883, as it has all worn out, he said. The total charges on depreciation since 1900 have been \$16,000,000, he said.

In the period from 1915 to 1922 the balance set apart as a depreciation reserve to be used for replacements has been lessened, according to Mr. Corddry. In arriving at the figures, he took the reserve as of the beginning of the year 1915, which totalled \$3,404,466. Taking from this the amount of the credits which left a balance of \$2,432,263, he added the balance in reserve left over from 1914, or \$821,663, making the total set apart for the depreciation reserve in Tennessee as of December 31, 1922, amount to \$3,253,926. If the adjustment be allowed of 1911, the present amount in this reserve would be \$4,149,098, he said.

In answer to technical questions tending to bring out the average percentage which this depreciation reserve bore against the capital account for the state, the witness said that in 1915 it was 5.52 per cent; in 1916, 2.98; 1917, 3.07; 1918, 2.03; 1919, 3.65; 1920, 3.36; 1921, 3.26; and 1922, 2.35, so that the average percentage for the time covered by his investigation was 3.23.

To get at the reproduction cost less depreciation he said he used the company's figures of slightly over 11 per cent.

"Deducting depreciation, the company's property on the last day of 1921 was \$18,704,000," he said. "The ratio of reserve to fixed capital is 19 per cent, and the depreciated reproduction cost of the company's property on December 31, 1922, was \$15,319,730."

Leaving out the "public's equity" in the property, it figured at 19.7 per cent. Mr. Corddry said the depreciated cost of the company's portion of the property, physical property and not money invested therein, was \$10,329,216 on December 31, 1922, and that the book cost of the property on the same date was \$16,527,270.

In arriving at this figure he deducted the appraisal expense, excess law expense, and certain taxes which are paid in arrears. The company's total current expenses amount to \$3,488,280, according to his estimate, which is \$1,420,189 less than the company's figures because of these deductions.

He figured out the proper working capital to be \$295,732.

About 60 per cent of the company's construction, the witness said, has been made at prices current since 1913, or at war prices. The total plant additions in the ten-year period amounted to \$6,132,000. Had these been constructed at pre-war prices they would have cost \$3,817,000, according to Mr. Corddry.

"The present book cost reflects war period prices to the extent of 29 per cent above pre-war prices," he said.

The actual book cost of the property, he gave as \$15,743,386, and the same property at pre-war prices would have been \$12,678,122, he said.

Replying to a question by Commissioner Julian Campbell as to whether the company had been able to take care of its depreciation during the period when it was under the control of the federal government, Mr. Corddry stated that it had been able to do so. He said it had set aside about 5 per cent for this purpose and had actually expended but 3.27 per cent. He also stated that the condition of plant property is 89 per cent, which he declared to be exceptionally good.

It was also stated by the witness that at the old rates the company can make a return of 13 per cent and above, depending upon the valuation fixed as a rate base. He fixed three bases ranging from \$13,000,000 to \$15,000,000, and claimed on either base the company's returns would be 13 per cent or over.

The witness declared that more than 90 per cent of the company's business is intra-state and less than 10 per cent inter-state.

On cross-examination by Thos. N. Greer, attorney for the Cumberland Bell, Mr. Corddry said that he had not allowed anything for good will or going value.

When asked if he did not think a company's business had a value, he said he did where it was a competitive business, but in this instance, it is a non-competitive business, in which its service is a public necessity and in public demand, and if the present plant was wiped out, the minute the new plant is ready to operate the business is still in existence and ready to be accepted.

The protestants were represented at the hearing by P. E. Cox of Franklin, Charles Hatcher of Columbia, and Roy H. Beeler of Knoxville.

Objections Entered Against Higher Rates in Greenville, Ala.

The hearing on the application of the Greenville Telephone Exchange for authority to establish increased rates in Greenville was held before the Alabama Public Service Commission in Montgomery on June 11. The case was taken under advisement.

The company maintains that under the present schedule of rates the exchange is not yielding a reasonable return on the investment represented. Testimony was submitted tending to show that last year the profits of the exchange amounted to only between \$300 and \$400.

Protests were entered against the proposed advance by Mayor W. S. Blackwell of Greenville, members of the city council, also by some of the citizens, stating they do not believe that the service now rendered by the exchange justifies the advance in rates proposed.

Wakarusa, Kans., Telephone Company Gets New Rate Schedule.

An order issued June 13 by the Kansas Public Utilities Commission gave the Wakarusa Telephone Co. authority to make the following rates effective for service in Wakarusa:

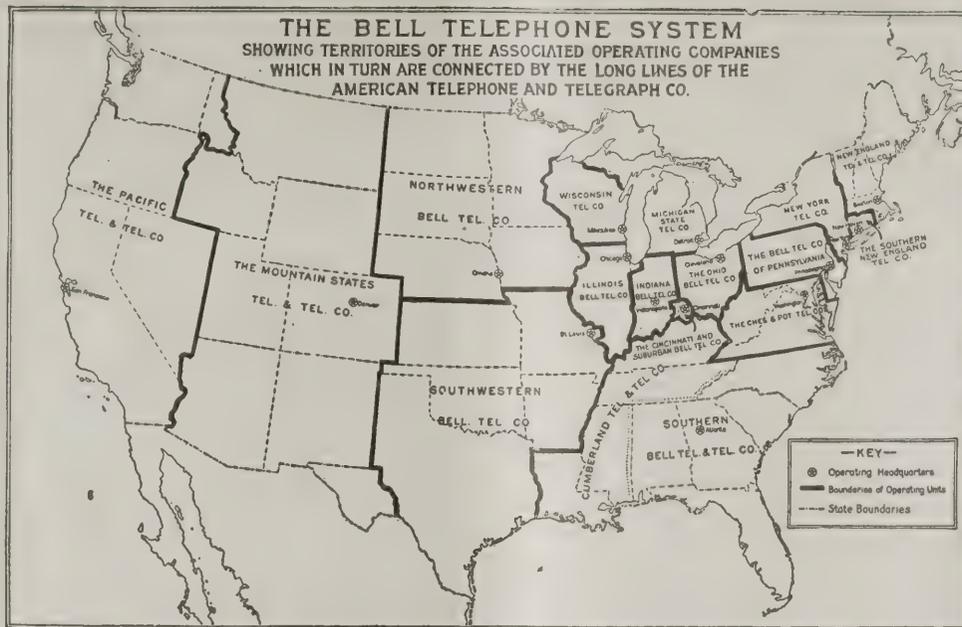
Business, one-party.....	\$2.50
Residence, one-party.....	1.75
Residence, party line.....	1.50
Rural, party line.....	1.50
Rural switching service.....	.50
Business extension.....	.75
Residence extension.....	.50
Desk sets.....	.25

The commission ordered that an improvement be made in the plant and that service on Sundays and holidays be the same as on every other day.

Sale of Properties of Kansas City, L. D., in Kansas Approved.

The petition of the Kansas City Long Distance Telephone Co. for authority to sell the local exchange properties serving Independence and Lenexa and rural communities immediately surrounding these points, to the Kansas City Telephone Co., was approved by the Kansas Public Utilities Commission on June 4.

The consideration is named as \$296,398,



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We are a people scattered over three million square miles of territory—a people whose daily commercial transactions and social interests are as wide-spread as our boundaries. Only a unified telephone service, covering the whole country, can serve our needs.

Such a service, in turn, requires a national organization with uniform policies and operating methods; and also in each community a local organization with full authority and responsibility for the problems of that community.

Such a service is the service of the Bell System. Two hundred and fifty

thousand employees and approximately six thousand local operating units cover the length and breadth of the land. Uniting these community organizations are the Associated Companies of the Bell System, each responsible for service in its territory. Linking together the Associated Companies is the American Telephone and Telegraph Company. It operates the long distance lines, develops nationwide policies, standards of practice and equipment for the improvements of the service and for the benefit of all.

In this commonwealth of service the best interests of the nation and of the community are equally served.



