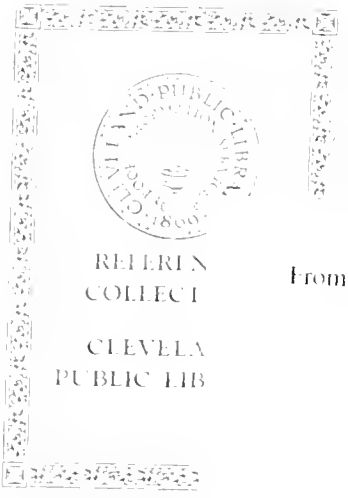


Business Stress

Vol 1

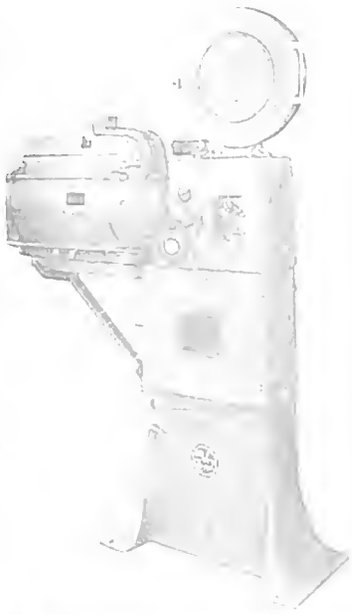
DeVRY'S IN THE ARMY TOO!

Above: Official U. S. Army Photo

DeVry cameras help test America's new bombers: flight recorder equipment utilizing the DeVry Model A camera is a standard part of aircraft test equipment now being used by many leading plane manufacturers.

OVER 300 DeVRY 35MM. THEATRE SOUND PROJECTORS TO U. S. ARMY AIR CORPS!

In all branches of the nation's armed services, where films are today demonstrating their inestimable value for teaching as well as wholesome entertainment, DeVry craftsmanship is fulfilling the need for sturdy, dependable projection equipment essential to the success of this vital victory program. To the growing list of Government users of our sound projectors DeVry is proud to add the U. S. Army Air Corps, recent purchaser of more than 300 theatre sound projectors including DeVry sound systems.



Hundreds of DeVry 35mm Sound Theatre Projectors and Sound Systems are being installed on fighting ships and at many of the far-flung shore bases of our Navy. Here, too, the same rugged construction and constant, theatre-quality performance under the most trying conditions assures uninterrupted programs whenever required.

The same craftsmanship is found in DeVry 16mm Sound Projectors used by schools, industry and Government. Sturdy and dependable, yet especially designed for convenient portability, this DeVry equipment assures the finest in 16mm performance.

AUDIO-VISUAL AIDS ESSENTIAL IN WAR TRAINING

The complex techniques of modern mechanized war and the swift expansion of our nation's armed forces have made audio-visual aids the teaching media of the hour. Speeding the training of millions of service men in the nation's drive to victory are the many hundreds of instructional film subjects produced by Army and Navy. On the industrial front, too, where apprentices must be rapidly trained to help meet the increasing demand for essential war production, vocational training films are playing an all-important role in shortening learning time. Wherever students, citizens, workers and the men of our armed services gather to learn by films, DeVry 16 and 35mm projection is "on duty" to assure unfailing quality in screen performance.

DAY and NIGHT for VICTORY

On night and day shifts, DeVry craftsmen maintain unceasing efforts to assure production of 16mm sound and silent projectors as well as DeVry 35mm equipment, for schools, industry and the U. S. Government.

Invest in the future of America—Buy Defense Bonds and Stamps

DeVRY CORPORATION

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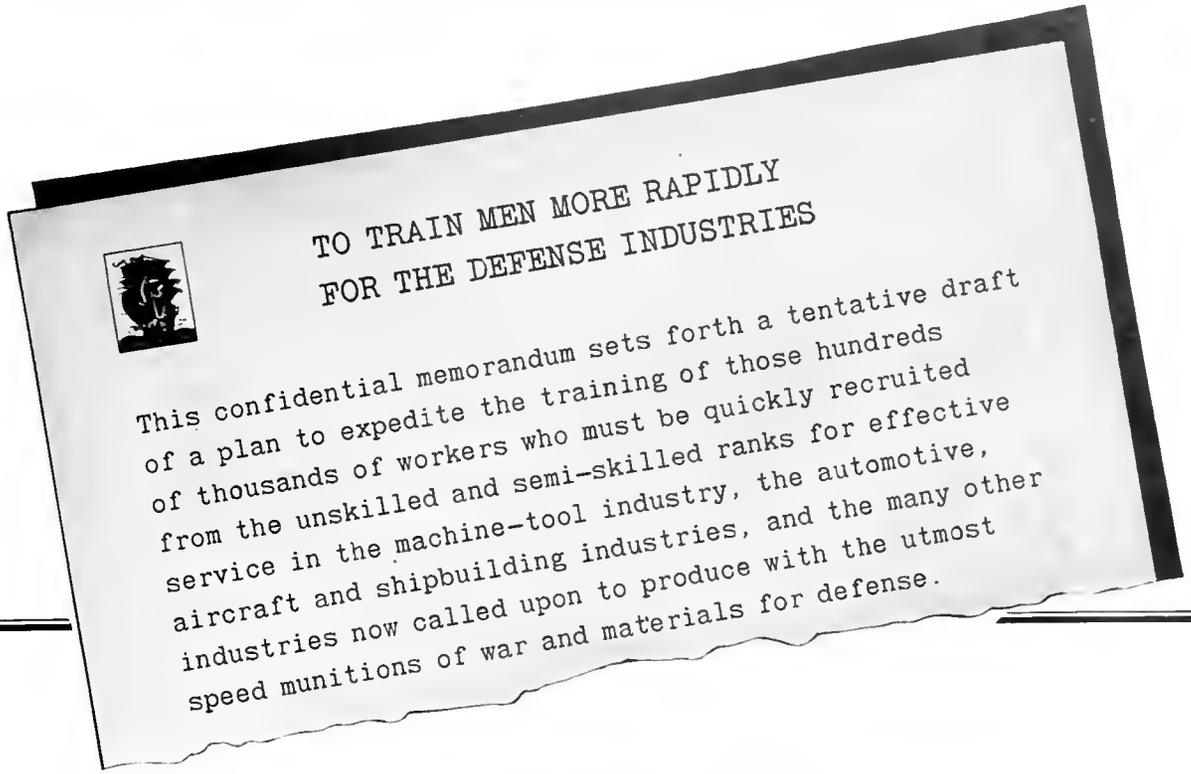
No Longer "Confidential"

So just as a matter of record, here is the opening paragraph of the original plan developed in collaboration with the U. S. Office of Education and approved July 15, 1940.



TO TRAIN MEN MORE RAPIDLY
FOR THE DEFENSE INDUSTRIES

This confidential memorandum sets forth a tentative draft of a plan to expedite the training of those hundreds of thousands of workers who must be quickly recruited from the unskilled and semi-skilled ranks for effective service in the machine-tool industry, the automotive, aircraft and shipbuilding industries, and the many other industries now called upon to produce with the utmost speed munitions of war and materials for defense.

"FILMS FOR DEFENSE" are now getting into action. We direct your attention to the following Caravel productions:

Five Films on the Milling Machine: The Milling Machine . . . Cutting Keyways . . . Straddle and Surface Milling to Close Tolerances . . . Straddle Milling . . . Plain Indexing and Cutting a Spur Gear.

Five Films on Shipbuilding: Preparing and Setting a Keel Block and Bottom Cradle . . . Innerbottom Sections: Sub-assembly of a Closed Floor, Sub-assembly of a Solid Floor . . . Side Frames: Sub-assembly of a Web Frame . . . Deck Girders: Sub-assembly . . . Deck Plates: Regulating and Setting.

TO BUSINESS MEN: The same organization that had the foresight and initiative to promote the use of training films in the defense industries eighteen months before this country was at war should be excellently equipped to serve you in creating training programs to speed immediate production, or to develop long-range selling plans. Ask to see our recent training films. Talk with our clients. Judge for yourself.

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. Circle 7-6112

Symbolic of America's expanding aircraft industry and its need for skilled and semi-skilled workers is this scene showing Martin bombers from the O.E.M. Film Report "Bomber".

Visual Aids of Great Importance in Training Program for Workers in War Industries

BY Frank J. McSherry, *Chief, Defense Training Branch, Labor Division, Office of Production Management*

ALL TYPES of visual aids have a place in trade and industrial training. In addition to the projected image we thus make use of the printed or written word; the chart, drawing, diagram, illustration, or print; the model, or job itself. In visual aids of the projected image type, piece, part, or assembly; and the actual machine tool the photographic techniques have been developed to a high degree. Much remains to be done, however, in developing the best techniques and instructional processes for the presentation of correct shop methods as practiced by industry, and in utilizing training aids most effectively in imparting this instruction.

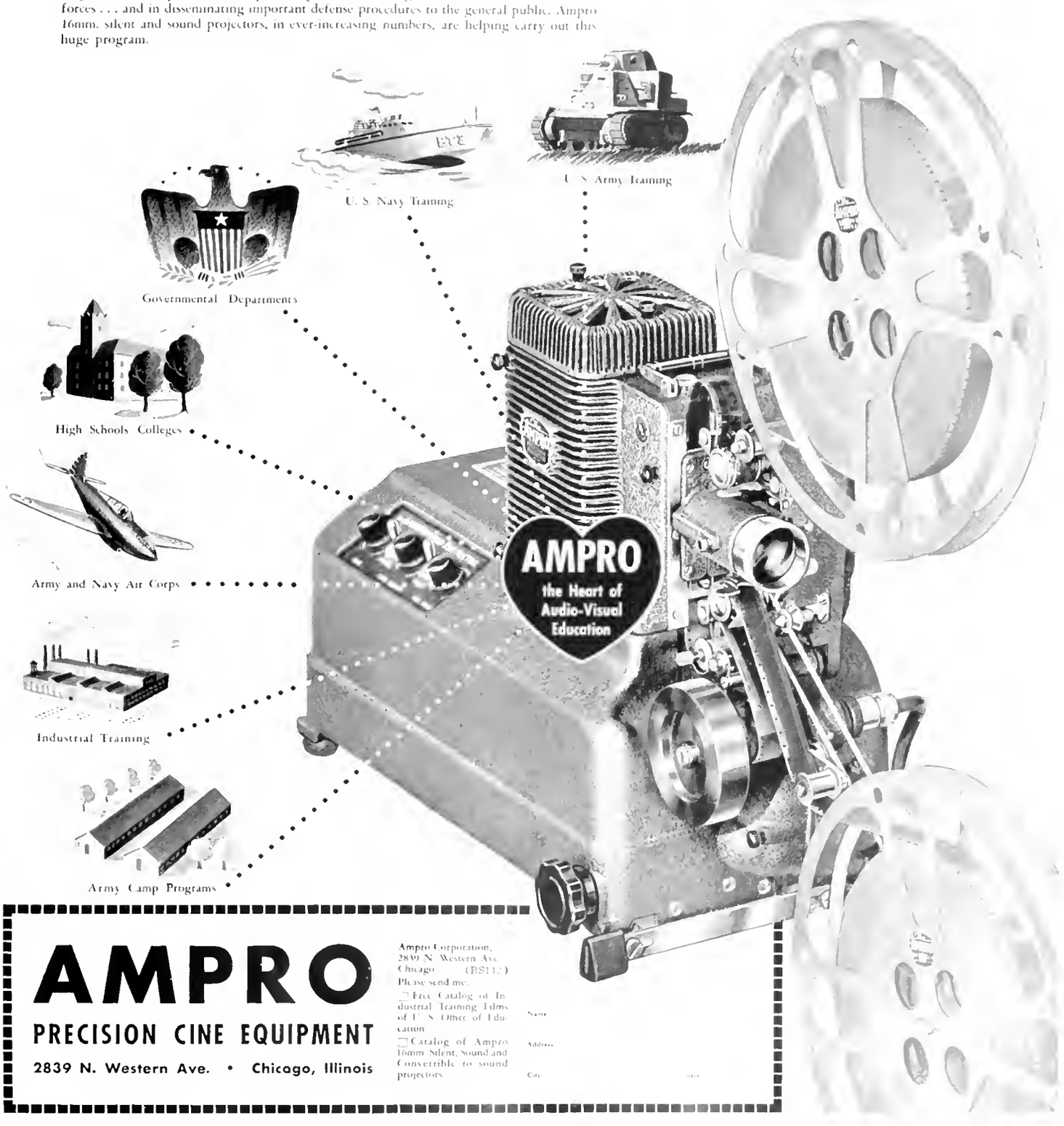
The development of courses of instruction should be placed in the hands of training experts who understand the application of the time-tested principles of trade and industrial education and who are working in the field for which training aids are being planned. This group with the assistance of specially selected mechanics, technicians, and foremen from the occupation itself should determine and select the content to be taught. This combined talent will insure correctness of method and arrangement for presentation in correct instructional order. New material will be presented "one thing at a time" in small amounts. Immediate application of the "check up" step, so important in trade and industrial training, will be provided for. The arrangement in the order of difficulty will be secured by going from the simple to the complex, from the easy to the difficult, and from the safe to the dangerous in procedures.

In the selection of essential operations, special consideration will be given the break-down under teaching points involving skills, techniques, and "shop kinks". Those techniques or methods that can be better shown by visual aids than by demonstration will be spotted. The best type or combination of types of visual education will be determined by such a group working with the skilled projection technicians.

Many training films are too long to permit retention of content. Movies and slide films should be short and shorn of all non-essentials, such as music and other folde-rol. Color is only advisable where it aids in visualization or differentiation. The application of these principles will save time, money, and effort and will insure an effective contribution to the all-important job of placing trained men on the production line.

TRAINING for VICTORY
...with Sound Motion Pictures

IN THE gigantic effort to weld this country into an effective fighting force—sound motion pictures are of tremendous importance. They play a vital role in training U. S. Army, Navy and Air Corps personnel . . . speeding up industrial production . . . training industrial workers . . . aiding in vocational education . . . making possible the more effective operation of government departments . . . providing morale-building entertainment to U. S. armed forces . . . and in disseminating important defense procedures to the general public. Ampro 16mm. silent and sound projectors, in ever-increasing numbers, are helping carry out this huge program.



AMPRO

PRECISION CINE EQUIPMENT

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Ampro Corporation,
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Please send me:

☐ Free Catalog of Industrial Training Films of U. S. Office of Education

☐ Catalog of Ampro 16mm Silent, Sound and Convertible to sound projectors

Name

Address

City

Washington, D. C.—Accurate data and information about films, equipment, and their uses by the Government agencies for vocational training and similar purposes, are practically impossible of assembly. One striking exception is the U. S. Office of Education which now is able to offer a definite film training program to all agencies of government concerned with vocational education in machine tools and shipbuilding skills.

The other two-thirds of the civilian defense industries will be in full swing within the next nine months and will be scattered over all parts of the United States, probably also in foreign areas, where there are United States armed forces, and where the civilians connected with Defense may carry the industrial help of the United States. Much of this vocational training will be spread, in the near future, through the 60 clients of the United States who receive lend-lease aid. These include China, the Dutch East Indies, the French, Belgians, and others, in Africa; and other groups elsewhere, such as the Russians, who need industrial skilled training in some techniques.

There are approximately 25 training films available which may be obtained from a number of agencies, such as the Social Security Administration, the Works Projects Administration, Civilian Conservation Corps, National Youth Administration, and others. The principal vocational training films, as is widely known, have been made, and will be made, by the Office of Education, under supervision of Dr. John W. Studebaker, Dr. C. F. Klinefelter, and under the direction of Floyde E. Brooker. Eighteen of these films have been finished, two will be finished before this is published, and ten will be ready in January. These thirty training films, virtually classics in the instruction of skills in machine work, are the earliest products of the fifty training films scheduled by the Office of Education. The balance of the fifty will be produced rapidly during the early part of 1942.

These Office of Education films also include the shipbuilding series, likewise produced under the direction of Floyde E. Brooker, at the naval shipyards at Newport News, Va., with the help of the Navy, the U. S. Maritime Commission, and with the general cooperation of the Federal Bureau of Investigation, and the Navy Intelligence section. This shipbuilding series, for use in all areas where shipbuilding is being rushed, has the technical aid of the foremost shipbuilding machinists and technicians in America. The need for this series is obvious when you realize that at least six times as many merchant ships will be built in the coming year as were built in 1941, and that the Navy tonnage will be expanded from 1,500,000 to 5,000,000 tons.

The training films produced by the Office of Education will be available to all agencies of the Government, to all vocational training schools, and to all training sections in industry, as well as to all other non-Government agencies which have anything to do with the training of skilled workers. The need of skilled workers grows by leaps and bounds; and the need of films to aid in the training apparently has no

(Please turn to Page Thirty-six)

BUSINESS SCREEN

Victory Training Edition

★ ★ ★

Business Screen Magazine, issued by Business Screen Magazines, Inc., 20 North Wacker Drive, Chicago, on January 15, 1942. Editor and H. Coelln, Jr., Art Director, Dan Runyan. Eastern Editor, Robt. Seymour, Jr., New York offices, Smith Bldg., Phone Murray Hill 4-1054. Western Editor, H. L. Mitchell, 2360 Hill Street, Huntington Park, Calif., Phone La Fayette 3015. Acceptance under the Act of June 5, 1934, authorized February 20, 1939. Issued 12 times annually including 4 special numbers, not circulated in the business field. Subscription $2.00 for 8 business numbers; Foreign and Canada $3.50. Single Copy 50c. Entire Contents Copyrighted 1942 by Business Screen Magazines, Inc. Trademark Reg. U. S. Patent Office.

THE U.S. OFFICE OF EDUCATION
ANNOUNCES
MOTION PICTURES that help to teach MACHINE SHOP WORK!

THESE 18 FILMS IMMEDIATELY AVAILABLE:

5 ON THE ENGINE LATHE

1. Rough Turning between Centers
2. Turning Work of 2 Diameters
3. Cutting a Taper With the Compound Rest and With the Taper Attachment
4. Drilling, Boring and Reaming Work Held in Chuck
5. Cutting an External National Fine Thread

5 ON THE MILLING MACHINE

A. The Milling Machine
1. Cutting Keyways
2. Straddle and Surface Milling to Close Tolerances
3. Straddle Milling
4. Plain Indexing and Cutting a Spur Gear

3 ON THE VERTICAL BORING MILL

1. Rough Facing, Turning and Drilling on a Vertical Turret Lathe
2. Rough Facing and Boring and Turning a Shoulder on a Vertical Turret Lathe
3. Facing, Turning, Boring, Grooving, Chamfering on a Vertical Turret Lathe Using 2 Heads

5 ON PRECISION MEASURING

1. The Steel Scale
2. The Micrometer
3. Fixed Gages
4. Vernier Scale
5. Height Gages and Standard Indicators

THESE 32 TITLES WILL BE RELEASED SOON:

- 3 On the Shaper
- 2 On the Radial Drill
- 5 On Bench Work
- 5 On Bench Work and Centering
- 2 On the Lathe
- 1 On the Sensitive Drill
- 2 On the Vertical Drill
- 10 On SHIPBUILDING
- 2 On Action of Single-Point Cutting Tools

Fifty 16mm Sound on Film Subjects

The Whole Country has hoped for some method by which the training of defense workers might be hastened. Workers themselves have been anxious to acquire specialized skills. Now here is a powerful aid—in motion pictures that help to teach machine shop work!

Produced for U. S. Government—These films were made under the direction of the U. S. Office of Education, Federal Security Agency. These important teaching tools were primarily designed to aid and expand the nation's defense effort.

Accurate . . . Authentic—The pictures are accurate...authentic. They conform to the best methods in machine shop practice. They were supervised by old line experts. Leading American industries cooperated in their making. Those who have seen them call them one of the greatest contributions ever made to American industry and American workers.

Low Cost—These instructional films are being sold at the lowest possible cost to give them the widest possible use. Your cost is less than $9.00 per reel! All subjects are available in 16mm Sound On Film. Eighteen titles are now ready. Every training school, every factory, every plant maintaining machine shop activities needs these great teaching aids!

FREE CATALOGUE! Send today for free catalogue describing each film listed at the left. We will gladly put you on our mailing list for information about future releases. Address all inquiries to:

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Distributors for THE UNITED STATES OFFICE OF EDUCATION

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Please send immediately FREE catalogue describing THE UNITED STATES OFFICE OF EDUCATION'S "Teaching Tools for Defense Workers."

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-DS 12

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(Reg. U. S. Pat. Off.)

Are the most successful we have ever used"

Stanley Murray

THE PERFECT CIRCLE COMPANY

Scene from "That High Power Top Inch", shown on a Da-Lite Challenger Screen—America's most popular portable screen

"*Engineered* FOR GREATER CONVENIENCE

The ease with which the Da-Lite Challenger Screen can be set up and taken down is an important reason why so many leading industrial film users prefer Da-Lite equipment. The Challenger combines in one unit a spring-roller-mounted glass-beaded surface and a rigid sturdy folding tripod. It is the only screen that has SQUARE TUBING in both the center rod of the tripod and the extension support and is the only screen that can be adjusted in height merely by releasing a spring latch and rasing the extension support. It can be set up anywhere in 15 seconds, yet folds compactly for easy carrying. 12 sizes from 30 inches by 40 inches to 70 inches by 94 inches inclusive. From $12.50 up. Price slightly higher on the Pacific Coast.

To explain the advantages of Perfect Circle piston rings to servicemen in the automotive industry, The Perfect Circle Company has found sound slidefilms very effective. Its latest production entitled "That High Power Top Inch," made by Associated Sales Company, dramatically shows the *most efficient methods* of installing and servicing piston rings. To assure the most efficient presentation of this slidefilm, The Perfect Circle Company has recently started *using Da-Lite Glass-Beaded Screens.*

Mr. Stanley Murray, Assistant Advertising Manager, writes—"In the past ten years we have used many films and types of screens in our sales promotion work and we have found these new screens to be the *most successful we have ever used.* They are quickly set up and seem to be "engineered" to help a person put on a good show rather than to be a source of annoyance like so many folding screens that we have used in the past. The surface of the screen reflects the film exceptionally well. We can whole-heartedly recommend this screen to any of your potential users."

Your industrial slidefilms and motion pictures also deserve projection on Da-Lite Glass-Beaded Screens. Ask your producer or supplier about them or write Dept. 12B for latest catalog.

THE DA-LITE SCREEN COMPANY, INC.

2723 NORTH CRAWFORD AVENUE · · CHICAGO, ILLINOIS

THE VICTORY TRAINING EDITION OF BUSINESS SCREEN MAGAZINE

"The American motion picture is one of our most effective media in informing and entertaining our citizens. . . . The motion picture, especially as used by the Federal Government, has a very useful contribution to make during the war emergency."
—FRANKLIN D. ROOSEVELT

ISSUE ONE • THE MAGAZINE OF VOCATIONAL & EDUCATIONAL FILMS • VOLUME FOUR

Our Industry Answers the Call to Arms

● VISUAL EQUIPMENT manufacturers and industrial film producers alike have answered America's call to the colors. This is the hour of destiny for the industry, with the armed services and the industrial war production program, as well as civilian defense, health and nutrition programs, agricultural production and public morale depending upon the film mediums as the *primary* educational medium.

Answering the call, our visual equipment manufacturers have pledged the Division of Civilian Supply of the Office of Production Management that the total resources of their plants are now turned to supplying the training classrooms and group centers of the nation with the essential equipment needed for these purposes. In this activity, your editor has given his services throughout the past months to serve as chairman of the industry's visual equipment manufacturers' association. We have been proud to serve.

Training for Victory

★ Visual educators, shop instructors and industrialists alike will be inspired, as we have been, by the tremendous production accomplishment now nearing completion by the U. S. Office of Education in the studios of the industry's most able and experienced industrial film producers.

Already the reports are flowing into this magazine and to the training chiefs in Washington of the results which the Victory Training program is accomplishing. Hardly begun, the program will gain momentum as the number of reels in use and the methods of use are increased and improved.

We can honestly say that these producers have given their all. The films were produced at half the cost the Government has paid in the past: at a *tenth* of the cost of some well-publicized creations. But into them has been poured the craftsmanship and skill of three decades of experience in this sort of work. They are *training* films, with technical animation, closeups, microphotography, and other industrial techniques applied without stint to assure real *training* results.

Information Vs. Training

★ Let no man confuse the two tasks which lay before our Federal Government in this critical hour. To the Office of Government Reports and the Co-ordinator of Government Films, Mr. Lowell Mellett, the President has assigned the task of planning and organizing Government motion picture production and distribution "as is deemed necessary to inform and instruct *the public* during the war-time crisis."

To Mr. Mellett and his able Deputy Co-ordinator Arch Mercey, your editor pledges the resources of BUSINESS SCREEN and the industry in carrying out this great task. We are, indeed, proud to acknowledge that we were the first and only publication to call attention to this need several months ago.

The highly technical and complex job of providing the industrial training program with visual materials is being successfully carried out by the proper educational authorities already charged with similar responsibilities. This is a *training* task which has earned the approbation of both Government and industrial officials concerned.

The trained specialists who have been at work on this program for many months have the experience and the proven record of production to which the thirty films reviewed in this issue are sufficient testimony. There are no persons in all Government so well qualified to continue and to achieve even greater success than this hard-working crew and their efficient superiors in the United States Office of Education.

Civilian Defense Program

★ We have been in touch with responsible individuals in the auto industry and with dealers who heartily approve of this idea: hold weekly classes in civilian defense procedures in your local auto dealer's salesroom. Some of these are projector-equipped. They are more readily available in business sections, particularly in smaller cities, than the local schools.

It costs money to keep a school open for these purposes in the evening. Heating plants, maintenance men, and janitors must be paid at considerable expense. The local auto dealer will be glad to help. Let's take advantage of his facilities, honor his courtesy and at the same time do this public training task more efficiently. It can be done if we use every physical asset at this vast nation's command.

Keep Them Rolling!

★ The income which the family auto produces in state and federal taxes as well as the common sense of keeping the dealer organizations going, calls for a nation-wide program of service and conservation teaching directed at the public and the dealer's own organization.

Mass "selling" did a great job for Chevrolet and others—why not use mass "teaching" to preserve what we have. Washington will heartily approve of such conservation and "anti-gyp" education. Safety, maintenance, tire care, all can be taught in a nation-wide series of free evening classes held under the joint auspices of motor, oil and tire companies. The public will do its part—the dealer urgently needs this kind of effort and no better way could be imagined for the sponsors to retain the goodwill and advertising in which they have so many millions invested.

What are we waiting for? Do you need any more testimony to the value of this medium than its present wholesale adoption by Government is now providing?

A Word of Regret

Pages of unused articles, reviews of outstanding recent film productions, etc., (some of them listed on the next page) remain in our publication files for appearance in our Mid-February number. In recognition of our country's great need — which is answered in this Victory Training program—we have dedicated every possible page to the greatest accomplishment in visual education the country has ever seen.
—*O. H. C.*

VISUAL MEDIA SPEED TRAINING

Motion pictures and slide-films are making possible the speedy training of millions of men who must man the machines in our new war production Program. To this Victory Training task, Business Screen dedicates this first issue of 1942.

COVER: THE PRECISION GAGE IS AMERICA'S SYMBOL OF VICTORY: *(picture by Loucks & Norling)*

America Trains Millions for New War Industries

—report shows need for visual training aids

● The National effort to [illegible] defense of this country [illegible] the expansion of many [illegible] industrial plants, the conversion of [illegible] others, and the establishment [illegible] new plants in the change of our industry from peace-time production to the production of war materials. This created a need for great numbers of technical, professional and skilled workers of all grades. Particularly acute was the need in the machine tool, aircraft, and shipbuilding industries. It was obvious that the existing supply of unemployed workers already qualified in defense occupations would be quickly exhausted and that the additional requirements must be met through the development of the skills and knowledge of employed workers in order to fit them for advancement and the development of the initial skill of new workers.

Recognizing that the solution of this problem would involve training programs of national scope, Congress, on June 27, 1940, appropriated funds to the U. S. Office of Education for the establishment and operation of defense training.

Millions Receive Training

As a result of this and succeeding appropriations for the same purpose, defense training programs are now being conducted by the public educational authorities of every State in the Union for the development of qualified workers for defense industries. A total of 2,177,100 persons have received instruction through these programs since their inception, July 1, 1940. Assisting in the carrying out of these programs are 155 colleges and universities, 1,000 public vocational and trade schools and 10,000 public school shops.

ENGINEERING, SCIENCE & MANAGEMENT TRAINING

★ To meet the needs for technical, professional and supervisory personnel in defense industries, a program was inaugurated and carried on in the degree granting engineering schools of our colleges and universities. This program is being accomplished through the utilization of extensive and highly developed training facilities comprising teaching staffs, plants, and equipment of these institutions. The greater proportion of courses of this program are designed to upgrade technical and professional personnel employed in defense occupations. The remaining courses are designed to prepare persons with suitable educational qualifications for positions in defense industries. As of December 1, 1941, there were 83,000 persons enrolled in these courses.

A total of 220,000 persons have received instruction in these courses during the last year. Initially the program was restricted to engineering occupations but it soon became apparent that there was need for technical and professional persons in other defense occupations. Beginning with the first of July this program was broadened to include science and management courses needed by defense industries. With the expansion of industries incident to the active participation of this country in war, the need for supervisory personnel will be greatly increased. The authorities in charge of this program are engaged in a rapid expansion of the training of supervisory personnel to keep in step with the needs of our expanding defense industries.

VOCATIONAL TRAINING FOR DEFENSE WORKERS

★ To assist defense industries to meet the needs for additional craftsmen and production workers, a training program beginning July 1, 1940, was inaugurated and carried on by our public vocational school system utilizing the teaching staffs and existing plants and equipment, worth one and a quarter billion dollars. This program consists of two parts, namely, supplementary courses to up-grade employed workers and pre-employment courses for unemployed workers.

Supplementary courses are designed to assist in the development of additional knowledge and skill of employed workers being prepared for advancement. This program is considered of paramount importance as it directly aids and expedites the Training Within Industry Program of OPM designed to meet the shortage of skilled workers in defense industries. From an enrollment of 25,000 workers one month after this program started the number of trainees has increased in a regular progression to 179,110 as of December 1, 1941. During the 18 months this program has been operated there have been 835,100 employed workers enrolled.

War Increases Need

The immediate effect of the outbreak of war upon this program is the need for expansion in order to assist defense industries in meeting their skilled labor problem incident to increase in production. During the current fiscal year it was planned to train 900,000 workers in this program. It is certain that during the last half of this current fiscal year the originally planned program will be expanded insofar as possible with existing facilities. During the next year the number of employed workers requiring supplementary courses in related subjects and in the shop practices related to their daily job, will be materially greater.

Pre-employment courses are designed to develop initial skill in workers essential to employment in defense occupations. The great expansion incident to the production of war materials also created a need for large numbers of production workers, that is, semi-skilled or single skill workers as well as a large number of replacements for workers who are upgraded. Through these short intensive courses persons who had previous experience in a defense occupation, but who have not actively engaged in that occupation for a period of time, have had an opportunity to refresh their skill.

Priority Unemployment Aid

Workers displaced due to priorities or other governmental restrictions placed on non-defense industries are given these courses to build on the skill and knowledge of their regular occupations. These courses are also given for workers with little or no previous industrial experience. This program is being accomplished through the utilization of the plants and equipment and teaching staffs of our public vocational schools. These courses are designed to give workers specific jobs known to be open in industry.

The enrollment of workers taking pre-employment courses as of December 1, 1941, was 127,264. During the 17 months that these courses have been in operation a total of 712,100 enrollments have been made. A large percent of those completing these courses have entered private employment.

WPA Workers Trained

The Works Projects Administration reports as of December 1, 1941, indicate that 133,190 WPA workers have already received training in this program. Of this number 39,089 have voluntarily left the WPA which would indicate that they have obtained gainful employment.

During the next year the number of workers to be retrained will be materially increased over the number trained during the past year, and conversely, the number of workers receiving refresher training will decrease materially. The total number of trainees receiving pre-employment training must be increased to meet the needs of industries if we are to secure maximum production.

OUT-OF-SCHOOL RURAL & NON-RURAL TRAINING

★ In order to provide opportunities for rural youth to receive defense training, Congress appropriated funds for the conduct of courses in rural communities. These courses are carried out through the utilization of the shops of rural public schools. This program is being carried on in the 2,500 different com-

(Please turn to Page 29)

COMING FEATURES IN BUSINESS SCREEN

Editor's Note. Because of the present critical need for training aids in war industries, this entire edition of Business Screen has been dedicated to the Victory Training Program of the U. S. Office of Education. Features and Reviews contemplated have been carried over into the mid-February number in preparation. These additional features are also scheduled for the forthcoming issue of Business Screen:

★ A Complete Index of All Visual Aids for Vocational Training, Revised to February, 1942.

★ The Church and Visual Aids: How modern church organizations use and produce films.

★ Motion Study and the Motion Picture: A survey of the work of the outstanding authority in this field.

★ Film Educotion for the Western Hemisphere.

★ Visual Aids for Civilian Defense: Feature Article.

plus news and reviews of outstanding new film releases.

U. S. Army training film camera crew goes into action in the field.

Army's films and production will be reviewed in an early Business Screen

MOTION PICTURES THAT HELP TO TEACH MACHINE SHOP WORK

Full Speed to Victory!

By John W. Studebaker, *U. S. Commissioner of Education*

MONTHS AGO there was placed over the main entrance to the office of the Federal Security Administrator Paul V. McNutt the commanding slogan, "Time Is Short." It served to quicken the pace of all who entered there as they went about their duties in connection with "defense." And the Administrator, from the first day a Nazi foot was set on Polish soil, was himself a living example of deiermination and celerity in action.

Since December 7 all vestiges of inhibitions have been removed; the slogan for the entire Nation is now, "Full Speed Ahead to Victory."

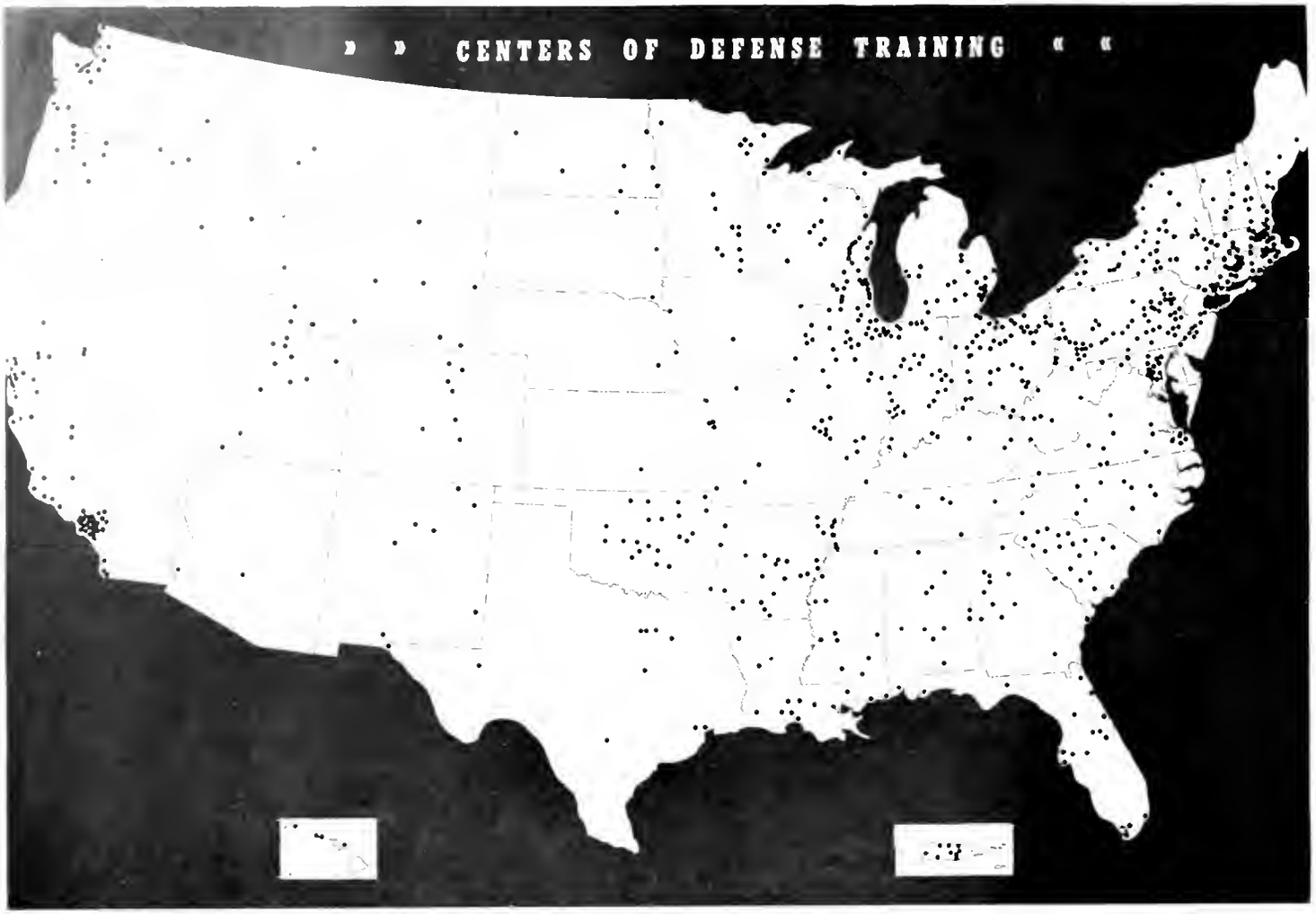
The need for speed and precision in war industries requires no additional emphasis. Twenty million pairs of hands in those industries, guided by alert and trained minds, must possess unexcelled dexterity and sustained power in action. To the extent that the workers see and understand the principles of mechanics and have the skills needed for maximum production our output of the implements of warfare will increase.

For two reasons, therefore, we should make the widest use of effective visual aids such as the training motion pictures now in production by the U. S. Office of Education in developing the abilities of industrial workers. First, instructional aids speed up the learning process, thus making available more skilled hands on any given date than the Nation would otherwise have at its service; and second, the quality of the workmanship of our gigantic industrial army will be greatly improved. For these reasons an adequate supply of carefully planned and well executed sound-on-film pictures to aid in training for war service is a prerequisite to "Full Speed Ahead to Victory."

J. W. Studebaker

U. S. Commissioner of Education

GUEST EDITORIAL: A FOREWORD TO THE VICTORY TRAINING PROGRAM



In 1,000 vocational schools in the 48 states, Hawaii and Puerto Rico, in 10,000 school shops, and in 155 colleges and universities, worker training is now on a 24-hour daily schedule.

Teaching Fundamentals in Victory Training

BY C. F. Klinefelter, *Assistant to the U. S. Commissioner of Education*

FOLLOWING the decision by U. S. Commissioner of Education John W. Studebaker to inaugurate a program of producing motion pictures designed expressly as teaching aids for the defense training program, an Office of Education committee was established, composed, with the exception of two representatives of the Engineering Defense Training Program, of a number of persons who were or had formerly been employed in the Trade and Industrial Education Service of the Vocational Division. Having decided that the first motion pictures should be made for use in the most critical bottleneck of all defense production activities — machine shop work — a comprehensive analysis of basic operations and machine tools was laid out by the committee.

This trade analysis was then subdivided by the committee into approximately 150 units or teaching lessons, which could be treated adequately in units of 400 foot 16mm. film. With the exception of certain units designed to explain items of basic technical knowledge and fundamental procedures common to a number of operations, the units were laid out in terms of work jobs, such as mechanics and operators are actually assigned from day to day in the shop. Further, the units were arranged in terms of learning difficulties rather than of production difficulties.

Step-by-Step Analysis

Having developed the trade analysis to this point, with the assistance of the committee, the technical consultant on machine shop practice next developed an individual synopsis of the subject matter to be incorporated in each teaching unit. The director of visual aids then took the synopsis and added suggestions as to methods of treating the subject matter so as to utilize the most effective devices to clearly portray the material.

Richards Training Formula

In constructing each synopsis, consideration was given to Richards' Training Formula, in which *E*fficiency of training varies as: the degree of *M*anipulative skill required; the *T*echnical knowledge one must have to do the job at all; auxiliary *I*nformation in excess of that required for a particular job; trade *J*udgment and: *M*Orale. This was because of the designed use of the films as teaching aids not only in connection with the giving of initial training in preemployment courses, but in supplemental courses for employed workers as well. The deliberate aim is to assist in developing *intelligent* workers at each and every stage.

As detailed shooting scripts were developed from the synopses, each one was checked to see that it was constructed in conformity with the standard steps of teaching, in which the learner's mind is first of all *Prepared* for what he is to be taught, followed by the job he is to do being *Presented* or shown to the learner by the teacher, after which the learner is placed at the job and the teacher stands by until the learner has *Applied* what he has just been taught while the teacher is available to patch up or straighten out anything the learner has not fully understood. The final step in teaching manipulative work only

appears after the learner has been *Tested* as to his ability to continue to perform similar jobs without supervision.

An understanding of the standard steps of teaching is essential in order to understand clearly the basic limitations of such teaching aids. *If* shown to a group of learners prior to taking the group to a machine to witness an actual demonstration, the film will *Prepare* the learner's mind, and will also *Present* or demonstrate how the job is done. Following such a demonstration portrayed in the film, the shop instructor should then at once take the group of learners to the actual machine and demonstrate or show just how the job is done with real tools and materials. After the group is assigned to machines to *Apply* what they have just been taught, the teacher may decide that one or more of the group need to see the film again in order to understand more clearly some phase of the instructions, and they can view the film again without disturbing the rest of the class.

Films Aid the Teacher

It must be emphasized, however, that learners, merely witnessing a demonstration shown by a motion picture film, cannot be expected to be able to actually do the job without having a demonstration by the instructor on a real machine and having a chance to try then to do the job themselves. These films cannot take the place of a skilled instructor. In his hands they can be very effective teaching tools if he knows how to use them to advantage.

An examination of any of the films dealing with a work operation will reveal the fact that in no case does the film attempt to cover each and every operation from start to finish and to impart each and every item of information associated with the job. This treatment is deliberate. It was decided upon partly in order to impress on shop instructors that they must actively teach and not become mere projectionists. In addition, it was deemed wise, in using the most expensive of all film media — the motion picture —to concentrate upon those parts of the teaching unit which the average shop instructor has some difficulty in getting a group of learners to comprehend.

State Committees Named

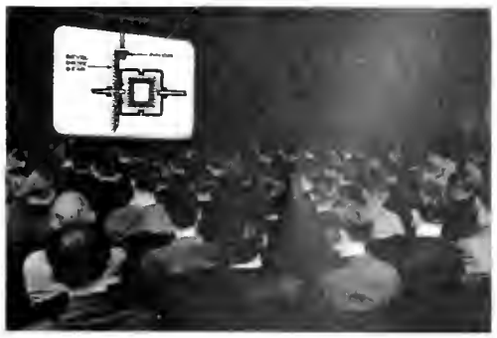
In order to speed up the actual production of the films, State and local advisory committees were created at or near the place of production by State and local officials in charge of vocational education and defense training. Following the development of the film synopses by the technical consultant on machine shop practice, and the director of visual aids, the script writers of the several producing companies began to write scripts which were checked and rechecked with the advisory committees.

The committees did yeoman service in checking the scripts, in viewing rushes, and, on occasion, in suggesting improved set-ups for the shooting. The assistance of the committees has been of inestimable value in insuring accuracy, acceptable terminology, conformity to good standard shop practice, and sound treatment of teaching problems.

As mentioned in the beginning of this account, the Office of Education committee made an analysis of approximately 150 teaching units to cover machine shop operations. When funds became available to finance only part of the program, 40 of the units that seemed to be most urgently needed were selected by the committee. Later, 10 units were awarded to make a beginning in highly critical shipbuilding skills.

Analyse Further Needs

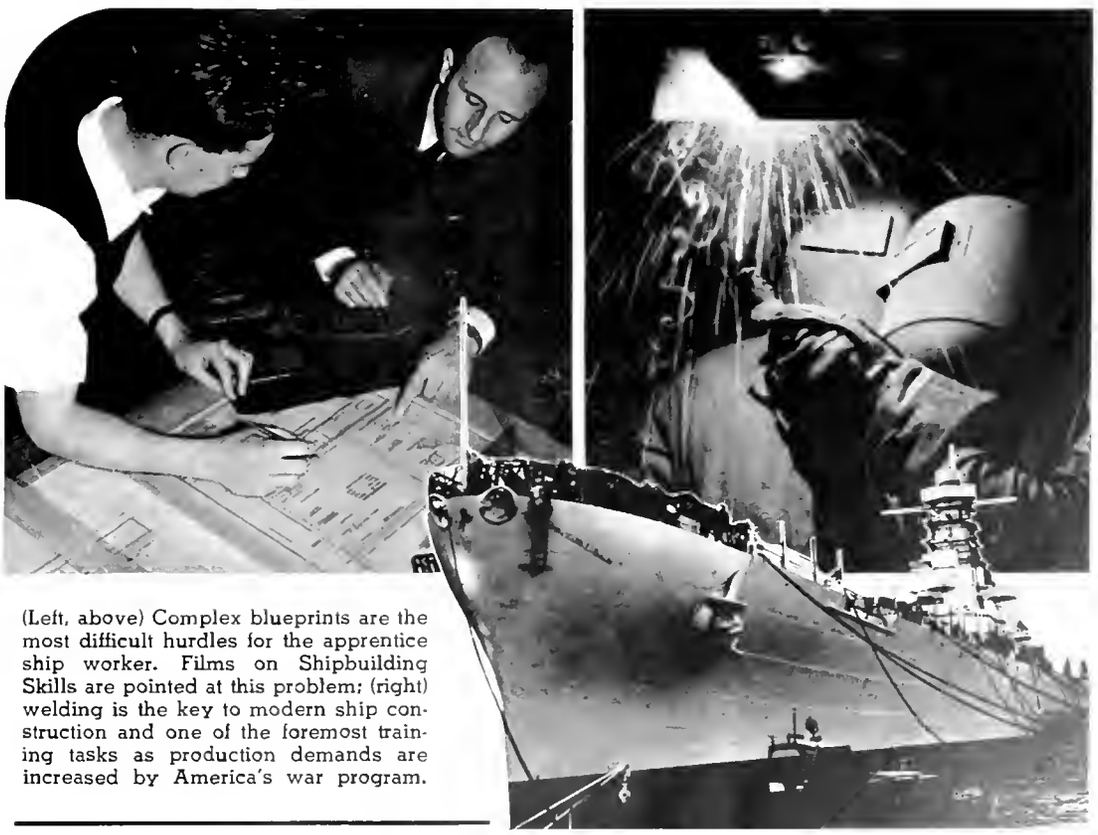
As soon as additional funds are made available to extend the program, the most critical defense training fields will be analyzed in similar manner and contracts for production awarded accordingly. It is definitely planned to make some film strips and teachers' manuals to accompany present films on machine shop practice and shipbuilding and any future production will encompass motion pictures, where motion is essential, film strips, loops, and teachers' manuals.



"If shown to a group of learners prior to taking the group to a machine to witness an actual demonstration, the film will prepare the learner's mind."

How to Obtain the Victory Training Films

*Thirty films on Machine Tool Operation and Shipbuilding Skills, produced by leading industrial film studios for the U. S. Office of Education, are reviewed in these pages. Castle Films, Inc. of New York City, Chicago and San Francisco is the national distributor, utilizing the services of audio-visual representatives throughout the entire United States from whom the films are available at the prices quoted in these pages.



(Left, above) Complex blueprints are the most difficult hurdles for the apprentice ship worker. Films on Shipbuilding Skills are pointed at this problem; (right) welding is the key to modern ship construction and one of the foremost training tasks as production demands are increased by America's war program.

PRECISION MEASURING

1 THE STEEL RULE . . . .

475 feet, 16mm. sound-on-film, Cost $11.37

This subject discusses in considerable detail the steel rule emphasizing the variations of the steel rule: the type of scales found on them: their proper use: and the correct procedures in transferring measurement by means of calipers and dividers.

The motion picture opens with a pictorial discussion of measurement and its importance in modern mass production. Pictures, blueprints, and commentary combine to limit the motion picture to the discussion of the measurement of distance in the form of length, height, width, and depth. Closeups of the blueprint showing both fractional dimensions and decimal dimensions illustrate the explanation of the commentary that the steel rule is ordinarily used in all dimensions given in fractional parts of an inch, while the micrometer is ordinarily used for the measurement of all dimensions given in decimal fractions of an inch.

Closeups call attention to the various scales available on steel rules, running from eighths to hundredths as the commentary stresses the necessity of checking the divisions on the scale being used in order to avoid error. Various forms of the steel rule are shown and their specific use illustrated and explained. Emphasis is given to the correct methods for taking measurements with the steel rule on ends of work, the diameter of shafts, the lengths of cylinders, and the width of holes.

Closeups and commentary combine to show the use of the outside and inside caliper and the correct method of procedure used when transferring a measurement taken by a caliper to a rule. Emphasis is given to the proper care and maintenance of the tools and to the need for precision in holding a caliper to a rule. The use of dividers and a trammel in laying out work in conjunction with a steel rule is also illustrated.

The film closes with a series of review scenes as the commentary calls attention to the usefulness of the steel rule and the necessity for proper care to maintain its accuracy.

2 THE MICROMETER . . . .

525 feet, 16mm. sound-on-film, Cost $12.37

This motion picture presents in considerable detail an explanation of the basic principles on which the micrometer works; correct care, use, and maintenance of a micrometer; and the various forms of the micrometer developed to measure outside lengths, inside lengths, and depths.

The film opens with an extensive use of animation which names the parts of the micrometer and explains in considerable detail the principle on which it works. Animation with printed titles, combined with commentary, shows how the movement of the spindle is controlled to within a thousandth of an inch or less. Animation is also used to explain the manner in which the scales on the barrel and the thimble are read to determine the distance between the spindle and the anvil. Closeups combined with commentary call attention to the correct use of the micrometer, emphasizing the need for the development through experience of the correct "feel" in order to secure uniform readings, the need for the removing of all burrs from the surfaces to be measured to secure correct readings, and calling attention to the necessity of avoiding the dropping of the micrometer or placing of it where abrasive materials may affect it or of whirling it around. The need for checking the accuracy of the instrument at intervals is stressed as closeups and commentary combine to explain the use of standards or gages to check its accuracy. Two forms of the inside micrometer are shown: the jaw and the rod types. Closeups show the use of these two instruments for measuring inside diameter and the manner in which the barrel and thimble scales are read. The rod type of inside micrometer is shown being used with several different lengths of extension rods to measure inside diameters.

The depth micrometer and its correct use are also demonstrated. Illustrations of the various types, with varying lengths of extension rod, combine with commentary to call attention to the flexibility of this instrument and its correct use.

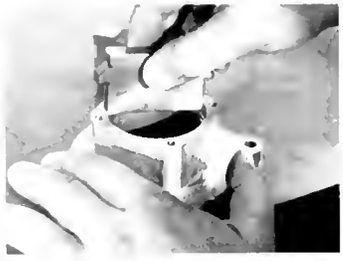
The film closes with a review of the important points in the correct care, use, and maintenance of all micrometers as the commentary stresses the importance of this care in keeping the instrument accurate.

3 FIXED GAGES . . . .

600 feet, 16mm. sound-on-film, Cost $13.87

This film gives in considerable detail, an explanation and definition of the various forms of fixed gages, a demonstration in the correct use and care of fixed gages, and emphasizes their importance in modern mass production. A series of views in the inspection room of a modern factory demonstrates several types of common fixed gages in actual use. There follows explanations of the fixed gages commonly used to check outside and inside measurements, internal and external tapers, threads, shoulders and tang recesses.

Various forms and sizes of the snap gages are demonstrated. Go and not-go gages are shown, their parts named, and their correct use demonstrated, in the measurement of flat pieces, of large cylindrical, and small cylindrical pieces. Closeups, animation, and commentary are combined to explain and define tolerance and to show how the snap gages assure parts being within the tolerance allowed. Various forms of go, not-go gages as they are applied to the diameter of holes, to threads, and to tapers are shown in use. Taper ring gages and taper plug gages are demonstrated in the checking of external and internal tapers. Closeups and commentary call attention to the constant need for careful use of gages in keeping them accurate.



Animation is used to explain the manner in which the flush pin gage is used. Closeups of the flush pin gage in actual operation show how it checks the specifications of shoulders and the like.

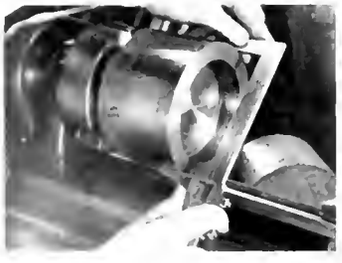
Throughout the entire picture, emphasis is given to the functions of these gages, their proper use to secure accurate and uniform inspection and their proper maintenance to insure accuracy.

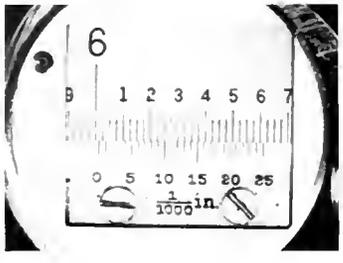
4 VERNIER SCALE . . . .

675 feet, 16mm. sound-on-film, Cost $15.37

This training motion picture offers a detailed study, largely in animation, of the principles of the vernier scale and its application to precision measurement. The reading of the vernier scale and the precautions necessary in the care of tools having a vernier scale are stressed.

Animation is combined with commentary to explain the principle of the vernier scale. The explanation begins with the five-part vernier. This explains the principles of all vernier scales showing how each division on the vernier scale subdivides each unit of the main scale into the same number of equal divisions that there are on the vernier. The principles are further demonstrated with views of a 10-part vernier used on a micrometer and a 25-part vernier used on a vernier caliper. Animation combined with extreme closeups of the scale itself and commentary, explain and demonstrate the reading of a vernier scale.





The care that is necessary to secure correct readings with these fine precision measuring tools is portrayed in a series of pictures showing a vernier micrometer and a vernier caliper in actual use. Attention is called to the two sides and their accompanying scale on the vernier caliper; the one used for outside measurements and the other for inside measurements. Several settings of these vernier scales are shown in extreme closeups to provide some experience for the student in their reading.

The film closes with scenes and commentary emphasizing the care that is required to maintain the accuracy of all tools using vernier scales.

5 HEIGHT GAGES AND STANDARD INDICATORS . . . .

425 feet, 16mm. sound-on-film, Cost $8.97

This subject reviews the fundamental principles and reading of a vernier scale as used on a height gage, shows several forms of test indicators, and demonstrates their use.

The film opens with animation which explains how vernier scales are read and why they are used. The parts of a vernier height gage are shown and their use demonstrated. Closeups and commentary emphasize the steps used in securing an accurate reading on a vernier height gage. This tool is demonstrated as it is used for a precision job of lay-out on an angle plate.

The second portion of the film deals with test indicators showing the dial form as well as other variants. Closeups of a dial indicator in actual use, combine with commentary to explain the function and use of dial indicators in measuring fine deviations from previously determined measurement. Various forms of these test indicators are shown being used to check the accuracy of lay-out, the flatness of a surface, the centering of work on a vertical boring mill, the centering of work between centers of a lathe, and the depth of a cut on a milling machine. These demonstrations also show the use of vernier height gage and gage blocks in conjunction with the indicator.

Throughout the motion picture special emphasis is given to the care necessary to maintain the accuracy of these precision measuring tools.

The Complete Set of Five Subjects on
PRECISION MEASUREMENT COSTS $61.95
(Individual titles may be purchased separately)

Total Footage, 2700 feet, 16mm. sound-on-film
All prices include reel and can

THE ENGINE LATHE

1 ROUGH TURNING BETWEEN CENTERS . 550 feet, 16mm. sound-on-film, Cost $12.87

This training motion picture emphasizes and presents in considerable detail the care and operation of the machine, the identification of the various controls and parts of the machine used in rough turning, the correct setting of rough turning tools, the safety precautions necessary for both operator and machine, and the necessity for following a blueprint in performing any job.

The job selected for this demonstration is rough turning a pin of rough stock such as the pins used in rear axle assembly. The rough stock is 2½ inches in diameter and has already been cut and faced to length. Close-ups of the blueprint combined with commentary emphasize the necessity for following the blueprint and give the problem that in this job the pin is to be rough turned to approximately 2 inches in diameter, leaving .015 for grinding.

As the operator prepares to do the job, detailed views of his clothing calls attention to the safety features involved in the operator's dress. The engine lathe is cleaned and oiled, with particular attention being given to the ways, and the centers of the lathe. The dog plate is screwed onto the head stock spindle, the centers are put into their proper positions. The operator checks with his blueprint to make certain he has the right piece of stock. The accompanying commentary names the parts of the machine as they are used and explains the reason for each step.

The rough stock is placed between the centers. Close-ups and commentary point out the necessity for constantly lubricating the tail stock center of the work. A series of pop-in views gives close-ups of rough turning, finishing, parting, threading and radius forming tool. The operator grinds his roughing tools as the commentator calls attention to the safety measures and to the manner in which the tool is held against the wheel. Extreme close-ups with titles give the various angles of the roughing tool with the names and the degrees of these angles.

Special attention is given to the mounting of the tool in the tool post, at the correct angle and position. Close-ups combined with commentary call attention to the need for the tightness of the tool and for as little overhang as possible. The operator takes a skimming check, checks with the blueprint, measures the cut with the micrometer, and calculates the full depth of the cut. Animation explains that the full cut taken is double the cut that is set on the cross feed index. The full depth of cut is started, checked the second time with the micrometer, and then continued as far as possible. Magnified views of the chip as it flows from the edge of the roughing tool illustrate the action of cutting tools and show the jagged razor edges of the chip. The piece is then reversed between centers, the dog is changed, the tail center again lubricated, and the cut finished.

The film closes with a series of brief review shots that recall and emphasize again the important steps in rough turning between centers.

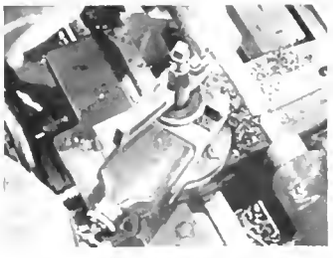
2 TURNING WORK OF 2 DIAMETERS . . . 500 feet, 16mm. sound-on-film, Cost $11.87

This training motion picture emphasizes the care and operation of the machine, the necessity for advance planning of the work, the setup for the job, the necessity for checking with the blueprint, laying off and nicking the piece for machining, rough and finish turning to close tolerances, rough and finish facing, and rough and finish turning of fillets.

The film provides a detailed demonstration of the sequence of operations followed when turning a gear blank with its shaft from a solid piece of round stock cut to the proper length, faced, and center. The tail center hole is lubricated, and the shaft is placed between the centers of the lathe.

The importance of the blueprint in guiding the operator through this job is emphasized. Closeups of the blueprint itself give the dimensions to which the operator works. A roughing tool bit is selected, placed in the tool holder in the proper position and at the correct angle. Double printing, arrows, and commentary emphasize the reasons for this angle and the necessity for as little overhang as possible. The entire piece is rough turned as far as the dog will permit. A facing tool is used to face the end nearest the tail stock. Using a scale, the operator nicks the stock to indicate the location of the gear blank. Commentary is used to explain the importance of the establishment of such reference points for all measurements. The shaft is rough turned down to the proper size to establish the collar, and then finish turned down to the size given in the blueprint.

The basic types of lathe tools for rough turning, finishing, facing, and fillet forming are shown. Animation, closeups, arrows, and commentary combine to explain the distinctive differences of the finishing tool and the reasons for the various angles of its faces. A radius tool is used to finish the right face of the collar and to form the fillet. The accompanying commentary explains that in such small cuts the hand feed is used. The work is reversed and this time a small piece of brass is used to prevent damage to the finished surface of the shaft. The roughing, finishing, turning and facing cuts are completed on the other end of the shaft, and the fillet is formed.



The film closes with a review of the rough cuts, the location and marking of the collar, the rough turning of the shaft to size, the finish and facing cuts on the shaft, the collar, and the end. The closing scene between the operator and the shop foreman shows the foreman checking the piece, and the dialogue gives the criterion of a good job; namely, cut to dimensions and in good time.

3 CUTTING A TAPER WITH COMPOUND REST AND TAPER ATTACHMENT

400 feet, 16mm. sound-on-film. Cost $8.47

This training motion picture shows the operations necessary to cut a sharp and slight taper on a gear blank. Considerable detail and emphasis are given to the care and operation of the machine, the use of the compound rest for turning a sharp angle surface, the setting of a compound for turning any angle within its range, the setting of the tool for taper turning, the principles of the taper attachment, the correct setting of the taper attachment for the given angle, and the use of a protractor and a ring gage for checking the angle of taper. The problem is set with the views of a finished shaft and a blueprint, which, combined with the commentary, defines taper and distinguishes between steep and gentle tapers. Animation depicts the steps by which the job will be done as the commentary emphasizes the constant need for advanced planning of each job. The operator cleans the lathe, places the dog on the end of the semi-finished shaft, lubricates the tail center, and places the shaft between the centers.

Animation explains how the compound rest is used to cut a sharp taper. Animation is also used to explain the setting of the compound rest for the desired angle of taper when the angle on the blueprint is given in terms of the center line of work, or, as is sometimes the case, when the angle is given in terms of a line at 90° to this center line. The accompanying commentary emphasizes and explains the proper setting of the compound rest in terms of the angle of taper desired.

As the operator sets the compound rest at the proper angle, extreme close-ups show the calibration on the base of the compound rest. The compound rest is locked in place, the truing-up tool is set to the center line of the work, the cross feed is disengaged, and the cut is taken.

Close-ups show the use of the bevel protractor to check the angle of taper, as the commentary explains the correct use of this measuring tool.

The second portion of this motion picture covers the use of the taper attachment to cut a slight taper at the opposite end of the work. Detailed animation combined with commentary demonstrates and explains the working of the taper attachment in cutting a slight taper. Close-ups show the operator disconnecting the cross feed screw, fastening the bracket to the lathe bed, and tightening the clamp on the connecting bar. A magnified close-up locates and shows the graduation on the taper attachment, as the commentator explains that these permit setting the taper attachment for the cutting of the desired taper.

Using the longitudinal feed the operator takes the first cut to establish the taper. A taper ring gage is used to check the taper, indicating it is loose at the large end. The commentator calls attention to the fact that the taper attachment may be worn, that the setting is only approximate; and that the taper attachment must be set for a slightly larger taper. A second trial cut is taken and this time the angle of taper is correct. Close-ups of the blueprint show the required diameter of the shaft at the point of the taper. Another cut is started, and checked with the micrometer, as the commentary explains the adjustment of the micrometer reading in terms of the tapered surface it is measuring.

The film closes with the taper completed, as the commentator states that the work is not complete, that the gear teeth and threads will be added by other operations on other machines.

4 DRILLING, BORING AND REAMING WORK HELD IN CHUCK . . .

400 feet, 16mm. sound-on-film. Cost $8.47

This training motion picture presents in considerable detail the centering of a gear blank in an independent chuck, the selection and setting of the tool for facing the gear blank; drilling, boring, and reaming with the tail center; and reviews the use of the taper attachment in the making of a taper bore.

The job selected for this demonstration is a rough steel forged pinion gear blank. The first operation is that of centering the gear blank in the jaws of an independent chuck. Closeups combined with commentary provide a demonstration of the method used to center the blank accurately. A rough facing tool is set in the tool post and the forging is rough faced. Commentary calls attention to the setting of the tool and to the use of the hand feed for this operation.

A check with the blueprint indicates the size of the hole and the drill size to be used. The drill is mounted with a special holder in the tail stock spindle. A guide bar is mounted in the tool post to guide the drill into the gear. The lathe is started, and the drill is fed by the tailstock hand wheel.

A boring tool and bar are set in the tool post, the taper attachment is set and a first boring cut is taken to establish the taper. Closeups combined with commentary serve to review the use of the taper attachment. The taper is checked with the taper plug gage. Since the taper is not correct the taper attachment is re-set and a second trial cut is taken. A new cut is taken and checked and found correct and the boring cut completed.

A taper reamer is used to finish the cut. Closeups and commentary call attention to the correct setting of the reamer, the use of cutting oil, and the use of the limit marks on the reamer.

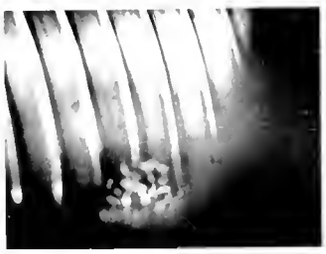
5 CUTTING AN EXTERNAL NATIONAL FINE THREAD . . . .

450 feet, 16mm. sound-on-film. Cost $9.47

This motion picture shows in considerable detail the procedures and precautions necessary when setting up a lathe for cutting a thread, the grinding and the setting of the cutting tool; the use of a thread pitch gage, and setting gage; and the operations of the lathe in the cutting of a thread.

An introductory sequence shows an acme, a square, and a national fine thread as the commentary names these threads and indicates their common uses. Animation is used to name the principal parts of a thread.

Closeups of the blueprint indicate the type of thread to be used in this case and the length of work to be threaded. The work is mounted between centers and with a parting tool the operator takes an undercut at the point where the thread ends. The accompanying commentary explains the reasons for this undercut and indicates its depth.



Animation, closeups, and commentary show the setting of the threading tool to the work by means of a setting gage. After the first test cut, the thread is checked to make certain that the pitch of the thread is correct. Considerable detail is given to the setting of the lead screw, the stop on the cross feed screw, and the use of the thread indicator dial. The correct use of the thread indicator dial is shown in closeups and in slow motion. The picture closes with a brief review of the important steps to be followed in operating a lathe for thread cutting and the checking of the finished thread to the specifications given.

The Complete Set of Five Subjects on
THE ENGINE LATHE
Costs $51.15
Total Footage, 2300 feet, 16mm. sound-on-film
Individual titles may be bought separately
All prices include reel and can

The Complete Set of Five Subjects on
THE MILLING MACHINE ►
Costs $75.95
Total Footage, 3325 feet, 16mm. sound-on-film
(Individual titles may be bought separately)
All prices include reel and can

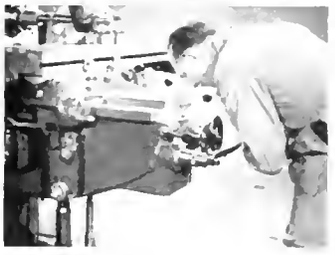
THE MILLING MACHINE

A THE MILLING MACHINE . . . .

This motion picture provides a demonstration of a plain milling machine and shows the basic parts of the machine, locates and names the various control levers, and demonstrates the action of the table longitudinally, vertically, and cross-wise.

The film opens with a view of the milling machine as it is being set up for a job. Views of the cutter and of the table serve to illustrate the commentator's remarks that the two basic elements of the milling machine are the revolving cutter and the movable table which feeds the work to the cutter. The arbor with its assembled cutter set-up and spacing collars is shown as the commentator names these parts and calls attention to their importance.

The three basic movements of the table are demonstrated and the power controls at both the front and the side of the machine which control the movement of the table up and down, cross-wise, and in and out. Closeups of the micrometer indexes on the hand feed wheels combined with commentary call attention to the fact that the table may also be moved by hand, and that each mark on the index dial indicates a table movement of .001. Closeups and commentary call attention to the levers that are used to lock the



275 feet, 16mm. sound-on-film, Cost $5.97

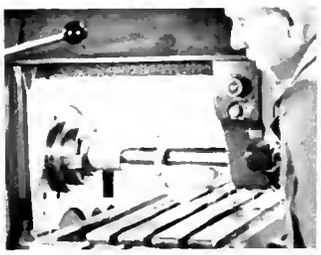
knee, the saddle, and the cross feed, to prevent movement of these parts. Views of the revolving cutter and of the feed dial accompany the commentator's remarks that the speed of the cutter is controllable on this particular machine from 20 to 500 r.p.m. The feed indicator dial is shown as the commentator defines feed as the number of inches per minute which the table moves the work into the cutter. The film closes with a series of views of surface milling, straddle milling, gear cutting and keyways as the commentary calls attention to the versatility, precision, and efficiency of the milling machine.

1 CUTTING A KEYWAY ON END OF A FINISHED SHAFT

This training motion picture shows in considerable detail the correct set-up for a rigid arbor assembly; the calculations and operations necessary to locate the work on the table for the cut; the calculation of the speed and feed in terms of type and size of cutter, and type of metal to be cut; and the use of the rapid traverses and power feeds. Animation, closeups photography, and commentary combine to demonstrate many of the basic principles of milling machine operation as they apply to the cutting of a keyway in a steel shaft.

Closeups of a blueprint show two keyways are to be cut, one at each end of a steel shaft. The shaft is located in the table slot nearest the head. A short arbor is selected and the cutter is located as near to the head of the machine as possible. The accompanying commentary stresses the importance of these locations to secure a rigid arbor assembly for precision work. Pictures and commentary combine to stress the importance of the cleanliness of the machine and the freedom of all parts from dirt and burrs. Animation and commentary show in considerable detail the calculations and the operations necessary to locate the piece for the required cut. Animation is used to show and to explain the calculation of the proper feed and speed for cutting a keyway in terms of the metallic composition of the cutter, the diameter of the cutter and the number of teeth, and the composition of the metal being cut.

The operator is shown setting the feed dial and the speed dial to the required positions. The table is set for the required depth of cut. The table stops are set for the length of cut and the cut is made



525 feet, 16mm. sound-on-film, Cost $12.37

After the first keyway has been cut, the machine is re-set for the second keyway. Closeups and commentary are used to explain and demonstrate the hand feeding of the cutter to the correct depth on the second keyway. Once the correct depth of cut is reached, the automatic horizontal feed is thrown in and the cut completed. For this job the shaft has been fastened to the table by clamps and U-bolts. A brief series of views shows the same job being done with the shaft secured in a table vise and between the centers of the dividing head.

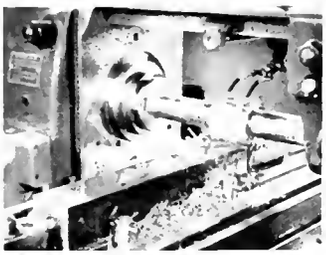
The film closes with a brief review of the important steps to be remembered and followed in operating a milling machine in the cutting of a keyway

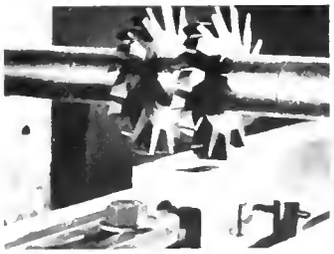
2 STRADDLE AND SURFACE MILLING TO CLOSE TOLERANCES

This picture shows the set-up and the selection of cutters used when surface milling a solid block of steel on four sides and then straddle milling the block into a T-section, working to close tolerances. The piece is clamped to the table with finger clamps in each end.

The rough piece has previously been drilled in the end for the finger clamps and the operator's movements as he cleans the table and the piece and clamps the piece on the table, for the first slab milling cut, are shown. The piece is milled on all four sides, each movement of the operator being shown in detail and discussed in the commentary.

After the piece has been finished all over the slab milling cutter is removed and two side milling cutters and the necessary spacing collars are mounted on the arbor. The importance of a rigid arbor set-up is emphasized and the operator is shown as he takes a trial cut and finds that the spacing between the two cutters





975 feet, 16mm. sound-on-film, Cost $22.12

must be changed. The method of calculating the thickness of the two shims used and the manner in which they are placed on the arbor are shown in the pictures and discussed in the commentary. As the cutting proceeds, the operator checks the setting of the cutters to be sure the spacing is correct. At the completion of the cut he again measures his work and checks with the drawing to be sure it is correct. The film closes with a resume of all the various steps used.

3 STRADDLE MILLING . . . .

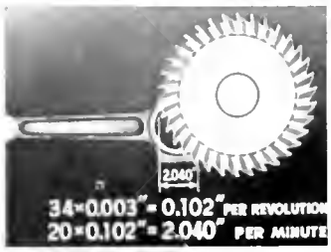
625 feet, 16mm. sound-on-film, Cost $14.37

This film shows the sequence of operations used when machining the sides of two connecting rods held on a fixture mounted on a table of a No. 2 plain milling machine.

Mounting the fixture on a table; clamping the two pieces in the fixture; calculating the length of various spacing collars to be used with the four cutters; the use of four side milling cutters with spacing collars of a given length, the necessity for a rigid arbor set up and the procedure used when making same; lining up the work held in the fixture with the cutters on the arbor; calculation of feed and speed are all discussed in detail both in the pictures and in the commentary.

Both the table and the base of the fixture are cleaned and the fixture mounted on the table. The fixture is rotated 180 degrees for each operation and is locked in these positions by a dowel pin. The two connecting rods are mounted in the fixture and the table moved up

THE MILLING MACHINE



ance to the face of the column. Closeup views showing the cutters mounted on the arbor and the manner in which the arbor support are bolted in place are clearly shown. The method used to calculate the length of the spacing collars, both for locating the cutters on the shaft and for the correct spacing between the cutters are shown in animation. A setting gage, held in a fixture, is used to align the fixture with the cutters, both for longitudinal and vertical position.

Calculating the speed of the cutters in feet per minute and the feed of the table in inches per minute are clearly shown. A trial cut is taken and the two pieces measured to check the spacing between the cutters.

The use of shims for correcting the distance between the cutters is demonstrated. Commentary is used throughout, discussing the various operations as they proceed and stressing safety precautions. The picture closes with a resume, both in pictures and in commentary, of the various operations depicted in the film.

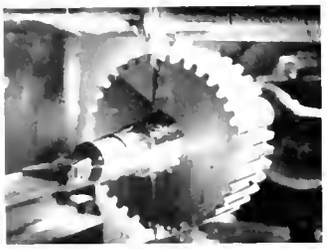
4 PLAIN INDEXING AND CUTTING A SPUR GEAR . . . .

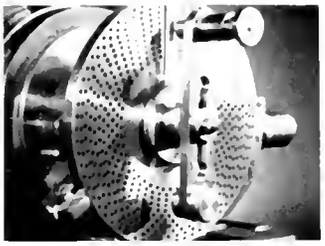
This training motion picture offers an explanation and definition of diametral pitch, and the parts of a gear tooth; detailed explanation of the use of the dividing head for spacing teeth and the operations of a milling machine in the cutting of a spur gear.

Animation combined with commentary names the parts of the gear tooth and explains diametral pitch. The proper cutter is selected, and placed on the arbor. Closeups show the placing of the gear blank on a mandrel and then between the centers of the dividing head.

There is provided in animation a detailed explanation of the principles of the dividing head and the manner in which it is used to secure the desired number of cuts. The use of indexing plates and of the sector on the indexing plates is explained. The operation of the dividing head to secure 36 evenly spaced cuts on a gear blank is demonstrated.

On this particular job the accuracy of the indexing is checked by making a series of preliminary nicks or slight cuts in the gear blank. The work is supported with the table jack, the depth of the first cut is calculated, and the table stops are located for the desired length of cut.





925 feet, 16mm. sound-on-film. Cost $21.12

A brief sequence of animation serves to review the calculation of the speeds and feeds necessary for this cut.

The roughing cut is completed for the entire gear blank and it is checked. A second, or finishing cut is then made. The finished gear is checked with a gear tooth vernier. The motion picture closes with views reviewing the important points in cutting a gear blank and using the dividing head. The commentary stresses the necessity for a constant check of the work and the accuracy needed in the correct cutting of the gear.

VERTICAL BORING MILL

1 ROUGH FACING, TURNING AND DRILLING ON A VERTICAL TURRET LATHE . . . .

This training motion picture emphasizes the identification of the various controls on a standard vertical turret lathe; the use of these controls in making facing, turning, and drilling cuts with the vertical head; demonstrates the independent and universal movements of the chuck jaws on the table; the method of holding a piece by internal chucking and the use of the indexes on the machine to control the movement of the cutting tools. The job selected for this machine demonstration is an aluminum casting for a diffuser section of a modern airplane engine.

The film opens with a finished job as rough facing, turning, and drilling cuts are identified. Closeups of a typical operation sheet combined with commentary, explain that these operation sheets are typical of production jobs and serve to guide the operator. The machine is cleaned and oiled and the operator is safely dressed. The accompanying commentary explains that these things are assumed on every job. The work is to be held by the jaws of the combination chuck on the table. The independent and universal movements of these jaws and the procedures used in internal chucking are demonstrated. The importance of the procedures used in centering the casting and securing it firmly to the table are explained.

The movement of the vertical head up and down and cross wise by power and by hand are demonstrated and the levers and wheels which control these movements are identified. Attention is called to the indexes on the vertical and transverse feeds and the correct procedures for using both the power and the hand feeds. The turret on the main or vertical head is explained in considerable detail by closeups and commentary as the operator mounts the roughing tool for the first rough facing cut. Animation explains the feed of the cutting tool on the machine. The facing cut is started, checked, corrected, and continued until completed. The turret head is indexed and closeups show the setting of the turning tool. The vertical head is brought into position, the table is started, and the turning cut made. The vertical head is centered by the centering rod and a drill is set in the turret for drilling. Throughout the entire film the correct and safe procedures to be followed in the operation of the machine are stressed by closeups and commentary. The motion picture closes with a brief review of the important points to be remembered in the performance of work on the vertical boring mill and vertical turret lathe.

1125 feet, 16mm. sound-on-film. Cost $25.12

2 ROUGH FACING AND BORING AND TURNING A SHOULDER . . . .

This motion picture reviews the operation of the vertical head; portrays in considerable detail the parts and the operation of the horizontal or side head; depicts the procedures used in holding work on the table with clamps and driving block, and demonstrates the operations used in making rough facing, boring, and turning cuts with the independent use of the main and side head.

An aluminum casting of an airplane motor part is used for the demonstration. The casting is fastened to the table by means of clamps and U bolts. It is centered and leveled by means of a dummy indicator and a surface gage. The controls and the movements of the vertical head are reviewed as the tool is mounted in the vertical head for the facing cut. A boring bar is mounted and a boring cut made. The shoulder is turned by means of a tool mounted in the side head. The vertical and horizontal movements of this head are explained and demonstrated and the machine controls that control these movements are identified. The use of reference chippings on the index dials of the hand feed wheels is demonstrated and explained in terms of setting up the machine for production work. Animation explains the determination of the depth of cuts on the diameter. Considerable emphasis is given to the use of the automatic horizontal and vertical feeds on the main and side heads.

The film closes with a brief review of the principles involved in the operation of the vertical turret lathe.

800 feet, 16mm. sound-on-film. Cost $17.87

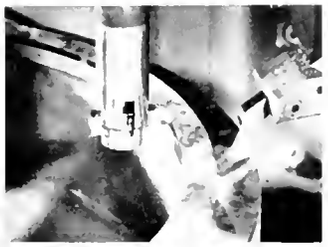
3 FACING, TURNING, BORING, GROOVING, CHAMFERING ON A VERTICAL TURRET LATHE USING 2 HEADS . .

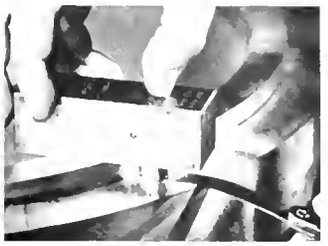
This motion picture demonstrates facing, turning, boring, grooving, and chamfering cuts on a vertical turret lathe with the simultaneous use of both heads, the securing of work in a special fixture, the precautions to be observed in machining magnesium alloys, and the use of a surface gage and test indicator for leveling and centering the work. The job selected for this demonstration is a semi-finished magnesium alloy casting, prepared by the lay-out department.

The use of special fixtures in securing castings to the table and the use of test indicator to check the setting are demonstrated. The vertical head is used to face the casting. The correct tools are selected and mounted in the vertical and side head for simultaneous use in making the boring and turning cut. The correct operation of the vertical and side head is depicted in considerable detail and the parts and controls of each are reviewed. The use of a flush pin gage to determine the depth of cut on a shoulder is shown and animation explains the use of a chamfering tool. Closeups, animation, and commentary show the correct use of a grooving tool and explain the calculation necessary to locate correctly the grooving cut.

The safety precautions necessary in working with magnesium alloys are emphasized in a brief sequence demonstrating the explosive action of burning magnesium chips when water is thrown on them. The accompanying commentary emphasizes the constant need for buckets of sand when working with magnesium. The use of reference clips and the order of setting the tools in the index head are explained in terms of "tooling up" the machine for production work.

The film closes with a brief review of the important features of the vertical turret lathe and the principles involved in its safe and efficient operation.





1125 feet, 16mm. sound-on-film, Cost $25.12

The Complete Set of Three Subjects on
THE VERTICAL BORING MILL Costs $68.11

Total Footage, 3050 feet, 16mm. sound-on-film
All prices include reel and can

(Individual titles may be purchased separately)

THE SHAPER

Footage and cost of this subject on same basis as previous reels

1 CUTTING KEYWAYS . . . .

This subject demonstrates the operation of a shaper in cutting a keyway in a steel shaft, emphasizes the safety precautions necessary in the operation of this machine, explains the clearance hole at the end of a cut, portrays the selection of the tool and its setting for a given width and depth of cut, shows the correct procedures for securing the work in a table vise, and the selection and procedures used in setting the correct length, position, and speed of the ram stroke.