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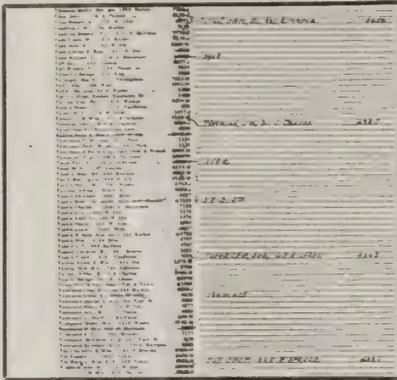
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and is to be payable on or before January 1, 1925, with interest at the rate of 6 per cent per annum from April 1, this year, payable semi-annually on the 15th of June and December of each year.

The Missouri commission has also given its consent to the transfer of certain exchanges in that state by the Kansas City Long Distance company to the Kansas City Telephone Co.

Grant Portion of Increases Applied for in Belvidere, Ill.

The Belvidere Telephone Co., of Belvidere, received, by an order issued June 6 by the Illinois Commerce Commission, a schedule containing a portion of the increases applied for.

The company estimates that additional revenue from the increase will amount to about \$3,000, whereas it had hoped to gain \$10,000, so as to be in a position to make improvements demanded by the city council.

The old and new rate schedules follow:

	Old rates.	New rates.
Business:		
One-party	\$3.25	\$3.75
Extension	1.00	1.00
Residence:		
One-party	2.00	2.75
Two-party	1.50	1.60
Extension .....	.50	.50
Rural:		
Four-party residence....	1.50	1.60
Switching service .....	.33	.33

The new rates are effective as of June 1.

Reduces Company's Figures and Denies Advance in Rates.

In denying the application of the Wyandotte County Telephone Co. for an increase in rates for service in Bonner Springs, the Kansas Public Utilities Commission made certain reductions in the figures submitted by the company and decided that a return of more than 8 per cent was being made on the investment. The decision was rendered May 29.

The items of right of way, cost of establishing business, and working capital were reduced by the commission to about one-half of the amount set up by the company. The reductions totaled \$12,572, making the commission valuation \$27,886. Considering depreciation, it was held that 5.98 per cent was a proper basis.

The allowances for manager's and bookkeeper's salaries were reduced—that of the former being cut from \$1,800 per year to \$900.

With these reductions, the commission held, the return on investment under the present rates equals more than 8 per cent.

Contract to Sell Telephone Plants Canceled by Court.

Contracts and notes figuring in the sale of two telephone company plants in Tippecanoe and Montgomery counties, Ind., have been set aside in a decision made by

Henry H. Vinton, judge of the Tippecanoe superior court, at Lafayette, in the case of Carl Lamb against the Akers Telephone Co. and the Linden Telephone Co. The action of the court, if sustained by the Indiana Supreme Court, to which an appeal will be taken, will invalidate the telephone deal.

The two companies, owning telephone exchanges in Romney and Odell, Tippecanoe county, and in Linden, Wingate and Elmdale, Montgomery county, in October, 1921, contracted to sell the five plants to Carl Lamb, of Boswell, for \$57,000, in exchange for a farm owned by Lamb, and \$30,000 in notes.

Before the Indiana Public Service Commission had approved the sale or given authority to issue the notes, Lamb withdrew from the agreement and brought suit in the Benton county circuit court to cancel the contract and notes, setting forth as his reason, that the public service commission had not given authority to sell and to issue the notes. A change of venue was taken to Tippecanoe county and Judge Vinton has sustained Lamb's contention and canceled the contract and notes.

The case presents a new question under the public service commission act and involves the constitutional question of the power of the legislature to limit the right to contract to sell public utility property and to issue securities against it.

Sale of Certain Michigan Bell Company Toll Lines Approved.

On June 11 the Michigan Public Utilities Commission approved the sale to the Reading Central Telephone Co., of Reading, of the Michigan State Telephone Co.'s toll lines from Hillsdale to Ransom by way of Frontier, and from Hillsdale to Camden by way of Reading.

The Ransom line is being connected with Reading at Cambria.

Hearings Before Federal Court On Nebraska Rate Case.

The question of a proper amount to be allowed for depreciation is being fought out between the Nebraska State Railway Commission and the Northwestern Bell Telephone Co. in the hearing in progress in Omaha before a federal court master in chancery.

The hearing calls into question the justification of the order of the commission reducing exchange rates. In arriving at this decision the commission held, among other things, that the company had a sufficient amount in its depreciation reserve to take care of all replacements, and that for the future it need only set aside a sum sufficient to keep this total available. This fund represents about 20 per cent of the company's property, and as a result of the commission holding it cut down the claim for depreciation to be set aside in the future.

The company maintains the position that

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it is entitled to accrue enough to keep the value of the investment at 100 per cent, and that the sums it asks to be set aside represent a proper amount for this purpose. It also holds to the position that as this is a sum set aside to reimburse the stockholder for property that has disappeared by use, it belongs to him, and that he need not account for any income arising out of its investment in securities.

The commission contends that this results, practically, in the accrual of a depreciation reserve to be paid out in dividends. Take, for instance, a property that is built at a cost of \$100,000 and in the course of time 20 per cent of this disappears by use. To keep the investment intact a depreciation reserve amounting to \$20,000 has been accrued. Under a circumstance like that, the commission attorney contended that if the company were given rates sufficient to give a reasonable return on the \$100,000, it could not claim the income from the \$20,000 depreciation reserve invested in securities.

Mr. Morsman, for the company, insisted that as the depreciation reserve is the property of the stockholders it was no business of the public or the commission what profits it may earn on it. He said that as the law gives to the owner of a mare the ownership of her colt, so also the ownership of the reserve gave the company the right to the income derived from such ownership.

Both sides, through their attorneys, argued these two conflicting theories of depreciation and Chairman Taylor asked for permission to state the commission side of the matter in person.

Attorney Lamaster for the commission cross-examined H. A. Livermore, the company's accountant, on the figures he submitted. Strenuous objection was entered by the commission to the charging up to the Omaha exchange of the cost of the installation of machine switching in the congested section of the city.

It was argued that Omaha had been used as an experiment station by the American Bell company as a sort of laboratory for determining the value and operating efficiency of this method of giving service, and that it was unfair to make the Omaha patrons stand the expense in its entirety when the entire Bell system would profit by the experience gained in its installation and operation.

Engineer Cozad submitted a series of traffic studies which showed that machine switching had quickened service in Omaha, and thus was a benefit to the patrons. The average length of elapsed time from the taking down of the receiver on the calling telephone until communication was established with the person called was about 30 seconds, which is materially faster than the manual service.

Mr. Lamaster thinks he scored a point, however, when he got Mr. Cozad to admit

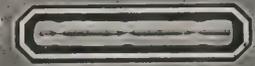


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that when the call was from the business to the residence section, in the latter of which the manual service is still given, it took about ten seconds more, due to the fact that a manual central had to be employed in making the connection. Mr. Lamaster insisted that this represented a considerable wastage of time, when compared with strictly manual records, with a corresponding expense to the patron.

The 4½ per cent contract with the parent company received another airing. The commission called for and was shown the correspondence between the company's staff and the general staff with respect to the various services which it is claimed justifies this contract. Several engineers testified at length on what benefits resulted from having the general staff services available at all times.

Chamber of Commerce Complains of Rates, Then Withdraws.

The New York Public Service Commission on June 19 ordered closed a complaint filed by the Lowville Chamber of Commerce, Inc., against the Black River Telephone Co. over a schedule of rates effective on June 1.

The complaint was particularly directed against the rates in Lowville, and after it was served upon the company the chamber announced its desire to withdraw the complaint.

Rates Fixed for Findlay, Ohio, After Consolidation.

Increased rates for Findlay and surrounding territory, under the consolidation of the Ohio Bell and Ohio State telephone systems, were ratified by the Public Utilities Commission on June 13.

The rates which will become effective upon completion of the consolidation are:

Business:	
One-party	\$7.50
Two-party	6.00
Residence:	
One-party	3.25
Two-party	2.75
Four-party	2.25
Rural:	
Business	3.25
Residence	2.25
P. B. X.:	
Trunk	11.25
Switchboard	6.00
Station	1.50

New Switching Rate—Must Give Free Town-to-Town Service.