Animation combined with commentary and closeups of the blueprint show the steps followed when laying off the keyway at the end of a steel shaft. The use of an indicator to check and to make certain that the solid jaw of the table vise is parallel with the stroke of the ram is demonstrated in considerable detail.

The operator places the shaft in the vise on a parallel and sets it in the correct position for cutting the keyway. A roughing tool with a cutting surface smaller than the keyway is selected as the commentary explains that a roughing cut will be made first. The tool is squared with a parallel and securely mounted in the tool post. The ram is set for the proper length of stroke, and then adjusted to make certain that the end of the stroke comes in the middle of the clearance hole at the end of the keyway. The importance of this position is explained by closeups and commentary. The correct cutting speed in terms of the cutting tool and the metal being cut is selected and machine is set. As the roughing cut proceeds, the necessity for keeping the clearance hole free of chips is explained. When the roughing cut has been completed, a finishing tool is selected that is the full width of the keyway. Sixty-four inch has been left for the finishing cut on both sides of the keyway. The speed, the length of the stroke, and the position of the stroke are checked. Attention is called to the necessity for wearing goggles in the performance of this work. The tool is hand fed to the work approximately .002 inch per stroke. Emphasis is given to the feeding of the tool on the back stroke. As the finishing cut approaches the lines in the layout, the machine is stopped and the dimensions of the cut checked with the blueprint.

The film closes with a brief review, emphasizing the proper setting of the tool, securing of the work, setting of the ram stroke, speed and position, as the commentary emphasizes the necessity of each of these in the safe and efficient operation of a shaper.

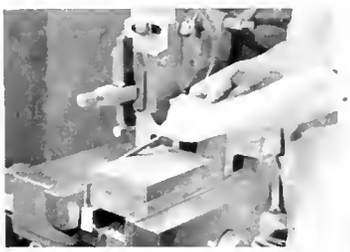
2 MACHINING A RECTANGULAR CAST IRON BLOCK

This motion picture demonstrates the procedures followed when rough machining and finish machining a rectangular block of metal held in a vise mounted on the table of the machine. In this picture a block of cast iron is used to show how the work is held in the vise, the functions and use of parallels and the various ways in which the block is set in the vise for rough machining all six surfaces. It demonstrates also the techniques used when taking finishing cuts including the use of tell-tale papers to assure the correct seating of the piece on the parallels, the necessity for establishing a reference surface and setting the piece in the vise so that all the other surfaces will be machined from that reference surface.

The difference in the shape of the roughing and finishing tools and the method of setting each, together with the depth of cut, and the use of the automatic feed, and hand feeding, are shown. Various safety precautions such as the use of goggles, keeping the hands out of the way of the tool, running the table off to one side when setting the work in the vise, and the necessity for keeping the vise clear of chips, are emphasized. Setting the ram for length and position of stroke and the use of the vertical hand feed screw in the head are shown in detail.

The cutting speed, feed, and depth of cut are shown in animation. The commentary, which flows along with the picture is used to explain and emphasize the various principles underlying each operation shown and to explain why certain operations are performed in a given manner. The film closes with a series of montage shots with lap dissolves giving a resume of the various basic principles and operations discussed in the picture.

Footage and cost of this subject on same basis as previous reels



3 MACHINING A TOOL STEEL V BLOCK

This film shows in detail the machining of a V-block from a solid piece of tool steel which is held in a shaper vise. The piece has previously been finish machined all over ready for cutting the V's and the clamping slots on the sides. The use of paper shims to assure the correct seating on the parallel, setting the ram for length and position of stroke, are shown in detail. The selection of each tool used on the various operations is discussed, both in the pictures and the commentary, and the correct procedures followed when setting each tool for its particular job, are also emphasized, both in the pictures and the commentary.

Cutting the slots on the sides is done with only one cut and the reason for this procedure is given. One method of roughing out the large V and the small V on the opposite side, working to the layout, are shown in full detail. Selecting the finishing tool for these operations, setting the head of the shaper over to cut to a 45 degree angle, and setting the finishing tool for the finishing cuts are clearly shown. The position of the head on the ram is not changed when machining the two sides of the V, instead the head remains in one position and the piece is reversed in the vise.

Footage and cost of this subject on same basis as previous reels

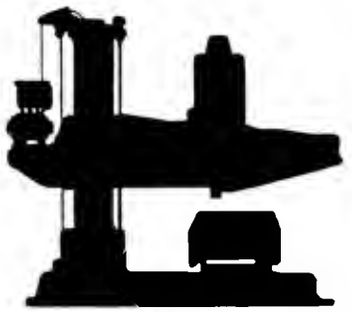
The necessity for using all precautions necessary to keep the vise clear of chips and the effect which chips may have on the accuracy of the work are emphasized. The necessity for removing burrs and breaking sharp corners as a safety precaution both for the work itself and for persons handling the piece after it has been machined are very strongly emphasized together with the necessity for exercising care when setting up the work in the vise to eliminate some of the various hazards to the operator.

The film closes with a series of montage shots giving a resume of the various steps covered in the picture.

The Complete Series Includes
THREE SUBJECTS ON THE SHAPER

Total footage and cost of the series is computed on same basis as previous reels

THE RADIAL DRILL



1 DRILLING AND TAPPING A CAST STEEL VALVE BODY

This picture shows the techniques used when drilling and tapping blind holes in cast steel on a radial drill. A drill jig with loose bushings is used for locating the holes

Throughout the picture, the various controls of the machine are pointed out and the method of using each demonstrated. The necessity for keeping both work and machine clean is emphasized. Setting up the work on the table of the machine, setting the jig on the piece to the layout lines, and clamping the work in place on the table are shown in considerable detail.

Calculating the size of the tap drill is shown and the method used when setting the machine to drill a number of holes to the same depth is demonstrated. A wizard drill chuck is used in the drilling operation and a standard friction chuck is used for holding the tap. The action of a tap in a hole is shown in animation as is also the reason why a tap binds in the hole and must be reversed frequently when tapping in tough metals. The necessity for having the work securely clamped on the table when tapping is emphasized

Footage and cost of this subject on same basis as previous reels

together with other safety precautions affecting the operator, the machine, and the work.

Commentary is used at each step to reinforce the pictures and give reasons why certain things are done in certain ways as well as calling attention to the basic principles underlying each operation.

The picture closes with a series of shots giving a resume of the various points covered, together with a discussion by commentary.

2 DRILLING AND SPOTFACING A CAST IRON VALVE BODY

This picture shows in detail the techniques used when drilling to a layout and spot facing the under side of a flange. The method of mounting the work on the table and the necessity for clamping it securely in place are shown in detail. Two small table jacks are used to hold the piece in position.

The layout of the various holes showing the prick punch marks on the center lines are shown on the surface of the casting. The drill is started on one of these layouts and test spot is drilled. Examination shows it is badly off center and the technique used in drawing it over to the center of the layout is demonstrated both by photography and by animation. The reasons why the drill often starts off center and the basic reasons underlying the various techniques used in drawing it back on center are discussed in the commentary.

After the drilling has been completed a plain spot-facing bar is placed in the spindle of the machine, the bar is lowered into one of the holes in the casting and a fly cutter is clamped in the bar on the under side of the flange. There are extreme closeups showing both the bar and the fly cutter separately and afterwards

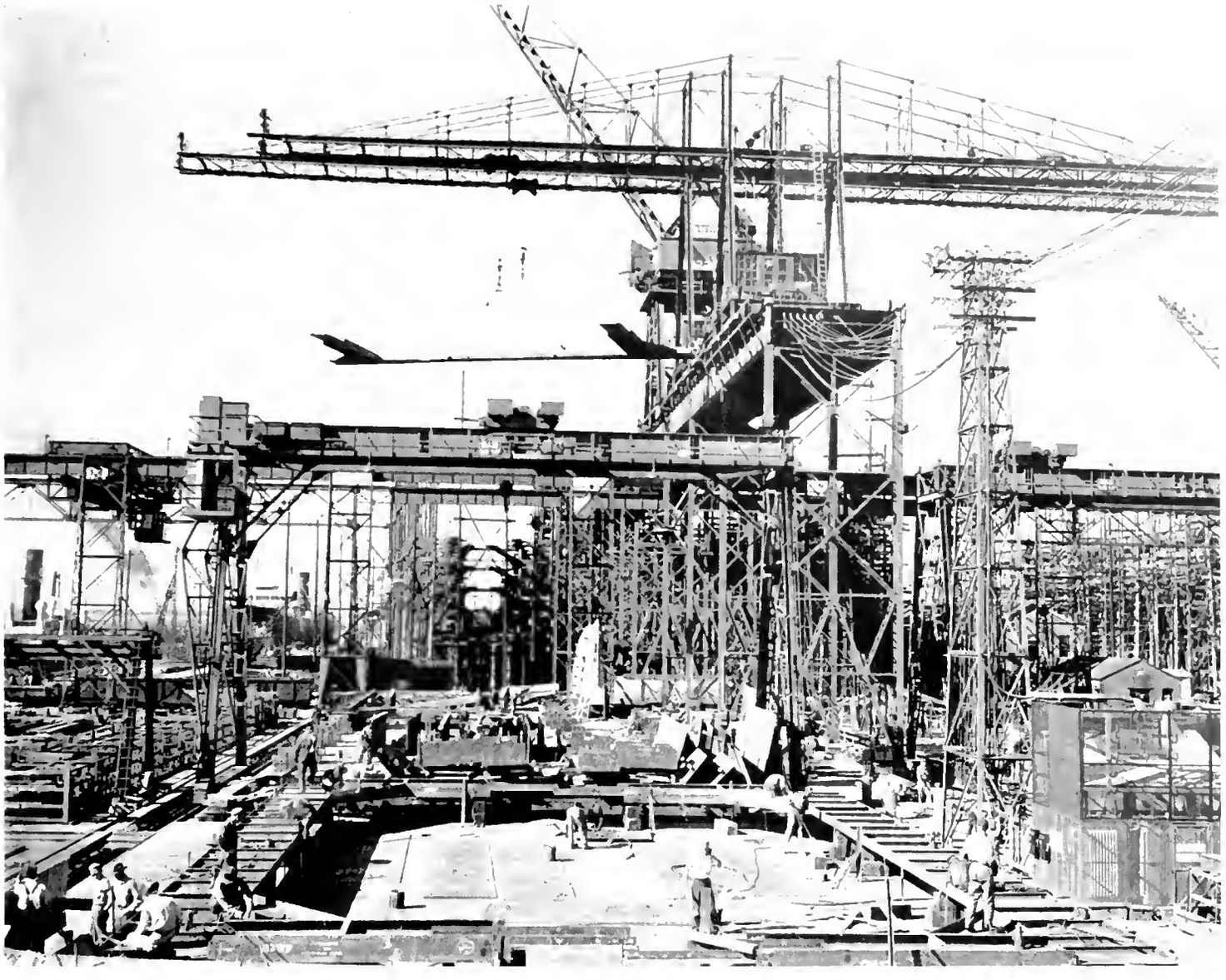
Footage and cost of this subject on same basis as previous reels

in the actual operation of spot facing the under side of the flange. The operator is shown as he measures the thickness of the flange after it has been spot faced and sets the stop on the machine for controlling the movement of the spindle when spot facing the succeeding holes.

Commentary is used throughout in a discussion of the basic reasons underlying each step in the operations as well as for calling attention to various safety precautions that must be used. The film closes with a series of shots giving a resume of all the steps shown in the picture.

The Complete Series Includes
TWO SUBJECTS ON THE RADIAL DRILL

Total footage and cost is computed on same basis as previous reels



Visual Aids in Shipbuilding

BY A. F. Johnson, *Coordinator of Shipbuilding, U. S. Maritime Commission*

MUSHROOM growth of existing shipyards and creation of new yards under experienced management are making possible the building of large merchant and naval fleets today. Five years ago there was very little shipbuilding.

A nucleus of experienced ship artisans is training an army of novices who must work in new and constantly changing environments.

To show these learners how the structure and equipment of a vessel are produced and assembled, without interference of related trades and in proper sequence, would be impracticable on the vessel itself. These learners would get in the way of productive workers. The proper kind of motion pictures with essential tasks enacted by skilled men and presented in proper sequence, with supplementary animation and commentary, can be used repeatedly and most quickly to instruct beginners away from the job and with least delay in production.

They rapidly convey the knowledge of assembly steps, nomenclature, part identification, markings, and supplementary erection procedures, with equal clearness to all learners and with the same opportunities for comprehension.

They also show skilled manipulation which young apprentices may imitate to their advantage. No other process of visual training can so vividly portray the complete story of producing and erecting typical ship's parts. Nor is it possible to put the student into so many related shop or field environments with little time loss.

The pictures serve an introductory, a review, and a corrective purpose. They permit, if necessary, the breaking down of complete shipbuilding trades into their component skills. This emergency policy may be necessary and justified as the shipbuilding pace accelerates.

SHIPBUILDING SKILLS

1 PREPARING AND SETTING A KEEL BLOCK AND BOTTOM CRADLE

This training motion picture presents in detail an explanation of the basic lines used in ship construction: base line, center line, water line, buttock line, frame lines; and explanation and definition of declivity angle, port and starboard, athwartships, and fore and aft; a demonstration of the setting of the keel block to the center line and proper declivity angle and the marking off and setting of a spaul from a template mold.

Animated diagrams are used to define and explain keel track and bottom cradle, and to show their relationship to the ship itself. Detailed animation combined with commentary explains base line, center line, water line, buttock lines, and frame lines, showing their relationship to each other and presenting them as planes which bisect the ship and assist in the easy, quick, and accurate location of every part on the ship.

Animation, combined with actual photographs and commentary, explains declivity and demonstrates the use of the declivity board and spirit level in the construction of the keel track and the setting of a keel block.

An explanation is given of the function of side spauls and the method used in laying off and setting a spur spaul. Such knacks as using a broad axe and adze and using the chalk line are portrayed. Animation is combined with commentary to explain the turning over of the spaul template for laying off both port and starboard spauls from the same template. Throughout the entire presentation there is a constant emphasis on the relation between the blueprint symbols, the workings on the steel parts and the lines defined in the opening sequence.

Visualizing Begins at the Keel

2 INNERBOTTOM SECTION: SUB-ASSEMBLY OF A CLOSED FLOOR SUB-ASSEMBLY OF A SOLID FLOOR

This training motion picture deals largely with the work of the shipfitter; defining vertical keel, flat keel, keelson, floors, stiffener, baffle plate, and universal mold; explaining the role of these elements of the ship construction in strenghtening the ship; and demonstrating the laying off of the closed floor from a template, locating and fitting a vertical stiffener, a flat bar ring for lightening hole, and a face plate.

An explanation of the inner bottom section and the role it plays in ship construction is followed by a detailed explanation of the location, kinds, and purposes of floors. The job of fitting a floor starts with a template. This is clamped to the steel plate and the shipfitter punches the necessary marks. Commentary and closeups combine to show and explain the different kinds of punch marks and their meaning. In the course of preparing this floor there is an explanation of port and starboard and their relationship to the proper laying off from a template and universal mold.

Constantly, the picture, animation, and commentary combine to show the relationship between the blueprint, the template, and the floor. A rather detailed explanation of hidden lines is given.

Locating, setting, and fitting a T-bar stiffener and tack welding it in position is demonstrated. The setting and fitting of flat bar face plates on the snipe and of a flat bar ring stiffener or chock in the lightening hole are demonstrated.

The purpose of these basic elements in ship construction and the role they play in ship construction is explained as the operations are shown.

Progression of a Double Bottom

3 INNERBOTTOM SECTION: SETTING UP AND FITTING FLOOR

This training motion picture deals with the cooperative work of shipfitter and shipwright in setting and fitting a closed floor in an innerbottom section. It provides an explanation and definition of keel, longitudinal side girders, floors, fairing, and declivity; shows the fairing, setting, and fitting of a floor in an innerbottom section and demonstrates the procedures used in checking the declivity angle, the use of wedges and spur shores, the use of bar and turn buckles to align the keel and emphasizes the use of the blueprint in all shipbuilding work.

A detailed explanation of the innerbottom section and its various parts introduces the setting, fitting, and fairing of a transverse watertight floor. The job starts with checking with the blueprint and checking the alignment of the vertical keel. The use of a spirit level shows that the keel is not absolutely vertical. The wright's helper drives up a spur shore with wedges until the keel is in vertical alignment. A declivity board and spirit level are used to check the keel and indicates that it is too high at the fore end. Flat bar and turn buckles are clipped to the keel and used to pull the keel down against the keel block. The vertical keel is checked for a considerable length and at another point must be raised. The wedges used in the nearest section of the keel track are driven in to raise the keel block and the keel the proper height. The accompanying commentary explains the reasons and calls attention to the safety measures necessary in this work, and defines this aligning of the keel as fairing.

The center line and the frame lines are struck. Markings on the solid floor locate it at Frame Station 98, and the floor is brought into position.

Next, a longitudinal side girder is located and set in the inner-bottom. The accompanying commentary explains the blueprint marks or symbols transferred to the longitudinal and their use in locating the position for it. The shipwright fairs the longitudinal with the use of a straightedge and a spirit level. Spur shores and wedges are used to raise the floor and girder. Blueprint symbols on the floor are explained as the chipper bevels, the edge of the plate. A dog and a wedge are used to bring the end of the longitudinal in alignment and the welder is shown tack welding the butt seam. The accompanying commentary emphasizes the safety precautions necessary in this operation.

A strongback is tack welded in position to hold the plates in correct alignment for a production weld. A transverse floor has been set, fitted, and faired by the shipwright and shipfitter working together to the blueprint.

On a Ship Floors are Vertical!

4 DECK GIRDER: SUB-ASSEMBLY

This training motion picture portrays the work of the shipfitter in sub-assembling a deck girder. This demonstration gives considerable emphasis to the necessity for proper understanding and correct reading of the blueprint in order to lay out and fit a deck girder accurately; the purpose of a deck girder, the operations necessary to fit filler and tilting brackets.

A view of a ship under construction showing the deck girders in place provides a basis for an explanation of deck girders, what they are, where they are located, and their purpose in a ship.

The task of fitting a deck girder starts with checking with the blueprint. This is a transverse deck girder to be made up from a split end T-bar with a filler bracket in the web of the split end. A dog is used to guide the filler bracket into perfect alignment for tack welding. A key bracket is fitted to the other end of the girder.

Since this is a transverse girder, the shipfitter locates with punch marks and marks the center line and the buttock lines. The blueprint calls for a doubler on the web of the girder. Dogs are used to hold the edges of the doubler from buckling as it is tack welded. Holes are located and the doubler is riveted to the web of the girder. The accompanying commentary explains the use of rivets for this job. Closeups show the use of the hammer in testing the tightness of the rivet. A tilting bracket is then fitted. The film closes with a view of the transverse girder swinging into position in a ship under construction.

Driving High Tensile Rivets

5 SIDE FRAME: SUB-ASSEMBLY OF A WEB FRAME

This subject presents in considerable detail the work of a shipfitter in sub-assembling a side frame. Views of a ship model, combined with animation, serve to show and explain the smooth tapering surface of a streamlined hull and the role of side frames in holding the ship in shape. A detailed explanation is given of the reversing of templates in laying off pairs of frames. Attention is called to the fact that where unusual pressure and strain are to be counteracted the web frame is used.

Closeups show the placing of a template on a steel plate, the scribing and the punching of the lines from the template to the steel plate, locating stiffeners giving the shape of the web frame, and marking the water and buttock lines. Lightening holes, stringer cutouts, and pipe openings are also located and punch marked.

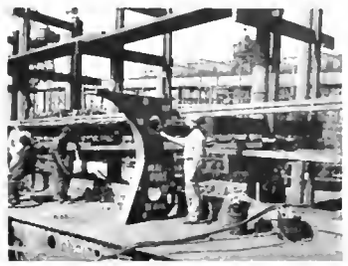
There is a detailed explanation by picture and by animation, combined with commentary, of the need for reversing templates when making a pair of such web frames. The role of the buttock line and water line in locating parts of the web frame are indicated and explained. Also, the use of frame numbers, water lines, and buttock lines in locating the web frame in the ship is explained. The water lines and buttock lines are chalked and back marked on the web frame. The use of copper batting strips in butt welding the web to the frame is demonstrated. The blueprint calls for a flat bar face plate. The center line of the face plate is located. Guide nuts are tack welded to the face plate at the work lines. The face plate is then dogged in the proper position and tack welded. A lightening hole is located and cut and a flat bar ring stiffener is fitted in the lightening hole. The commentary explains the reason for these lightening holes and the use of the flat bar ring stiffener. The film closes with pictures and commentary emphasizing the role of the blueprint in all jobs of the shipfitter.

Tack Welding a Bracket

6 GIRDERS: SETTING A TRANSVERSE WEB FRAME AND A HORN GIRDER

This training motion picture shows the work of the shipfitter and shipwright working together setting a web frame and horn girder. Considerable emphasis is given to laying off of center lines, frame lines, and buttock lines on the deck of the ship, fitting and setting the horn girder in terms of these lines, the various procedures used to shift the girder up and down, over and crosswise and to the definition of such words as camber, wooden batten, and spiel line. The job starts with the drawing showing and animated arrows explaining the location of web frames and deck beams, and illustrating and defining camber. The parts of the web frame which support this deck beam and the various holes that have been cut in each are named and explained. Throughout the entire process considerable emphasis is given to constant checking with the blueprint. Closeups show the punch marks which indicate the location of the center line and the wright striking the center line on the deck of the ship. The accompanying commentary emphasizes the necessity for absolute accuracy in striking this line and explains why it is desirable to mark each line. The resulting squares that are formed are checked by the 6-8-10 system for absolute squareness. Closeups show the wright beginning his measurement at the 1-foot mark on the tape line as the commentary explains that this practice makes for greater accuracy.

The frame line, the 28-foot buttock line, and the 24-foot water line are pointed out and their relationship to the setting and fitting of the girder explained. The web frame is lowered to the deck of the ship with the use of erection ribbands. The various symbols marked on the web frame are pointed out and explained. The declivity on the alignment on the web frame are carefully checked with the spirit level and declivity board. The use of a wooden batten in determining the amount of excess metal to be removed are demonstrated. The lines are marked, the excess metal is cut, the alignment is checked and this time the web frame fits. The spur shores needed to receive the deck beam and to adjust it to position for proper setting, are sawed and drilled. As the deck beam is swung by the crane, spur shores are bolted to it. Wedges under the shores enable the wright to raise or lower the deck beam or to shift it sideways as it is necessary. The center line and the declivity of the beam are checked with the plumb bob and the declivity board. The plumb bob shows that the deck beam is properly centered, ready for the shipfitter.



A Web Frame Is Set and Fitted

7 BULKHEAD: LAYING OFF THE BOUNDARY AND STIFFENERS ON A TRANSVERSE WATERTIGHT BULKHEAD

This picture depicts the work of the shipfitter necessary to lay out the boundary and stiffener on a transverse watertight bulkhead. Considerable emphasis is given to a definition and explanation of base line, center line, water line, and buttock line; showing how these lines are located and chalked on the bulkhead; demonstrating the knacks used to make certain that the lines are "square"; and showing the use of templates to lay off stiffeners and other markings.

The job starts with a check with the blueprint. The bulkhead is to be 24 feet high and 48 feet wide. Animation, combined with commentary, is used to locate and explain the starboard and the port side, buttock lines, and water lines. Templates are used to locate the center line, buttock line, water lines, and stiffener lines. The great care necessary to locate the center lines properly is shown and emphasized by a series of extreme closeups. The water lines and buttock lines are then struck and their squareness is checked by making certain that both diagonals of the same square are the same length. This method of checking squareness and the necessity for such constant checks are emphasized and explained by pictures and commentary. The bulkhead is now shown with the 4-foot buttock lines and the 4-foot water lines combined with the center lines to form 4-foot squares.

Templates are now fastened to the bulkhead with mold loft clamps, care being taken that the water lines and buttock line on the templates, line up with those laid off on the bulkhead. To make certain that the templates remain in proper position, they are dogged down. A soap stone is used to mark the edge of the template and thus to indicate the excess trim. Closeups and commentary are used to emphasize the need for accuracy in this marking and the necessity for following all the edges in notches and angles. Soap stone marks are then center punched. Later these lines will serve as a guide for the burner.

Using the templates, the location of the stiffeners is punch marked. When the templates are removed, circles are painted around these punch marks to assist the shipfitter in locating them later. Considerable emphasis is given in picture and commentary to the general practice of making the template for the starboard side of the ship and then turning them over to lay off the portside. The portside of the bulkhead is now laid off and punch marked in the same fashion. The templates are removed, the punch marks are circled with paint, and the fitter strikes the stiffener lines. The use of dogs and wedges in flattening a bulged portion of the bulkhead to secure a flat fit of a T-bar stiffener is demonstrated. The technique used in chipping a weld to secure a close fit of a stiffener is shown. The film closes with a view of the entire bulkhead dogged down, laid off, and fitted with stiffeners.

Laying Out the Bulkhead

8 BULKHEAD: LAYING OFF AND FITTING A CENTERLINE STIFFENER

This motion picture deals primarily with the work of the shipfitter in laying off and setting a center line T-bar stiffener to a water-tight bulkhead. This subject gives considerable emphasis to the advance planning of the work in terms of the most economical cutting of the T-bar stiffener and tripping bracket from an I-beam; the laying off of stiffener and brackets from templates; and the necessity for constant checking with the blueprint on the part of the shipfitter.

An introductory sequence locates and gives the importance of bulkhead and explains the use of the center line stiffeners. The job starts with an examination of the blueprint and on the basis of this information, the shipfitter plans his work step by step. A T-bar center line stiffener is to be cut with a tripping bracket from an I-beam quickly and with a minimum wastage of material. Closeups of the blueprint indicate the size of

T-bar stiffener combined with views of the I-beam and commentary explaining the planning of the work. The template is aligned to the beam the water line, and edge of the template is punch marked on the beam itself. Chalk lines are struck for the center line and the cutting line.

A brief sequence shows a cutting machine cutting the I-beam. The template is placed on the T bar thus formed. The water lines are marked on the web and flange. Commentary stresses the necessity for accuracy in this work in relation to the proper fitting of the stiffener to the bulkhead and the bulkhead to the hull.

On this particular job, a tripping bracket is to be used. This will be cut from the remaining portion of the I beam. Again a template is used. A punch marks the flange lines with 1-inch of material left for fitting. The lines for the tripping bracket are marked on the beam as the commentary calls attention to the skill needed in back marking the edges of the flange. Marking the 4-8-12 16-20-and-24 foot water lines follow on the T-bar stiffener. The bracket has been cut and the tripping bracket is fitted on the end of the main bracket.

The next task is that of fitting the center line stiffener to the bulkhead. Closeups call attention to the perfect alignment between the water lines on the stiffener and those on the bulkhead as the commentary stresses the importance of this alignment. To assist in securing this necessary alignment a flat bar is welded to the bulkhead. The stiffener is now tackwelded to the bulkhead by the shipfitter ready for production welding.

Close Measuring to Speed Victory

9 BULKHEAD: SETTING A TRANSVERSE WATERTIGHT BULKHEAD INTO HULL

This subject demonstrates the work of the shipwright in setting and fairing a watertight bulkhead into a hull. Considerable emphasis is given to the location of the center line, frame lines and buttock lines on the hull of the ship, the alignment of the same lines on the bulkhead to the hull lines, the technics used in shifting the bulkhead to bring it into the correct position, and the shoring of the bulkhead in position for fitting.

The film opens with views of a bulkhead in position as the commentary calls attention to the importance of such bulkheads in strengthening the ship transversely. An overview of the entire job of setting the bulkhead is given by a series of views in miniature.

The shipwright and his assistants first strike the center line and buttock lines on the innerbottom of the hull. Views of this work show the steps by which the wright locates the center line, the frame line, and the buttock lines and strikes them on the innerbottom. Closeups show the marking of these lines with punches. The 3-4-5 method is demonstrated to check the 'squareness' of the frame line with the center line. Closeups show the location of the work line as the commentary explains the purpose and use of this line.

The bulkhead already subassembled on the skids is lowered into the hull. The commentary calls attention to the ribbands that are necessary to keep the bulkhead 'fair' during the process. There follows a detailed series of views demonstrating the methods by which the shipwright moves the bulkhead, over, sidewise, and vertically in order to get it into the correct position. Closeups combined with animation and commentary call attention to the use of spur shores and wedges, steamboat jacks and hydraulic jacks to shift the bulkhead into position. Closeups show the exact alignment of the lines on the bulkhead with those previously marked off on the hull. The position of the bulkhead is checked with a plumb bob held at the center line. There follows a detailed explanation by picture and commentary of the procedures used in checking the bulkhead for the correct declivity angle. These checks show that the bottom of the bulkhead needs trimming. A wooden batten is used to mark the bulkhead for the trimming.

Watertight Bulkhead in Position

The bulkhead is now dropped into its position. The film closes with a series of views showing the bulkhead being checked for correct alignment and being found correct.

10 DECK PLATES: REGULATING AND SETTING

This film shows the work of the shipfitter and the shipwright in setting, fairing, regulating, and fitting, the deck plates of a ship. Emphasis is given to procedures used by the shipwright in setting and aligning deck plates, the work of the shipfitter in regulating and fitting the plates in their position, the use of a steamboat jack and angle bar clips and bolts for moving the plates are demonstrated.

Animation, combined with the views of a model and commentary are used to show the location and the purpose of decks in a ship. The internal bracing that underlies each deck and the purpose of the deck plates in strengthening the ship transversely are explained. Animation, combined with closeup views show the work of the shipwright in locating and chalking the center line. Animation is also used to explain the placing of deck plates in rows or strakes outboard from the center line. Each strake of plates must be located with exact reference to the center or buttock line marked on the ship and on the plate itself. Closeups show the shipwright locating these lines and chalking them on the transverse deck beam. Plates are swung into position by a crane on top of the deck girders.

This particular deck has milled scarphs to make flush points at the butt joints and side seams. Closeups combined with animation and commentary explain the use of steamboat jacks and ratchet and angle bar clips and bolts to draw the plates into exact position for welding. Closeups show the root opening as the commentary explains the purpose of this opening in making the necessary welds. Each strake of plates is checked by the shipfitter and the shipwright before it is tack welded into position. Closeups and commentary show the use of liner wedges, dogs, and flat bar fairing strips to provide flush joints for welding. The shipfitter checks the fit of each strake of plates, the deck beams and girder. Closeuos show the use of a clamp and bolt to bring the plate squarely on top the deck girder. A testing knife is used to check the steel to steel fit.

The use of the strongback to straighten a plate bent or buckled during welding is shown in considerable detail. Bolts are tack-welded to the plate, the strongback is set over the bolts and the plate is straightened. The root opening on the seam is gaged and the plate brought flush for welding.

The film closes with a brief review of the important points of the work of the shipfitter and the shipwright in regulating, fairing, setting, and fitting deck plates.

Footages and cost of the individual titles above as well as the complete series of

TEN SUBJECTS ON SHIPBUILDING SKILLS

are on the same basis as previous reels reviewed

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Further films in this series will be produced by the Calvin Company, Ray-Bell Films, Inc., and West Coast Sound Studios (N. Y.)

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The program of training motion picture production of the U. S. Office of Education of the Federal Security Agency, was planned in its broader aspects by an Office of Education Committee consisting of the following individuals:

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★ Many other people and organizations have cooperated in the production of these films, advising on the technical content and organization, checking the accuracy and soundness of the teaching procedures portrayed, making certain that difficult teaching problems were covered, and in many instances, assisting in securing the necessary accessory jigs, fixtures, and the like required for the motion pictures.

The following have given freely of their time and experience in the production program:

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19 West 44th Street	Transportation Building	2821 East Grand Boulevard	311 Talbott Building	230 N. Michigan Boulevard	7046 Hollywood Boulevard
VAnderbilt 6-5290	*REpublic 8036*	*MAdison 2450*	*ADams 6289*	*STAte 6757*	*HEmpstead 5809*

AMERICA TRAINS

(*Continued from Page* 12)

munities throughout the rural districts of the United States. At the present time there are 46,030 youths enrolled in these courses. During the past year 349,700 youths have been enrolled in this program. These courses for rural youth are designed to provide a knowledge of occupational nomenclature, shop practices and industrial materials and to develop natural skills in the use of tools in the field which the training is given. Trainees who have taken these courses form a pool of potential industrial workers who with additional specific training will be prepared for employment in occupations essential to defense or the training may assist them in the operation and maintenance of mechanical equipment in the field of agriculture which is now assuming great importance.

The need for increasing certain agricultural products is necessitating a change in courses which originally were of an industrial character to one with an agricultural complex. The outbreak of war will require the speeding up of this change in the character of this program. During the next year emphasis on this program will be more on occupations essential to agriculture than on industry. In order to make this program more effective it will be necessary to open this type of training to all agricultural workers regardless of age.

Picture Credits

Sources of pictures received and published in this issue:

Page:	Credit to:
1	Official O. E. M. Photo
11, 15, 17, 18, 23, 24	Jam Handy Organization
12	Official U. S. Army Photos
14, 15	American Vocational Assn.
1, 16	Loucks & Norling Studios
19, 25	Caravel Films, Inc.
20	Audio Productions, Inc.
21, 22	Emerson Yorke Studios

NEW TOOLS of INSTRUCTION

—producing the Victory Training films

● These motion pictures were made to assist teachers who are charged with the task of training the men needed in the defense industries. Little needs to be said about the staggering proportions of this task. The problem of defense is essentially a problem of production and the problem of production, to a considerable degree, is a problem of securing the skilled men necessary to maintain it and to increase it. To have more tanks, more planes, more guns, and more ships we must have more men, trained in the production of tanks, planes, guns and ships.

Training Methods Unchanged

The methods by which these implements of modern warfare are produced have changed greatly in the last decade, but the ways by which we train the men who produce these implements have changed but little in a hundred years. The development of motion pictures specifically designed to assist instructors is an endeavor to apply to the problems of training the techniques of motion picture presentation. These techniques have proved their effectiveness in other areas of use.

The utilization of motion pictures in education and more specifically, in training, is not as new as is generally supposed. Large industrial concerns have for many years had a definite program of motion pictures and allied visual aids to assist them in the training of men who were necessary to the successful carrying on of their business. Foreign nations, such as England, Germany, Russia, France have for many years developed films and used them extensively in the training of men and women. An interesting sidelight on this fact is that in 1939 Germany, with half the population, had four times as many sound 16mm. projectors as the United States and more than five times as many motion pictures specifically designed for instruction.

Army An Early Pioneer

The U. S. Army, during World War I, developed some 117 films specifically designed for the instruction of the armed forces. These films cover such things as aerial map reading, the operation of the Stokes mortar, and the correct use of the Y-gun. It is a logical development that with the increased mechanization of modern warfare, the Army should in World War II, embark on an even more intensive and concentrated use of motion pictures for the training of men. The Navy likewise has a program of motion picture production for use in training.

Nor is the success of motion pictures wholly a matter of conjecture. In addition to the experience provided by commercial concerns, foreign nations and the armed forces there is the experience provided by the public schools. Well authenticated research carried on by some of the leading educators of the country indicate that motion pictures are some 30% more effective than traditional methods of instruction in putting across facts and their percentage of superiority is even greater when it comes to shifting attitudes and developing appreciations. The acceptance by teachers of motion pictures as teaching tools is indicated by the fact that in a national survey conducted as of January 1, 1936, only 153 sound 16mm. projectors were in the schools of the entire United States and a similar survey conducted as of January, 1930 —four years later— indicates that there are better than 6,500 sound 16mm. projectors in the secondary schools alone.

Office of Education Program

Therefore, to assist in the training of men and of women, as such training becomes necessary, the United States Office of Education has engaged in the production of motion pictures and other visual aids. These are motion pictures specifically designed to utilize the techniques of the motion picture in clarifying, explaining, and demonstrating the basic principles of machine operation and other skilled work. They are high quality motion pictures made under the guidance of competent specialists experienced in every phase of machine shop and ship construction work. They are teaching films specifically designed for teaching, whose organization was checked by men experienced in the problems of teaching skills and who are familiar with the problems of motion picture presentation.

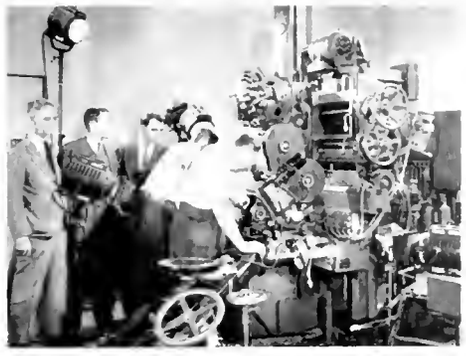
They are designed to help the instructor by providing a demonstration in which all students see equally well the intricate aspects of every job operation; by providing clarification of cutting tools; and by giving such motion picture techniques as animation, slow motion, and magnification to such things as basic principles of the micrometer, the calculation of speeds and feeds, the action of cutting tools; and by giving to the student an over-view of an entire job operation on a typical machine with a skilled explanation of the "whys and wherefores" of each operation as it is performed.

Help Understanding of Job

It is expected that these motion pictures will provide students with a basic familiarity and understanding of the job, the principles involved, and the manipulation required; that they will assist in the development of an appreciation of skill and precision that is required in the competent mass production of modern implements of warfare and that they will give the student a sense of familiarity with the physical operations that he must "ape" in order to do them himself. These presentations bring all the impact of a motion picture in a darkened room to emphasize the necessity for such things as safety, cleanliness, and good craftsmanship. They may be used in such instances as the motion picture "Fixed Gages" to familiarize students with tools that are not available in their own training situation.

Can't Replace Instructor

These pictures are designed to assist instructors. They cannot take the place of the instructor any more than a machinist's handbook can take the machinist's place. But like the machinist's handbook, they have a place and will assist. They depict typical jobs on typical machines for the purpose of demonstrating and clarifying basic principles of



The complexities of a vertical boring mill are discussed by J. W. Barritt, technical consultant to the U. S. Office of Education (extreme left), Frank Speidell, of Audio Productions & Floyde E. Brooker, Director of Visual Aids for the Office of Education.

machine operation and ship construction. They cannot show all the various ways of doing various jobs, nor can they be expected to cover variations that exist from shop to shop, from industry to industry, and from machine to machine. It is expected that instructors will amplify and add to the information and content of these pictures in terms of their own training group and in terms of their own shop practice. These are motion pictures. They cannot take the place of actual practice on the machine. They may familiarize and provide information and an effective demonstration, but in the actual operation of any machine or in the actual performance of any job requiring skills, they cannot and are not expected to take the place of actual practice.

Technically Excellent

Photographically these are excellent motion pictures. They have been professionally made by some of the leading commercial film producers. Animation and closeups have been used extensively and expertly. The voice used for the commentary has been well selected. The commercial motion picture industry can well be proud of this series of motion pictures. For in these pictures the students at all times can see what he is supposed to see—hear what he is supposed to hear.

Experienced instructors who have seen these films and who have used them, indicate that if they are properly used, they will do the job for which they are intended—that of expediting defense training.

In the pages that follow, brief descriptions are given of those subjects that have been completed or will be completed and available for distribution by January 1. These descriptions are intended only as a catalogue to the pictures themselves. They should enable instructors to select the films in which they are most interested. But these descriptions are not intended and cannot take the place of seeing the motion pictures themselves.

Building the Training Library

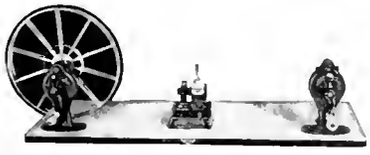
● Vocational schools and apprentice classes in industry who are utilizing the invaluable visual aids provided in the U. S. Office of Education Victory Training program, will first look to the availability and condition of projection equipment. Then facilities for the storage of the entire 50-reel program (of which 30 are already available) must be provided for their projection and adequate humidification.

"Safe Model" Film Cabinet —has a capacity of 50 reels.

Primary supplier of such storage equipment as well as of editing equipment and other film handling supplies is Neumade Products Corporation of New York City. For this program, Neumade recommends the "Safe" model which provides storage facilities for 50—400 foot reels. Similar cabinets are available with 800, 1200 and 1600 foot reel capacity. All are made of heavy gauge steel and are both fire and dustproof.

* * *

Minimum editing equipment necessary for splicing and repairs would consist of the Neumade "junior" board which provides rewinder spools and a splicer, cement holder and applicator.



The Neumade Junior Board provides two geared end rewinders on a 34" porcelain panel. A Griswold Jr. Splicer is in the center

THESE NEW TRAINING FILMS

By J. W. Borritt, Technical Consultont on Visuol Aids, U. S. Office of Educotion*

● The First Time I saw one of these films, I thought "Gee! if I could have had something like this in my apprentice training work." A whole flock of memories wedged themselves into my mind. The time when a young apprentice forgot to keep the tailcenter on his lathe tight when taking a finishing cut on a gear blank. The gear was scrapped and the delivery of the unit it was made for was delayed two weeks.

The time when Sam got mixed in his reading of an angle and set the compound to the wrong degree. The time when the apprentice who was cutting a spur gear, got mixed in his figuring for the dividing head, and had half a tooth left over, when the cutting was done.

Those Painful Memories

Or the time when . Oh, well, let it go at that. Why take the time and energy to recall all these things: they are all too familiar and too painful to every instructor who has struggled with the problems of getting the students to comprehend the importance of such so-called unimportant details. The pictures are here now, to take the place of the old labored, tiring, and tiresome work at the blackboard, or with a pencil and paper at the machine, or perhaps with a piece of chalk on the floor, or on the side of a convenient casting. Those trials and failures of the past have now crystallized into a new tool that will help many instructors over those old teaching hurdles.

Animation Spices Action

Speeds, feeds, and cuts, on each machine; the care and operation of each machine; the various uses of every important part on each machine; the shape, care, and use of cutting tools; use of the micrometer; the vernier; and many others, are all shown in action on the screen; action spiced with animation.

Perhaps my feelings when I saw this first picture can best be realized if I tell you of the events leading up to the occasion of the showing. I had written the original drafts of this picture, together with others of the same, which Mr. Brooker had translated into motion picture parlance. In company with other men who, like myself, had spent all their lives in the machine shop, and long hours and much energy in explaining all these various things to the boys, the shooting script and the commentary had been gone over with a fine-toothed analysis and a critical viewpoint.

We had made certain that every movement in the picture, and every word in the commentary, was the right movement and the right word. Careful study of the original analysis had disclosed many things that should be shown in the pictures so many that it was necessary to scatter them throughout several pictures. Therefore, certain ones were allocated to certain films.

We Begin "Shooting"

Then the shooting began! Now don't get excited. The word "shooting" has no reference whatever to gun play, as it is often portrayed in our Hollywood movies, nor does it connote any accomplishments of our Navy gunners. It is simply one expression of many in the jargon of camera men.

There were many others in this specialized field: Shutters, doors, screens, kleigs, and what have you. And thus it went from day to day. Something new each day; something different; new problems coming up all the time; and the film was growing into something. I kept wondering all the time what it would be like, especially since I had been assured many times over that it would not be like anything I had ever imagined, when writing the original draft.

And so what? Finally the day came when we were to see the assembled rushes. I was so excited I could scarcely keep still, and there was an uneasy feeling in the pit of my stomach. "What will they be like" was the one question on my mind.

We were ushered into a brilliantly lighted room. Presently the room was dark, then the pictures began to come on the screen. I was electrified and amazed. What had seemed to be a prosaic piece of mechanism in the form of an engine lathe had, by the magical powers of the camera, and of light, been transformed into a thing of beauty with a glamour all its own, far removed from Hollywood.

It's All On the Screen

There were the movements of the operator, slow and deliberate, yet true to shop actions; one of my early experiences as an apprentice was unfolding before my own eyes; the voice of the commentator

* * *

* *Formerly Supervisor of Apprentices, Westinghouse Elec & Mfg. Co.; author of "The Care & Operation of Machine Tools (John Hall-1927); "Machine Tool Operations" (I. T. S. 1940; 800 pp.)*

DuMont television camera in an advanced position, duly camouflaged, scouting for the headquarters' staff at the rear

Home Training with Visual Aids

● Not so long ago a young man started as a private in the Signal Corps for $21.00 a month. Within a short time he was rated a Staff Sergeant at $72.00 a month—resulting from his knowledge of radio and electronics.

Investigation found he had gained considerable knowledge with the help of visual training. He had been supplied in his own home with a movie projector and numerous films which actually pictured the action of electricity in various circuits—one of the unique advantages of DeForest's Training, Inc.

As a result he had found the subject easier to understand. He had grasped it more quickly. In fact, it is unlikely he will ever forget the points put across by those interesting films. In addition, he was provided with clear, concise, loose-leaf material—plus "practical training" by means of working on actual Electronic equipment, also supplied for use in his home. This was followed by additional practical training on larger items of commercial equipment in the Chicago laboratories of this training organization.

The world-shaking events of the past two years dramatically reveal that radio and electronics are now almost as necessary to military success as guns and powder. Radio makes possible communication between ships and planes, planes and tanks, tanks and infantry, submarines and their bases.

Even the military possibilities of the spectacular new development of Television are receiving serious consideration. Not long ago, experiments were conducted with a fully-equipped mobile television unit during one of the large war games. The experiment was hailed a success, as a camouflaged television camera "picked up" scenes of the invading "Blacks" and relayed them back to defense headquarters.

Television, radio and sound motion pictures are all a part of the timely training opportunity made possible by DeForest's Training, Inc. Organizations such as this one are truly contributing a real service to our great military program. Today, as in the past, training remains one of the foundations of national strength.

---

came clear and smooth, giving the why's and wherefore's of every movement.

And as the completed picture unfolded, the thought came to me, "Here is something that will help solve those old problems of instruction: Here is a *new* tool for the instructors: here is something that will answer the prayers of thousands of instructors who have wrestled with these teaching problems for years.

These films will not supplant the instructor, but on the other hand, should be regarded as another tool to be used in their instruction work. As a matter of fact, they will offer a wide field in which the instructor must exercise his ingenuity to the utmost to use the films to the greatest advantage.

Any readers interested in preparing for and getting started toward a career in Radio, Television and Sound Motion Pictures, may obtain additional information by addressing their request to BUSINESS SCREEN, 20 North Wacker Drive, Chicago, Ill.

FILMS ON ELECTRICITY

● IMPORTANT in many phases of the defense production program, electrical maintenance and repair is an excellent subject for the employment of visual aids. Many good films have been prepared, some by commercial sponsors, others of a definitely educational character by professional producers who offer them at modest sale and rental prices noted in this list.

A complete index to such visual materials, including motion pictures and filmstrips, will be published in the next issue of Business Screen. A list of representative electrical subjects follows:

TYPICAL ELECTRICITY TITLES

CURRENTS INDUCED. *Motion picture film*, 16mm. silent. 1 reel. Eastman Kodak Co., Rochester, N. Y., $24.00. The principle of electro-magnetic induction applied to commercial generators—the conversion of alternating current into direct current—the action of the commutator, transformer, telephone, etc.

ELECTRICITY. *Slide-films* (12). 35mm. The Jam Handy Organization, Michigan. Individual slide-films, $4.50. (*See page* 28).

ELECTRICITY, CHEMICAL EFFECTS OF. *Motion picture film*. 16mm. *silent*. 1 reel. Eastman Kodak Co., Rochester, N. Y., $24.50. The action of two electrodes in an electrolyte is traced from crude beginnings by Volta, through modern battery manufacture and use, etc.

ELECTRICITY, HEAT AND LIGHT FROM. *Motion picture film*. 16mm. *silent*. 1 reel. Eastman Kodak Co., Rochester, N. Y., $24.00.

ELECTRICITY, MAGNETIC EFFECTS OF. *Motion picture film*. 16mm. *silent*. 1 reel. Eastman Kodak Co., Rochester, N. Y., $24.00. Includes magnetism and magnetic induction, with their applications to the electro-magnet, the electric bell, the ammeter, the voltmeter, and the motor.

EXCURSIONS IN SCIENCE. *Motion picture film*, 1 reel, 16mm., sound. General Electric Co. (Write nearest branch office); free loan, transportation charge.

FILM LESSONS IN ELECTRICITY. *Motion picture films*. 16mm. sound or silent. 6 films, each 2 reels. DeVry Films and Laboratories, 1111 Armitage Ave., Chicago, Ill., rental each subject (2 reels), sound $3.00; silent $2.50 for each two days plus transportation both ways; purchase price each subject (2 reels) sound $63.00; silent $43.00. Subject covered:

1. *Principles of magnetism*
2. *Principles of Electro-magnetism*
3. *Principles of current electricity*
4. *Principles of electrical measurement*
5. *Principles of electrostatics*
6. *Principles of current generation*

HOW THE G-E ICING UNIT WORKS. *Motion picture film*. 16mm. silent. 2 reels. General Electric Co. (Write nearest branch office), free loan, (transportation charge).

MODERN SWITCHGEAR FOR GENERAL INDUSTRIAL USE. *Motion picture film*. 16mm. 2 reels, sound, General Electric Co. (Write nearest branch office). Free loan (transportation charge). A picture showing the importance of up-to-date switchgear in maintaining industrial production schedules.

MODERN ZEUS, A. *Motion picture film*. 16mm. sound. 1 reel. General Electric Co. (Write nearest branch office). Free loan (transportation charge). Pictures the production of artificial lighting and the devices used to protect electric power systems and domestic services from lightning.

QUALITY MOTORS IN THE MAKING. *Motion picture film* 16mm. sound. 1 reel. The General Electric Co. (Write nearest branch office). Free loan, (except transportation charge).

VOLT COMES INTO ITS OWN, THE. *Motion picture film*. 16mm. sound. 2 reels. General Electric Co. (Write nearest branch office). Free loan transportation charge.

WHEN YOU CAN MEASURE. *Motion picture film*. 16mm. sound. 4 reels. General Electric Co. (Write nearest branch office). Free loan, transportation charge.

WHY WE DO IT THE WAY WE DO. *Motion picture film*. 16mm. sound. 4 reels. General Electric Co. (Write nearest branch office). Free loan, transportation charge

EDITOR'S NOTE: According to the needs of local vocational classes, the titles above *may* be obtained through public funds provided for defense instructional materials, allocated at the discretion of state vocational authorities and *subject to such approval*, according to the provisions of Public Law, 146.

Reading the voltmeter is depicted in a DeVry Film reel from that Company's film lessons in electricity (6 films each two reels long).

Diagramatic animation helps unveil the mysteries of electricity in a typical scene from one of the DeVry Films' teaching series.

A MODEL TRAINING SETUP

by James F. Engle, Visual Advisor, Illinois Institute of Technology

● An important part of any engineering curriculum is the act of doing or seeing done the things which have been studied. This important phase of training was gradually being taken away in the early Spring of 1941. By this I mean field trips or plant trips were being curtailed due to an increasing amount of defense work. This loss of practical application necessitated our turning to the only other means by which we could bring the student in contact with this important phase of his work - the motion picture or slide. We, therefore, obtained a projector and began to search for suitable material, pictures which would fit in with our "stepped up" type of training.

Program Is Extended

After a thorough study of the available film and slide catalogs we finally obtained a small assortment of so-called "educational" films and started a visual education program. We soon found that even though a film was called "educational" it had no place in our program due to the fact that we were pressed for time and the majority of the films reviewed were not of a technical enough nature to warrant showing them to our students. We then instigated an exhaustive search throughout the country for strictly technical films and slides. After months of this work we compiled a list of films which we feel have great technical bearing on engineering work and placed them in a catalog for the use of our instructors. We deleted many very fine films from our list due to the fact that they did not stress the important steps in a given procedure, or they contained too much commercial advertising. Because our time is so limited in the various courses offered it is necessary to show only those films which will impart the most knowledge to our students in the least possible time.

During our quest for films on the topic of inspection we found that there was very little material available. We therefore asked our instructors to aid us in gathering together all the material which they felt was of value in the teaching of this particular subject, with the result that we now own a very elaborate set of 2x2 slides completely covering the inspection field.

Our visual education program has grown from an "if and when" proposition to the point where we now publish weekly programs of pictures covering all phases of engineering including the following: Advanced Tool Design, Introduction to Tool Design, Elementary Mechanics and Machine Design, Machine Design, Strength of Materials, ASTM Testing Methods, Inspection in Quality Control, Welding Engineering, Concrete Testing, Diesel Engine Theory, Time and Motion Study, Advanced Production Methods, Industrial Training Methods, Industrial Management for Foremen, Metallurgy, Metallography, Plastics, Electricity, Advanced Radio Theory and Practice, Introduction to Electronics and Communications, Piping Systems, Introduction to Chemical Engineering, Explosives, Testing of Materials, Safety Engineering, Personnel Selection and Training, Cost Estimating, Foundry Engineering, and Maintenance Engineering.

These films and slides are available for showing in the defense training classes of the two branches of Illinois Institute of Technology, and in a number of plants in this area which have "Training Within Industry" programs. After compiling our "Motion Picture and Slide Films Directory" we found that we had upwards of 250 films and slides dealing with all phases of engineering, with new sources coming in every day. Supplementary sheets of new topics are issued monthly.

Reach 5,000 Students

Our visual education program has grown from serving the needs of 1,039 students in the first Engineering Defense Training program to an organization with a personnel of at least 10 people, 11 projectors, screens, facilities for rewinding, splicing and viewing films and a good start on a film library of our own which is now available to the 5,000 students enrolled in the current Engineering, Science, and Management Defense Training program. After these students have viewed a film or set of slides they are required to write a resume of what they have seen, and the gratifying results obtained have gone a long way in making these intensive training programs possible.

The people who have helped to make this program possible are the manufacturing concerns and those foresighted enough to appreciate the value of visual education in this country who so generously offered us the use of their films and slides. They are to be highly commended for doing their part in the National Victory Program as they have helped make possible one of the most economical visual education programs in the country.

For listings on this page address inquiries to Service Bureau of Business Screen, 20 N. Wacker, Chicago.

BUSINESS SCREEN'S INDEX OF PRODUCTION

WASHINGTON NEWSREEL

(Continued from Page Six)

immediate limit. There is a constant demand for films to amplify other training among partially skilled workers already employed in defense industries. These training facilities presumably are supplied directly by the Office of Education, and by Army, Navy, by the Training-in-Industry Section of OPM, and by other parts of OPM, OEM, and other Emergency units.

Army and Navy and Marine Corps will use the Office of Education films in growing numbers. All already are using some of the Office of Education films. They find these films exactly what the Doctor prescribed for some of their technical training purposes. Army and Navy are, and increasingly will be, the greatest users of such films. To understand the reason it is necessary to grasp that Army is striving to train every solitary soldier in some skill.

The old idea of the soldier who performed all the tedious jobs of the casual laborer when he enlisted is no longer valid. The Army has adopted the current European theory that the soldier is a fighting man, a caste apart as a fighting man; and since modern warfare is fundamentally and in detail a matter of machines and techniques, a matter of skill in the individual, the soldier must be individually trained in machine and similar skills.

It makes the whole subject more intelligible if you bear in mind that the soldier of the present national army not only learns the tricks and business of the Signal Corps, the Artillery, the Air Corps, the Chemical Corps, and all the rest of the various arms of the Services, but he fundamentally must know something of the basic skills of machines that are used for transport, for shooting, for transmitting messages and for keeping the many machines of transport, communication and fighting in action in an emergency. It is for this reason that all men of all branches, infantry, cavalry, artillery, medical corps, air corps, are not trained to cook or to cobble or to do the comparatively

(Please turn to Page Thirty-eight)

The Most Complete

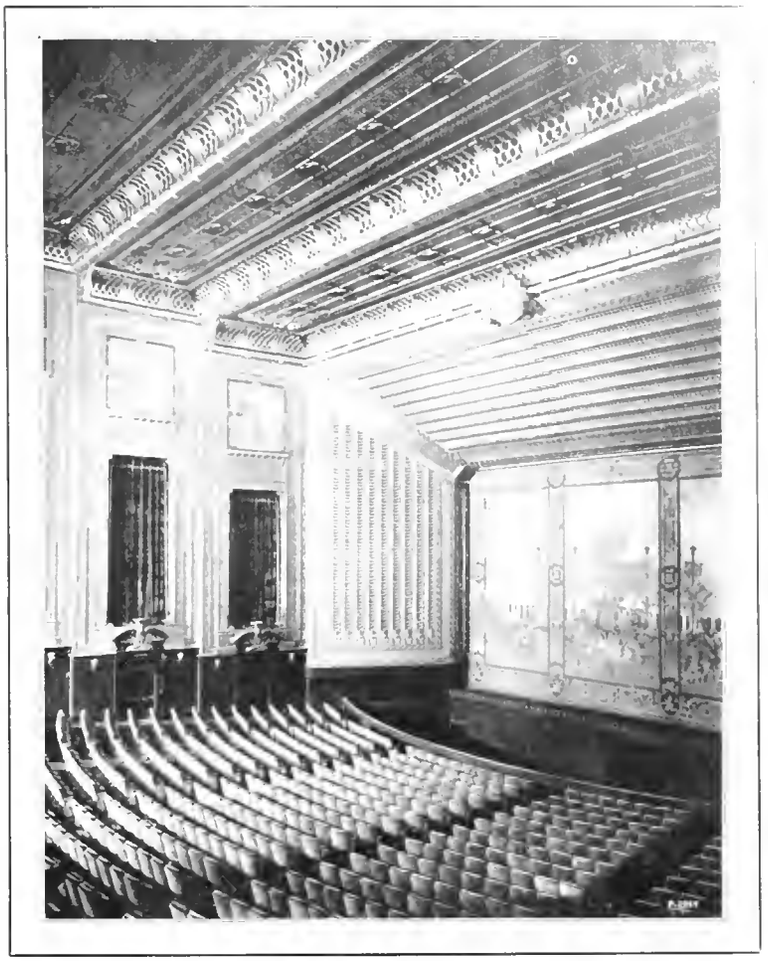
FACILITIES

For Your Organization Meeting Film Preview, Radio Broadcast

★ Local and national business, government and social organizations who have enjoyed the facilities of the Chicago Civic Opera House and Civic Theatre will affirm the convenience and completeness of these ultra-modern auditoriums. Equipped to meet the most exacting requirements of radio, motion picture or stage presentations, these theatres are ideal settings for your organization meetings, conventions and similar functions. From 3,529 upholstered, spring-cushioned seats, audiences enjoy perfect vision and unexcelled acoustics. Unlimited technical facilities include complete lighting and electrical equipment, R. C. A. public address system, modern projection booth for motion pictures as well as drops, drapes and scenery of unlimited variety.

Convenient Location

Located at the center of all Chicago business, adjacent to surface car, rapid transit, surburban and national rail terminals and motor coach lines, 20 North Wacker Drive offers the utmost convenience to theatre guests and residents.



Interior view of the world famous Chicago Civic Opera House.

Address all requests for Information to the Office of the President, Mr. James C. Thompson

THE CENTER OF CHICAGO BUSINESS • THE CIVIC OPERA BUILDING

20 NORTH WACKER DRIVE

THE LIGHTING INSTITUTE. A gem of modern theatrical design is the 200-seat auditorium of the widely-known Chicago Lighting Institute situated on the 36th floor of the Civic Opera Building. Nearby restaurants and club lounges offer additional guest conveniences.

THE STUDIO THEATRES. Forty-two stories above the Chicago Loop are two acoustically perfect studio theatres suitable for broadcasting, previews, group meetings, etc. Economical rentals to interested groups; rates on request. Motion picture screen and projection service available for film showings.

The advantageous architectural layout of 20 North Wacker Drive assures a maximum of light and air for all offices.

WASHINGTON NEWSREEL

(Continued from Page Thirty-six)

menial jobs of an earlier day, but are taught to do some of the skilled things that must be done to the equipment which is more or less intricately made of machinery. It is obvious every man in this man's army learns something about mechanical skills. They have schools all over the place, and they are taught by every expert available. General Staff officers hold that the film, the training film, is the best corollary adjunct to be had to make them better trained and to train them swiftly.

Officers put it this way. Virtually every man in this present Army of 1,600,000 men must be trained in some degree. This means thousands of classrooms in hundreds of places all over the United States and its appendages. It is impossible to secure top flight experts in the skills to teach in every classroom. But it is perfectly possible for the less top flight teachers to use training films, made by the greatest experts in the country, to teach the mechanical and other skills that the less expert cannot actually demonstrate themselves. The Army—and the Navy—therefore make tremendous use of such films, as swiftly as they can obtain the films.

To the Army and Navy the production of the Office of Education films is the answer to many a prayer, because they can get splendid film technique, the finest teaching skill, and the last word in professional and technical abilities, as well as demonstration by the best mechanical devices, and they can get mass production of such films, for distribution to outlying bases and places where there are limited facilities.

This naturally leads to the thought about projectors. The greatest immediate and potential markets for projectors among Government agencies, undoubtedly are the Army and the Navy. What the Army thinks about the matter virtually reflects the thought of the Navy. The General Staff officers of the Army hold that 16mm. projectors must be used in the class rooms. They feel the 16mm. is lighter, more portable, requires less power, and therefore can be used in places where the power necessary for the heavier projectors would not be available. Army people feel the 16mm. must be made useful for all agencies of Government, so there may be some approach to standardization and interchangeability.

—*IRVOLD KRUCKMAN*

Specifications

FOR MOTION PICTURE FILM FOR THE OFFICE OF EDUCATION

REQUIRE THAT: "All prints must be subjected to a permanent conditioning and protective treatment, equal to the VAP O RATE process, resulting in a reaction directly on the emulsion itself. Such treatment shall raise the melting point of the emulsion in water and cause no loss in pliability. Such conditioning shall be effected within twenty-four hours after print is developed and dried. The type of treatment that forms a skin-like layer or varnish on the film will not be accepted."

No comment can add force to this statement of the absolute necessity for effective protection . . . . and the factors required for full effectiveness.

VAPORATE

Better photo finishers offer VAPORATE protection for still negatives.

VAPORATE CO., INC. 130 W. 46th St. New York City
BELL & HOWELL CO. 1801 Larchmont, Chicago 716 No. LaBrea, Hollywood

NEW U.S. FILMS *Speak*

FOR THE ARMY, NAVY, AIR CORPS AND ALL THESE GOVERNMENT AGENCIES ★ ★ ★

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- Bureau of Fisheries
- Bureau of Foreign & Domestic Commerce

U. S. Department of Interior
- U. S. Office of Education

U. S. Treasury Department
U. S. Public Health Service
Office of Emergency Management

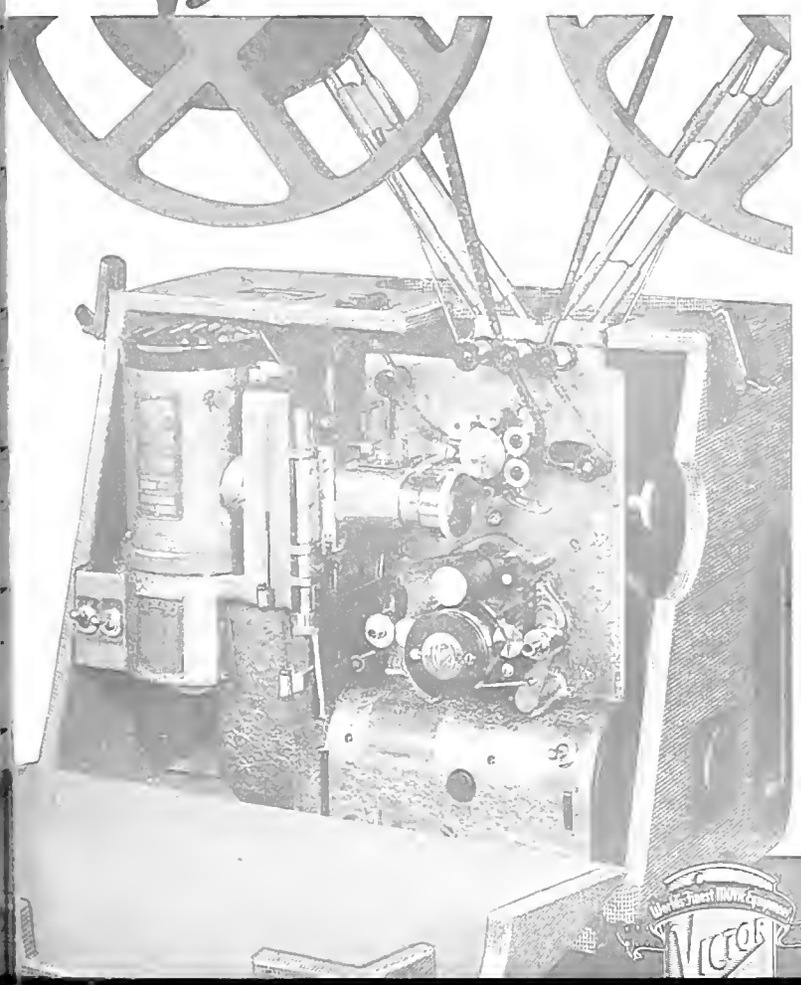
Federal Security Agency
- Civilian Conservation Corps
- Social Security Board
- U. S. Housing Authority
- Works Progress Administration

U. S. Department of Agriculture
U. S. Department of Justice

U. S. Department of Labor
- Children's Bureau
- Women's Bureau
- Division of Labor Standards

U. S. Bureau of Mines
Federal Bureau of Investigation
U. S. Maritime Commission
All Recruiting Service Activity

THE *Victor* ORGANIZATION OF TRAINED MEN CARRIES THESE VITAL PICTURES TO EVERY CITY AND VILLAGE IN THE LAND



Through their Schools, Churches and Industrial Plants — Civic Clubs — Welfare Agencies — Farm Groups—Adult and Alien Education Groups.

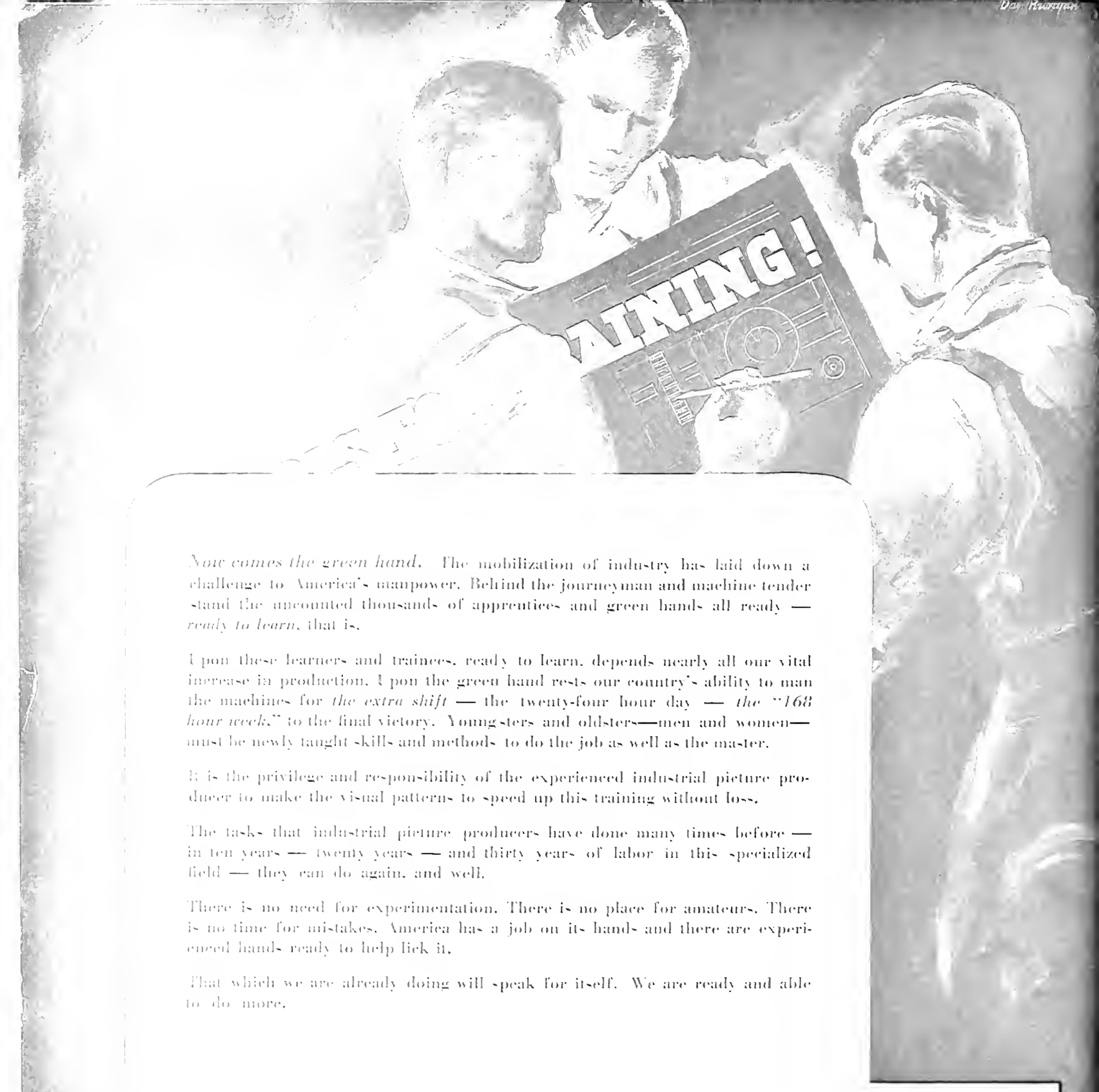
(Map shows location of Victor representatives — the largest force in the 16mm Sound Motion Picture Field. Result — Prompt Service.)

THE *Victor* ANIMATOPHONE IS ALREADY SERVING ALL THESE AGENCIES

Worldwide, Victor Animatophone gives these vital Government Films a finer picture clarity and sound superiority —and a multiple-use feature that permits service in either small or large auditoriums, for groups indoors or outdoors and with mike and turntable facilities.

ASK FOR NEW CATALOG

VICTOR ANIMATOGRAPH CORPORATION



Now comes the green hand. The mobilization of industry has laid down a challenge to America's manpower. Behind the journeyman and machine tender stand the uncounted thousands of apprentices and green hands all ready — *ready to learn*, that is.

Upon these learners and trainees, ready to learn, depends nearly all our vital increase in production. Upon the green hand rests our country's ability to man the machines for *the extra shift* — the twenty-four hour day — *the "168 hour week,"* to the final victory. Youngsters and oldsters—men and women—must be newly taught skills and methods to do the job as well as the master.

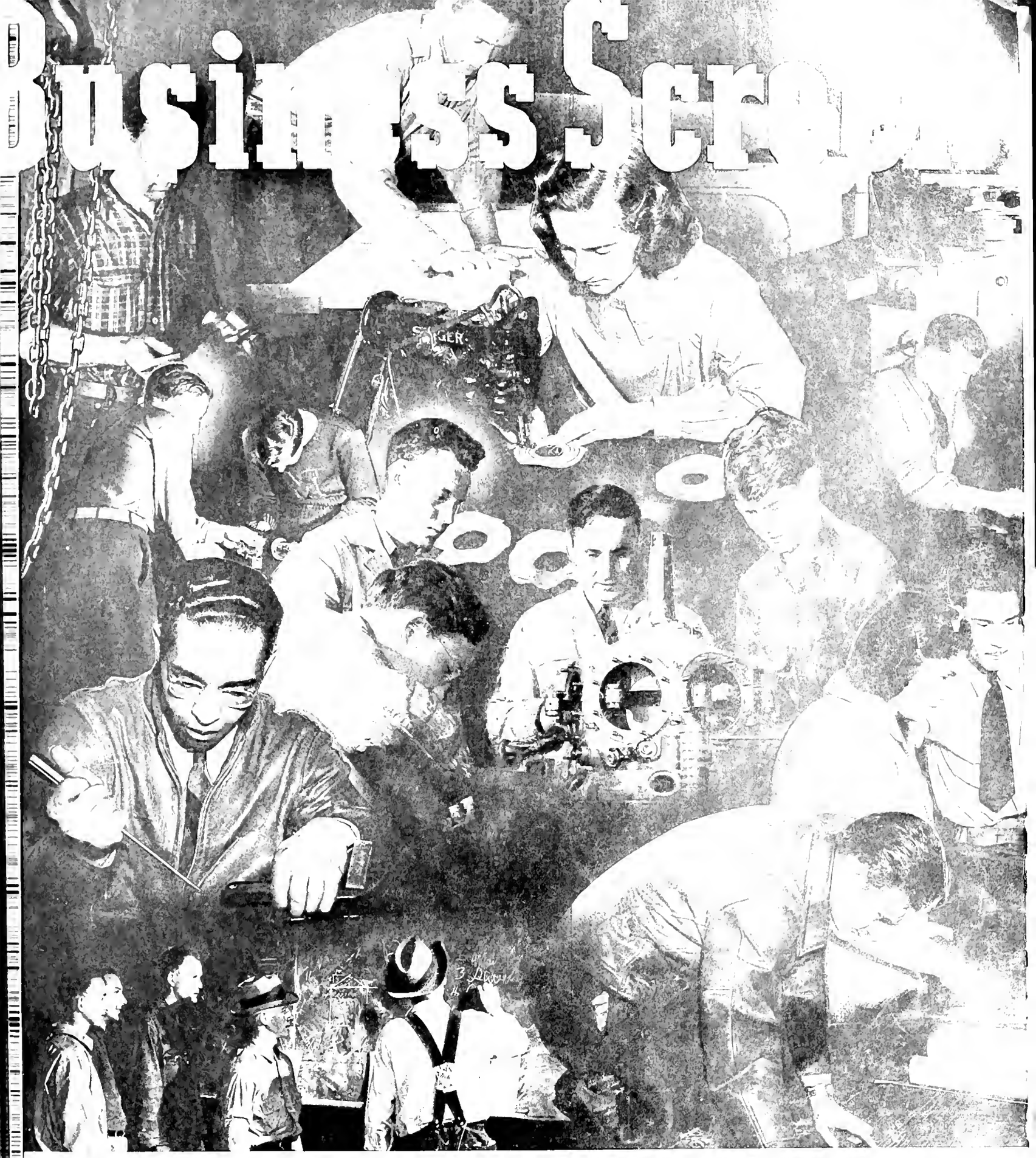
It is the privilege and responsibility of the experienced industrial picture producer to make the visual patterns to speed up this training without loss.

The tasks that industrial picture producers have done many times before — in ten years — twenty years — and thirty years of labor in this specialized field — they can do again, and well.

There is no need for experimentation. There is no place for amateurs. There is no time for mistakes. America has a job on its hands and there are experienced hands ready to help lick it.

That which we are already doing will speak for itself. We are ready and able to do more.

Educational Sound Pictures • Slide Films • Vocational Training • Visual Aids



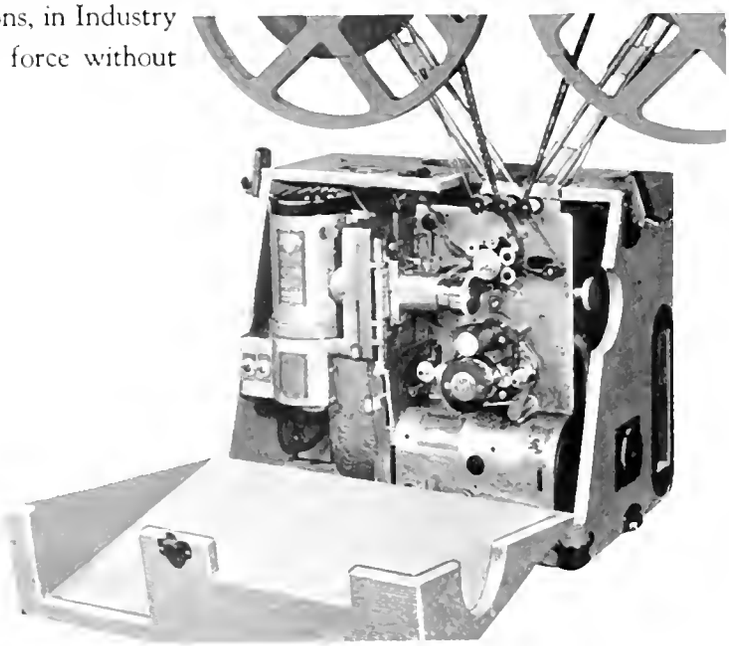
02 FILMS HELP TRAIN A NATION FOR WA

DISTINGUISHED SERVICE

Wherever a training job is to be done—in every branch of U. S. Government War and Civilian Service—will be found Victor Animatophone — doing the job of teaching and training hundreds of thousands through the New U. S. Films.

NOW, MORE THAN EVER BEFORE IS UNINTERRUPTED SERVICE ESSENTIAL TO THE VICTORY PROGRAM

Not only has Victor pioneered 16mm motion picture equipment, but through the years Victor has developed many of the major improvements for superior picture and sound clarity. Likewise, Victor has planned in advance for the present emergency by building the largest organization of trained men that can efficiently serve every city and village in the land—that can serve the many thousands of Animatophone users in the Armed Forces, in Civilian Organizations, in Industry and in Education — a service force without equal in the industry.



Write Today For Complete Victor Catalog

World's Finest MOVIE Equipment
VICTOR
THE SYMBOL OF FINEST CRAFTSMANSHIP

VICTOR ANIMATOGRAPH CORPORATION

DEPT. E-1 DAVENPORT, IOWA

The Shortest and Surest Way to "Keep 'em Rolling, Keep 'em Flying"

PROOF

If you want proof that Caravel Plans get results, check with

American Can Company
American Viscose Corporation
Wallace Barnes Company
The Bates Manufacturing Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Socony-Vacuum Oil Company, Inc.
Swift & Company
Talon, Inc.
The Texas Company

OR ANY OTHER CARAVEL CLIENT

MAKERS OF THINGS FOR MAKING WAR: From all reports, you're producing the finest war-making materiel the world has ever known . . .

But what about those boys who must carry on from where you leave off?

Millions of those boys have never operated anything more fearsome than a billing machine . . . or a hay-tedder . . . or a second-hand jalopy . . .

Can they be expected to read, and grasp, and put into practice all those technical directions you have carefully set forth in your instruction manuals?

In this War for Freedom, success in combat depends to a large extent on MAINTENANCE!

Those trucks and tanks and planes and ships must not only be operated with the utmost skill, they must also be kept in perfect running order; and that goes for engines, refrigeration units, communication systems—every material element, in fact, that can contribute to the final victory.

With time the essence, the shortest and surest way to "keep 'em rolling, keep 'em flying, keep 'em afloat" is—TRAINING FILMS.

Films to insure expert servicing—with the least time out for breakdown and repairs. Films of a type which Caravel is now successfully writing and producing.

Write us today for details of a plan that facilitates the making AND SHOWING of such films—a plan that will definitely help you speed the winning of the war.

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

DISTINGUISHED SERVICE

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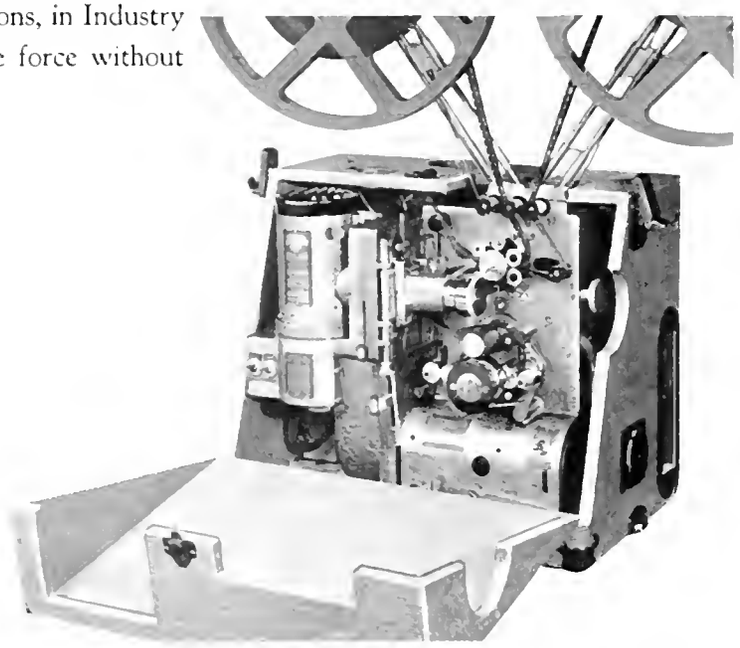

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World's Finest MOVIE Equipment
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THE SYMBOL OF FINEST CRAFTSMANSHIP

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The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
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Talon, Inc.
The Texas Company

OR ANY OTHER CARAVEL CLIENT

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But what about those boys who must carry on from where you leave off?

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Films to insure expert servicing—with the least time out for breakdown and repairs. Films of a type which Caravel is now successfully writing and producing.

Write us today for details of a plan that facilitates the making AND SHOWING of such films—a plan that will definitely help you speed the winning of the war.

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

FILM FORUM: A DEPARTMENT OF LETTERS

★ VICTORY TRAINING is the theme of the hour and its importance is exemplified in the inspiring response which BUSINESS SCREEN has received from training directors, educational supervisors, industrial executives and many others genuinely interested in the medium who have written.