An order issued June 19 by the Oklahoma Corporation Commission establishes a rural switching rate of \$5 per year per telephone for the Carnegie Telephone Co., of Carnegie. The minimum annual rate for any one line is \$20, and the rate of \$4 instead of \$5 per year per telephone is authorized where full payment for one year in advance is made.

The order denies the request of the Car-

negie company for permission to discontinue free town-to-town service heretofore afforded.

May Not Furnish Its Own Toll Service—Connects with Bell.

Connection between the lines of the Red Fork Telephone Co., of Red Fork, Okla., and those of the Southwestern Bell Telephone Co., was ordered by the Oklahoma Corporation Commission on June 19.

The order establishes a rate of 10 cents per call for person-to-person calls and 5 cents per call for two-number service. A division of proceeds is provided in the order.

It also establishes a rate of \$3.50 per month for one-party business and \$2.50 per month for one-party residence service at the Red Fork exchange.

The order further provides that subscribers on rural line between Tulsa and Red Fork may be connected with either city's exchange but not with both.

This case has been a hard fought contest before the commission—the Red Fork company's demand for a connection with the Bell being made when the commission refused to permit the Red Fork company to furnish the toll service between Red Fork and Tulsa over its own lines.

Must Refund Excess Switching Rate Collected Since Jan. 1.

Effective June 18, the Oklahoma Corporation Commission ordered the Frederick Telephone Co., of Frederick, to furnish a switching service for its rural patrons at a charge of \$5 per telephone per year, the minimum rate per year for any one line to be \$18 and the maximum rate \$100. The company is required to refund all moneys collected since January 1, 1923, in excess of the schedule just authorized.

The Frederick company had made application for exemption from the commission's order of April 1, 1922, reducing the rural switching charge from \$6 to \$4 per year. It desired to continue the \$6 rate, but is subjected to half of the amount of the reduction established by the January order.

Summary of Commission Rulings and Schedule of Hearings.

ALABAMA.

June 11: Hearing held in Montgomery on application of the Greenville Telephone Exchange, of Greenville, for increased rates.

ILLINOIS.

June 5: Order entered dismissing complaint of Commercial Telephone & Telegraph Co., of Olney, against Southern Illinois Light & Power Co., alleging inductive interference with rural and toll lines of complainant.

June 5: Approval given to supplemental agreement dated March 1, 1923, between Illinois Bell Telephone Co. and LaHarpe Telephone Co., eliminating iron metallic circuit between LaHarpe and Bushnell, and exchange of the Disco Tele-

phone Co., Disco, together with an iron grounded circuit from LaHarpe to Disco, and to include an iron metallic circuit of the LaHarpe Telephone Co., between LaHarpe and Macomb.

June 5: Order entered approving first supplemental agreement, dated April 1, 1923, between Illinois Bell Telephone Co., and Murphysboro Telephone Co., being a modification of an intercorporate agreement dated February 1, 1919, and eliminating one iron metallic circuit between DuQuoin and Elkhart, which includes an iron metallic circuit between Carbondale and DuQuoin, with Elkhart bridge.

June 5: Order entered approving first supplemental agreement, dated April 1, 1923, between Illinois Bell Telephone Co., and Fayette Home Telephone Co., being a modification of an intercorporate agreement dated June 1, 1919, including in the toll line traffic agreement, supplemental to traffic agreement dated June 1, 1919, regarding exchange at Brownstown.

June 5: Order entered approving agreement and supplemental dated March 1, 1923, between Illinois Bell Telephone Co. with exchanges of the Inter-City Telephone Co. at Biggsville, Kirkwood and Oquawka, for the handling of toll business.

June 5: Order issued directing that rate schedule IPUC 2 of the Illinois Bell Telephone Co., for telephone service in Lewistown, be continued in effect until otherwise ordered.

June 5: Approval given to supplemental agreement dated February 15, 1923, between the Illinois Bell Telephone Co., and the Murphysboro Telephone Co., being a modification of an intercorporate agreement dated February 1, 1919, which eliminates a portion of an iron metallic circuit between Leving and Olmsted.

June 5: Order entered dismissing complaint of E. N. Irish against Blandinsville Switchboard Co., same having been adjusted.

June 5: Order entered dismissing complaint of Samuel A. Culp against Line No. 20, Eureka Telephone Co., Eureka, for refusal of Line No. 20 to furnish telephone service.

June 5: Sale of the telephone toll property of the Gibson Home Telephone Co., Champaign County, to the Fisher Telephone Co., as set forth in order, for \$51.10, approved.

June 5: Order entered dismissing complaint of the Plymouth Farmers Switchboard Co. against Plymouth Mutual Telephone Co. and Mississippi Valley Telephone Co., complainant having been satisfied.

June 5: Approval given to lease by the Illinois Bell Telephone Co. to the American Telephone & Telegraph Co. of certain space on the 11th floor of the Bell Telephone Building, 212 West Washington Street, Chicago, from May 1, 1923, to April 30, 1928, at a rental of \$23,295 per year, to be paid in monthly installments.

June 6: Order issued permanently cancelling rate schedule IPUC 3 of the Belvidere Telephone Co., also, authorizing the company to file Ill C. C. 4 for service in Belvidere and vicinity, effective June 1, 1923.

June 6: Order issued authorizing J. A. Young, doing business as the Young Telephone System, to execute and deliver a mortgage upon property of the company, to be dated not later than July 1, 1923, and to run to R. O. Renner, as trustee; also, authorizing the company to issue and sell \$800 aggregate principal amount of mortgage notes, consisting of eight notes of the principal amount of \$100 each, all

to become due four years after their respective dates, bearing interest at 6 per cent per annum, payable quarterly.

June 6: Motion passed that an order be prepared suspending rates of Illinois Telephone Co. at Jacksonville and other points described in Schedule III. C. C. 1, filed by the company.

June 26: Hearing held at Chicago on citation to Illinois Bell Telephone Co. to show why rates for service in Chicago and the Chicago exchange should not be reduced.

INDIANA.

June 21: Present rates of Home Telephone & Telegraph Co., of Fort Wayne, which were authorized by United States district court upon appeal from order of commission denying higher rates, ordered continued indefinitely as the regular rates of the company.

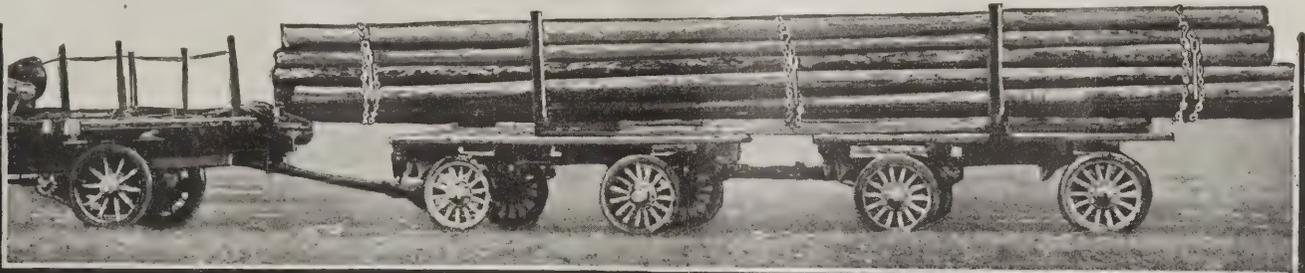
KANSAS.

May 16: United Telephone Co., of Abilene, granted a certificate relating to proposed issue of preferred stock in the amount of \$47,700 to reimburse the company for expenditures made as per supporting schedule filed with application.

May 29: Application of Wyandotte County Telephone Co. for authority to establish increased rates at Bonner Springs, denied.

June 4: Order entered dismissing the complaint of the city of Garnett, alleging excessive rates charged by Kansas Telephone Co.

June 4: In the matter of application of the city of Ottawa for a reduction in rates charged by the Kansas Telephone Co., order entered making permanent the rates which had been temporarily allowed November 27, 1922, and December 21, 1922, modified as follows: Kansas company allowed to add a penalty of 25 cents to each



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bill for individual line residence and 20 cents to each bill for four-party residence telephones not paid by the 10th of the month in which bills are due.

June 4: Approval given to transfer of certain property by the Kansas City Long Distance Telephone Co. to the Kansas City Telephone Co.

June 5: Certificate issued to the United Telephone Co., of Abilene, relating to the proposed issue of its preferred stock in the amount of \$35,000, for the purchase and acquisition of the Herington Coöperative Telephone Exchange.

June 6: New rate schedule authorized for Parker Telephone Co. for service in Parker.

June 6: Complaint of the citizens of Potter against Potter Telephone Co., alleging insufficient service, continued for 30 days to give company time to improve its plant.

June 6: Application of A. V. Hirschler for permission to sell his telephone plant and property at Lone Elm, to L. Q. Adamson, allowed.

June 6: In the matter of application of Eastern Kansas Telephone Co. for authority to increase rates for telephone service at Kincaid, service rendered found to be very inefficient; found that applicant has been negligent in not keeping its lines in good working order and in not furnishing sufficient competent operators at its exchange at Kincaid; that rates charged are rather low but that they are sufficient to pay for the poor and inefficient service being given; and application therefore denied.

June 6: Application of Mrs. H. W. Whittaker for permission to sell her telephone plant and property at Mildred to L. Q. Adamson granted.

June 8: Midland Telephone Co., of Leonardville, authorized to establish the following rates: Business, \$2.25; residence, \$1.25 per month; rural switching service, \$5 per year.

June 8: United Telephone Co. granted certificate relating to a proposed issue of its preferred stock in the amount of \$59,000 to reimburse working capital used in extensions and additions to property as per schedule submitted.

June 8: Application of B. J. Wells for permission to sell his telephone plant and property at Tribune to C. D. Bennett allowed.

June 11: Peoples Telephone Co., of Lebanon, relating to the proposed issue of capital stock in the amount of \$9,000.

June 11: Application of Trego County Coöperative Telephone Co. for a certificate to transact the business of a public utility in Wakeeney denied.

June 13: New rate schedule granted

Wakarusa Telephone Co. for service in Wakarusa; company ordered to make improvements.

MICHIGAN.

June 11: Approval given to sale by Michigan State Telephone Co. of certain toll lines to the Reading Central Telephone Co., of Reading.

NEBRASKA.

June 19: Application filed by the Chappell Telephone Co. for permission to charge gross and net rates.

June 20: In the matter of the application of the Arapahoe Telephone Co. for permission to issue additional securities, continued until June 29 at the commission offices.

June 21: Application by the Lincoln Telephone & Telegraph Co. for permission to charge at the exchanges at Surprise and Rising City, the same schedule of rates, after July 1, as are now being charged by the Surprise Telephone Co., from whom they were purchased, with some amendments.

NEW YORK.

June 19: New rate schedule filed by Northern New York Telephone Co. for service at its various exchanges.

June 19: Application filed by Northern Tioga Telephone Co., of Newark Valley, operating in that village and various towns in Tioga, Tompkins and Cortland counties, for authority to establish new rates for service in Newark Valley and Richford districts.

June 19: In the matter of complaint of the chamber of commerce of Lowville against the Black River Telephone Co. over rate schedule, case closed upon announcement by chamber of its desire to withdraw complaint.

NORTH DAKOTA.

July 19: Hearing to be held in Bismarck on application of the Northwestern Bell Telephone Co. for authority to permanently close Spiritwood exchange and establish a new class of service out of Jamestown.

July 20: Hearing to be held in Bismarck in the matter of investigation into rates, charges and practices of Northwestern Bell Telephone Co. in the state.

July 20: Hearing to be held in Bismarck in the matter of investigation into rates, charges and practices of the North Dakota Independent Telephone Co.

OHIO.

June 13: Rates in Findlay for service after the consolidation of the Ohio Bell Telephone Co. and Ohio State Telephone Co., fixed.

OKLAHOMA.

June 18: Rural switching rate of Frederick Telephone Co., of Frederick,

reduced from \$6 to \$5 per station per year; minimum yearly rate for one line to be \$18, maximum rate \$100.

June 19: Order entered establishing rural switching rate of \$5 per telephone per year for the Carnegie Telephone Co., of Carnegie; minimum rate per line to be \$20; rate of \$4 authorized for payment in advance.

June 19: Authority given for connection between the lines of the Red Fork Telephone Co., of Red Fork, and the Southwestern Bell Telephone Co., and toll rates established; one-party business and residence rates also fixed for the Red Fork exchange.

June 30: Hearing held at Heavener on application of the Oklahoma-Arkansas Telephone Co. for increased rates in Heavener. The company proposes to install a complete new telephone plant if the schedule applied for is approved, and the application is endorsed by citizens and organizations of the town.

TENNESSEE.

June 12: Hearings begun in Nashville on rates of Cumberland Telephone & Telegraph Co.

VIRGINIA.

June 11: Order entered directing R. O. Garrett, receiver for the Fluvanna & James River Telephone Co., to appear at a hearing on June 12 in connection with complaints filed by patrons in Richmond and Cumberland counties, alleging inadequate service.

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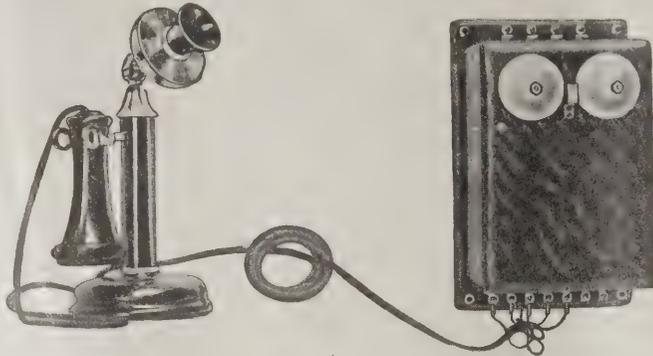
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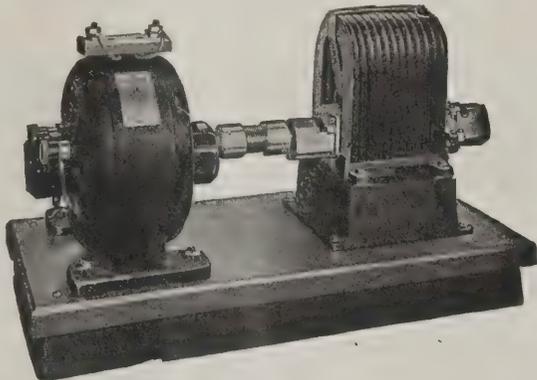
MANUFACTURED BY
INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

YOUR TELEPHONE RINGING
will not interfere with
RADIO TRANSMISSION

if the ringing is done by a

HOLTZER-CABOT

Magneto-Ringing Motor-Generator



We are prepared to ship you one of these machines subject to a guarantee to this effect. It is non-interrupting, and the ringing is uniform under all conditions. Eventually you will install one—why delay giving your subscribers the **BEST SERVICE?**

THE HOLTZER-CABOT ELECTRIC CO.
Chicago Boston

BRACH VACUUM ARRESTERS

at prices
within
your
reach



When the best protection costs no more, why not have it? BRACH arresters insure: non-grounding of lines, cables, clear transmission, balance of potential between pairs, and full protection against power crosses or lightning. There are no carbons to clean and no maintenance bills.

You can readily afford BRACH Vacuum Arresters at our present low prices. Type 440, shown above, complete with porcelain base, fuses and mountings, sells at \$1.75 each.