From this enthusiastic response, a comparatively few letters are presented here. Elsewhere in the issue groups like the county health officers in the State of Kentucky, defense training centers, etc., have given inspiring testimony.

from the Department of Education St. Paul (Minn.) Public Schools:

. . . We started out last June 7 with an enrollment of 107 students of all ages. Some of them had no, or very little knowledge of machine shop work. The film, *"How to Run a Lathe,"* was shown to all but 30 students on the first day. After the first run, we had the students give us a written report of what they learned by seeing. This report was homework. The following day, each report was checked by the instructor and discussed before the class. Corrections were made right on the machine and demonstrated by the instructor.

Three days later the film was shown again and a quiz was conducted after the run. This time with very good results, as to understanding the principle of cutting tools and the operation of the machine as a whole.

Two weeks later we checked this group against the group of 30 who had not seen the film, and found that Group No. 1 had a much better all-around knowledge than had Group No. 2. After that test or survey was completed, the film was shown again to the whole group with very good results, and all of our instructors agree that by showing any film at least three times to the same group, makes the teaching job better, and at the same time easier.

I think we can agree with the same old three points of teaching telling, showing, and demonstrating, and check often.

We are now operating 21 hours a day, 7 days a week, and placing all of our trainees in industries for which they were trained.

A. V. KVORING,
Supervisor and Instructor.

P. S. Our 100 day school students and entire faculty have just volunteered to work through Easter vacation without pay as our contribution to help win the war.

from the Waterbury, Conn., Defense Training Center:

. . . I have always been of the opinion that visual aid is a necessary tool of an instructor, to be used as another method of presentation, but he must not rely upon it entirely and use it only as a modification of his method.

In my opinion, visual aids such as the new machine shop series should be used as a supplementary instructional method and not presented to a green student. These films, not any other, will replace an instructor, and showing a technical film to a "green" student would have little effect on him. Teach the subject first and then use the film to give the student an opportunity to have the subject presented from another point of view. This will also act as a check on the instructor to see if he did not overlook any detail. Because a student cannot learn what an instructor did not teach. After the showing of the film, I should suggest a test covering the subject presented.

I have had an opportunity to notice the reaction of a class of Machine Tool Operators. I had a film presented to students who have studied the book upon which this film was based, and again to another group who did not have this opportunity. *The interest of the first group was very noticeable, the keen activity displayed was gratifying and everyone felt the showing was certainly worth while.* On the other hand, the second group had very little comment and the questions had to be asked by the instructors.

EDW. J. S. STUPECK, *Supervisor,*
Waterbury Defense Training Center.

from the Newport News Shipbuilding & Dry Dock Co.:

. . We are just about to begin construction of an educational building within the plant in which suitable projection rooms will be provided. It is in my purpose to show these films before interested groups both during and after regular work hours.

G. GUY VEA,
Supervisor of Training.

from the Detroit Schools (Dept. of Vocational Education):

. . . Naturally, my opinion in regard to the use of visual aids by vocational instructors will be limited by me to observation. Until the Office of Education released the present films covering various defense occupations there were very few really high class sound movies covering operations in the various trades.

Since viewing the films recently produced we are stimulated to study how to use them most effectively. Instructors should have the films available for use at such times as there seems to be a need for them in the class. They should not have to wait for a complicated system of delivery. When previewing the films with representatives of the Office of Education I suggested that there should be certain "frames" removed from the movie and made available for "still projection." There should be an opportunity for the instructor to focus prolonged attention on some specific operation or position. The best way to develop a formula for using these films would be to encourage and practically insist on teachers using them a great deal allowing each teacher a considerable individuality in method and procedure. Out of a variety of experiences will come one good way of doing it.

From the practical point of view all operators should be given training in the use and operation of sound-movie equipment.

Our teachers have given enthusiastic approval of these films and stand ready to use them a great deal, *if, and when, equipment for their use can be provided.*

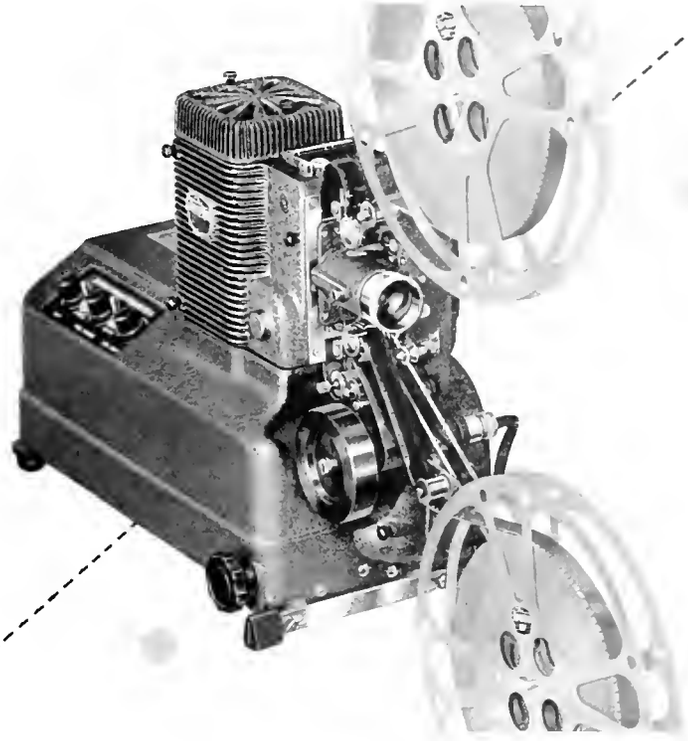
EARL L. BEDELL, *Director.*

from the University of Alberta, Edmonton, Canada:

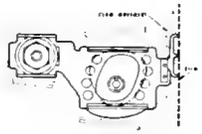
. . I thoroughly agree with the prime necessity of motion picture and still picture equipment being

(Continued on Page 31)

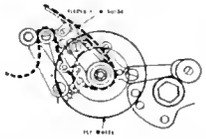
Here's Why AMPRO SOUND *Gives You* Better Performance



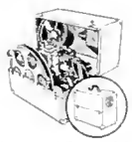
THERE are definite reasons why an ever-increasing number of Ampro 16mm. sound projectors are being selected to aid in the U. S. "Training for Victory" program—in schools, technical colleges, U. S. Army, Navy and aviation forces, government departments, as well as by America's leading industrial concerns. These reasons include:



Triple Claw Movement—The Triple Claw engages three sprocket holes simultaneously which materially lengthens the life of the film. This is of first importance not only from the standpoint of operating costs but affords better reproduction because of improved film condition. One evidence of Ampro's improved film movement is the absence of "film slap" which also contributes to unusually quiet operation.



Natural Sound Reproduction—free from waver and distortion is due to Ampro's finely balanced flywheel and patented "film guides" which control the path of the film to prevent any speed fluctuations or lateral deviations.



Quiet Operation and Portability—The quiet Ampro mechanism of the model illustrated permits operation without blimp enclosure. Packs with reel arms folded for extreme portability. Since there is no sound-proofed case to confine heat, this projector provides extremely cool operation even with 1000 Watt lamp.

And Many Other Features, such as: Tube Operation Approved by Radio Mfr's. Assn. · Flexibly mounted Motor · Direct Light to the Photocell · Underwriters' Approval for 1000 Watt Lamps · All Tubes Convenient for Quick Replacement · Non-Overloading of Amplifier Tubes · Standard Lamps procurable everywhere at no Extra Cost · All Electrical Features Built on one Removable Chassis for Simplified Service · Unusual Ease of Threading · Fast Automatic Rewind · Tubes Carry Oil to all Points from Centralized Oil Cup · Oilite Bearings and Precision Ground Shafts Employed Throughout · Convenient One Hand Tilting Device · Special Threading Light and Pilot Light.

Send for Complete Story

Although the demands of the U. S. War program may make it impossible to fill your requirements immediately—every person interested in better 16mm. projection should get full details of the Ampro story *right now!* The coupon below will bring it to you promptly.

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Precision Ciné Equipment

BS 212

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Gentlemen: Please send me the complete details on entire line of Ampro "Precision Quality" 16mm. Sound and Silent Projectors.

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T R A I N I N G F O R V I C T O R Y

The U. S. Office of Education is sponsoring a huge sound film program for industrial training in connection with National Defense. Ampro educational dealers are fully informed regarding this comprehensive sound film program. Contact your nearest Ampro dealer or write us for free catalog describing each film.

Why SO MANY VICTORY TRAINING FILMS *Are Being Shown On*

DA-LITE

(Reg. U. S. Pat. Off.)

SCREENS

Scene from one of the new Victory-training motion pictures which have recently been completed under the direction of the *United States Office of Education, Federal Security Agency.* It is shown here projected on a Da-Lite Challenger—America's most popular portable screen.

TO INSURE *brilliant projection* of training films (motion pictures and slidefilms) industrial firms and vocational schools, in ever-increasing numbers, are using *Da-Lite Screens.* Because they make pictures brighter, sharper and easier to see and type matter clearer and easier to read, Da-Lite Screens *speedup learning.* Da-Lite surfaces, White, Silver and Glass-Beaded, are the result of *33 years of leadership* in screen manufacturing. Da-Lite mountings, long famous for their easier operation, save valuable time getting ready. Da-Lite's sturdier construction assures dependable performance and many extra years of trouble-free service. Ask your producer-dealer for time-proved Da-Lite Screens. Write Dept. 2B for a free 10-page screen data book.

THE DA-LITE CHALLENGER IS "FIRST-CHOICE" FOR PORTABILITY

Light in weight, **easy to carry** and **easy to set up,** the Challenger Screen is **ideal** for showing defense training films **out in the shop** and in vocational school classrooms. It can be put up anywhere in 15 seconds, yet folds compactly for carrying. The Standard Challenger was the first portable screen with **square tubing** for greater rigidity, and is the **only screen** with **slotted** square tubing in the **tripod** and **solid square** tubing in the **extension support** for **all sizes** from 30" by 40" up to and including 52" by 72". Its patented slotted construction with inner-locking mechanism has proved its superiority over many years. The Challenger is the only screen that can be adjusted in height merely by releasing a spring latch and raising the extension support. No separate adjustments of the case. For showings to very large groups, the Challenger is available in a **Deluxe model** with crank lift. This model is made in 3 sizes, 63" by 84", 70" by 94", and 72" by 72".

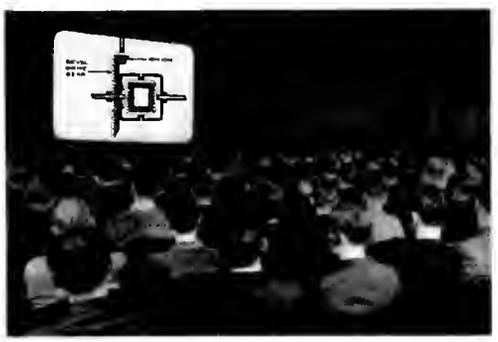


Photo Courtesy the Jam Handy Organization

DA-LITE HANGING SCREENS

Spring-Operated or **Electrically-Operated.** The spring-operated models B and C are available in 21 standard sizes, including square sizes, from 22" by 30" up to 12 ft. by 12 ft. The Da-Lite ELECTROL, the **only truly automatic** non-theatrical screen, is lowered and rerolled by electrical control. 14 standard sizes (including square sizes) from 6 ft. by 8 ft. to 20 ft. by 20 ft.

★ ★ ★ ★ ★ ★ ★ ★ ★

PARTIAL LIST OF USERS OF DA-LITE SCREENS

U. S. ARMED FORCES
- Army
- Navy
- Marine Corps
- Air Corps

UNITED SERVICE ORGANIZATION
- (Practically every U. S. O. Center now has a Da-Lite Model C hanging screen, a Da-Lite Challenger and a Da-Lite Projector Stand).

U. S. GOVERNMENT AGENCIES
- U. S. Treasury Dept.
- Federal Bureau of Investigation
- U. S. Office of Education.

PROMINENT SCHOOLS AND UNIVERSITIES
- State University of Iowa, Iowa City, Ia.
- Freeport High School, Freeport, N. Y.
- Purdue University, Lafayette, Ind.
- Glenville High School, Cleveland, Ohio.
- University of Michigan, Detroit, Mich.
- Board of Education, Chicago, Ill.
- Tulane University, New Orleans, La.
- Brentwood High School, Brentwood, Pa.
- Northwestern University, Evanston, Ill.
- University of Southern California, Los Angeles, Calif.

LEADING INDUSTRIAL FIRMS
- The Perfect Circle Co.
- Deere and Co.
- General Mills, Inc.
- (SALES MANAGEMENT'S latest survey shows that of 29 companies giving makes of screens used, 27 listed only Da-Lite).

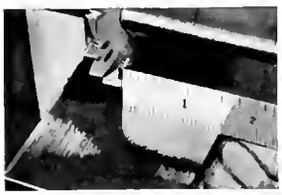
★ ★ ★ ★ ★ ★ ★ ★ ★

THE DA-LITE SCREEN COMPANY, INC.

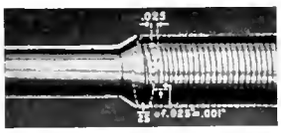
2723 NORTH CRAWFORD AVENUE • • CHICAGO, ILLINOIS

SPEED DEFENSE WORK with U.S. Office of Education Motion Pictures that help to teach PRECISION MEASUREMENT!

Acclaimed by Educators and Shop Foremen as one of the Greatest Contributions to Shop Training ever made!



THE STEEL RULE. 475 ft. 16 mm. sound. Cost: $11.37. Subject shows in detail the various forms of steel rule in general use, explains fractional scales and demonstrates correct use. Explanation of blueprint dimensions. Variations in form of depth gages and combination squares. The rule measuring round stock.



THE MICROMETER. 525 ft. 16 mm. sound. Cost: $12.37. Subject shows various forms of the micrometer. Animation teaches their reading. Emphasizes necessity for checking against known standards. Outside, inside and depth micrometers demonstrated. Correct reading of barrel and thimble scales shown.

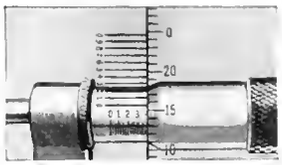
FIXED GAGES. 600 ft. 16 mm. sound. Cost: $13.87. Subject offers demonstration of various types of fixed gages in use. Measurement of outside and inside dimensions, to checking internal and external tapers and to measure threads shown. Go-not-go, flush-pin, taper ring and taper plug gages in use.

COMPLETE GROUP OF 5 SUBJECTS

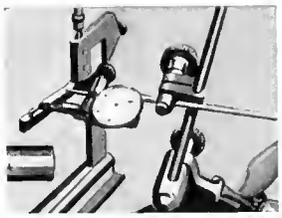
ON PRECISION MEASUREMENT COSTS $61.95

Total footage 2700 feet—16 mm. Sound-on-film.

(Prints may be bought separately)



VERNIER SCALE. 675 ft. 16 mm. sound. Cost: $15.37. A detailed study, largely in animation, of principles of the Vernier scale and its application to precision measurement. Both ten and twenty-five part Vernier scales explained. Vernier micrometer and caliper in use. Extreme closeups for experience in reading.



HEIGHT GAGES AND STANDARD INDICATORS. 425 ft. 16 mm. sound. Cost: $8.97. Subject presents fundamental principles of the Vernier height gage. Various forms of standard indicators. Gage's use to scribe necessary lines for a precision lay-out job on angle plate. Use of standard indicator with gage block to check depth of cut.

ALSO AVAILABLE: 5 subjects on the ENGINE LATHE, 5 on the MILLING MACHINE, 3 on the VERTICAL BORING MILL.

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Please send immediately FREE catalogue describing THE UNITED STATES OFFICE OF EDUCATION'S "Teaching Tools For Defense Workers."

*Name*_____

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*City*_____ *State*_____ BS 1

(LETTERS: CONT'D FROM PAGE FOUR)

readily obtainable for school and general educational purposes. In the Province of Alberta, the Department of Extension of the University of Alberta has developed through the years a very active program of Visual Instruction for school and adult education. In the twelve month period ending March 31st last we circulated 675 sets of lantern slides and over 1000 filmslides and 5,823 reels of silent and sound motion picture films, the aggregate attendance at over 5,000 showings amounting to 460,000 people.

We have become somewhat alarmed over the present situation resulting in the great difficulty of obtaining equipment to enable our program of Visual Education in the schools and institutions in this Province to be continued. *During the past two years these programs have, we believe, been directly instrumental in implementing the war program in Red Cross work, War Savings and in many other ways. In the city of Edmonton we gave over 200 showings of war films* during the last winter and at the present time we are commencing a new program on behalf of the Canadian Government which involves the setting up of a number of circuits with operators giving a daily exhibition at each point, in the school and community hall. I am of the opinion that equipment for Visual Education should be made readily available as Visual Education will, undoubtedly, be a very large factor in upholding the morale of the people and in furnishing encouragement for the utmost effort in the prosecution of the war.

Yours very truly,
H. P. BROWN,
Supervisor Div. of Visual Instruction, Dept. of Extension, University of Alberta.

from the Winnipeg, Canada, Dept. of Education:

. . . We very much regret to learn that there is some thought of curtailing the production both of films and projectors. No one can ever doubt but that showing of the films in the schools, properly related to classroom work, is of great value to pupils and to teachers. Even an occasional film of entertaining character produces desirable results. *Moreover, at the present time many films are extensively used, and very effectively too, in connection with our war effort.* It would be difficult to substitute a more expedient medium to promote loyalty and unity of action.

It is our opinion that the fine progress made by using films as an aid in educational efforts would be jeopardized by any shortage of films or projectors.

Yours very truly,
M. G. WAWRYKO,
Director of Visual Education, Winnipeg, Canada.

from the Kaleva Rural Agricultural School:

. . . We, as well as most every school in the United States, are very much concerned about the direct possibilities that visual aids have in the development and training of our youth today. We find that it is a very potent instrument to use in maintaining the morale of our small communities and schools. It is especially useful in the instructional work in the teaching of National Defense classes.

It appears to me that it is going to become increasingly difficult to secure capable instructors for National Defense classes. Since that appears to be the case and since the Government has recently sponsored the making of several outstanding educational films, administrators in the various schools will turn more and more to the use of motion picture projectors. One of the most vital National Defense aids I would consider to be the motion picture projector and I hope that their manufacture will not be curtailed in any way so as to slow up the teaching procedure in National Defense which is so essential at this particular period in our history.

MELVIN C. YAHNKE,
Supt., Kaleva, Michigan.

from the University of Iowa, Extension Division:

. . . I have just finished reading your editorial in Business Screen titled "A Weapon of Defense That Is Vital to America," and wish to congratulate you on this topic.

It was shown in World War I that education and dispensation of true information were two of the leading factors toward building a great army and a public morale with the will to win. With the great advances being taken in the past twenty years in use of the educational motion picture, the task of helping educate and build public morale should go to great heights.

In our Visual Instruction Department here at the University of Iowa the lantern slide projector, film slide projector and motion picture projector is helping in many different ways to speed the defense program. Just to give you some idea of the pictures in our program in connection with the University of Iowa, I will list some departmental use. (*List includes College of Engineering, ROTC, Chemistry Dept., College of Medicine, Nutrition Projects.*)

The above are but a few of the more direct uses of equipment for the projection of pictures in defense training. With the declaration of WAR, I think this department will be called on more every day to help in this training.

In my previous statements I have not mentioned the use of motion pictures and still camera equipment that we are using to make new materials for defense training. We have just finished a new 16mm sound film titled "Motion and Time Study Principles" (With Applications Showing Better and Easier Ways to Work). This new film was made with the idea of helping speed up production in defense industries giving the latest ideas found in our College of Engineering, Motion & Time Study Division.

L. W. COCHRAN, *Supervisor, Department of Visual Instruction.*

from Manhattan, Montana:

. . . Subject—The need of more visual education during our national emergency.

Psychology gave us our answer—

NUMBER TWO VOLUME FOUR

BUSINESS SCREEN

* CONTENTS *

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Business Screen Magazine, issued by Business Screen Magazines, Inc., 20 North Wacker Drive, Chicago, on March 1, 1942. Editor: O. H. Coelln, Jr.; Art Director, Dan Runyan. Western Editor: H. L. Mitchell, 2469 Hill Street, Huntington Park, Calif.; Phone LAfayette 3468. Acceptance under the Act of June 5, 1934, authorized February 20, 1939. Issued 12 times annually, including 4 special numbers (not circulated in the business field). Subscription, $2.00 for 8 business numbers. Foreign and Canada $3.50. Single Copy 50c. Entire Contents Copyrighted 1942 by Business Screen Magazines, Inc. Trademark Reg. U. S. Patent Office.

the answer to our question of how to reduce educational waste to a minimum and how to teach our students old and young alike, quickly and efficiently. Psychology answered, "Mr. Educator, 87% of all that we know gained entrance to our brain through the sense of sight."

Taking psychology's answer as an acceptible fact, Americans sought to invent a sight teaching tool. As a result, a highly portable, quick to set up, simple to manipulate and safe (using non-inflammable film) to operate, 16mm sound motion picture projector came into being. Americans perfected this dynamic teaching tool and then 16mm sound teaching films brought the whole world to the classroom. Truly a new world opened up to the student when haziness was replaced with vividness. Today most of the nation's schools depend upon this aid in their teaching.

War came. Enemy foreign countries quickly saw the vision. They could use this American creation as a stronger weapon of defense than was their gun, their tank, their battleship or their submarine. Nationalism, patriotism, health, safety —in fact everything that was desired of a strong nation at war could be taught with the aid of the educational film. Into nearly every German educational institution went the educational sound movie and the world's most powerful war machine was built up. They then also put it to work softening resistance in countries which they were about to invade. In some countries educational sound movies was responsible to a large degree for the complete breakdown of resistance. Both behind and at the front the educational movie was telling whatever story the propaganda minister wished told. All instruction at home was supplimented with edveational film because it was the quickest and most efficient aid to instruction known.

Over here, Eleanor Roosevelt struck the keynote when she wrote in an article for the Photoplay magazine, copy attached, "Love of Country Can Be Inculcated Through the Movies———"

Let us keep on building strong. Keep the flow of this powerful weapon, the motion picture projector and educational film coming to our educational institutions. Educators will use it to great advantage in teaching national safety, health and what to do in case of danger. The educator will teach Americanism with it. He is doing so today. He is teaching our democratic way of life to all of Uncle Sam's children. Later we shall send this teaching to the far corners of the earth as a foundation of permanent peace. Keep 'em coming.

OLIVER H. CAMPBELL, *Former Supt. Manhattan Public Schools.*

from Madison, Wisconsin:

. . . I feel very strong that visual aids in our schools, especially vocational schools, are of estimable value at this particular time in the matter of defense training.

The government films and vocational training films which are just now being put on the market are ample proof that such work is desirable from a practical teaching standpoint. Many subjects can be taught more successfully by animated motion pictures than by actual laboratory experience, and certainly the time of training will be much less in the former case. The best use, of course, is in a joint use of laboratory and screen showing.

I trust that the government will see fit to make available both 16mm motion picture machines and strip film projectors to all units who can use visual instruction. Certainly with all the films now being produced, and with their great teaching value realized by everyone, it would be just to bad if the equipment could not be obtained. Such equipment should be put on a priority basis.

WM. J. MEUER.

from Portland, Maine:

. . . We would like very much to go on record in answer to your editorial which recently appeared regarding the value of Visual Education.

When our own United States Government spends thousands of dollars for training and defense films in spite of all extra expense, they are not doing this for the fun of it. They are doing it because they feel that by placing the actual moving pictures in front of the eyes of the general puhlic and the armed forces of the United States, they are going to place a visable picture which will imprint in their minds the subjects in which the pictures portray.

Today more than ever states are turning to the motion picture for their vocational training as carried on in their schools. Safety through the highways and police departments, health education through the public health officers and certainly at this time Civilian Defense Training is on everybody's tongue. This new education throughout our country is using a tremendous amount of motion pictures in the educational training which they carry on. Therefore, it behooves all of us regardless of our business affiliation to make every effort to promote the use of Visual Education for the good of the people of the United States of America—D. K. HAMMETT.

from Pittsburgh, Pa:

. . . Your editorial entitled "A Weapon of Defense That Is Vital to America," inspires me to the extent that I send this letter of commendation.

The problem confronting this and all other nations today is of such magnitude that the printed page, the spoken word can no longer be relied upon to carry on alone the educational process. Today's assignments as given to the leaders of important departments of the Federal Government, for example, are, as you already know, of such magnitude that it is necessary for them to call to their aid all good existing and usable sound film material and, in addition, plan for the production of new sound films to help them and their co-workers to complete specific teaching and training jobs quickly.

The use of films by virtually all departments of the United States Government is not new because the Government has always been cognizant of the true value of the sound motion picture. The task of training selectees, preparing new men for work in vital defense industries, educating the aliens within our gates as well as the adults and youth of the land and to make all

(CONTINUED ON PAGE 29)

We're talking about tools that can help America win this war

To win this war by attack on the field of combat, we must first win the Battle of Production at home. Not only material shortages but a vast—and only partly solved—shortage of industrial manpower must be overcome to put an end to the world wide scourge of tyranny facing us. *The tools which can help to solve our labor problem are already at hand.* If we now begin to use them *confidently, thoroughly* and *wisely*, they may prove one more vitally important key *to the winning of this war.*

The tools we're talking about are TRAINING FILMS and the projectors that give them life. FILMS for the technical instruction of a soldier, a sailor, a doctor, a civilian air raid warden or —of the greatest importance—the retraining of a Detroit auto worker whose plant is being converted to war production. FILMS to train those ten million additional workers the War Production Board says are going to be needed to turn out the planes, tanks and ships that will blow Hirohito and Hitler clear to Hell.

★ ★ ★

INDUSTRIAL TRAINING EXPERTS, EDUCATORS, MEDICAL MEN AND THE VISUAL TRAINING CHIEFS IN THE ARMY AND NAVY KNOW THAT FILMS TRAIN MEN FASTER AND BETTER: Training experts in defense plants and educational authorities, the men who *know* the power of this medium in the Army and the Navy, eminent medical men from the American College of Surgeons and the Surgeon-General's Office, and every Government agency in Washington — including the War Production Board (through the Labor Division and the Contract Distribution Section) are counting on films to help solve *training* problems.

★ ★ ★

CO-ORDINATION OF FILMS FOR WAR PRODUCTION BY ARMY, NAVY, AND U. S. OFFICE OF EDUCATION IS NEEDED: FILMS serve two *entirely different* purposes in the war effort. The President anticipated and confirmed one of them in the appointment of Mr. Lowell Mellett, an experienced newspaperman, to co-ordinate government *informational films.* The other is a tremendous and sobering task: the employment of *the instructional* powers of the film to teach a man to repair a tank, to help train an unskilled green hand in the operation of a machine tool or to read a complex ship's blueprint: to speed up the retraining of millions of priority-unemployed workers in the new tasks of war production. Hollywood methods would make a mess of this kind of picture-making: it has taken years for *specialists* to learn the simplest rudiments of it, and there are few of them. But we do have men in the Signal Corps of the Army, in the Bureau of Aeronautics of the Navy, in the U. S. Office of Education and far-sighted executives in the War Production Board who understand the nature of this training problem and who can assemble the experienced talent and facilities available to carry it through. Time is the essence of Victory! *If these visual training aids can save it they will help win the war.* They should be *administered* and *tested* and *their fields of use extended wherever needed!* America's victory may depend on prompt and farsighted development of these training tools.

—O. H. C.

★ ★ for the DURATION

CURRENT SOUND MASTERS PRODUCTIONS

For the Navy:

6 Training Films
3 Recruiting Films
10 Training Slide Films

For the Defense Savings Staff:

"When Freemen Shall Stand"

For B. F. Goodrich:

"Keep 'em Rolling"

For General Motors:

"Now is the Time"
"The Boss Takes His Coat Off"
"Wings for Defense"
"Wheels for Defense"

For Buick:

"Swords and Plowshares"

★ **Dec. 7, 1941,** ended a period of nearly two years in which Sound Masters earnestly essayed to lend a helping hand in the National Defense Program through the production of many kinds of "defense films". Hundreds of thousands of feet of film were produced for clients and government agencies in documentation of the national rearmament drive. We tried to help tell the public about the approaching peril . . . and what American industry was doing to safeguard our heritage of freedom.

Now America is at war. And, like good Americans everywhere, we are working day and night at the job we best know how to handle. We have accelerated the production of Training and Recruiting films for the Navy Department . . . we have stepped up the pace on vital Morale and Instructional films for industrial clients who are now turning out war materials. And if anybody comes along with a new assignment that will give us further opportunity to Work Like Hell for Victory, we'll tackle the task with joy. We're in this thing up to our necks . . . and we're in FOR THE DURATION!

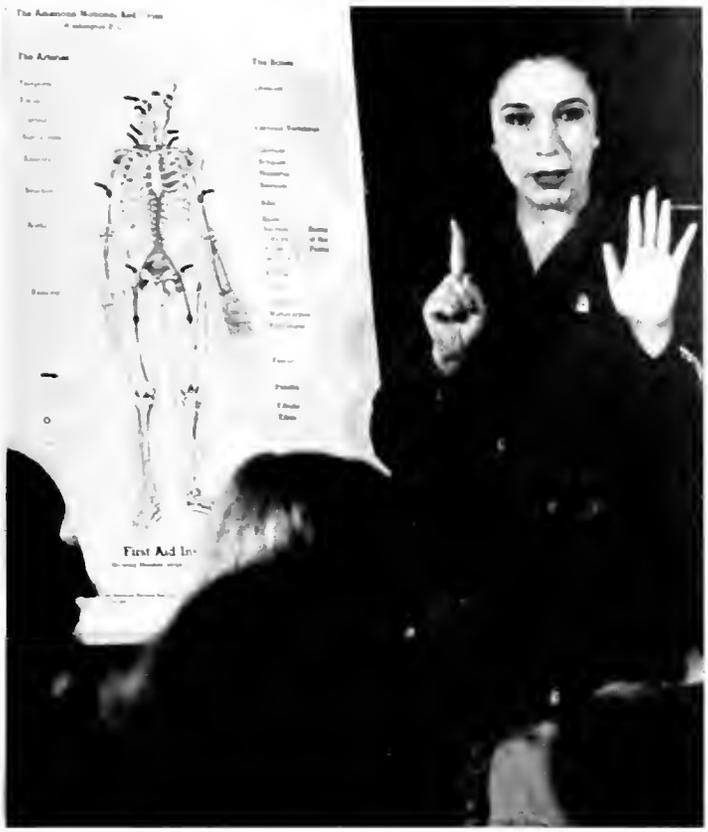
SOUND MASTERS
INCORPORATED
★
165 W. 46th
NEW YORK, N. Y.

TRAINING FILMS on sheet metal work for aviation mechanics

The first six of a series of sound motion pictures prepared in cooperation with the Bureau of Aeronautics, U. S. Navy Department, has recently been made available to recognized aviation training schools and other organizations training or employing aviation mechanics on sheet metal work.

1. THE BAR FOLDER (1 reel)
2. THE CORNICE BRAKE (2 reels)
3. ROTARY MACHINES (2 reels)
4. SHRINKING AND STRETCHING OF ANGLES (2 reels)
5. HAND METHODS OF FORMING SHEET METALS (2 reels)
6. MACHINE METHODS OF FORMING SHEET METALS (2 reels)

These Sound Motion Pictures are available in both 16mm and 35mm.
WIRE OR WRITE FOR SYNOPSES AND PRICES.



1. AMERICA'S "WOMEN IN DEFENSE" LEARN FIRST AID in an American Red Cross class scene from the O. E. M. "Defense Report" for which the commentary was written by Eleanor Roosevelt and narrated for the screen by Katherine Hepburn. Training films on many similar subjects are planned.

2. TRAINING WORKERS FOR WAR PRODUCTION with the aid of the motion picture camera and the projector is helping speed the mobilization of 10,000,000 additional workers required by the nation's expanding arms production efforts, according to Sidney Hillman, Chief of the Labor Division of the War Production Board. "Victory Training" films will play an important role in this effort.

FILMS Vital Role in Training U.S. Public and Workers for War . . .

★ DELIVERING FACTS QUICKER and more thoroughly than any other form of idea communication, the educational film has at long last come into its own at this hour of the nation's greatest need. Motion pictures and slidefilms are already playing a vitally important role in training the armed services; they are beginning to play an equally vital part in the training of the Home Front, particularly in the schools and in industry.

Because it gets instructional material *understood and remembered* the film may prove a vital link in the training of millions of additional workers required for war production. A shortage of experienced teachers and the pressure of time make any teaching aid of vital importance; because excellent instructional films can be prepared on a national basis (such as has already been demonstrated by the U. S. Office of Education) with complete standardization of the best teaching practice, detailed demonstration, etc., they offer a particularly important solution to this training shortage.

Not only in the war industries but elsewhere on the Home Front, this medium of instruction and training must play an important part. Where agricultural production must be increased and methods of operation improved, county agent meetings and similar War Activities Board functions may serve to bring together audiences for film showings. In urban centers, air raid precautionary facts can be brought to the attention of the 2,500,000 workers already enrolled —*at a minimum of expense for a maximum of absorbed learning*, according to the original principles set forth by the Office of Civilian Defense in Washington. The *unchangeability* of the motion picture is one of its principal assets, particularly when in use among untrained groups.

Abroad, in Latin America and among the Allied Nations, instructional and informational motion pictures are playing an important role. Showings in America of the British documentary TARGET FOR TONIGHT demonstrated the popular appeal such subjects have among friendly nations. The work of the Rockefeller group, working in the field of cultural relations, will result in the showing of numerous Latin-American subjects before adult groups, etc., in this country while our neighbors to the South see North American subjects.

* * *

♦ BUSINESS SCREEN'S NEWS PAGES reflect today's trends in visual education with Government and Industry setting the pace. An index of the month's features highlights these trends in the field:

Defense Plant Training

♦ Training directors find U. S. Office of Education films invaluable aids in speeding class routines.

Vocational Schools

♦ Defense Training in 2,400 primary centers and over 3,000 OSY and similar classes is of increasing importance in meeting labor need. U. S. O. E. films aid in training.

Army & Navy Films

♦ War Department releases statement on reasons for use of films. Navy increases use of training films. (Feature articles on these programs to appear in the next issue).

Civilian Defense

♦ First film already in circulation, with additional reels ready for local council showings. Target (coast) areas first in importance.

Public Health

♦ New techniques of war medicine demand visual aids: public health education for nutrition physical condition of equal significance.

State of the Nation

♦ Defense production reports showing to 16mm groups; rural areas also get extensive programs.

Inter-American Relations

♦ First American reels on the lands to the South are ready; distribution of similar programs in Latin-America is the other goal.

War Production Contracts

♦ Contract Distribution offices to have educational films for guidance of subcontractors according to War Production Board plans.

INDUSTRY FACES ITS WAR PROBLEMS

Aid to Dealers and Consumer Education Are Objectives for Pictures

★ With the assembly lines of American industry converted to war production, the task of safeguarding our tremendous investments in products and trade reputations is now the major responsibility of advertising and selling. To speed the equitable distribution of remaining stocks to the benefit of loyal dealers and consumers, to retain the basic dealer organization against post-war needs, and to serve the economic well-being of the Home Front in many similar ways are tasks worthy of the best in media and men.

Advertising, having proved its *ability* to build mass markets and thus to create the production lines upon which our victory now depends, must now prove its *adaptability* to accomplish some of the following assignments:

Three Major Assignments

1. Long-range measures to insure the manufacturer's leadership in future post-war markets.

2. Re-examination of all existing media in light of war psychology, severe changes in readership due to population shifts, the draft, priority-reduced and war-production activated markets, "target" areas and subsequent changes in living habits, rising space costs, competition of war news in radio and newspapers and of the greatest importance — the recognition of a "preferred" dealer and consumer market. This latter condition stems from the knowledge that a reduced quantity of products are available for sales and that a lesser number of better dealers must be maintained on a minimum profit or subsistence basis.

3. Substitutions required by diversion of critical materials to the war effort.

What Kind of Advertising

The magazines have featured a familiar pattern of advertising appearing on every other page: now the advertiser's dedication to the defense effort is the theme. However true, these messages have a time-limit and it is expiring. As every plant produces for defense, it is no longer *news*. It will not serve to replace the consumer's desire for the product or pay a dealer's rent.

The challenge of the present lies in the development and use of media such as the motion picture or slidefilm which have very apparent advantages in this present era.

Films an Essential Medium

The films greatest advantage is that of *realism*. Its next important characteristic is *selectivity* of audience. There are already enough theatrical and non-theatrical outlets available to the advertiser to enable him to carry on a campaign as complete as that of any other existing medium. Yet this campaign will be one where a complete explanation of circumstances of sales, or of substitutions, etc., may be made with the undivided attention of the prospect for a period of not less than ten consecutive minutes.

The medium is a *serious* one, used non-theatrically. Its realism and thoroughness are entirely in harmony with the war effort. Its present role of service to the nation in industrial training and to the Army and Navy are a tribute to its *instructional powers*. These same powers may be employed with dramatic interest and attentiveness unequalled by anything else.

How Are They Now Used?

Recent film production may be divided into several fields of activty. These diverse objectives may be accepted as a basic pattern of use for other concerns:

1. *To explain the role of the manufacturer in war production*: International Harvester, (The Marines Have Landed, The Strong Shall Be Free) has depicted the use of its equipment on the fighting front, has also shown the vital parts played by the farmer, the industrial worker and the man at the front and the relation of food and equipment. General Electric (Beating Time), American Telephone & Telegraph (All-Out for Defense) and General Motors (Wings for Defense, Wheels for Defense) have produced similar subjects.

2. *To inform the consumer*: Household Finance, Edison General Electric (Hotpoint), Westinghouse, the American Institute of Baking, National Dairy Council and the Aluminum Company of America have contributed excellent film fare in this field.

3. *Training the dealer organization for conservation duties*, maintenance and repair and similiar operational tasks: Chevrolet's forward-looking Car Conservation Plan has already been backed up with service training films. Study films will be issued at frequent intervals to co-ordinate with the general service training plan. In a similiar vein is the Thermoid Company's new picture, Keep 'em Holding which covers the entire field of hydraulic brake operation. Slidefilms offer another economical means of such service training.

For the Armed Services

4. *Motion pictures and slidefilms explaining the operation of equipment used in the Army and Navy*: To insure the satisfactory operation of equipment, to minimize maintenance and repair obligations, and to generally contribute to the better fulfillment of war production obligations, leading manufacturers are complying with the stated request (also embodied in procurement contracts) that visual aids be supplied for such training purposes. These films are useful in the civilian field and are most economical to make.

5. *To carry on direct advertising to selective markets*: the screen has many distinct advantages of con-

CONSERVATION IS OUR PATRIOTIC DUTY!

★ In a special appeal to the readers of Business Screen, we have called attention to the request by Government and private interests concerned with the problem of metal cans and reels now curtailed by priorities. We repeat it again—send back your old 35mm. film cans and cores to the supplier. They must be used over and over again. You can help assure the continued and uninterrupted supply of film by your sincere cooperation.

You also serve America in an hour when the Battle of Production is being fought to assure all of us the blessings of democracy. Films are serving at the front: make sure they can continue to fill this essential role of training and information by informing Business Screen of all unused existing projectors. It is evident that a large number formerly purchased for sales promotional uses have now been diverted to re-training of workers and dealers and for various other useful war tasks, but no equipment should stand idle at this time. Please inform us and we will see that the information is brought to the attention of the proper authorities in Washington where re-purchase arrangements may be made.

centration. Screen advertising thru theatres may be purchased in principal defense centers, non-theatrical audiences may be reached through regular channels as well as in million-fold quantity throughout rural areas this coming spring and summer season. Many products, unaffected by priorities, may nevertheless escape the penalties of other media in war time through the use of the screen.

There are other objectives such as the re-training of workers in agriculture and industry in which the manufacturer of equipment used by these workers has a definite responsibility toward its continued usefulness. In this category, the maker of farm equipment may assume some of the obligations of training women needed for farm production or workers for defense industries, both of whom would profit by his own superior explanation of the operation of the equipment these workers must use.

UNLIMITED AUDIENCES NOW

One phenomenon of the industry is the tremendous number of requests for films from all types of groups. This has often far exceeded the desires of the sponsor but today it provides ample selectivity as well as a comparatively less expensive mass audience.

The most economical means of distribution is obtained through existing services, providing projection service, equipment, etc. or the lending type of film library. One service has listed 56,000 American Legion Posts, Parent-Teacher Associations, fraternal societies, women's clubs and other adult organizations. An even greater number of audiences may be reached through the schools.

Though there is not enough projection equipment now on the market and unoccupied by defense training duties, nevertheless some cooperation may be obtained in the case of groups meeting in the school. Part of this problem is also served by the presence of a trained operator service in most of the major cities of the country.

COSTS ARE ECONOMICAL

In comparison with other media, the film requires technical skill and knowledge of its fundamentals but is no more difficult to plan. Production costs have been stabilized by far-sighted cooperative producer action to the point where they offer definite guarantees of reliability, experience, financial integrity and ample facilities as prerequisites to the production contract. Government today, for example, is buying commercial picture production at costs far less than its own pictures formerly cost.

Typical Defense Subjects

◆ Two single-reel theatrical films recently completed by Sound Masters for the General Motors Department of Public Relations continue to receive favorable comment wherever they are shown. WINGS FOR DEFENSE is a fast moving review of Uncle Sam's growing air armada. Centering about the production of the Allison aircraft engine, made by GM, and the engines made under license from Pratt-Whitney, this one reeler also shows them powering some of the fastest military aircraft in the world.

The second film, WHEELS FOR DEFENSE, tells a parallel story of the military use of motor vehicles. Much of the footage was [illegible] shot at one of the Army's [illegible] training centers, where an amazing variety of motorized equipment is shown in action with one of the new armored divisions.

Motion Pictures Aid In Speeding War Work

◆ The part motion pictures can play in stepping up war production was pointed out recently in an article by Lt. Col. Roy L. Bowlin, "Shell Production Motion Pictures as an Aid to Quantity Manufacturing," which appears in the current January February issue of *Army Ordnance*.

The author details clearly how General Signal Co. combined sound and color motion pictures with words in assembling the production analysis for an educational order.

He points out that films may enable other manufacturers to save weeks, possibly even months, in determining whether they have available machines and other facilities to handle similar orders. He states that manufacturers can learn from the picture the required floor space, methods of handling, scrap disposal, and the economical sequence of operation and machining methods.

Operating time for every operation as actually checked in the educational lineup of machines in the General Railway Signal picture.

Figures such as these, according to the article, are valuable guides in designing a production layout. Lieutenant Colonel Bowlin states that "the picture represents a valuable service and short cut not previously applied to ordnance manufacture" in this country.

—*Steel.*

* * *

PROJECTORS AND SCREENS NEEDED FOR WAR TRAINING MAY BE AVAILABLE THROUGH THE PAINSTAKING EFFORTS OF THE WAR PRODUCTION BOARD AND THE CO-OPERATING MAKERS:

The War Production Board believes this industry worthy of materials urgently needed to make equipment to carry out defense training programs. Industrial plants and schools engaged in defense training, public health officers and medical schools, air raid training centers, the Red Cross, the U.S.O., agricultural educators and county agents now organized under the War Activities Board setup — all those concerned with the serious business of preparing this nation for all-out war — should be able to get the equipment essential to their vital training activities. Manufacturers of visual equipment have supplied the WPB with data for their minimum material needs; they have stripped their production lines of "amateur" items. They have doubled and tripled hours of production to handle other war materials of the kind their machine tools and men are best equipped to produce. They have substituted, to the limits of efficiency in use, wherever critical materials were heretofore employed. In all this we have played an intimate personal role and can honestly say that the cooperation and understanding of the men and women with whom we worked in the War Production Board and within our own industry is to us an enduring tribute to the medium and to these Americans who labor together for Victory!

—O. H. C.

This Month's Cover:

● The cover scene, showing many phases of the defense training activity, is reproduced by special arrangement with the U. S. Office of Education.

"UNFINISHED RAINBOWS", the excellent new sound motion picture production now available thru the Aluminum Company of America, tells the historic saga of the development of aluminum, its place in our domestic and industrial life and in the armament and defense of our nation.

WAR MEDICINE
and the Screen

by Dr. Malcolm T. MacEachern, American College of Surgeons

MEDICINE TURNS TO VISUAL AIDS to bring the latest developments in technique to doctors. This scene from "White Battalions" which was produced for the American College of Surgeons, shows a typical hospital class.

★ WAR MEDICINE needs the movies. It needs the swiftness with which they convey information. It needs the definiteness with which they illustrate principles and techniques. It needs the vividness with which they impress ideas upon the beholder.

The development of the medical motion picture for the profession and the general public has been opportunistic. With the shattering of peace for America on December 7, a new phase in the evolution of the teaching film undoubtedly has been entered. One purpose unites us to win the war, as speedily and thoroughly as possible—and to that end every helpful medium and instrument must be deliberately and systematically pressed into maximum usefulness. The motion picture should rank high among the media that will contribute to a decisive victory.

NEED TRAINING PROGRAMS

In the field of health and medicine we want intensified training programs, short-cuts for disseminating facts to the public, ways of arousing the people to protection of life and limb, means of scientific intercommunication with our allies. Fortunately we have long experimented with the movies. They have already repaid us richly with numbers of films that have contributed to medical progress by spreading knowledge. These productions have been only a foretaste of what the motion picture can do now that necessity goads us to mighty effort to employ our medical resources in the best way to conserve the nation's man power.

Quickly we want new medical developments to be graphically communicated in all the details of technique involved to the medical personnel on our far flung defense front. We cannot send clinicians everywhere to demonstrate and teach, but we can ship films. Quickly we want medical recruits trained in caring for battle and air raid casualties. We lack sufficient instructors, but we can partly compensate for the shortage by using teaching films.

STANDARDIZED SURGERY

A surgeon lightly remarked at a hospital conference of the American College of Surgeons in 1917 that perhaps surgical efficiency could be standardized by efficiency methods, and that what an efficiency engineer like Gilbreth would probably suggest would be, for example, to take moving pictures of a certain eminent surgeon's stitch-tying and through them teach the profession how it is done. What was a figment of fancy early in World War I was being done before its conclusion, crude as the motion picture was then. At a medical meeting in January, 1919, Major L. Funstall Taylor of the Surgeon General's Office, said:

"As a supervising surgeon, it early became apparent to me that simply the verbal lecture, with the limitations of the human voice and the absence of illustrations or clinical material, was inadequate for attention and retention by the memory; charts and slides were impractical; so that the moving picture, on my initiative and the hearty cooperation of Colonel Owen, was established in the Surgeon-General's Office. . . . In creating these lectures, I have had in mind not only military instruction, but adding teaching facilities available for use in our civil medical schools. . . . The moving picture is very broadening in its educational possibilities."

FILMS USED EXTENSIVELY

Medical schools and medical assemblies today use educational films extensively. Surgical film exhibitions are now a major feature of every meeting of the American College of Surgeons, close to seventy-five thousand feet of film being shown in the course of a five-day session. Close-ups, enlargement, slow motion, unobstructed view, give the motion picture superiority in many instances over the operative clinic for demonstrating surgical technique. Since the introduction of color film, enabling differentiation of various tissues, the value and popularity of medical motion pictures have been greatly increased, and the possibilities for their employment in advancing medical practice in World War II are boundless.

Not every medical film is, however, valuable, and not every motion picture producer has the vision and patience which it takes to obtain a worth while result. Some of the infinite precision of detail which goes into the surgeon's performance of an operation, must enter into the production of medical films. If a picture is not authoritative, it is not only worthless but is misleading. In a field in which life and health are at stake, an inaccurate motion picture is as great a menace as the quack doctor. Medical motion pictures, like physicians, need credentials, evidences of worth, for the protection of the profession and the public.

REVIEW PROGRAM GROWS

Years ago a producer sought the aid of the American College of Surgeons in producing medical films, and gradually since 1926 a comprehensive program of review, evaluation, and in some cases distribution, has developed to meet an expressed need of guidance by industrial concerns, departments of health, insurance companies, foundations, associations, missions, individual physicians, and film companies. Professional technique, general teaching value, and photographic quality of each film submitted are judged by recognized authorities on the subject matter. Films which meet the basic standard are approved, and the author given the right to insert a legend which reads: "Passed by the Committee on Medical Motion Pictures of the American College of Surgeons."

Each October the Approval Number of the College *Bulletin* carries a list of approved films, classified according to part of the body involved, and indicating number of reels, width of film, whether sound or silent, and from whom procurable. The 1941 list took 20 solidly printed pages. Seventy of the films listed are designed for the lay public. The newest of the latter is WHITE BATTALIONS SERVING ALL MANKIND, a sound motion picture produced for the College under a grant from the Becton Dickinson Foundation for the Extension of Scientific Knowledge and designed to impart through dramatic presentation a knowledge of the scope of hospital service. Among the newest of the professional films is SURGERY OF THE COMMON BILE DUCT, by Dr. Charles B. Puestow procurable from Davis & Geck.

TWO TYPES OF AUDIENCES

These two pictures illustrate the necessary contrast involved in reaching two radically different types of audiences—one which can best be educated through emotional appeal and entertainment; the other which demands straight, unimpeded, sharply drawn presentation of technique. The paramount aim of both is, however, to teach, and the medical and technical details of the first type of film must be punctiliously correct as those of the second. In both types, incidentally, it is possible to use animated, diagrammatic illustration to demonstrate effectively those procedures and functions not readily pictured or explained in any other way.

When the medical motion picture was in its infancy, a committee of the College planned a program for encouraging the production of films on practically every subject pertaining to medicine, some of them in series and correlated to present a subject in all its aspects. According to such a plan, the film on SURGERY OF THE COMMON BILE DUCT would be supplemented by one on physiology and function of the gall bladder, another on pathology, and a third on diagnosis and management, and similar series would be produced in every practicable field.

The program would have progressed much farther than it has, had not the depression intervened. Now, however, with the critical war situation, there is need for every teaching aid. Spurred by the

CONTINUED ON PAGE 271

SUNKIST entertained many sub-deb groups like these at film showings in '41

FILM REVIEW

NEWS AND REVIEWS OF THE LATEST COMMERCIAL & EDUCATIONAL PICTURES

♦ RAILROADIN', the new General Electric sponsored color production on American railroading, is a picture of universal appeal—the only qualification for a full enjoyment of it are that you be interested in America and the things that make her great—that you can be moved by the breath-taking drama of one of her great industries—that you enjoy a story full of movement and color and vital information.

The picture takes the audience from the early 1300's, when railroading was a young and struggling industry, to the present, when it has become an indispensable part of American life.

Schools — colleges — clubs — all will find in RAILROADIN' 30 minutes of inspiration and entertainment.

Directed by John Boland, and produced by Adverti-Films, Hollywood, in co-operation with American railroads, RAILROADIN' took a year to produce. It is enhanced by a special musical score by Dr. Edward Kilenyi.

Railroads in all sections of the country are represented. You are taken behind scenes for an insider's look at what makes the railroads click. (*Pictures on the next page*)

"AMERICAN ANNIVERSARY" is the new N. A. M. theatre short subject.

A Story of America

♦ The story of an immigrant's rise to a position of security and influence is, in miniature, the story of America herself.

An eye-witness account of the first showing of a film based on this theme, AMERICAN ANNIVERSARY, appeared in a letter written by a California lady, to the New York Times. The showing which she witnessed took place at the 10th Annual Convention of the National Association of Manufacturers where the gathered industrial leaders of the nation were given the opportunity of previewing the film before its release to theatres throughout the country.

"There was not a sound in that enormous Waldorf-Astoria ballroom," this writer reports, as the story unfolded—that of a simple immigrant who came here as a boy and achieved success. A simple and poignant story, it is typical of

It depicts the rise of an immigrant as akin to the story of our country's growth.

experiences of thousands who have "made good" in this land of the free.

"Suddenly," she writes, "I realized that those men, who have been called 'capitalists' with much scorn, were weeping. Unashamed, they wiped their eyes and I realized that they wept because many of them saw themselves; saw their beginnings of poverty, loneliness, disadvantage. They wept because they were feeling deeply that emotion called love of country."

AMERICAN ANNIVERSARY is being distributed to theatres only for N.A.M. by Modern Picture Service, Inc., through each of this national film distributor's 31 theater-exchange centers. It is not available to groups or schools.

Panorama of Industry

♦ A candidate for distinction for the most-talked-about commercial film of the year is NOW IS THE TIME, produced for the General Motors Department of Public Relations by Sound Masters. More than a year in the making, this motion picture presents a panorama of American Industry's production of war materials. Already revised three times to bring the subject matter up to date, NOW IS THE TIME is about to go into its fourth complete revision.

Produced under the supervision of James Clemenger of the Sound Masters organization in New York, this comprehensive report of a nation preparing for victory was filmed in more than fifty cities scattered throughout the United States and Canada.

Revealing the gigantic task faced by Industry in converting its men and machines to war production, the film also shows the breath-taking acceleration of production as plant after plant swings into line. Heartening indeed, to every American, is this spectacle of Industry's all-out participation, in the war for preservation of freedom.

To Help Dealers

♦ Detroit auto companies are preparing conservation materials for the education of dealers and employees during the coming months. At least two major concerns have announced complete training programs.

New York Calling—

♦ A new motion picture showing the highlights of New York City in sound and color is now being presented by the New York Central System. It is available for entertainment and educational purposes to school and social groups.

The film, entitled *New York Calling*, is New York Central's contribution to the promotion of nation-wide interest in the cultural, educational and entertainment facilities of New York City and travel to that metropolis. Using the daily life of the great city to portray its moods at work, at study and at play, individual shots catch scenes varying from the idle informality of pigeon feeding to the grandeur of New York's famed skyline.

Production was in charge of Frederick G. Beach, Supervisor of Motion Picture Bureau, Public Relations Department, New York Central System. The narration, written by Gordon Auchincloss, is given by Vincent Connolly. The film, 300 feet long, has a running time of 21 minutes. It is 16mm in Kodachrome.

In fast-moving sequences, *New York Calling* brings the visitor down the scenic Hudson River Valley via New York Central into Gotham. The film then takes its audience on a boat trip 'round Manhattan, which is followed by a bus ride up Fifth Avenue and visits to museums, parks, Coney Island, the Bronx Zoo, Rockefeller Center, the tops of skyscrapers and many other points of interest. It ends with the traveller en route back home.

The picture has an entertaining as well as educational appeal to varied audiences: school students of all ages, Parent-Teacher groups, employee groups, church, civic and social organizations, etc.

Address the Screen Service Bureau of BUSINESS SCREEN (420 North Wacker Drive, Chicago) for full details on sources from which this film may be obtained in your immediate locale.

"AMERICANS AT WORK" an all-Technicolor release made under the supervision of the New York State Bureau of Milk Publicity has been seen in theatres. It is a 10-minute informative and entertaining short on the work-a-day life of a milkman, turned philosopher, with his candid views on life.

FILM REVIEW A GUIDE TO SELECTED INDUSTRIAL

★ HELPING AMERICANS keep well-informed, both industry and Government are providing instructive, factual films containing up-to-the-minute information for consumers, inspiring reports on the progress of the war effort, and vital guidance on conservation of cars, homes, and precious materials now used for the making of war goods.

In clubs, lodges, church auditoriums, parent-teacher meetings and community centers, audiences may gather to see these films at little expense. Civilian Defense groups, most active these days, are seeing instructional films. Consumer education is facilitated by product films and nutritional subjects available through national distribution service agencies and libraries.

HOW TO ARRANGE SHOWINGS

♦ The only expense, unless rental entertainment subjects are desired, will be that of projector service. Groups regularly using such equipment may wish to purchase it and they can readily obtain it if organized for Civilian Defense instruction or similar purposes such as defense training. Otherwise, your local audio-visual dealer or projectionist will serve at nominal cost.

Although projectors may be obtained from local schools, Government offices, etc. for showings, BUSINESS SCREEN has checked and found offices, etc. for showings, guided. Local civilian defense councils too often receive such instructions only to find that they have no one capable of operating this sound equipment, nor will any responsible owner readily loan it on such a basis.

Talk it over with the school and your local projectionist first.

Defense Savings Film

♦ A thrilling recital of the average American's part in the Second World War, WHEN FREEMEN SHALL STAND is a one-reel sound motion picture for theatre use produced by Sound Masters, Inc. for the Defense Savings Staff of the U. S. Treasury Department.

RAILROADIN'—GENERAL ELECTRIC'S-sponsored all-color 16mm. sound motion picture produced for American railroads by John Boland, Adverti-Films, Hollywood, features this typical historical scene showing an episode in the early history of the railroads. A nation which looked, in its early days, with suspicion at the "iron horse" as the film describes it. (Reviewed in detail on the previous page)

OF INTEREST TO CLUB GROUPS

♦ ADULT CLUB GROUPS will welcome news of an entire series of films on Latin-America just about to be released under the auspices of the Rockefeller Inter-American Affairs Office, 444 Madison Avenue, New York City.

AMERICANS ALL was the first in this series and is obtainable from the New York City, Chicago, Dallas and San Francisco exchanges of the Motion Picture Bureau of the YMCA among other depositories. University extension libraries will also have this subject. Some 15 additional reels, many of them in full color, are coming! Full details will be released in FILM REVIEW next issue.

Among the free commercially-sponsored films of particular interest to women's groups are the Household Finance slidefilms on Buymanship as well as the excellent budget advice contained in the 16mm sound motion pictures also obtainable thru the Corporation's Research Department, 919 North Michigan Avenue, Chicago. DuPont, the Livestock & Meat Board, Armour, the National Dairy Council and Westinghouse are other sponsors with consumer pictures.

♦ Men like baseball and the annual American League sound movies rate tops. This year's edition, THE NINTH INNING, may be requested from Lew Fonseca, c/o the League's Promotional Department, 310 So. Michigan Ave., Chicago.

Check the Government "defense reports" listed on the page opposite and add one of these films to your next program.

for Air Raid Wardens

♦ AIR RAID WARDEN, a 16mm. civilian defense training film produced on the Pacific Coast, has been announced by Photo & Sound, Inc., San Francisco.

The film is available nationally to civilian defense councils, air raid warden groups, industrial firms, city and county governments, and schools.

AIR RAID WARDEN is a 10-minute sound film showing the duties of the air raid warden in preparing his neighbors for action under possible air attack, and also shows his duties during a blackout. Also under production in San Francisco is another 10-minute defense training film BLACKOUT scheduled for release in March.

CIVILIAN DEFENSE

♦ An instructional film entitled FIGHTING THE FIRE BOMB, describing methods of combating incendiary bombs and adopted by the Protection Division of the Office of Civilian Defense, is now in use.

Two additional films AIR RAID WARDEN (1 reel) and THE RESCUE SQUAD (2 reels) are scheduled for early release. Projection arrangements are to be worked out by local councils.

The places from which clubs, fraternal organizations, and similar groups may obtain the film for the instruction of their members, and the number of prints available in each place are:

CIVILIAN DEFENSE CENTERS

First Civilian Defense Region: Mr. Joseph M. Loughlin, acting director, 101 Milk Street, Boston, Mass., 52.

Second Civilian Defense Region: Col. Walter W. Metcalf, acting regional director, 111 Eighth Avenue, New York, N. Y., 82.

Third Civilian Defense Region: Col. Augustine S. Janeway, acting director, 1554 Baltimore Trust Building, Baltimore, Md., 35.

Fourth Civilian Defense Region: Mr. Charles H. Murchison, director, 150 Hurt Building, Atlanta, Ga., 52.

Fifth Civilian Defense Region: Mr. Dan T. Moore, director, 513 East Town Street, Columbus, Ohio, 22.

Sixth Civilian Defense Region: Mr. Raymond J. Kelly, director, Room 2620 Civic Opera Building, 20 North Wacker Drive, Chicago, Ill., 20.

Seventh Civilian Defense Region: Mr. Joseph D. Scholtz, acting director, 506 Grain Exchange Building, 19 and Harney Streets, Omaha, Nebr., 30.

Eighth Civilian Defense Region: Mr. R. E. Smith, Director, Majestic Building, San Antonio, Tex., 29.

Ninth Civilian Defense Region: Mr. Jack Helms, acting director, 1355 Market Street, San Francisco, Calif., 47.

AT U. S. NAVY OFFICES

Capt. Webb Trammell, USN (retd), North Station Industrial Building, Boston, Mass., 1.
Commander W. C. L. Stiles, USN (retd), 90 Church Street, New York City, 1.
Capt. Julian H. Collins, USN (retd), Navy Yard Station, Philadelphia, Pa., 1.
Capt. E. M. Woolson, USN (retd), Naval Operating Base, Norfolk, Va., 1.
Commander F. D. Pryor USN (retd), c/o Commandant, Sixth Naval District, Charleston, S. C., 1.
Lt. Comdr. R. W. McReynolds, USNR, Federal Building, New Orleans, 1.
Capt. W. F. Amsden, USN, Naval Training Station, Great Lakes, Ill., 1.
Capt. E. A. Lefquist, USN, Naval Training Station, Great Lakes, Ill., 1.
Capt. H. O. Roesch, USN (retd), Naval Operating Base, San Diego, Calif., 1.
Capt. J. W. Lewis, USN, Federal Office Building, San Francisco, Calif., 1.
Commander E. W. Hoffman, USN, United Exchange Building, Seattle, Wash., 2.
Commandant, Tenth Naval District, San Juan, Puerto Rico, 1.
Commandant, Fourteenth Naval District, Pearl Harbor, Hawaii, 1.
Commandant, Fifteenth Naval District, Balboa, Panama, C. Z., 1.
Commandant, Washington Navy Yard, 1.
Training Division, Bureau of Navigation, 1.
Commander Sam Singer, Office of Civilian Defense, Washington, D. C., 3.
Training Section, office of Civilian Defense, Washington, D. C., 31.
Total, 120.

War brings the challenge of fire from the skies—incendiary attacks—pictured in "Fighting the Fire Bomb."

The film shows you how you can protect your home, your family and your community.

Inexpensive and reasonably satisfactory under certain conditions is the use of the sand method.

Various approved types of equipment and materials for controlling incendiaries are shown in actual use.

FACTORY GROUPS

♦ WAR PRODUCTION is the topic of the hour in our shops and factories. Training films, such as those on machine shop operation and shipbuilding produced by the U. S. Office of Education or the many other excellent "industrials" available through producers or manufacturer-sponsors are first choice.

Then safety material ranks high. The slide-films of the National Safety Council: motion pictures available through Aetna and similar insurance sponsors will find ready use.

Thirdly; Government-sponsored material such as the Army film SAFEGUARDING MILITARY INFORMATION (available in 16mm) and the defense reports listed here make excellent program fare.

Finally, always fill out the bill with a sports reel, a cartoon, or travel subject to sweeten the program. Open with music and close with memorable facts. At many of the defense plants, noon-hour employee meetings are ideal for short film showings and after-hours, under either union or company auspices, whichever is preferable.

Fly-Casting Pictured

♦ A new sound picture on the art of fly-casting is available through the Fisher Body division of General Motors.

The film, LETS GO FISHING AGAIN, is a sequel to the popular picture LET'S GO FISHING. The first picture, which dealt with bait casting, was acclaimed so widely by disciples of Izaak Walton and by conservation authorities that it was decided to make a sequel. The movie is a two-reel 20-minute film, featuring Tony Accetta, six-time U. S. professional all around bait and fly casting champion.

YOUR DEALER HAS THESE FILMS

♦ Arrangements for films reviewed in these pages may often be made through your local audio-visual sales representative or projection service organization. The necessary projection equipment is available at reasonable cost. See "Projection Service" in your classified phone book.

PHONE YOUR LOCAL PROJECTIONIST TODAY!

Motion Picture Bureau Service

♦ LONG YEARS OF EXPERIENCE marked by outstanding visual aid service to the adult and educational groups who make up the thousand-fold audiences who regularly fill their programs thru the facilities of the Motion Picture Bureau of the YMCA, have once again culminated in the Bureau's selection as the motion picture headquarters for the 172 USO clubhouses.

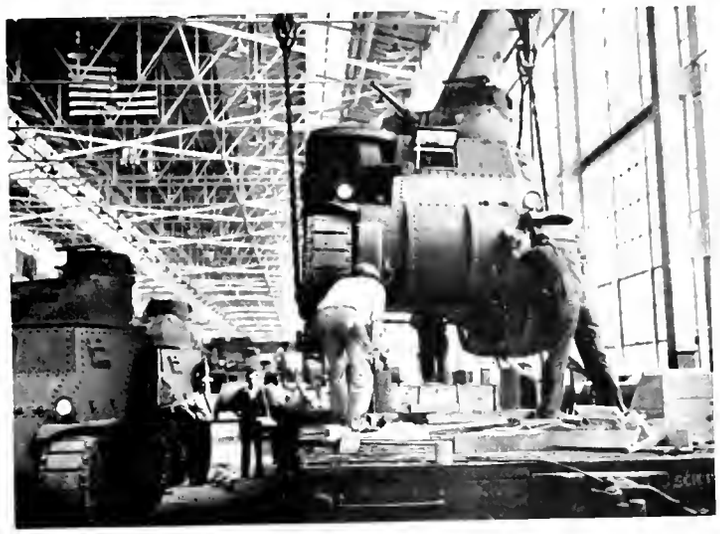
For these recreational centers, the Bureau's capable chiefs, George Zehrung and Al Fredericks, are arranging hundreds of programs in advance. Each program is a well-balanced evening of entertainment with a comedy, a travelogue, a musical film and either an educational or industrial picture of real worth to these service men.

The Bureau's exchanges in New York, Chicago, Dallas and San Francisco have been in Government service for many many years, in fact, continuously thru the period since World Wars I and II. In recent years, distribution of Defense Reports to millions of borrowers of British and Canadian war informationals has been an outstanding activity. The first Inter-American subject. AMERICANS ALL, is now being distributed.

Groups, particularly adults and schools owning equipment, may join this service as Exhibitors at a modest fee. Regular bulletins are issued on new free industrial and low-cost rental material as a part of this Exhibitor service. On Jan. 1, 1942, the Bureau listed 15,350 16mm Sound Exhibitors consisting of schools (65½% educational) and churches, clubs, industries and other organizations (34½% community. Since each member exhibitor represents an attendance of many individual members in the school or organization, audience figures tally up to considerable numbers—totaling many millions.

Next Issue: Another outstanding source of films will be discussed in these pages.

GOVERNMENT DEFENSE REPORTS



"BUILDING A TANK" is a new 2-reel O.E.M. "Defense Report" for America.

♦ BUILDING A TANK, a Defense Report on the making of the M-3 tank, with narration by Orson Welles, has been produced by the Film Unit of the Office of Emergency Management. A 2-reel version, especially for 16mm. distribution, is to be available.

The following pictures are also available in 16mm. sound:

BUILDING A BOMBER: (2 *reels*, 20 *minutes*). Photographed in the Glenn L. Martin plant at Baltimore, this film graphically describes the step-by-step manufacture and assembly of the B-26 medium bomber. Of interest to engineering and vocational groups.

ALUMINUM: (1 *reel*, 10 *minutes*). Traces the importation of bauxite from Dutch Guiana, now occupied by U. S. troops, and describes the subsequent chemical processes which convert this one ore into aluminum, the "fateful metal" of modern warfare.

DEFENSE REVIEW NO. 1: (1 *reel*, 10 *minutes*). Incorporates three subjects (a) describing necessity for sub-contracting defense orders; (b) training projects of the National Youth Administration; and (c) the tremendous merchant shipbuilding program.

DEFENSE REVIEW NO. 2: (1 *reel*, 10 *minutes*). Incorporates three subjects (a) describing work entailed in building new airfields of the expanding Air Corps; (b) the processes by which aluminum scrap is recovered and converted into weapons; and (c) manufacture of synthetic rubber.

HOMES FOR DEFENSE: This film indicates the problems of defense housing and shows the various types of housing provided for workers in defense areas.

POWER OR DEFENSE: (1 *reel*, 10 *minutes*). Report on the defense activities using TVA power in the Tennessee Valley.

ARMY IN OVERALLS: (1 *reel*, 7 *minutes*). Work of the C.C.C. in clearing military reservations for the U. S. Army.

"Hidden Hunger" Released

♦ HIDDEN HUNGER, a two reel picture starring Walter Brennan, is being presented by the Federal Security Agency as a part of the National Nutrition Program. It is being released only through motion picture theatres for the time being.

A committee headed by M. L. Wilson, Director of the Nutrition Division, Office of Defense Health and Welfare Service, assembled the nutritional information for the film. Funds were provided by Swift & Company.

Since the film is one of the most important projects carried out by the Office of Defense Health and Welfare Services, Administrator McNutt is addressing himself to national organizations such as men's and women's clubs and service groups, educational groups, youth groups and similar bodies, asking them to help promote the film as part of their effort for our national defense program. HIDDEN HUNGER was produced by the American Film Center for the national program.

GET THIS PROGRAM GUIDE REGULARLY

♦ Program chairmen, other responsible heads of adult groups, clubs, lodges, unions, and associations may receive film bulletins and other literature without cost by addressing FILM REVIEW c/o Screen Service Bureau, 20 North Wacker Drive, Chicago.

SCREEN SERVICE BUREAU
20 N. WACKER, CHICAGO

Kentucky Health Officers Cite Importance of Visual Aids —

IN DEFENSE OF PUBLIC HEALTH

★ ONE OF THE FINEST TRIBUTES paid to Visual Education was recently addressed to the editorial offices of BUSINESS SCREEN by Dr. I. F. Smith, Executive Secretary of the Kentucky Tuberculosis Association. Dr. Smith's letter and a number of others which accompanied it cited the inestimable value of motion pictures in community education, the handicaps and actual hazards to public health which would be incurred if this valuable work were abandoned. The letters tell of a vital campaign against disease:

To the Editor of Business Screen:

♦ . . . I am much interested and rather distressed, at an editorial in Number Eight, Volume Three of the BUSINESS SCREEN MAGAZINE. I am interested because I did not know how widely the motion picture projector was being used in other lands, nor, did I know that they were so much superior to us along this line. This points out clearly that they have been keen to recognize the value of this potent weapon in fighting the battle behind the lines.

I have been a strong advocator of visual education for more than ten years, and have been using equipment extensively for eleven years. I have both sound and silent equipment, and have been able to place such equipment in the hands of many of the health officers in Kentucky. Just now, we have more of them who are wanting equipment that they are having difficulty in obtaining. I fear that in the face of national emergency, our people are going to adopt a short-sighted policy, and curtail the production of this equipment by giving something else the priority. This, I think, would be a grave mistake, because we are being told it takes about eighteen men on the ground and behind the lines to keep one on the fighting line; therefore, the efficiency and morale of these men is of vital importance and without health all of these things are of little importance. We are being told that more than half of our men called to action are physically or mentally unfit for service at the time they are called.

HOW MANY FIT FOR SERVICE?

Dr. James Magee, Surgeon General U. S. Army, has recently issued a statement confirming the findings of others, that 1% of the male population of military age for the country as a whole, have active tuberculosis and, of course, that means that they are spreaders of disease. He has also made the statement that at least 75% of early active tuberculosis can be discovered only by chest X-ray examinations.

My job is to tell this to the people, and make them believe it is important, and that is where I find visual education so helpful.

I have recently come in from a heavy campaign of more than six weeks and my records show that in 2[illegible] days of field work, I showed 57 reels to 17 groups, with a total attendance of 3,550, mostly high school boys and girls. But, of course, in this group there was one night meeting at which four X-rays were shown to the doctors of the community, and another to a social club. Of importance. This is just a sample.

I have just received some letters from the communities where I have served, and in order that you may see the significance of these letters, I am inclosing them for your study. *I believe they will show some pretty convincing reasons why it would be a grave error to do anything that would cut off this vital factor in field work, and general efficiency for national defense.*

PICTURES HELP WIN TAX CAMPAIGN

We recently had a campaign in one of our counties where they were to vote on November 4 to levy a tax to take care of the tuberculosis people. In the face of already overburdened taxation, you can readily see how this would meet the disapproval of most everyone and many of our folks said it could not be done. However, we covered the county pretty well with the right sort of pictures, giving facts and creating interest as to the needs for such a program. When the voting day came around, they voted 10 to 1 in favor of the tax. I am sure visual education was the factor that turned the tide, but, why go on.

I just want to register with you my approval of visual education, and my disapproval of any step that will curtail the production of the equipment that is needed to keep our country abreast of the great needs, and wise to the perils that threaten us. *Morale and health are vital elements in national efficiency*, and when we have these things national defense will take care of itself. We have been warned that this may be a long drawn out war and if this should be the case, then these things will be needed more than ever before.

I hope you can do something to remove this tragic threat that seems to be creeping nearer to us.

Sincerely yours in the defense of our nation.

I. F. SMITH, M. D., *Executive Secretary.*

OTHER HEALTH OFFICERS WRITE

Adair County Health Department

♦ Recent information from you to the effect that elimination of 16mm projectors is being contemplated is somewhat disturbing. I wonder what the effect will be upon the Health Education Programs that are being carried on throughout the country. I believe, as you do, that such education in relation to tuberculosis control, nutrition, etc., is of vital importance in maintaining the physical efficiency of our nation's national defense.

Your recent trip to the county, and the enthusiastic reception with which your films on tuberculosis and other health subjects was met, demonstrates the value of these programs. I sincerely hope, as you do, that projectors will continue to be available, as I have seriously considered the purchase of one with Christmas Seal Funds this year.

Yours sincerely,

J. T. DUNCAN, M.D., *Health Officer.*

Bracken County Board of Health

♦ . . . As you may know, the use of motion picture films is an established method of education in this country and has been for several years. In the fields of health and nutrition education this method has been of exceptional value.

I believe that Bracken County is more advanced in the use of films for educational purposes than the average county and thus is probably better equipped. Many other counties will undoubtedly desire to institute or expand their film educational programs and would be seriously handicapped if 16mm projection equipment were not available. I know that local educators consider the use of films indispensable in general education and their value in health education is unquestioned.

J. V. CAMPBELL, M.D., *Health Officer.*

Breathitt County Health Department

♦ . . . During this war emergency we realize there are many articles that civilians must sacrifice, however there are a few materials that are greatly needed in our work in health education and any curtailment in the production of these materials will reduce the effectiveness of our educational program . . . We feel that your recent visit to this country and the showing of motion pictures on tuberculosis and other health subjects was a great aid in this Christmas Seal Sale campaign.

Again we sincerely hope that this method of Public Health Education will not be impeded by lack of materials.

PAUL V. WRIGHT, *Director.*

Carroll County Health Department

December 22, 1941.

♦ . I am writing to you concerning the great value of the educational films and lectures presented by you to the many schools in these counties and various adult groups as well. These presentations, especially the pictures shown, have served to strike home to our citizens the needs for prevention and precautions against communicable diseases, especially those of the chest. Since you have shown your films in these counties there has been a great influx of people to private physicians and X-ray clinics to secure chest plates and many cases of tuberculosis have been found among these. Without these films this could not have been accomplished and the value of them, therefore, to public health, is inestimable. I sincerely hope that you will be able to continue with this fine work since it is so necessary and is producing such wonderful results.

WALTER THOMAS FLAHERTY, M.D., *Director.*

Mason County Board of Health

♦ . I am much perturbed about priorities limiting the production of 16mm projectors for educational work in the control of tuberculosis. Your recent visit to Mason County with your projector was undoubtedly instrumental in the very favorable increase in seal sale returns. If such educational work is withdrawn in a state which is so heavily infested with tuberculosis we shall quickly experience an increase in our cases and deaths.

As you know, tuberculosis is on the increase in certain large cities in the United States and this simply reflects the fact that we have reached a crisis in tuberculosis control. Further, that

(LETTERS CONTINUED ON PAGE THIRTY-FOUR)

PROJECTORS WHIR AS INDUSTRY SPEEDS TRAINING OF 10,000,000 WORKERS NEEDED FOR WAR PRODUCTION

★ DETROIT, MICHIGAN: In the Motor City as in the rest of America, all-out conversion to war production is the Job of the hour. The tools and dies which molded America's greatness in mass production are being cut to fit a new assignment—the weapons with which America's army, navy and air force must accomplish the defeat of the Axis. And the Job is being met with the same planning ability and mass-scale thinking that made this industry the model for all the world—including Nazi Germany.

With that characteristic "bounce" which has made it possible for the auto industry to lead so many economic "comebacks" for American industry, the motor car makers are going at this task with enthusiasm. The men from the paint shops and other former shop assignments are either already in retraining or scheduled for early classes. Many of them are already on the "assembly lines of defense" as a recent Chrysler picture production has termed it.

Throughout this training activity at Hudson, Dodge, Fisher Body, Chrysler, and many other plants—visual aids have long been playing an active role in daily showings before apprentice groups as well as in up-grading. Not only company-produced films but also those of the U. S. Office of Education are shown to trainees. Projectors formerly busy in the sales promotion departments are doing double-duty in the training schools; there have been many requests for additional equipment in new plants.

Elsewhere in the country, the aviation industry appears most active in the use of visual aids. Curtiss-Wright and Lockheed are among those using their own films as well as "outside" training subjects. The following report, a letter from the training division of Sperry Gyroscope, is indicative of the thorough manner in which these plants are tackling their training problems:

SPERRY GYROSCOPE GIVES FAVORABLE TEST RESULTS

. . . The U. S. Office of Education's set of *Precision Measurement* sound motion pictures comes closest to showing possibilities for use in our inspection training program. *The Scale, Fixed Gages,* and *Height Gages* are good and *The Micrometer* and *Vernier* are excellent. With the two latter films we ran an interesting experiment to test their teaching efficiency.

A two-hour experimental class of ten girls was taught the use of the micrometer. Our regular apprentice and learner classes consist entirely of boys, but in this experiment girls were used for subjects to insure results unaffected by the factor of previous experience. None of the girls had ever used a micrometer. Nine had never touched one. Some had never seen a micrometer. The films carried practically the entire burden of instruction.

The lesson plan pursued was as follows:

SUBJECTS	MINUTES
(a) *Introduction—reason for being here*	3
(b) *Show "Micrometer" film*	15
(c) *Explain "feel" orally*	3
(d) *Distribute micrometers and start measurements on previously calibrated bars to* 1/1000 in.	30
(e) *Mention general mistakes such as "micrometer where possible should be read before taking off from piece"*	6
(f) *Show "Vernier" film*	11
(g) *Re-emphasize major points of "holding" and "feel"*	1
(h) *Take readings on previously calibrated bars to* 1/10,000 *in.*	12
Total Time	2 HOURS

♦ A chart was made to summarize the experimental data obtained. After viewing the *Micrometer* film and hearing a three-minute oral explanation by the class instructor on "feel" (a detail beyond the ability of the film to get across) each girl made ten measurements on calibrated bars. Of the 100 readings thus made, 77% were correct to ±.001 in.; 3% were wrong, due to mis-reading of a .025 in. division (a common mistake easily correctible with a personal word or two); and 15% were true errors.

51% ACCURACY IS ATTAINED

After viewing eleven minutes of the *Vernier* film and hearing a six-minute oral elaboration by the class instructor on the correct holding of the micrometer each girl made ten additional measurements. Of the 100 readings thus made, 35% were correct to an accuracy of ±.0001 in.; 51% were correct to ±.0002 in.; 5% were wrong due to mis-reading of a .005 in. division; and 11% were true errors.

During none of the above readings did the class instructor give any individual help as is always done in the regular male inspection learner classes. An analysis of the readings shown on the chart shows that if such help *had* been given—and it would not have incurred any additional time—67% of the answers (starred on the chart as "easily correctible") would have been corrected to ±.0001" as compared with the 52% found correct to this tolerance after a corresponding period of class time with the regular average boy learner class receiving oral instruction only.

BOYS HAVE COMPANY EXPERIENCE

It should be emphasized that the boys from which the above figure of 52% accuracy is, on the average, obtained usually have had technical or vocational school backgrounds, considerable experience with Sperry, and have usually had

(PLEASE TURN TO PAGE THIRTY-TWO)

Slidefilms help teach aero-dynamics to Uncle Sam's new army pilots

Why the Army Uses Films

★ The War Department has given the following reasons why films and film strips are valuable as time savers and as aids to improvement in the quality of instruction.

(1) They concentrate attention on essentials by showing only the essential action or subject.

(2) They bring demonstrations of tactical exercises or equipment to the troops, thus eliminating the time-consuming factor of moving troops to the demonstration areas.

(3) The same demonstration can be shown repeatedly without expending the time and labor to repeat such demonstrations in the field.

(4) Films on the use and care of new equipment can be shown in advance of its arrival, thus facilitating its immediate use.

(5) Instruction for all troop units is standardized.

(6) Mechanical functioning of weapons or motors can be clearly depicted by means of slow motion and animation.

(7) All members of the class can see and hear all phases of an action which otherwise can be observed satisfactorily only by those close to the scene.

(8) The services of the most highly trained troops and expert instructors are utilized in demonstrating the methods and techniques illustrated on the film. This insures that all troops, regardless of location, have constant visual access to the latest approved methods as a standard in attaining their training objectives.