L. S. BRACH MFG. CO.
NEWARK, N. J.

The Handyman POLE PUSHER

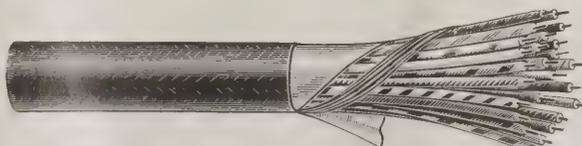
A mechanical pike pole with the pushing capacity of at least ten men. Straightens leaning poles—takes slack out of wires on corners—moves a pole through a trench on resetting—holds a pole straight when pulling—in fact, it will save time and back straining labor everywhere the ordinary pike pole is used. Light enough for one man to carry and operate. Capacity—6000 lbs.

Write for prices.

HARRAH MFG. CO.
BLOOMFIELD,
INDIANA



CABLES FOR SWITCHBOARD AND INTER-PHONE WORK



Cables are made of tinned copper or enameled copper wire, insulated with the highest grade of Tussah Silk and long staple cotton.

Core—Our standard practice is to furnish cables with saturated wax core. This has proven far superior to the so called dry core cable. We can, however, supply the dry core cables.

Switchboard and Inter-Phone Cables can be furnished in both Braided and Leaded Types.

**RUNZEL-LENZ ELECTRIC
MANUFACTURING CO.**
MANUFACTURERS OF

Telephone and Switchboard Cords, Cables and Wires
1751-1757 N. Western Ave., Chicago

A MAGNETO TELEPHONE



Stromberg-Carlson No. 896 Magneto Telephones are wired and arranged to take care of your future purposes as well as your present requirements.

WITH UNIVERSAL WIRING

WHEN you install a telephone you never know but what at some future time you may want to—add a “Sure-Ring Condenser,” provide for “Silent-Ringer,” install “Divided Circuit Ringing,” or supply some other popular service modification.

The designers of the Stromberg-Carlson No. 896 Magneto Telephone knew this. They also knew what an advantage it would be to have a regular bridging telephone provided with universal wiring so that quick changes of this kind could be made without either adding or splicing wires in the cable.

Stromberg-Carlson No. 896 Magneto Telephones are therefore, not only wired but are arranged so as to facilitate quick changes, from regular bridging service to any of the following classes of service:—

- Regular Bridging with “Sure-Ring Condenser”
- Regular Bridging with “Silent Ringer”
- Regular Bridging with “Non-Interfering Push Button”
- Divided Circuit Signalling
- Harmonic Four-Party Selective Signalling
- Synchromonic Four-Party Signalling
- Synchromonic Eight-Party Signalling
- Biased Ringer Two and Four-Party Signalling
- Twenty and Sixty Cycle Two-Party Signalling
- Twenty and Sixty Cycle Four-Party Signalling
- Common Battery Signalling



Bulletin No. 1022-T tells you how easy it is to make these changes provided that you have Stromberg-Carlson No. 896 Magneto Telephones.

This universal wiring is one of the twenty-four reasons why you will prefer the Stromberg-Carlson No. 896 Magneto Telephone.

Bulletin No. 1022-T will be sent upon request.

Stromberg-Carlson Telephone Mfg. Co.

FACTORY and GENERAL OFFICES—ROCHESTER, N. Y., U. S. A.

BRANCH OFFICES:

CHICAGO, ILLINOIS

KANSAS CITY, MISSOURI

TORONTO, CANADA

DISTRIBUTORS:

Garnett Young & Co., San Francisco, Cal., Los Angeles, Cal.
Portland, Ore., Seattle, Wash.

Scoville Mercantile Company, Atlanta, Ga.

JOBBER:

Midland Electric Company, Regina, Sask.
Charleston Electrical Supply Company, Charleston,
West Virginia



A short wrench-turn
—positive, lasting adjustment.

The Easy But Positive Adjustment of Kellogg Harmonic Ringer

Loosen the nut with the screw driver—then using the special wrench provided, turn the eccentric lock nut to the proper adjustment—then lock the nut again by turning the screw and the adjustment is completed—in a jiffy.

The center-mounted concentric brass gongs are held rigidly in place by substantial screws and spring washers.

KELLOGG SWITCHBOARD

Main Office and Factory:

COLUMBUS, OHIO
111 N. Front Street

Branch Offices
KANSAS CITY, MISSOURI
407 Broadway

Branch
THE HAGUE, HOLLAND — Sweelinckstraat, No. 8

Solve your harmonic ringer adjustment troubles by installing this new Kellogg ringer. After properly adjusting it, forget it is there, as it will bother you no more.

The long type coils are wound with silk covered wire, preventing any possibility of short circuiting. The magnet wire terminates on metal punchings, which are securely fastened to the spool heads. Gongs are of brass, heavily enameled, giving a rich, clear tone. They are of standard size— $2\frac{1}{2}$ inches. Length of stroke and armature air gap remains unchanged during life of ringer.

Kellogg ringers are extremely sensitive, operating on 25% less current than any other make, as shown by repeated tests.

With the new adjustment all movable parts are locked immovably in place and remain so indefinitely. The fine adjustment necessary for harmonic ringers is easy to make with this Kellogg product. Even if locking screw should be left loose, the nut holds adjustment perfectly.

Order a supply of these ringers with the permanent adjustment today.

No. 72A for frequencies $33\frac{1}{3}$ -50-66 $2\frac{2}{3}$ -16 $2\frac{2}{3}$.

No. 73A for frequencies 30-42-54-66.

No. 74A for two-party service, 20 and 60 cycles.

No. 75A for other make telephones.

We will furnish these ringers in any other cycle that may be ordered, special.

USE, Is the Test

& SUPPLY COMPANY

CHICAGO, ILLINOIS

and Warehouses:

PORTLAND, OREGON
357 E. Burnside St.

SAN FRANCISCO, CAL.
86 Third Street

Offices:

SHANGHAI, CHINA — 62 Kiangse Road

RELIABLE PROTECTION

Your Greatest Need is the uninterrupted use of your telephone plant.

Our catalogue, "Reliable Protection", shows the complete line of Reliable specialties designed to eliminate interruptions to telephone service.

- | | |
|-----------------|--------------------------|
| Mica Fuses | Cable Hangers |
| Fibre Fuses | Cable Terminals |
| Pencil Fuses | Cable Compound |
| Steel Sleeves | Telephone Arresters |
| Copper Sleeves | Baby Knife Switches |
| Test Connectors | Main Distributing Frames |

MANUFACTURERS EXCLUSIVELY

Reliable
Electric Company

3145 Carroll Ave. Chicago, Ill.

Buy from any Jobber

AMERICAN CROSSARM & CONDUIT CO.
CROSSARMS THAT LAST
 'RAINIER' FIR LONG LEAF PINE CREOSOTED
 FOURTEEN MILLS MAKING THEM
 THIRTY-SIX WAREHOUSES DISTRIBUTING THEM
 ASK YOUR DEALER FOR OUR PRODUCT
 SUCCESSOR TO AMERICAN LINE MATERIALS CO.

Main Office CHICAGO

USE

HEMINGRAY

REGISTERED.

Standard Glass Insulators
 HEMINGRAY GLASS CO., Muncie, Ind.



It Will Pay You

To Try

Ironite

This drop wire is a specially made product designed to furnish a combination of greatest strength, flexibility, high conductivity and toughness of insulation.

It is offered at prices that will save you money in first cost and the long service it will give you will save you the extra expense of replacing poor quality wire.

Paragon Grounds

Why Take Chances
with Poor Grounds

Paragon Grounds furnish absolute grounding protection from lightning and crosses with high potential.

They are correctly constructed of pure copper and are cheaper in first cost—and cost less to install than any other ground you could use furnishing adequate discharge area.

Paragon Electric Co.

37 W. Van Buren St., Chicago, Illinois
 206 Third Avenue, S., Seattle, Wash.
 86 Third St., San Francisco, Calif.
 817 W. Third St., Los Angeles, Calif.
 357 E. Burnside St., Portland, Ore.



ROEBLING

TELEPHONE WIRE



Covered with the heaviest practical coat of spelter. Highest electrical and mechanical properties.

E. B. B., B. B. and STEEL GRADES
 JOHN A. ROEBLING'S SONS CO.
 TRENTON, NEW JERSEY

Bonitas for Economy



These aerial cable rings cost less to buy, less to put up, less for upkeep, and less to take down. That's why there are over 50 million in use.

Standardized by A. T. & T. Co.

CAMERON APPLIANCE CO.
 EVERETT, MASS.

OPPORTUNITIES!

Rates 8 cents per word, payable in advance. Minimum charge \$1.50. Send cash with order.

"REBUILT" TELEPHONE APPARATUS

and exchange equipment saves you 30 to 50 per cent—quality and efficiency guaranteed.

SWITCHBOARDS

—Telephones—Apparatus — Protection Equipment — Cable — Everything you need for the installation and operation of a complete exchange—Magneto or Central Energy—of the best and most reputable manufacturers.

FIFTEEN YEARS' SUCCESSFUL OPERATION

of our "Rebuilt" Equipment Department puts it past the experimental stage. Quality and price will make you a permanent customer. Better investigate.

Ask for Our Free No. 78 Bargain Bulletin. Address "Rebuilt" Equipment Department

PREMIER ELECTRIC CO.,
Chicago, Ill.

"REBUILT" when connected with PREMIER means something



SANDWICH POLE-CHANGERS

PARTS AND REPAIRING
RAILWAY TELEPHONE MFG. CO.
8 So. Clinton St., Chicago, Ill.

RECONSTRUCTED EQUIPMENT

Western Elec. No. 27A Repeating Coils @	\$1.50
Dean No. 1470 straight line C. B. desk sets @	\$6.50
Harmonic 16-33-50 or 66 Cycle @	\$6.75
Dean straight line C. B. steel hotel sets @	\$5.00
Harmonic 16-33-50 or 66 Cycle ringer @	5.25
Stromberg No. 681 C. B. desk sets with straight line signal set @	7.00
Monarch 4-Bar Bdg. hand Gen. complete with cranks @	1.75
H. C. 1000 ohm Non self contained ringers @	.75
Dean Elec. 3-bar 1000 ohm Bdg. desk sets @	\$8.75
4-bar \$9.25—5-bar @	10.50
Monarch compacts 3-bar 1000 ohm \$3.00—4-bar 1000 or 1600 ohm \$8.50—5-bar @	9.25
Swedish Am. 3-bar 1000 ohm Bdg. compacts @	\$8.75
4-bar 1000 or 1600 ohm \$7.25—5-bar @	3.50
Kellogg 3-bar 1000 ohm Bdg. compacts \$8.00—4-bar 1000 or 1600 ohm \$9.00—5-bar @	9.75
Garford (Demo type) 5-bar 1600 ohm Bdg. compacts @	9.25
Stromberg No. 22 2-M-F. Condensers @	35
New Slip type ringer coils for Kellogg, Dean, Monarch, Leich, Stromberg and Western Elec. Mfg. ringers—per pair 500 ohm 55c—1000 ohm 60c—1600 ohm 90c—2500 ohms @	.90
Short line Battery call wall type telephones, per pair @	7.00

REBUILT ELECTRIC EQUIPMENT COMPANY, Not Inc.

E. C. Stoeffhaas, Mgr.

1940 W. 21st Street, CHICAGO, ILL.

We are not connected with or successors to Rebuilt Telephone Equip. Co

WANTED TO BUY

WANTED TO BUY—Rather than sacrifice will you sell me your property at its fair value with a down payment of \$1000 to prove my confidence in my ability? References and a record of accomplishment furnished. Address 5332, care of TELEPHONY.

GUARANTEED REBUILT TELEPHONE EQUIPMENT

Rebuilt—W. E. Co. No. 317, 48-A Gen., 1000-2500 Ohms	\$10.00
Rebuilt—W. E. Co. No. 317—Outside Conn. 47-A Gen.	9.00
Rebuilt—Century Compact 4-Bar, Pul. or A. C., 1000 or 1600 Ohms	8.00
Rebuilt—Dean Compact, 4-Bar, 1600 Ohms	8.00
Rebuilt—Kellogg No. 39 Desk Stands only, old type	4.50
Rebuilt—Monarch Comb. Drops and Jacks	—
Rebuilt—W. E. Co. Ball Type Drops	....
Rebuilt—S. C. Self-Contained Ringers 1000 Ohms	1.00
Rebuilt—Monarch 1000-Ohm Ringers	1.00
Rebuilt—S. C. Steel Hotel Sets	6.50
Rebuilt—S. C. Receivers	1.00
Rebuilt—Kellogg No. 85 Signal Set	....
Rebuilt—Auto. Elec. Co. Dials	....
Rebuilt—Auto. Elec. Co. Transmitters	....
Rebuilt—Auto. Elec. Co. Receivers	....
Rebuilt—Auto. Elec. Co. Ringers	....

We have a large stock of rebuilt telephone equipment. Write us in regard to any material you are interested in and we can make attractive prices.

ELECTRICAL INSTRUMENT REPAIR CO.
1050 West Madison St., Chicago, Ill.

REBUILT EQUIPMENT

Dean 500 ohm straight line ringers with gong, 75c; in lots of 25	\$.65
Kellogg 500 ohm ringers	..75
American Electric straight line ringers, each	..50
Kellogg 4-bar, 1000 ohm magneto wall telephones (re-finished)	9.00
Kellogg 4-bar, 1600 ohm magneto wall telephones (re-finished)	9.50
Western Electric 6-Bar, 1000 or 2500 ohm magneto wall telephones	9.50
Kellogg 3-bar generators	3.00
Kellogg 4-bar generators	3.50

BUCKEYE

Telephone & Supply Co.
Spruce and Space Sts., COLUMBUS, OHIO

TRY THE HOOSIER for REBUILT TELEPHONES Switchboards—Other Equipment

Our available stock insures prompt deliveries. No order too small. Write us your specifications.
HOOSIER TELEPHONE EQUIPMENT CO.
Rebuilders of Telephone Equipment
2806 Highland Place, Indianapolis, Ind.

FOR SALE

FOR SALE—1200 American C. B. desk telephones. Write for sample and quantity prices. Our telephone repair experts are more efficient now than ever before. Give us a trial on your repairs. The Suttle Equipment Co., Olney, Ill.

FOR SALE—Telephone exchanges in Central Illinois. All conditions, sizes, and prices. Give size of exchange you wish to purchase and amount you have to invest in first letter. Address P. O. Box 226, Springfield, Ill.

OVERSTOCK—5/20, 6/20, 5/25, 6/25. Cut prices on above sizes. We quote lowest prices on all sizes "DIXIE BRAND" White Cedar Poles. Willis H. Gilbert, Bainbridge, Ga.

FOR SALE—Account changing to C. B., 150 Monarch 4-party direct current telephones. Nappanee Telo. Co., Nappanee, Ind.

POSITIONS WANTED

WANTED—Charge of magneto exchange as manager, superintendent, wire chief, or combination of these. Will furnish tools, test instruments, and car. Twenty years' experience. Prefer Central states. Address 5333, care of TELEPHONY.

POSITION WANTED—Manager or wire chief. Twelve years' experience in supervision, outside construction, installation of switchboards, and maintenance of telephone exchanges. Address 5329, care of TELEPHONY.

HELP WANTED

HELP WANTED—Switchboard wiremen. We are in need of several first class telephone switchboard wiremen and cable layout men for factory work. Address Automatic Electric Co., 1001 W. Van Buren St., Chicago, Ill.

Switchboard Lamps	Each \$12
Receivers	..90
Condensers	..30
Harmonic Ringers	..95
Cook Unit Protector Mounts	
H-5	..35
Cook M-10-1 10 Pr. Terminals	5.00
Cook M-10-1 26 Pr. Terminals	9.00
Kellogg 15A Repeating Coils	1.00
Generators, all makes, per bar	.50

STANDARD TELEPHONE EQUIPMENT CO.