Film Strips and film strip projectors are especially useful for they are easily transported, and can be utilized in day rooms, mess halls and similar locations without the need of complete darkness. Since any individual frame of a film strip can be held on the screen as long as desired, they permit the student to check his work with the correct procedure, while the instructor can point out and discuss at length the vital points of the instruction.

Editor's Note: The above is an official statement released by the War Department on behalf of the Signal Corps, U. S. Army.

FILMS

♦ Keyed to the times is KEEP 'EM ROLLING, a new institutional motion picture just completed by Sound Masters for The B. F. Goodrich Company. Of vital interest to every American is this film's revelation of the indispensability of rubber in the life of the nation. Beyond question, this film will startle audiences into a new appreciation of the vital importance of rubber tires and highway transportation to an America at war.

The critical shortage of raw rubber, everyday rules for increasing tire life and the Government's plan for providing the Army with its full requirements are all discussed authoritatively. Something new in commercial film production technique is found in this new film, where a stirring and original marching song . . . . entitled *Keep 'Em Rolling* . . . . forms the basic structure of the entire film.

Alcoa in Technicolor

♦ Starting out with its introduction in the form of table ware at a state banquet given by Napoleon III, aluminum has had a colorful and eventful hundred years of commercial existence. At that banquet in the early 1850's, the guests of honor at Napoleon's table were supplied with forks and spoons of a new and strange, lightweight metal—aluminum. The less important guests had to get along as best they could with the ordinary, cheaper solid gold utensils. In those days, aluminum sold for $545 a pound and was much rarer than gold.

A new Technicolor sound movie tells the story of aluminum, beginning with that colorful banquet scene in Napoleon's palace. The movie UNFINISHED RAINBOWS, runs for thirty-five minutes and brings the story of aluminum up to the present defense effort being made by the producers of the metal.

Charles Martin Hall and his sister, Julia, are portrayed in the woodshed of the Hall home, where Charles, only recently out of Oberlin College, worked to discover the electrolytic process of producing aluminum. Later, in the tiny plant of the Pittsburgh Reduction Company, Hall and Arthur V. Davis, now board chairman of Aluminum Company of America, have a real Thanksgiving Day in 1888 when they turn out the first ingot produced by the Hall process.

The movie relates the history of the American aluminum industry—its inability to crack the metal markets with this new, untried metal, the dark times when the day's production of aluminum was locked up in the safe at night because aluminum was selling—if it could be sold at all—for $8 a pound. The sales developments made necessary by the newness of the metal are portrayed—the efforts to persuade manufacturers to "just try" a shipment, the sale of an order of aluminum wire even before a wire mill for drawing aluminum wire had been constructed. Through the entire history of the aluminum industry runs the effort of the producers to get the price down—$8 in 1888, $2 in 1890, 36 cents in 1906, 38 cents in 1917 during World War I, 20 cents in 1937—and 15 cents today!

The closing scenes of UNFINISHED RAINBOWS reflect the feelings of men in the Industry today—today all the aluminum is going into National Defense but tomorrow there will be more aluminum, better and cheaper aluminum than ever before—aluminum to do better all the jobs for which it is suited. The picture was produced at the Hollywood studios of Wilding Picture Productions, Inc.

Vision for Defense

♦ VISION FOR DEFENSE is a new educational production recently released by the Better Vision Institute. Its theme is eyesight conservation. It stresses the importance of vision in defense activities and in all human activities. It is an eye-care film. Yet it also carries the supplementary themes of glass and lens manufacture, spectacle making, and style in glasses as well as portraying highlight procedures in a characteristic examination routine.

VISION FOR DEFENSE is not a commercial or industrial film such as is commonly released by private companies or associations. It has been planned from the theatrical point of view with no effort spared to assure unabating interest. The film was produced by Paramount, under the able direction of the Educational Division, headed in New York by George Shupert.

Lowell Thomas is the narrator.

This new Institute 16mm sound movie is suitable for all kinds of audiences. Rotary Clubs, Kiwanis Clubs, Lions Clubs, Women's Clubs, Church Clubs, Parent-Teacher groups, Schools and others may also show this type of production. It is timely, tying in with national defense activities.

The running time of this 16mm sound picture is 15½ minutes. The film is non-inflammable. A print which provides both pictures and sound can be purchased by Institute members for $15.

WORK SIMPLIFICATION

Essential to Defense . . . by Allan H. Mogensen

★ THE MOST SERIOUS PROBLEM facing America today is that of increasing our industrial productivity. No matter how much money we spend, no matter how much floor space we add to our plants, no matter how many machines we eventually are able to build, we are nevertheless limited by the number of possible man hours. And when one analyzes the figures of the new plans and schedules, it is immediately apparent that unless something is done to increase productivity we will not be able to increase our production to the point where it will be of real value in winning the war.

Few people understand the difference between increasing production and increasing productivity. So far, we have gone largely on the assumption that if we want to turn out twice as much product, we merely have to double the floor space, buy twice as many machines and hire twice as many men. Temporarily the question as to where the money is coming from does not bother us, but this most certainly will if the effort is continued over a period of several years. Up to the present, floor space has not been a serious handicap as one can readily see from the size of the aircraft and other plants that are being put up all over the country. However, we are now reaching the point where shortage of building material may be a critical factor. Securing adequate productive machinery has been a problem all through the defense effort, and would be an increasingly serious one if the program is multiplied in its scope.

UNSKILLED WORKER BIG PROBLEM

Man power, on the other hand, has been a serious problem from the start although so far taking up the slack of unemployment and then robbing skilled men from other "less important" industries saw us through the preliminaries. It soon became evident, however, that it would be necessary to train many of the unskilled people for skilled jobs, and to induct many who have never worked before into unskilled jobs. Witness the effort of many of the fine men who have been called from industry to come to Washington to assist in setting up training programs and developing the "up-grading" plans that have produced results.

This all, however, to my mind is overlooking the most obvious truth of all, and that is that if we are to increase output we must increase productivity. That is, we must increase the efficiency of every unit in our production scheme. If a man can produce twice as much with the same equipment, floor space, and in the same number of hours, and yet go home less tired than he was before, and with a sense of real satisfaction in having contributed something to the ingenuity necessary to do this, he is finding the solution to this problem that has puzzled so many people. Notice I say in the *same number of hours*. In the last war England tried going to very long hours of work in an effort to increase output. Studies made by the National Institute of Industrial Psychology proved conclusively that output fell off rather than increased, and therefore the number of hours was reduced. Despite this lesson learned both abroad and here during the last war, England has again attempted and we are now attempting to increase our output by going to excessive over-time.

WORK SIMPLIFICATION AN ANSWER

What is the answer? Work Simplification, taught to every single member of the organization and applied by the use of motion pictures, is the answer, in my opinion.

Very few people understand the difference between work done at high speed and work done in a hurry. Most of the attempts so far at increasing our output have been to "speed up" production. Now, work done at high speed will give perfect work because it is accomplished by eliminating the unnecessary parts of the job, whereas work done in a hurry will give poor work because it is a speeding up of all parts of the job, both necessary and unnecessary. One cannot blame the workman for his lack of understanding of this fundamental when very few of our chief executives appreciate its truth. Therefore, instead of trying to get a man to work harder or faster, Work Simplification seeks to find the "one best way" of doing each job. This way is usually the easiest way, and in fact, is often so simple that one wonders "why did we not think of that before?"

MOTION PICTURES USED TWO WAYS

The motion picture is used in two ways in connection with these Work Simplification training programs. The first and most obvious use is that of the 'before and after' picture to teach fundamentals to all concerned. These films show the former way of doing a simple operation, and then demonstrate the new and easier way of performing it. Each one of these films illustrates a fundamental principle in Work Simplification or Motion Study and then enables the person who has seen the film to analyze his own operation and apply the same principles to its simplification.

One specific example is a film on a simple operation in a garment plant demonstrating how the output of a whole room was increased three times by analyzing the motions that went into the performance of this operation. Part of this increase was due to the elimination of 71 useless motions formerly included, and part was due to the fact that the new method was so

(CONTINUED ON THE NEXT PAGE)

* * *

MOTION AND TIME STUDY under the direction of Prof. Ralph M. Barnes of the College of Engineering at the University of Iowa makes extensive use of visual aids including production of actual motion study films. Film analysis practice is shown in the view at left and the class scene above.

CONTINUED FROM PREVIOUS PAGE

much simpler that it was possible for girls to develop much higher skill than previously. Also, many more girls could become really skilled operators under the new method, whereas only a few could attain this skill when performing the job using the previous method. Redesign of the workplace, study of the tools used, and operator training were well demonstrated by this illustration.

USED IN DEFENSE PLANTS

The use of the motion picture is of course not new. However, one application that has been extremely successful, especially in some of the new defense plants, is the use of the motion-picture film loop for training operators. The idea of loop film used for training is not new, inasmuch as Frank B. Gilbreth applied it at least 20 years ago, and the speaker has used it in connection with training programs since 1920. However, proper equipment for the most effective use of this tool has not been available until recently. A special version of 16mm. projector has been designed by Prof. David B. Porter, of New York University, and has been used by graduates of the Work Simplification Conferences held each year at Lake Placid Club, New York, in almost every conceivable kind of industry and business.

ARSENAL OPERATIONS FILMED

The use of this particular piece of equipment can well be illustrated by citing the procedure used in training operators in a new defense plant recently set up in the middle west. First of all the operation as it was performed at one of the U. S. Arsenals was filmed completely from start to finish, in 16mm. This was a run of about 1000 feet when edited and titled. A small group of engineers then looked at the film and at the end of each operation asked "Why?", "Is there a better way?" This group consisted of the time study engineer, the plant manager and the foreman, for first a few days a week. At the end of this time it was evident that the specifications set forth by the government demanded about twice the equipment that was actually necessary, showed that the new plant could be erected with about half the floor space called for in the government specifications, and that only about half the number of people would be required. It can be seen of course that this greatly simplified the problem of procuring machinery, as well as the problem of training operators.

EACH NEW EMPLOYEE SHOWN

As each new employee was brought into the plant, he or she was shown the film as developed at that time and told that this was not necessarily the best way to make the product, but that it was the best way known at the moment. Each employee was told that he or she would undoubtedly have many good suggestions that would simplify the operation and they were urged to ask "Why?" at every step.

Aptitude tests then determined whether or not the applicant was suitable for the job for which he or she was being considered, followed by a medical examination.

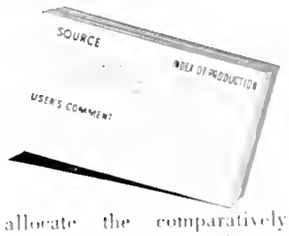
When the operator was finally selected for the job, he or she was taken into the training room and the particular loop of film covering that operation was projected on the screen. The film was run slowly at first and all of the requirements as far as quality, safety and output were explained. Usually several loops covered an operation. First, the new employee would be shown a long shot which demonstrated the overall handling of the equipment, the procurement of the material, and general safety factors surrounding the operation. Then successive close-ups were shown until in some instances in sewing operations the foot of the machine with one or two stitches

CONTINUED ON PAGE 260

A New Business Screen Advisory Service for Defense Training Schools & Industries

♦ In the interests of national defense training in the thousands of industrial plants and vocational schools where apprentice classes and the government-sponsored programs of the U. S. Office of Education are being carried on, BUSINESS SCREEN is devoting the major part of its editorial attention to this vital topic.

To enable these instructors to tie education into their class work, a regular program analysis service has been inaugurated. In each edition of BUSINESS SCREEN a number of selected visual aids will be reviewed, including both slidefilms and motion pictures. In order that the distributors and sponsors may



allocate the comparatively few prints to such defense classes, sources will not be revealed editorially but will be restricted to a separate mailing, printed on 3 x 5 index cards.

A card file, together with a topical index for subjects covered such as MACHINE TOOL, WELDING, AIRPLANE ENGINES, etc., is included. Sources will be on the reverse side of the cards. This service will be available to schools and industry by subscription at only $3.00 annually, for the *complete service*, including one yearly subscription to BUSINESS SCREEN. *Extra program cards, special announcements, etc.,* (not published) are an exclusive advantage of this unique and helpful defense training-visual aid service.

THE EXPERIENCED WORKER DEMONSTRATES to the "green hand" in this series of scenes from the Jam Handy general training motion picture "Passing the Know-How Along" which has been made available to all defense training groups.

12 INDUSTRIAL TRAINING PROGRAMS

A new Business Screen training film analysis and review feature to assist defense training instructors in schools and and industry. Edited by James F. Engle, Contributing Defense Training Editor. Suggestions and queries are invited.

1. The Derivation of Involute Profiles

One reel, 16mm. silent — About 15 minutes.

Source: A university college of engineering.

Scope: A step by step derivation of involute tooth profiles made from a pair of pulleys and a crossed belt. Shows how points in the belt, in moving from a point of tangency on one pulley to a point of tangency on the other, generate the conjugate involutes of both pulleys.

Opinion: *This film illustrates the subject in a thorough and technical manner.*

2. The Aviation Engine-Dissembly & Inspection

Two reels, 16mm. sound — About 30 minutes.

Source: A commercially-sponsored production.

Scope: An up to date film which thoroughly illustrates: the major parts of a modern radial engine; the various subassemblies and their functions; methods of inspecting for flaws; testing and running in.

Opinion: *Suitable for classes in training mechanics, testers and inspectors.*

3. Eyes of Science

Three reels, 16mm. silent — About 45 minutes.

Source: Leading national optical manufacturer.

Scope: Reel No. 1 shows clearly the physical aspects of lenses. Gives an accurate illustrated conception of the action of light rays bending and reflecting. Reel No. 2 is devoted entirely to the manufacturer's products.

Opinion: *One of the best of a limited number of films on optics.*

4. Physics of Metal Cutting

Two reels, 16mm. silent — About 30 minutes.

Source: Commercially produced by a leading machine tool manufacturer.

Scope: Picture prepared in conjunction with a lecture of Hans Ernst on the theory involved in metal cutting. Based chiefly on moving photo-micrographs and photo-elastic stress pictures. Chip formation and fluid advantages are studied and illustrated.

Opinion: *Excellent for shop and theory.*

5. Heat Treating Hints

One reel, 2000 feet 16mm. Kodachrome sound.

Source: Sponsored by well-known engineering concern.

Scope: A very excellent motion picture depicting Heat Treating methods and procedures, and the uses of oil, water, brine and lead quenches. Excellent detail hints regarding the processing of unusual or difficult sizes and shapes of hardened tools and accessories.

Opinion: *Only known picture telling the complete story.*

6. Manufacture of Refractories

Five reels, 16mm. silent — About one hour.

Source: Sponsored by a leading manufacturer in field.

Scope: Reels One and Two. Manufacture of fireclay refractories. Reel Three. Manufacture of silica refractories. Reel Four. Conclusion of manufacture of silica refractories and manufacture of magnesite and chrome refractories. Reel Five. Scenes in research and control laboratories.

7. How to Run a Lathe

Four reels, 16mm. sound Kodachrome — About one hour.

Source: Sponsored production of a lathe manufacturer.

Scope: The metal working lathe, Reels One and Two. An excellent analysis of the metal cutting lathe, showing all old and modern features and their respective advantages. Especially valuable for new shop men as it is exceedingly thorough in its treatment of the subject. Reels Three and Four. Plain turning. Shows the technique of turning work between centers. *The film covers all subjects, including blueprints, measuring, centering, rough turning, and finishing.*

8. The Flow of Metals Into Molds

Two reels, 16mm. silent Kodachrome — About 30 minutes.

Source: Sponsored by a leading commercial supplier in this field.

Scope: A thorough picture on foundry practice. A detailed study of the effects of shaping and placing gates and risers in various patterns and molds, as well as cooking rates and flow rates are studied. Cores are given consideration. Spectacular pictures of the filling of open face molds are used to illustrate points. Foundrymen's drawings are used to explain and illustrate the process.

9. Graphic Representation of Machine Operations

Two reels, 16mm. silent — About 30 minutes.

Source: Produced by a nationally known engineering school.

Scope: A technical picture showing drawings and the accompanying machinery operations, drilling, reaming, turning, threading, bevels, shaping, etc. Shows the drawing, then the operation

Opinion: *Recommended for classes in Blueprint Reading and Inspection.*

10. Uses and Abuses of Twist Drills

Two reels, 16mm. sound — About 30 minutes.

Source: Sponsored by a machine tool manufacturer.

Scope: Shows the fundamental principles which are combined to produce the twist drill and the proper and improper methods of handling and using them.

Opinion: *An excellent pictorial demonstration.*

11. Dies & Die Making

Two reels, 16mm. sound — About 30 minutes.

Source: Commercially produced for sale of prints.

Scope: A film on the forming of metals under pressure. The film shows exactly how a punch operates in both blanking and forming operations. Emphasis is placed on minor items such as clearance, die form, and over shaping. Blanking dies; forming and drawing dies; actual construction of a compound die of precision character.

Opinion: *Highly recommended for tool and die design classes.*

12. The Making and Shaping of Steel

Seven reels, 16mm. sound or silent — About 1½ hours.

Source: Produced for steel manufacturer.

Scope: One of the most widely used technical motion pictures in the country, completely covering the subject. Reel one, Raw Materials. Begins with underground mining of iron ore; its transportation and delivery. Reel two, The Making of Steel. Open hearth, electric furnace, etc. Five other reels cover processes in detail. *Rated: excellent.*

ON THE PRODUCTION LINE

◆ The production of training films, and the all-important sequel, their showing in the many thousands of defense centers in vocational schools and industrial plants throughout the country is the commercial film industry's No. 1 assignment of the hour. What happens when these films go into the field is exemplified by the following letter just received by BUSINESS SCREEN from Pennsylvania State College, defense training center:

◆ . . . Penn State is conducting, under the U. S. Office of Education, the largest defense training program of any college in the nation. Our fourth program, which closed only recently, had enrolled 13,000 men and women in 109 cities and towns of the State. We are two-thirds through registration for the fifth program and are certain the registration will greatly overshadow that of the fourth.

This sudden increase in federal training has brought with it many problems. One of the problems is a matter of speed in training men and women for technical jobs. We have found films so effective that the Extension Services now have ten full-time projectionists who travel all over the State, and a staff of three or four others, including repair men, dispatchers and the like. When I tell you that nearly a million feet of film were used in one-hundred different cities of the State in the last program, that many more feet will be shown in the next program, you may obtain some idea of its scope.

Foreman Training Slidefilms

◆ Teaching the training director how to teach is as important as the demonstrations of machine tools, etc., according to the theory freely expressed by well-known vocational training experts. This theory is fully carried out in the Foreman Training Series produced with the cooperation of national experts of the National Industrial Council who aided in the preparation of these slidefilms for Vocafilm, Inc. Particulars concerning individual subjects, prices, accompanying printed materials, quizzes, etc., which are a part of this complete program, are available through the producer, 121 Madison Avenue, New York City.

Panoram for Sales Promotion

◆ The finest in 16mm. theatrical performance is equalled by the widely-heralded Mills Panoram equipment, hitherto restricted to the coin machine and entertainment field but now soon to be available on a lease and sales basis to department stores, chain stores, exhibitors and similar visual display outlets. Full details of the arrangements will be revealed in an early issue of BUSINESS SCREEN.

Father Hubbard Films

◆ D. B. Oliver, widely known audio-visual figure with many years of contact with schools and industry, has just announced his selection as the Midwestern representative of The Father Hubbard Educational Films. The famed Glacier Priest, Bernard R. Hubbard, S. J. has one of the finest libraries of 16mm. sound motion pictures based on his explorations and travels. One of these subjects, ALASKA'S SILVER MILLIONS, is thought by many to be the finest educational film of its kind. Full information on the entire library, rentals, etc., may be obtained from Mr. Oliver, at 188 West Randolph Street, in Chicago.

PICTURE CREDITS

Illustrations appearing in this issue are accredited to the following:

P. 11 Office of Emergency Management
P. 11 The Jam Handy Organization
P. 12 Caterpillar Tractor Company
P. 13 Wilding Picture Productions, Inc.
P. 14 Chicago Film Laboratory, Inc.
P. 15 Castle, N. A. M. & Roland Reed
P. 22 The Jam Handy Organization
Cover: Courtesy U. S. Office of Education.

Wolff Films Arc Welding

◆ Significant in a number of aspects, a new 16mm. Kodachrome sound motion picture has been completed by Raphael G. Wolff Studios, Hollywood. Most significant point is that it is the first training film to attempt the teaching of arc welding. Not far behind in point of interest is its actual photographic accomplishment, the first capture on film—let alone Kodachrome—of the very flame of the arc through use of what amounted to microphotography. In achieving this, an elaborate lighting system was set up to concentrate more than a million candlepower of external illumination, counterbalancing the arc's light, on an area approximately an inch square.

Running 100 feet in length this film, first of a projected series of four, gives a thorough grounding in the elements of arc welding, utilizing live action, still life in the form of comparative cross sections, cartoon, animation, etc.

B & H Conservation Plan

◆ With all photographic equipment becoming increasingly difficult to obtain, Bell & Howell has taken what seems to us a wise step in making it easy and inexpensive for the Filmo owner to take the best possible care of his present camera and projector. Conservation of what we have is the order of the day, and the makers of Filmo have inaugurated a low-cost, flat-rate service system.

The new Bell & Howell flat-rate service charges apply to all models of Filmo 8mm. and 16mm. cameras and projectors, and to Filmosounds, and by going to his dealer, the Filmo owner can determine in a minute just what service is going to cost him. "Furthermore," Bell & Howell goes on to say, "the owner has his choice of several standardized service levels all the way from simple cleaning, adjusting and lubricating, to complete overhauling." For further information, see your Filmo dealer or write to Bell & Howell Company, 1801 Larchmont Avenue, Chicago, Illinois.

3 Million See Steel Pix

◆ Approximately three million persons during 1941 attended showings of United States Steel Corporation's educational films depicting the making of steel, according to a report for the year just issued. This represented an increase of 16% over 1940. The films were projected 30,000 times. The increase is attributed to public interest in steel as a vital product in the American war program.

U. S. Steel films are being widely used by national defense training classes in arsenals, colleges and industrial plants as visual aids in fitting trainees for national defense jobs. In some courses of study, the 7-reel film entitled THE MAKING AND SHAPING OF STEEL and other shorter U. S. Steel films are required as a regular part of the curriculum.

Even greater use of these films is anticipated in 1942 in view of the increased tempo of employee-training programs and the generally increased interest in vital war materials. U. S. Steel films are available through distribution centers located in company offices in New York, Pittsburgh, Chicago, Cleveland, Birmingham and San Francisco.

IMPORTANT NOTICE

Eastman Motion-Picture Film Cans and Cores

MUST BE RETURNED

WAR requirements have sharply curtailed the supply of metal and plastics needed to manufacture 35-mm. motion-picture film cans and cores. Consequently, the Eastman Kodak Company urges the prompt return of these essential supplies. They must be used over and over again.

Help maintain the supply of motion-picture film by seeing to it that all Eastman cans and cores are kept in good condition, collected, and shipped to the Kodak Park Works, Rochester, N. Y.

By doing your part in this emergency, you help yourself and everyone connected with the motion-picture industry—as well as all those who depend more than ever on the screen for vital information and entertainment.

Write for prices and detailed shipping information.

Motion Picture Sales Division

EASTMAN KODAK COMPANY, ROCHESTER, N. Y.

MOTION STUDY

(CONTINUED FROM PAGE 22)

occupied the full screen. Thus every conceivable feature of the operation could be demonstrated and explained by the instructor.

BEGIN TRAINING AFTER SHOWING

Following this instruction with the loop film, the operator was introduced to the foreman or forelady on the job and the actual training begun. Successive visits to the class room were included as the training progressed so that the correct method could be constantly emphasized. In the past very often instruction cards or write up of the correct method have been given new operators, but there is no attempt to follow through and see that the operator actually does follow the correct motions during the training period. Thus bad habits creep in, and while often they are small and may appear insignificant they spell the whole difference between a smooth, efficient and restful operation as against the nervous drive so often seen behind attempts to get operators to increase their output.

One of the very important advantages of the projector is that one does not have to take all of the pictures at 64 frames per second in order to have slow motion. The biggest objection to slow motion in the past has been the expense of filming everything at this speed. Very often only a small part of the resultant film was needed in slow motion and the cost was therefore prohibitive. With this machine everything can be taken at 16 frames per second and the slow motion effect secured in almost all instances except where very rapid hand motions do cause some blur when the still picture is projected on the screen.

TWO NEW TIMING FEATURES

For actual motion analysis two new features have greatly simplified the securing of time from the film. In the old days of Gilbreth's first work the timing device was a "microchronometer" which was spring driven. This was later replaced by one powered by a Telechron motor, and the final development is a small, compact device which eliminates the necessity of reading a dial inasmuch as it is built on the cyclometer principle. This clock is produced by Veeder-Root Inc., and is known by them as the Wink Counter.

Where it is not desirable to include the clock in the film one may take the picture with a constant speed camera powered with a synchronous motor and then the projector discussed here is equipped with a small frame counter so that time may be taken directly from the film. The heat absorbing filter allows lengthy study of each frame, if desired, without warping the film. There are many 16mm. projectors on the market which are satisfactory for projection of an occasional frame, but none of them allows detailed analysis frame-by-frame of the type desired by the motion study engineer.

16MM. ONLY EFFECTIVE MEANS

The 16mm. motion-picture film provides the only effective means of making micromotion studies where high production work warrants the cost of such analysis.

Therefore, in summary, it can be seen that motion-picture films are absolutely essential if Work Simplification is to be applied to the job of increasing productivity. First of all, it trains the organization in finding ways of doing jobs easier and better. It helps break down the traditions that so often dictate methods that are acceptable largely because "we have always done it that way."

The use of loop film in training has proved its value in enough instances to convince those who have used it that training time can be greatly reduced; operators who are not going to be suited for a particular job can be transferred to other work before that long period of discouragement and dissatisfaction is encountered; supervisory and executive time is definitely reduced, which is extremely important in these days when we have a shortage of these skills; operators rapidly attain high skill and thus fall into the high earning class which follows the sound principle of paying high wages for high productivity but eliminates the headaches usually encountered when demands for higher and higher earnings merely result in greater and greater dissatisfaction, due to the wide range between the highly skilled and the clucks. Finally, this method of training will eliminate the need for much of the expensive equipment which was formerly tied up in the "vestibule school" method of training.

* * *

Editor's Note: Mr. Mogensen delivered the above message at a recent SMPE meeting in New York.

NEWS OF THE INDUSTRY

♦ Caravel Films, Inc., New York City, announces the inauguration of a new department to be known as a Consultation Service which will be under the direction of H. G. Christensen.

The purpose of this new addition to Caravel services, according to the company's announcement, is to "provide expert and specialized counsel to any business, industrial, or other organization with problems relating to the training of personnel, maintaining and improving employe morale, increasing efficiency, conveying information, and in clarifying facts and figures through the medium of visualization."

Consultations are arranged without obligation for any company or organization facing these and similar problems. It is pointed out that the personnel of this department has had many years experience in visualization through any and all mediums.

Now, at a time when American Business and Industry are pledged to all-out production for National Defense, it is felt that setting up such a Consultation Service will be a contribution to its successful outcome. It is pointed out that already, organizations engaged in the National effort are seeking ways and means to direct the human side of the job through the most effective, visualized mediums available.

Caravel has also announced the appointment of Lyne S. Metcalfe to its creative and research staff.

IT'S SELDOM THAT YOU SEE TONY ACCETTA, six-time U. S. Professional all-around bait and fly casting champion, in the role of a movie star. But here is Accetta during filming of "Let's Go Fishing Again," a new fly casting sound movie produced by Fisher Body for free distribution. Accetta, right, is showing John L. Halpin, center, of the New York State Department of Conservation, and W. S. McLean, Director of Advertising for Fisher Body, one of his favorite flies.

New Automatic Lens—

♦ Although the living eye, with its elastic lens, automatically focuses objects at varying distances, optical engineers have looked askance at many ingenious proposals to accomplish this purpose in a photographic lens. But a four-element motion picture lens has now been designed by Bausch & Lomb in which one double-concave element is electronically oscillated on its axis by means of a special cell mounting developed by P. Stanley Smith, a New York radio engineer.

The new lens is confined to a distance of three-tenths of a millimeter in its axis movement but the oscillations are at the rate of 23,200 times per minute, thus continuously altering the focus so that all objects are uniformly in register from four feet to infinity. Although all objects are slightly softer in focus than with lenses of a fixed focal length, many photographers regard this as an improvement.

Smith, following the work of Dr. Ludwig Dieterich, an Austrian-born engineer, who patented a mechanical method for vibrating a lens element, designed an electronic method of achieving this purpose and has successfully incorporated the lens in a motion picture camera which it is believed will offer greater flexibility in motion picture photography and direction.

At present action must be kept mobile within the set focus of the camera. Actors must work within a chalk line necessitated by the focal range of the camera. Lighting must be rearranged for each new focus, cameras reset, and distances taped.

Bonds via Television:

♦ A sound picture to promote the sale of Defense Bonds and Stamps will be donated to the Government by Marsh Cinesound, Inc. of New York.

The film is a one-minute sound picture in full color especially designed for Television projection, with Gregory Abbott doing the narration. Composed of part animation, and part studio shots, it is being done by a special department of Marsh Cinesound known as 'Television Films'.

Leon Rhodes and Reed B. Fuller, directors of this department, presented a paper on findings and proposals for determining standards of motion pictures intended for Television projection, at the regular meeting of the Society of Motion Picture Engineers on February 16th at the Hotel Pennsylvania. Mr. Rhodes and Mr. Fuller have been working in close cooperation with technicians of the television broadcasting companies. Marsh Cinesound has recently expanded in space and operation, and has taken over the Beale Studios at Oceanside, Long Island.

Institute Tests Public Response

SURVEYS SHOW EFFECTIVENESS OF LIFE INSURANCE FILMS

● THE MOTION PICTURE'S EFFECTIVENESS as a medium for influencing public thought and opinion has been evidenced again in two studies recently conducted by the Institute of Life Insurance.

"In distribution for 3 and 2 years respectively the Institute's two films, YOURS TRULY, ED GRAHAM and AMERICAN PORTRAIT, have had excellent public acceptance, the total audience amounting to more than 3,500,000 people," says Holgar J. Johnson, president. "The recent studies add to the already extensive proof that the films get conviction and belief for their messages."

The first of these surveys was made with a group of students at N. Y. U. by Professor Darrel B. Lucas of the School of Commerce, famed for his research on the much discussed "Continuing Readership Study," for *Life Magazine*. The group was composed of two classes, totaling 99 students. Only one class was shown the film, YOURS TRULY, ED GRAHAM, but both classes were given the same questionnaire five days later. All factors which might influence the results were eliminated as scientifically and thoroughly as possible.

FILM INCREASES UNDERSTANDING

It was found that the film group that is, those who had seen the film—consistently showed a greater appreciation of life insurance and security than the other group. "Financial security" was the theme of YOURS TRULY, ED GRAHAM.

On a percentage basis, more than twice as many of the film group—as contrasted with the group which did not see the film—rated life insurance among the leading professions on the score of special knowledge required for competence; nearly twice as many rated the reliability of the life insurance man as "tops" compared with other popular professions, such as law and medicine; 60 per cent more of the film group selected life insurance as a preferred vocation for themselves among six listed (law, medicine, life insurance, banking, advertising and politics) with nearly half of those who had seen the film expressing interest in life insurance as a career.

RAISES ECONOMIC VALUES

Moreover, people who have seen this film are more apt to request their agent to call on them at regular intervals or to voluntarily consult him more frequently. It is interesting to note, also, that the value which the average person places on economic security compared with other basic lifetime needs, such as good health was increased appreciably by the film's

Commenting on the test, Dr. Lucas said, "On the day when we submitted questionnaires in order to test out the impressions left by the film, our government was just in the process of declaring war on Japan. I was fully prepared to find no influence at all traceable to the film on account of the extraordinary conditions at the time. You can imagine my pleasant surprise at the very impressive evidence favoring the film. Altogether, I was greatly pleased both by the film and by the clear-cut evidence we found showing its effectiveness in fulfilling its purpose."

AGENTS' ATTITUDE SURVEYED

The second survey was made among 509 members of eight local associations of Life Underwriters to ascertain the agent's reaction to both films. Of those answering the questionnaire, 72 per cent stated their conviction that the films were definitely beneficial, and 79 per cent said they believed the public's attitude toward their work was better as a result of seeing either film. Modern Talking Picture Service, Inc., and member local licensees handled request showings for these agents in schools, before adult groups, and elsewhere.

The Institute is emphasizing school showings in its distribution plans for educational purposes. At the close of the year 806,770 Junior High, High School and College students had seen one of the films. The educational values of both films have been praised by visual education experts from Coast to Coast. The Institute reports that the Los Angeles Board of Education alone, which has several prints of both films in its library, was able to take care of only one-fourth of the showing demands in its own system last year. New prints are now being circulated to meet increasing popular demands in this field.

The interest shown in these films is illustrated by the fact that the Institute has received more than 120 requests for the films direct from schools and universities which had heard of them from others who had seen them. Many of these institutions serve hundreds of other schools in their territories.

WAR MEDICINE

(CONTINUED FROM PAGE 14)

urgency, we again have an opportunity to develop a correlated medical motion picture program. Conversion to war uses of facilities for entertainment and production of luxuries, is certain to be required. Priority regulations already indicate this. No drastic change need be required of motion picture studios, however, if they key their productions to current needs. Films will undoubtedly be in demand that will portray how civilians should act in emergency, how to render proper first aid, how to nurse the sick and wounded, how to conserve health and strength through preventive medicine, proper nutrition and other principles of hygiene, and many more specialized subjects.

To avoid duplication, to be sure that the most needed subjects are being covered, to have the right approach for the audience it is desired to reach, and to insure accuracy of technique, a central impartial agency familiar with what has been and is being produced, and competent to act as counselor, should be consulted before work is started on a medical motion picture, and frequently while it is in progress. This service, and assistance in application of medical films to war needs, the American College of Surgeons will gladly give to any producer who requests it.

FILM FORUM: THE READER SPEAKS

(CONTINUED FROM PAGE NINE)

people fully conscious of the truth involved in this international situation is not paralleled in all history.

As you know, all of the facilities of commercial and private film distributing agencies are being utilized to bring the vital messages in sound film form with 16mm sound projectors to every city and village in our nation, and I am confident that the effort will have a far-reaching effect and will go down in history as one of the biggest contributions made during a time when the "machine hour" and the "man hour" were so vitally important in this nations defense program. It is important, in my estimation, that nothing should hamper the full-time production of sound motion picture projectors so that we may cope with those countries where propaganda through the sound film has been developed to its highest stage of perfection and where we know this medium has proved to be the most effective of all those that have been tested.

J. E. Foss.

from Akron, Ohio:

. . . Your editorial in the latest issue of "Business Screen" is very interesting and important. Every institution of learning in our country should by all means at this time equip themselves for the more modern, faster and thorough method of teaching.

In national and civilian defense, no better method can be found than the sound motion picture to truthfully portray to large and small groups of people every where the important part each and every one of us must play in this great national emergency. In order to reach a greater number of people, more projectors must be manufactured and placed in service.

I recently introduced visual education to several township schools in rural districts of central Ohio where only recently electricity has been made available. From these small communities comes the backbone of our national defense program, manpower. Manpower, properly trained with the aid of visual education is our most efficient weapon.

A committee of prominent teachers from several of our leading colleges, recently reported after a thorough study and test that twenty minutes of educational sound motion pictures is equivalent to 2.65 hours of ordinary study. This alone proves to us that we must maintain and support visual education now, more than ever before. To do this, equipment manufacturers must be recognized as a vitally important factor in our national defense program.

M. E. Lockard.

from Urbana, Illinois:

. . . Your Editorial in Business Screen was very timely. If by the use of Visual Education we can produce one more battleship, or one more tank, or even one more shell per year, Visual Education will have proved its worth. By training defense workers faster, and more efficiently, more armaments can be produced.

After the sound motion picture projector has been used for Defense Training, it can be used for instruction of safety and the health of the defense workers. If by using the Visual Education safety and health is promoted so that the worker will be on the job 365 days of the year, production of armaments is increased and the sound projector has again proved its worth.

After it has been used for training of defense workers, for the promotion of health and safety, it then can be used for entertainment and the morale of the defense worker is just as important as his health.

Garland B. Fletcher

from Ft. Thomas, Kentucky:

. . . In the schools today the motion picture projector is an essential teaching tool and the wealth of film material that is available brings into the lives of the pupils a true appreciation of the resources and opportunities that are theirs to enjoy under our democratic form of Government.

In vocational guidance and occupational training the motion picture has proven to be of indispensable value and as a builder of morale, in camp as well as the home, it cannot be duplicated by any other means.

The producers of motion picture equipment and film material, so essential for the maintenance and advancement of this very important educational program, should be given every encouragement in their respective production efforts which, united, represent a DEFENSE BOND that cannot be contributed by any other source.

E. R. Dodson.

from Knoxville, Tenn.:

. . . I have just read and reread your stirring article in Business Screen.

I entered the visual education field in 1932 and have seen the application of 16mm sound motion pictures branch and spread into a myriad of valuable uses. Since the National Defense Program started, I have, months ago, seen and fully realized that this type equipment does not have to be in an army camp or training ship in order to be of inestimable value. For examples and proof of this fact, we have delivered a large number of sound projectors to Tennessee Valley Authority for use in their training of workers and for teaching the value and importance of soil conservation to the public.

We have sold them to chapters of the American Red Cross for use in raising their roll calls to the desired quotas. Others to municipalities for training their firemen and police in fire prevention and extinguishment. Many of the sound films from Great Britain have helped these men learn what to do in case our country experiences the treatment imposed upon that nation.

The F. B. I. is using them in training their men how to handle various type criminals. Our civic clubs are seeing films which clearly impress their membership with the reasons why they should buy defense bonds. Our high schools a

(CONTINUED ON THE NEXT PAGE)

16MM. FILM SOURCES

♦ With but a few months elapsed since the publication of the eighth edition of the Victory Directory of 16mm Sources, an unprecedented demand has made the publishers plan an early re run.

One of the primary reasons for the large sale of this booklet is due to its completeness both as to sources listed and subjects covered. Another factor is evidenced by the increased number of individuals, schools, churches, industrial organizations, associations and large number of Governmental Departments using silent and sound motion pictures. The intensity of training with motion pictures in the Military Forces as well as in Civilian Defense is another interesting reason for its popularity.

Especially helpful and interesting are the articles in the editorial section dealing with such timely subjects as: "The Microphone and Phonograph Record Player"—"A Recommended Classroom Procedure for Using Film Produced Specifically for Instruction"—"Reasons Why This Is the Time to Begin a Well Defined Audio-Visual Program" "The Sound Motion Picture An International Educational Instrument"—"Non-Theatrical Motion Picture Industry"—"Making Your Own Movies" and others covering the Sound Motion Picture in the home, in business and in religious work.

This booklet offers an easy method of locating the sources of a film dealing with a particular subject. A copy can be obtained from the Victor Distributor in your vicinity, from your local motion picture equipment dealer, or from the Victor Animatograph Corporation, Davenport, Iowa. The price is 50c per copy.

MESS SERGEANT JOHN ROCH giving cooks James Vincent and Robert Batton of the Ft. Monmouth, N. J., Consolidated Mess Company some carving tips shown in "Meat and Romance" the National Live Stock and Meat Board sound film recently screened at the Cooks' School on the Post. In addition to the carving sequence, the picture shows how to select meat and cook it by the latest approved methods. "Meat and Romance" was produced in collaboration with the Bureau of Home Economics, U. S. Department of Agriculture. Film prints can be obtained from Castle Films, Inc., New York City, on a free loan basis by schools and interested groups. (Photo by Ft. Monmouth Photo School, U. S. Signal Corps).

The Reader Speaks...

163% of Business Screen's 1942 readers are either directly concerned with production for defense or with the training of workers for that all-important task in schools and industry.)

★ The measure of a magazine's worth, especially in these times of stress, is in its ability to interpret new problems and to aid in their solution to the best of its editorial and merchandising ability. The measure of its ability to accomplish that task lies in its READERSHIP and their *response.*

★ BUSINESS SCREEN *has* been meeting the problems of the times, head-on, almost single-handed. But it seems we never were alone. In recent weeks, hundreds of readers from Coast-to-Coast, in Canada and abroad, have been responding with letters of encouragement and constructive opinion. In Washington, D. C., *some of those letters are now doing their bit toward winning the war;* some like those from the County Health Officers in the State of Kentucky are so powerful and true their effect will be felt in this field for many years . . .

★ Do your part. *Write a letter.* Think about the possibilities of films in the nation's war effort. *Send it in as your contribution to the future of Visual Education and of our nation at war.*

"The National Magazine of Audio-Visual Education"
BUSINESS SCREEN

LETTERS DEFEND VISUAL EDUCATION:

(Continued from the previous page)

most daily see films on social and other diseases so vitally important. The high school agriculture teachers use every film they can find to instruct their boys in proper farming and conservation methods. Our schools teaching vocational training could not do without the many valuable films they use. The latest development in this area is the use of sound projection and public address equipment in connection with the Food for Defense program as passed on to them by the U. S. Department of Agriculture. This work is being done by the county agents.

In addition to the uses just mentioned, it certainly should not be overlooked that each school equipped with a sound motion picture projector constitutes a veritable civilian training station in event our government should need to release a series of propaganda sound films. The civilian is no other than the "man behind the man behind the gun," not just a bystander.

Again I say that this type equipment is just as valuable as it could possibly be and steps should be taken to release just as many units as the war efforts will permit.

In closing, allow me to congratulate you on the article referred to above. We need more of them to defend an item of equipment production which has and will continue to do more than its part in the National Defense Program.

FRANK L. ROUSER.

from Berkeley, California:

. . . Your editorial in the last issue of Business Screen is even more important now than before actual hostilities commenced. We should retain and even greatly increase the full amount of visual aids to be used for education and training for National Defense.

The films we have seen recently, giving us here on the Pacific Coast a concrete example of the things we can do to protect us against air attacks, are just an example of the vastly increased speed and accuracy of training possible by the intelligent use of films. It would be just plain suicide to deprive ourselves at this critical time. Our enemies, the Germans, certainly don't deprive themselves of the full advantage gained by the use of films and other visual aids.

Sometimes even able men in high places become so stereotyped in their thinking that they are incapable of realizing the advantages to be gained from this tremendous aid. It is up to us to see that our National existence is not threatened by failure to use the best methods we have available.

CARROLL W. RICE.

AIR PRODUCTION SLIDEFILMS

♦ More planes produced more swiftly is the aim of Tradefilms, Inc., Hollywood, commercial producers who have specialized in the field of aviation. To meet the need of National Defense the firm has completed eight sound slidefilms, each averaging 30 minutes in length and containing more than 140 photographs, drawings and diagrams. An additional subject will be completed about every two weeks until the entire program of 38 subjects, some of which have been split into two or three sections, is complete.

With each slidefilm a library of information on some particular phase of aircraft production, permitting frequent review, and placing of stress on necessary points for better understanding, and discussion of aspects of the subject whose fuller development was limited by the length of the recording, the series will include:

The engineer's relation to production; the engineer's relation to assembly; riveting; blueprint reading; gas welding; arc welding; resistance welding; jigs and fixtures; methods of fabrication; methods of assembly; forming machines; cutting machines; lathes; mills; heat treatment of alluminum alloys; processings; safety.

TYPICAL FILM REVIEWED

Typical of the undertaking is this summary of the slidefilm on *The Engineer's Relation to Production* which visualizes and explains fabrication methods and puts problems of drafting room and shop on a common basis so that the engineer grasps more readily the effect on his own work of the task of operators in the fabrication departments. Four separate sections make up the film:

(1) Introduction and orientation, presenting the fact that in addition to the engineering problems of function and weight is added a third practical problem—production: "Can the part be made and how much will it cost to make?"; (2) sheet metal shop, devoted to illustrating the most important forming and cutting machines, their uses and limitations, and how to meet the engineering problems which these limitations incur; (3) machine shop, covering fabrication of parts machines on engine and turret lathes and various types of milling machines, with explanation of practical methods of overcoming the problems involved; (4) finishes, processes and summation.

COVERS SHOP PRACTICE

Told primarily from the viewpoint of designer and detailer, *The Engineer's Relation to Production*, covering the broad front of shop practice, is an interesting and important supplement to shop training, and with *The Engineer's Relation to Assembly* it gives a complete, overall picture of aircraft production and production methods.

Significant of increased, more effective learning was the repetition 30 minutes later of a test given engineers in training before they had seen the production film. With 67 engineers taking the test—and they had been in training three months or less—the average grade before seeing the film was 58.8%; after seeing the film the average grade was 81.6%, showing an increase in average grade of plus 25.80%, a percentage increase of plus 46.23%.

NEW EQUIPMENT

Plastic Reel Announced

♦ Now available to solve the needs of industrial, defense training and Government film users is a recent innovation in accessories, the new American Molded Products Company plastic reel. Thus far, 16mm 400-foot reels are on the market with production under way on a 1600-foot, 16mm size.

The reels are transparent, noiseless and exceptionally strong, though light-running. A new positive threading feature, making threading simpler, is an added advantage. Slots are provided, however, as well as an instantly readable footage scale accurately etched into one of the spokes. The reels are moderately priced.

For listings on this page address inquiries to Service Bureau of Business Screen, 20 N. Wacker, Chicago.

BUSINESS SCREEN'S INDEX OF PRODUCTION

SPERRY TESTS FILMS

CONTINUED FROM PAGE NINETEEN

previous considerable acquaintanceship with the micrometer.

Reactions of the class were very favorable:

(a) Close attention and interest was had throughout.

(b) No important points were missed.

(c) One girl remarked afterward: "They (the motion pictures) don't leave you anything to question."

(d) The girls showed remarkable adeptness.

From the results of the above experiments our inspection department believes that motion pictures:

(a) Can be relied on to carry the main burden of orderly instruction.

(b) Do not take the place of personal help to the practicing learner. The learner should have possible mistakes corrected before proceeding too far.

(c) Makes coverage of all important points uniform in every class and independent of the instructor.

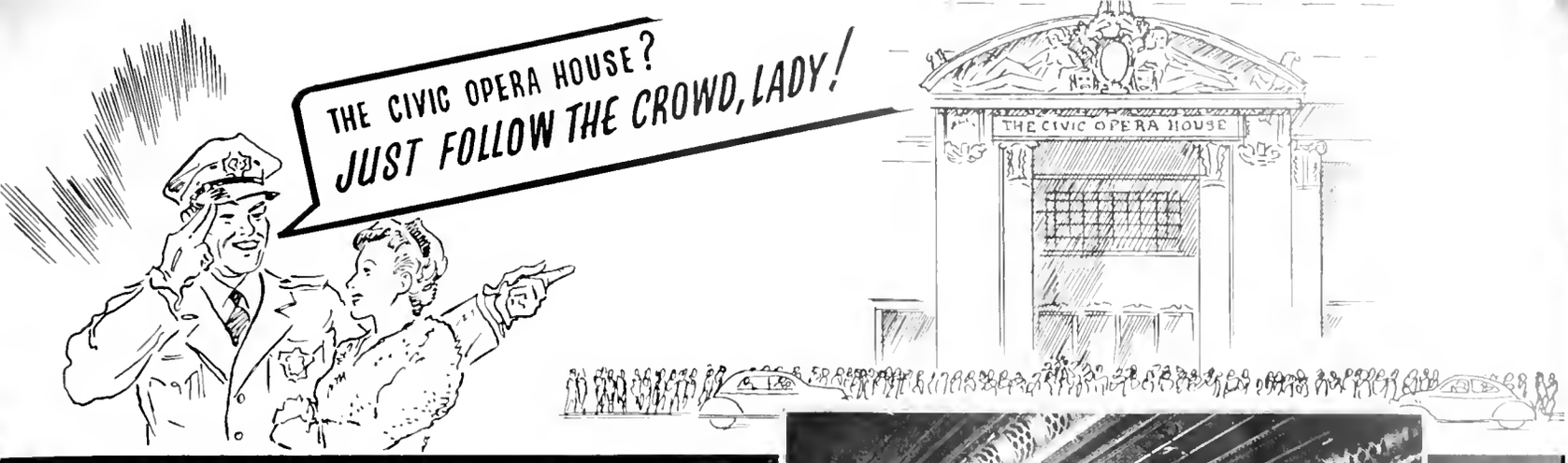
(d) Eliminate the need for time-consuming and comparatively inadequate blackboard illustration.

FILMS DO MAJOR TEACHING TASK

The films in the experiment described carried all but a small fraction of the actual instruction purely to see how good the pictures can be in this regard. In classes regularly using films for visual aid it would be important to supplement them with personal advice to the students while they practice.

We must emphasize that we do not now include motion pictures in our inspection training program even though the experiments so far have proven successful because we feel that to use visual aids to the best advantage *we should use them throughout and completely integrate them with the course of instruction. We have not yet located sufficient suitable visual aid material to enable us to do that.*

(BELOW) SCENE FROM A RECENT BURTON HOLMES technical training motion picture on the operation of the lathe, released for national distribution to schools and industrial classes.



The World's Finest Theatres!

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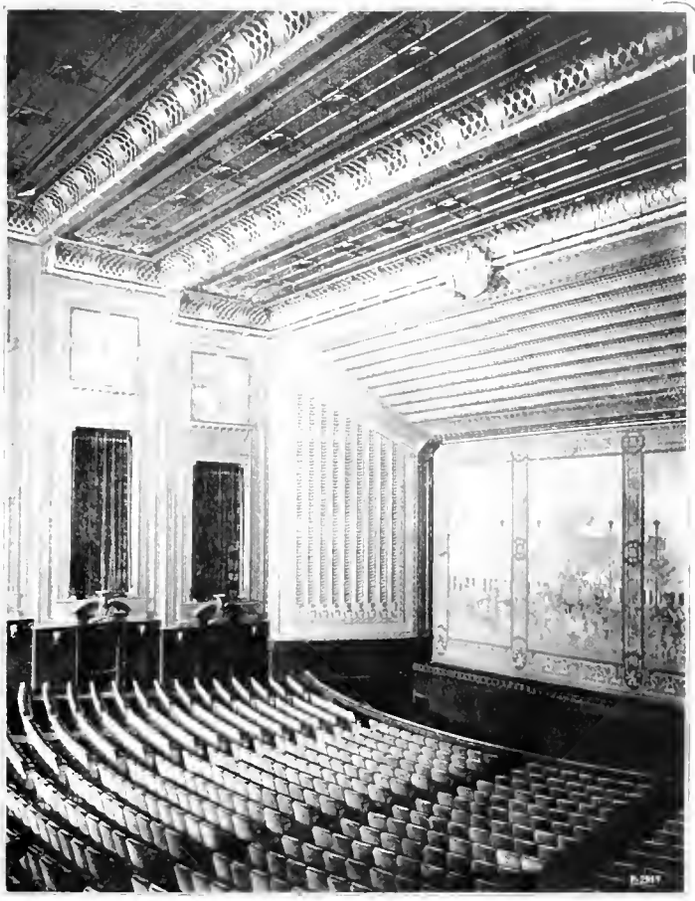
Crowds are important to the Showman! Every year, thousands of visitors crowd the Civic Opera House as one of Chicago's "Points of Interest." And visitors are theatre-goers! ★ The Civic Opera House is the home of Chicago's great opera company. It is the center of the city's brilliant concert and ballet seasons. The world's greatest artists and theatrical attractions play here. It is therefore, identified with SUCCESS. ★ Your choice of the Civic Opera House indicates your desire to give your production the best possible setting and your patrons the utmost in comfort. The next time you play Chicago. *Play the Civic!*



CIVIC OPERA HOUSE FACILITIES: Seating capacity, 3531; proscenium 35' x 50' stage width, 115 feet; stage depth, 75 feet, three light bridges; nine border lights, 103 sets of counterweights; and RCA Sound System.

THEATRE CITIES: Seating capacity, 878; proscenium 30' x 34'; stage width, 72 feet; stage depth, 32 feet; three light bridge, five border lights; 55 sets of counterweights, and RCA Sound System.

THE CIVIC THEATRE

Complete in every detail, duplicating the finest features of the Opera house, the Civic theatre achieves the cozy comfort and the rare charm of the perfect "Theatre Intime." ★ Both theatres are ideally situated as to transportation. Parking facilities are complete. Upholstered and spring cushion seats, perfect vision, impeccable acoustics, beautiful lounges, 100 dressing rooms (many with private bath) assure comfort and convenience for patrons and artists alike. By all means *Play the Civic!*

For Full Information Write or Phone
J. Charles Gilbert, Managing Director

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For information on equipment sources without obligation address The Screen Service Bureau of Business Screen, 20 North Wacker Drive, Chicago.

STATE DOCTORS' APPEAL

(*Continued from Page* 18)

to continue a decrease in tuberculosis, it will be necessary more than ever to employ all devices, especially visual methods. Be assured that we are in hearty accord with the idea of more intensive educational work by visual methods, since such practice will be of value to both our armed and civilian forces.

C. W. CHRISTINE, M. D.,
Health Director.

Metcalf County Health Department

. . . I am writing to thank you very sincerely for the two showings of your 16mm films in the schools at Edmonton and Center in Metcalfe County. These films are highly educational and has meant a great deal to the people of Metcalfe County and more especially to the high school students. There is a curtailment of many supplies due to the national emergency and I am greatly in hopes that there will be none that will interfere in any way with the showing of these highly educational films.

H. T. CARTER,
Director.

Ohio County Health Department

. . . As we all know tuberculosis is one of our greatest enemies and in this great hour of National Defense, health education thru moving pictures to our people is going to be needed more than ever. Already this country has been educated more on tuberculosis since your visit than they have ever been. It is thru the eye and ear that we learn most and pictures are the best way to put it before the public.

A. D. PARK, M. D.,
Health Officer.

Perry County Health Department

. . . We are about to conclude the most successful Seal Sale in our fight against Tuberculosis that Hazard has ever had, and I am anxious to make arrangements for an extension of the educational program you gave us a sample of when you were in our county last month showing 16mm films in two or three of our schools. I cannot help but believe that education is our best weapon against Tuberculosis and I am convinced that the showing of sound films in our schools, mining camps, clubs and etc., is undoubtedly our best means of attaining this end.

LEWIS C. COLEMAN, M. D.,
Director.

Western Kentucky State Teachers College, Biology Department

. . . I have heard it rumored that our supply of 16mm projectors is likely to be cut off or reduced. I hope that this is only a rumor, because I feel that the use of such is playing a great part in maintaining the health, nutrition and many other things so vital to the defense program, both industry and military.

I rather doubt if the vote placing a tax on the property in Warren making possible a tuberculosis hospital, could have been put over in such a fine way if it had not been for the splendid work which has been done for the last few years by Dr. L. E. Smith and his pictures. This is one of the few of the tax programs that has ever been voted in Warren County. The vote was ten to one in favor of the tax.

J. R. WHITMER, *Biology Dept.*

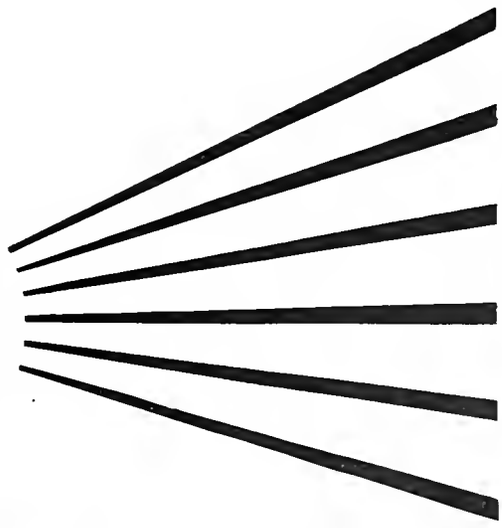
TRAINING FILMS

For INDUSTRY.
for CIVILIAN DEFENSE.
for the ARMED SERVICES

Sound - Silent

16 mm - 35 mm

Black & White - Color



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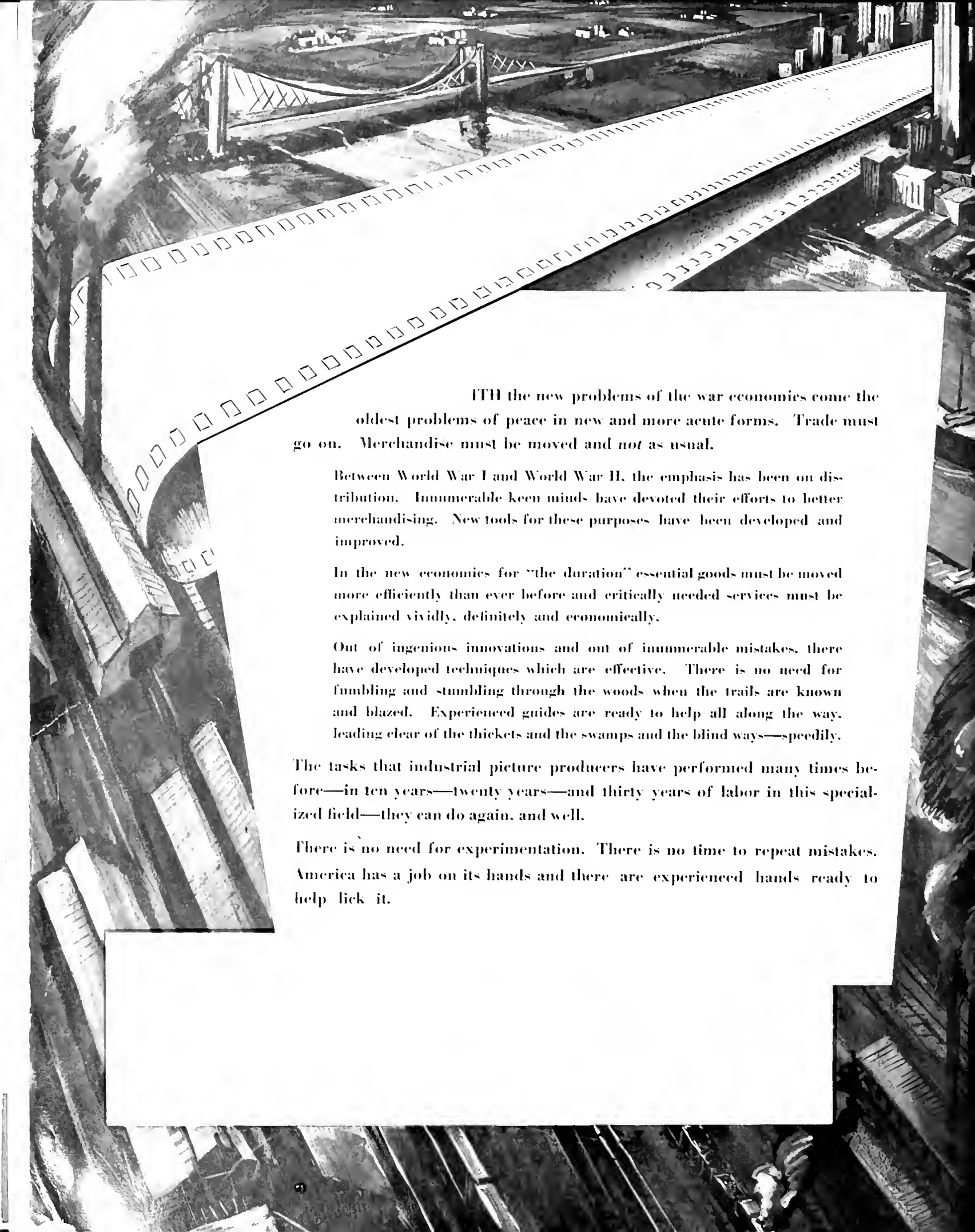


WITH the new problems of the war economies come the oldest problems of peace in new and more acute forms. Trade must go on. Merchandise must be moved and *not* as usual.

Between World War I and World War II, the emphasis has been on distribution. Innumerable keen minds have devoted their efforts to better merchandising. New tools for these purposes have been developed and improved.

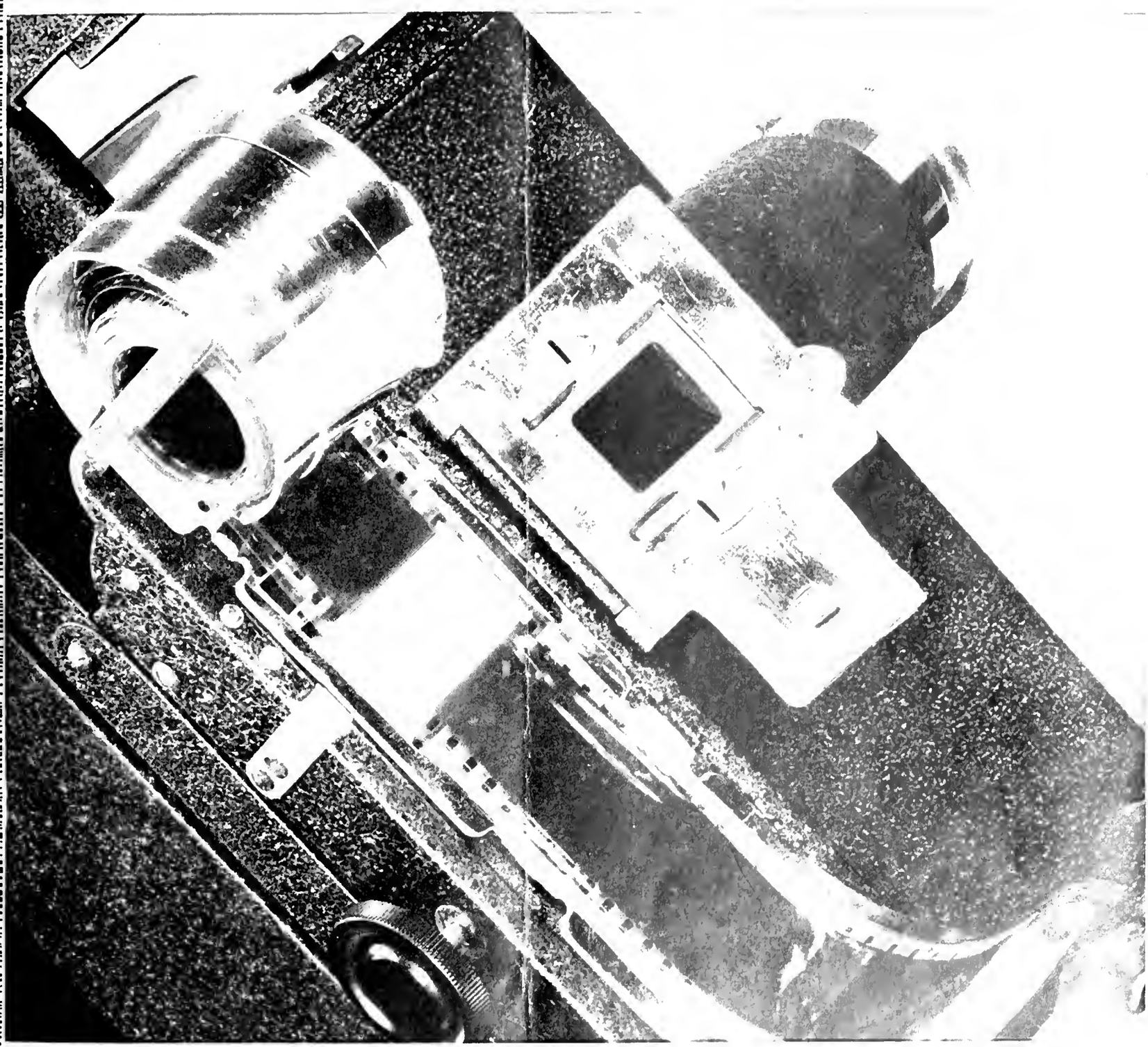
In the new economies for "the duration" essential goods must be moved more efficiently than ever before and critically needed services must be explained vividly, definitely and economically.

Out of ingenious innovations and out of innumerable mistakes, there have developed techniques which are effective. There is no need for fumbling and stumbling through the woods when the trails are known and blazed. Experienced guides are ready to help all along the way, leading clear of the thickets and the swamps and the blind ways—speedily.

The tasks that industrial picture producers have performed many times before—in ten years—twenty years—and thirty years of labor in this specialized field—they can do again, and well.

There is no need for experimentation. There is no time to repeat mistakes. America has a job on its hands and there are experienced hands ready to help lick it.

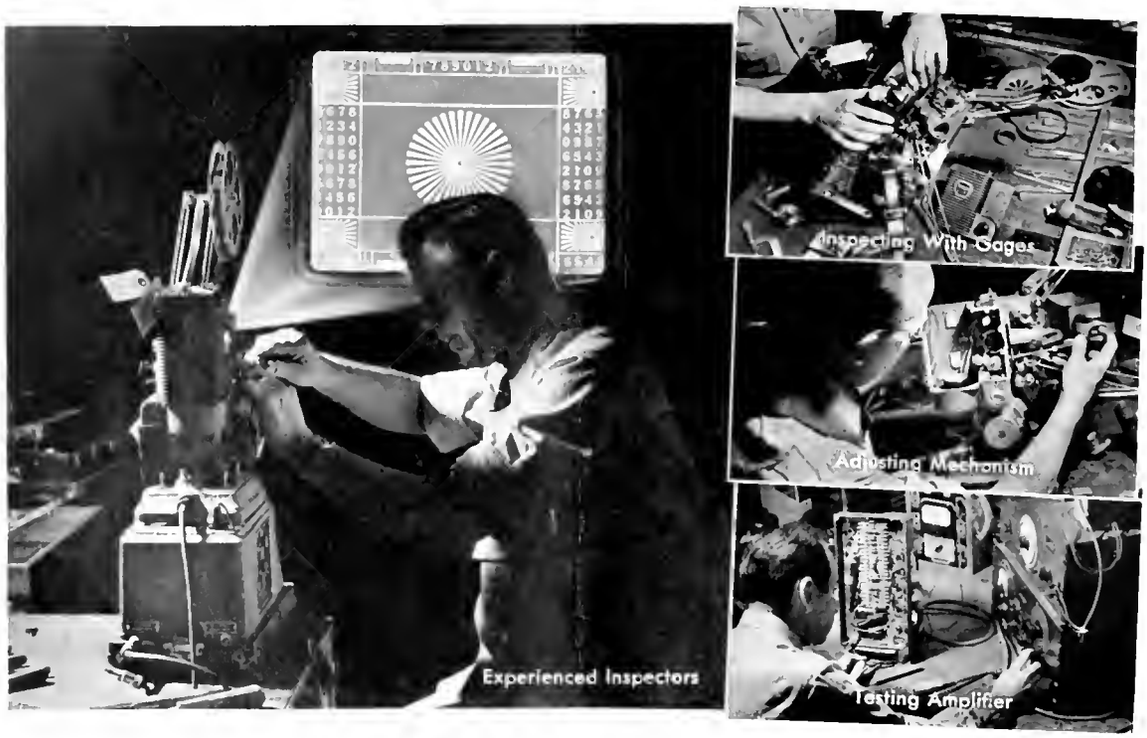
Business Screen



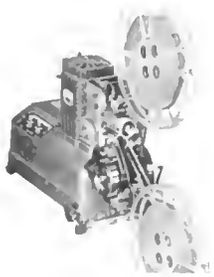
SHOW WORKERS WHAT TOTAL WAR MEANS

(SEE PAGE

Put your Projector in *FIGHTING TRIM*



An Important Message to All AMPRO *Owners...*



Today—every Ampro 16mm. Sound and Silent Projector should play a vital part in the vast U. S. war-time program of training and education.

Today—every Ampro owner has the serious responsibility of making certain that his projector is ready to render efficient service because:

1. Every Ampro projector that is serviced and put back into first class condition relieves just that much of the load of producing new machines for the war effort.
2. There is ample opportunity for using every Ampro for projecting 16mm. films for Civilian Defense, War-time training and the circulation of important information.

For industrial training classes, civilian defense meetings, conservation meetings, for vocational schools, church clubs, fraternal organizations and service groups—you can swing your projector into "front line" service for the duration — and help in an important phase of AMERICA'S DEFENSE.

The Ampro corporation maintains complete service departments, manned by men who are experts in reconditioning and rebuilding used projectors. Users report that Ampro maintenance costs are extremely low. You will be surprised at how much can be done at reasonable rates to make your projector as good as new. A routine check-up of your projector will insure long and satisfactory performance, so visit your nearest Ampro dealer today for projector inspection, cleaning, and adjustment.

Write for name of local Ampro dealer.

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Selling the American Way of Life to the Young People who will one day rule America

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TO BUSINESS MEN: If, as you so fervently declare, the American Way of Life is worth *defending*, then by all that's holy it is worth *explaining* . . .

—For what it is: not merely the most practical way of providing the people of a great nation with the things they need for safe and comfortable living *but the most effective way of insuring "Freedom of Speech, Freedom of Religion, Freedom from Want, Freedom from Fear."*

—Worth *explaining*, we say, to the millions of young people, now in secondary schools and colleges, who will shortly need a stout-hearted faith in the American system of free enterprise in order to preserve it and direct it into proper patterns.

* * *

Granted the premise, where is the logical place to start?

Why, in the SCHOOLS and COLLEGES, of course—and to this end the motion picture screens *in many thousands of classrooms and assembly halls* are all set up to convey the message of American business to the future rulers of America.

Two warnings: (1) Your motion picture must be educational, free from self-exploitation; (2) It should be made by a producer experienced in school distribution.

If your company qualifies, we can readily show you how you can take a vital and profitable part in "Advertising's Most Important Job." Write today for full particulars.

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A REPORT FROM THE TRAINING FIELD

—How the U. S. Office of Education Films Really Work Told in a Letter That Merits a Second Reading By All!

To the Editor of Business Screen:

★ THE FIRST PRINTS of the United States Office of Education Machine Shop films to arrive in the midwest were delivered to the Oak Park and River Forest High School on December 3 of last year. The films have now been used as an integral part of the machine shop work in this school for over five months. They have been studied in our high school shops during 150 class periods, projected for adults in several defense training centers and shown to machinists now working in defense plants. The ten Office of Education subjects on ship building, recently completed, were delivered on April 20 of the current year. This series has been projected for a number of high school classes and defense training courses. Despite the fact that no shipbuilding training activity is carried on, this series has proved of unusual value for other types of work. Machine shop work films have speeded the training of students in high school shop classes and in defense training centers. They can do as much in increasing the output of machinists now working in industry. These statements are based upon the training provided by the films in several experimental groups organized here during the past five months, film-appraisals by shop teachers, and the opinions of expert machinists now working in factories who have attended showings in the High Schools visual education room.

ENTIRE SERIES PURCHASED AFTER PREVUE

After previewing the Office of Education programs that were available last November, the shop teachers in our school enthusiastically recommended the purchase of the entire series. Teaching results obtained by using the films in several experimental classes have exceeded our original high expectations. As a by-product, we found that many of these films may also be used to advantage in science and mathematics classes. Films such as *Steel Rule, Micrometer, Fixed Gages, Vernier Scale Height Gages and Standard Indicators, Plain Indexing and Cutting a Spur Gear,* not only facilitate the regular work in general science, physics and mathematics classes *but also demonstrate the relationships between these subjects and the work in industry and war production.*

Our shop students have been very enthusiastic about the value of these films. A definite number of completed projects are required for credit in our shop courses. Despite the time element involved in completing these projects, the shop students ask for a second and often a third showing of individual films so that they may really know what is in the picture. The benefits to learners that are described below, have been emphasized by students in their shop reports over and over again. The comments quoted from their reports represent typical student reactions to the value of these films.

1. *The films speed up the rate at which subject material is mastered and at the same time result in more careful and accurate work*: Stanton Swank—Sophomore, Machine Shop I: "These films have speeded up our progress a great deal in learning how to run the machines. I did not realize before I saw these pictures what an important part in industry the machine shop plays."

   Lawrence Krahe—Junior, Machine Shop I: "Before we had the films, our teacher had to work with groups of two or three on each new operation. By showing the films to the whole class, valuable time is saved and each point is made much more clear and definite."

   Alex Bugler—Senior, Machine Shop I: "The machine shop pictures are a help to us because they show how the work is done in the industrial field. They point out mistakes that we make in the shop and give helpful hints that make it possible for us to do more accurate work."

   Glen Andresen—Senior, Advanced Machine Shop III: "During the past few months I have been employed in a machine shop for after-school and Saturday work. While working in this shop I became well acquainted with our foreman, who has been a machinist for forty years and is an all around A-1 man. During an operation which called for very close tolerances, I used the vernier on the

(PLEASE TURN TO PAGE SEVEN)

This Page Is Worth Reading Again

★ The report which appears on this page tells of one school's actual experience in the use of the machine tool and shipbuilding training films produced by this industry for the Office of Education. It packs plenty of meaning for those in Washington who are concerned with the nationwide problem of training new workers for the war production lines. It is only typical of many similar case histories coming into this editorial office and to the workshops of the men who have made visual education history with their unshaken faith and unceasing toil.

Read these simple, unvarnished words again, Washington. We won't win this tough war we're in without using every weapon we command. The swift, thorough methods of visual instruction are the kind of weapons that can speed production for industry just as they are aiding combat training in the Army and Navy. They can help teach complicated operations, maintenance, and safety and instill in every worker the meaning of this total war. We already have trained production personnel and supervision for the making of such films and we know what they can do. So let's use them all-out—NOW!

—OHC.

THE ACTORS ACT...BUT WILL THE PUBLIC?

IT TAKES MORE THAN ACTION on the screen to cause action by the audience. And the "know how" of making them reach for their pocketbooks...instead of their hats . . . isn't picked up in a day.

In 26 years of making and distributing motion pictures, Castle Films has acquired this sales "know how." But the ability to create *yearning* . . . instead of yawning . . . is not the whole story.

Castle Films has a Distribution Service that gets pictures *seen*. Last year alone, over 25,000,000 people in key buying areas saw Castle-distributed films.

Have you ever considered moving pictures as an excellent medium for *moving* merchandise? Consult Castle Films without obligation.

SOME OF AMERICA'S LEADING INDUSTRIES FOR WHOM CASTLE MAKES AND DISTRIBUTES FILMS:

Procter & Gamble . . . E. I. du Pont de Nemours Company (Finishes Division) . . . California Fruit Growers Exchange . . . Pennsylvania Railroad . . . Southern Pacific Railroad . . . Carrier Engineering Corporation . . . Pabst Brewing Company . . . Sealright Corporation . . . Aetna Casualty & Surety Company . . . Spreckles Sugar Company . . . Lily Mills Company . . .The Fuller Brush Company . . . Lenox China.

CASTLE MAKES MOVIES. . . CASTLE GETS THEM SEEN!

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FIELD BLDG. . . . . CHICAGO
RUSS BLDG. . SAN FRANCISCO

CASTLE FILMS

RCA BLDG. . . . . NEW YORK
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RUSS BLDG. . SAN FRANCISCO

BS2

(CONTINUED FROM PAGE FOUR)

micrometer to read to the ten thousandth of an inch. Our foreman could not understand how I was able to do this, so I explained to him the vernier scale on the micrometer. Through his forty years of machining he used the micrometer to read to the thousandth of an inch and thought those other markings were just so many lines. Through my seeing the picture on the use of vernier I was able to show my foreman the use of a vernier and receive compensation for doing so. The visual aid technique is an excellent way to bring the ideas and principles to prospective machinists."

2. *The films demonstrate good safety habits and shop ethics:*

   George Seifert—Sophomore, Machine Shop I: "The films proved that safety means a great deal in the shop. They showed that the machines are dangerous when you don't understand them. The films proved that the tools are not the cause of accidents. Accidents are always caused by persons being careless when they use the tools."

   Richard Anderson—Senior, Machine Shop III: "Some of the rules that we are required to observe in the school shop used to seem rather unreasonable to me, but since I have seen these films on machine shop work, and have watched experts following these rules, I now realize the value of them."

3. *The films help in learning the sequence of operations.*

   John Novak—Junior, Machine Shop III: "Whenever I want to turn out a piece of work, I now picture in my mind how the operator in the film did it, and then I try to do it in the same way. These films bring out the details and finer points about the machines and how they should be used."

4. *The films demonstrate the care of machines and shop-housekeeping.*

   Harold Brekke—Sophomore, Machine Shop I: "Before seeing these movies, I knew little about the housekeeping and care of machine shop equipment. Now I know how important it is to the life of your machine and the accuracy of your work to keep the machine clean and properly oiled. I think these films are educational and will help students to be better, safer, and cleaner machine-shop workers."

5. *The shop films provide a broadened outlook and a respect for metal trades and tradesmen.*

   Byron McBride—Sophomore, Machine Shop I: "Ever since I entered high school, I have been taking Industrial Arts with the sole idea of obtaining credit. After seeing the films, I have decided that I want to specialize in machine work and make a success of it. I think that these pictures would help anyone who hasn't decided upon his work, to decide what he would like to do."

Robert H. Chandler, machine shop instructor, believes that the most effective way to use these visual aids in teaching machine shop is to show short films limited to 15 or 20 minutes each. He believes that it is important that the work be planned carefully so that the visual material may be correlated directly with the work that is going on in the shop. He usually has a film projected more than once in order to emphasize specific operations, tooling procedure, mathematical data and other related information. The film is followed by class discussion, and sometimes a verbal or written test is given to check on the knowledge acquired. From an educational standpoint, Mr. Chandler believes that it is definitely wrong, with very few exceptions, to show more than one of these machine shop films at a given time. The shop schedule was planned so that individual films produced by the Office of Education could be used as an integral part of the work. Mr. Chandler reports that this has produced excellent results.

SHIPBUILDING FILMS SERVE MANY USES

The reactions of instructors and adult students in several defense training centers have like-wise been very enthusiastic: they have found the entire series of machine shop films to be very helpful in speeding up the training program. When the new shipbuilding series was previewed here in April, Mr. F. S. Owens, metal shop and welding instructor, obtained a number of film appraisals from high school teachers from adult students taking defense training work.

The ship building series is particularly praised because of its thorough coverage of such subjects as welding, blue-print reading accurate carpentry methods and related topics. This may be indicative of a need for specific films produced in the same thorough manner.

Talks with officials and machinists from several defense plants show their keen interest in materials to facilitate the training of employees. The consensus of opinion has been that defense plants have been finding it necessary to accept men with insufficient background and experience. These plants are attempting to supplement the training of men while on the job, not only in specific techniques but also in general methods. The information so far requested by factory officials includes:

(a) What visual materials are available for training?

(b) Where can we obtain these materials?

(c) Where can we obtain the necessary projection equipment?

(d) How do you go about using the different visual materials more effectively?

Comments by experienced machinists who attending showings illustrate the possibilities of these and similar films in war plants:

Expert Machinist - 20 years experience: "I have a number of new men working under me: I am supposed to answer their questions and check their work. Although I have worked in industry for twenty years, I learned quite a few things from the films that will help me in our defense work. I know that these pictures would make a world of difference in the work of the new men."

Expert Machinist - 15 years experience: "Many of the older and experienced men don't know how to turn out certain projects, but they will not admit it. When something is not right, they blame it on their machine. These films could be used to review different operations: this would prevent mistakes, save materials and speed up the work."

Expert Machinist - 15 years experience: "Machinists often tend to develop bad habits in their work. These films would call attention to these bad habits by demonstrating correct methods."

There are not enough of these films. The clear evidence of their power to speed the training process in defense training enters is clearly indicative of an ultimate speeding in actual output of war materials. If that is so, and our evidence points that way, then this machine shop series and others like them on important subjects not yet covered, can play a vital role in winning the war.

Lyle F. Stewart, Director of Visual Aids, Oak Park and River Forest Twp. High School.

DEPARTMENT OF INDUSTRIAL EDUCATION, OAK PARK HIGH SCHOOL

Division of Machine Shop—Robert H. Chandler, Instructor

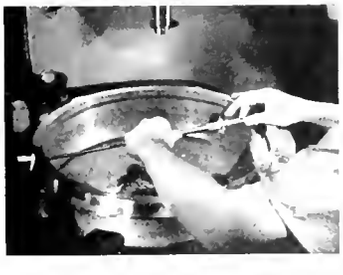
SCHEDULE OF FILMS FOR SECOND SEMESTER 1941-1942

Subject	Title	Date
Precision	*The Steel Rule*	Feb. 4
Engine Lathe	*Drilling, Boring, etc.*	Feb. 9
Precision	*Micrometer*	Feb. 16
Lathe	*Cutting Tapers, etc.*	Feb. 23
Milling Mach.	*Straddle and Surface, etc.*	Mar. 2
Eng. Lathe	*Rough Turning, etc.*	Mar. 9
Eng. Lathe	*Turning of Two Diameters*	Mar. 16
Precision	*Vernier Scale*	Mar. 23
Eng. Lathe	*Cutting an External Thread*	April 6
Milling Mach.	*Cutting Keyways*	April 13
Milling Mach.	*Plain Indexing, etc., Gear*	April 20
Precision	*Height Gauges, etc.*	May 4
Shaper Work	*Cutting Keyways*	May 4
Shaper Work	*A rectangular block*	May 11
Shaper Work	*Cutting a "V" block*	May 18
Rad. Drill	*Operations*	May 25
Precision	*Fixed gauges*	May 25
Rad. Drill	*Operations*	June 1

(1) Scene from "Shipbuilding Skills" films of the U. S. Office of Education.