1227-1241 Prospect Ave.
CLEVELAND, OHIO

BUYERS' REFERENCE

- Addressing Machines**
A1.
- Ammeters**
F2, W1.
- Anchors, Guy**
C12, E4, G1, H7, S4.
- Anchors, Twist**
H7.
- Appraisers**
A2, H3, H4, P5, V2, W2.
- Arms and Brackets (for holding telephones)**
A4.
- Arresters, Lightning (See Protective Devices)**
- Asbestos Wood, Ebony**
J1.
- Attorneys**
E3.
- Auditing, Accounting and Systems**
B11, C7, V2.
- Angers**
O1, I4, S4.
- Automatic Telephones**
A9, K1, N7.
- Bars, Tamping and Digging**
K2, L2, O1.
- Batteries, Dry**
B16, C3, E1, F6, N1.
- Bells, Magneto**
A4, H5.
- Belts and Safety Straps (Linemen's)**
B13, K2.
- Binders (For Poles)**
S3.
- Binders (Books)**
B14.
- Blank Books (etc.)**
F3.
- Blow Torches**
E3, T4.
- Bolts and Nuts**
L2.
- Bolts (Expansion and Toggle)**
L2, N5.
- Bond Wires**
C9.
- Bores, Battery**
P2.
- Branding Irons**
E3.
- Bridle Rings**
H7.
- Brushes, Motor and Lighting**
N1.
- Cable**
A5, A7, A8, B4, H1, I1, R3, S7.
- Cable Compound**
N10.
- Cable Racks and Rollers**
- Cable Reel Carriers**
C9, H7, L2.
- U2.
- Cable Rings**
C2, N5.
- Cable Splicing Joints**
J1.
- Cable Terminals**
A4, C8, R2, S7.
- Cableways**
R3.
- Carbon**
F6, N1.
- Cards, Book Forms**
W4.
- Clamps, Ground (Plates, Cones)**
B12, C2, P2.
- Clamps, Guy**
C8, E4, L2, N5, R2.
- Climber Straps**
B13, K2, O1.
- Chimbers**
K2, O1, S2.
- Clips, Cable**
C2, H7, L2.
- Clips, Testing**
F5, S8.
- Clocks**
C1.
- Coils, Induction**
A4, A5, M5, S8.
- Coils, Rewound**
E2, F6, R1.
- Coils, Resistance**
A5, B4.
- Coil Winding Machines**
B4.
- Condensers**
A4, A9, F1, L3, M1, M5, S9, W3.
- Conduit, Fibre**
J1.
- Conduit Rods**
C9, J1, M3.
- Conduit (Creosoted)**
A3.
- Conduit, Underground**
A3, C6, J1.
- Connectors, Wire Test**
C8, F5, H5, R2, S8.
- Construction Specialties**
C8, C9, H7, J1, K1, K2, L2, M5, O1, R2, S2, W2.
- Copper Cables and Strands**
B4, H1, R3, S7.
- Cords, Telephone & Switchboard**
A9, B4, G1, H1, R5, S9.
- Counters**
V3.
- Creosote and Creosoting**
A3, I3, P1.
- Cross Arms**
A3, I3, L4.
- Diggers**
O1, I4.
- Dressing, Emergency**
F8.
- Electrical Instruments**
E2, F2, H5, S3, W1.
- Engineers, Telephone**
A2, B1, F4, H3, H4, M4, M6, P5, C10.
- Equipment, First Aid**
F8.
- Fireproof Bldg. Lumber**
J1.
- Fire Fighting Apparatus**
J1.
- Flux, Soldering**
B4, B7, B9, B12, C5.
- Fuses, Mica**
A4, C8, R2.
- Generators, Ringing**
H5, L3.
- Grounding Devices**
C11, P2.
- Guy Stretcher**
H13.
- Hangers, Cable**
C6, C2, C8, E4, H7, L2, N3, N5, R2, S7.
- Improved Party Line Systems**
A9, L3, M5.
- Indexes**
B14.
- Insulate**
B4, G2, R5, S7.
- Insulators**
G2, H2, J1, P2, U1.
- Insulated Copper Wire**
B4, H1, R3, S7.
- Insulated Staples**
E3.
- Insulating Compounds**
G2, J1, N10, S7.
- Insurance, Fire and Employers' Liability**
B10.
- Intercommunicating Systems**
K1, M5, S9.
- Jacks, Pole**
H13, T2.
- Linemen's Supplies**
B13, C9, H7, K1, K2, O1, S2, W3.
- Meters (Electrical Testing and Measuring)**
F2, W1.
- Office Supplies**
F3.
- Ohmmeters**
F2, W1.
- Paint**
S1.
- Panels**
J1.
- Parts, Special Telephone**
A4, A9, F1, K1, L3, M5, S9, W3.
- Pins and Brackets**
A3, H7, I2, O1.
- Platinum**
B2.
- Pliers**
S2.
- Pliers, Insulated**
R4, S2.
- Pole Pullers**
H13.
- Pole Pushers**
H13.
- Pole Straighteners**
H13.
- Pole Dolly**
U2.
- Pole Steps**
A7, H7, I2, L2.
- Pole Line Hardware**
C2, H7, J1, K1, L2, M5, N5, O1, S2, W3.
- Poles, Wood**
B5, I3, K1, L4, M5, N6, N3, N4, N8, P1, P3, S6, V1, W3.
- Preservatives, Wood**
A3, I3, L4, P1.
- Printing**
F3.
- Protective Devices**
A4, B12, C8, F2, J1, M3, N2, P2, R2.
- Pruning Tools**
B14.
- Radio Supplies**
I2, M5.
- Rebuilt Telephone Apparatus**
E15, E2, H6, P6, R1.
- Record Forms**
E14.
- Ringin Equipment**
H5, K1, L3, W3.
- Screw Drivers (Rubber Insulated)**
R4.
- Semi-Automatic Systems**
N7.
- Service**
A6.
- Sleeves, Paper**
C3, R2, R3, S7.
- Sleevings—Cotton**
F4.
- Solders, Sticks, Liquids, etc.**
B4, B7, B9, C5.
- Solder, Self-Fluxing**
B4, C5.
- Soldering Irons and Tools**
E3, P7, P8.
- Soldering Flux, Paste, Salts**
B4, B7, C5.
- Splicing Clamps, Pliers, etc.**
S2.
- Stills, Storage Battery Water**
S5.
- Strand and Cord**
B4, C11, H1, R3, R5.
- Switchboard Cable**
K1, R5, S7, S9.
- Switchboards, Telephone**
A9, E2, F1, K1, L3, M5, N7, N9, P6, R1, S9, W3.
- Tanks, Portable**
F8.
- Tapes**
B4, J1.
- Telephones**
A9, E2, F1, K1, L3, M5, N7, N9, P6, R1, S9, W3.
- Telephone Supplies (Jobbers)**
I2, K1, M5, N5, N9, W3.
- Testing Sets**
H5, K1, M5, S3, W3.
- Tie Wires**
C11.
- Timing Devices**
C1, N5, V3.
- Tips and Terminals**
B4.
- Tools**
K2, O1, S2.
- Tool Bags and Boxes**
B13, K2.
- Torches, Blow**
T4, E3, F8.
- Trailers**
U2.
- Transmitters**
A9, E2, F1, K1, L3, M5, N7, P6, R1, S9, W3.
- Tree Trimmers**
B14.
- Trouble Finders**
S5.
- Underground Specialties**
C9, I2, J1, L2.
- Vacuum Cleaners, Electric**
E5.
- Voltmeters**
E2, F2, W1.
- Winches**
M2.
- Wire, Aeroplane**
A4, R3.
- Wire, Copper**
A5, A7, A8, B4, C11, I1, R3, S7.
- Wire, Copper Clad Steel**
B4, C11, S7.
- Wire, Electrical**
A7, B4, I1.
- Wire, Enameled and Magnet**
A7, B4, H1, R3.
- Wire, Galvanized Iron**
A5, A7, I1, P2, R3.
- Wire Rope**
A7, H1, R3.
- Wire Rope Slings**
A7, R3.
- Wire, Rubber Covered**
A7, B4, H1, P2, R5, S7.
- Wire, Telephone and Telegraph**
A7, C11, I1, P2, R3, S7.
- Wire, Twisted Pair**
C11, P2.
- Wire, Weatherproof**
A7, B4, C11, H1, I1, P2, R3, S7.