(2) Use of the Micrometer shown in the Film Series on Precision Measuring.

(3) Precision Measuring scene from the films produced by Loucks & Norling



(4) The shipbuilding films were produced by Caravel Films and Jam Handy

CAMERA Eye

NEWS & COMMENT OF THE PERIOD

★ A STRANGE PARALYSIS seems to grip agencies of government, often the moment of decision is prolonged far longer than seems necessary to the ordinary citizens and wholly incomprehensible to your average businessman. Sometimes this is, indeed, the evil of red tape at work but mostly it is simply the functioning of good democratic government, slow and ponderous at times but inevitably grinding out results with fairness and justice to all.

If that is to be the result of Government's delay in putting its many and varied film programs in the hands of those who should be using them, all will eventually be well satisfied and there is little doubt that this will happen. In the meantime, Civilian Defense is awaiting its share of a national picture program for actual task training as well as citizen information through the morale division.

While the schools will generally close for the summer season and some already have . . . there are thousands of adult audiences, meeting throughout the summer, who are eager to see and hear about the life and customs of our neighbors to the South, to receive information on the progress of the war effort and to obtain specific instruction on such subjects as air raid precautions, savings, nutrition and health, etc. All this should be acted upon decisively and quickly.

Motion Picture Bureau Gives Government Service

◊ Through the nationwide facilities of the Motion Picture Bureau of the YMCA, the Governments of the United States, Canada and Britain have circulated their films to a total audience running somewhere in the millions. Now that such programs are being standardized in the U. S., increased efforts have been made to take some of the load away from the Bureau's well burdened shoulders. But the service rendered in this initial period of organization will not soon be forgotten. Entirely without profit or recompense, the Bureau served Government well during this pioneer phase. Since Pearl Harbor, circulation of available war films has increased tremendously, so much so that it is rare to find a single print in the vaults of the Bureau—they are all either enroute or showing twenty four hours a day, seven days a week.

BUSINESS SCREEN

THE MAGAZINE OF VOCATIONAL AND EDUCATIONAL TRAINING

NUMBER 3 VOLUME 4

CONTENTS

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Kodak Gives War Summary in Stockholder's Report

◊ The picture of photographic America in time of war which is provided holders of Eastman Kodak stock in the Company's annual report is worth quoting:

"Diversified types of film and photographic paper comprise the Company's principal output of sensitized goods. In spite of the fact that this production is the largest photographic manufacturing operation the world, more than half of the Company's American output of photographic sensitized goods is currently used for military purposes of industrial or commercial purposes recognized as essential to the war effort.

"The functioning of industries normally employing more than 150,000 people depends directly on the availability of photographic materials, as does the hobby of millions of amateur photographers. By and large, such businesses as the motion picture industry, medical, industrial and office photography, picture magazines and picture newspapers, photo engraving and photo-lithography, and commercial photography, cater to civilian needs that might be classed anywhere from essential to important."

Important Brochure on Screen Advertising Is Yours — Free!

◊ Word has been received that a number of copies of the new and interesting brochure on screen advertising, Teaching Your Brain Child to Walk and Talk have been reserved for readers of BUSINESS SCREEN. Write to the Screen Service Bureau of this magazine, 20 North Wacker Drive, Chicago and a free copy will be mailed on receipt of your request on a company letterhead. The book is of especial value to those utilizing the screen for product merchandising and all mass educational and selling problems.

Keep These Lines in Mind

For lack of ships and planes and tanks
We lie here where we fought in serried ranks
Because too little and too late
The shift make six instead of eight"

WILLIAM O. HOTCHKISS, 1942

THE WAR PRODUCTION EDITION OF BUSINESS SCREEN MAGAZINE

"It takes eighteen industrial workers to equip a single fighting man. Human labor is the one element for which there is no substitute, and unless we devise methods to conserve and allocate our available labor supply, our production machinery and our industrial plants will not be able to provide the armaments we need."

— PAUL V. McNUTT.

ISSUE THREE • THE MAGAZINE OF VOCATIONAL & EDUCATIONAL FILMS • VOLUME FOUR

Mobilization and Morale in War Industry

★America Faces a twofold problem as the drive for increased war production brings us face-to-face with labor shortages in vital war industries and, secondly, with the need for an enhanced will to work among those already employed. Other related problems are those of plant safety so that precious man-hours lost in accident and injury may be conserved, job training of millions of new workers, and general employee relations.

With the appointment of the War Manpower Commission, of which Federal Security Administrator Paul V. McNutt is Chairman, the President has acted for mobilization of our people for war industry. According to Brigadier General Frank J. McSherry, deputy director for labor supply and training in the War Production Board, about ten and one-half million workers will be added to the seven million already employed in our war industries.

Shift Implies Training Problem

While most of those newly-employed on unfamiliar tasks will be trained by the simple method of teaching a single operation along the mass production line, nevertheless many thousands of more highly-skilled workmen will be required. As pointed out by General McSherry in an address to the School of Foreign Service, Georgetown University, on December 17 last, "there is a general shortage of supervisory personnel throughout war industry" and "a shortage of skilled workers in certain crafts and occupations needed at the present time."

Thus "training programs must be expanded within industry and without, to increase the skill of employed workmen and develop initial skill in untrained, unemployed workmen," concludes General McSherry. One of the first steps to be taken by the new War Manpower Commission is to be that of expanding the program of industrial training, according to a statement issued by the Chairman on his appointment.

♦ The following is from the statement issued by Federal Security Administrator Paul V. McNutt upon his appointment as Chairman of the Commission:

"The War Manpower Commission which the President, the Commander-in-Chief of our total war effort, has created, should provide the machinery for making certain that the manpower we need for war production will be available when and where it is needed.

"Through this Commission, all the agencies of the Federal Government, working closely with representatives of labor and industry, will be able to develop and maintain coordinated labor supply policies and programs on a voluntary and democratic basis. At the present time I can see no need for the building up of a large administrative staff to do this work. I believe that we can carry on most of the functions through the existing agencies.

"I want to emphasize that in my opinion the primary reason for my designation as Chairman of this Commission is that many of the activities with which the Commission will be concerned are already operating within the Federal Security Agency. These include the U. S. Employment Service, with its basic responsibility for recruiting labor, and the wartime training programs carried out through the U. S. Office of Education, the Civilian Conservation Corps and the National Youth Administration."

Training of All Types

Not only the training of apprentices and the upgrading of experienced men but, in addition, the breaking in of negro workers, other minority groups and women is included in the training problem. This calls for the employment of every posible training aid, not alone the standardized techniques of personal instruction, but the addition of visual aids specifically designed to meet the war production problem.

Such a program of visual aids has already been carried out within the U. S. Office of Education where 50 reels of sound motion pictures on the various machine tools and shipbuilding work have been produced. These films are supplementary texts; when used in an integrated program of instruction they are apparently performing excellently. Similar projects need to be carried out in other fields and crafts as well as in the all important work of safety education.

★

PAUL V. McNUTT, Federal Security Administrator and Chairman of the new War Manpower Commission.

The wartime training activities of the U. S. Office of Education, already functioning in the Federal Security Agency, will be carried on within the Commission.

★

Next to Training: Morale

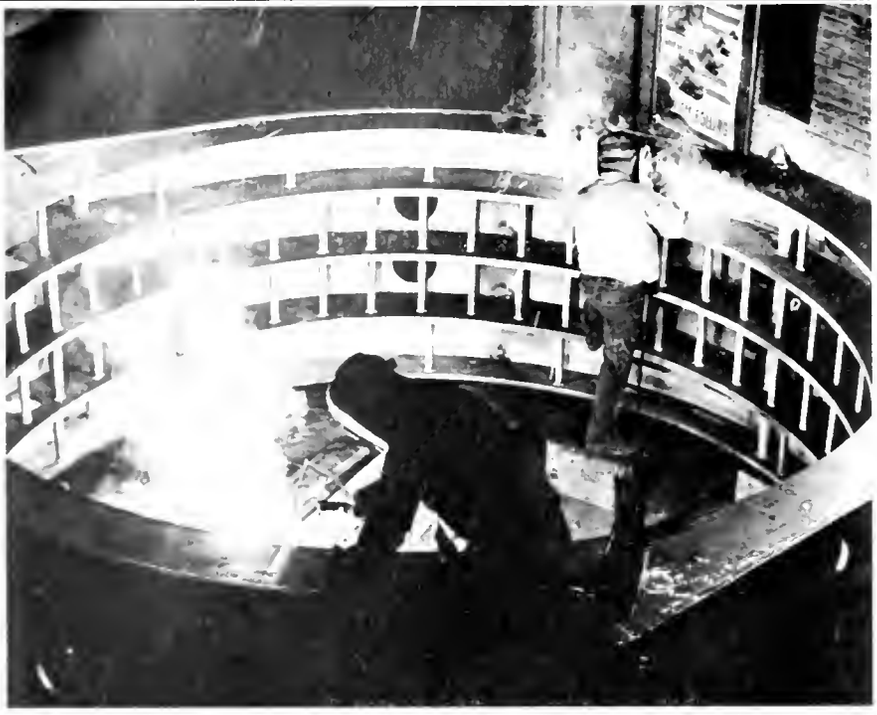
♦ Our next great concern in war industry is that of Morale. Many industries have already taken successful steps to relate to workers their part in the war effort, notably the "Beat the Promise" campaign instituted by the RCA Manufacturing Company and an increasing number of others. In this connection films are also being used with outstanding effectiveness.

In the town of Canton, Ohio, where the Timken Roller Bearing Company is *the* town's big industry, short news-reel type "minute movies" are regularly shown in the motion picture theatres. The scenes of war action are followed by a challenge to Timken workers, striving together for the common victory. The pictures are played in local theatres.

Morale is a matter of education. The informed worker will understand the urgency of his task and bringing that information is the primary ingredient of any employee relations drive. The machinery for labor-management cooperation, already in operation in over 700 war plants, consists of committees of workmen and managers who are getting together on War Production Drives. Within these committees, not only the problems of labor and management relations are being discussed but also the general problems of worker morale, safety, thrift, etc.

The Spirit of Cooperation

In the words of Mr. William L. Batt, director of materials for the War Production Board, "Joint management-labor committees are being set up all over the country to get behind Donald Nelson's Production Drive . . . that is proof that there are people (Turn to Next Page)



WELDERS AT WORK ON A HUGE MOTOR FRAME in an Eastern G. E. Plant. This scene is from General Electric Motion pictures "The Inside of Arc Welding."

General Electric Films Arc Welding

♦ SIX one reel, all color sound motion pictures designed to help speed war efforts through the faster and better training of welding operators are now under way for the General Electric Company, according to an announcement by C. L. MacGuffie, manager of G-E arc welding sales. Titled *The Inside of Arc Welding*, the films are being produced by the Raphael G. Wolff Studios, Hollywood, who have evolved a new technique for picturing this difficult subject in a dramatized and highly interesting manner.

First Picture Is Completed

The first picture in the series titled, *Fundamentals*, was recently completed at the Wolff studios in Hollywood. Five additional subjects, all in 16mm color, are now in final script, and it is planned to complete the series by June. Subjects to be covered in the training productions are *Flat Arc Welding*, *Horizontal Arc Welding*, *Flat and Horizontal Arc Welding*, *Vertical Arc Welding* and *Overhead Arc Welding*.

The series, *Inside of Arc Welding*, will furnish a well-rounded comprehensive visual instruction course, illustrating in detail each step of the welding process with charts and diagrams as well as actual photographic action.

Wolff and his staff started shooting technical sequences for the remaining pictures the week of March 23rd at General Electric's Schenectady plant. The schedule calls for three weeks' shooting at the plant, with the productions to be completed in Hollywood.

When completed the pictures will be made available to public, private, and industrial welding schools, as well as to other interested groups. The first of the pictures covers the fundamentals of arc welding. It is scheduled for general release about April 20.

Other Films About June 1

The other pictures will be available about June 1, and will deal with technique of arc control and electrode manipulation for all welding positions, using both direct and alternating current equipment.

Because they will show for the first time just what actually goes on inside the arc, the *Inside Arc Welding* pictures will be of great interest to the expert welder as well as the beginner. Through the application of new methods of lighting, the all-color pictures will show the electric arc in operation, revealing details of the arc and crater impossible to photograph previously.

Animation and Action Help

Ingenious animated cartoons and actual welding shots will be combined to add punch to the treatment of the subject. Featured in the cartoons will be "Joe Magee, the Welder", a timid, but likeable character created by Hollywood, especially for the job.

Information as how to obtain the pictures will be supplied by the Visual Instruction Section, Publicity Department, General Electric Company, Schenectady, N. Y., or the nearest General Electric office or arc welding distributor.

(CONTINUED FROM PREVIOUS PAGE)

a growing number of people who are done with bickering; people who have put aside their individual differences; people who understand that we have only one job and that is a job that will take every ounce of our strength; people who have vision enough to see that once we put our minds and hearts and hands to it, there is practically nothing we cannot do; people who have nerve to start out with the odds against them and take on and then lick the biggest, roughest, toughest gang of muscle men ever assembled in one mob.

"With this spirit we can work as we never thought we could work before."

♦ That the need for planned programs to inform the worker is growing is evidenced in many lines of press and public comment. It is not lack of patriotism but downright ignorance and confusion in labor-management policies that result in slow downs and lay offs. It has often been said and rightly that nothing united this nation like the blow at Pearl Harbor, but we cannot wait for the Axis to toss a few bombs on our target areas to improve employe morale.

What our workers need is information. Facts about this complex international war, the background of Axis vs. United Nation's beliefs, military and naval strategy and the importance of the weapons we must produce in abundance. More than anything else, they should feel the horror of war, the price men in uniform must pay for a failure on the home front and the full realization of the tragedy of defeat. Living witnesses of Axis terror in Occupied Europe testify in newsreels, the full action of war is brought to the theatre screen—why not to the industrial plant for worker showings?

Proof that such methods really work was given the editor of BUSINESS SCREEN by Thomas Baird, Director of Non-Theatrical Films in England for the British Ministry of Information. Many worthwhile things have been accomplished by this group but none so interesting as the showing of factual films on England at war which are held for women workers on the night shift. At a post-midnight recess period, when interest and physical ability are at low ebb, these workers are shown realistic films of the war and their part in it. The results are said to be most encouraging in this as in many similar activities which the British are using the length and breadth of that bastion of freedom.

In America we have many similar opportunities. As pointed out before, plant facilities such as public address systems, employee club rooms, cafeterias and projection rooms can be used with telling effect to bring the ingredients of information and inspiration to our war workers.

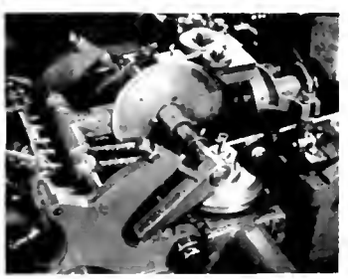
Only then the confusion and misunderstanding which are allies of the enemy will be driven from our lines of production.

Lines for a Bulletin Board

The battery's out of ammunition,
If any mourn us at the shop, Say
"We died because the shift
kept holiday."

—Kipling, 1918.

THE NEW FULLER BRUSH COMPANY sound motion picture depicts the role of the noted brush manufacturer in the war effort. Shown below are various scenes typical of this war activity film produced for Fuller by Castle Films, Inc.



Mobilize Visual Aids for War Service!

★ The urgent need for competent, experienced visual aids volunteers to assist in the showing of Government-sponsored film programs in their local communities, to help vocational school people and industrial training workers in setting up visual aids programs and for many similar services has brought forth this first organized plan of recruiting such workers for war services!

Registration Is Nationwide

To the visual leaders in schools and industry throughout America, the readers of Business Screen and to all other individuals owning sound motion picture or slidefilm projection equipment, this Volunteer War Service Registration Form is being sent. Registration forms will be tabulated and the information forwarded to the proper agencies and to local organizations requiring the services of those who can serve this worthy cause.

You can do your part in helping win this war by putting your experience and equipment at the disposal of those who vitally need the benefits of visual education. Extensive government film program plans will provide films of all kinds but lack of experience and equipment among potential users is the present serious bottleneck.

Volunteers Are Needed

The visual aids worker, in either schools or industry, is asked only to serve on a voluntary basis a few hours each week at most. School workers available for afternoon or evening duty and commercial and industrial Volunteers with a free evening period during the week can be of the greatest help in solving this critical problem. Those who have projection equipment should note the fact. In the event of special duty, compensation may be arranged according to local budgets and needs.

Regular professional projection services are being registered separately. It is realized that these commercial organizations and their complete showing facilities can be of the greatest possible help, particularly in so called "target areas" where visual teaching programs for civilian defense and first aid, etc. are now being actively carried on. In no case will the services of Volunteer workers be sufficient to meet the vast training needs which this country faces during the next six months. If visual education is to succeed in this great demonstration of its possibilities, every potential worker and available unit of equipment must be employed on daily and evening schedule.

War Plants Need Help

Industrial training classes, both in defense training schools and on the war production line in industry, are just beginning to use such programs as those provided by the U. S. Office of Education. Lack of adequate projection equipment and particularly lack of knowledge of the principles of visual education is a real problem in such plants. Visual educators in nearby schools should be ready to assist in this emergency.

With the summer vacation season at hand, school workers may be available for full time duty. If that is the case, attach a letter of explanation to your Registration Form and explain your case in detail. Wherever possible such individuals will be put in contact with the proper authorities for possible full time service throughout the summer season.

Projectors Are Needed

If personal services are not available because of other committments, registrants are asked to give data concerning available projector equipment, either for use by an experienced operator from one of the local school systems or for rental or purchase. If you have additional equipment available for sale or rental please give details, model and year, etc.

Volunteer workers can thus help mobilize the physical resources of visual equipment throughout the United States. The breaking of this bottleneck to the success of vital Government and industrial training programs is of the greatest significance to the war effort. No expense will be spared to secure the registration of every potential worker.

Slidefilm equipment will also be in demand as soon as contemplated Government programs in that field mature. Special civilian defense and first aid strips are already being developed by commercial production groups as well and these will greatly assist training classes unable to secure the more complex type of projection apparatus.

Serve your country and your profession - register now for Volunteer War Service!

CUT OUT AND MAIL THIS VOLUNTEER REGISTRATION FORM TO THE EDITOR, BUSINESS SCREEN, 20 N. WACKER, CHICAGO, ILL.

VOLUNTEER WAR SERVICE REGISTRATION OF VISUAL AIDS

I pledge my willingness to serve wherever my experience and training in the use of visual aids can best be used in the service of my country: (NAME) .....

(ADDRESS) ..... (CITY) .....

(EXPERIENCE & POSITION) ..... (SCHOOL OR COMPANY) .....

I can devote ..... hour(s) daily for the following typical war service assignments:

CIVILIAN DEFENSE FILMS ☐ WAR PRODUCTION TRAINING ☐ FIRST AID SHOWINGS ☐ (Put X in Space)

Hours at which I will be available for these volunteer service activities: 1 2 3 4 5 6 7 8 9 P. M. (Circle)

Days on which I will be available: Mon., Tues., Wed., Thurs., Fri., Sat., (Circle one or more)

Special Projection Equipment Mobilization

Own Projector:..... Motion Picture or Filmstrip:.. Sound or Silent:.. .

Can Use (School) (Industrial) (Dealer) Projector:..... Model: .....

Other equipment available: public address; sound truck; microphone, etc. (Circle one or more)

CUT OUT AND MAIL AT ONCE TO WAR SERVICE REGISTRATION, BUSINESS SCREEN, 20 N. WACKER, CHICAGO, ILL.

Victory Must Be Ours!

★ The bumbling, reminescent point of view that has distinguished the thinking and writings of those who set up to reflect the progress of Visual Education during the past decade has suffered greviously since December seventh. It might better have been laid to a well-earned and eternal rest. The spark of life which persists must be extinguished for the duration to make room for sound, realistic policies of survival . . . and of a glorious, justly-earned future.

For Visual Education has got to put its theories and prejudices into mothballs, together with the useless memory-book meanderings in the lore of its pioneers and promoters. It has no claim on the future unless it helps this nation win the war now! So far it has remained for a hardworking but pitifully small group in Washington to carry the torch, backed up by the efforts of some producers, distributors and equipment manufacturers. But what about the visual educator?

What is going on in our vocational schools and industrial plants, in the training camps and bases of the Army, Navy and the Marine and Air Corps is of vital significance to the future of Visual Education. This training activity and that which is being carried on in the interests of an efficient Civilian Defense, first aid, nutrition and other citizen education for similiar war activities, is the sole and sufficient reason for continued supply of materials for equipment. Visual Education asks no other. Though the actual amount of projectors available in our schools and industry is shockingly small by comparison with Russia, Britain and Germany; it need not be increased now for any purposes excepting those concerned with the winning of this war. Meanwhile, are you, as a visual educator, *helping* win the Victory?

In this land there are tremendous war-time training tasks ahead. We have not half-begun the job of mobilizing our priority-unemployed millions for war production tasks; we are a confused and perplexed mass as yet unprepared for attack from the air; we lack, in our shipyards and factories, the zeal and enthusiastic hatred of those who have seen and understood the true meaning of an enslaved, Axis-dominated world.

These are the goals, henceforth, of Visual Education. They are goals which will not be attained until every individual and every projector is mobilized for the attack. We preached this to you for a year before Pearl Harbor. That our words are being heard and applauded by willing and earnest workers is not enough. Yours are the *deeds* that will prove your devotion to this medium. Yours is the *awakening* to action that will put to use the weapons that have been forged for us in Washington. Upon you, the destiny of Visual Education and the part which it must play in the winning of this war has been fairly thrust.

What will you do? When will you act?

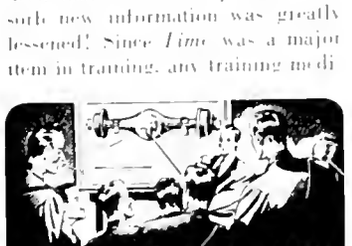
—O. H. C.

WHY THE ARMY USES FILMS

★ The remarkable still photographs and motion pictures taken by the Signal Corps during the first World War are still the best means of understanding what the Army looked like at that time. The fact that the motion picture negatives are stored in the National Archives is comment enough on the value the Government places on those films. True, those films do not compare with sound motion pictures produced with the most modern equipment and techniques. Lacking sound, they fail to create the same illusion when projected. Recall, however, that these are historical records, many made under battle field conditions and taken without "cue sheets, scenario or plan", before comparing them with modern newsreels or motion picture productions.

Army Has Kept Pace

Over twenty years have passed since the Signal Corps produced those unusual silent motion pictures. During this time it has kept pace with every phase of motion picture development. In addition, it has invented new techniques of its own in order to solve many problems related to the use of motion pictures for the Army. It is not surprising therefore, that when the National Defense program began, the division of the General Staff charged with Operations and Training directed the Signal Corps to start work on a comprehensive film program requiring the use of motion pictures. This time they were to be for training of troops, instead of recording what the troops did in battle. In the period since the first World War, educators had discovered that visual aids to training had tremendous effectiveness as teaching aids. Not only did their use better illustrate textbook and ordinary instruction, but it was noticed that the time required to absorb new information was greatly lessened! Since *Time* was a major item in training, any training medium which could reduce the length of the required training period was of immense significance. This was a new application of motion pictures for which the Signal Corps was ready. In fact it had been producing similar training film on a modest scale for ten years previously. The General Staff directive was thus merely an extension of its regular activities.



Expansion Raises Problem

The expansion of an army of about 130,000 to one of a million and a half men required a tremendous training program. While the press has published full accounts of the building, equipping and manufacture of items required for the Army, little has been said about the materials needed for training. Millions of textbooks, many entirely new! Thousands of instructors, many of whom have never taught before! From a practical standpoint it was as if over a million men had been suddenly ordered to school, where they would find buildings in the process of construction, text books just off the press, instructors often new to the business, and a different method of living to be learned, in addition. This last item was one of major importance. Students have to become acclimated before they are mentally in shape to learn. All this took *Time*, and time was at a premium.

Complex War Methods

The conduct of wars is based on experience with previous conflicts. The second World War, from the Nazi standpoint, has been conducted with the aim of eliminating the errors of the first. The "mechanics" differ due to the advance of science in the fields of industrial activity. The highly mechanized warfare employing tanks, dive bombers and complex ordnance is not new in its basic form. Neither is the use of psychological "terror" producing activities. What is new, is the extent and degree to which they are employed. It is this that requires a high quality of skill on the part of troops. While the production of new weapons is a critical item, the adequate training of the using and maintaining personnel is equally important. It may be even more so! Excellent tools do not guarantee skill on the part of the craftsman, they are merely essential to job performance. It is the use of the tools which reflects the degree of craft skill! Thus the Signal Corps found itself intrusted with a program of producing technical training film for the instruction of a

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FILMS THAT SERVE AMERICA

"MACHINE SHOP WORK & SHIPBUILDING SKILLS"—50 reels of training pictures produced by the U. S. Office of Education

◆ A truly outstanding contribution to visual education and to the successful prosecution of the war on the Home Front are the 50 films on *Machine Shop Work* and *Shipbuilding Skills* produced by the United States Office of Education.

Production was handled by the following: The *Engine Lathe* series (5) and five films on *Shipbuilding* were produced by THE JAM HANDY ORGANIZATION, the *Milling Machine* series (5) and five additional films on *Shipbuilding* were produced by CARAVEL FILMS, INC.; the *Vertical* [illegible] series [illegible] [illegible] [illegible] [illegible] [illegible] series [illegible] STUDIOS, INC.

THE TECHNICAL PRODUCTION skill of a number of the country's foremost industrial film producers contributed to the screen excellence of the Machine Shop Work & Shipbuilding films.

"HIDDEN HUNGER"—a motion picture on nutrition, produced by the Federal Security Agency, released for theatrical showing.

◆ A new educational program to build a strong nation by teaching Mr. and Mrs. America how to win the war on the food front is in full swing under the aegis of the Federal Security Agency. As part of its National Nutrition Program the Office of Defense Health and Welfare Services initiated the educational campaign to teach every man, woman and child in the country the proper use and conservation of our supply of food products.

One of the dramatic ways in which this project is being carried to the American public is through the motion picture, *Hidden Hunger*, starring Walter Brennan, now being released directly to motion picture houses of the nation by the Federal Security Agency. 16 mm distribution plans are expected to be announced shortly.

Hidden Hunger tries [illegible] [illegible] [illegible] and understand at a glance the newer knowledge of nutrition. It points up waste of food through improper cooking and waste of money through improper buying.

Each of the protective foods is given its proper share of attention according to the scientific standards established by nutritionists of the Office of Defense Health and Welfare Services.

The film's lively, amusing plot concerns Farmer Link Squires' (Walter Brennan) exciting adventures during his one month crusade to get people to stop extravagant

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THE WHISTLE came from the Little Man, played in Hidden Hunger by Lloyd Corrigan, veteran Hollywood actor, writer and director. He is shown here as he identifies himself to Link Squires as the walking delegate of the [illegible] League of America.

"DEMOCRACY IN ACTION"—a new Department of Agriculture film tells the vital role of food in the fight for world freedom

◆ *Democracy in Action* is the latest of a series of documentary films produced by the United States Department of Agriculture to report on agriculture's assignment in war production. Other films in the series previously released include *Plows, Planes and Peace* and *Farm Front*.

Tom Hogan directed and photographed *Democracy in Action* for the Agricultural Adjustment Agency. Duncan Wall, assistant director of information, wrote the narrative, and Jack Shilkret did the musical score.

As the title indicates, *Democracy in Action* portrays the action on the battle line of farm production. It tells how the Nation's farmers, blessed with the advantages of democratic heritage and a progressive farm program, are going [illegible] [illegible] to supply the foods and [illegible] needed by the United Nations.

The scenes and commentary indicate the magnitude of this

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THIS SCENE OF CHEESE being loaded on a British-bound ship is identified as a part of agriculture's great war contribution in the new documentary, Democracy in Action.

Help Get Them Used!

Visual Leaders Address Midwestern Forum

WAR TOPICS DOMINATE 4th ANNUAL SESSION ON VISUAL TEACHING

★

See Also Page 20

FORUM CHAIRMAN WILLIAM C. REAVIS, of the University of Chicago, opens the general evening session. Dr. Reavis keynoted the Fourth Annual Forum in pointing out the change in emphasis on techniques and school problems to the problems which have arisen out of the war emergency. He also briefly sketched the history and purposes of the Midwestern Forum.

REPRESENTING INTER-AMERICAN AFFAIRS in his capacity as Director of Production for the Co-Ordinator's Office in that activity was Mr. Kenneth Macgowan. Mr. Macgowan described the extensive production plans for films to improve understanding between the Americas, both for circulation in Latin America and through existing distribution agencies in this country. Films now in use, such as "Americans All" were briefly reviewed by the speaker.

THE PROBLEMS OF PRIORITIES were reported to the Forum by Harry E. Erickson, Educational Director of the Ampro Corporation, who pointed out the equipment maker's primary responsibilities to the war effort and to those agencies and users directly contributing to war production and training.

FLOYDE E. BROOKER, Senior Specialist in Visual Aids, United States Office of Education, discussed the relation of visual education to the total war effort. Pointing out the growing material needs of the visual education field, Mr. Brooker called for justification of these needs by active dedication of audio-visual techniques and teachers to the problems of war training.

THE ROLE OF FILMS IN WARTIME was described in the talk by William F. Kruse, head of Film Division of Bell & Howell. Pointing out the extensive subject matter already available in film libraries, Mr. Kruse told of the many applications of visual materials in the war effort. As an example of how the visual educator may serve he described his own civilian defense work.

C. R. REAGAN, head of the National Association of Visual Education Dealers and a devoted servant of visual instruction, also discussed the need for equipment in the training and informational fields. Representing the problems of dealers, Mr. Reagan presented their case ably.

★ A NOTE OF CHALLENGE was added to educators present at the Fourth Annual Midwestern Forum on Visual Teaching Aids held in Chicago on March 26-28. The challenge was given by consecutive speakers at the opening session by two representatives of Government agencies, Kenneth F. Macgowan of the Office of the Coordinator of Inter-American Affairs, and Floyde E. Brooker of the United States Office of Education. Both recommended visual educators to do their part in aiding Government.

Mr. Macgowan pointed out the need for educator's suggestions and ideas regarding school programs now in production. The right to materials vital to the war effort must be based on the use of these materials in the winning of the war, Brooker declared. In the training of workers and similar tasks justification may be found. The challenge was later echoed in a resolution submitted by the editor of BUSINESS SCREEN and adopted in part by the Executive Committee. The resolution proposed the mobilization of visual educators to assist in defense training.

A SPECIAL SECTION ON VISUAL METHODS IN

TRAINING FOR WAR PRODUCTION

(Right: A U. S. Army technicians' class sees a slidefilm lesson)

Technical Training for War Industry

By J. I. Yellott, Chairman, Defense Training Committee, Illinois Institute of Technology

★ PRODUCTION ALONE WILL NOT WIN this war but lack of production can certainly lose it. America, the proverbial land of plenty, is suddenly faced with a shortage of men, minutes, machines, and materials: these four factors, plus money, result in production, but only when intelligent management brings them together at the right time and place.

Today, when industry must produce more than ever before, the imperative demands of the armed services are resulting in a shifting of working forces. Young able-bodied men, who normally populate our factories, must be taken into combat service: a ten-million man army and navy program, the goal in 1943, will take virtually every man who is fit to fight. Despite this, industry must operate and *essential* civilian services must continue to function. It is evident that new resources of labor must be found, and it is equally evident that training on all levels and in unprecedented volume is necessary.

THREE-FOLD TRAINING PROGRAM

The training problem was foreseen as early as 1940, and three programs were inaugurated. The first of these was Training Within Industry, a branch of the labor division of the Office of Production Management, which has been continued in OPM's successor, the War Production Board. TWI is doing a magnificent job in showing industry how to train its new workers on the job, how to upgrade experienced workers, and how to de-skill difficult operations so that inexperienced workers can perform them. Currently, through a program of "Job Instructor Training," TWI is reaching half of the supervisory personnel of American industry by means of five-session, 10-hour courses, in which men on the job are taught the four-step method of teaching a job. The JIT program is undoubtedly the most effective mass instruction program which has yet been devised.

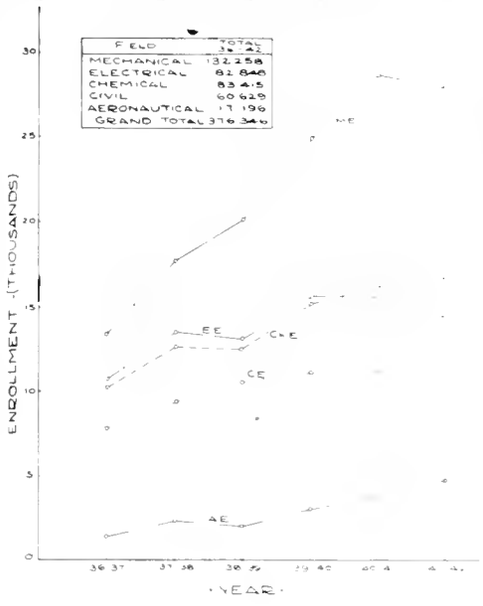
Vocational training, the second part of the national training program, is one of the activities of the U. S. Office of Education and is carried on by the local schools with funds made available from the Federal treasury through the state Boards for Vocational Education. By this program, hundreds of thousands of machine operators have been trained, and vocational schools are being kept busy 24 hours per day. The JIT program, mentioned above, is also financed through the state Board for Vocational Education, and is administered jointly by them and the Training Within Industry district offices.

ENGINEERING PROGRAM IN COLLEGES

The third training program, and the one to which this discussion is devoted, is the college level training system, designated as Engineering, Science, and Management Defense Training. Organized in the summer of 1940 with a budget of seven million dollars, this program was originally intended to provide "short, intensive college level training in fields essential to the national defense". The necessity for such a program was evident to far-sighted engineering executives, and the statistics presented here will demonstrate this. The normal enrollments of our engineering colleges are based upon ordinary industrial demands. In normal times, also, all engineering graduates are absorbed by industry, mostly for direct service in a technical capacity, although some are employed in related fields where their technical training is desirable but not essential. In this war, which is primarily a technological struggle, the demand for technically trained individuals has surpassed all previous expectations.

Figure 1 shows the total enrollment in the five major branches of engineering since 1936.

Figure 1: Engineering Course Enrollment



These figures include all four under graduate classes as well as the small group of graduate students in these fields. The continued growth in engineering enrollments is evident, and it is indeed fortunate that this growth took place. The decline in enrollment in the current academic year is alarming, because in the next few years we will need far more men with technical training, and, unless this trend is reversed, we will have a smaller number of such men. The total number of students who have been registered in these branches of engineering in the last six years, is less than 100,000.

ACADEMIC MORTALITY IS HEAVY

Unfortunately, it has been traditional that one of the principal responsibilities of the engineering faculty is to remove through academic processes about one-half of the potential engineers. (This fact is shown by Figure 2 which presents the enrollment for 1941-42, by classes, in mechanical, electrical, and aeronautical engineering.) Normally, we should have registered more than 90000 freshman mechanical engineers and more than 1000 freshman electrical engineers. The uncertainties which perplexed the typical high school graduate in September, 1941, and the fact that jobs were available at good wages for these graduates, combined to reduce the freshman classes in these two subjects by at least 3000 students. As Figure 2 indicates, it is customary to lose almost 25% of the freshman class, and to lose similar numbers as the classes progress through their senior and junior years. Consequently in 1942, we may expect some 4,500 men to graduate in mechanical engineering, less than 3000 in electrical and less than 1000 in aeronautical. At the present time, the navy could use all of these men, except for the fact that the majority cannot pass their rigid physical examinations. The army, through the air corps, the signal corps, and ordnance could also use them all. Private industry has been endeavoring to recruit them since December, but the increasing stringency of the Selective Service System will result in most of the 1942 classes finding themselves in the armed service.

The shortage in graduate engineers is serious, but far more serious is the truly alarming shortage in post-graduate students. As candidates for the master's degree in mechanical, electrical, and aeronautical, we have, in all, less than 2000 men.

(CONTINUED ON NEXT PAGE, COL. 1)

As candidates for the doctorate in these fields, we have only a few hundred. Thus, the supply of men who are able to understand advanced technical problems, or who will be competent to teach in these fields, is reduced to a mere handful. The outlook for graduate students in 1942-43 is far more discouraging since there is no assurance that such students will be able to obtain deferment. Most draft boards feel that four years of engineering college is adequate and they cannot realize that additional study is imperative if one is to master the complexities of vibrations, aerodynamics, or electronics.

Industrial Need Is Great

The academic situation has been presented above. The industrial picture is less easy to obtain, and one can only estimate the number of technicians which will be necessary for war industry. One of the great automobile manufacturers, in full page advertisements, has stated that 135,263 factory workers are being used by them on war work, with their work supervised and directed by "35,000 engineers, process men, tool designers, supervisors, factory clerks, accountants, and managers". Thus the ratio of supervisory personnel is almost 1 to 4. This ratio is probably not typical of all war industry, since this particular manufacturer is engaged in re tooling and manufacturing the most complex devices which are used in this war, such as aircraft engines, machine guns, and fire control equipment.

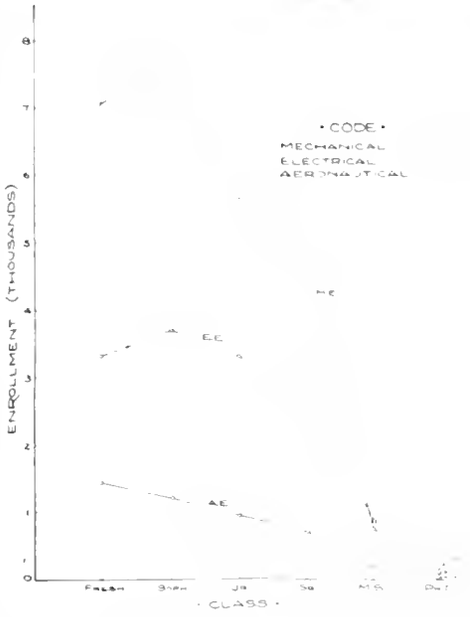
It is estimated that war industry will require 15 million workers by 1943. If the ratio established above were in effect, one might expect 3½ million of these workers to be in supervisory, clerical or technical capacities. Taking the most usual estimate that one technician is needed for each 10 factory workers, we would estimate that 1½ million individuals would be needed. The total need will probably lie between these two figures, but in any case it will be far in excess of the normal capacity of the engineering and technical institutions. Just as vocational education has been streamlined and directed toward the producing of workers with single skills, so must technical training be directed towards the producing of individuals who can perform one task expertly, but who must also have a knowledge, ranging from slight to great, of related subjects.

Training on Broad Basis

The trend in engineering education recently has been towards broadness, and it has been assumed that, because we do not know where our students are going, we must prepare them for any type of work in their chosen field. It has also been customary for industry to give their own training courses to cadet engineers, and some of them, notably the General Electric Test Course, have been almost the equivalent of formal graduate study.

This situation is now changed, and we know that, during the next few years, our graduates are going into war industry. The electrical engineers will go into electronics, and most of them will find their way into the communications branch of the army, navy, or air force. RADAR work needs all the electronic specialists who will graduate this year. Mechanical engineers will go into the production and utilization of ord[illegible], aircraft, combat devices, and ships. Aeronautical engineers will go into the production of the vast armada of bombers, fighters, and trainers. The general industrial training course is invariably going to be replaced by immediate work on urgent problems, since Selective Service boards are unlikely to grant deferment for prospective sales engineers.

Figure 2: Enrollment by Classes—1941-42



600,000 Receive Technical Training

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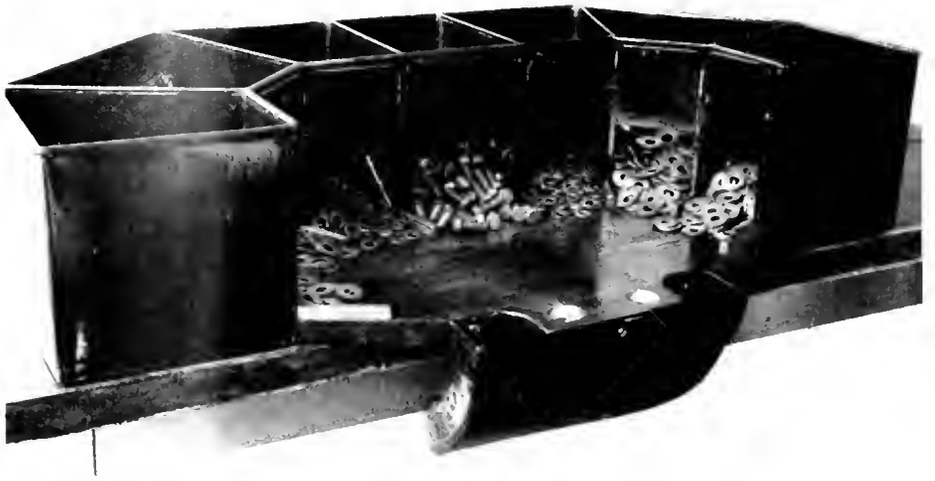
In addition to these part-time, in-service courses, which are designed to upgrade individuals who are already employed in a technical capacity, a large number of pre-employment courses have been given. As an example, in Chicago, during the summer of 1941, more than 1000 young men were trained for work in the airplane engine factories, by courses in inspection and in airplane engine testing. All of those trainees were taken from non-technical pursuits and all but a few are now working in a technical capacity in war industry. These courses, typical of all ESMDT courses, were tuition-free and the trainees had to supply only their text books and their work. The actual costs of the course were paid by the Federal government.

Ordnance Inspection Ranks High

One of the most important of these full-time courses is that devoted to Ordnance Inspectors. In this program, young men who have had one year of any branch of engineering or at least two years of any other kind of college, with six hours of physics or chemistry and mathematics through trigonometry, are appointed through Civil Service by their local Ordnance Districts as "Junior Inspector-Trainees." They are paid $120 per month during the 12 week, full-time period, and are promoted to the rank of "Junior Inspector" at $1620 per year when they complete the course. This course was organized as a result of conferences between the office of the Chief of Ordnance, the Office of Education, and the Engineering colleges. In it, the trainees receive 10 hours per week of instruction in such subjects as mathematics, ordnance materials, elements of metallurgy, production processes, and inspection theory and practices. (Please Turn to Page 32)



IMPROVED ARRANGEMENTS OF BINS FOR THE ASSEMBLY of bolt and three washers. Duplicate bins are located close in and around the fixture. Two countersunk holes in the front edge of the table serve as a fixture to aid the assembly operation. Material chute around the fixture permits the finished assemblies to be dropped down into a tote box under the table. (See article on opposite page)

MOTION STUDY IN WARTIME

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★ American Industry now as never before must exert every effort to increase production of war materials and of consumer goods. In the process of stepping up manufacturing activities it is becoming apparent that we shall soon be confronted with a serious labor shortage. Even with the employment of older men, women, and children we shall still not have sufficient manpower available unless we can increase the productivity of our working force.

Motion and time study principles and techniques serve as one means of increasing labor effectiveness without speeding up or overworking the individual. It is the main purpose of motion study to make manual tasks easier and less fatiguing by eliminating unnecessary and tiresome motions and by arranging the necessary motions of an operation in the best and simplest manner.

Motion Study Speeds Production

For example, if it requires twenty hand motions to make a particular part, and if a simpler method can be found which will eliminate five of these motions, it is obvious that four parts can be made with the same number of motions as formerly was required to make three parts.

Although motion economy principles are being successfully applied in many offices and factories today, there is still need for their wider use. That the need is being recognized is evident by the thousands of people now enrolled in courses in motion and time study in this country. Many plants are holding their own courses or conferences, colleges and universities are offering work in this field, and the U. S. Office of Education, through their program of Engineering, Science and Management Defense Training sponsored by more than 150 engineering and commerce colleges, are offering courses entirely devoted to motion and time study and other courses in Production Engineering and Production Supervision partly devoted to this subject.

Motion pictures serve a useful purpose as an aid in teaching motion and time study principles. In fact, there are some phases of this subject that cannot be given in a satisfactory manner without the use of motion pictures.

Some years ago we began building a film library for use in our own courses in Industrial Engineering and Management at the University. Gradually the demand for the loan of our films became so great that the University Department of Visual Instruction included copies of our Motion and Time Study Films in their library, thus making them generally available for loan.

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In order to explain better the scope of motion study I am going to present some of the most common principles of motion economy and motion economy may be enumerated as follows:

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4. Definite and fixed stations should be provided for all tools and materials.
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Bolt and Washer Assembly

♦ The simple operation of assembling three washers onto a bolt illustrates how the first six principles of motion economy listed above may be applied. (*See illustrations pages* 18, 19, 31.)

Parts Used. A manufacturing concern uses eight bolts $\frac{3}{8}$ inch x 1 inch fitted with three washers each in the final assembly of one of its productions. (*See illustrations.*)

Old Method.- The bolt and washer assembly was originally made in the following manner. Containers with the bolts, lock washers, steel washers, and rubber washers were arranged on the top of the bench as shown in Fig. 1. The operator reached over to the container of bolts with her left hand. She picked up a bolt with her left hand and brought it up to position in front of her. Then with the right hand she in turn picked up a lock washer from the container on the bench and placed it on the bolt, then a plain steel washer, and then a rubber

(Please Turn to Page Thirty-Four)

* *For a complete discussion of principles of motion economy see "Motion and Time Study" by*

As candidates for the doctorate in these fields, we have only a few hundred. Thus, the supply of men who are able to understand advanced technical problems, or who will be competent to teach in these fields, is reduced to a mere handful. The outlook for graduate students in 1942-43 is far more discouraging since there is no assurance that such students will be able to obtain deferment. Most draft boards feel that four years of engineering college is adequate and they cannot realize that additional study is imperative if one is to master the complexities of vibrations, aerodynamics, or electronics.

Industrial Need Is Great

The academic situation has been presented above. The industrial picture is less easy to obtain, and one can only estimate the number of technicians which will be necessary for war industry. One of the great automobile manufacturers, in full-page advertisements, has stated that 135,263 factory workers are being used by them on war work, with their work supervised and directed by "35,000 engineers, process men, tool designers, supervisors, factory clerks, accountants, and managers". Thus the ratio of supervisory personnel is almost 1 to 4. This ratio is probably not typical of all war industry, since this particular manufacturer is engaged in re tooling and manufacturing the most complex devices which are used in this war, such as aircraft engines, machine guns, and fire control equipment.

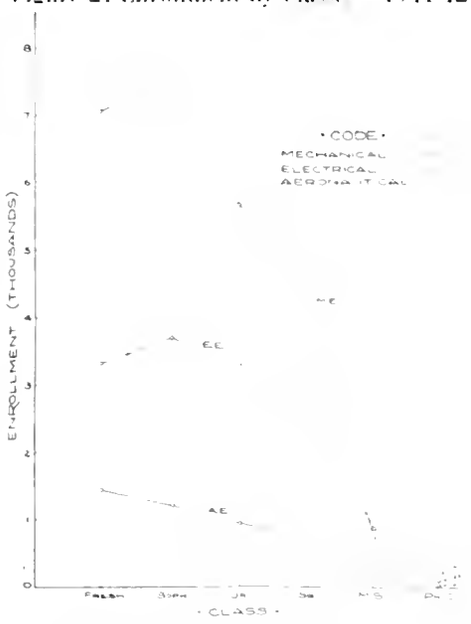
It is estimated that war industry will require 15 million workers by 1943. If the ratio established above were in effect, one might expect $3\frac{1}{2}$ million of these workers to be in supervisory, clerical or technical capacities. Taking the most usual estimate that one technician is needed for each 10 factory workers, we would estimate that $1\frac{1}{2}$ million individuals would be needed. The total need will probably lie between these two figures, but in any case it will be far in excess of the normal capacity of the engineering and technical institutions. Just as vocational education has been streamlined and directed toward the producing of workers with single skills, so must technical training be directed towards the producing of individuals who can perform one task expertly, but who must also have a knowledge, ranging from slight to great, of related subjects.

Training on Broad Basis

The trend in engineering education recently has been towards broadness, and it has been assumed that, because we do not know where our students are going, we must prepare them for any type of work in their chosen field. It has also been customary for industry to give their own training courses to cadet engineers, and some of them, notably the General Electric Test Course, have been almost the equivalent of formal graduate study.

This situation is now changed, and we know that, during the next few years, our graduates are going into war industry. The electrical engineers will go into electronics, and most of them will find their way into the communications branch of the army, navy, or air force. RADAR work needs all the electronic specialists who will graduate this year. Mechanical engineers will go into the production and utilization of ordnance, aircraft, combat devices, and ships. Aeronautical engineers will go into the production of the vast armada of bombers, fighters, and trainers. The general industrial training course is invariably going to be replaced by immediate work on urgent problems, since Selective Service boards are unlikely to grant deferment for prospective sales engineers.

Figure 2: Enrollment by Classes—1941-42



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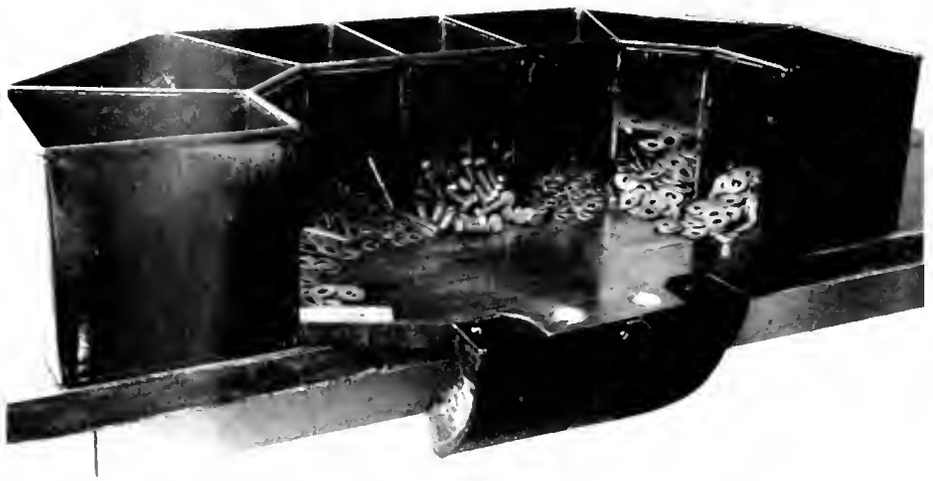

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o bottom) MOTION PICTURES WERE
ator performing the "Bolt and Washer
microchronometer in the picture. This
e in 1 2000ths of a minute—makes it pos-
time hand motions accurately. This is
study. Notice in this series of pictures
move together simultaneously, sliding the
the bins into the countersunk holes in the
th hands are working effectively.

TESTING RESULTS IN WAR TRAINING

New Test Method Proves Value of Visual Aids in Training — By James F. Engle

★THE IMPACT OF VISUAL education on the War Production training program has been tremendous. Because its field of use has been spread over a vast scene which includes technical school and college courses, industrial plants and the armed services, the total effect of the first thirty reels of sound motion pictures on machine shop operation and shipbuilding produced by the U. S. Office of Education can only be gauged by users' reports from the field.

Some indication of the effectiveness of this well-organized program was obtained in a series of tests conducted in the war training classes at Illinois Institute of Technology, one of the nation's outstanding contributors of engineering and management personnel, ordnance inspectors and other advanced production workers. Conducted in a purely experimental way and blazing the trail for similar undertakings which may follow in other centers, the tests were based on a unique testing procedure adapted for educational purposes by a well known visual aids producer.

OBSERVO METHODS USED

These tests were conducted in collaboration with Mr. Ralph M. Cronin, representative of Haig & Patterson, the producing organization, who furnished the controlled method of guidance and examination material called OBSERVO. The purpose was to demonstrate that a controlled method of guiding and examining trainees on the subject matter of films would increase their effectiveness. The tests also furnish the first hand accurate statistical measurements of the learner's improvement via visual aids.

TEACHING MATERIAL SCARCE

At present there is very little teaching material generally available for use with vocational training films. In addition many of the instructors, recruited from work at the bench and in the shop and unfamiliar with teaching techniques, are unable to bring home the important points contained in the films except by the most personal form of instruction. With the present need for training speed-up, this personal method is too slow. In addition many of the classes, such as those comprising the negroes in the South, foreign elements in our large industrial communities, as well as illiterate native workers, cannot take a written examination even though they will make capable workmen for the jobs that will be handed to them.

To cite a few tests: At a Chicago defense training school an ordnance training class of fifty girl students was divided into two groups of twenty-five each. This class consisted of students with a certain amount of college background and was high in intelligence. The first half of this group was shown the film *The Micrometer* which was followed by a regular class discussion period at which time all questions were asked. The girls were told that they would be given a written examination the following day and to study their texts. The second half of this group was told about the OBSERVO method, shown the same film, and then the OBSERVO plan of study guidance was used. This group was then also told that a written examination would be given the following day. Both groups were called together the following day and given a written examination. The results were that on the same written test covering only the subject matter in the film, which both had seen only once, the group using the OBSERVO method had a mean class average of 82% and a median of 81%. The other class, using the method where they were shown the picture plus a class discussion, scored a mean class average of 61.6% and a median of 68%.

At this same school a class in Naval Ordnance using this method OBSERVO scored 85% on a written examination on the same material.

CONDUCT OTHER TESTS

In another large Midwest industrial city where a class of workmen from non-defense plants were attending night school defense training classes, two classes of twenty each consisting of workmen of little schooling with almost the same mechanical aptitude, and in the same stage of knowledge concerning precision instruments, were used for a test. In the first case one class was shown the *Micrometer* film once, the instructor, a former shop foreman, discussed the film, and then it was run through again *without the sound* as the instructor explained the details which were important.

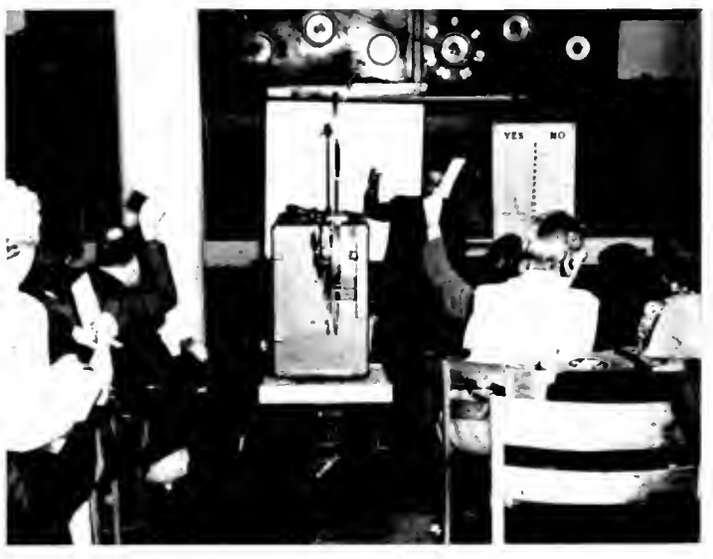
The second class was then called in and the OBSERVO technique was explained to them. They were then shown the film and given the test. Both classes were later given a written test.

The group which used the regular discussion method scored a mean class average of 37.9% and a median of 37%. The class using the new method scored a mean class average of 55.3% and a median of 53%. Here the inability of many of these men to write was expressed in their poorly written answers. They all agreed that such a control method of study guidance and examination enabled them to more easily grasp the subject.

SHORTEST TEST PERIOD

The third test was run at a large plant long famous for its excellent industrial training school. Here a faculty of sixteen full time instructors follow a tested and proved training procedure at all times. Using test classes of apprentices whose intelligence and aptitude had previously been determined for acceptance to the school the test took an hour and five minutes. Using the OBSERVO method covering the same ground the test took forty five minutes—a saving of twenty minutes.

The above are just a few examples of how progress can be made in getting proof of results: *How you* do it is not so important. The important thing is *when* you do it and that must be NOW.



12 INDUSTRIAL TRAINING PROGRAMS

Number Two of an exclusive Business Screen contribution to aid the War Production Drive. For sources of films reviewed on this page subscribe to the Industrial Index, care of Business Screen, Chicago. Details on request.

1. Cyclone Combustion

One reel, 900 feet, 16 mm. sound—About 30 minutes.

Source: Leading manufacturer of aviation engines.

Scope: A very thorough treatment of the theory of combustion in a four cycle gasoline engine of the aviation type. Animation, sound and photography are very good. The film also covers generally the manufacture of the engine, such as number of men, inspections, and tests necessary in the building of precision engines.

2. The Airscrew

Two reels, 16mm. sound.

Source: A commercially sponsored production.

Scope: An accurate account of the manufacture of all-metal propellors, from the raw materials to the finished product. Includes a concise explanation of the variable pitch theory. A very timely presentation of this important subject.

3. Precision At Work

Four reels, 16mm. silent—About 45 minutes.
Source: Sponsored production of lathe manufacture.
Scope: A film showing the operation of the precision lathe, and its construction. Emphasis is placed on the accuracy necessary to make the lathe the precision machine that it is. Accompanied by good explanatory notes on the care and operation of the lathe.

4. Forging An 81 M.M. Trench Mortar Shell

One reel, 16mm. silent, color.

Source: Commercially sponsored production.

Scope: An excellent step by step development of a shell from stock to the finished article on a series of standard forges. Excellent material for showing adaptability of machines.

5. A Modern Aladdin's Lamp

Two reels, 16mm. sound.
Source: Commercially sponsored production.
Scope: Development of the modern vacuum tube, how it is made, and pictures its many applications in everyday life with particular reference to its uses as a repeater tube in telephone circuits. An interesting animated sequence explains the theory of operation of a three-element tube so clearly that even a lay-minded audience will understand it. Scenes depict the delicacy, the care, and the precision of workmanship that goes into the making of these electronic bottles.

6. The Romance of Wire Rope

Four reels, 16mm. sound—About one hour.

Source: Commercially produced.

Scope: Pictures the drawing, heat treating and weaving of wire rope. Includes all the steps in detail in the production and fabrication of wire rope. An excellent portrayal of this important material.

7. Aerodynamics

Two reels, 16mm. sound—About thirty minutes.

Source: Sponsored by leading educational distributors.

Scope: 1. Theory of Flight: A wind tunnel demonstration of air velocity showing lift and drag on plain and cambered air-foils. Also the control of Airplane Movement by use of ailerons, elevators and rudders. 2. Problems of Flight: Demonstrates actual usage of controls in take-off, flight, simple maneuvers and landing.

8. Surface Chemistry

Four reels, 16mm. sound.
Source: Educational distributors.
Scope: A film graphically portraying and demonstrating Dr. Irving Langmuir's experiments on Surface Chemistry which won him the Nobel Prize. Shows and demonstrates apparatus for studying surface films of oil, and explains research studies on the camphor boat, egg albumen, molecular measurements, and polarized light studies. Especially valuable for chemical and industry laboratory research.

9. There's a Job To Be Done

Two reels, 16mm. sound—About thirty minutes.

Source: Leading steel manufacturer.

Scope: A timely, fast moving motion picture showing the manufacture of alloy steels, in stressing its importance in today's defense effort.

10. Unseen Worlds

One reel, 16mm. sound.

Source: Educational distributors.

Scope: The story of the electron miscroscope showing the elementary theory of its operation, and the vast realm opened for miscroscopic exploration now made possible with this instrument.

11. Precisely So

Two reels, 16 mm. sound—About thirty minutes.

Source: Produced and distributed by leading manufacturer.

Scope: An entertaining, forceful picture of the precision of modern industry. A brief story of the growth of precision is followed by the modern ultimate in accuracy. Calipers, verniers, stop-go gauges, radius gauges, plugs, etc., are shown in use.

12. Arteries of Industry

Five reels, 16mm. silent.
Source: Leading manufacturer.
Scope: 1. Mining of Ore—blast furnace operation—Bessemer converter process of making steel. 2. Open hearth process of making steel—blooming and rolling mill operation. 3. Butt-weld process of making pipe—galvanizing pipe. 4. Lap-weld process of making pipe and tubes. 5. Seamless process of making pipe. Recommended for classes in Metallurgy and Production Processing.

(CONTINUED FROM PAGE 14)

waste of our abundant supply of foodstuffs in this land where "we grow the greatest harvest in the world." Now that we are at war, we can afford less than ever to misuse our food supplies. Every ounce of energy they produce is needed by every American for the greatest efficiency in our wartime effort.

EAT THE RIGHT KIND OF FOODS

Link doesn't ask people to "go on any new fangled diet or cook in any new fangled way." He preaches vegetables and meat, the right kind of bread, milk, eggs, fruits, sea foods, dairy products, whole grain cereals the foods Americans have always eaten. But he points out dramatically the importance of a properly balanced diet. If the American people will buy and cook well balanced meals so that they get all of the 10 different elements the body needs, "they will get themselves an equal chance for health, the way they've got themselves an equal chance to vote." And the two out of every five persons in this country now suffering from "hidden hunger" (not the hunger coming from an empty stomach, but the hunger in a body that's fed the wrong kind of food), will be brought back to health and efficiency.

Link lists the minimum essential foods a man should eat every day to retain the bloom of health: one egg, one pint of milk (three fourths to one quart for growing children), two vegetables (green, leafy or yellow) and a potato, an orange or tomato juice, and another fruit, three or more slices of the right kind of bread (whole wheat or enriched white), two tablespoonfuls of butter or margarine, and meat.

Buy carefully in the markets, he counsels Mrs. Housewife. See that your own children get the milk that you produce, he adjures the farmer who often feeds his cattle better than his growing children, giving the former all the needed high quality roughage and concentrates, then shipping all the milk off to market.

Don't put soda in your peas to make them green, he expounds further to Mrs. Housewife. That kills the vitamins. And don't cook vegetables too long or in too much water for the same reason. Don't think its necessary to buy a Delmonico steak; a thrifty cut of meat is just as nourishing, and can be made to look and taste just as good.

Hidden Hunger further advises that a man can get the 12 milligrams of iron he needs daily from fruit and meat and vegetables; that the calcium and phosphorus he needs for strong bones and sound teeth are contained in milk and dairy products; that fruits and vegetables help fight off eye disease, build up the epithelial tissues of the body, help resist cold infections and other diseases. Indeed, he may live the middle years of his life twice over, if he learns to eat right for correct diet lengthens the most productive part of the entire life, middle age.

FILMS THAT SERVE AMERICA

RESULT OF NATIONAL CONFERENCE

Hidden Hunger is one of the results of the National Nutrition Conference called by President Roosevelt in May, 1941. The Conference, held under the joint sponsorship of Federal Security Administrator Paul V. McNutt and the National Nutrition Advisory Committee, was attended by 1,000 representatives of science and industry as well as of public and private agencies. Its purpose was to outline a national nutrition policy which would successfully combat unnecessary and widespread malnutrition. It was faced with the fact revealed in recent nationwide surveys that in this land of surplus food, two out of every five persons are suffering from hidden hunger.

The picture is a Hollywood production. Written and directed by Joseph Krumgold and Henwar Rodakiewicz of Film Associates, Inc., authors of the recent featurette, *Adventure in the Bronx*, it was produced by the American Film Center at the Fine Arts Studio in Hollywood. Funds for the film were provided by private industry.

Important producers and directors aided with their professional advice. Samuel Goldwyn became interested and, at the request of Administrator McNutt, lent Brennan, three time Academy Award winner, for the picture. Lloyd Corrigan, writer, director and actor, plays a double role. Leonard Clark makes his screen debut in *Hidden Hunger* in the role of a doctor; Joyce Coyles, dancing star and Little Theater player has the feminine lead; and Willard Kent, Hollywood veteran, plays a police lieutenant.

ADMINISTRATOR ASKS COOPERATION

Since the film is one of the most important projects carried out by the Office of Defense Health and Welfare Services under Administrator McNutt, the latter is addressing himself to national organizations such as men's and women's clubs and service groups, educational groups, youth groups and similar bodies, asking them to help promote the film as part of their effort for our national defense program. It is Administrator McNutt's hope that every man, woman and child in America will see this film.

In presenting *Hidden Hunger*, Administrator McNutt says: "This project looks toward a stronger and healthier and therefore a better America in meeting the problems which confront us in this emergency."

Democracy in Action

(CONTINUED FROM PAGE 15)

They interpret the huge production goals for milk, eggs, hogs, oil crops, and other farm commodities in terms of the Nation's fighting strength. The film also shows how the products of the farms are put to use in feeding and equipping our armed forces.

The film runs 10 minutes in length. A limited number of copies in 16 mm. size are available for non-commercial showing through the U. S. Department of Agriculture War Boards in the several States. Both farm and city groups will find *Democracy in Action* a valuable program addition to any of their meetings. In cases where the location of the War Board office is not known, inquiry may be directed to the Department of Agriculture, Washington, D. C.

Scenes in the film were made in 12 states California, Indiana, Kentucky, Louisiana, Mississippi, Missouri, Montana, New Jersey, New York, North Carolina, South Carolina, and Texas.

WHY THE ARMY USES FILMS

(CONTINUED FROM PAGE 14)

new army, in new types of warfare, with new weapons.

Since the Operations and Training Division, (G-3) of the General Staff is responsible for the kind and degree of training, it was primarily concerned with *policy*. In accordance with regular routine, a series of "Directives" were issued outlining the procedure for establishing a film program. Combat and Service Branch Chiefs were required to submit recommendations based on the study of branch training requirements and list subjects for film production. These subjects had to be defined to prevent duplication, and after consideration by the Staff were incorporated in the main program and given a priority rating for production. The subjects so approved were developed by the preparation of "picture plans", which formed the basis for scenarios. These scenarios were the detailed "blueprints" from which the Signal Corps could produce the films. The final check after production, was the review by the General Staff and the Signal Corps of the completed film to insure proper interpretation by the producer. This last step was most important for reasons that are not commonly known.

FILMS DO NOT CHANGE

The art of learning through reading is not a universal possession. Words have varied meaning. Words in combination do not convey the same thoughts to each reader. In the process of reading, symbols are translated into mental images, colored by experience. The succession of images thus presented may not be correct or in the proper succession. This conversion of symbol into mental image is eliminated by the motion picture, for the visual presentation on the screen is definite, precise. All observers see the same object at the same time. For this reason, training films must be technically correct and exact. They allow no interpretation or correction by the instructor *after projection*. Since they present a series of visual images, retention by the mind of the observer is more lasting, and quicker in absorption as there is no complex conversion of symbol in print into mental pictures.

LARGER FACILITIES NEEDED

Inspection of the final training film program by the General Staff soon indicated that if production schedules were to be met it would require far more facilities than the Signal Corps had available. Most of the subjects required pictorial presentation with a running narrative. Technically, this is termed, "shooting silent with studio scoring". While not requiring extensive sound recording arrangements for every production which is the case in feature length pictures of the entertainment type shown in theatres, the care in production, in camera work and correct narration had to be of the highest quality. All productions were precision jobs. It was not a question of a knowledge of "good theatre", but of technical facts, properly presented for educative purposes. This demanded a new technique, since elimination of the entertainment feature to hold audience attention had to be replaced with technical excellence in the presentation of *facts*. Some of these facts were dry, commonplace detail. But they had to be learned, and visual exposition as an aid to that learning was vital. It saved time by making the subject clearer, simpler. The Signal Corps knew this technique, and had worked with it for some years previous. Like the rest of the Army, it would have to expand to meet the task.

COMPARED TO BUSINESS USE

The magnitude of the program might become more understandable to businessmen by a comparison. Suppose a large corporation like the du Pont Company planned to film its entire business, in connec-

(PLEASE TURN TO PAGE 33)

Scenes from "BOMBER" recent U. S. Government film now available in 16 mm. release through various film sources nationally. (Produced by O. E. M. film unit.)

"Trees" Gets Theatrical DISTRIBUTION

♦ Smashing a barrier in existence since the days of the one-reel program, first run motion picture theaters in San Francisco began, late in April, screening a three reel advertising film as a "must" addition to their programs regardless of the running time of other attractions.

Titled *Trees and Homes*, the subject was produced by Weyerhauser Lumber Company and the main title showed that credit. Simultaneous first run showings were scheduled for the Paramount, Fox, St. Francis and Warfield, for a week each; at the latter house the 26-minute film shared the bill with "Reap the Wild Wind," for which admission was upped to a 65 cent top.

First to break through the barrier of first run theatres in the California area, the Weyerhauser film was approved by the Variety Club committee on advertising films for showings in theatres in this district, and proceeds from the advertiser, figured at $5 per 1000 theatre attendance, go to the Variety Club for its welfare fund.

Order for the showings was sent directly from headquarters of Fox West Coast Theaters, whose President, Charles Skouras, approved advertising films in all F-WC houses in southern California; bookings for the Weyerhauser film for this area have not been disclosed as yet, though report reveals a likelihood that it will play the Warner, Paramount and other houses in addition to the Fox circuit. The film is being booked into all West Coast theatres in Northern California, according to report, and again the expectation is that it will play the Evergreen circuit in the Pacific northwest.

Tabulation of the film's circulation is due to come with daily managerial reports attesting that the film was shown at every performance and totaling the days, number of paid admissions and passes.

NARRATING "RING OF STEEL" is Spencer Tracy (center above) as he appeared recently at New York O. E. M. Film Unit headquarters. Philip Martin, O. E. M. production chief is at Tracy's right and Garson Kanin, who directed the film, at his left.

"THE BOSS TAKES HIS COAT OFF" in Soundmaster's film production of that title for the Public Relations Department of General Motors.

Marsh Sets Map Department

♦ Marsh Cinesound, Inc., announces the establishment of a department to produce animated maps for newsreels and other displays as well as for related art work. Today's war news, which must deal with obscure and little known territory, demands clear and accurate map illustration a service requirement which President Charles J. Marsh believes his company now is particularly well equipped to meet.

George S. Gullette, formerly with Atlas Soundfilm Studio and long experienced in motion pictures on the west coast, has joined the Marsh organization.

Ideal's West Coast Office

♦ Moved to new and finer quarters at 2108 West Seventh Street; the Los Angeles office of Ideal Pictures. All former services of the organization, including film rentals and Kodachrome duplication are being continued. Under the supervision of Corey Cook, production is nearly completed on a series of badly needed "Serve-In-Silence" films, first of which, probably establishing some sort of record in view of usual narration over photography, is in synchronous sound.

Tradefilms Training Slidefilms

♦ Tradefilms, Inc. has moved to its own new building at 8302 Melrose, Hollywood, where it now has not only extensive offices but adequate production space as well, and its own laboratory and shipping facilities, which it lacked in the former quarters at 959 Seward. With completion of the extended production of San Diego's Consolidated Aircraft's production, *Cradle of Victory*, heavier emphasis is being placed on the slidefilms training program, in which three additional productions drilling, riveting and flush riveting have just been made available. *Cradle of Victory* runs four 35mm. reels, is at most only one-quarter devoted to Consolidated's story, replaces that film's first production, which is still going strong after four years' use, will be distributed through regular educational and civic channels.

NEWS OF THE INDUSTRY

Announce Sale of Audio to Speidell and Associates

♦ Sale of Audio Productions, Inc., to Frank K. Speidell, president, acting for himself and certain associates; together with interests representing outside capital, was announced Monday, April 20, by T. Kennedy Stevenson, vice-president of the Western Electric Company. For the past nine years, Audio Productions (a subsidiary of W. E.) has been one of the leading producers in the fields of industrial, advertising and training films.

According to Mr. Speidell, there is associated with himself and his organization group in the purchase and refinancing of this established concern, Film Institute, Inc., of which Lawrence J. Fox, Jr., is president and the board includes Joseph Cullman, Howard S. Cullman, John F. Wharton and others in financial and publishing circles. Mr. Fox will become treasurer of Audio. He has hitherto been connected with many successful feature picture productions in a financial capacity as well as producer, and has had a considerable experience also in the educational and theatrical short subject fields.

Mr. Speidell will continue as president of Audio with Herman Roessle, vice president, and P. J. Mooney, secretary.

Audio is now actively engaged on many government film contracts and is expanding its technical facilities and staff to provide an even larger production set-up for training motion pictures now urgently needed in many government departments and in defense industries.

Audio's new production headquarters and general offices are in the Film Center Building at 630 Ninth Ave., New York, where large space has been leased following the purchase by the Army Signal Corps of the Astoria plant where Audio operated for many years.

Major Zetterholm to Army; Frank P. Gibbs Heads G.S.A.

♦ After nine years heading up General Screen Advertising, Inc., Chicago, Major M. E. Zetterholm, also formerly of General Motors, has been recalled for active service in the U. S. Army with the Inspector General's Department. The company stresses that his is a leave of absence for the duration only and that Major Zetterholm, one of the original organizers of General Screen Advertising, Inc., retains his official connections as secretary and treasurer.

Stepping into the exec post is Frank P. Gibbs of St. Louis, currently assistant to the president of the Alexander Film Company, and at one time head of his own St. Louis advertising agency. Mr. Gibbs will headquarter in Chicago at the company's main office. These offices were moved from the present Wrigley Building location at 400 N. Michigan Avenue to the next-door Wrigley Building Annex, 410 N. Michigan Avenue, during April.

Mr. Norman D. Olson

DeVry Nomes Norman Olson to Export Manager's Post

♦ W. C. DeVry, president of the DeVry Corporation, Chicago, manufacturers of 16mm. and 35mm. motion picture equipment, announces the appointment of Norman D. Olsen as export manager.

Mr. Olsen brings to his new job a wealth of experience in dealer-distributor relations, having served DeVry for the past ten years in the capacity of special contact man with DeVry's vast United States dealer-distributor organization.

L. L. Allison to Direct Sales of Du Pont's Photo Products

♦ The Photo Products Department of E. I. du Pont de Nemours & Company, formerly Du Pont Film Manufacturing Corporation, with general business offices located in Wilmington, Delaware, since March 1st, announces two organization changes effective immediately.

L. L. Allison, manager of Cine Sales, becomes director of Sales and C. D. Ford, formerly manager of X-Ray Sales, will head a newly created Development Section of the Du Pont Photo Products Department. Also announced was a change of address of the New York Sales Office from 9 Rockefeller Plaza to 1031 Empire State Building.

* * *

Note: Other news of the studios, personnel and new developments on pages 26 and 29.

OF THE WAR AND FILM MUSIC

By Jack Shaindlin, Music Consultant,
Office of Emergency Management Film Unit

RECORDING THE MUSIC FOR "LAKE FREIGHTER," recent O. E. M. Film Unit production. Conducting the orchestra on one of the sound stages of Eastern Service Studios, Long Island, is Jack Shaindlin. Conductor and composer of many noteworthy film scores, Shaindlin authored the notes which appear on this page.

lishments, respected by the most critical in the industry. Its technical staff alone consists of twenty-seven men and women who work hard for something they consider vital and important. Its program is a gigantic undertaking and can be accomplished only by hard work and complete unity.

Gould Scores "Ring of Steel"

"*Ring of Steel*," O. E. M.'s latest release, has already been called the best thing yet done in the line of morale-building pictures. Directed by one of Hollywood's most capable directors, Garson Kanin, it has a narration of sheer beauty and poetry, written by Wallace Russell and read by Spencer Tracy. The music score by Morton Gould, who is one of America's greatest modern composers, is a tone poem in itself.

Music was, and will continue to be an important factor in all of our productions. Among our future undertakings are several in which music will play the major part. The importance of music in a documentary type of picture is at last being appreciated, and some of our greatest American composers, among them Aaron Copland, Deems Taylor and Paul Creston have contributed scores to the cinema. The great Russian composer, Shastakovich, who is considered one of the five great living composers, constantly writes for the Russian screen.

Music a Film Essential

Music is no longer looked upon as a form of entertainment and relaxation. If properly applied, it can become a tremendous morale builder and it is my opinion that the World War song, "Over There" awakened more patriotism in people than dozens of editorials or pep talks. I would like to end by saying that the old gag, "What this country needs is a good five cent cigar," should now read, "What this country needs is a good nickel war song."

National Anthem on Film

• A short motion picture trailer, long enough to accommodate the singing of the National Anthem, has been produced by Castle Films in both sound and silent versions for 16mm. projectors. Super-imposed words of the song appear on all editions. A stirring pictorial procession, symbolic of patriotism, occupies the screen during the singing. Castle Films' *The Star Spangled Banner* is in demand for cutting into existent film for use in plants, schools and in other places.

VISUAL AIDS *on the* WAR FRONT

• Dr. John E. Dugan, Chairman of the Section on Visual Education of the World Federation of Education Associations, announces that visual education is being included in plans which are under way for the Conference of the World Federation of Education Associations to be held at Montreal, Canada, July 6th, 7th and 10th, 1942. Delegates are expected from various countries of this hemisphere and from other nations which can send representatives at this time.

Nebel Prepares Visual Aids Training for Curtiss-Wright

• Charles W. Nebel is ready for an all-out attack on mass training of airplane technicians. He assures us that all our effective firing won't be done with Howitzers, sixteen-inch guns, or Garand rifles in this war.

A lot of accurate firing must be done from his very precise and versatile little guns. His guns are slide-film projectors, and they will shoot out a powerful amount of information to large and small groups of men in the Propeller Division of the Curtiss-Wright Corporation.

Nebel, a film promotion executive, is an old hand at organizing training programs for vast, widely scattered groups. Before leaving the Dodge Division of Chrysler Corporation to join Curtiss-Wright he devoted his efforts for many years to the handling of industrial picture programs. His personal contributions to visual media have been noteworthy.

Executives in Active Service:

• Joined the U. S. Navy as [illegible] he held a reserve officer's commission, John D. Wallace, former head of Allied Film Exchanges, a Pacific Coast distributing organization, announces that he has severed his connection with Hollywood Screen Enterprises.

• Herbert D. [illegible], former Trade Commissioner, U. S. Department of Commerce, now Pvt. Herbert D. [illegible], U. S. Army, stationed at Fort [illegible], Wyoming.

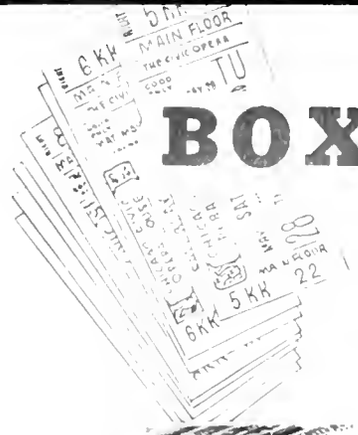
• Mr. Gordon W. Hedwig, president of Nu-Art Films, Inc., of 145 West 45th Street, New York City, has joined the armed forces of the country. Arrangements have been made to offer the public the same type of service as was rendered heretofore. During his absence, the company is planning a number of new releases that will be announced shortly, for the 16mm. industry.

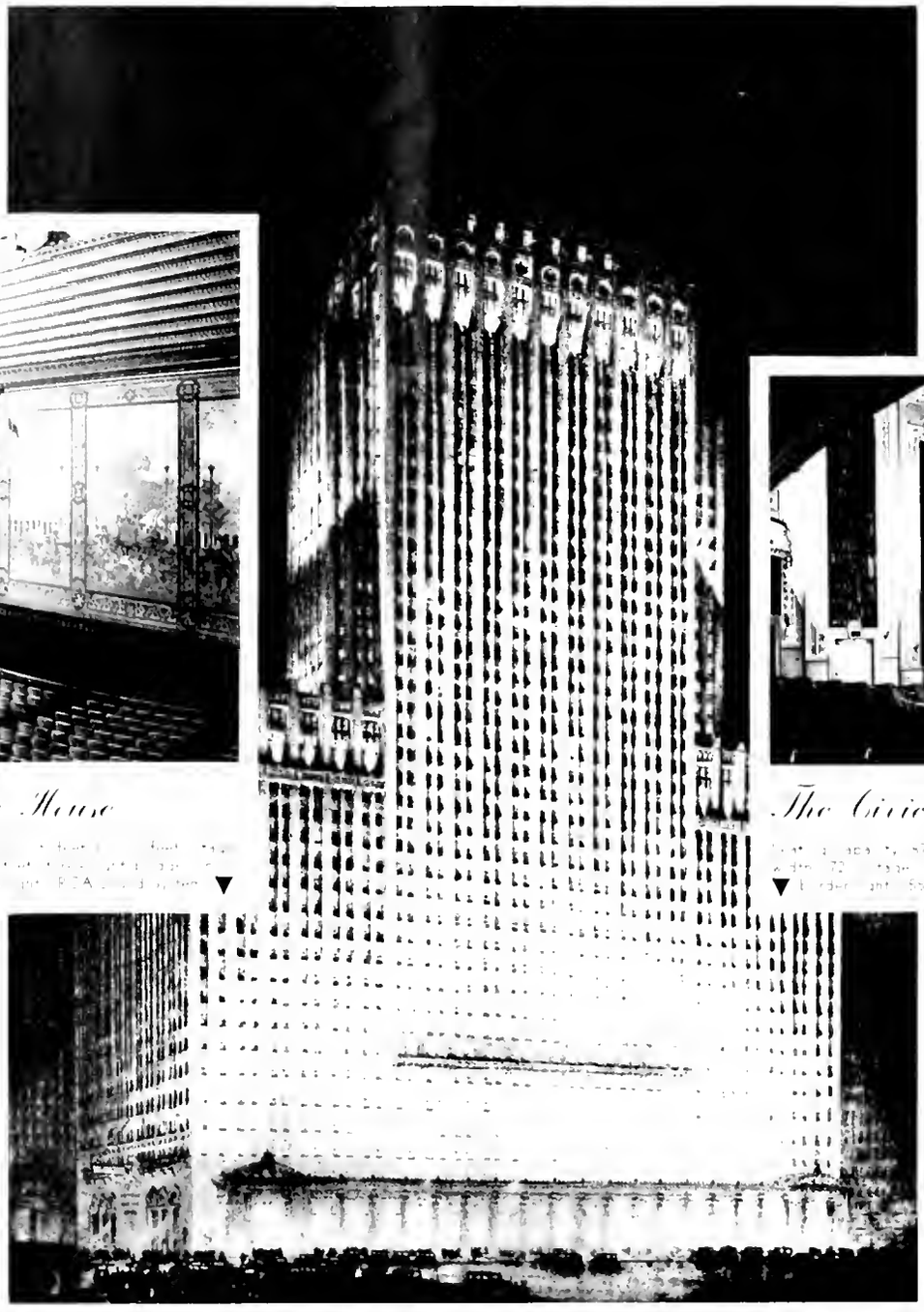
Allen Leslie McCormick

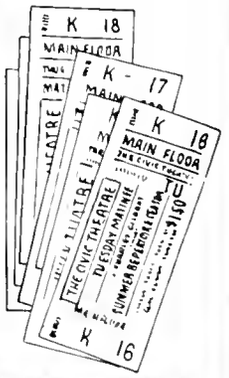
Died, at his home in North Hollywood, Allen Leslie McCormick, founder-president of Cinex, Inc., Some years prior to the founding of Cinex, Inc., he had invented weather-stripping used to prevent rain from blowing over the edges of automobile windshields. At one time in Detroit he held the world's one-mile automobile record at a speed of 60 m.p.h. He leaves his widow, a daughter Mrs. John King, wife of the actor, and a son, Allen, Jr., of Akron, Ohio.

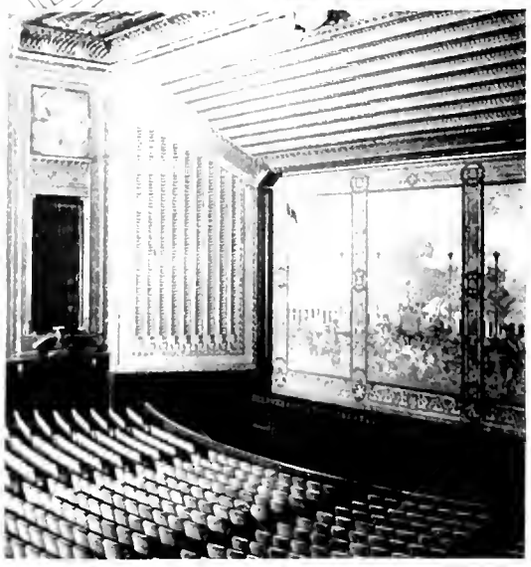
AT THE RECENT MIDWESTERN FORUM ON VISUAL TEACHING AIDS one interested group was pictured by Business Screen's camera. From left to right in this study of concentration are Fred G. Roberts, Manager of the Educational and Vocational Division, Bell & Howell; W. D. Empleman, widely known educational dealer of Detroit, Michigan; W. A. Moen, Assistant Manager of the Educational Division, Bell & Howell; and Mr. J. E. Deahman, visual aids executive of the Chicago Public Schools, who addressed the Forum on school problems.

BOX-OFFICE ... MOMENTUM!









The Civic Opera House

The Civic Theatre

THE greatest boxoffice season in the history of Chicago's two finest theatres—during the 1941-42 theatre season now coming to a close, the 3,531 seat Chicago Civic Opera House and the 878-seat deluxe Civic Theatre played to the largest houses their attractions ever enjoyed in this city. The box-office momentum storted by these record grosses is playing in your favor . . . for success breeds success!

These attractions made box-office history this season: the Ballet Russe de Monte Carlo (broke all previous Chicago records); the Ballet Theatre; the Chicago Opero Company (biggest boxoffice gross in post ten years); Col. W. de Basil's Orginal Ballet Russe and many others. The brilliant concert season saw record attendances at performances of the Philadelphia Orchestra, Dorothy Maynor, Rachmaninoff, Marion Anderson, Lily Pons, Jascha Heifetz, Nelson Eddy, John Charles Thomas, Oscar Levant, the Don Cossack Choir, and other great concert attractions which played to the highest grosses in their Chicago history. The San Carlo Opera Company, which just closed its Spring Season here, broke all its previous Chicago records at the Civic. Unquestionably this box-office momentum means that throughout the next season Chicago theotre-goers will continue to follow the crowds to the Civic!

SUCCESS BREEDS SUCCESS!

Play the Civic!

KEEP THE BALL ROLLING

Play the Civic!

FOR FULL INFORMATION WRITE:

[illegible] Civic Opera House Managing Director

20 NORTH WACKER DRIVE • CHICAGO

THE CIVIC OPERA BUILDING

TELEPHO
DEARBO
7474

COLOR AND EQUIPMENT NEWS

Cinecolor Expands Laboratory and Color Service Facilities

♦ Expansion of activities at Cinecolor, Inc., Burbank, has now provided what its executives believe amounts to the most diversified range of services offered by any laboratory in the world. With its latest equipment it now offers the industry 35mm. prints from 16mm. Kodachrome, 16mm. prints from 16mm. Kodachrome, Slidefilms from Kodachrome transparencies, a complete cartoon service, and similar facilities.

In the making of 16mm. color prints, this laboratory is currently serving such accounts as Castle Films, Walter O. Gutlohn and Stewart-Warner.

In blowing up 16mm. Kodachrome to 35mm. color prints of theatrical quality, Cinecolor has just completed the first feature-length production ever handled in this manner—Ray Scott's "Ku Kan," photographed in China. This subject received honorable citation among the last Academy Awards. For Jamison Film Co., Dallas, Texas, Cinecolor has produced blow-ups in three colors of films made at the Texas State Fair. Currently, too, a good deal of this work is being turned out for M. P. A. of New Orleans.

Another accomplishment is the perfection of a method of faithful reproduction of Kodachrome transparencies onto slidefilm, and three of the nation's largest commercial slidefilm users have just completed productions done on this basis. Both method and result have attracted widespread interest throughout the trade.

A comfortable conference room has been fitted out in the Cinecolor offices for the exclusive use of clients.

New Radiant Portable Model

♦ A new portable glass beaded projection screen, designed specifically for use in schools, universities, auditoriums, churches, meeting halls, army camps, training centers, etc., has been developed and will be ready for delivery March 15th.

Realizing the need for a portable unit—housing a large size screen surface that can be quickly and easily set up—to fill present day requirements in the vast program of visual education, military and industrial training, RADIANT has developed this new unit which embodies minimum weight with maximum strength and rigidity.

The "AUTOLOCK" a new RADIANT development eliminates all set screws and other locking devices. An automatic clutch permits raising and lowering quickly and easily to any height on the tripod, which is constructed of extra strong square tubing on both upright and extension support.

This new RADIANT product will be known as the "INSTITUTIONAL MODEL DS" and is made in 4 sizes: 52 x 52 inches, 45 x 60 inches, 60 x 60 inches and 52 x 72 inches.

Spindler & Sauppe to L. A.

♦ As a means of giving more prompt and efficient service than ever before, Spindler & Sauppe, Inc., has consolidated its Los Angeles and San Francisco offices into one big new plant at 2201 Beverly Boulevard, Los Angeles. The new quarters, which provide a large and efficient work shop as well as complete shipping and sales facilities, were occupied April 1.

The firm was founded in San Francisco in 1921, and the Los Angeles office was opened in 1927. Manufacturers of Selectroslide and similar visual equipment, the firm is also equipped to repair and do delicate work on Leica cameras, prism binoculars, microscopes, and other scientific instruments; its optical department is capable of repolishing and re-cementing any kind of photographic lens.

Most recent development here, the first model of which has been demonstrated before Government officials in Washington, is the Heller Selectroslide Manograph, which adapts an unique recording principle to the visual materials used in the Selectroslide. Utilizing a steel tape 9/32 of an inch wide and 1/200 inch thick, so that 100 feet of tape make up a 6-inch reel, vocal or musical sounds recorded in low, medium and high frequency with an additional impulse recorded for changing slides, are placed in four lines on the tape which will play for one hour and then repeat without attention required for resetting. No needle is utilized, since the principle is magnetic, and the pattern of sound remains until it is demagnetized. A 20,000 frequency will erase and permit the making of corrections at the time of recording. The new equipment opens up a vast field of new possibilities, since anyone with 2 by 2 inch slides can make his own lecture on the instrument.

Another adaptation of Selectroslide utilizes a glass screen for rear projection, providing a striking display medium.

For listings on this page address inquiries to Service Bureau of Business Screen, 20 N. Wacker, Chicago.

BUSINESS SCREEN'S INDEX OF PRODUCTION

TECHNICAL WAR TRAINING

CONTINUED FROM PAGE EIGHTEEN

Illinois Institute of Technology is currently training some 300 of these men, the first group of 72 having been graduated on April 11. This type of instruction raises many problems since the contact hours per student are at least twice as great as those found in normal engineering work. Teaching processes must be refined. The student does not have time for much homework and the instructor must present the pertinent material in the most efficient manner.

VISUAL EDUCATION AIDS TRAINING

It has been found that Visual Education plays a most important part in this program. By the use of the films recently made available by the U. S. Office of Education, the nature of machine tool operations and the functions of the various machines can be taught far more effectively than in any other manner. The basic principle of instruction by both telling and showing is put into practice in a particularly effective manner, by these and other excellent films which are now available. The four-step method of training mentioned above as part of the JIT program can also be carried out on this level. The arousing of the student's interest is done by the instructor and by the fact that the student's advancement depends upon his own effort. The presentation of new jobs is done by both telling and showing, and the use of close-ups, slow motion, etc., makes the showing far more effective than that which the instructor alone can accomplish. The testing of the student is done by the instructor, by means of true-false quizzes and class discussion. The future performances of the students must be checked by his superior in the inspection service, in order to complete the four-step training method.

SLIDEFILMS TEACH SAFETY METHODS

Visual education is being widely used in the ESMDT program. One of the largest undertakings, in number of students enrolled, is the nation-wide course in Industrial Safety Engineering. The excellent sound-slide material prepared by the National Safety Council is being used to good advantage in this course.

The next great task before the ESMDT program is the training of women, because all men who are able to fight will soon be in the armed forces and women must replace them in industry. The field of inspection is one for which women are particularly well suited and full-time training courses, similar in nature to the Ordnance Inspection course, are now being offered. Visual Education will be vital to this program, since women who have had no connection with industry can be taken on elaborate and carefully guided inspection tours without leaving their school. By carefully selected technical films the general background of industry can be imparted to women, and their technical progress can be greatly accelerated by an intelligent combination of the four-step method with Visual Education.

SLIDES & FILMSTRIPS FOR WAR

★ VOCATIONAL TRAINING materials are helping to win the Battle of Production. The problem here is to make a plentiful supply of visual aids available to the overworked training director so that the two-fold task of thoroughly integrated instruction and of speed in training can be satisfactorily accomplished.

Lantern slides offer a good solution for the training director who wishes to present sketches, blueprints and similar illustrative material, charts, diagrams and technical information to his apprentice class. Easy to make, cheaply bought from the standpoint of materials, they are nevertheless most effective. One outstanding advantage, in these days of priorities and equipment shortage, is the fact that the slide filmstrip projector is comparative simple and thus plentiful. It may be used under all kinds of unfavorable light conditions. It will offer the flexibility of editorial changes, the brilliance of image and clarity of detail that leaves little difficulty for either the student or the instructor.

Filmstrip Series on First Aid and Similar Subjects in Work

♦ The economoy and simplicity of the filmstrip for educational purposes is being widely demonstrated by the Aviation Service Schools of the Navy and Army and for other war training purposes. To facilitate use by first aid and other civilian defense groups, the Society for Visual Education announces an authoritative series of First Aid lessons, with other programs of a similar nature already in work.

Want to Get Out a Crowd?" Write for New Free Bulletin

♦ Full details on the art of gathering a crowd by the use of visual aids, particularly useful to program chairmen in charge of arangements for civilian defense meetings, and many other types of adult groups, etc. are given in a new bulletin, How to Get Out a Crowd, which will be sent to readers of BUSINESS SCREEN on written request. There is no charge.

A Section on Slides ond Filmstrips To Be Inaugurated

♦ A complete section on the use and production of low cost materials for vocational training, civilian defense education, etc. will be inangurated in the forthcoming Issue Four of BUSINESS SCREEN.

Filmstrips, glass slides, and opaque projection as well as the many wartime uses for microfilms will be digested and discussed in detail.

Industry Produces for War

♦ Industrial progress in the war production effort is currently reflected in the following new screen productions: United States Steel's *Steel for Victory;* Allis Chalmers' *We Work for Victory;* International Harvester's *The Strong Shall Be Free;* General Electric's *Beating Time;* the Goodrich film *Keep 'Em Rolling;* Massey-Harris' *Food for Freedom;* and similar productions by the Public Relations department of General Motors, by Goodyear, Ohio Bell Telephone, and many others.

The Army Uses Films

(CONTINUED FROM PAGE 231)

tion with an employee training plan! This would require the study of processes from the standpoint of maintenance and operation; the consideration of products, their design, packaging, sale and even servicing. Such a program might include the study of existing educational films on chemical manufacture! Hundreds of "short subject" and feature length films would be required, and might include film strips, (still photographs on 35mm film for projection) as an auxiliary visual aid in teaching. All these film training aids have been included in the Army Program.

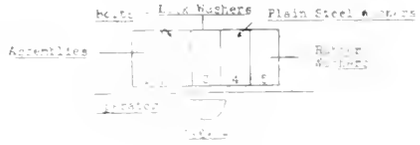
It is quite possible that the training film activities of the Signal Corps may have a far reaching influence on teaching. The program for the production of these visual aids to training is the first comprehensive large scale undertaking of this type which has been really complete. At the present time these films are restricted for exhibition to military and naval personnel with the exception of a few films on industrial processing produced to aid manufacturers of munitions. While these are not now available for public exhibition, they may become a milestone in progressive education.

AIDS *to* WAR PRODUCTION

(CONTINUED FROM PAGE NINETEEN)

washer. This completed the assembly and with the left hand the operator disposed of it in the container to her left.

Fig. 1. Layout of work place for assembly of bolt and washers using the old method.



Improved Methods Speed Work

Improved Method A simple fixture was made of wood and surrounded by metal bins of the gravity feed type as shown in Fig. 2. The bins containing the washers were arranged in duplicate so that both hands could move simultaneously, assembling washers for two bolts at the same time. As seen from Fig. 2, bins 1 contain the rubber washers, bins 2 the plain steel washers, bins 3 the lock washers, and bin 4, located in the center of the fixture, contains the bolts. The bottom of the bins slopes toward the front at a 30 degree angle so that the materials are fed out onto the fixture board by gravity as the parts are used in assembly.

Two countersunk holes or recesses were made in the front of the fixture into which the three washers fitted loosely, the rubber washer on the bottom, the plain steel washer next, and the lock washer on top. A small hole slightly larger than the diameter of the bolt went through the fixture. A metal chute was placed around the front of the wood fixture with openings to the right and to the left of the two recesses so that assembled bolts and washers might be dropped into the top of this chute and carried down under the bench to a container.

Instructions Given in Detail

In assembling the bolt and washers the two hands move simultaneously toward the duplicate bins 1, grasp rubber washers which rest on the wood fixture in front of the bins, and slide the rubber washers into place in the two recesses in the fixture. The two hands, then, in a similar way, slide the steel washer into place on top of the rubber washers, and then the lock washers are slid into place on top of these. Each hand, then, grasps a bolt and slips it through the washers which are linked up so that the holes are concentric. The hole in the rubber washer is slightly smaller than the outside diameter of the threads on the bolt so that when the bolt is forced through the hole it is gripped and thus permitted, with three washers, to be withdrawn vertically upward without losing the washers. The two hands release the assemblies simultaneously over the metal chute. As the operator begins on the next cycle with the hands in this position, the second finger of each hand is in position to reach for the rubber washer which is almost at the tip of the finger.

Results

Average time required to make one bolt and washer assembly by the old method ..... 0.0838 minute

Average time required to make one bolt and washer assembly by the improved method ..... 0.0546 minute

Time saved ..... 0.0292 minute

This represents a 53 per cent increase in output.

The improved method as opposed to the old method of assembling the bolt and washers conforms to the principles of motion economy already mentioned.

Fig. 2. Sketch showing improved arrangement of bins after study of motion study findings.

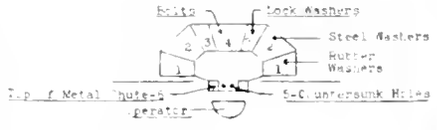


Fig. 2

IMPORTANT NOTICE

Eastman Motion-Picture Film Cans and Cores

MUST BE RETURNED

WAR requirements have sharply curtailed the supply of metal and plastics needed to manufacture 35-mm. motion-picture film cans and cores. Consequently, the Eastman Kodak Company urges the prompt return of these essential supplies. They must be used over and over again.

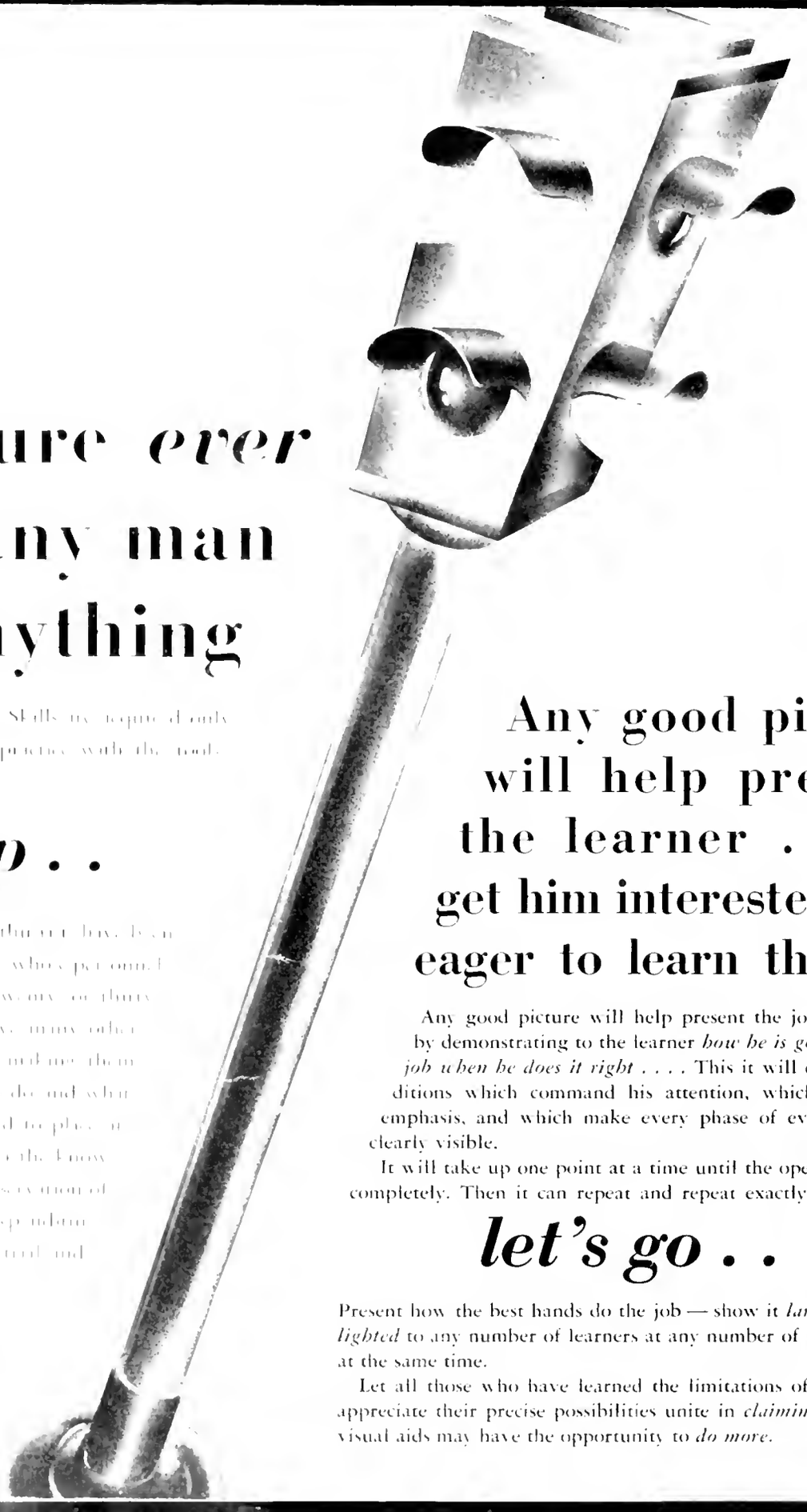
Help maintain the supply of motion-picture film by seeing to it that all Eastman cans and cores are kept in good condition, collected, and shipped to the Kodak Park Works, Rochester, N. Y.

By doing your part in this emergency, you help yourself and everyone connected with the motion-picture industry—as well as all those who depend more than ever on the screen for vital information and entertainment.

Write for prices and detailed shipping information.

Motion Picture Sales Division

EASTMAN KODAK COMPANY, ROCHESTER, N. Y.



No picture *ever* taught any man to do anything

Most learning can be done only by doing. Skills are acquired only by actual performance and by practice with the tools of the trade.

let's stop . .

Many of the claims of picture enthusiasts have been absurd. Producers and purchasers, whose personnel have used visual aids for as much as twenty or thirty years, made these mistakes as have many others. But they have graduated from making them. They have learned what not to do and what not to expect. They are prepared to place in the disposal of every picture buyer the knowledge that has been gained by observation of many millions of dollars of expenditure through all the many years of trial and error under hope and hoodl

Any good pictur will help prepar the learner . . . get him interested an eager to learn the jo

Any good picture will help present the job to be do by demonstrating to the learner *how he is going to do job when he does it right . . . .* This it will do under c ditions which command his attention, which control emphasis, and which make every phase of every operat clearly visible.

It will take up one point at a time until the operation is s completely. Then it can repeat and repeat exactly as approv

let's go . .

Present how the best hands do the job — show it *large, vivid lighted* to any number of learners at any number of places and at the same time.

Let all those who have learned the limitations of pictures appreciate their precise possibilities unite in *claiming less* so visual aids may have the opportunity to *do more.*

Business Screen

THE MAGAZINE OF COMMERCIAL AND EDUCATIONAL FILMS

VOL. 4 1942

Put your Projector in *FIGHTING TRIM*

Ampro Service will put it in first-class condition

Now, more than ever, efficiently operating projectors are urgently needed for industrial training classes, vocational schools, civilian defense work and service groups!

And now — during these vacation months — is the most convenient time for making certain that your Ampro projector is ready to play its part in the U. S. war program for training and education.

Remember: Every Ampro projector that is serviced and put back into first class condition relieves just that much of the load of producing new machines for the war effort. There is ample opportunity for using every Ampro for projecting 16mm. films for Civilian Defense, War-time training and the circulation of important information.

The Ampro Corporation maintains a complete service department staffed by experts in reconditioning and rebuilding used projectors. Ampro service will make your projector as good as new—at surprisingly reasonable rates. Visit your nearest Ampro dealer *today*—for projector inspection, cleaning and adjustment.

Write for name of Ampro Dealer.

AMPRO Precision Cine Equipment

2851 N. WESTERN AVE., (DEPT. BS542) CHICAGO

These Tools of War Will Also Help to Shape a Better World When War Is Ended

ON THE FIGHTING FRONT OF EDUCATION

IN ADDITION to the many training films Caravel is now producing for use by the Army and Navy, we call particular attention to the following films produced under the direction of the U. S. Office of Education . . .

Five Films on the Milling Machine

The Milling Machine . . . Cutting Keyways . . . Straddle and Surface Milling to Close Tolerances . . . Straddle Milling . . . Plain Indexing and Cutting a Spur Gear.

Five Films on Shipbuilding Skills

Preparing and Setting a Keel Block and Bottom Cradle . . . Innerbottom Sections: Sub-Assembly of a Closed Floor, Sub-Assembly of a Solid Floor . . . Side Frames: Sub-Assembly of a Web Frame . . . Deck Girders: Sub-Assembly . . . Deck Plates: Regulating and Setting.

ONCE IN A WHILE we dare look ahead to a day when the flags of the United Nations float in triumph over Berlin, Rome and Tokio . . .

And when that day comes, as it surely will, we humbly predict that the business of EDUCATION (the most important business in the world) will have been stepped ahead by at least ten years.

Do you imagine, for instance, that our fighting men in the Army and Navy, trained to so great an extent through the use of sound motion pictures and slide films, will stand idly by if they see their children being trained by less effective methods?

Or do you imagine that the heads of great industries—having witnessed the extraordinary power of vocational training films in time of war—will fail to make even broader use of such films when war is ended?

We who are on the fighting front of education have still a tremendous job to do . . .

Until the war is won we must CONTINUE to help speed the building of ships and tanks and planes . . . we must CONTINUE to insure their effective operation, care and maintenance . . . we must CONTINUE to work all-out for the final victory . . .

But let us never forget that in the performance of these tasks we are paving the way for the greatest advance in EDUCATION that the world has ever known.

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

WAR TRAINING IN THE CLEVELAND SCHOOLS

Number Two of a Series on the Role of America's Schools in the War Effort

Editor's Note It has been our privilege to give the readers of BUSINESS SCREEN the most extensive and exclusive reports on the vast development of visual aids in America's war training program. It is in recognition of these efforts that we are further privileged to give you direct reports from the training front. Typical of these and eloquent testimony on behalf of the value of the visual materials prepared by this industry is the following letter from Director M. R. Klein, head of the Educational Museum which is the visual aids center serving the 158 Cleveland Public Schools.

To the Editor of Business Screen:

★ SCHOOLS have an excellent opportunity to accelerate and stimulate instruction during these critical times through the vehicle of visual aids. There is an abundant and worth while material available at present for visual aid departments to use. It becomes the task of the person in charge of visual aids in the school or school system to initiate a program of visual aids which not only will meet the needs of the older boys in the machine shop but visually aid other groups of students in all areas of instruction during these critical times. The Educational Museum, organizing and distributing center for visual aids for all Cleveland Public Schools, has been busy serving these schools with films, slidefilms and lantern slides. It may be of interest to state some of the details of our program, especially for the current year.

Realizing the potentialities that visual aids will play in the forward surge toward national unity, cooperation, work training and the building of morale it was necessary to propose and plan for the acquisition of new and additional supplies and equipment. It was necessary to get quick action in view of the possible shortages of some visual aids. It is indeed a pleasure to report that our department was granted a 100% increase in appropriations over that of last year or any year since the establishment of a separate visual aid center in Cleveland.

Our department has received excellent cooperation and support from Superintendent of Schools Charles H. Lake. He encourages the use of visual aids for all levels of school instruction.

SIX SETS OF USOE FILMS PURCHASED

Six sets of the United States Office of Education *Machine Shop* films have been purchased. One complete set of films being sent to each of five large technical schools for a school semester wherein machine shop instruction is given. These are East Technical High School, West Technical High School, Collinwood High School, Cleveland Trade School, and Thomas A. Edison Occupational School. The sixth set is circulated to the cosmopolitan high schools. All the schools have reported satisfaction with the results obtained with these exceptionally well-produced sound films. A teacher is appointed in each school to arrange showings and bookings for various classes. Projection is performed by trained boys or teachers. Only one title is shown during the day allowing ample time for clarification, questions and learning.

MAKE LANTERN SLIDES ON LATHE

Some months ago our department organized six sets of one hundred and forty eight each of $3\frac{1}{4}$ x 4 lantern slides made up from the South Bend Lathe Works book *How To Run a Lathe*. Since all of the Cleveland High Schools have South Bend lathes for machine shop instruction the slides enrich and supplement the teaching with the instruction book. Permission to reproduce the slides was graciously granted to us. Each set of slides is composed of four boxes arranged in logical order and paralleling the book instruction. The details of this work was performed by an Industrial Arts Curriculum of teachers from Lincoln High School. The sets are the property of the Educational Museum but are sent to any high school for a period of several months upon request. The schools all have specially designated visual aid rooms with projectors and darkening shades.

More recently *Iam Handy* slidefilms have been purchased of the following: *Basic Electricity Kit-Sets, Bench Work Kit Set, Automotive Mechanical Training Kit-Set No. 1* and *No. 2, Machining Kit-Set and Basic Aircraft Metal Skills*. These slidefilms organized in logical sequence for instruction, can be readily used at a moment's notice by any instructor whose day is crowded with classes in a busy technical school. The ease of operation and projection makes this type of visual aid popular. *The Basic Aircraft Metal Skills* series will be much in demand with the present emphasis upon aviation training.

Films in our library suggested in the bibliography of a pamphlet "Education for the Air Age" prepared by the staff of the Aviation Education Research Project under the auspices of the Civil Aeronautics Administration are the following: *Aerodynamics* (Theory of Flight) – (Eqpt), *Aerodynamics* (Problems of Flight) – (Eqpt), *Principles of Flight* (Eastman), *Weather Forecasting* (Eastman), *Thermodyn-*

(PLEASE TURN TO PAGE 34)

Business Screen

NUMBER FOUR VOLUME FOUR

Contents

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TIME IS PRECIOUS!

48 SUBJECTS

16 MM. SOUND-ON-FILM

5 ON THE ENGINE LATHE
1. Rough Turning between Centers
2. Turning Work of 2 Diameters
3. Cutting a Taper with the Compound Rest and with the Taper Attachment
4. Drilling, Boring and Reaming Work Held in Chuck
5. Cutting an External National Fine Thread

5 ON THE MILLING MACHINE
1. The Milling Machine
2. Cutting Keyways
3. Straddle and Surface Milling to Close Tolerances
4. Straddle Milling
5. Plain Indexing and Cutting a Spur Gear

3 ON THE VERTICAL BORING MILL
1. Rough Facing, Turning and Drilling on a Vertical Turret Lathe
2. Rough Facing and Boring and Turning a Shoulder on a Vertical Turret Lathe
3. Facing, Turning, Boring, Grooving, Chamfering on a Vertical Turret Lathe Using 2 Heads

5 ON PRECISION MEASURING
1. The Steel Rule
2. The Micrometer
3. Fixed Gages
4. Vernier Scale
5. Height Gages and Standard Indicators

3 ON THE SHAPER
1. Cutting a Keyway on End of a Finished Shaft
2. Machining a Rectangular Cast Iron Block
3. Machining a Tool Steel V Block

2 ON THE RADIAL DRILL
1. Drilling and Tapping a Cast Steel Valve Body
2. Drilling and Spot Facing a Cast Iron Valve Body

10 SUBJECTS ON SHIPBUILDING!
1. Preparing and Setting a Keel Block and Bottom Cradle
2. Inner Bottom Section:
   Sub-assembly of a Closed Floor
   Sub-assembly of a Solid Floor
3. Inner Bottom Section: Setting up and Fitting Floor
4. Deck Girder: Sub-assembly
5. Side Frame: Sub-assembly of a Web Frame
6. Girders: Setting Transverse Web Frame and a Morning Girder
7. Bulkhead: Laying Off the Boundary and Stiffeners on a Transverse
8. Bulkhead: Laying off and Fitting a Center Line Stiffener
9. Bulkhead: Setting a Transverse, Water-Tight Bulkhead and Hull
10. Deck Plates: Regulating and Setting

JUST RELEASED!

2 ON SINGLE POINT CUTTING TOOLS
1. Fundamentals of Side Cutting Tools
2. Fundamentals of End Cutting Tools

8 ON BENCH WORK
1. Centering Small Stock
2. Laying Out Small Castings
3. Fundamentals of Filing
4. Threading with the Use of Taps and Dies
5. Scraping Flat Surfaces
6. Fitting and Scraping Small Bearings
7. Reaming with Straight Hand Reamers
8. Reaming with Taper Hand Reamers

2 ON THE LATHE
1. Turning a Taper with the Tailstock Set Over
2. Cutting an External Acme Thread

1 ON THE SENSITIVE DRILL
1. Drilling a Hole in a Pin

2 ON THE VERTICAL DRILL
1. Locating Holes, Drilling and Tapping in Cast Iron
2. Countersinking, Counterboring, and Spot Facing

SAVE TIME AND INCREASE PRODUCTION

with

U. S. OFFICE OF EDUCATION MOTION PICTURES

that help to teach

MACHINE SHOP WORK AND SHIPBUILDING!

Time is our most precious commodity! Save time in training the millions of machine shop and shipyard workers that we need NOW with MOTION PICTURES that help to teach wartime skills!

U. S. OFFICE OF EDUCATION motion pictures mentioned on this page were produced by the United States Government for the specific purpose of helping to speed production. The pictures are accurate . . . authentic. They conform to the best methods in machine shop and shipbuilding practice. They were made under the supervision of old-line experts. Leading industries cooperated in their making.

Each film is LOW IN COST, to give the widest possible distribution. Thousands of the films are in use right now in technical schools and war plants. Those who are using them regard these films as vital aids towards speeding up the training of skilled workers.

All films are available in 16 mm. Sound-on-Film. If you are not using them—and *can* use them—put them to work in your organization immediately! Write for complete information on prices, lengths, and subjects. Act TODAY!

CASTLE FILMS INC.

Distributor for

THE UNITED STATES OFFICE OF EDUCATION

MAIL COUPON TODAY!

CASTLE FILMS, INC.

RCA BLDG. NEW YORK | FIELD BLDG. CHICAGO | RUSS BLDG. SAN FRANCISCO | Address nearest office

Please rush complete description of all U. S. OFFICE OF EDUCATION Motion Pictures on Machine Shop Work. ☐ Shipbuilding. ☐ Also put me on FREE mailing list for announcements of future releases.

Name

Address

City _____ *State* _____

SAVE AND SELL TO US FILM CANS AND CORES

PROMPT return of Eastman motion-picture film cans and cores is urgently needed. They must be used over and over again, if film production requirements are to be met. The supply of metal and plastics for making new cans and cores has been sharply curtailed by increasing war needs.

Help maintain the supply of motion-picture film by seeing to it that all Eastman cans and cores are kept in good condition, collected, and shipped to the Kodak Park Works, Rochester, N. Y.

Write for prices and detailed shipping information.

Motion Picture Sales Division

EASTMAN KODAK COMPANY, ROCHESTER, N. Y.

What do you mean by

"THE INSTITUTE?"

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The Institute for the Advancement of Visual Education and Vocational Training, Inc. is an organization of motion picture and slide film producers (others are welcome) who have the following qualifications for membership:

1. Financial Responsibility
2. Studio and Equipment
3. Permanent Production Staff
4. Experience

Any producer of good reputation who believes that these are minimum requirements for dependability of performance, who subscribes to the Code of Ethics and who supports the Institute's Standards for the protection of buyers is eligible for membership.

Educational Building

THE INSTITUTE
for the Advancement of
VISUAL EDUCATION AND VOCATIONAL TRAINING, Inc.

70 Fifth Avenue
New York City

Business Screen Reports on the War Film Activities Among the United Nations (Next: England at War)

CANADA MARCHES TO WAR

★ CANADA is rounding out her third year at war. It was only shortly after September, 1939, that sponsored movies girded themselves for war, even before the conflict took on its "total" aspect and world-wide ramifications.

Throughout the period since the advent of war, government departments have turned to motion pictures to shoulder an increasing share of the burdens of mass information, patriotic appeals, and enlistment of the nation's resources by stimulating gasoline and rubber conservation and the salvage of waste materials. The National Defense Department used theatre screens to aid recruiting campaigns, is using training films to speed instruction of the armed forces and has been highly conscious of the interest in newsreels, being anxious to have all possible events of significance reported for the news screens. The National War Finance Committee made use of screen trailers in its campaign on war savings stamps and certificates, and has made extensive use of motion pictures, both theatrical and non-theatrical, during each of two nation-wide Victory Bond campaigns.

Commercial and industrial films were not long in putting their films into battle dress.

REVIEW OF WAR PRODUCTION

A review of war theme productions by one of Canada's major commercial motion picture producers will indicate the manner in which industry dressed its films for the times. Associated Screen Studios at Montreal has one of the largest plants of its kind on the continent, developed during the past twenty one years, with facilities for both theatrical and non-theatrical production and distribution. In addition, this firm maintains newsreel crews to cover Canadian events for major newsreel companies of the United States.

One of their first productions for Canadian industry after the advent of war was *Motors on the March* for General Motors of Canada. It was a visual presentation of how peace-time industry spared neither time nor effort when the call came and threw itself into high gear for production of the tools of war. It was conceived as a tribute to employees, engineers and executives of general Motors who accomplished miracles in mass production of new vehicles, new tools for the job.

ADVERTISING IS MINIMIZED

This single-reel subject, whose narration told its story in rhyme had wide spread distribution through Canada, both theatrically and non-theatrically. Advertising was kept to a minimum; the subject served to point the way for the vast industrial conversion job that Canada was only then beginning to undertake from peace to war production with the gradual constriction of consumer-goods production. It was acceptable for general showings as an informative and morale-building short.

WAR'S IMPACT ON UTILITY

Ontario Hydro Electric Commission some years ago had *The Bright Path* produced for its relations work by Associated Screen Studios. This told in great sweeping terms the story of electricity's contribution to the modern development of industry and 20th Century living. They too, had a story to tell of war's impact on a public utility. *Keepers of the Light* resulted a single-reel picture to show the rising storm clouds of war, and how engineers and construction gangs have worked and are working against time, in summer's heat and winter's bitter cold, to supply the ever-increasing demands for industrial power. Both these subjects are shown in a program of non theatrical screenings arranged by the Power Commission itself throughout the area it serves. They acquaint the general public with the problems and the tasks of the public utility in an excellent public relations program.

SHOW CONVERSION TO WAR

About this time, Associated Screen Studios were completing another report to Canadians by General Motors of Canada in the single reel short *On To Victory*. This told something of the urgency of war production demands, and amplified the further steps in conversion from peace time mass production to greatly expanded war-time mass production. *On To Victory* was also shown both theatrically and non-theatrically throughout the nation. In this case, the only credit given the sponsor was contained on main titles. Because of its stimulating message, voluntary committees working for the sale of Victory Bonds made use of this short in

(PLEASE TURN TO PAGE 35)

Buy War Bonds and Stamps!

DeVRY MOVIE NEWS

PUBLISHED IN THE INTERESTS OF INDUSTRIAL AND EDUCATIONAL VISUAL AIDS TO VICTORY

29 Years of Progress

FILMS AID WAR PLANTS OUR UNITED WAR EFFORT

Workers See Training and Morale Pictures to Increase Production

★ On the Home Front where the Battle of Production is being waged, motion pictures have come into their own as a wartime **necessity** in training workers, maintaining morale, lowering fatigue and encouraging factory safety practices.

A DeVry 35mm projector shows Harvester's new war film to thousands at employees at recent showing.

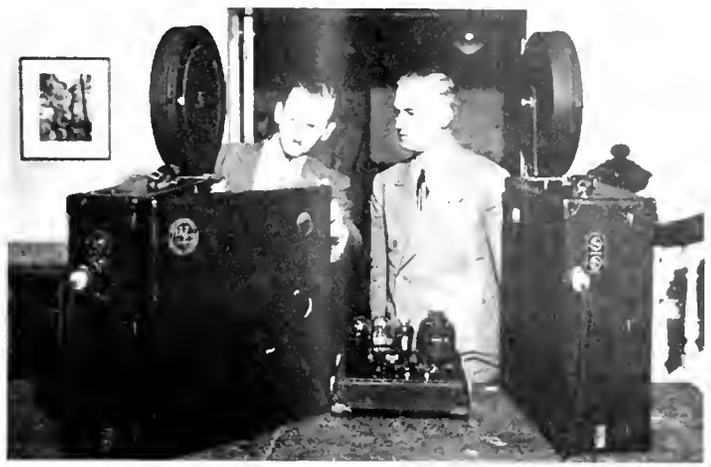
Not only have such industrial giants as International Harvester, U. S. Steel, Allis-Chalmers, General Motors, Western Electric, Minneapolis - Moline, Caterpillar Tractor and many others realized this with actual picture production and **plant and auditorium showings** but Uncle Sam has joined the picture parade with both training and morale-building subjects.

The U. S. Army, the U. S. Office of Education and the O. E. M. are among the outstanding agencies providing such films for industrial plants and schools.

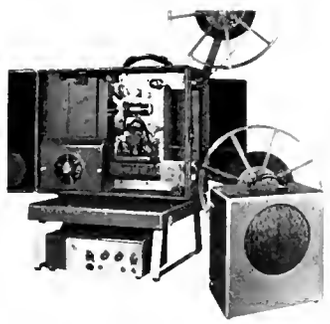
★ ★ ★

". . . the right kind of films can accomplish wonders for morale. Also . . . a lot of short cuts can be taken in Army training by visual education through films."

—Washington Merry-Go-Round



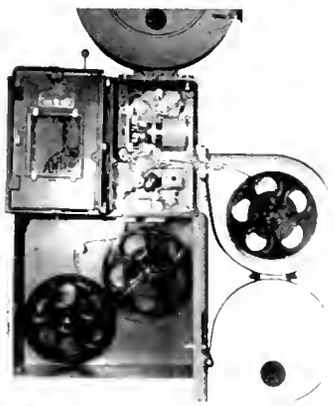
WHEN GOVERNOR DWIGHT GREEN OF ILLINOIS *viewed the State's latest film "The Open Road" in the Governor's mansion at Springfield recently, two DeVry 35mm portable sound projectors assured performance to perfection. With Green a popular choice executive would always use Pilsbury O'Hair of the State's Department of Repair. Harry Crandell is Director of the Department and in charge of all state publicity. "The Open Road" is available free to schools, clubs, churches and other organizations that may be interested.*



16mm Freedom Model Conserves Materials

★ The new "Freedom" model DeVry 16mm sound projector (with choice of Z-12 or ND-30 Sound Systems) conserves vital war materials without sacrificing either quality, precision or portability.

The choice of two fine sound systems provides extra performance advantages for either industrial plant, school or general usage. The "Freedom" Model was designed for wartime needs.



NEW DEVRY 35MM EDITING PROJECTOR *used in Film Training Lab. at U. S. Signal Corps, Wright Field, Ohio. Ideal for film producers, this unit features separate sound, picture mechanisms and dual film takeup. The sound head may be used as a rewinding channel.*

Put These Electricity Films to Work in Your War Training

Six motion pictures on electricity (each 2 reels of 16mm sound) are available thru DeVry Films. They include: Principles of Magnetism; Current Magnetism; Electro - Magnetism; Current Electricity; Measurement; Electrostatics & Current Generation.

Save-Kote Protects Valued Films!

The Save-Kote process of protective film treatment, an exclusive service of DeVry Films and Laboratories, is now serving Ideal Pictures, International Harvester, the Cleveland schools, etc. Write for details!

DeVry Factories Step Up War Production; Earn Minute Man Flag

By W. C. DeVRY
President of the DeVry Corporation

★ We men and women of the DeVry organization, working together for Victory, recognize our responsibilities toward the men in the training camps, at shore bases, on the fighting ships and on the fighting fronts where our Army and Navy face the enemy. In the all-out effort to speed the Victory, we are **keeping our promise** to produce more and better equipment for our armed forces!

Traditions of DeVry research and engineering leadership established these past 29 years, are now dedicated to new developments for the war effort; improvements which will benefit all—**now** and when peace comes.

As important as the production line—is the payroll line where our savings have been pledged for War Bonds. The same spirit with which DeVry employees earned the Minute Man Flag by their War Savings pledges carries on as we work together on day and night schedule to produce for Victory!

QUENTIN REYNOLDS SAYS—"*Motion pictures are as important in winning the war as guns, tanks, planes, . . .*"

DeVRY WITH THE COMMANDOS and ANZACS

THEY HAD TO BE SURE: *When Movietone cameraman Jack Edmonds accompanied British Commando unit about to Norway recently a DeVry camera was used for historic news pictures. Above is The Royal Variety with a DeVry 35mm camera and two DeVry projectors with a New Zealand YMCA unit, on the Egyptian front.*

Manufacturers of the World's Largest Line of 16mm and 35mm Sound Motion Picture Equipment

DeVRY CORPORATION 1111 ARMITAGE AVE., CHICAGO • NEW YORK • HOLLYWOOD

"It is exciting to go into a factory on a night shift at three in the morning and see the people going from their benches into the canteen for lunch and having movies with their coffee. We realize that the little man who works on a little washer for a tank gets a kick out of seeing that tank in action. Factory managers tell us that the morale of the factory goes up with a bang after these pictures are shown."
SIDNEY L. BERNSTEIN, *Film Advisor British Ministry of Information.*

ISSUE FOUR • THE MAGAZINE OF VOCATIONAL & EDUCATIONAL FILMS • VOLUME FOUR

Visual Aids on the War Training Fronts

★ CHICAGO, ILL. Here in America's largest center of heavy industry, the nation's arms production has roared into high gear. With the versatility for which they are famous, thousands of Chicago manufacturers have "converted" to the production of armament and war supplies, and a substantial number of them have turned to visual education as the short-cut to job training, man-building, home-front morale, safety, and civilian and plant defense. They are drawing rapidly upon any and all sources of educational and inspirational film material that will speed the war effort by increasing production.

The pressure of time, the unprecedented mechanization of warfare, the need to expedite the training of tens of thousands of unskilled and semi-skilled workers for effective service, and the urgency to exceed production goals—all these have brought to light as never before the value and utility of the film medium in industry.

HEAVY DEMAND FOR VISUAL AIDS

In this widely diversified industrial area, expansion by the establishment of all-new plants and the enlargement of others has created an unusually heavy demand for films that amplify other training. This is particularly true among partially skilled workers already employed in war work, or who soon will be. For example, the new General Electric film series, *The Inside of Arc Welding*, has already been requested by upwards of forty firms in this area, most of whom plan to purchase it outright.

This six-part all-color sound film, which was summarized in the last issue of BUSINESS SCREEN, is expected to help cut the training time of thousands of new welders by as much as 20 per cent and to provide them with a better understanding of the principles of arc welding. The pictures also furnish veteran welders with hitherto unavailable pictures of the behavior of the arc and molten metal weld. These views of the flame of the arc in action, as well as cross sections of good and bad welds, charts, diagrams, and animated cartoons, combine to provide a comprehensive instruction course on the subject. Manufacturers who plan to use the series include the Chicago Bridge & Iron Works, Edison General Electric Company, Ryerson Steel, Mississippi Valley Structural Steel Company, Pure Oil Company and such outlying concerns as Barber-Greene and the All-Steel Equipment Company of Aurora.

Similarly, the United States Office of Education films, *Machine Shop Work* and *Shipbuilding Skills*, are being widely used here, not only in all vocational training schools but almost without exception by the larger industrial concerns and by scores of smaller ones. A means of clarifying, explaining, and demonstrating the fundamentals of machine operation and ship construction work: they serve to make learners familiar with the operations they are to perform, the principles involved, and the manipulation required of them.

SPEED TRAINING IN PLANTS

The demand for this series and other industrial films of like nature that are now available from both producers and manufacturer-sponsors has been heavy and constant. The films have positively demonstrated that they can speed up and amplify the training process among partially skilled workers and thus cause an ultimate speed-up of materials output. Of course, the use of motion pictures in class routine among apprentice and supervisory groups is nothing new to the larger industrial concerns. Some of them have conducted a definite program of education through films and other visual aids for many years. In education for plant safety, film material on safety subjects has always ranked high in the accident prevention programs of such firms as American Steel Foundries, Commonwealth Edison, Stewart Warner and Pullman Standard Car.

Seeking to offset the shortage of supervisory personnel, a number of Chicago manufacturers have been making full use of foreman training slide films, of which excellent subjects are now available. The rapid upgrading of men into foremen's positions has unquestionably been assisted by these visual aids.

HARVESTER FILMS OUTSTANDING

Among those firms which have produced films that explain their role in war production, International Harvester has produced and shown to its employes *The Marines Have Landed*, and *The Strong Shall Be Free*. These morale-building pictures, available also to the public, portray the use of the company's equipment on the fighting front and point out the close relationship between abundant food and equipment. The war effort partnership among farmer, industrial worker, and fighting man is brought home.

Typical of the way larger employers are not only putting to good use worthwhile films from the outside but are producing training and morale-building pictures themselves is the program of the Carnegie-Illinois Steel Corporation.

Carnegie-Illinois Steel Increases Training Program

♦ In the past few months the Carnegie-Illinois Steel Corporation, already an extensive user of films for training purposes, has considerably amplified its visual education program. Production of five new supervisory training films has recently been completed, and outside sources of training materials have frequently been drawn upon. Maximum support has thus been provided to a program of instruction which involves the many complex problems of rapid introduction of new personnel on a large scale.

Experience has shown that interest in the hour and a half conferences among foremen and supervisors is increased by the diversification afforded by pictures. Now however, training films provide the conference leader with a general topic, from which he may launch into a round table discussion on specific supervisory procedure.

FIVE NEW SOUND FILMS

The five new films point up the human side of personnel handling and are so designed that comments from members of the conference are freely provoked. These 15-minute sound slide films are as follows:

New Men at Home deals with the induction of the new employe. It demonstrates the foreman's duties in making the newcomer feel at home, such as explaining safety measures, pointing out location of lockers and washrooms, and giving whatever other suggestions may be necessary in order to get the new employe off to the right start in the plant community.

Big Little Things explains how the foreman can take care of unimportant grievances before they assume serious proportions. The film shows how to treat misunderstandings with tact and sympathy and to iron out personal problems, however trivial they may appear to be at the outset.

UPGRADING TO FOREMAN'S JOB

Planning for the Future is devoted to the foreman's training of his understudies. The picture shows how the foreman can bring his assistants along and prepare them for the job ahead of them.

Safety for Sale describes the reasons for the approved safety practices throughout the company plants.

In addition to these showings at

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♦ [illegible] held for [illegible] Kearney and Trecker Corporation, West Allis, Wisconsin, [illegible] the famous Milwaukee-built machine tools, [illegible] of the production [illegible] three-color Cinecolor [illegible] film. This production [illegible] edited and recorded by Ray Bell Films with special [illegible] photography made by Milford Assistant Advertising Manager of the Kearney and Trecker Corporation.

Make Prints in Cinecolor

The complete film slide program was originally photographed in Kodachrome and then transferred to three-color Cinecolor single frame slide film by the producer.

The producers created many of the engineering sketches which add to the authenticity of this series of slide films on the practical application of current milling practices.

Complete Program Two Hours

The complete slide film is in five parts (total projection time two hours eighteen minutes), but breaks down into sections as follows: Part I traces the story of milling from the beginning of the first milling machine in 1818 to the modern high powered milling machine. The machinist learns the fundamentals of good machine tool practice in this first part and through the use of sketches as well as photography these principles are forcefully and adequately explained. This part of the complete lecture runs on two sides of a double faced 16 inch record for about 20 minutes.

Part II continues with the explanation of cutting forces and more intricate explanations of good milling machine practice. Excellent photographic examples are portrayed and an especially well written commentary accompanies each picture.

Parts III, IV and V bring to light the actual shop jobs, the background and good milling practices analyzed in Parts I and II. Many actual milling operations are shown and the proper set-up for each of these jobs graphically explained.

This entire program has been approached from a teaching standpoint and not a selling angle and for that reason this series of slide films will win a well earned place in the industry.

♦ *Telephone Arsenal*, a new sound film produced by the Western Electric Company, has been released for public showings after having been "previewed" by more than 100,000 Western Electric employees and members of their families. The film is currently making the rounds of other Bell System locations from coast to coast.

from the new U. S. Army film "The Arm Behind the Army"

"All down the production line . . . plant for plant . . . the Axis and the United Nations stand locked in battle. It will be the sweat of workers that tips the beam . . . the sweat of American workers who will give you men tanks and planes and guns to fight for our free and democratic world."

"Wherever American soldiers fight, the Arm Behind the Army fights with them. We will win our battles on the firing line because they will win their battles on the assembly line."

Telephone Arsenal, as its title indicates, points the parallel between America's place as the arsenal of democracy and Western Electric's function as the arsenal of telephony for the Bell System and, to a large degree, the armed forces. The film was originally produced to dramatize for Western Electric workers the direct relationship between their efforts on the assembly line and military operations involving Western Electric products. The picture, is at the same time, a film document on "communications in wartime." It takes its audience into Western Electric's principal plants and distributing houses and shows the manufacture of vital war communications items, shows, too, these same items in the hands of the armed forces—radio equipment for planes, tanks, and torpedo boats, telephone equipment for Army field operations. The essential role played by the telephone in speeding America's industrial effort is also emphasized, while the operations of the Nassau Smelting and Refining Company, Western Electric subsidiary which plays an important part in the Company's metals conservation program, come in for a share of the footage.

Shown Over 150 Times

Telephone Arsenal, when it toured Western Electric locations, was screened more than 150 times, was each time made the occasion for a "war production rally" featuring entertainment, patriotic pageants, addresses by Company officials on the progress of Western Electric's war effort.

Inquiries about this film should be addressed to Motion Picture Bureau, Western Electric Company, 195 Broadway, New York City.

Thousands of British workers see informative war films at regular showings of which this plane factory audience is typical.

"The Enemy Listens" Is First of New War Film Series

♦ The danger of repeating information, no matter how fragmentary, is strikingly revealed in *The Enemy Listens*, a Corey Cook Ideal Production, the first of a new war film series to tackle this problem. Recurrence of six people throughout the 400 feet of film, dropping scattered items which the enemy can piece together, coupled with an interesting trick shot of *The Enemy* who appears only in silhouette, plus actual scenes of the appalling destruction of war, make this very thorough and convincing. The Third Symphony of Gliere provides background music of an ideal type for arousing the desired emotion which will help to check talking and encourage the public to "Serve in Silence."

Seen by a commanding officer of the western Naval area, the film was declared one that should be seen by every man in the Navy. Schools and churches, too, have accorded the production an enthusiastic reception.

Directed by Corey Cook, assisted by Betty Chandler, story was by Royall Barnett, photography by Phil Cantonwine, sound recording by Ben Winkler.

Next two releases, now in production, are *Gas Attack* and *The Blackout*.

Films Build Morale in War Plants

★ DURING THESE DIFFICULT times, the thing which is uppermost in our minds is production and more of it. Many schemes have been devised to facilitate the daily output of war materials and to simplify the numerous problems which arise in connection with this program: therefore it is interesting to note the part which motion pictures are playing in this "Victory Production" drive.

War workers in one of England's largest aircraft factories (as in others) see war information film programs shown regularly.

AUDIO-VISUAL METHODS POTENT

It is a well established fact that audio-visual education is an excellent means of driving home an idea. It is equally well known that this means of informing the nation has been and is being used by the Federal Government and other agencies to a great extent. Morale-building and patriotic motion pictures are in evidence everywhere, in fact so much so that the absorption capacity of the average individual has just about reached the saturation point. Realizing this, the Government turned the trend in morale showings away from the more strident, raucous type of film to more subtle media of presentation. Thus it was conclusively proven that a good laugh will boost the spirits better than most pep-talks; that showings of an entertainment nature were a more subtle and far more effective means of reaching the desired goal -improved morale. A film executive says:

"Recognizing this as our keynote, we have instituted the utilization of entertainment as well as educational 16mm sound films in the Defense Plants for showings to their employees. These showings are particularly useful in solving some of the problems which arise among the workers on the night as well as the day shift and which could be coped with so effectively in no other way. The night workers do not ordinarily have the opportunity for normal recreation which other people have access to; they may easily reach the point where they regret having taken a night job."

A LARGE CHICAGO INDUSTRIAL PLANT has arranged noon-hour film showings of entertaining short subjects which are projected right in the factory aisle.

This problem was encountered in a west coast aircraft plant which employs thousands of workers, and it has been successfully overcome by the regular use of good feature and short subjects as well as government educational films. All the benefits of this arrangement were not realized however, until the idea was tried when it was found that the flow of traffic at change-of-shift was greatly facilitated. Because the showing of films was begun approximately two hours before the late shift began work, the workers were for the most part already in the plant, and the automobile parking problem was solved. It was also found that the workers coming early to these showings stayed out of the taverns and were in better condition to do their jobs efficiently as a result.

ENTERTAINMENT ADDS INTEREST

The personnel manager of a large aircraft parts plant in the midwest was faced with this problem. It seemed that he had projection equipment available, and had run showings of a purely safety and patriotic nature. His project was, according to him, a "flop" and he could find no satisfactory means of attaining his objectives—increase in morale and consequently more production. It was suggested that he "sugar coat" his exhibitions through the exclusive use of entertainment short subjects. A test run of these shorts for a period of four weeks was agreed upon and the results checked very carefully. The test exceeded all expectations and this company now runs a twenty minute short subjects program during the noon hour every day. The projector and screen are set up on the shop floor several minutes before the lunch hour begins and when the whistle blows the show is started. Film programs are rented by the week and the same show is given in a different section of the plant each day. In one week's time the entire plant has been covered with the one show. After the inception of these short shows, it was found that not only was the morale of the workers improved, but that the RATE OF ACCIDENTS DUE TO FATIGUE HAD DECREASED MARKEDLY.

EXECUTIVE MEETINGS URGENT

A large Naval ordnance plant in Chicago found that their heavy production schedul made regular meetings of the plant foremen and executives increasingly necessary. Pre-meeting films helped retain

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★ Major [illegible] at Brigadier General Frederick H. McSherry as Director of Operations of the War Manpower Commission was announced by Chairman Paul V. McNutt.

General McSherry, 49, a native of Missouri, has been working on labor supply and training problems for several years with the Federal Security Agency and the War Production Board on assignment from the Army General Staff.

In a dual capacity as an officer of the Federal Security Agency and of the War Production Board's Labor Division, he planned the coordination and expansion of vocational training facilities in this country during the first year and a half of the present emergency. Since December he has been Deputy Director for Labor Supply and Training of the WPB's Labor Division.

General McSherry has been an Army officer since 1917, and served overseas.

He is a graduate of the University of Arizona where he studied mathematics and mining, and he also did special work in electrical communications at the Massachusetts Institute of Technology. He graduated from the Coast Artillery School in 1923, from the Advanced Gunnery course in 1928, from the Command and General Staff school in 1934, and from the Army War College in 1937. He has been assigned to the General Staff since 1937.

Northwestern Bell in War

◆ With the interesting title of *Northwestern Bell in War*, Ray Bell Films, Inc., announces the completion of a two reel motion picture for the Northwestern Bell Telephone Company and Subsidiaries.

In production since last November, this fifteen minute film has been produced to acquaint telephone employees with the scope and nature of telephone work and facilities required to meet the extraordinary demands created by the war.

With the Seventh Corps Area as a base for the activities of the Northwestern Bell Telephone organization, activities are shown throughout the five states within the Seventh Corps Area served by this telephone system. The Ray Bell Films camera crew visited several army posts, training bases and numerous ordnance plants to secure background material for the film. Scenes were made in several large cities served by the Northwestern Bell organization as well as in Western Electric Company branches in the territory.

There is no question but that any audiences after viewing the film will immediately realize the tremendous job the telephone company has in meeting the demands of our nation's war program.

A most novel conclusion of the film is the singing of "America, the Beautiful" by a chorus of Northwestern Bell employees.

The film was directed by Reid H. Ray of Ray Bell Films, and supervised through the General Information Office of the Northwestern Bell Telephone Company, Omaha, Nebraska.

ENGLAND TRAINS FOR WAR

BRITAIN'S WORKERS LEARN new war trades as shown in these scenes from "Transfer of Skill" produced by the Ministry of Information. The film shows how British craftsmen have transferred their skill and ability to wartime needs. After the war "their hands will be just as essential in the building of a new improved world."

History of Sutures Is Shown in New Medical Film

(SCENES FROM THE PICTURE AT LEFT AND RIGHT)

◆ Premiered at the Wedgewood Room of the Waldorf Astoria last month was the new sound motion picture, *Sutures Since Lister*, sponsored by the Ethicon Suture Division of Johnson & Johnson, New Brunswick, New Jersey. In the audience were members of the New York Chapter of the American College of Surgeons, medical officers of the Army and Navy, and leading hospital executives. Audio Productions, Inc., produced the film.

The movie is well described in its own foreword: "The development of absorbable sutures is an integral part of the history of surgical progress. So that you, the surgeon, may have complete confidence in this all-important part of your equipment, we present this story of the research and painstaking care that go into the manufacture of sutures."

Early sequences point up the contrast between surgery of the gaslight era and today. The surgeon buys his catgut suture in the shop of a violin maker. His technic and the inadequate sterility precautions seem primitive when the scene changes to an operating room in a modern hospital, where precision and quiet efficiency, smooth teamwork and scrupulous safeguarding of sterility prevail. An actual operation complete with considerable suturing is shown.

The story then shifts to what have been described as the world's finest suture laboratories, revealing how suture-making has kept pace with surgery. The manufacture of sutures under laboratory control is shown in the new, modern plants of Johnson & Johnson at Chicago and New Brunswick. On this tour, which only a few have been able to take in person, the research and intensely painstaking care that go into the manufacture of sutures is demonstrated.

Following a week's run at the Ethicon Theater at the American Medical Association convention at Atlantic City the first week in June, *Sutures Since Lister* will be available for booking by medical and allied organizations. There is no charge; operator, projector, and screen are furnished by the producer, Ethicon Suture Division of Johnson & Johnson, New Brunswick, New Jersey.

Announces Production Awards

◆ W. C. DeVry, president of the DeVry Corporation, Chicago, has instigated a production for Victory Drive, with an offer of substantial cash awards for suggestions by employees on how to better the manufacture and production of motion picture sound equipment.

(Above) Extreme close-up contrasting double bastard cut and single cut bastard cut files from the Office of Education film "Fundamentals of Filing" Reviewed in this issue.

SUGGESTIONS FOR EFFECTIVE USE OF OFFICE OF EDUCATION TRAINING MOTION PICTURES

BY Floyde E. Brooker, *Director, Visual Aids, U. S. Office of Education*

TRAINING motion pictures are instructional tools designed to help instructors train war workers. Like technical reference works, training motion pictures help the instructor most when they are correctly used.

Many shop foremen and shop instructors have recognized this and have asked, *"How can we use these training motion pictures to get the greatest possible help from them?"* It is difficult to give a blanket answer to this question. Shop methods and instruction vary greatly, depending on the type of work the shop is producing.

As with all tools, the good instructor gets the most good from training films when he adapts them to his own particular job and to his own individual way of working.

Nevertheless, there are some suggestions that have been found generally helpful by other instructors for securing the greatest possible assistance from training motion pictures. These principles of effective use can be reported as a general guide for others.

The first step in securing the most help from training motion pictures is an understanding of the jobs they can do. This is particularly important with a tool so new and about which so many enthusiastic statements have been made.

What These Films Can Do

▪ The chief value of training motion pictures is to prepare the student for actual "doing." Students learn to "do" by "doing". No motion picture, textbook, or teacher can take the place of practice.

But before a student can practice or actually "do" he must "know" such things as the parts of a machine; he must "understand" such things as the principles of operation; he must "appreciate" the importance of safety and the correct methods; and he must "see" others run the machine and do the work—then he must try it himself on the actual machine using real materials.

Training motion pictures can present information, provide a basis for understanding, help develop appreciations, and provide an authoritative demonstration—and in doing these things the training motion picture can help to speed up effective training.

The training motion picture is designed to help the instructor. Some information can be presented more effectively by tables in machinists' handbooks, some by wall charts, some by models, some by motion pictures — but none of these will make a machinist. All are tools to help an instructor train a group of men. *Training motion pictures may be regarded as reference texts in celluloid.*

The job of the instructor is to know about these tools, refer his students to them when the student can use the information provided, through discussion point out modifications and applications of the material in terms of his own individual class, and then make certain the students have understood and can apply the material presented in the motion picture.

Advantages of These Tools

▪ More specifically the Office of Education training motion pictures are designed to expedite war training by providing teachers with an instructional tool that:

1. Uses animated diagrams to make clear such basic principles as speed and feed, taper cutting, using a dividing head, etc.
2. Uses enlarged closeup views to concentrate attention on individual machine parts or operations.
3. Shows an expert operator doing a job in such a way that all students can see equally well and without distraction, each and every operation from the proper angle.
4. Dramatizes the necessity for safety, cleanliness, and craftsmanship.
5. Shows the correct sequence of operations with an accompanying explanation that is perfectly timed and thought out by experts.
6. Provides the instructor with a demonstration that is authentic, accurate, and organized for instruction, which may be repeated for the slow students as many times as necessary without taking the full time of the instructor.
7. Provides the instructor with a demonstrator that never grows tired or cross and never forgets an important point.

Planning the Use of a Training Motion Picture

▪ The Office of Education training motion pictures will not do the job they are designed to do unless they are used effectively. Effective use is largely a matter of advance planning.

Since these motion pictures were planned and produced with a definite use in mind, the first step in planning is understanding the type of use that determined their organization.

1. It was intended that these films would be used as a series.

A scene from "Cutting a Taper . . ." film of the USOE series on The Engine Lathe

What They Say

With first sets of The Office of Education films now in widespread use in the armed forces and in the apprentice training classes of vocational schools and industrial plants, results and experiences of significance are beginning to flow from these training fronts. BUSINESS SCREEN continues the firsthand publication of these statements which began with our exclusive (and widely quoted) articles in preceding issues:

* * *

"We have had these films only a short time and have not shown the complete series. Comments of both trainees and instructors indicate that the films are extremely valuable. They speed up the rate of learning by presenting ideas in a concise, interesting way. They develop better comprehension by showing and explaining at the same time. They are particularly valuable for supplementing a shop instruction program, where the emphasis is on rapid learning."

State project supervisor Defense Training

"Properly used, these films greatly speed up the learning process and clearly demonstrate details that cannot be so well presented to a group in any other way."

Supervisor Industrial Education Mid western city

"While we have only had the films for a short period, reports from the instructors and trainees have been good. Better comprehension of the tools and machines, improvement in attitude is noticed towards care of equipment, improved safety habits, and I am sure it will tend to speed up the rate of learning. The pictures are clear and rather complete in details. Most of the films are short and fit nicely into short periods, even permitting reshowing if necessary."

Supervisor of Industrial Arts Northeastern city

This is particularly true of all the training films on machine operations.

The general order of the use is indicated in the numbering of the films.

Because they are planned for use in a series, certain material has been covered in only one film of the series. For example, there are seven films on the lathe, each of which covers a given job. Other necessary and desirable supplementary material has been covered in only one of the films to avoid tiring and wasteful duplication. For example in this particular series, a detailed explanation and definition of "speed" and "feed" have been given in Film No. 6; safety has been given special emphasis in Film No. 1; etc.

Because they have been planned for use in series, the first film in each series demonstrates the simplest job, introduces the basic vocabulary, and gives special emphasis to those things machine operators "should always do whenever working on the machine."

2. These films were planned to present the basic principles of machine operation. A specific operation, on a specific machine, is shown, because it provides an illustration of the principles of operation on any machine of the same general type.

3. It was expected that the films would be used with trainees interested in learning how to operate the machine illustrated. Therefore, the films are simple, straightforward presentations with no attempt at glamorizing beyond the appeal of a beautiful machine expertly operated to produce a prideworthy piece of work.

4. These films were planned for use with and by an experienced instructor; and require supplementation by the instructor.

There are several reasons for this: (1) the picture always shows more than the commentary can discuss or mention in the time given; (2) the commentary has been written from the viewpoint of a "production" shop with consideration for starting trainees; other viewpoints or other uses would require quite a different commentary.

Every instructor will probably — in terms of his own practice — find some "gaps" or "holes" in the picture or verbal explanation. Filling these "gaps", or calling attention to variations of practice are a necessary part of adapting a training film to individual situations.

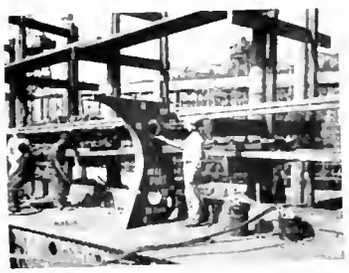
Selecting the Film

The motion picture should be selected to fit the trainees. Beginning training films should be selected for use with beginning students. Films should also be selected to provide a demonstration on the machine they are training to operate. The vertical boring film may have some use for a class training on the milling machine; but a milling machine picture is likely to be more effective.

Previewing the Film

Any instructor planning to use a training motion picture should preview it and familiarize himself with it.

An important part of this preview study of the picture is planning the use in class. It may prove of considerable help if the instructor makes some general notes during the preview on the following points:



A scene from the film (No. 6) on "Girders" of the USOE series: Shipbuilding Skills

1. The information that the film is designed to "put across" to trainees. For example, in the case of *Operations on the Milling Machine: No. 1 - Cutting Keyways*, this might include the following:

a. Names of main parts of the machine
b. Functions of each of the main parts
c. "Safety" points to be remembered
d. Procedures used in "setting up" a job
e. Understanding points of good "set up"
f. Understanding "speed and feed"

These items should be listed roughly in the order in which the instructor expects his students to learn them. The items should also be limited to the primary things the film was designed to do.

2. The things taken for granted or assumed in the picture. No motion picture or any other single lesson can cover in detail every point of any job. Therefore, each of the Office of Education motion pictures has made certain assumptions. For example, in *Rough Turning Between Centers* the demonstration starts with a piece of stock cut to length, faced, and centered.

These things were not shown, not because they are not important, but because they are covered in other films, and because the film presentation must be kept to a reasonable length. The instructor, may quite justifiably, consider this a part of the job, and wish to call the attention of the class to the omission.

3. In particular, some notes should be made on portions of the film presentation that require explanation or amplification by the instructor.

There are many different and equally correct ways of doing a given machine shop job. The motion picture, in many cases, can show only one. If other methods are used in the training shop, or in the shop where the boys will work, the instructor should call attention to the differences. For example, the round stock in *Cutting Keyways* is held with U-clamps and T-bolts.

A fixture might be used in the training shop, certainly would be used in a production shop and this other method should be explained. The effective use of any instructional tool requires this adaptation to individual situations.

Mechanical Detail of Showing

1. Make certain in advance of any motion picture use in class, that the showing of the picture will proceed smoothly and without interruption.

The projector should be set up, focussed, and ready to go. The trainees themselves can take care of this item very effectively. Fifth grade students have learned to operate and take care of sound motion picture projectors very satisfactorily with less than a half hour's instruction. If possible, the projector should be in back of the group, and high enough to "throw" the picture over the

Credits: Scenes from The Engine Lathe by courtesy The Jam Handy Organization; Shipbuilding Skills by Caravel Films, Inc.; Vertical Boring Mill by Audio Productions

heads of the trainees. A stand with casters will handle this situation nicely.

The screen should be set up so that its surface is at right angles to the beam of light. There are ready-made screens available.

Have the reel of film in the projector. The boy operating the projector should have the right film ready. Make certain that film is not wound backwards, or turned over, and that there are no "breaks" in it.

The room should be dark enough that the picture shows up well on the screen. Above all, don't have any points of light that are in back or close to the

A scene from film (No. 7) on "Bulkheads" of the USOE series: Shipbuilding Skills

sides of the screen. This makes it very difficult for the trainees to focus their attention on the screen itself.

Steps in Using a Training Motion Picture

▪ Before any Office of Education training motion picture is used, the students should have an opportunity to familiarize themselves with the specific machine on which each will work. Standard milling machines, for example, vary in size, age, and make, but all of them have the same basic parts and same basic principles of operation as the particular milling machine shown in the training film on the milling machine. Nevertheless, it will help the students if they have seen first, the machine they will use, have watched it work, and have heard the names of some of the more common parts.

The showing of the film with the class should follow the same basic pattern that governs all good instruction.

1. The instructor should introduce the showing by explaining the reasons the particular film is being shown and indicating the things to which the student should give particular attention.

The notes made at the preview by the instructor will provide the list of things that students should focus their attention on. The motion picture will undoubtedly have to be shown several times, and students should not be asked to "pay attention" to everything on the teacher's list at the first showing.

2. Show the motion picture. At the first showing, the entire motion picture should be shown without interruption. Later, at subsequent showings, this will

3. Check with the students to make certain they have learned the points to which their attention was called in the beginning. Maybe they have learned them in part, or maybe there is disagreement, or perhaps some points have been misunderstood.

The subsequent class discussion will probably provide an opportunity for the instructor to point out the variations in practice between those shown in the film and those used in his particular shop.

4. Show the film again. The discussion that followed the first showing may serve to emphasize the portions of the film to which the students will give particular attention. Otherwise, the instructor may add some additional items from his list to which the students should give their attention on this second showing.

5. Following the showing of the film and the discussion the instructor should take the learners to the machine which they have been studying and carefully demonstrate the same operations portrayed in the film with actual tools and materials.

Each trainee should then be assigned to a machine and perform the complete operation, while the instructor stands ready to make clear any point of procedure which the trainees have not completely grasped.

From this point on, the use of the training film cannot follow any pre-determined or set plan. All the students may have failed

(PLEASE TURN TO PAGE 22)

Scene from film (No. 3) on "Facing, etc." from USOE series on Vertical Boring Mill

What They Say

"Your films speed up training considerably; we are not prepared to give any percentage of increase in speed because we have not made such tests. We consider them to be based on sound mechanical and educational theory and practice . . ."

Director of Industrial Education
National motor car manufacturer

"I wish to advise you that these films have been used in exceptionally good advantage in training lathe operators and machine shop trainees . . .
Due to the rapid turnover required in our training program, we get the students started in the field in which they are being trained.

Director
State Trade School in the South

"It is reported that the films have proved to be a very valuable addition to the instructional material used in Group III Service School. In particular, a marked improvement has been noted among students working on machine tools."

Commander,
Naval Training Station

"I wish to state that these films are of great benefit to us and to all of the students.
In using the films that we have the students benefit by both hearing and also by the instructions given by the instructor and we can sincerely say that this is by far the best that we have ever used . . ."

Vice President, General Manager
An aircraft manufacturing concern

"At a preview of these pictures we found them to be complete in every detail, and they were highly recommended for use in connection with our engineering educational program, to give our engineers a clear and concise picture of how standard machine tools are used in the production of parts."

Director of Education Engineering Dept.
Nationally known maker of airplanes

Fifteen New Office of Education Motion Pictures

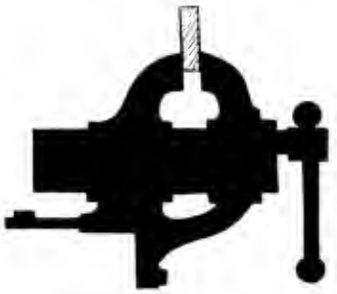
FIFTEEN additional new titles complete the entire series of forty-eight sound motion pictures on Machine Shop Work and Shipbuilding Skills produced in the first war labor training program of the U. S. Office of Education. The new subjects (exclusively reviewed in these pages) are available to industrial plants and vocational schools through national distribution outlets.

A new series on *Bench Work* accounts for eight of the final fifteen titles; two new subjects on *cutting tools;* two additional subjects on the *Engine Lathe* and two titles on the *Vertical and Sensitive Drill* complete this history-making audio-visual war training program. Production of all the films was handled by leading industrial film studios under the direction of the Office of Education.

How to Obtain These Films

The entire series of 48 titles, comprising more than 70 reels of pictures, may be purchased (by individual subjects or in series) on a special low-cost basis through the nationwide distribution outlets established by Castle Films, Inc., of New York City, Chicago, and San Francisco, national distributor for the Office of Education. Footages and prices of the final fifteen titles are in keeping with the low-cost of the thirty-three titles previously reviewed. For complete details see advertising elsewhere in these pages. (See Page 5). Reviews of the 15 new titles follow:

BENCH WORK



1 THREADING WITH USE OF TAPS AND DIES

This motion picture shows and explains the methods operations and procedures used when cutting small threads with the use of hand taps and dies

The film opens with an explanation of external and internal threads and introduces the hand taps and dies used to thread small pieces The job problem requires the tapping of a blind hole in a fuel pump body and the threading of a stud bolt. The selection of the correct size drill is stressed and attention is called to the different sizes of drills required for tapped holes in hard crystalline metals and and in soft tough metals Animation is used to explain the term "75 full thread" and to show how the load is carried by the threaded connection

Animation, picture, and commentary explain the correct use of the taper tap, the plug tap and the bottoming tap in cutting internal threads in a blind hole. Different types of wrenches for small taps are demonstrated and attention is called to the situations in which each may be used.

Animation is combined with picture and commentary to show the various parts of a die and to explain the exact order in which an adjustable die must be assembled for correct use. Solid dies of various kinds are shown and the difference between them and adjustable dies explained.

The methods and operations used to cut a thread on each end of a 5 16ths stud, one for a tight fit in the stud hole and the other for a loose fit in the nut are demonstrated.

The film closes with a brief review of the important points to be remembered and followed in cutting threads with hand taps and dies.

2 SCRAPING FLAT SURFACES . . . .

This film shows and explains the operations, methods, and procedures used in hand scraping flat surfaces to a surface plate.

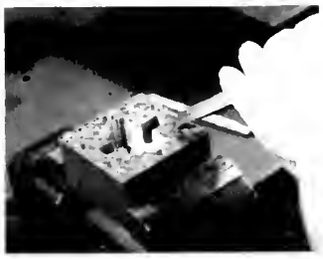
The introductory sequences of the film show the uses of flat surfaces to provide accurate guides and slides, and to provide liquid tight joints. The problem covered in this film is hand scraping a fuel pump body to produce a liquid-tight joint.

The surface plate is shown and its function in machine shop work explained, with emphasis being given to the need for care in its use. Closeups show the burrs on the edge of the piece to be scraped as the commentary stresses the necessity for removing all burrs and dirt from the piece before it is put on the surface plate Prussian blue is applied to the surface plate, the fuel pump body is placed on the plate and moved over the surface in a circular motion Extreme closeups show the points that have gathered the most blue as the commentary indicates that these are the points requiring scraping

Five common forms of hand scrapers are shown. The straight flat scraper is selected for this job, and the operations and care used in sharpening and using this scraper are shown in detail. Closeups and commentary combine to call attention to the position of the scraper, and the methods used in scraping around holes, and near the edges. After the first scraping, the piece is cleaned and tried on the surface plate the second time. This time the blue points have increased in number and grown smaller in size. The scraping and trying is continued until the points of blue increase in number, grow smaller in size and are evenly distributed over the entire surface.

Scraping for a very fine finished surface is illustrated with the use of alcohol on the surface plate instead of Prussian blue. This time the places requiring scraping show up as bright shiny points.

The film closes with a review of the important points to be remembered in hand scraping.



3 SCRAPING AND FITTING SMALL BEARINGS . . . .

This motion picture shows and explains the procedures, methods, and operations followed in hand scraping curved surfaces. The scraping of split and solid bearings, the laying out and chipping of oil grooves, are demonstrated in considerable detail

The film opens with a discussion of bearings which points out that all bearings must provide full support, be in perfect alignment and provide for lubrication

The first job demonstrated is the scraping of a split bearing of the pillow block type for a jack shaft The forms of hand scrapers used for scraping curved surfaces, the three cornered, the half-round curved, and the half round straight scraper are introduced The bearing and the shaft are clean and free from dirt and burrs. The shaft is coated with Prussian blue, placed in the bearing, and turned two or three times The high points of the bearing gather blue and on this first check, the points of blue are most noticeable high up on both sides of the bearing, indicating that it is too small These points are scraped with a half-round straight scraper. The scraper is worked from the bottom up, following the surface of the bearing and removing just enough metal to remove the blue markings. This is repeated until the blue marks are evenly distributed in the bottom and top of the bearing indicating that full support is being provided for the shaft. The location of the blue markings when the bearings are not in alignment with the shafts is shown

Animation is combined with commentary to explain the relieving of such bearings to aid lubrication, and the manner in which oil grooves are layed out and chipped.

4 REAMING WITH STRAIGHT HAND REAMERS . . . .

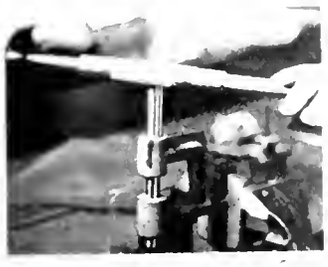
This motion picture shows and explains the operations, methods, and procedures used in hand reaming with straight hand reamers Hand reaming a bearing with a straight fluted reamer and hand reaming a gear blank with a spiral fluted reamer are demonstrated in considerable detail.

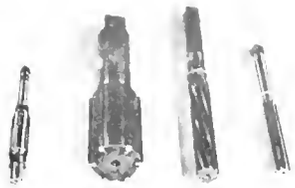
The film opens with the drilling and machine reaming of two bearings in line Animation, combined with closeups and commentary, calls attention to the differences between machine and hand reamers Four basic types of straight hand reamers; the solid straight fluted, the spiral fluted, the inserted blade, and the adjustable blade reamers are shown and the differences of each explained.