The letter with accompanying number indicates the name of advertiser as given in full in the Alphabetical Index to Advertisers on the opposite page. When making known your wants to any company listed herein, please mention TELEPHONY

ADVERTISERS' INDEX

A		K	
A 1—Addressograph Co.	—	K 1—Kellogg Switchboard & Supply Co.	6-7
A 2—American Appraisal Co. .	31	K 2—Klein & Sons, Mathais. .	—
A 3—American Cross Arm Conduit Co.	8	L	
A 4—American Electric Co. .	40	L 2—Lanz Bolt Co., M.	—
A 5—American Electrical Works	1	L 3—Leich Electric Co.	2
A 7—American Steel & Wire Co.	1	L 4—Long-Bell Lumber Co. .	—
A 6—American Telephone & Telegraph Co.	27	M	
A 8—Anaconda Copper Mining Co.	1	M 1—Mansbridge, G. F.	—
A 9—Automatic Electric Co. .	18-19	M 2—Mead-Morrison Mfg. Co. .	—
B		M 3—Minnesota Electric Co. .	31
B 1—Babcock, Garrison .	31	M 4—Mitchell, J. G.	31
B 2—Baker & Co.	40	M 5—Monarch Tel. Mfg. Co. .	39
B14—Bartlett Mfg. Co.	40	M 6—McKay, Chas. W.	—
B 4—Belden Mfg. Co.	—	N	
B 5—Bell Lumber Co.	40	N10—National Cable Compound Co.	40
B 7—Benson Co., Alex R.	40	N 1—National Carbon Co.	—
B 8—Byer & Manly .	31	N 2—National Electric Specialty Co.	—
B 9—Blake Signal & Mfg. Co. .	37	N 4—National Pole Co.	1
B10—Block & Co., Lynton T. .	—	N 5—National Telephone Supply Co.	—
B11—Bowdle, F. A.	—	N 6—Naugle Pole & Tie Co. .	1
B12—Brach Mfg. Co., L. S.	3	N 7—North Electric Mfg. Co. .	37
B13—Buhre Co., R. H.	—	N 8—Northern Pole & Lumber Co.	41
B14—Buchan Telephone Records Co.	30	N 9—Northwestern Electric Equipment Co.	40
B15—Buckeye Telo. Supply Co.	35	N 3—Northern White Cedar Association .	—
B16—Burgess Battery Co.	—	O	
C		O 1—Oshkosh Mfg. Co.	—
C 1—Calculagraph Co.	—	P	
C 2—Cameron Appliance Co. .	8	P 1—Page & Hill Co.	38
C 3—Carbon Products Co., The	—	P 2—Paragon Electric Co. .	8
C12—Chance Co.	—	P 3—Partridge Lumber Co. .	40
C 5—Chicago Solder Co.	25	P 5—Polk, W. C.	31
C 6—Clay Products Co.	—	P 7—Post Electric Co.	37
C 7—Coffey System & Audit Co.	31	P 6—Premier Electric Co. .	35
C 8—Cook Electric Co.	28-29	P 8—Prest-O-Lite Co., Inc. .	—
C 9—Cope, T. J.	37	R	
C11—Copper Clad Steel Co. .	—	R 1—Rebuilt Elec. Equip't Co. .	35
C10—W. H. Crumb.	31	R 2—Reliable Electric Co. .	8
E		R 3—Roebing's Sons, J. A. .	34
E 1—Electric Storage Battery Co., The	—	R 4—Rubber Insulated Metal Corporation .	—
E 5—Electric Vacuum Cleaner Co.	25	R 5—Runzel-Lenz Elec. Mfg. Co.	3
E 2—Electrical Instrument Repair Co.	35	S	
E 3—Everhot Mfg. Co.	—	S 1—Sewell Paint & Glass Co. .	1
E 4—Everstick Anchor Co. .	1	S 2—Smith & Hemenway Co., Inc.	—
F		S 6—Southern Exchange Corp. .	—
F 1—Federal Telephone & Telegraph Co.	40	S 5—Sparta Mfg. Co.	37
F 8—First Aid Specialty Co. .	32	S 4—Specialty Denic Co.	—
F 2—Foote Pierson Co., Inc. .	—	S 3—Stacey Co., Eugene.	33
F 7—Fort Dodge Telo. Co. .	—	S 7—Standard Underground Cable Co.	—
F 3—Ft. Wayne Ptg. Co.	1	S 8—Stewart Bros.	31
F 4—Fowle, Frank F.	31	S 9—Stromberg-Carlson Telo. Mfg. Co.	4-5
F 5—Frankel Connector Co. .	—	S10—Suttle Equipment Co. .	35
F 6—French Battery & Carbon Co.	—	T	
G		T 1—Telefon Fabrik Automatic .	—
G 1—Gottschalk Mfg. Co., J. W.	—	T 2—Templeton, Kenly & Co., Ltd.	1
G 2—General Insulate Co.	—	T 4—Turner Brass Works. .	—
G 3—Gund Mfg. Co.	—	U	
H		U 1—Universal Specialty Co. .	—
H13—Harrah Mfg. Co.	3	U 2—Utility Trailer Mfg. Co. .	2
H 1—Hazard Mfg. Co.	—	V	
H 2—Hemingray Glass Co. .	8	V 1—Valentine-Clark Co.	—
H 3—Hill, H. F.	40	V 2—Van Emon, Carlton G. .	31
H 4—Hirsch, Gustav .	31	V 3—Veeder Mfg. Co.	—
H 5—Holtzer-Cabot Electric Co.	3	W	
H 6—Hoosier Telo. Equip't. Co. .	35	W 1—Weston Elec'l Inst. Co. .	—
H 7—Hubbard & Co.	1	W 4—Wiggins Co., John B. .	—
I		W 2—Wray & Co., J. G.	31
I 2—Illinois Electric Co.	—	W 3—Western Electric Co. .	—
I 1—Indiana Steel & Wire Co. .	2	J	
I 3—International Creosoting & Construction Co. .	—	J 1—Johns-Manville, Inc. .	—
I 4—Iwan Bros.	—	J	



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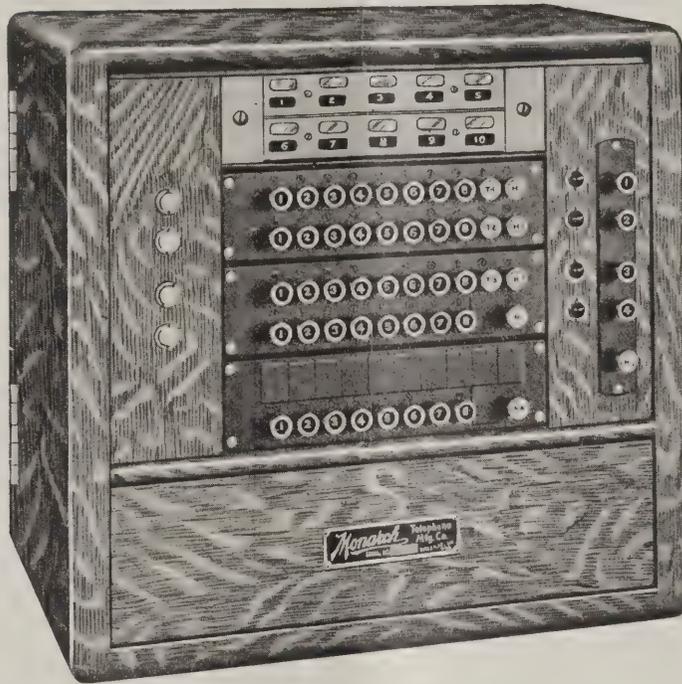
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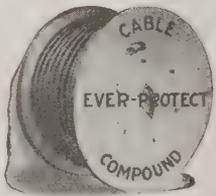
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