A straight fluted reamer is selected for the reaming of a two bearing bracket.

Attention is called to the necessity for checking the exact size of each reamer with a micrometer since the reamer may have been sharpened and may no longer be the size stamped. Animation and closeups show the care required to secure the correct measurement without damaging the blades. Animation, combined with commentary, is used to show the reamer blade, to name its parts, and to explain the work performed by the tapered tip.

The reamer is inserted in the bearing, its straightness is checked from two angles, and the reaming started, as the commentary warns that reamers must never be turned counter-clockwise. Smooth even strokes are taken with just enough pressure to make the reamer cut. Closeup cutaway views show the smooth finish left by the hand reamer as contrasted with the finish left by the machine reamer.





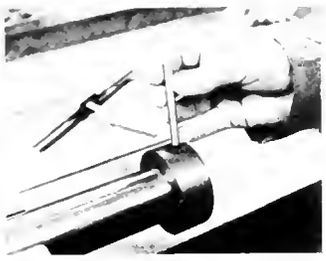
The second job, a hole in a gear blank, has a keyway, so a spiral fluted reamer is selected as the commentary explains the reasons for this selection. The size of the reamer is checked, and the reamer started in the hole. The reamer is not ground for the tough steel of the gear blank and begins to chatter. Closeups of the reamer marks, and views of the action of the reamer, explain "chatter" as the commentator states that reamers must be correctly ground for the type of metal being reamed. The hole is reamed, checked with a plug gage, and found to be the correct size. The film closes with a brief resume.

5 REAMING WITH TAPER HAND REAMERS . . . .

This motion picture shows and explains the tools, operations, methods, and procedures used in taper hand reaming. The demonstrations covered are the hand reaming of a taper pin hole through a shaft and collar and taper reaming a dowel pin hole.

A study of the blueprints starts the first job. This shows that a No. 6 taper reamer is called for as the commentary explains that reamers for taper pins come in sizes numbered from 0 to 13. Animation explains the desirability of drilling the top portion of a tapered hole to a larger diameter than the lower portion. Closeups combined with commentary stress the necessity for starting the reamer straight in the hole and show the method used in checking this.

Emphasis is given to the principle that all reamers must be turned clockwise with a smooth even motion and a slightly downward pressure. Animation shows the action of the reamer blade in removing metal with a scraping action. The reamer is removed, the hole is cleaned and the taper pin tried. It does not go through so the reamer is replaced in the hole and a few additional turns taken. The pin now extends above the hole just enough to permit driving it home with a hammer, since a tight fit is required. The hole is now to size.



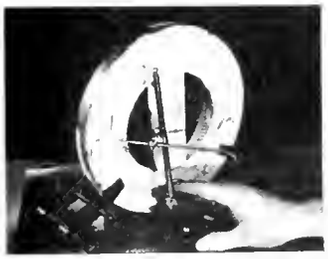
The second job is the reaming of a hole for a dowel pin on a split bearing cap. Considerable attention is given to aligning the split bearing before reaming the dowel pin hole. Since the dowel pin should remain fixed in the cap of the bearing, the hole in the lower half of the bearing is given a few additional turns of the reamer to relieve it.

The film closes with a brief review of scenes illustrative of the important points to be remembered when using a taper hand reamer.

6 LAYING OUT SMALL CASTINGS . . . .

This picture shows in considerable detail the methods and procedures used when laying out a small casting for drilling. The location of a reference point and the necessity for working from this reference point when laying out such castings is emphasized.

The first job of layout pictured is a casting for a circular saw bracket in which the bolt holes must be located in relation to the saw bearing. The machined portions of the castings are coated with a marking compound, the casting is wiped clean and set on a surface plate. It is set square with the edges of plate and clamped in position. Referring to the blueprint constantly, the worker uses a combination square and surface gage to locate the horizontal center line of the bearing hole. Closeups show the use of the hermaphrodite calipers to locate the center on this horizontal center line. This center becomes the reference point from which all other measurements are calculated. The surface gage and steel rule are then used to locate and mark the bolt holes. The casting is taken from the surface plate and the holes are punch-marked to guide the drill press operator.



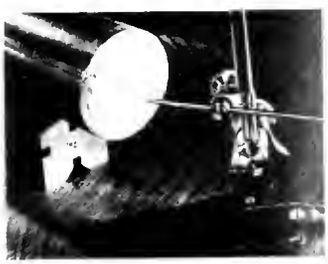
The second job is the location and punch marking of six regularly spaced bolt holes on a pipe flange casting. The casting has been coated with whiting, centered, and clamped to an angle plate. Using the blueprint as his guide the worker sets his dividers and scribes the circle on the flange. A surface gage is used to scribe the diameter intersecting the circle. Keeping the same setting of the dividers, one leg is set at the intersection and two arcs are scribed from each intersection. This system divides the circumference into the six equal parts necessary to locate the six holes.

The film closes with views and commentary emphasizing the necessity for accuracy in all layout work.

7 CENTERING SMALL STOCK . . . .

This picture shows in considerable detail the tools used and the methods followed when locating the center of round, square, and rectangular pieces.

The film opens with a pictorial demonstration of some of the ways of locating the center of round stock. The first method shows the use of a flat surface, V blocks, and surface gage. Measurement of the stock shows that it is $\frac{1}{4}$ inch oversize in diameter as the commentary indicates that with this much oversize the location of the center needs to be only approximate. In this method of centering, attention is called to the necessity for having the flat surface, the V blocks, and the stock clean and free of burrs. The stock is placed on the V blocks, and the end coated with common chalk. The surface gage is used to scribe a line slightly above center (the commentary states that slightly below center would be equally correct). The stock is turned 90 degrees and a second line scribed at right angles to the first. Another 90 degree rotation of the stock and a third line is scribed parallel to the second. The two sets of parallel lines enclose a small square, a punch is used to mark the estimated center of this square. Two other methods of locating the center on round stock are also depicted: (1) the use of the hermaphrodite calipers, and (3) the use of a center head and rule.



The location of the center of square stock is shown in similar detail with the use of a combination square. The location of the center of rectangular stock is demonstrated first with a combination square and then with a pair of hermaphrodite calipers. In each demonstration, closeups show the setting of the tool used, the scribing of the lines, and the punch markings of the center.

The film closes with a brief review of the main points of each method, stressing the constant need for cleanliness and accuracy.

FOOTAGES AND COST OF TITLES ON SAME BASIS AS PREVIOUS REELS

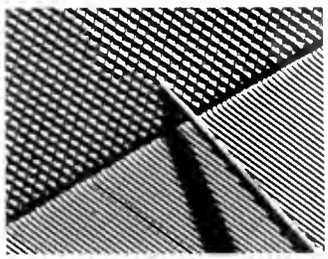
8 FUNDAMENTALS OF FILING . . . .

The purpose of this motion picture is to give the beginner in shop work the information that will enable him to select the right file for the right job.

Motion pictures are combined with commentary to define the terms used, to distinguish the various kinds of files, and to indicate the general type of work that each kind of file does best.

The film opens with a man filing as close ups and commentary indicate the importance of the position of the hands and the correct pressure of stroke. Extreme closeups, combined with commentary, explain the two meanings of the term "cut" as it is applied to files. Extreme closeups shows the difference in spacing between the teeth in coarse "cut" and fine "cut" files. Closeups and commentary indicate the range in files from coarse to fine and explain that the bastard cut is the one between the medium and fine. An enlarged profile view of the teeth on a single "cut" file demonstrates that they are shaped like the teeth on a hacksaw. Closeups and slow motion are used to show the formation of the chips between the teeth.

There follows a sequence demonstrating and explaining the need for keeping the file clean. The formation of pins; the manner in which they scratch the surface of the work being filed; and the use of a file card, or piece of soft brass to remove the pins from the file are shown in considerable detail.



The use of single cut files to obtain a fine finish on soft steel, and the use of oil or chalk is illustrated. The use of draw filing with a single cut fine file to secure a fine finish is demonstrated.

The difference between the single "cut" and double "cut" files is shown and explained and the general principles determining the use of each given. The principle that the double cut file is always selected to remove excess metal is explained as a bench worker files a rough casting. The warning is also given that too much pressure should not be used since it may ruin the work or the file.

There follows a series of brief sequences showing various cuts of files being used on various kinds of metals as the commentary gives the names of the files and the reasons in terms of the metal and job each file was selected to do.

SINGLE POINT CUTTING TOOLS

1 FUNDAMENTALS OF SIDE CUTTING TOOLS . . . .

This is a motion picture study of a single point side cutting tool in action. The film gives in considerable detail (1) the name and location of each part of the tool, (2) an explanation of the relationship between each part and the job the tool has to do, (3) an explanation of how the job of cutting metal and carrying off the heat generated affects the shape, the setting, and the care of a single point side cutting tools as used in a lathe.

The picture begins with views showing how a side cutting tool is formed from a solid piece of tool steel. As each part of the tool is shown, it is named, and the relationship between the various parts shown. The tool (of the inserted bit type) is inserted in a holder and clamped in position in the tool post.

Animation shows the direction of the pressure that results from turning work passing a stationary cutting tool when the tool is located (1) on center, (2) below center, and (3) above center. This is followed by a series of closeups showing the tool at work, at normal speed, at slow lathe speed, and at slow motion speed.

Closeups and commentary call attention to the heat generated at the cutting edge by the cutting of the metal, the friction of the moving chip, and the bending of the chip.

The presence of heat in the cutting tool is demonstrated. Pictures and commentary combine to explain the manner in which the heat is carried from the cutting edge and dissipated through the machine. The action of a side cutting tool with a chip breaker groove is shown in considerable detail as the commentary calls attention to the convenience of the closely curled chip and the lessened heat generated.

The edge of a tool broken down by excessive heat and the resulting cut is shown in extreme closeup.

The picture closes with a brief series of views emphasizing the necessity for grinding cutting tools to the correct shape in order to generate as little heat as possible and to provide the support for the cutting edge necessary to carry off the heat that is generated.

2 FUNDAMENTALS OF END CUTTING TOOLS . . . .

This is a motion picture study of representative single point end cutting tools in action. Six representative tools are shown and the various uses and characteristics of each discussed in detail.

The film opens with views of the grooving or nicking tool. The parts of the tool are named, pointed out, and the relationship of each to the other parts of the tool explained. Attention is called by picture and commentary to the end cutting edge and to the fact that this is the widest part of the cutting end. Closeup views of the grooving tool in action serve to explain why all end cutting tools have a minimum heel clearance and are usually set on the center line and square with the work.

The same closeup shows the chip breaker groove ground into the cutting face, in action.

The next sequence of views shows the parting tool cutting off or parting stock held in chuck. Pictures and commentary point out that this tool cuts deep into the work, generates considerable heat, and is, therefore, seldom used at high speed.

There follows other series of views dealing with the radius tool, the threading tool, the sheer cut finishing tool, the round nosed finishing tool, and the side facing tool. In each instance, the parts of the tool are shown and named; the tools are shown taking a typical cut, the correct setting of the tool is indicated; and the type of cut each is ground to make is discussed. Extreme closeup views, slow motion, and commentary are combined to explain each of these points.

The film closes with a brief review of the important points to be remembered about each of the six end cutting tools covered by the motion picture.

CONTRIBUTING PRODUCERS of the VICTORY TRAINING FILMS

★ *Films on Bench Work (5) were produced by* RAY-BELL FILMS, INC.

★ *Films on Bench Work (3) and Cutting Tools were produced by the* CALVIN COMPANY

★ *Films on the Engine Lathe & Drill Press were produced by* WEST COAST SOUND STUDIOS, INC. (N. Y.)

THE ENGINE LATHE

1 TURNING A TAPER WITH TAILSTOCK SET OVER . . . .

The purpose of this picture is to show the operations and sequences followed when turning a taper on a lathe with the tailstock set over. The picture begins with a definition of the word "taper" and mentions some of the many ways in which they are used in machines.

The three methods commonly used when turning tapers on a lathe are mentioned and the reason is given why it is sometimes necessary to use the set-over method.

Animation is used to show just how the tool cuts a taper with this method and demonstrates the movement of the tailstock when it is set over.

Methods of calculating the amount the tailstock must be set over to cut a given taper are given together with the calculations which are shown in detail on the screen. Three methods are shown for setting the tailstock to a given distance.

One method uses a gage block, another method uses the dial indicator, and still another uses the cross feed screw and its index. The necessity for setting the tool on center when cutting tapers is emphasized.

The terms "feed" and "speed" are defined and illustrated by animation as is also the depth of cut. The use of a reference book or reference table when determining the cutting speeds for the various metals is shown and the operator is seen as he sets the change gears for the correct speed and feed of the job to be done.

The shaft of the belt on a cone-head lathe is also shown. The methods used when setting the tool for a roughing cut on a taper are shown in detail and the necessity for keeping the tailstock center well lubricated is emphasized. The use of the ring gage for testing the accuracy of the preliminary setting, as well as that of the finished surface, is shown in detail and explained fully in the commentary. The use of a narrow finishing tool and a fine feed for finishing is shown.

The picture closes with a series of shots reviewing the principal items shown.

2 CUTTING AN EXTERNAL ACME THREAD . . . .

The purpose of this picture is to show the methods used and the sequences followed when cutting an external acme thread. The picture opens with a description of the acme thread, giving its shape and emphasizing the fact that the broad surfaces on the thread provide for the transmission of power and motion with the least amount of friction. The operator is shown studying a drawing and a table showing the dimensions of acme threads is used by him to get the dimensions of the thread he is to cut.

The method used when setting the cross-feed index for the roughing cut is clearly shown as is also the manner in which the operator sets the stocking tool to the work and checks this setting after a preliminary cut has been taken. A magnified closeup gives the outline of a stocking tool. Commentary is used to discuss its shape and the necessity for using such a tool. The various steps followed when taking the roughing cut are shown in detail from the beginning of the cut to the finish.

After the roughing cut has been completed, a finishing tool is substituted for the stocking tool. The method the operator uses for setting this finishing tool by means of a setting gage, together with the procedure followed when picking up the thread left by the stocking tool are shown in detail, supplemented by description in the commentary. Also, the use of the threading dial and the method by which it is set are shown in detail.

After the cross-feed index shows that the thread has been cut to depth, a gage is tried on the thread showing that the thread is still slightly oversize.

The picture shows how this condition is corrected and closes with a resumé of the various items shown in the picture.

THE SENSITIVE DRILL

Footage and prices of all subjects on same basis as previous reels

1 DRILLING A PIN . . . .

This picture shows the operations and sequences followed when drilling a hole in each end of a steel pin.

Two methods are shown: drilling to a layout; and drilling with a jig. The methods and tools used when laying out a number of pins for drilling, and the use of a V-block when drilling, are shown in detail.

The necessity for following the drawing at each step is emphasized and attention is also given to the need for cleanliness of machine and tools.

Setting up the machine for drilling with the use of a V-block, the setting of the spindle stop, and the precautions to be observed when drilling deep holes in steel are all shown in detail.

The use of a jig when drilling small, deep holes is shown in detail. Closeups, combined with commentary, explain the uses of jigs in production work, and show the job is speeded up. Commentary is used throughout to explain the reasons for each movement and to emphasize the various safety precautions that must be observed.

The picture closes with a brief resumé giving all the chief points of interest in the picture.

THE VERTICAL DRILL

Footage and prices of all subjects on same basis as previous reels

1 LOCATING HOLES, DRILLING AND TAPPING IN CAST IRON

The purpose of this film is to show the methods and sequences followed when drilling and tapping cast iron. The picture opens with a few shots of the operator laying out a bolt circle with eight holes. The methods of locating the center of the bolt circle and the centers of the various bolt holes, together with the way they are marked to guide the drill press operator, are given in detail.

The method of setting up the piece on the table of the machine, the correct methods used for clamping, and the necessary adjustments to the machine are shown in detail.

An ordinary drill chuck is used for drilling the holes, the procedures by which the operator "draws" the holes are shown in extreme closeup. The methods used for checking the location of the hole by the prick punch marks is also shown in extreme closeup as is also the shape of chips given off by a correctly ground drill.

After all the holes have been drilled, a tapping chuck of standard make is used to tap the two holes for set screws. The method of setting the machine for this operation and the precautions the operator must take are shown in detail.

The picture closes with a resumé giving all the important points covered in the picture.

2 COUNTERSINKING, COUNTERBORING AND SPOT FACING

The object of this picture is to show the methods and sequences followed when setting up a vertical drill for three different production jobs. The methods followed in mounting the work on the table of the machine and in setting up the machine so that a number of pieces can be done without changing the set-up are given in detail.

The first piece is 3 16th by 2 inch steel which must be drilled and countersunk. A vise is bolted to the table of the machine to hold the piece of steel which is to be drilled and countersunk. All the holes are drilled in all the pieces and, after changing tools, they are all countersunk, using the same set-up. The method by which the operator sets his machine to cut each hole to the same depth is shown.

The second piece is a small cast iron pedestal, the hub of which must be drilled and counterbored and the base drilled and spotfaced.

A cast-iron pedestal is mounted directly on the table with the necessary stops and the machine is set to drill the lead hole for the pilot in the counterbore.

After all the pieces have been drilled, the counterbore is inserted in the spindle, the machine is set to cut to a given depth, and the work on the one piece is completed and checked, after which the operator completes the counterboring of all the pieces.

After the counterboring has been completed, using the same set-up, the operator drills and spotfaces the holes in the base.

The necessity for planning when to do production work in order to keep the number of times tools are changed to a minimum, is emphasized as is also the advisability of using simple methods when setting up work.

The picture closes with a resume of all the important points covered.

A USERS GUIDE

to understand certain points. In this case perhaps only a portion of the film should be repeated. This can be easily done by running the film between the two reels rapidly until the desired portion is available, threading this in the projector, and running just the portion of the film desired for the class.

Some slow students may have failed to grasp some of the most important points. There is no reason why the film should not be repeated for these students while the instructor works with the rest of the class.

The number of times the entire film, or portions of the film, should be repeated will vary with the abilities of the class, and with the complexity of subjects covered. Like most good work, this becomes a matter of judgment on the part of the instructor.

Follow-Up the Lesson

After each and every lesson, or after a series of lessons, the instructor should determine whether or not the students have actually learned what the film was designed to teach. The little discussions that may follow the individual showings, or the class practice on the machine after the showing, may serve this purpose.

In either case, written tests, verbal discussions, and the like are not sufficient. The films are designed to expedite the development of physical skills, to help students learn "how to do" a given job of machine operation. Therefore, each and every follow-up, or checking, should include practice on the machine itself. Often these practice sessions will indicate that another showing of the motion picture would have value.

Conclusion

Training motion pictures bring to the instructor a new and powerful tool. Reports from teachers using them indicate that they are speeding up training, producing better trained operators, and helping workers upgrade themselves.

The Complete Script: No. 1 Film on Shipbuilding Skills
"Preparing & Setting a Keel Block and Bottom Cradle"

To Speed Ships for Victory

★ BEFORE any modern steel ship can be constructed, it is necessary to build a form or mold that will support the ship and determine its shape. This mold is called a bottom cradle.

It consists of a keel track . . . a series of wooden blocks upon which the foundation of the ship is laid . . . . . and a series of spauls, that determine the shape of the hull.

It is from this mold or bottom cradle that all measurements throughout the entire construction of the ship will stem.

To the shipwright falls the responsibility of building this bottom cradle accurately.

The shipwright must build the cradle to conform exactly with the ship's blueprints and template molds.

He must also transfer all fundamental lines from the template molds to the cradle.

A thorough understanding of these lines is essential to all shipbuilding work

because once they are established on the cradle they become the basic lines from which all measurements are taken throughout the construction of the entire ship.

The first line to be established is the base line.

It is from this base line that all heights, or vertical measurements, are taken.

The second is the center line.

All widths, or transverse measurements, are taken from this center line.

The base line and the center line must always be considered as planes.

The base line extends from an established point at the base of the ship.

The center line runs the length of the ship midway between the two sides.

For convenience in locating and checking heights above the base line, blueprints and plans show a series of horizontal lines called water lines. They serve like subdivisions on a ruler and are generally marked off every four feet.

For convenience in checking cross, or *transverse* measurements, there are also subdivisions. These extend every four feet out from the *center* line. They are *buttock* lines.

All water lines and buttock lines are actually *planes*, subdividing the entire ship into long strips, or sections.

In order to shape the ship—one other set of lines is required. They are called *frame* lines.

Frame lines are vertical planes subdividing the ship *lengthwise* at fixed points.

Since water lines are measured upward from the base line, they are marked in terms of distance. Four feet eight feet twelve feet and so on.

The buttock lines are also marked in terms of distance—in this case, the number of feet from the *center* line.

The frame lines are numbered progressively from the forward end to the after end of the ship.

Once these lines are established we can regard the entire ship as composed of many small sections of various shapes and sizes.

A knowledge of these lines and their relation to one another is essential to all shipbuilding work.

It is important to remember that all these lines retain their same relative position regardless of the angle upon which the ship is built.

For instance if the ship is to be launched stern first, it has to be built on a grade steep enough to allow the ship to slide into the water . . .

This grade or angle is called the *declivity* angle. The degree of this angle is determined by the engineers according to the length and weight of the ship.

Before the keel blocks can be placed, the shipwright must first set up a series of wooden guides or forms at the exact height required for each section of the keel track . . . because the tops of the forms represent the top of the keel track. each form is first checked with a spirit level. These forms are called straight edges and can be used for checking the declivity angle.

To do this, the shipwright places a long straight board across two of the straight edges. A declivity board and a spirit level are then employed.

The declivity board is cut to the exact angle of keel grade. It is always used in conjunction with spirit level in checking declivity angle.

Each section of the keel track is made up of a number of blocks . . . there are, filler blocks two wedges which make easy removal of the section at launching—and a main keel block.

Since the top of the main keel block must be cut to the declivity angle it is necessary for the shipwright to mark it accurately. This is done by stretching a chalkline between the straight edges.

When this line is pulled tight over the tops of the straight edges it is at the correct angle of declivity.

Snapping the cord marks off the correct declivity angle on the block.

Cross lines are also marked off, so that the blocks can be cut to exactly the correct angle and height required.

To hold the block steady for cutting, it should be toe-nailed to a larger piece of timber. The shipwright uses a broad axe for a rough cut.

Then an adze is used to get a smooth, accurate finish.

After cutting, each main keel block must be checked for the correct height and proper declivity.

Even a slight error in the height or declivity angle of a single keel block is apt to throw the keel of the ship out of line. Therefore constant checking is absolutely necessary.

Once accurately cut, checked and placed the blocks are toe-nailed in position. A shifting line is scribed or raced into the wood with a racing knife. This line serves as a tell-tale should the blocks be shifted out of position.

The blocks and wedges are then marked with their proper number. Each section is numbered to identify its position in the keel track.

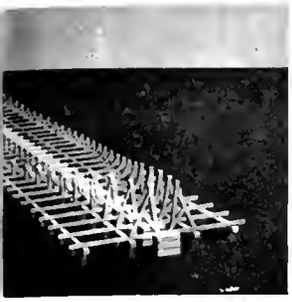
With the keel track properly located –

The spauls are next set in position. Since the shape of the hull is determined by the shape of the spauls separate patterns must be used for each spaul.

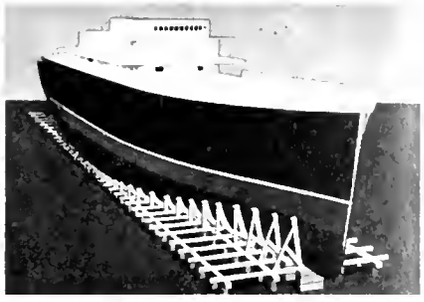
These patterns are called template molds and the shipwright

(PLEASE TURN TO PAGE 24)

THE COMPLETENESS OF DETAIL and helpful interpretations of shipbuilding facts is typified by the above script and the key scenes from the same film shown opposite. From "Preparing & Setting a Keel Block & Bottom Cradle" produced by Caravel Films, Inc. for the U.S. Office of Education.



ottom cradle is the mold on ship consfruction begins



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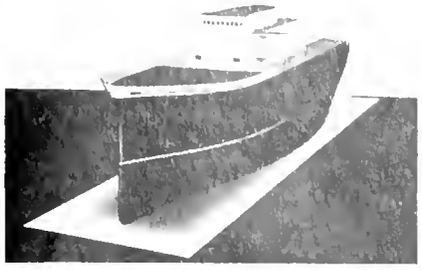

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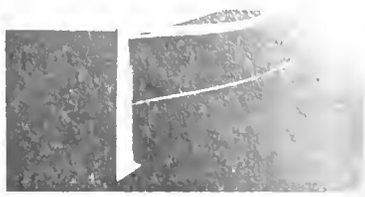
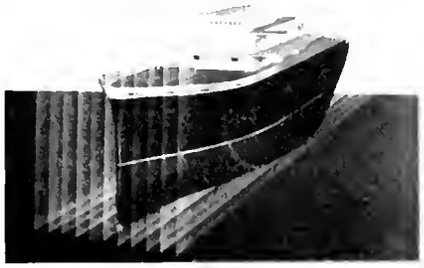
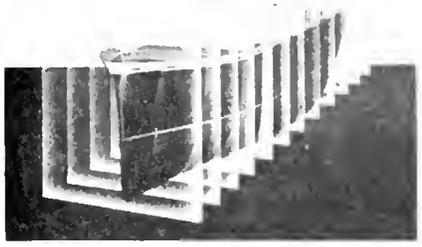


The second line to be estoblished is the center line

es of horizontol lines (the water subdivide height



Cross or transverse measurements ore token via the buttock lines



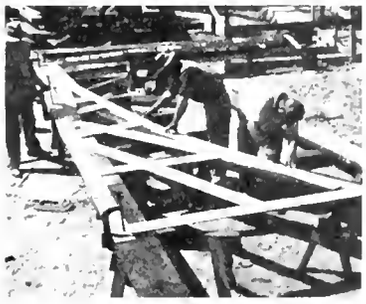
Frame lines ore verticol planes subdividing the ship lengthwise

The declivity angle (for lounching purposes) is bosed on length and weight

t edges ore used for checking clivity angle

A chalkline pulled tight over the straight edges is at correct declivity ongle

A shifting line scribed into wood serves as tell-tale should blocks shift out of position



Potterns colled templote molds determine spouls on which hull forms

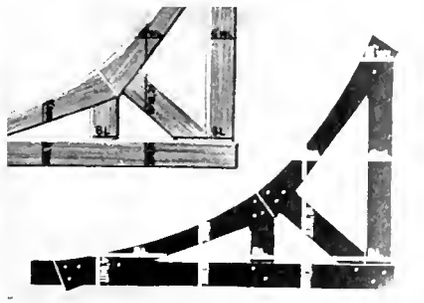
spaul is clamped together and d if is drilled for bolting

After bolting, all reference lines ore accurotely marked

Symbols ore clearly morked: this mork indicotes the 12 foot buttock line

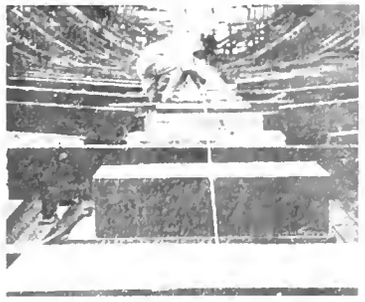
With half the spoul completed, the templole is reversed for other side

ide of ship (looking forword) ; right side is called Starboard



Completed sections are immediotely morked for either port or starboard

After spauls ore in position, final checkup is mode with templote mold



Finol checkup of center line and declivity angle before keel is loid

SHIPBUILDING:

(CONTINUED FROM PAGE 20)

... templates for spauls to conform exactly with these templates. The station, water lines and buttock lines are indicated on the templates and must be carefully checked and transferred to the spauls.

When the spaul has been clamped together and marked from the template it is drilled for bolting.

After the heavy timbers of the spauls are securely bolted, all reference lines are accurately marked.

The lines are then re-traced with a racing knife so that they will remain permanently in the wood.

The symbol for each specific line should be clearly marked with a marking brush to avoid mistakes in setting the cradle. This mark indicates the 12 foot Buttock line.

Since both sides of a ship are exactly the same blueprints and templates are usually made for only one side.

Therefore, with half the spaul completed the template is reversed or turned over from the center line so that the other half of the spaul can be made.

The left side is always the left side of the ship looking forward. This is usually called the Port Side.

Everything to the *right* of the center line looking forward—is the Starboard Side.

As soon as any section is completed, it should be marked immediately with the hull number, frame number, group number and symbols indicating whether it is for the port or starboard side of the ship.

After the spauls are in position . . . a final check-up should be made with the template mold before the plates are set.

A spirit level is used to check the spaul on a water line at a buttock line. The water line must be parallel to the base line . . . and be square with the center line.

In order to have permanent, immovable checking points for measurements during the construction of the hull, a series of monuments are placed alongside the ways.

These monuments are placed at various heights corresponding with the declivity angle, along the length of the ship.

The top of the monument represents the base line. All vertical measurements can be checked from it. The center line can be checked by measuring halfway across the hull between two opposite monuments.

To avoid any possibility of error a final check up of the center line and declivity angle is made before engineers before the flat keel is laid.

SUMMARY OF FILM

Since all measurements throughout the construction of the entire ship will stem from the basic lines established on the cradle every possible precaution must be taken to make sure they are absolutely accurate.

These lines must always be regarded as planes.

The base line as a plane located at the base of the ship from which all vertical measurements will be taken.

Water lines as planes which will serve as convenient checking points for all heights above the base line.

The center line as a vertical plane midway between the two sides from which all transverse measurements will be taken.

Buttock lines as planes which will serve as convenient checking points for all distances from the center line.

Frame lines as planes dividing the ship lengthwise into numbered sections.

Therefore in constructing a bottom cradle, the shipwright is charged with a dual responsibility that of building the keel track and bottom cradle accurately and to establish all the fundamental lines from which all future measurements will be taken throughout the construction of the entire ship.

* * *

Editor's Note

♦ Additional scripts and key scenes from other typical U. S. Office of Education films will be reviewed in early issue of BUSINESS SCREEN. The first thirty-three films were reviewed in issue Number One of this current volume; a few additional copies remain and these are available at single copy price on written requests. A lengthy article giving complete data on these history-making productions, the example they have set for government training film activity and other factual background data will appear in an early issue. *Watch for it!*

* * *

TRAINING FRONTS:

(CONTINUED FROM PAGE 11)

foremen's conferences, use has been made of a number of the excellent supervisory training films now available from outside sources.

HEAT PRECAUTIONS SHOWN

For the plant employes, the company has recently developed a safety film, *Beat the Heat*. It is being shown in all the plants and is occasionally loaned out. The film deals with heat exhaustion during work and the precautions to take in order to avoid it. Insofar as they apply to the manufacture of steel, safety subjects are also shown that have been prepared outside.

For use among the employes in job training, the company has selected 18 of the United States Office of Education machine shop films. Trade apprentices, taking a four-year course, are shown the films as a supplement to their instruction on machines. Whatever pictures deal with their own or related trades are included in this instruction.

USOE SERIES OF REAL VALUE

For learners, who are brought into the maintenance division of the company to train for specific jobs, the Office of Education films have been found to be of great value in speeding up the process of training on particular tools or machines. The men in this division are shown those films that will serve to enable them to qualify as skilled operators under rigid performance tests. The six all-color sound pictures, *The Inside of Arc Welding*, recently released by the General Electric Company, will be shown to interested groups as rapidly as they are received.

Plant defense films are also exhibited before the plant employes in meetings of from 10 to 30 persons. Recent showings have included *The Warning*, which deals with the bombing of Nottingham, England. *Fighting the Fire Bomb* and an excellent first aid film.

Before purchasing titles from outside sources, the company officials satisfy themselves that plant directors of training have reviewed the films carefully and intend to use them for specific training purposes. In the field of public relations, "Big Steel" and its subsidiary companies have made use of industrial films virtually since their birth. Entering now into the production of much needed supervisory training films to give impetus to the war effort has therefore involved a procedure, which is, to a large extent, entirely familiar to them.

Experience has shown that diversification of programs is extremely helpful in keeping hour and a half conferences among foremen and supervisors at a high level of interest. Such diversification is provided by training films which give the conference leader a topic from which he may launch into a round table discussion on supervisory programs.

Western Electric Shows

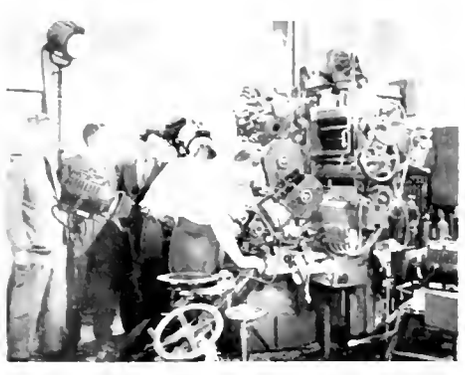
♦ The Western Electric Company introduced its new sound film *Telephone Arsenal*, to its Chicago Hawthorne Works employes during a seventeen-night War Production Rally, consisting of entertainment, patriotic pageants, and addresses by company officials on the progress of Western Electric's war effort. Included in the shows, which were held at the Morton High School Auditorium in Cicero, was the Army film, *Safeguarding Military Information*. Not only the company's employes, but their families and friends, were invited to the rally. The film, *Telephone Arsenal*, previewed by Western Electric employes of all its plants, shows the parallel between America's place as the arsenal of democracy and Western Electric's function as the arsenal of telephony, even to a large extent for the armed forces.

For Chicogo's Workers

♦ From Chicago also, comes news of a forceful twenty-three minute sound film entitled *While We Stood Still*, produced by the Advertising Men's Post No. 38 of the American Legion in collaboration with The Employers' Association of Chicago.

The film is being shown currently to thousands of employes in Chicago industrial plants. According to Mr. Gordon L. Hostetter, Director of The Employers' Association of Chicago, employers indicate that the film is making a great contribution to the all-out production effort, mainly because it gives to employes a correct, concrete viewpoint of the war.

* * *



BY POPULAR DEMAND we repeat the only "in action" picture of the able team who directed the vast training film activity for the U. S. Office of Education: from left to right, Mr. J. W. Barrett, USOE technical consultant, Frank Speidell one of the producers, and Floyde E. Brooker, Director, Visual Aids, U. S. Office of Education.

Photo by U. S. Army Signal Corps

Training films produced by the U. S. Army Signal Corps serve all branches of the Service according to their needs; (above) a typical Army visual aids class at work.

Quartermaster Corps Takes to the Screen

by First Lieutenant Raphael Dubrowin, Q. M. C.

★ The Great National Habit has been drafted.

Americans, from the farms and the towns, the factories, the mills, and the offices have shared, for the past generation, the delights of Hollywood's contribution to National Defense. To the average Yank, it is second nature to sit in a darkened auditorium and be amused, frightened, aroused, and instructed by the vicarious antics flashed on the screen.

The soldier in our new Army has had ample background in identifying himself with his movie hero, has subconsciously gone through the motions of each activity portrayed before him.

The War Department was not slow to recognize this.

Defining Training Films

Training Films, according to FM 21-6 (Military Training) are "motion pictures, sound or silent, produced specifically for use as visual aids in expediting and standardizing instruction in all components of the Army. They are designed for use primarily in the explanation, demonstration, or illustration of subjects."

Army films, which are rolling out of the Training Film Production Laboratories of the Signal Corps' east coast studios, cover a wide variety of subjects. Almost every step of training, enlisted man's or officer's, is being carefully photographed and recorded on the "sound track". . . . the actors are crack troops, the equipment in perfect condition, the lecturer or narrator well rehearsed; with each word of the script carefully checked by the best military authorities on the subject.

Whether the screen will bring to the audience a frank and emphatic discussion of sex hygiene, or an imaginative portrayal of the carburetion in a GMC truck, the soldier's interest can be more dramatically held than by most lecturers, however able they may be. The practical implications have been demonstrated time and time again. This method of instruction disregards the limitation imposed on a single officer addressing a small group of enlisted men. A motion picture projector can handle as many men as can be assembled in the theater, recreation building, or classroom. At the quartermaster School, simultaneous showings to several classes have given an identical hour of instruction to as many as three hundred at a time; and as soon as a building with a large enough assembly room is made available, it will be possible to show to groups of 600 to 1,200.

Advantages of Visual Aids

In technical subjects, the mysterious internal parts of various items of equipment can be shown in actual operation by trick photography, animation and slow motion. From a tactical standpoint, a film can show the development of a plan, giving the soldier at one time the entire scope of the action as well as the part he is expected to play in it. More important is the fact that the film will lend to the explanation an element of dramatic grandeur which will make the lesson stick.

Basic subjects, such as The Articles of War, Personal Hygiene, and Customs of the Service become vitalized with human interest when presented in story form, emphasizing the do's and the dont's in actual everyday problems.

Subject Has Dual Meaning

At the Quartermaster School, the question of visual aids, which include training films, film strips, film slides, screening maps and charts, and other demonstrations, has a dual meaning.

The Training Film Section, Technical Service Division of the School is charged with the production of all quartermaster films (except motor transport subjects which are handled by the Holabird Depot), and in addition manages the integration of visual aids with the School curriculum.

The subject of visual aids has received a great deal of attention at the Quartermaster School since it moved into its rather far flung surroundings at Camp Lee, Virginia, last September.

Colonel H. L. Whittaker, Commandant of the School, is a firm believer in progressive methods of instruction, and through his efforts a wide and comprehensive program for visual aids has been worked into the School curriculum. The theory, now actively in practice, is no longer "What shall the instructor tell his class?", but "What will the instructor say, . . . *and how can he show it?*"

Hours can be spent explaining the technique of concealment, of aerial photography, of the use of road blocks, all vital matters to the Quartermaster in the field, . . . but ten minutes of pictures can sometimes drive the message home, and the impression made will last long after the instructor's precise words have been drowned out by the confusion of combat. A good picture is equal to thousands of words, . . . a good picture, in motion, with the proper words cannot be measured in value.

Instructors at the School frequently plan their program of instruction in consultation with officers of the Training Film Section, in order to work into their curricula whatever visual aids are available and appropriate. The instructors are advised as to the contents of various motion pictures and film strips, the scope of the subject covered, and whether or not the particular point desired can be brought across.

Used to Make Comparisons

Not infrequently will a very well trained instructor, a specialist in his own field, find himself faced with the necessity of introducing, for purposes of contrast or comparison, a subject "not in his line." For instance, in teaching Field Operations, a discussion of armored vehicles may be pertinent. The Armored Force has turned out several films on the subject. In the Film Library at the Quartermaster School, there is an extensive collec-

(PLEASE TURN TO PAGE 25)

★ [illegible] a fascinating yet seemingly little experiment which our agency undertook to measure the degree of human remembrance of commercial movies. But, before you read further, please determine just type of advertiser you are, since this report will be of interest to one of two classifications.

To clarify this, let's first admit that the impact of war has divided most of us into two groups. At the risk of oversimplification, one group does seem to consist of those who wave the White Flag over the recumbent positions of their own advertising, who look upon priorities, ceilings zero, curtailed or non-existent production as reasons per se for eliminating their advertising for the duration.

Advertising's Three Fold Job

Group two however resolutely refuse to subscribe to this paralysis of waiting. Instead they clutch the flag tightly, move forward aggressively, realizing they have a 3 fold job which advertising can be made to do. (1) Vitally important though trite through constant repetition the need to keep their names alive, to keep the public aware and friendly. (2) To explain their present war coordinated efforts and more importantly their plans for the future. (3) To substitute for personal contact where sales and field forces have been contracted and to search out and greet that vast army of war production workers who have migrated to new homes near new jobs.

The following study therefore will hold real interest for Group 2 only. These advertisers are finding out that Today, more than ever, *front page display* for their advertising is absolutely necessary to compete successfully for war conscious interest.

Finance Company Launches Ads

A very successful finance company, thinking along these lines, decided to utilize the double firing power of motion pictures (eye plus ear appeal). They produced an inexpensive series of five black and white minute movies (each one minute long) for release on theater screens in many of their branch office cities. The effort started November 1941, carried through February '42 and was immediately followed by a second series of five pictures.

Because of government restrictions and because the national income is way above normal, an important part of the company's effort is measured by how well the company's name was impressed on

AN ADVERTISER COMPETES WITH THE WAR NEWS

The inside story of a new type of audience survey—measuring remembrance value of screen advertising

theater audiences, how much of the message was retained against another day and how acceptably did audiences receive the story.

Hence, a blind postcard questionnaire was designed, distributed to theater patrons (adults) as they left theaters where one of the minute movies was run as a part of the regular show. A Free War Map Gift offer was printed on the card to stimulate returns, said gift promised *whether or not the questions could be answered.*

Results: Out of 5,500 cards, more than 22% were filled out, mailed in (no postage cost). Before digging into the figures, it should be remembered that people received this card as they left the show and largely this meant that after people saw the minute movie they stayed for another feature picture, news reel, etc. Out of the people who said they saw the minute movie (and nine of every ten who answered did see it because with this type of advertising in a darkened theater, there is nothing else present to distract attention) 61.8% of them *correctly identified* the company who sponsored it (Sounds unbelievable, but I've seen the actual returned survey cards.

Question two asked whether those who saw the ad could remember at least one COMPLETE sales point in the film. 79.3% could, did, and described it and credit was not given unless there was entire remembrance of one sales point.

The last question attempted to evaluate public sentiment. 72.8% rated positive liking for the film with 5.3% additional rating their preference lukewarm. 11.2% did not answer and 10.7% did not like it for a wide variety of reasons. Of course, it can be argued that since a gift was given, recipient-to-be might be influenced to turn in a favorable reaction. Such reasoning however could only apply to the last question if any because promise of a gift could not help a person remember sponsor's name nor recall a sales story.

Good Case For Films

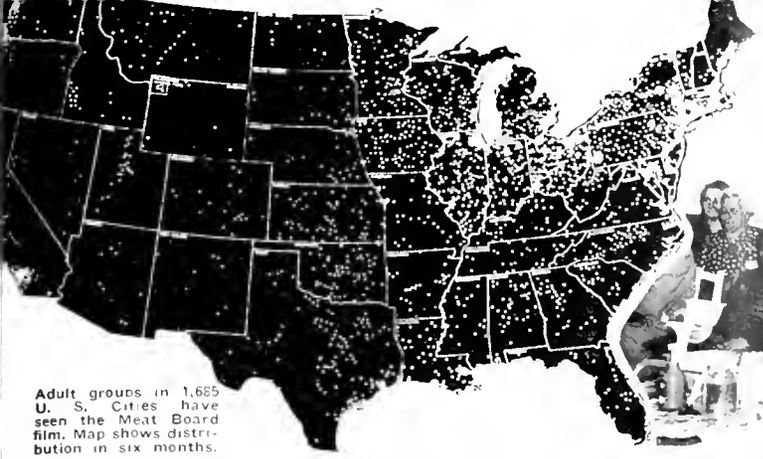
Just one other thing. Your editor to the contrary (since he asked for a factual report only) I believe a writer as well as a reader is entitled to draw a conclusion or two from established data and it seems to me the foregoing contains a strong case for the theatrical motion picture commercial short. Because it is true that, at most, an advertising medium is only a vehicle for carrying an advertising message and on this basis the commercial film field may well be proud of this proof of its ability.

*Editor's Note: A few copies of the complete survey are available to Business Screen readers. Write, if you'd like one.

New Western Electric Film Shows Importance of Salvage

♦ More than 75,000,000 pounds of junk metal, exclusive of much iron and steel, was salvaged for re-use last year in the Bell System. This statistic and many other arresting facts about metal conservation are revealed in a two-reel motion picture *Mines Above Ground* which was shown to the press in June.

According to P. L. Thomson, director of public relations for the Western Electric Company, who introduced the film, more communications equipment already has been made by his Company for our armed forces since the beginning of the present conflict than was turned out during the entire period of World War I. Such production calls for vast amounts of raw metal, far more than is available from conventional mines below the ground, hence, every ounce that can be salvaged from outworn parts and other scrap must be conserved for re-use. The picture *Mines Above Ground* also shows how conservation methods can be started.



Adult groups in 1,685 U. S. Cities have seen the Meat Board film. Map shows distribution in six months.

Housewives and their guests enjoy a showing of "Meat & Romance" at a recent California exposition.

MILLIONS SEE TIMELY NUTRITION FILM

★ With the entire country becoming daily more and more conscious of the need for proper nutrition for buoyant health, the motion picture *Meat and Romance*, which was produced by the National Live Stock and Meat Board, is a splendid example of a production which went into distribution at the proper psychological moment.

Alarmed at surveys which showed that more than 45 million Americans are living on diets that are entirely inadequate for good health, government authorities have launched a nation-wide intensive program designed to direct the attention of every man, woman, and child to proper eating habits. The anxiety of public officials was heightened when reports from army induction centers revealed that forty per cent of the selectees were being rejected because of poor health which could be traced directly to dietary deficiencies.

Mass Nutrition Drive Under Way

Plans were immediately gotten underway for a mass education drive on nutrition and these plans are now culminating in one of the largest co-operative promotions ever undertaken. Badly needed in peace time, proper nutrition on a national scale is essential now to enable the nation's workers to produce the necessary armaments with the utmost efficiency.

Already, a great deal has been accomplished. Almost every city in the country now contains one or more groups who are either conducting or preparing to conduct continuous courses in nutrition. The number of such classes is rapidly increasing and, significantly, they are turning more and more to motion pictures for assistance in their educational work.

Meat and Romance, produced a year and a half ago in 16 millimeter sound and partly in technicolor, has readily adapted itself to the national nutrition program. The fact that meat is the food around which housewives in 30 million homes build their meals has made this sound movie of outstanding significance in audience appeal. With the aid of a Hollywood cast to add human interest, the film depicts the wide range of meat cuts available, the use of less-demanded cuts in the economy budget, the basic principles of modern meat cookery, and the correct methods of carving meat. In addition, the new revelations concerning meat as a food which builds strong, healthy bodies are stressed and an excellent play is given, the recent research findings showing meat to be the richest source of the important B group of vitamins. The need for a well-balanced diet and the constituents of such a diet are forcefully presented. These are the foods which the nutrition authorities are stressing today.

Presenting graphic information on these four phases of the subject of meat—buying, cooking, carving, and nutritional values, this film has found an unexpected audience in these nutrition-minded groups. An indication of the scope of the interest in nutrition is reflected in the demand for *Meat and Romance* for use in nutrition classes alone, during the month of March. The film was shown to 11,155 persons studying nutrition in 104 cities of 28 states. Requests for the film came from Red Cross nutrition workers, extension agencies, groups working under the Federal Security Agency, local branches of the Office of Civilian Defense and similar organizations.

Although *Meat and Romance* was primarily produced for distribution in the nation's high schools, colleges, and universities, it was apparent from the first that the picture was of almost universal appeal. When Business Screen announced its release in December, 1940, it stated: "It was plainly evident after its premiere showing that it will be of equal interest to groups of people of any age and in all kinds of life."

An Outstanding Film Production

This has proven true. The consensus of thousands of comments received at the Board's office has been to the effect that *Meat and Romance* is one of the most helpful educational films produced. It is a masterpiece of understatement to say that such results have been gratifying.

Averaging 96 showings daily throughout the country, the picture had been shown 27,203 times to an aggregate certified audience of 1,128,950 by the end of March. This audience has been composed of 40 per cent adult men and women and sixty per cent high school and college students. The distribution, handled by Castle Films, has been carefully controlled. Each booking is made on request and even with 270 prints in distribution, the distributor has found it difficult at times to take care of the demand. All prints have been booked solid as far as two and three months in advance.

Prints Go To College Visual Services

Augmenting the distribution obtained by Castle Films, the Board has privately distributed 100 prints. Fifty of these have been deposited with visual education services of colleges and universities, a number have been sold to meat packers, schools, and boards of education, and a few are kept in reserve in the Board's offices. These prints are being shown to an average yearly audience of more than 500,000.

The Board, a non-profit organization engaged in education and research on the subject of meat, produced *Meat and Romance* with the collaboration of the Bureau of Home Economics of the United States Department of Agriculture. The script was carefully checked and approved by nutrition authorities before production.

(ABOVE) THIS LARGE AUDIENCE ATTENDED the showing of "Meat & Romance" which was a feature attraction at the recent "Health for Victory" Exposition staged at Bridgeport, Conn. Typical of crowd response to showings of this timely nutrition subject was the booth scene (above right) at another location. (Lower right) The map shows the widespread distribution of high school and college audiences in 2,486 cities in which the picture has been shown since September, 1941.

QUARTERMASTER:

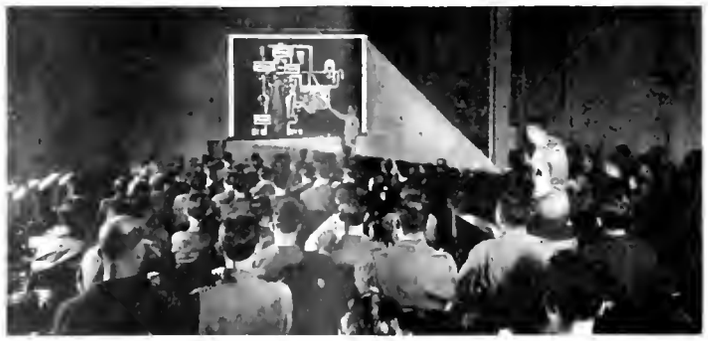
[illegible] dealing with the [illegible] arms and services [illegible] are being made at present [illegible] military training films of the armies of the other United Nations.

Visual aids in education do not always extend to the complicated business of producing or even using motion pictures. Officers concerned with the visual aid program at the School have scanned the courses of instruction to find various methods of illustration, visualization. Maps and charts need no longer be drawn laboriously on a blackboard, and neither time nor materials have to be utilized in extensive draftings. A simple six inch map, slide or illustration, can be projected on a six foot screen with a device called a "delineoscope". Maps cut from daily newspapers have served this purpose admirably. Photographs of trucks and other equipment, clipped from service publications, magazines and the like are similarly used.

The Training Film Section, now part of the School's, Technical Service Department, is close enough to the academic side of training, to make recommendations for the production of training films covering important subjects. The school, by correspondence, through recommendations of the Quartermaster Board, and from questions raised by students from units and organizations all over the country, has a firm basis on which to judge these suggestions.

Operates Like Touring Circus

The visual aid program operates like a traveling circus, but with greater efficiency, and more emphasis on training than on entertainment. Requests for the showing of films, or slides, or anything else are sent through in writing. The instructor figures on a certain portion of his lecture in which he too will listen to a Signal Corps narrator in an Army Training film, or counts on the help of some graphic illustration on the screen. At the proper time, a projectionist sets up in the classroom, puts on his "show", and leaves with the portable equipment for his next scheduled show. On this basis, as many as three or four classrooms become temporary theaters at the same time, and identical lectures may be heard by hundreds of students simultaneously. The value of this technique can only be appreciated when one considers the prospect of officer candidates [illegible] Hundreds, adding to the [illegible] this com-



Soldiers at an East Coast Quartermaster School learn mechanical details with the aid of visual training slidefilms. (Courtesy Jam Handy.)

Subscribe Now to the Industrial Index

★ In recognition of the need for training materials in war plants and vocational schools, a new Source List service known as the Industrial Index File was recently inaugurated by the Editors of BUSINESS SCREEN. Subscriptions include eight sets of Source Cards each containing a Training Film review and sources. A convenient file box and alphabetical index are also included at the cost price of only $3.00 for the complete service.

Subscribers Get Them First

♦ With this issue, subscribers to the Industrial Index will receive sets of source cards before the reviews appear in BUSINESS SCREEN. Currently, slidefilms are being reviewed for the Industrial Index and these are being supplied on color cards for ready identification in the file.

Only Training Films Listed

♦ Ordinary commercial films are not included in this service. It is exclusively a War Training activity, engaged in *at cost* for war plants and schools. Subscriptions are accepted from bona fide distributors and libraries to help them serve these industrial training users. The vocational and apprentice training director will find the Industrial Index invaluable as a source of new visual materials. Sample cards and full information will be sent on request without obligation, but such request must be made on a school or company letterhead. To date twenty-four cards have been issued and twelve additional are in work.

mand will number well up into the thousands.

Training film production is another phase of this work, one which is more extensive inasmuch as it involve agencies somewhat beyond the pale of the School itself. All arms and services are responsible for the planning of training films dealing with their own particular mission.

The Quartermaster General has assigned to the Quartermaster School the responsibility of preparing such film plans, preliminary scenarios, and the details of production. With the exception of films dealing with motor transport matters (the province of the Technical Service Division of Holabird), all other Quartermaster topics are being handled by the School's film section, under the director of the Technical Service Division. These subjects include a general exposition of the Quartermaster Services in the Infantry Division, Transportations of Animals (by water and rail), a lengthy opus on The Ration Supply in the United States Army, and other films dealing with the activities of Salvage Companies, Laundry Companies, Sterilization and Bath units, and more.

Makes Most of Facilities

The Commandant of the School, Colonel Whittaker, has made the most of the limited facilities available for this aid to instruction, and has, in so doing, facilitated the problem of the instructor and enlivened the curriculum for the student. This emphasis on progressive methods of instruction should set a standard for other service schools and all units charged with the responsibility of training.

* * *

EDITOR'S NOTE: The above is a condensation of Lt. Dubrowin's article, scheduled for an early issue of the "Quartermaster Review."

Telefilm Records in 16mm

♦ While 35mm recording technique has been comparatively static, 16mm techniques have been kinetic and have made marked forward strides, according to Joe Thomas of Telefilm, Inc., Hollywood. That others are recognizing this progress is indicated by the fact that more than 300 commercial, educational and training films have been sounded by Telefilm, as well as a number of distinguished screen tests, including that of Howard Hughes' still unreleased find, Jane Russell.

Among the clients, virtualy all of whom have repeated their choice of this service on from one to a half-dozen subsequent productions, are Santa Fe Railway, General Electric (the recent welding series), Denver & Rio Grande Railroad, Washington State Apple Commission, United States Department of Agriculture, National Dairy Products, Douglas Aircraft, TWA, Bell & Howell, General Petroleum Co., Gilmore Oil Co., Food Machinery Co., the Mexican Government, the Salvation Army, Pathe News, a dozen or more municipalities, and many others.

Some of the group were handled through such advertising agencies as J. Walter Thompson Co., Lord & Thomas, Botsford, Constantine & Gardner, and some through leading commercial producers.

BUILD MORALE

AND INCREASE PLANT OUTPUT WITH

CASTLE FILMS' MOTION PICTURES

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Up-to-the-mioute reporting of America's part in the war. Bombing of Pearl Harbor. U. S. Navy blasts Marshall Islands. Other great war films.

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Sports thrillers of all kinds. Fast-paced, exciting films on fishing, boxing, horse-racing, football, water sports, skiing, skating, bowling, bronco-busting. Top-notch eotertainment!

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Adventure thrills all around the world! Among African natives! Polar bear lassoing in the Arctic! Sea-going adventure on 85-ft. Gloucester schooner! Wild elephant round-up in Africa!

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Mirthful, merry antics that will keep 'em smiling! Over 25 cartoons from which to select. Hollywood-produced! Masterpieces in animation! Put them to work for you!

FREE! Castle Films' big new 32-page catalogue describing over 100 movies suitable for crowds of all kinds. Profusely illustrated. Describes each picture. Send for your copy now!

16 MM. SOUND-ON-FILM

Show them at pep meetings... during lunch hours... during the MacArthur Shift... at Bond drives!

Put your projectors to work at providing stimulation and recreation for your war workers! Recreation for workers improves productive efforts. Here are films of every description! War News films to let workers know what this country is fighting for... to show them why their *particular* work is vital! Here are Sports pictures . . . Adventure pictures . . .Travel pictures . . . mirthful fun cartoons! Films to banish fatigue and strain . . . to send craftsmen back to the job refreshed and revitalized!

Between shifts . . . during lunch and rest hours . . . at War Bond and other patriotic rallies . . .whenever a group of workers have half an hour for rest and recreation, afford them this welcome diversion. It will pay you big dividends in appreciation and greater effort. Castle Films are fast-paced, dynamic, interest-filled morale builders. Put them to work immediately! Write for FREE illustrated catalogue describing over 100 subjects!

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"WASHINGTON IN WARTIME." Our Capital teeming with action! A picture to show NOW!

"BRITAIN'S COMMANDOS IN ACTION." Most amazing under-fire picture ever filmed!

"RUSSIA STOPS HITLER." Grim, gripping battle scenes before Moscow! Red fighting fury!

"WILD ELEPHANT ROUND-UP." Suspense, danger, thrills in hunt with ropes! Brute strength against man's cunning!

"BOWLING ACES." Joe Falcaro, and other bowling stars, in action!

"ICE CARNIVAL." Cool picture for summer! Flashing skates! Flawless skill!

"BIG FISH." Battles royal with game fighters of the deep!

"A THRILL A SECOND." Quickest-moving movie ever offered! Daredevils tempting fate!

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Business Screen's Guest Article of the Month

Notes on Training Films

by Reed Drummond

★ And now we are going to look at a motion picture. Don't expect any supercolossal glamour glittering film. We haven't tried to make this picture interesting. Instead we have tried to put as much meat into it as we could."

Then, after someone, usually called Joe, has fumbled with the light switch, the picture comes on the screen. True, the sound may blast a bit at first . . . the picture dance or jump until it gets centered on the screen but, with reasonable luck, it takes only a few seconds until you find yourself looking at another training film.

True to the introduction, the picture will probably have a great deal of meat in it. But, after watching ten or twelve such pictures and audience reactions, there come questions. Why are the pictures introduced in that way?

Is it a sort of half-apology?

Is it an attempt to get the audience into such a frame of mind they will be pleasantly surprised?

A little checking up seems to indicate the former. For example, one school superintendent is alleged to have reported that instructors find most training films are satisfactory only for review work. Multiply that report just two or three times and you begin to wonder what has happened to all the findings we all know so well and which have proved the power and popularity of motion pictures for training purposes. Where is the commercial film producer who can't tell you of instance after instance about the success this company and that company had with pictures?

In the January February, 1942 issue of Army Ordnance, Lieut. Col. Roy L. Bowlin in writing about a motion picture on shell production says in part:

"Theoretically, a written analysis tells the whole story of any mechanical procedure in complete detail and with complete clarity. Militating against this, however, is the barrier of language- the problem of getting a detailed account, in words, of exactly what is done and the lack of certainty that the description, once formulated, will be correctly interpreted by everyone reading it. Using its motion picture as a supplement, the General Railway Signal analysis leaps this barrier of words and gives the observer the entire machining experience in the form of actual experience carefully visualized. The picture helps to close the gap between the written description and the actual operation. It enables the onlooker to see what is meant- how the cross and tools are doing the job. It lends final authority to the production analysis by making the onlooker an eyewitness to the effectiveness of the methods employed."

And so we come down to these inconsistencies; one, no one doubts the power and popularity of pictures two, business has used pictures with good success for training purposes three, the Government and all branches of the Armed Forces have carefully studied the use of pictures for training purposes and seem to agree they are one of the most effective media that can be used four, early reports do not reflect the enthusiasm always attendant to a well executed picture program.

Something is missing. Let's put down a few of the things which are happening and see if we can get a few answers- the kind of answers any experienced commercial producer can make. Of course, putting down answers is just another way of sticking out your neck but if the thoughts expressed here can stimulate a little healthy argument and progress let's not quibble over a neck.

There are those who admonish the picture makers, "These are serious times. We don't want any story, just the meat." They seem to forget that story treatment is just a device to help the memory and maintain concentration. Commercial producers know this. Can it be they are awed by uniforms to the extent they won't argue for principles they know are right?

★ ★ ★

★ There is another question which could be argued with those who insist on no story being present in training films . . . and that is the question of incentive. This, of course, is just another device to hold interest. Most people will agree that few of us will study voluntarily. We need some incentive. When we were in school, we had the incentive of the monthly report card and the punishment it would bring unless it measured up to expectations. In the training of salesmen the profit or increased earning incentive was used. How about training films? What incentives can be used here? How about the universal desire for recognition of ability? How about the fact that skill has always been a guarantee of security? How about the desire for promotion and progress? How about the desire for independence which comes when one has mastered a trade? How about pride and other emotions which have been successfully used as incentives?

Some say, "We'll have to go to movie headquarters for our films." To them that means Hollywood and Hollywood is not headquarters for training films. There is an interesting story about a contingent of Hollywood picture-makers working at one of our aviation centers. Denied the use of story and character, they looked for some way to use their established techniques and discovered the instrument board in the cockpit of a plane. The resulting films were complete with long shots for effect . . . angles, yes, but all were long shots. Now two or three reports are coming back of commanding officers who are seeking men who have not had Hollywood experience. In reality, this is a defense of the West Coast brothers. Their techniques are superb on their types of pictures. They have too much to offer. It is unfair to suddenly call upon them to throw away their value and adjust themselves to restrictions of training films.

And there are others who say, "We'll get experienced authorities on the subject to write the script." Here we have people who do not appreciate the tremendous gap between authority and author. It is no more reasonable to expect an authority on turret lathes to be an author than it is to expect a script

writer to run a milling machine. Authorities contribute most when they contribute accurate information . . . and some will appreciate the use of the word accurate here. They also have their use in checking final script insofar as factual material is concerned. You might as well buy and limit it to factual material because they are going to check script organization without encouragement.

In this same class, we have those who employ teachers to write scripts. This again is unfair. Text book technique and film technique vary as stud horse and the winner of the Kentucky Derby. For most people, reading is slow work. It can be laid aside from time to time. Pictures get ideas over fast and have no interruptions. As a result, they use up material a great deal more quickly than textbooks. And above all, they are intense . . . a form of concentrated training. It is possible to feed an audience too much, too fast.

* * *

★ Right along these lines, it seems well worthwhile to remember the proved three-step formula for teaching 1. aim—2. method 3. drill. In the recently modern language of the sales-training authority, one has been changed to "building desire" two changed to "explanation or sales presentation—and three to "demonstration". These same sales-training men speaking with experience will tell you that every minute of demonstration, particularly if you have the product in the prospects hands, is worth five minutes of explanation—every minute of explanation worth five minutes of "building up desire."

Educators don't always lay down such absolute proportioning of time but they do agree that "drilling," or said another, "learning by doing" should take up the most time in a teaching program. Now obviously the job of the training film is to cover the first two steps of this pattern. One educator advises holding the first step to a minimum and the final step to a maximum with the intermediate step only long enough to bridge the two. Another interprets it in percentage—ten per cent of the time for step one, thirty per cent for second step and sixty per cent for the third. Thus, in a one-hour class period, the first two steps would be covered in twenty-four minutes. All of this can be easily summarized for those who prepare training pictures. Keep your picture moving. Remember that ideally it has two jobs: one, to set the objective and, two, to explain methods for reaching that objective. Remember, also, that under ordinary circumstances, it should be so planned that it take up less than half the class time.

* * *

★ Now let's see if we can take all of these more or less miscellaneous thoughts and use them as a background to organize a pattern for training pictures.

One, the introduction and why the subject of the film is important in general and in particular for the audience.

Two, the objective why is the method to follow important where is the device used—how does it fit it.

Three, an overall view of the method—the steps to be taken to reach the objective how you can organize it in your own mind.

Four, detailed presentation of the steps and method the "how to do it" part of the picture.

Five, a summary—using action verbs rather than simply cataloging the steps by subheads.

Six, the conclusion—an exhortation, a proposal, a command or a conditional promise, i. e., "if you do so and so, you get this and that." Now how about the rest of the program or class period? At a recent showing of a really splendid training picture it was introduced something like this:

"In just a few minutes you are going to see a motion picture. You will see for the first time a special photographic effect because for the first time a high speed camera was used to capture in detail exactly what goes on when the machine is in operation. But, before we look at the picture, I have here a working model which I will show you."

Then came ten minutes of detailed explanation with a working model. Any commercial producer of training pictures will tell you that this speaker might just as well have saved his breath. When you tell an audience it is going to see something and then show it something else, you run into immediate trouble with that eternal problem, audience interest. Moreover, when the picture ended, this man had nothing to talk about. The lights came on. There was a courtesy applause. A reaching for cigarettes and then everybody went home.

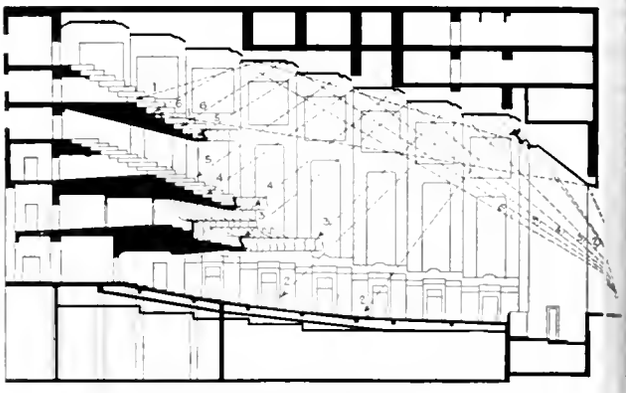
Producers know what that kind of program planning does to prospects. They are slow to sign up for another picture, because as they explain it, "The last picture didn't seem to have the lift it should have."

We all know the arguments to cover this, i. e., "a picture worth

(PLEASE TURN TO PAGE 71)

ACOUSTICS

is more than just a word



[illegible] of the Civic Opera [illegible] parts of house.

At the Civic Opera House it is an *achievement!*

The public pays to HEAR EVERY WORD!

With this thought foremost in their minds, the architects and engineers who built Chicago's most luxurious theatre sought to achieve perfect acoustics by the application of proven scientific principles to the design and interior construction of the Civic Opera House, without in any detail detracting from its architectural beauty or decorative treatment.

Here is what Paul E. Sabine, world-famous expert on acoustical research, had to report on the extensive sound tests made in the Civic Opera House by the Department of Acoustics of the Riverbank Laboratories in 1929, the year the theatre was opened to the public:

The Civic Theatre

[illegible]

"These tests . . . consisted of auditory tests on speech, piano, and violin, as heard in all parts of the house, covering most of the ordinary musical range, and also tests for echoes at places where from the geometry of the room echoes might normally be expected.

"The tests for echo showed none that will prove at all objectionable.

"The auditory tests showed that there were no undesirable acoustic peculiarities. Quiet passages on both the violin and piano were heard clearly in all parts of the house. A conversation carried on at about the level of telephone speech was easily possible between the extreme rear of the upper balcony and the stage. This all indicates that the attempt at reinforcement of sound by useful reflections, contemplated in the ceiling design, was quite successful, and gives every assurance that solo performances and speech will be acceptably heard in all parts of the house . . . I await with entire confidence the verdict of public opinion in the matter.

"In closing this report . . . let me also congratulate you on having achieved a room which is both architecturally beautiful and acoustically excellent, and which should become a tradition in the architecture of concert halls."

(Signed) PAUL E. SABINE,
For the Riverbank Laboratories

• • •

This report was published in full (with facts, figures, and technical details too numerous to repeat) in the Architectural Forum of April, 1930.

In recent years, the addition of a completely concealed RCA Sound System has made possible the successful playing of the most intimate musical or dramatic performances. The softest speech reaches the audience in the great Civic Opera House with the same ease and clarity that is enjoyed in the more intimate Civic Theatre.

These are additional examples of the infinite care and painstaking effort that made the Civic Opera House the perfect setting for your production. The theatre-going public is quick to appreciate your discernment when you

Play the Civic!

FOR FULL INFORMATION WRITE:

[illegible] Managing Director

20 NORTH WACKER DRIVE • CHICAGO

THE CIVIC OPERA BUILDING

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7474

SHOW FILMS IN WAR PLANTS

(CONTINUED FROM PAGE 130)

points. It has been noted, however, that mental fatigue creeps in because of what becomes monotonous repetition. Do away with this by the interjection of a good entertainment short subject or two before rerunning the training film and you'll be amazed at the results! Remember, these same projectors may be used for your "morale shows" for the plant in general.

Of course there is always the obvious means of purchasing projection equipment with adequate priorities and should you do so you might investigate the possibilities of amortizing its cost by using the U. S. Office of Education films. For the small amount involved, the results are well worth obtaining. Should you not wish to purchase equipment, or are unable to do so, call on your local Projection Service for help. They will be glad to aid you in coordinating your programs and in arranging for your film bookings. Again I repeat, the cost is small compared to the *results* obtained.

Show Films Anywhere

Remember too that it is not necessary to have a separate theatre on the plant premises. You may have your exhibitions on the shop floor, in the garage, cafeteria, on the roof at night, or even project films on the outside wall of the plant. Some firms have even gone to the additional expense of renting nearby auditoriums and vacant stores in which to give their shows. Although practically every Defense Plant is crowded for space today, some little corner can always be found for motion picture showings.

Today, more than ever before, it is vitally necessary to KEEP 'EM SMILING. Why not let movies take their rightful place in *your* plant and show you their real worth?

New Series of Civilian Defense Films Announced

◆ A clear answer to the often heard "What can I do to help in the war effort?" is given in Castle Films' announcement of the near-completion of three movies on Civilian Defense activities.

These movies, produced in cooperation with the U. S. Office of Civilian Defense, will be available in 8mm and 16mm silent versions, as well as 16mm sound-on-film.

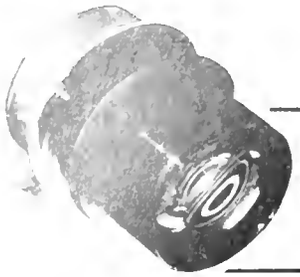
The Civilian Serves is the title of one of these new releases. It pictures numerous ways in which civilians can do vital work in Civilian Protection—from acting as messengers to work with gas-decontamination squads.

Civilian Fire Fighters is a particularly interesting movie on the organization of auxiliary fire-fighting units. Bombing possibilities are outlined, as well as specific fire-fighting methods for instructing the non-professional in how to cope with such menaces as the thermite incendiary bomb—temperature 1,300 degrees.

Air Raid Alert illustrates the diverse duties and functions of wardens during warnings and actual air raid attacks. Important safety rules for all civilians during a raid are particularly emphasized.

Projector owners will shortly be able to obtain all three of these movies at leading photographic and visual aids dealers.

SHOWINGS RIGHT IN THE FACTORY AISLE during the noon-hour have been notably successful at this Chicago war plant. Entertaining short subjects are featured during the period of relaxation from the daily rush of war production.



SLIDE AND SLIDEFILM REVIEW

Economical cost and simplicity of slides & filmstrips appeal to many vocational instructors in schools and industry; advantages discussed

★ Vocational training materials are helping to win the Battle of Production. The problem here is to make a plentiful supply of visual aids available to the overworked training director so that the two-fold task of thoroughly integrated instruction and of speed in training can be satisfactorily accomplished.

Lantern slides offer a good solution for the training director who wishes to present sketches, blueprints and similar illustrative material, charts, diagrams and technical information to his apprentice class. Easy to make, cheaply bought from the standpoint of materials, they are nevertheless most effective.

One outstanding advantage, in these days of priorities and equipment shortage, is the fact that the lantern slide projector is comparatively simple and thus fairly plentiful. It may be used under all kinds of unfavorable light conditions. It will offer the flexibility of editorial changes, the brilliance of image and clarity of detail that leaves little difficulty for either the student or the instructor.

Cleveland Schools:

(CONTINUED FROM PAGE 1)

namics (Erpi), *Electrodynamics* (Erpi), *Our Earth* (Erpi), *Overland To California* (Eastman), *In Airplane Trip* (Erpi) *and The Machine Maker* (Erpi). All of these films are used in junior and senior high schools. Requests for bookings for the fall semester are heavy.

Sets of slides have been prepared for use in Civilian Defense classes. These slides, fifty-two in a set, were reproduced from illustrations in several Office of Civilian Defense booklets. These are used by teachers in Aid Raid Precaution classes.

Films Teach Americanism

Consideration has been given for visual aids in other than defense training classes. If our schools are to be considered "America's first line of defense" surely then we need to begin early in their public school career to have them gain a background for an appreciation of being an American. Also, in view of the importance of friendly relationships with other Americas and Canada it becomes imperative that experiences be provided for our pupils so that a better understanding is developed. Films such as *Americans All* sponsored by The Coordinator of Inter-American Affairs may well be a forerunner of such an All-American program in schools. We have purchased many new subjects of films from several sources to round out this phase of the program.

Filmsets For All Classes

Desiring that our elementary classes have additional visual material to enrich geography and social studies especially during these days of international news and history-in-the-making, silent "Filmsets" have been purchased. These libraries of forty-eight, two-hundred foot reelers are being loaned to schools for the school year to be used somewhat similar to supplementary sets of books in a school. They remain in a classroom making them available whenever a film subject is deemed pertinent to enrich a lesson. The films were selected only after previewing each unit with respect to its value of correlation with the existing Cleveland course of study for 11th, 5th, 6th and 7th grades. Excellent correlation is provided for the respective grade levels with these newly produced silent films.

No visual aid program regardless of the material and resources available will succeed unless the cooperation of the classroom teacher is gained. Help should be offered whenever possible by the Visual Aid Department not only in getting the best visual aids obtainable but also in giving aid toward instruction and techniques of usage. Each of the Cleveland Schools have received a new catalogue of films which the Educational Museum circulates. In the preface of the catalogue appears the following under the caption Suggested Techniques in Utilizing Classroom Films: *"The Motion Picture Offers a Unique Method of Supplementing Classroom Teaching Procedure and When Properly Used Becomes a Dynamic Tool Toward Enriching the Curricula."*

M. R. Klein, *Director, Educational Museum, Cleveland Public Schools.*

Slide Binder Stock Ample

◆ Many users of small slides have the impression that binders are no longer available. Spindler & Sauppe, Inc., Los Angeles, report that they have a considerable stock on hand for immediate delivery. Compact, efficient, easy to use in making a perfect binding, the units are priced at $1.95, F.O.B. Los Angeles.

Two New X-Ray Films

◆ In view of the fact that defense industries are finding an increasingly wide number of uses for industrial x-ray films, Agfa Ansco has designed two new films—*Superay 'T'* and *Superay 'B'* that have unique radiographic characteristics.

Because of their extreme contrast and fine grain, it is possible with these new films to record minute defects that have escaped detection by films generally used for x-ray inspection in the past. *Superay 'T'* is equal or superior to any other available film except *Superay 'B'* for recording traces of foreign material or cracks in castings and welded joints. Requiring slightly longer exposure than 'A', *Superay 'B'* now enables industry to record and study detail within a structure of metal or other material in a manner that would remain impossible, were it not for the unique characteristics of this newest material for non-destructive radiographic testing. Particularly interesting is the adaptability of both *Superay 'T'* and *Superay 'B'* to give optimum results when used with million-volt and radium exposures as well as low-voltage exposures for x-raying aluminum and magnesium alloys.

CANADA'S FILMS MARCH TO WAR

(CONTINUED FROM PAGE 8)

their campaign. Programs of 16mm war films were arranged for showing on sound projectors before a large number of adult groups, with a speaker from the local committee to urge support of the Victory loan campaign.

ALSO FILMED IN KODACHROME

McKinnon Industries, an automobile accessories manufacturing concern, and subsidiary of General Motors, was expanding and converting to war production. *Heavy Hitters* was produced in Kodachrome to tell the story of how its facilities were being employed in the manufacture of shell fuses.

At the Canadian National Exhibition last year, items in the war-time production of General Motors were featured, and actual work on shell fuses was demonstrated by girls from McKinnon Industries. One of the features of the G-M exhibit was the General Motors Theatre, through fourteen days, thousands of people saw the two films *On To Victory* and *Heavy Hitters*.

EXHIBITION USES FILM PROMOTION

The Canadian National Exhibition itself uses the commercial film to get business. Last year the Kodachrome picture *Canada's Answer* was produced during the Exhibition, to show how this *Show Window of the Nation* altered its character to attune itself to the times. The manner in which displays and features adopted educational and entertainment slants with a war-time theme was illustrated. Displays of equipment being manufactured in Canada for the prosecution of the war were shown; army vehicles were shown cavorting on a proving ground. Military parades and pageants were shown to have provided the inspiration so necessary to stimulate a nation to wholehearted all-out effort.

Aluminum production in Canada has been a key factor in that country's contribution of supplies to the Allied Nations. The Aluminum Company of Canada hinted at the size and scope of expanded production by describing one isolated task that faced its engineers. That concerned the need for a vast increase in power required in the expanded production program. *Nation Builders*, a single-reel short produced for theatrical distribution told that story. It described how an entire community had to be freighted by air to a remote part of the north country served by neither railroad nor highway. And it showed steps in the development of a new source of hydro-electric power with which to turn out more and more aluminum for the plane builders.

MASSEY-HARRIS' DUAL MESSAGE

Massey-Harris had a dual message to convey in *The Part We Play*. Here, they showed, in Kodachrome, how their production skill was being turned to creation of tools of war, and at the same time re-emphasized the need for efficiency in farm operation. Farming scenes introduced the use of that equipment for which Massey-Harris has been famous for many years; pointed the fact that food, too, is a vital weapon of war.

When the Canadian Red Cross Society was faced with the need for soliciting $9,000,000 from ten or eleven million Canadians to carry on its vastly expanded services, more than ordinary efforts had to be planned. It was desirable to make use of the mass appeal of motion pictures to tell the story of how Canadian Red Cross dollars were being expanded. Sequences were made showing the Red Cross activities in England: hospital, first aid, and air raid services; recreation facilities for men of the Canadian armed forces there; distribution of clothing and comforts to civilian bomb victims; provision of ambulances and mobile kitchens. The work of volunteer members, the blood donor clinics in Canada were covered. At Denham Studios in England, British film actress Anna Neagle donned a Red Cross nurse's uniform to donate her charming presence and voice to set the theme for the picture. On the Montreal sound stages distribution of food parcels to Canadians in enemy prison camps was re-enacted; Red Cross assistance to rescued seamen was illustrated, and overseas aid and comforts to bomb victims was described. More than 600 Canadian theatres played *There, Too, Go I* during the Red Cross appeal for funds.

OPTICAL GLASS PROCESS FILMED

Never before has Canada produced optical glass. But the Government and its technical advisers saw no reason why it could not. Optical glass was desperately needed for gunsights, periscopes and binoculars. So a government-financed company came into being, and last year turned out its first batch of optical glass. Research Enterprises Limited called in Associated Screen News cameramen to make a complete record of the production processes. Here was a case

(PLEASE TURN TO PAGE

For listings on this page address inquiries to Service Bureau of Business Screen, 20 N Wacker, Chicago.

BUSINESS SCREEN'S

INDEX OF PRODUCTION

PICTURES HELP TEACH "HEALTH FOR VICTORY"

★ DURING the late summer and early fall of last year, the Westinghouse Electric & Manufacturing Company at Mansfield, Ohio, decided to make two motion pictures. This was regular practice. Westinghouse had made one or more educational and sales training motion pictures every year. They had long been a regular part of the selling programs developed for introducing new models of refrigerators, ranges, and other appliances.

But this time there were no new models to be introduced. In fact, there were many indications there would soon be no merchandise of any kind for sale. It takes courage to produce motion pictures in the face of a situation like that.

NEW PICTURES ARE SERVICE-EDUCATIONAL

The new pictures were made on the basis that they be service-educational in nature designed to be of genuine service to housewives during the emergency and at the same time help keep the name of Westinghouse alive in the minds of tomorrow's customers.

One of these pictures is titled *10 Billion Enemies*. It is a sound motion picture in full color (Kodachrome) and tells scientific facts about the control of food bacteria. It shows the proper use of a refrigerator to preserve food, and explains how to make a refrigerator operate efficiently and last longer.

PRESENTED BY SCIENCE TEACHER TO CLASS

In the picture, this information is first presented by a science teacher to his class. The scientific findings are then interpreted by a home economist and, finally, the picture shows how homemakers can use this knowledge for the safe preservation of food in the home.

The kinds of "cold" required by the various types of perishable food are explained. The fundamentals of placing food correctly in a refrigerator are demonstrated, along with hints on the care of a refrigerator. This picture has nothing to sell, but the safe protection of food in the home. The running time of the picture is 20 minutes.

The other picture is titled *I-Men*. This noncommercial, educational sound motion picture begins by reviewing the nutritional significance of the essential vitamins, and tells about the men of science whose research contributes so much to the health of America.

The high point of the film is an informative comparison of two methods of cooking. "Old fashioned" vs. "Protective Cooking" which clearly demonstrates how the modern protective method reduces the destructive effect of vitamin-destroying factors in cooking.

The laboratory procedures involved in the scientific study of these two cooking methods are portrayed in the picture. The results of hundreds of tests and assays which prove conclusively the nutritional importance of "Protec-

PLEASE TURN TO PAGE 151

CANADA'S FILMS

(CONTINUED FROM PAGE 34)

of a war-time commercial film being produced, without any thought of public showings. At least for the present, it is for company records only. It has been used to show to employees, so that a worker in one department will understand his relation to the entire production process.

Use of motion pictures in two Victory Loan campaigns was planned on a large scale. The nation's leaders in these Victory Bond sales campaigns spoke to local district workers throughout the land—via the motion picture. In larger centers, campaign workers gathered in the local theatre to receive instructions from district leaders and to see and hear the planning that had been done at national headquarters for the drive. Two-reel films were produced by Associated Screen Studios to be shown before canvassers. Both instruction and inspiration for the task was provided therein and the tools with which they would work were shown.

War Finance Trailers

In addition to the canvassers' film, Associated also produced a series of dramatized trailers for theatrical showings for the National War Finance Committee. These were distributed to all leading theatres throughout the nation, made direct appeal for Victory Bond subscriptions. During the last campaign *Somewhere the Guns* pointed to the fact that Canadians' realization of the gravity of the war was so far unawakened by actual approach of the enemy, and described what others in active theatres of war were suffering; suggested the urgency of all possible efforts to stop the enemy now. *Eleventh Hour* described the thoughts of a Polish soldier seeing Canada for the first time, so little affected by dangers of attack and invasion to date; exhorted Canadians to prepare with all haste for the *Eleventh Hour* before they experienced the fate of other peoples. *Want to Buy a Bomb?* was in lighter vein, using a comic little man who sought everywhere to buy a bomb with which to blast the Nazis; finally found that Victory Loan headquarters could arrange to have the Royal Canadian Air Force deliver one for him and the bond that would deliver his bomb would repay his money at a later date.

Newer developments in the guiding of films for war are to be found in the inauguration of training in industry programs with the aid of instructional films; a growing demand for films on safety education; the use of motion picture cameras in time studies. Applications such as these to the problems of expanding and more efficient war time production are expected to give the commercial film an ever widening circle of influence during its years in battle dress.

NOTES ON TRAINING

(CONTINUED FROM PAGE 1)

making is a picture worth a good showing." The serious thing about it though is the fact that pictures shown in this way do not have the opportunity to do the educational job that must be done right now.

At the risk of again asking for trouble let's put down another pattern. This time a program for showing training pictures.

One, introduction by speaker why this picture is important to the audience now.

Two, the picture.

Three, a review quiz.

Four, the all important drill . . . the "learning by doing."

Five, second showing of picture.

Six, review quiz.

Seven, a test or final examination.

And so we have some thoughts about training pictures. Undoubtedly there are many who have other ideas. Let us hear them. And above all, let the commercial producer who has done so much, suffered so much, find the courage of his convictions and bring to those in charge some of the principles learned the hard way. We people in the picture business must prove our case now or forever after hold our tongues.

PILOT TRAINING CLASS utilizing the kitset of training slidefilms (Pilot Training Series) reviewed in these pages recently. This California group is typical of thousands of war training classes benefited by the added learning power gained through modern visual instruction methods.

"HEALTH FOR VICTORY"

(CONTINUED FROM PAGE THIRTY-SIX)

tive Cooking" are explained in detail. The running time of picture is 17 minutes.

Both of these pictures were designed for showing to home economics, dietetics and nutrition classes, along with women's clubs and organizations, granges, and cooking schools.

Westinghouse offers the loan of prints free to exhibitors who agree to provide showing reports, return the prints promptly, and pay return shipping expenses.

It is well to remember that these pictures were planned and practically produced before the dramatic December 7th of last year. Subsequent events seem to indicate that Westinghouse in making these pictures, anticipated a definite need for exactly the kind of information they contain.

24 Million Man Days Lost Monthly

In the December 28, 1941 issue of the *New York Times*, there was a story reporting that 24 million man-days of work were lost in a month through illness—3,200,000 work days in War industries or War-connected industries alone. Half our population, the article said, was unaware of the need for proper diet. The time lost from illness in War industries or War connected industries would, if it were concentrated entirely on the building of War implements, be equivalent to the time required for the actual building of two heavy cruisers, or 145 medium bombers, or 3,200 light tanks.

The *American Medical Journal* in the February 21, 1941 issue, offered this suggestion to War industries: "Industrial plants might assist more than they do in the educational work that must be done."

"Organization of employees could well be enlisted in a campaign to educate the individual workers in such matters, and through them their wives who select the food served in their home. Through them the wives could be encouraged to attend the various nutrition classes that are being established in the communities throughout the land as part of the national drive on nutrition in relation to defense."

Westinghouse elected to accept the challenge presented by these articles, and the problem was assigned to Mrs. Julia Kiene, Director of the Westinghouse Home Institute.

Study of Employees' Eating Habits

The first thing she did was to make a study of employees' eating habits. Lunch trays and lunch boxes in the Mansfield plant were checked carefully. An appalling majority of these lunches showed a conspicuous absence of milk, vegetables, and other dietary essentials.

Nor was this lack of properly balanced diet offset in the home. In eavesdroping on the marketing habits of employees' wives, it became evident that dietary needs were being given little or no consideration. Moreover, few if any of these women seemed to have any practical knowledge of substitutes to counteract food shortages.

Even more, when housewives bought the right kind of food, surprisingly few knew how to cook it properly to preserve its nutritive value. Little or no attention was being paid to modern "protective" methods of cooking to prevent needless waste of essential vitamins and minerals.

To solve this problem Mrs. Kiene organized

OE VRY EMPLOYEES were recently awarded the Minute Man flag for war savings pledges. Door prizes given at the social get-together held on that occasion were handed out by Herbie Mintz, m.c. who is shown presenting a War Savings Bond to Mrs. Clare Roloff.

the "Health for Victory Club." The wives and even landladies of Westinghouse employees were invited to join this club.

The objective of the club was not only to teach women the need of proper nutrition, but also to direct them in planning health-building meals and show them how to prepare these meals properly with their present kitchen equipment.

A program was set up so that members of the "Health for Victory Club" would participate in a year's program of educational monthly meetings which cover the whole broad field of better nutrition.

At every meeting, the members receive a meal planning guide, with health-building menus and recipes for every meal in the month, even to lunch box suggestions. These meals and recipes are based on a food budget of approximately $14.00 a week for a family of five. (Based on March, 1941 prices in Mansfield, Ohio.) The two movies produced fitted into this program perfectly as part of the material used to emphasize the importance of proper nutrition, and also to dramatize how the goals could be reached.

Success of Club Noteworthy

The success of this first "Health for Victory Club" program is now history. Several clubs have been organized in all Westinghouse plants and are now being organized for other War manufacturers. In fact, the program has become so successful it is described in a series of two-page advertisements which will appear in the July 11th issue of *The Saturday Evening Post*, *Collier's Magazine* and in the July 20th issue of *Life*.

Perhaps most gratifying of all is the following comment by Donald M. Nelson, head of the War Production Board. He said, "I congratulate you on the ingenious plan which has been worked out to aid in the war effort through your 'Health for Victory' campaign."

And there you have it. Add all these things together and you come up with a moral. Given pictures of genuine audience value they can be easily fitted in as a major part of any program designed to win and hold public good will for the duration.

VICTOR

16 mm Motion Picture Projectors Are Dependable

VICTOR ANIMATOGRAPH CORPORATION

Main Office: Davenport, Iowa *Factory Branches: Chicago & New York*

DISTRIBUTORS THROUGHOUT THE WORLD

The Road At Work Using Great Tools

MR. HOWARD S. PALMER PRESIDENT, NEW YORK, NEW HAVEN & HARTFORD RAILROAD

". . . We believe the motion picture offers one of the best ways to tell a story. Our convictions as to the effectiveness of motion pictures is based on the uniform success of the three other movies which the New Haven has produced since 19[illegible]."

"The first film did much to interest people in skiing and other winter sports and we know that our snow trains have brought thousands of people to New England.

"Our second film induced many of the visitors to the New York World's Fair to include New England in their vacation travels. That movie has been shown in practically every state in the Union.

"Our third movie has done much to stimulate outside interest in the industrial advantages of New England.

"Our newest film supplements the messages told in the other pictures and shows how the New Haven performs its important job of serving southern New England."

So says Howard S. Palmer, President and Trustee of The New Haven Railroad, introducing the railroad's latest Jam Handy picture produced under the supervision of Mr. S. A. Boyer, Manager of Public Relations, to take the public behind the scenes with a great railroad.

ISUAL EDUCATION FOR VICTORY

Let the Forces of Education Now Be Armed for All-Out Victory!

ON THE FIGHTING FRONT OF EDUCATION

IN ADDITION to the many training films Caravel is now producing for use by the Army, the Navy, and the Coast Guard, we call particular attention to the following, produced under the direction of the U. S. Office of Education:

Five Films on the Milling Machine

The Milling Machine . . . Cutting Keyways . . . Straddle and Surface Milling to Close Tolerances . . . Straddle Milling . . . Plain Indexing and Cutting a Spur Gear.

Five Films on Shipbuilding Skills

Preparing and Setting a Keel Block and Bottom Cradle . . . Innerbottom Sections: Sub-Assembly of a Closed Floor, Sub-Assembly of a Solid Floor . . . Side Frames: Sub-Assembly of a Web Frame . . . Deck Girders: Sub-Assembly . . . Deck Plates: Regulating and Setting.

JUST AS THE WAR has effected revolutionary changes in the vehicles of Flying, so the War is compelling a revolutionary change in the vehicles of Learning.

This change is witnessed vividly in the use of motion pictures and slide films to train our armed forces, to train millions of workers in the war industries.

But—changes of even greater import are in the making! Here are a few of the indicated possibilities:

—Films, specially made, to coach foremen, superintendents, managers in the fine art of keeping fellow-employees working contentedly and at high efficiency;

—Films, specially made, to teach the English language to the foreign-born, and by that same token to create a more thoroughly unified America;

—Films, specially made, to carry to the school children of the world a TRUE PICTURE of this country: its people, its government, its resources, its commercial and industrial activities, its way of life;

—Films, specially made, to delineate to millions of Americans gathered in Forum Groups the tremendous issues of this war, and thus to make more immediately practical the vision of the Four Freedoms.

Wars are not won by weapons alone; the seeds of victory must first be planted in the human mind. The adequate IMPLEMENTING of the Forces of Education will not only speed the victory, it will help to assure the KIND of peace which alone can "bring us to a happier world."

CARAVEL FILMS

INCORPORATED

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Member of THE INSTITUTE FOR THE ADVANCEMENT OF VISUAL EDUCATION AND VOCATIONAL TRAINING, INC.

AMERICA'S WAR EFFORT
ON 16 MM. SOUND FILM!

NEW MOTION PICTURES

PRODUCED BY THE

OFFICE OF WAR INFORMATION

Commentary by Famous Personalities

Visual report on the war effort! Are we turning out planes, tanks, ships—and fighting men? These pictures give the answer! Here are motion pictures—*at exceptionally low cost*—that tell today's dramatic story! Show these films! They're an inspiration for Americans everywhere—in homes, war plants, schools, defense councils—among all groups interested in furthering a better understanding of the war effort. Write now for free folder describing all films in detail!

Aluminum (No. G-1) Story of the "fateful metal"! From bauxite to sheeting for fighting planes! Striking photography and commentary. 10 minutes. **$7.20**

Tanks (No. G-4) Assembly, testing and shipment of M-3 tank. Photographed at Chrysler Tank Arsenal and Fort Knox. Commentary by Orson Welles. 10 minutes. **$7.70**

Ring of Steel (No. G-7) U.S. fighting men ready for action. Historic American battlefields . . . part U. S. soldiers have played. Commentary by Spencer Tracy. 9 minutes. **$6.70**

Bomber (No. G-2) One of the finest documentary films ever produced! Manufacture of a famous plane. Commentary written by Carl Sandburg. 10 minutes. **$7.70**

Building a Tank (No. G-5) A complete account of the building of the M-3 with considerable technical detail regarding processes involved. 20 minutes. **$15.47**

Lake Carrier (No. G-8) Thrilling story of Great Lakes ore boats. Iron ore followed from the mines to the steel mills! Commentary by Fredric March. 9 minutes. **$6.70**

Building a Bomber (No. G-3) The building of the Martin• B-26. An unusual picture with special appeal to engineering groups and vocational schools. 19 minutes. **$14.97**

Power for Defense (No. G-6) Photographed in the Tennessee Valley Shows vast new U. S. hydroelectric power producing munitions. 11 minutes. **$8.20**

Women in Defense (No. G-9) Women in the war effort! Commentary written by Mrs. Franklin D. Roosevelt. Narrated by Katharine Hepburn. 11 minutes. **$8.20**

CASTLE FILMS INC.

Distributor of 16 mm. Sound Film

U. S. OFFICE OF WAR INFORMATION

CASTLE FILMS, INC.

RCA BLDG. NEW YORK | FIELD BLDG. CHICAGO | RUSS BLDG. SAN FRANCISCO | Address Nearest Office

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VICTOR AT WAR

Victor Craftsmen are producing increased numbers of Victor Animatophone 16mm Sound Motion Picture Projectors to speed the tremendous training job involving millions of men and women in the Armed Forces, in Industry and in Civilian War Life. Today — and as long as necessary — Victor's total effort, facilities and resources are devoted to — COMPLETE VICTORY.

NOW MORE THAN EVER

Victor urges—Conserve sound motion picture projectors. Increased use of sound films for all teaching and training purposes demands constant, uninterrupted service. Good care and regular checkup should be made. Victor's nation-wide, trained organization is at your service.

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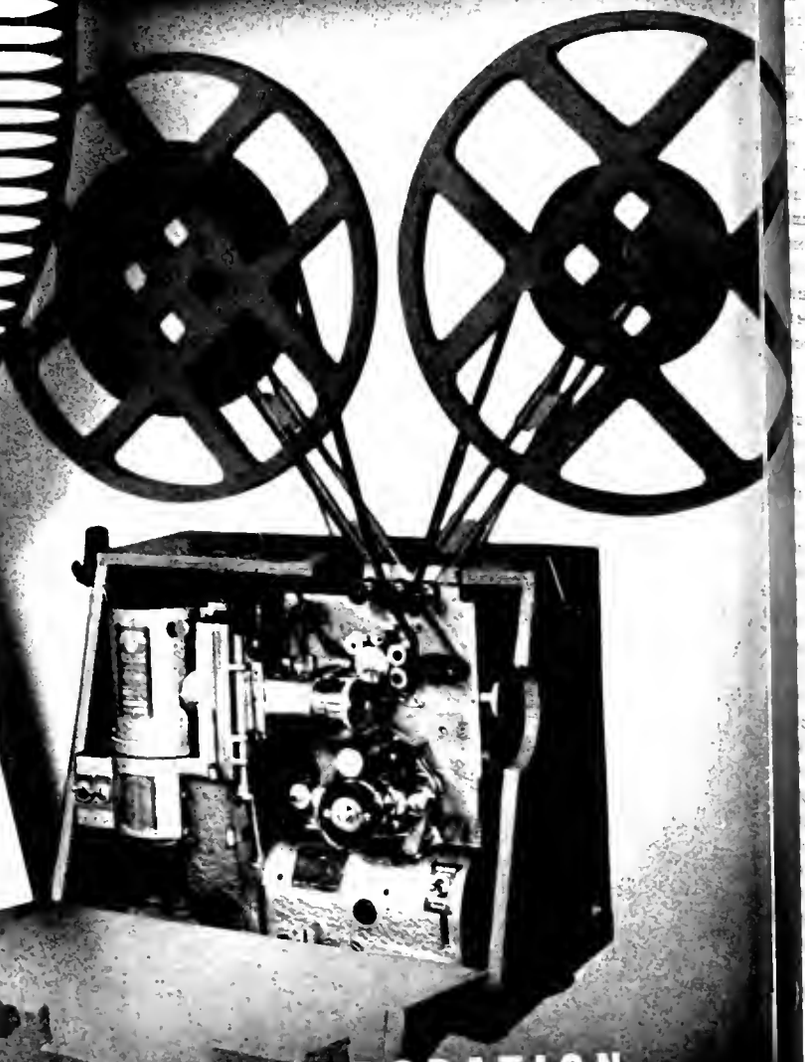
16 MM



VICTOR—AFTER VICTORY

Carrying on its Traditional Leadership for fine tools for Education, Victor Equipment will "swing into action" after the war for a new peacetime progress and reconstruction. Since Victor gave the World the first 16mm Camera in 1925, Victor has always assumed the responsibility — and will continue in the future — to pioneer the important developments in fine 16mm motion picture equipment.

VICTOR ANIMATOGRAPH CORPORATION

Main Office: Davenport, Iowa

Factory Branches: Chicago and New York

Industry Will Produce Only Essential Pictures

IN COMPLETE AGREEMENT WITH THE ADMINISTRATORS OF THE WAR PRODUCTION BOARD'S LIMITATION ORDER L-178 for the conservation of raw film stock, industrial and educational film producers will henceforth and rapidly limit their production activities to the making of pictures useful or directly related to the war effort, whether for the armed services, for Government agencies or for industrial and commercial organizations. While this principle of limitation has already been in effect through the almost complete conversion to war film production of a number of producers, it has now been formally acknowledged through the Industry's recently designated Advisory Committee meeting with the able chiefs of the Motion Picture Section of the WPB.

Although the officially reported statistics of the industry clearly show that only two per cent of the total raw film stock manufactured last year was consumed for commercial, industrial and advertising purposes (in contrast to the eighty-three percent consumed for entertainment purposes only and not including trailers, etc.), the industry will be increasingly engaged in training film production for the armed services and war industries and as well as in the production of public and employee informational subjects related to the war effort. It willingly sacrifices pictures made solely in praise of products and sponsors.

Interpretation of the many useful contributions which films produced by industrial and commercial sponsors may make in relation to the war effort (and for which raw stock is being granted) was given the editor of *Business Screen* in interviews with the WPB and with the advisory members of the Motion Pictures Bureau staff within the Office of War Information.

OF FIRST IMPORTANCE ARE PICTURES FOR MECHANICAL OPERATIONAL TRAINING, in war industries or for the armed services; similarly pictures which teach conservation and consumer education and which help "make what we now have do" for the duration in conserving critical materials, property, clothing, etc., bear a direct relation to the war effort. Conservation of manpower through safety, health and nutritional education is given an equally high rating while films for inter-company communication and especially for employee morale are to be encouraged with proper emphasis on *purpose* rather than *prestige*. Agricultural education through films which teach better methods of production, maintenance of equipment, and stimulate morale have a natural priority while scientific and medical films of many kinds are critically needed. Both producers and sponsors will recognize the wide latitude of other war services which films may render and yet will as easily recognize that aggrandizement of product or company or any similar abuse of this high privilege of war service is both intolerable and unpatriotic.

Interviews with Mr. Harold Hopper, Chief of the Motion Picture Section of the War Production Board and with his advisors, Mr. Lowell Mellett, Chief of the Motion Pictures Bureau of the Office of War Information and Dr. Edgar Dale have convinced us of the sincere and helpful purpose which is the guiding spirit in the administration of L-178. For our part, this industry can do no less than keep faith with the growing need of our country for emphasis on training and education of our armed forces, our workers and the public in these critical times.

O. H. C.

Issue Five, Volume Four of Business Screen Magazine, issued by Business Screen Magazines, Inc., 20 North Wacker Dr., Chicago, September 28, 1942.. Editor: O. H. Coelln, Jr.; Art Director, Dan Runyan. Western Editor: H. L. Mitchell, 2469 Hill Street, Huntington Park, Calif.; Phone LAfayette 4668. Subscription: $2.00 for one year's service; Foreign and Canada $3.50; Single Copy 50c.

WASHINGTON, D. C.—Your correspondent has spent a total of seven-teen working days at staff headquarters of the nation's production front, observing at first hand the drafting of the emergency orders which now regulate the production of motion pictures and slidefilms as thoroughly as the manufacturing of other products is governed by similar orders of the War Production Board.

We have also directed the assembling of vital statistics regarding this newly-regulated field as chairman of the National War Committee and we are deeply conscious of the responsibility and trust imposed in us by more than a score of leading producers of industrial and educational films throughout the country.

The confidence and cooperation extended us by the able chiefs of the Motion Picture Section of the War Production Board has now happily resulted in the complete and whole-hearted conversion of our film production resources for war purposes. That few casualities have yet resulted is a tribute to these men and to the foresight of the industry which began such conversion more than a year before Pearl Harbor. The recognition granted our producers in the formation of an Industry Advisory Committee was a sincere acknowledgment by the WPB of their useful service and economic importance and it has been answered by the unanimous attendance of every appointed representative and the spirit of cooperation and sacrifice which characterized the Committee's first meeting in Washington on September 21. Certainly this is in sharper contrast to the legalistic demands of less essential film consumers, many of whom will secure millions of feet of critically needed film stocks for productions necessary only to their own finances.

This situation has resulted in an unfortunate paradox. The two guiding principles adopted by the War Production Board in the allocation of these critical film stocks were *usefulness of the end product* or its *importance to national morale* and these presumably govern the status of all film production. Yet old millions of feet of film must now apparently be granted *without regulation other than a 10 per cent reduction in quantity*, for the continued production of horror films, these operas, and sensational pictures in which a number of independent film producers specialize. Such pictures obviously mean nothing to the country's morale (quite the opposite). That they mean little or nothing to the majority of theatres was already apparent to the WPB which at first denied them stock. If this situation now results in critical shortages which force the further curtailment of vitally needed training films for the armed services or of informational films for Government the reason will be clearly apparent to millions of Americans who have willingly sacrificed their own business to the needs of our nation at war.

For our part we stand squarely behind Mr. Harold Hopper and the other members of the Motion Picture Section who are so ably and sincerely carrying out their obviously difficult tasks. We are proud of our producers who have refused any part in organized activities based only on the economic well being of the participants. Now that the facts concerning the clearly useful role of these industrial producers in war film production are known in Washington and throughout the nation, we will fight only for their continued right to perform these vital services, to assure the prompt and satisfactory production of training films by these experienced hands, and to conserve every ounce and every inch of critical materials toward the successful prosecution of the war in which, with God's help, we shall persevere to victory.

Our War Poster Cover

♦ Throughout the past year, our readers have witnessed a conversion of this magazine, too, to complete service for war. First to nationally publicize in the most thorough fashion the film program of the U. S. Office of Education, it is fitting that we now present the first of a series of original war film posters as the theme of our covers.

The contents of this issue are also indicative of our wartime leadership. We are again FIRST in relating the new wartime role of the schools with the highly useful and related assets of visual education. Government, the schools and war industry have become the basic trilogy in our editorial program; their use of visual education methods is our guiding policy. This policy is reflected in our circulation: *the total coverage* of every Government agency and individual concerned with visual media: the *total coverage* of every industrial and associational outlet similarly concerned; and now, before the end of 1942, the *total coverage* of every projection outlet in high schools and colleges in the U. S.

The Purposes of
"THE INSTITUTE"

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To establish a better understanding and appreciation on the part of industrial organizations and the public of the usefulness and advantages of motion pictures for educational and vocational training purposes;

To encourage and promote the use of motion pictures for educational and vocational training purposes;

To promote, by closer personal contact of the members, the interchange of ideas, thereby obtaining a better understanding of mutual problems arising in the business of producing motion pictures for the purposes aforesaid;

To foster and maintain better relations between producers of such motion pictures and those who use or may use the same and between the producers themselves; and for that purpose to establish and maintain fair and uniform trade practices, customs and commercial usages and a high standard of ethics for those engaged in the business of producing motion pictures for educational and vocational training purposes;

To hold full and free discussion of trade conditions, volume and needs of the industry and to develop, for the benefit of all concerned, reliable information with respect to the business of producing motion pictures for educational and vocational training purposes and the actual trade conditions relating thereto;

To seek to accomplish the purposes herein set forth by bringing together as members of the Institute those who agree to subscribe to the ethical standards set up by the Institute and who are qualified by previous experience to render competent productive service of the required specialized character — to the end that the motion picture may render its fullest service as an educational and social agency in American life.

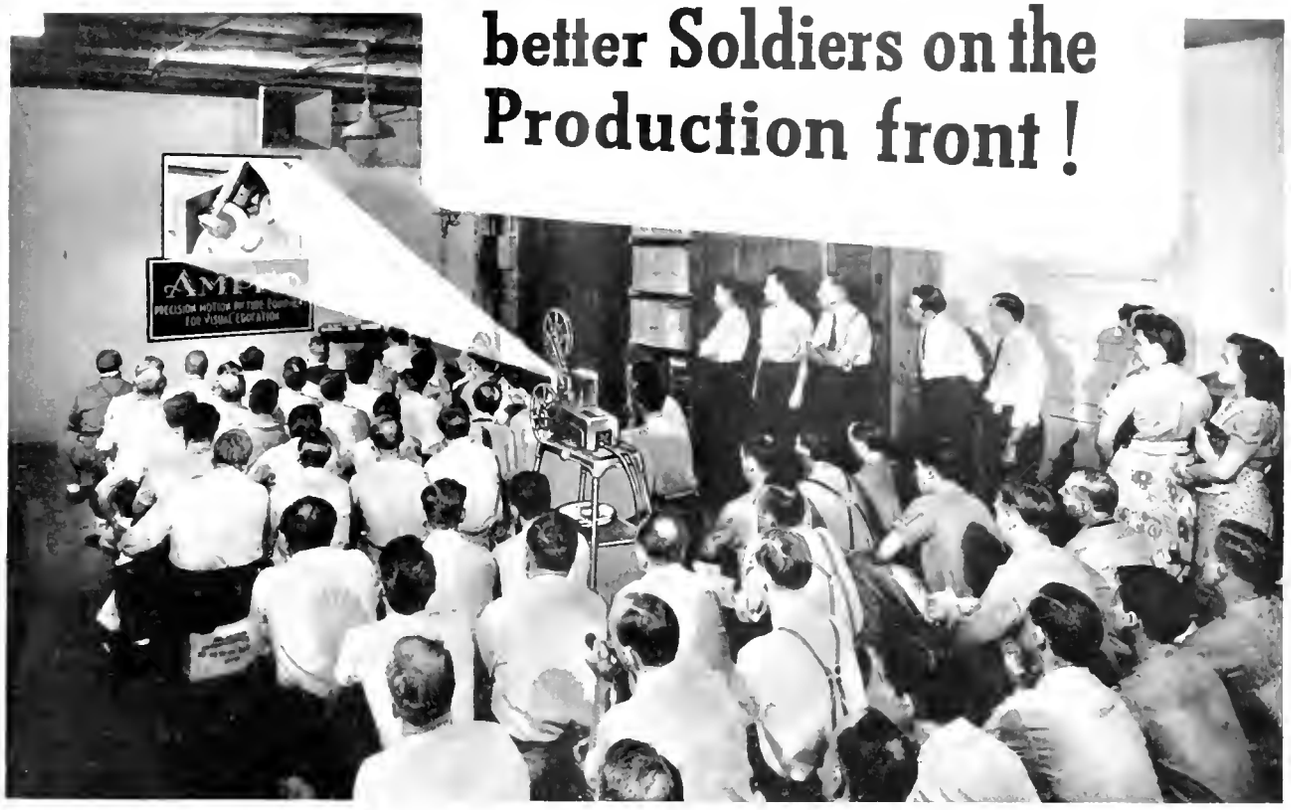
"Mass Training for Mass Production"

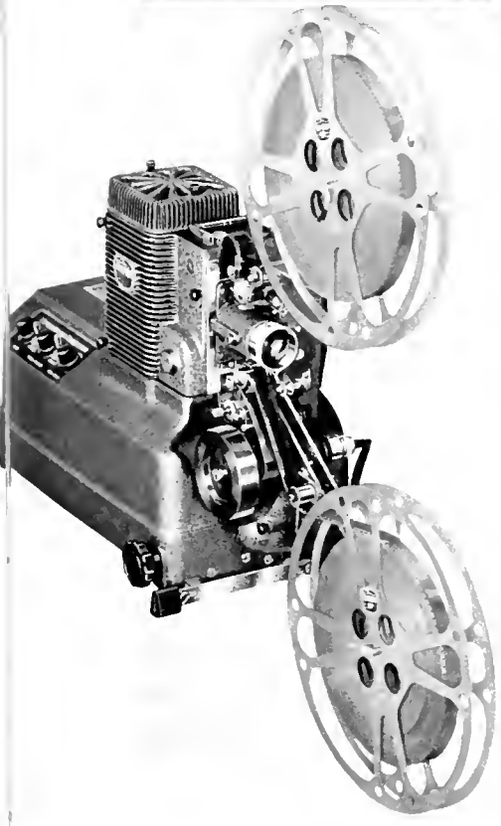
Educational Building

THE INSTITUTE
for the Advancement of
VISUAL EDUCATION AND VOCATIONAL TRAINING, In.

70 Fifth Avenue
New York City

Movies make better Soldiers on the Production front!





16mm. Motion Pictures in Industrial Plants Help Build Up *Efficiency and Morale*

IN thousands of important war production plants throughout this country, motion pictures have become a double-edged weapon for victory. The training films produced by the U. S. Office of Education are being used both to develop the morale of employes and to give specific instructions for various technical operations. The results have been exceedingly worthwhile.

Many of these films are being projected brilliantly clear—and with enjoyable tone quality—on Ampro 16mm. Precision Projectors. And this is not the only phase of Ampro's participation in the war program. Thousands of Ampro Projectors are assisting in the Civilian Defense Program. More important—additional thousands of Ampro Projectors are in daily use in all branches of our army forces—on all battle fronts—doing a triple job there of assisting in studies of operations, affording an effective aid to the better training of our fighters and providing welcome entertainment.

Send for Ampro Catalog

Although the demands of the U.S. War program make it impossible to fill your requirements now, every person interested in better 16mm. projection should get full details of the Ampro story right now! Write today!

AMPRO CORPORATION • 2839 N. Western Ave. Chicago, Ill.

★ AMPRO ★

PRECISION CINE EQUIPMENT

A Special Report on THE NATIONAL INSTITUTE ON EDUCATION AND THE WAR

by HERBERT S. HOUSTON, *Chairman of the Institute for the Advancement of Visual Education*

★ EDUCATION WENT "ALL OUT" FOR "VICTORY" at the National Institute on Education and the War, which was convened the final week of August in Washington, under the direction of Dr. John W. Studebaker, United States Commissioner of Education. The "all-out" expression of urgency was sounded from the first address by Dr. Joseph W. Barker, Dean of the Engineering Department of Columbia University and Educational Adviser to the Secretary of the Navy to the closing summary by Dr. Studebaker, four days later.

Dr. Barker put it this way in his final words—also marking the place of films in war training—"Insisting there should be no delay in obtaining pictures to train the Navy's fighting men, a Navy officer recently said, 'I cannot take the chance of some boy's ghost saying, "If your training program had only done the job in time".'"

General Brehon B. Somervell, Chief of the Services of Supply branch of our Army, was even more insistent in his demand for speed in training as he challenged five hundred of the leading school and university men in the country with these words:

"We are engaged in total war. The job of the armed forces is to win this total war on the battle front. The job of industry is to furnish the weapons and supplies needed by the armed forces to carry on total war. *The job of the schools in this total war is to educate the nation's man power for war and for the peace that follows.*

"Education is the backbone of an army. Out of every 100 men inducted into the service 63 are assigned to duties requiring specialized training. And there is a great shortage of such trained men. As an example—in an army of 1,000,000 men, at the present rate, there's a shortage of 139,160 automotive mechanics. This shortage must be supplied by the schools and colleges, which must become pre-induction training centers for our armed forces."

And so it went on, in a swelling demand from every branch of the Government, like a recurring Greek chorus. Paul H. McNutt, chairman of the War Manpower Commission and Federal Security Administrator, gave the first antiphonal response as to what was being done to meet the pressing needs; and his speech itself bore a note of urgency because it came on a record, which the Governor made that morning before flying to keep another appointment.

"The Office of Education informs me," the Governor reported, "that 11 per cent of the present Army are high school graduates. Nearly every man in a typical 120 men is a specialist at some military job. But right now both the Army and Navy are crying for skilled mechanics, engineers and radio technicians. War industries are also crying for trained men and women. One Navy expert even went so far as to say, 'When the battle fleets meet in the Pacific, victory will go to the side with the best mathematicians'. So it is that our schools are essential parts of our Victory production assembly lines and of the training programs of the Army and Navy."

And as the transcription recited the result one could almost visualize the smile of pride o the Governor's face as he said that more tha 1500 vocational schools have trained 3,000,0 men and women for work in war industries an that colleges and universities had provided sp cial training for more than a half million eng neers, physicists, chemists, and management e perts. All of this he considered so vital to vi tory that he counselled teachers to stay at th posts where they are doing such essential wa work.

The Governor's outline of needs and plans t meet them was further developed by the Vi Chairman of the War Production Board, Fowl Harper, and by two other members of th Board, Dr. Edward Elliott, President of Purd University, and Arthur S. Fleming of the Civ Service Commission. It all reminded the writ of the County Teachers Institutes of his youth in the Mississippi Valley when teachers them selves came "to school" to learn of the late educational methods and plans.

On the national stage in Washington this w all given a truly world-wide presentation, to th war-beat of battle on three continents, with th instructors the men themselves who made and d rected the plans described, and the students th great educators of the nation.

Dr. Raymond A. Kent, President of the Un versity of Louisville, gave the most comprehe sive statement as to the exact present position schools and colleges in relation to the great jo they were asked to do of training for the wa stating they were already doing their be to perform it right up to the hilt. If there w delay or partial failure at any point it would i due to lack of funds. There was full agreeme as to the job and also as to the necessity of w time financial support. This support was responsibility of the federal government, t same as any other war act activity; it should limited wholly to winning the war: it shou end when the war ended. Dr. Kent presented timely illustration that was most dramatic a convincing.

"Last week," he said, "the largest Americ battleship ever built was launched, at a cost $88,000,000. Where is the man who wou question the economy and need of the Gover ment in providing the money needed to educa the men to operate that ship and keep it abo the waves?" He also advocated the policies England and Canada in subsidizing students higher education for war time purposes.

"If our nation is to meet this crisis of ma power and bring victory and peace, colleges a universities must continue the needed progra in maximum capacity. This they cannot do a more than industry, transportation or commu cations can, without federal wartime assistanc concluded Dr. Kent.

Without a dissenting vote this view was su ported at a largely attended meeting of Sc

(PLEASE TURN TO PAGE TWELV

...y War Bonds Stamps

MOVIE NEWS

DeVRY 29 Years of Progress

...UBLISHED IN THE INTERESTS OF INDUSTRIAL AND EDUCATIONAL VISUAL AIDS TO VICTORY

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All-out production for the armed ...rces has been the order of business ...r DeVry the past year, demanding ...er-increasing capacity to meet war ...eds. Following War Production ...hief Donald Nelson's advice, the ...mpany has acquired additional ...actory facilities already built rather ...an consume vital raw materials in ...w plant construction.

The new Chicago plant facilities ...ill enable DeVry to reach new out...ut records, it is hoped, with the ...eat-the-Axis Drive now in full ...ving. Meanwhile DeVry men and ...omen on our production lines con...nue to uphold the Company's ...andards of precision manufacture ...tablished in 29 years of leadership.

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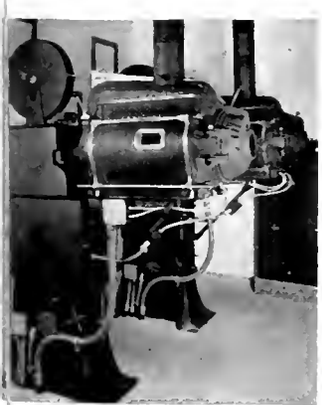
Six sound motion pictures (2 reels ...ch) on the principles of electricity ...e available through DeVry Films ...r your war training classes. Titles ...clude: *Principles of Magnetism; ...rrent Magnetism; Electro-Mag...tism; Current Electricity; Meas...ement; Electrostatics* and *Current ...neration.* Write today for free ...talog listing hundreds of other ...mm sound and silent films!



...VRY HEAVY DUTY 35MM PROJECTORS *on war duty at one of Uncle Sam's great naval training bases. The latest and best sound and projection equipment available, serves our armed forces!*

A MESSAGE TO OUR CUSTOMERS AND FRIENDS

This message is written to express something of the feeling on our part that has been brought about by the complete upheaval in our business relations since the advent of the war.

We believe that we owe this to our customers and friends. We do not think we are unique in this regard. Everyone must feel much the same way. Certainly every industrial business, whose operation is geared to the war program, has been jolted and jarred throughout its whole structure by the swift transition of its status from an individual enterprise to a component part of a vast war machine.

In this, we, like everyone else in productive fields, have gone along with the rest. Total war effort is the only thing that matters. Gratitude for past favors, the human impulse to give preference to those who have shown friendship for us, appreciation of business courtesies; all these things, it seems, must be "frozen" for the duration. They must go by the board; we must help win the war. In the world's present state, we would not do otherwise if we could; and neither would you.

Yet, we want you to know that this gratitude, this human impulse, this sense of appreciation is still there. We are always conscious of it, even though we must govern our relations with our customers and friends along lines that would have seemed fantastic or impossible in peace time years.

Time is our most precious commodity. Today, in all branches of our Nation's armed forces, in industry, in schools and other institutions, motion picture films are demonstrating their inestimable value in shortening the teaching period of millions engaged in learning wartime skills.

Our entire resources, backed by 29 years of research and engineering leadership, are now dedicated to new developments; improvements which will benefit all now—and when peace comes.

Yours for Victory,

VICTORY DeVRY

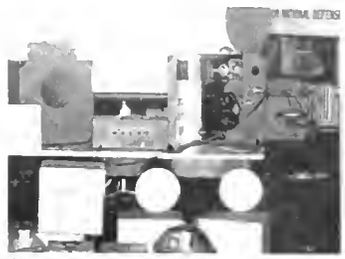
W. C. DeVry, President

WHEN KING MEETS KING—A DEVRY WAS THERE!

★ When young King Peter of Jugoslavia visited Buffalo, N. Y. aircraft plants recently, Frank King, Movietone News cameraman was on hand with his DeVry 35mm camera to film the tour. In the picture below, (left to right), Larry Bell, President of Bell Aircraft Company, Burdette Wright, Vice-President of Curtiss-Wright Corp.; King Peter and Cameraman King are shown as they visited together on that occasion. King Peter, a "regular guy" according to Frank, was deeply interested in his camera work, heard in detail about King's difficult assignments "shooting" test flights, etc., where his DeVry performed with unfailing perfection.

Post-War Improvements

★ Although DeVry cameras and many other lines of visual equipment is not available for civilian sales excepting for war service duty, improvements now being made due to wartime research for the armed service will provide the finest when peace returns. Sound and silent projectors, where needed for war training activity may be available.



DeVry equipment enroute to the A. E. F.

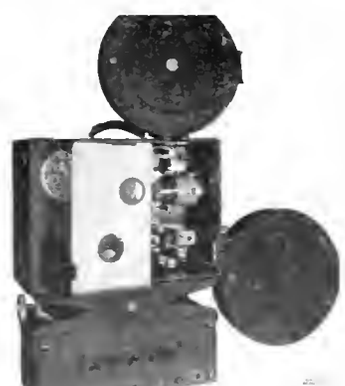
G. E. Employees Give DeVry Projector to Soldiers in Pacific

★ Setting a real example of patriotic spirit and good-will, the employees in the Foundry Division of the General Electric Company plant at Everett, Massachusetts, have recently provided a 35mm DeVry sound projector, ND-30 amplifier, screen and parts, for the entertainment of our soldiers in New Caledonia.

Funds were raised among employees on receipt of a letter from a former co-worker who mentioned there were no amusements or entertainment of any kind on the island. Arrangements for the complete equipment and aid in obtaining a supply of films were made by Atlantic Motion Picture Service, Boston. Write to G. E. if you have any 35mm entertainment subjects which can be forwarded to the boys and they will make the necessary arrangements.

TRAINING FOR WAR

★ The Radio and Communications field urgently needs trained men and women. Any of our readers from 18 to 45 interested in how they may prepare and actually get into Radio and Communications may secure the necessary information by addressing a card to DeForest's Training, Inc., 2533 N. Ashland Ave., Chicago, Ill.



NEW DEVRY 35MM PORTABLE PROJECTOR *with deluxe theatre mechanism, built-in sound head and new patented tilting base amplifier. A new wartime development by DeVry's skilled research engineers.*

. . . is our weapon for war

SOUND MASTERS films are saving TIME

in the Armed Forces
for the U. S. COAST GUARD
U. S. MARINE CORPS
U. S. NAVY

in Government Agencies
for the OFFICE OF CIVILIAN DEFENSE
OFFICE OF COORDINATOR OF INTER-AMERICAN AFFAIRS
OFFICE OF EMERGENCY MANAGEMENT
OFFICE OF PUBLIC HEALTH SERVICE

in Private Industry
for GENERAL MOTORS CORPORATION
CURTISS-WRIGHT CORPORATION

"You see," said Lieutenant Bulkeley, "we were expendable." I said I didn't understand.

*"Well, Mr. White, it's like this: In a war, anything can be expendable — money, gasoline, equipment, or men. Suppose you're ordered to hold a position until you're killed or captured; the precious minutes you can hold up the enemy's advance is worth a gun and a man. You're expendable. You know the situation and you don't mind. But when you come back here, after seeing your friends give their lives to save minutes, and see people waste hours and days and even weeks. . . ." **

★ We on the home front are learning the value of TIME, Lieutenant Bulkele. We know that Time can mean the difference between Victory and defeat . . . between Life and death for the boys who are fighting our battles. We a not going to waste Time, Lieutenant Bulkeley.

Our job is to save Time; to make every minute count in the training of m for the armed services and for war production lines. The training films ma by the industrial film producers of America are helping to fit men better a faster for their vital jobs in defense of democracy.

TIME is our weapon, Lieutenant Bulkeley. It is our humble contribution . . a few of those "precious minutes" which may help to bring your heroic Expen ables back home again to a victorious America.

*"THEY WERE EXPENDABLE," by W. L. White, Harcourt, Brace & Co., publishers.

SOUND MASTERS INC.

PRODUCERS OF MOTION PICTURES AND SLIDE FILMS

165 WEST 46th STREET • Phone BRyant 9-4676 • NEW YORK CITY, N.Y

The Role of the Schools in EDUCATION for WAR

PRE-INDUCTION TRAINING FOR ARMED SERVICES STRESSED AS SCHOOLS MOBILIZE FOR WAR

THE TOTAL MOBILIZATION OF THE NATION'S hools for total war is moving swiftly ahead. anks to the vision and energy of school and overnment leaders, working together on this oad and vitally and important front.

Education has accepted the challenge laid wn by Army, Navy and War Manpower offi- ls at the National Institute on Education and e War held in the closing days of August on e campus of the American University in Wash- gton, D. C. Here the obligation of the schools provide the necessary pre-induction training men going into the armed forces was force- lly stressed; here, too, the tasks of training n and women for the many other vital jobs the home front were laid before the as- nbled educators. Guiding spirit of the Insti- e and Chairman of the Wartime Commission Dr. John W. Studebaker, U. S. Commissioner Education.

Reported in detail by a special correspondent BUSINESS SCREEN elsewhere in this issue, the oceedings of the Institute reveal the tremend- s scope of the training problem. "Our Army lay is an Army of specialists," declared Lt. neral Brehon D. Somervell, commanding gen- l of the Services of Supply, "out of every 100 n inducted into service, sixty-three are as- ned to duties requring specialized training , taking only those specialties in which the my has found major shortages, we find a total 62,853 lacking in every 300,000 men in- ducted. That adds up to 838,040 in an Army of 1,000,000 men."

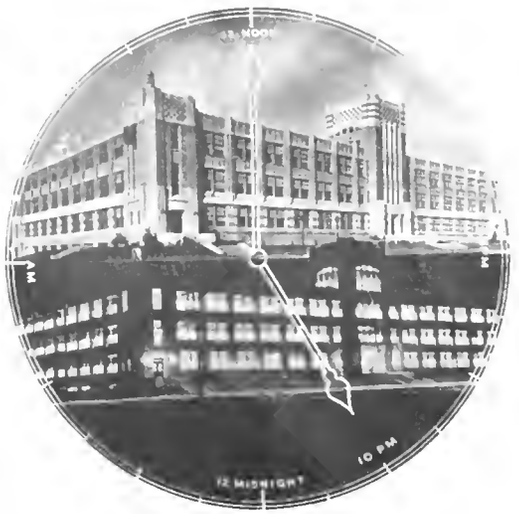
Giving one specific example among others, Gen. Somervell declared "In the entire field of automotive mechanics, which includes many al- lied subjects, out of every 300,000 men inducted, we were short 10,137. That means a shortage of 31,790 out of every 1,000,000 men. In an Army of 4,000,000 men, that's a shortage of 139,160 automotive mechanics."

Government service shortages, industrial shortages which must be largely now made up by women, and the growing shortage of teach- ing personnel also came in for serious discus- sion. In all of these fields it was obvious that the role of visual education will be of increas- ing importance. The latest field in which ex- tensive preparatory materials are to be offered is that of pre-flight aeronautics where the U. S. Office of Education is preparing to issue an ex- tensive list of Army and Navy training sub- jects shortly to be available to the schools. A very extensive list of materials is already avail- able and is given elsewhere in this issue.

Formation of the High School Victory Corps by the Office of Education has now also been an- nounced with a Production Service Division, a Community Service Division, Land Service Di- vision, Air Service Division and a Sea Service Division available to high school students. Basic training in mathematics and Science and pre- flight training in aeronautics are to be stressed.

R. JOHN W. STUDEBAKER, U. S. Commissioner Education and Wartime Commission Chairman.

LT. GENERAL BREHON D. SOMERVELL, Commanding General, Services of Supply, U. S. Army.



Nation's Leaders Cite War-Time Objectives

"When our enemies challenged our country to stand up and fight, they challenged each and every one of us, and each and everyone of us has ac- cepted the challenge for himself and for the Nation."

Franklin D. Roosevelt

* * *

"Teaching today is war work and schools the company headquarters of the home front . . . "

Paul V. McNutt, Chairman of the War Manpower Commission

* * *

"The Victory Corps, with its emphasis on a thorough mastery of fundamental subjects— physical training, special studies and other activi- ties that can properly be a part of any school's program—will enable the boys and girls to serve more usefully after graduation, both in the war effort directly and indirectly in other pursuits.

Henry L. Stimson
Secretary of War

* * *

"Because the High School Victory Corps empha- sizes both basic education and technical-vocational specialization, the Navy Department feels that it will be an organization of great value both to the youth concerned and to the Nation in this war emergency.

Frank Knox,
Secretary of the Navy

* * *

"The job of the schools in this total war is to educate for war and for the peace to follow it the men and women of this country, but above all, and without an hour's delay, to provide the oppor- tunity for every youth to equip himself for a place in winning the war."

Lieut. General Brehon D. Somervell
Commanding General, Services of Supply

* * *

"We are engaged in a war for survival. This is a total war—a war of armies and navies, a war of factories and farms, a war of homes and schools. Education has an indispensable part to play in total war. Schools must help to teach individuals the issues at stake; to train them for their vital parts in the total war effort; to guide them into conscious personal relationship to the struggle."

John W. Studebaker,
U. S. Commissioner of Education

Army Films Also Aid in Pre-Induction Training

Visual Aids Help Speed Pre-Flight Instruction

War Industry Now Has Extensive Film Aids

Educational Films Integrate Women Workers

THE NATIONAL INSTITUTE ON EDUCATION AND THE WAR

(CONTINUED FROM PAGE EIGHT)

superintendents of public schools and state secretaries of educational associations, from all parts of the country, held in connection with the Institute. This support took the form of a petition to the President and to Congress "to enact into law immediately the bill S. 1313 now pending on the Senate Calendar to provide funds to make possible the most valuable contribution of the schools to the winning of the war."

Naturally it is quite impossible to give in one article even the titles of the addresses given and all the subjects discussed, in a four day Institute composed of such able and creative men and women as the leading educators of the United States. But any report of this remarkable Institute would be entirely out of focus, however brief, that failed to make mention of the consideration given to training for Aviation.

A startling address was given by Brig. General Lawrence L. Kuter of the Army Air Forces on "What the Army Air Forces Need from Education" outlining a training job of gigantic proportions. Two statements alone prove that.

"We are having to re-teach simple mathematics before we can teach the application of simple mathematics to military problems; we must do the same with physics before we can teach its application to military and aeronautical equipment. You can help us build a war winning Air Force by relieving us of that great burden of fundamental instruction." General Kuter went on to give the magnitude of the task:

"The 125,000 airplane program for 1943 is closely related to an Army Air Force of approximately two million men. Of these 1,000,000 must be given military training as technicians. *That number is almost half the total number of young men in senior high schools.*"

The way this need is being met was outlined by Director of Training of the Navy A. W. Radford, who paid this deserved tribute to Admiral Towers, Chief of the Bureau of Aeronautics, "He is one of those who in peace time prepared for war and helped to give us the system that has produced the victors of the Coral Sea and Midway." After describing the courses being given he emphasized in this fine appreciation, "the debt which the Navy and the Nation owe to the parents and to the educators of America for the type of young men we are getting, clean of mind, clean of body and clean of purpose. Such magnificent personnel cannot fail."

In addition to these addresses from the Army and Navy before the general session there was an important special session, devoted to definite plans of training, under the guidance of Dr. Ben D. Wood of Columbia University, an educator whose range of special knowledge is only equalled by his enthusiasm, as the writer can bear witness from close association with him on the Motion Picture Research Council.

As the Institute came to its close and it moved throughout with the precision of a Swiss watch under the direction of the Chairman on Arrangements, William D. Boutwell of the Office of Education, there was a cumulative interest and zeal for Victory that resembled a religious Crusade. And then the man who had been e inspiring leader, Dr. Studebaker, gave an il minating, but compact, summary of the fo stirring days. With typical head-on directn Dr. Studebaker met the challenge the war h brought to the schools when he declared:

"Only sheer blindness to reality could ca any of us to doubt that education must und take conversion to the pressing business of to war. The schools may have moved rather slow in making this conversion because never befo had they had to turn their full attention to e science of war."

From this clear statement, which was ma festly concurred in by every one who had tended the Institute, the Commissioner proceed as a military commander might have done, outline the steps needed to accomplish that to "conversion to War."

"There must be fuller occupational inform tion and guidance into the critical war servic more emphasis must be given to physical fitne greater attention given to mathematics and s ence, as the Army and Navy men had urged every address; introduction of pre-flight cours in aeronautics in thousands of high schoo more attention to training for citizenship in democracy; development of broader knowlee and understanding of our Allies in the Unit Nations."

In this connection Dr. Studebaker quot Secretary Hull's searching words "This is a ta of intensive study, hard thinking, broad visi and leadership not for Governments alone b for parents and teachers and clergymen and t those, within each nation, who provide spiritu moral and intellectual guidance."

Dr. Studebaker also outlined proposals a plans which had been presented by colleges a universities during the Institute. In particu he supported the idea that colleges and u versities should at once "adjust their regu courses and curricula to better fit warti needs."

Thus ended a deeply significant and tru historic gathering one that said with ca courage to the world that the Schools, Colleg and Universities of the United States are in t War for Freedom until it ends in Victory.

★ ★ ★

EXTENSIVE USE OF VISUAL AIDS will help U. S. schools mobilize for war service duties more quickly; very extensive programs are already available in the special fields enumerated in scenes shown to the left.

DR. C. F. KLINEFELTER, Assistant U. S. Commissioner of Education, helps to administer the unprecedented vocational training film program now available throughout the war industries and the scho

Visual Aids to Victor

VISUAL AIDS FOR FLIGHT CLASSES

ALL AMERICAN AVIATION, INC.,
200 W. Ninth St., Wilmington, Del.
Air-mail Pickup. . . . . 35 mm.—color.

AMERICAN FILM CENTER, INC.,
45 Rockefeller Plaza, New York, N. Y.
Clouds and Weather.
Wings of Youth: Training of Canadian Fliers.
Story of Aviation . . . . . 3 reels—sound.

BELL AIRCRAFT CORP.,
Advertising Dept., Buffalo, N. Y.
The Airacobra.

BELL AND HOWELL,
(New York, Chicago, Hollywood, Washington, D. C.)
Aviation Engines. . . . . 1 reel, 16 mm. sound.
Curtiss-Wright Answers the Call for Quantity . . . . . 1 reel, 16 mm.—sound.
How to Fly . . . . . 1 reel, 16 mm.—sound.
Aerodynamics:
Part 1. Properties of Air. . 1 reel, 16 mm. sound.
Part 2. Lift . . . . . 1 reel, 16 mm. —sound.
Part 3. Air Resistance and Streamlining . . . . . 1 reel, 16 mm. sound.
Aircurrent and Theory of Streamlining . . . . . 1 reel, 16 mm. sound.

BRANDON FILMS, INC.,
1600 Broadway, New York, N. Y.
Aviation Engine. . . . . 1 reel, 16 mm. sound.

BRAY STUDIOS, INC.,
729 Seventh Avenue, New York, N. Y.
Youth Trains for Aviation . 1 reel, 16 mm.—sound.
Methods of Flight. . . . .2 reels, 16 mm. —sound.
Essential Parts and Types of Planes. . . . . 1 reel, 16 mm.—sound.
Youth Takes to Wings . . .2 reels, 16 mm.—sound.
Aerodynamics . . . . . 1 reel, 16 mm. sound.
Part 1. Properties of Air. 1 reel, 16 mm. sound.
Part 2. Lift . . . . . .1 reel, 16 mm. sound.
Part 3. Air Resistance and Streamlining. . . . . 1 reel, 16 mm. sound.

CASTLE FILMS,
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Write for new announcement folder

CONSOLIDATED AIRCRAFT CORP.,
Publicity Dept., San Diego, Calif.
The Building of PBY's . . . 1 reel, 16 mm.—sound.

EASTMAN KODAK CO.,
Rochester, N. Y.
Principles of Flight. . . . 1 reel, 16 mm.—sound.

ERPI CLASSROOM FILMS,
35—11 35th Ave., Long Island City, N.Y.
Problems of Flight. . . . . 1 reel, 16 mm.—sound.
Theory of Flight. . . . . .1 reel, 16 mm.—sound.
The Weather. . . . . .1 reel, 16 mm.—sound.

FILMS, INCORPORATED,
330 West 42nd Street, New York, N. Y.
Conquest in the Air. . . . . 4 reels—sound.
The Weather. . . . . 1 reel, 16 mm.—sound.

FRANKLIN INSTITUTE OF PHILADELPHIA, PA.
Smoke Streams. . . . . .2 reels, 16 mm.

GOODYEAR TIRE & RUBBER CO.,
Akron, Ohio
The Air Fleet. . . . . 1 reel—silent.

GUTLOHN, WALTER O.,
35 W. 45th Street, New York, N. Y.
History of Aviation. . . . .3 reels, 16 mm.—sound.
Autogyro. . . . . .1 reel, 16 mm.—sound.
Airplane Welding. . . . . .2 reels, 16 mm.—silent.

HAMILTON PROPELLER CO.,
Hartford, Conn.
Keep 'Em Flying (propellers) 1 reel, 16 mm.—sound.

JAM HANDY ORGANIZATION,
2900 East Grand Blvd., Detroit, Mich.
24 slide films, as follows:

Men and Wings.	Fuel and Feed.
Today's Wings.	Airplane Ignition.
Aircraft Regulation.	Engine Instruments.
The Pilot.	Parachutes.
Traffic.	The Air Ocean.
Radio and Control.	Air Masses.
Lift and Drag.	Weather.
Wing Forces.	Air Pilotage.
Stability.	Dead Reckoning.
Plane Performance.	Airways Aids.
Check and Double Check.	Flight Instruments.
The Airplane Engine.	Pilot Problems.

LOCKHEED AIRCRAFT CORP.,
Public Relations Dept., Burbank, Calif.
Look to Lockheed for Leadership. . . . . .1 reel, 16 mm.—sound.

MARCH OF TIME,
Time Inc., Publishers, New York, N.Y.; Washington, D. C.
Sailors With Wings. . . . . .1 reel, 16 mm.—sound.

NATIONAL AERONAUTIC ASSN.,
718 Jackson Place, Washington, D. C.
Air Youth Division, Charts 1 and 2.
Chart 1 gives clearly labeled names of parts of a modern sports plane.
Chart 2 gives 3 view silhouettes of some of the planes of United States and other nations.

NONTHEATRICAL PICTURES CORP.,
165 W. 46th Street, New York, N. Y.
Airscrew . . . . . 2 reels—sound.

MOTION PICTURES BUREAU,
Office of War Information, Washington, D. C.
Building a Bomber . . . . 1 reel, 16 mm. sound.

PHOTO TEMPLATE LABORATORIES,
3734 San Fernando Road, Glendale, Calif.
Charts 20 inches x 30 inches on Aircraft Engines, Fuel and Oil Systems and Airplane Structures.

NAVY DEPARTMENT,
Washington, D. C.
Wings of Gold and Eyes of the Navy. . . . . 4 reels, 35 mm—sound.
May be secured from Cadet Selection Boards at Albany, N. Y.; Baltimore, Md.; Birmingham, Ala.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Indianapolis, Ind.; Denver, Colo.; Des Moines, Iowa; Detroit, Mich.; Houston, Tex.; Kansas City, Mo.; Little Rock, Ark.; Los Angeles, Calif.; Louisville, Ky.; Macon, Ga.; Minneapolis, Minn.; Nashville, Tenn.; New Haven, Conn.; New Orleans, La.; New York, N. Y.; Omaha, Nebr.; Philadelphia, Pa.; Pittsburgh, Pa.; Portland, Oreg.; Raleigh, N. C., Richmond, Va.; Salt Lake City, Utah; San Francisco, Calif.; Seattle, Wash.; Springfield, Mass.; and St. Louis, Mo.

U. S. ARMY, SIGNAL CORPS,
Washington, D. C.
These 16 mm. sound films and also 35 mm. filmstrips will be made available for school use through the U. S. Office of Education after October 1942. *Watch for announcement in these pages next month.*

Aircraft Engines	Film No. 1-135, 1-136, 1-137.
Aerodynamics. . . .	Film No. 1-160, 1-161.
Airplane Structure:	
Parts I and II	Film No. 1-211.
Part III	1-213.
Part IV	1-214.
Part V	1-215.
Part VI.	. . . . .1-312.
Part VII	1-328, 1-246.
Air Navigation. . . .	. Film No. 1-245.
Aerial Navigation. . . .	Film No. TF1-328.
Modern Weather Theory and Structure of Storms. . . .	.Film No. 1-134.
Map Reading: Parts I and II.	Film No. TF5-12.
Communications No. 11-1	. . .Film strip.
Wizardry of Wireless . . .	.2 reels—sound.

VISUAL EDUCATION SERVICE,
131 Clarendon St., Boston, Mass.
How to Fly. . . . . 1 reel, 16 mm.—sound.

VULTEE AIRCRAFT, INC.,
Public Relations Dept., Vultee Field, Calif.
Messerschmitt 110 . . . . 1 reel, 16 mm. silent.

WESTERN AIR LINES,
501 W. 6th Street, Los Angeles, Calif.
Color slides. . . . . .1 series, on military aircraft.

WRIGHT AERONAUTICAL CORP.,
Public Relations Dept., Paterson, N. J.
Wright Builds for Air Supremacy 2 and 5 reel versions, 16 mm. and 35 mm.

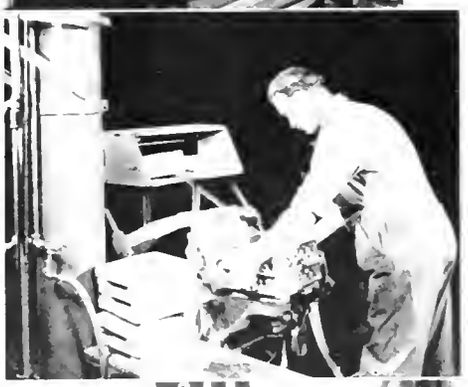
SOCIETY FOR VISUAL EDUCATION,
100 E. Ohio St., Chicago, Ill.
The slide films available cover the following subjects:

Historical.	Gliders and Light Planes.
Construction.	Aerial Photography.
Engine.	Aircraft in Other Industries.
Instruments.	Famous Flights and Fliers.
Propellers.	Army Aircraft.
Lighter-than-air.	Navy Aircraft.
Land Planes.	Radio and Aircraft.
Seaplanes.	Accessories.
Air chutes.	Special Equipment.
Maintenance.	Aircraft Schools.
Autogyros.	

TRADE FILMS,
933 Seward St., Los Angeles, Calif.
The 18 slide films available cover the following subjects:

The Engineer's Relation to Production.	Resistance Welding.
The Engineer's Relation to Assembly.	Jigs and Fixtures.
Riveting.	Methods of Fabrication.
Blueprint Reading.	Methods of Assembly.
Gas Welding.	Forming Machines.
Arc Welding.	Cutting Machines.
Mills.	Lathes.
Heat Treatment of Aluminum Alloys.	Processings.
Safety.	The Component Parts of an Airplane

From Pre-Flight Aeronautics handbook of the United States Office of Education



CHICAGO'S SCHOOLS SET AN EXAMPLE in two new sound and color films recently released by the Board of Education Film Council. The two pictures "Skilled Hands for Modern Living" and "Young America Learns a Trade" depict Chicago's outstanding industrial arts training program. The scenes (right) show the widespread diversity of training afforded in trades through the program advocated by Dr. William H. Johnson, Superintendent of Schools and under the direction of Dr. Louis V. Newkirk.

ARMY FILMS cut training time

COL. GILLETTE, ABLE CHIEF OF ARMY'S TRAINING FILM PRODUCTION, DECLARES VISUAL AIDS SAVE 40% IN TIME

★ The use of motion pictures as a visual aid to education is not a new idea to most of you gentlemen. In the past ten years you have made good use of the commercial film in helping to exploit your products or in teaching sales techniques to your personnel.

Training Films are not a new idea to the Army, either. The only thing new about the Army's current Training Film program is its size. The Signal Corps has been charged with training film production in the Army for about twenty-five years. I have been engaged in Army film work for the past twelve years. But, as late as 1938 my staff consisted of three enlisted men, one civilian employee, and myself. At the present time there are in my command at the Signal Corps Photographic Center several hundred officers, enlisted men and civil service employees.

Like most of the other activities of the Army during peacetime, Training Film production for ten years prior to the emergency, had been operating with a skeleton staff. It was the Signal Corps' job to experiment, to develop, and to prepare in miniature a complete plan for visual education that could be expanded overnight into a working program for the training of millions of men. As professional soldiers we were preparing against the day when War might come.

Now that day is here. We have tried to minimize the problems of overnight expansion and to get on to the major problem of supplying film to aid in the training of the Army's new millions.

It must be remembered that most of these millions come into the Army from civilian life as raw recruits. They must be indoctrinated, first, in the Army way of life. Military courtesy and discipline must become second nature. They must be taught how best to live and protect themselves under field conditions.

Most important and most difficult from the training standpoint they must be taught to use and care for the many highly complicated weapons and instruments on which a modern Army depends. To drive a tank or to track a dive bomber with an anti-aircraft gun takes a great deal of technical knowledge and facility. New equipment and new techniques are constantly being developed and the soldiers of the new Army must be taught to use them.

The military mission of the Signal Corps Photographic Center is to produce film that will help to train fighting men as quickly and as efficiently as possible. It is hardly necessary to point out that, in the present situation, training time is a vital element. It is a military asset that must be rationed as carefully as steel or copper or rubber. Time, unlike other military commodities, cannot be stretched out and there is no substitute for it. There is never enough of it in wartime, because trained men are always needed immediately.

AT THE FAR-FLUNG OUTPOSTS AND TRAINING CENTERS OF OUR ARMY, training films are helping to make better soldiers and shorten their training time.

The only way the problem of time can be attacked and beaten is by an improvement in training methods that will actually cut down the training period. The Army has believed for some time that training films can do this, and we are now in the process of applying that theory.

Col. Melvin E. Gillette

tells N. Y. Sales Executives about Army's training films in talk reprinted here by permission of War Department.

There is only one valid test for any training method. Does it train men better and quicker than previous methods? You may want to ask me now, with some justification, whether or not Army training films meet that test.

Frankly, I have used that test myself many times. And in order to arrive at a sound conclusion I have applied a yardstick that is more commercial, I'm afraid, than it is military. I have asked myself as perhaps you gentlemen have asked yourselves on certain sleepless nights "Are my customers satisfied?"

My "customers" are those officers of the various Arms and Services whose job it is to supervise the training of the Army of the United States. Their job is the biggest mass educational program that man has ever attempted.

The thing that interests these officers most is training time. How can it be cut down and still turn out trained men? The elimination of waste motion is just as important to them as it is to the management of any production line.

These officers whose business it is to know assure me that training films, used intelligently in combination with normal methods, can cut the time required for training up to forty percent in some cases.

And these officers are backing up their belief with official requests for more films. As a matter of fact, if we were able to produce twenty-five films a week, we would still be unable to satisfy the demands.

In plain terms we have satisfied customers who want more of our products. These officers are highly trained specialists, grimly engaged in the biggest job in the world. Their opinion is, I believe, the best and most realistic argument I know for the efficiency of films in helping to train soldiers.

In short, the Army is convinced that the visual education idea is a sound one. And they have arrived at that conclusion by the hard headed business like approach of testing it.

I assume that most of you gentlemen who have used films have used them in sales training or as a promotional aid.

The main difference, I believe, between this type of film and the pure training film lies in the approach. Whereas your sales or promotional film is concerned to a large extent with psychological factors of persuasion, the training film is concerned principally with "what to do" or "how to do it."

Our experience in Army training films has been that the simple straightforward technique of presentation is the most effective.

It is my opinion that the work being done by the Army in applied visual education will have far reaching effects after the war. I know that we who are in Army film work are learning new techniques and new approaches to education every day. And I feel sure that some of the things we are learning can be applied to civilian education. I believe there will be a broader use of films in schools and colleges after the war.

And commercial films, which have begun to reach important proportions before the war, will, I feel confident, reach greater heights and wider usage. Aside from the new techniques that will have developed there will be a large audience of ex-service men who will have been accustomed to visual education training methods.

It is not anticipated that films will ever do away with text books in school, any more than we in the Army expect training films to replace the manuals. Films should be used as an aid, rather than as a complete, self-contained educational medium.

In communities throughout the Dominion, posters like this announce war film showings

CANADA'S WAR FILMS hit hard!

FIGHTING FILMS BRING HOME REALITIES OF WAR

IN A WAR which is total or nothing ne Canadian Government, through s National Film Board is produe- ng documentary war films whose ard-hitting realism has broken ith the accepted motion picture ormula as completely as the Nazis roke with the Maginot mind.

Contrasted with the traditional aution of governmental enterprises. nd their instinct for dealing ging- rly with major issues, Government ilm Commissioner John Grierson id Director Stuart Legg are turning ut a brand of fighting front films hich leave no doubt whatsoever iat their objective is to jolt Cana- ian motion picture audiences next the grim realities of war. In few her countries has any department government permitted itself to ew facts so realistically or to immer them home so hard. That e method has succeeded is proved the fact that National Film oard pictures now enjoy interna- tional circulation and have been ranked among the best war report- ing jobs so far produced by any of the United Nations.

The war series, CANADA CARRIES ON and THE WORLD IN ACTION, circulate theatrically on an ordinary commercial basis. Speaking of the WORLD IN ACTION series before the National Board of Review in New York on November 13, 1941, Grier- son remarked, "We said from the first that we were not giving it away. We were selling it commer- cially because if it was good it was good enough to sell commercially, and if it wasn't good enough to sell commercially, we weren't any more interested in it than the industry. In other words we decided to put our work on a normal entertain- ment basis and use that as a yard- stick of our success in public in- formation."

In Canada the CANADA CARRIES ON series made in co-operation with the Public Information Division of the Department of National War Services (now being replaced by the Wartime Information Board) plays 900 or ninety percent of Canadian theatres, seventy of them French. Regular French versions are made of each monthly release. *Churchill's Island*, first issued in this series and later released internationally as the first of the WORLD IN ACTION series, gained a special award from the Motion Picture Arts and Sci ences in Hollywood as the best short documentary picture of 1941. Over- night the National Film Board be- came international film news. Ca- nadian films began to gain a world audience. Successors in the series, *This Is Blitz*, *Food Weapon of Con- quest*, *New Soldiers Are Tough* and *Inside Fighting Russia* have better than lived up to the standard of the opening release. Through each of these war front films there runs the

(PLEASE TURN TO NEXT PAGE)

These Are Typical 16mm War Films

BATTLE IS OUR BUSINESS — Made with primary purpose of illustrat- ing training of raw recruits into a competent soldier, it is also notable for its human interest.

BATTLE OF BRAINS—Illustrates dif- ference between this war and that of 1914, emphasizing importance of mechanization; work of the scientific laboratory.

CALL FOR VOLUNTEERS—War work of the women of Winnipeg—rang- ing from collection of magazines for troops to operation of a junk shop to raise funds for canteens.

FIGHTING SHIPS — An industrial film made for workers and about workers demonstrating that the front line in this war extends to the workers in the steel-mills and the shipyards.

HOME FRONT—Mobilizing the civilian populations for the war effort; new responsibilities of Canada's women.

SOLDIERS ALL—A panoramic view of the British Commonwealth in training.

STRATEGY OF METALS—Production of metals, not merely as an aspect of the home front, but for direct ac- tion on the fighting front.

TOOLS OF WAR—The contribution of Canada's engineers and mechanics to the war effort. Importance of Canada's natural resources and highly developed industries.

WINGS OF YOUTH—The gigantic Air Training Scheme. To Canada come thousands of men from Britain, Australia and New Zea- land to train side by side with young Canadians.

OF PEOPLE & RESOURCES

GREAT LAKES—The main stream of shipping down the Lakes shown in color, and an outline of the great industries along the shore.

HOT ICE—The first of a series of films on Canadian sports. Ice hockey is shown as a game which Canada has given to the world, and the skills of the game are then analyzed, from the first sim- ple rules taught to child players to the skill of professionals.

ICELAND ON THE PRAIRIES—Magnifi- cent Kodachrome color film of the Icelandic communities in the Cana- dian west.

OTTAWA ON THE RIVER—Colorful aspects of life in Ottawa and sur- rounding country, Parliament Hill, the Peace Tower and the Memorial Chamber.

PEACE RIVER—The film outlines the settlement and activity of the Peace River district, Canada's last frontier in northern Alberta and British Columbia.

PEOPLES OF CANADA—Canada's an- swer to Hitler's doctrine of race superiority. Men of man races with different cultural, social and political backgrounds co-operate in building a unified nation.

TIMBER FRONT—The importance of Canada's forests in the war effort and the vital part they will play in the re-constructive social plan- ning of tomorrow.

CHURCHILL'S ISLAND First of "World in Action" Series. Winner of special Academy Award for best documentary war film in 1941

INSIDE FIGHTING RUSSIA Men and women share in the councils of the U. S. S. R. (from the "World in Action" series.)

THIS IS BLITZ: The ruthless calculated pattern of blitz is planned by Hitler and his staff

FOOD, WEAPON OF CONQUEST Europe's civilians plead for bread. Below, HITLER'S PLAN Laying communication lines on the desert

CANADA'S WAR FILMS: Cont'd

tightening, toughening pattern of the new warfare, the hard hitting strategy of attack. To awakening and badly shaken United Nations, saccharine-fed and complacence-dulled too long, they offer a smashing screen counter-offensive, refute the old argument that motion picture audiences are interested only in escape.

Motive power behind this two year record of achievement is Government Film Commissioner John Grierson who was convinced from the outbreak of war that the United Nations must tell their story with all the dynamics of public information geared to total war and that the process must be international or not at all.

How far this purpose has been achieved by the Canadian documentary film can be judged by the fact that THE WORLD IN ACTION series is distributed throughout the United States, Great Britain, Australia, New Zealand, India, South Africa and the Latin Americas where sound tracks are translated into Spanish and Portuguese. Since April 1940 the National Film Board has been producing one theatrical two reel war film each month and since April 1942 it has produced two. Theatre releases also include weekly newsclips, novelty trailers on government campaigns and a French language newsreel entitled *Les Actualités Olympiques*.

Grierson's connection with the documentary film goes back to the close of World War I when, after serving three years with the British Navy, he travelled to the United States on a Rockefeller Research Fellowship. On his return to England he organized the Empire Marketing Board Film Unit for the British Government and later on developed it into what came to be widely known as the G. P. O. Film Unit, the first ambitious center of documentary film making in any country.

Between 1930 and 1933 he was frequently called in as consultant by other governments and it was while on his way to Australia in this capacity that he was invited by the Canadian Government to become its first Film Commissioner. He has also been responsible for training some of the best documentary men in the field, notably Stuart Legg, director of CANADA CARRIES ON and THE WORLD IN ACTION and Harry Watts, who directed *Target For Tonight* and *London Can Take It*.

Through long experience in the fields of education and propaganda, Grierson has never fallen into the error of under-rating these weapons in the hands of the enemy nor the consumate skill with which the Nazis have learned to use them. He has consistently held that the only defense lies in attack and that to achieve victory the United Nations must state their faith in stronger terms than the enemy. It is this actuality approach to film-making coupled with a long-range view of the film as an instrument of public education that has endowed Canadian documentaries with their tough core of realism, their blunt refusal to treat with any emotion less comforting than truth.

In Canada government film production and distribution is centralized under authority of the National Film Board which in turn looks after the film interests of all government departments. The Board includes two government ministers, three senior civil servants and three members of the public chosen for their interest in and knowledge of the film as an instrument of public policy.

Although the documentary film has long since proved itself in the field of public information, the word "documentary" is still too often confused with the newsreels. Yet the difference remains fundamental, for whereas the newsreel presents unrelated facts, the documentary film creates a pattern of events, relates this pattern to past and present and often casts a startling shaft of prophecy into the days ahead.

Notable examples of this prophetic news sense were *Warclouds In The Pacific* issued ten days before *Pearl Harbor* and *Hitler's Plan*, based on Mediterranean strategy, whose release date coincided almost to the day with the opening of General Field Marshall Erwin Rommel's Libyan campaign. Already in production when the Japanese bombed Dutch Harbor was *Road To Tokyo*, a film based on Canada's Pacific coast front line.

Although less widely known the CANADA CARRIES ON and THE WORLD IN ACTION war films, the National Film Board's 16 millimeter production plan has been expanding steadily over the past two years. In addition to films on school subjects and adult education this now includes wartime economics and special films made for key government departments such as Munitions and Supply, Wartime Prices and Trade Board, General Post Office, Labor, the Civilian Director of Recruiting, the Director General of Aircraft, the Army, Navy and R. C. A. F. and the Department of National Defense.

Non-Theatrical Outlets

◆ Non-theatrical distribution in Canada is carried out mainly through twenty regional libraries

FILM COMMISSIONER JOHN GRIERSON—among the United Nations one of the ablest film interpreters of the war

set up throughout the nine provinces. In the more thickly populated regions of Ontario and Quebec there are as many as four film libraries, while in New Brunswick where circulation is restricted there is only one. Through the libraries both war and education films are available on a loan purchase basis. At the end of six months of theatre showing films in the CANADA CARRIES ON series are reduced to 16 millimeter and become available for schools, camps

of Canada's people and her resources

CANADIAN LANDSCAPE shows Canadian landscape painter A. Y. Jackson at work, tells his technique.

PEOPLES OF CANADA: a study of life in Quebec and among the mixed population of the Canadian West

Visual Aids to Victory

lubs, churches or any other com-
unity organization that wishes to
ut on a program.

As a teaching medium the film
n Canada is proving an instrument
f flexibility and range. It can and
oes instruct the army in tactics and
rms, demonstrates the use of pre-
entive medicine, first aid and
. R. P., teaches the use of preci-
ion tools and is introducing new
pproaches to history, social studies
nd art. Planned for future pro-
uction are films dealing with ag
iculture, housing, health, medicine,
utrition, social welfare and other
ranches of public service.

As interpreter of Canada to Ca
adians themselves the documentary
ilm is showing them how much in
he past they have looked at yet
ever truly seen. Northwest the
olor camera has explored the rich
Peace River District of British Co-
lumbia; in Great Lakes brought
ack a record of Canada's inland
waterways and the powerful flow of
their lake-borne traffic. It has fol-
lowed the Indian trapper into the
northland and caught the habitant
farmer of Quebec as, with horse and
sleigh, he starts out through the
woods to tap the sugar bush.

Iceland On The Prairies, Ukrainian Christmas and *Pays De Quebec*, all in color, form part of a series now in production which is devoted to the various racial groups of European background who have made Canada their home. From the Pacific coast to the Maritimes the camera is showing one half of Canada how the other half lives and building a permanent record of the Canadian heritage.

Thirty Mobile Units

♦ Settlement in Canada is widely scattered with many communities living far outside theatre range. To include such isolated communities, the National Film Board, in co-operation with the Director of Public Information and the Canadian Council For Education in Citizenship, established in January last a project for thirty 16 millimeter travelling theatres. The object of these rural circuits was twofold, first to bring people in remote settlements into visual contact with war and secondly to stimulate greater knowledge of and interest in current events among foreign language groups.

Although Canada is basically of British and French stock, large numbers of immigrants from central, eastern and northern Europe have come to her shores and settled there. Today peoples of Ukrainian, German, Scandinavian and Polish origins make up the bulk of the population in many rural areas. Communities of Ukrainian and German settlers are particularly large and many travelling circuits have been designed to meet their special language needs.

By June 1942 the original thirty traveling theatres had increased to forty-seven with a monthly audience of more than 230,000; an audience scattered all the way from Vancouver Island, British Columbia to the fishing villages of Nova Scotia. By October it is certain that at least sixty-five of such mobile units will be in operation and by December it is expected that audiences will be doubled. In many cases these are the first motion pictures which the community has ever seen and letters received by the National Film Board tell of families coming forty and fifty miles in bad weather determined not to miss the monthly film showing.

Encouraged by the rapid growth of these rural film audiences outside groups are now entering the project to help the National Film Board finance additional circuits. Among these groups are the Co-operative Wheat Pools of Saskatchewan and Manitoba, the United Grain Growers of Alberta, the Canadian Forestry Association, the Free Press Publishing Company of Winnipeg and others.

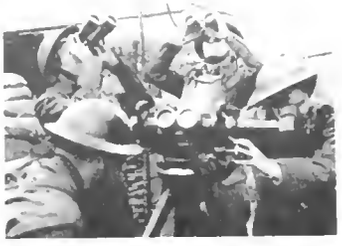
In April 1942 organized labor in Canada brought the first film programs into Ontario labor halls. Under the joint sponsorship of the Canadian Trades and Labor Congress and the Canadian Congress of Labor film programs are now shown in Toronto, Ottawa, St. Catharines and Windsor with other labor unions waiting to be included as soon as additional equipment is available. As in the case of the rural circuits these film showings have resulted in much vigorous unrehearsed debate and a keener realization of the meaning of war by people in all sections of the country.

Industrial Showings

♦ While Canadian labor is supporting the film the National Film Board through its industrial series now in production is bringing to the thousands of men and women working day and night shifts on the production lines a new pride in their job. Films such as *Fighting Ships, Thank You Joe* and *Keep 'Em Flying* which deal with shipbuilding, tank production and aircraft, are shown in war factories all across the Dominion and two of them are being made available for general non-theatre showing. Further films in this series either planned or under contemplation include items on explosives production, small arms, merchant shipping and training planes.

The training of Canada's youth for battle

Scenes from "Battle Is Our Business" showing day to day life in the Canadian army; training routine and typical battle drill in all its various phases.



—and of Canada's women for war duties

In "Women Are Warriors" these scenes show girls at work in an aircraft factory; and ack-ack girls at air defense posts, ready for action.

from the series on the war industries—

Two scenes typical of "Fighting Ships" showing the making of huge propellors at Kennedy & Sons; boring evaporation base at Peacock Brothers.

Any plant ever remotely connected with the main product which forms the subject of the picture receives a print. Thus *Fighting Ships* goes not only to shipyards and docks but to steel mills, electrical plants, cordage, propellor, marine engine and boiler factories. Replacing the old high pressure methods of pep talks and patriotic slogans these industrial films maintain the dignity of the worker by dramatizing for him his own stake in the war. Not only do they show the overall process of production but, by intercutting warfront material, they show the kind of fighting the product must do once it leaves the factory and is shipped half way round the world.

Non-theatrical distribution of National Film Board pictures abroad is carried out by means of film libraries established in the offices of Canadian representatives. In Latin America, for example, Spanish versions of *Peoples of Canada* and the color film, *Canadian Landscape*, are

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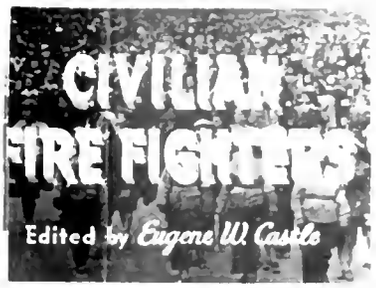
Director Stuart Legg views film through the moviola.



Scenes and comments from one of the new Castle Films' civilian defense films

The thirtieth of December, 1940, saw the high tide of Nazi bombing raids.

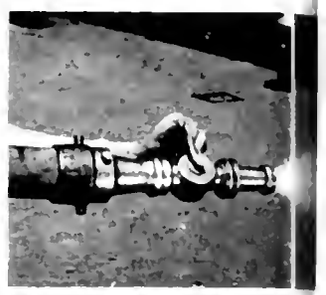
. . and London flamed with a thousand fires roging at one time . . .

There is . . . the passibility of or- carrier within range of our co

Fire-Fighting organizations, regulars or volunteers, do not have sufficient men

Defense councils throughout the nation have called for men of endurance and courage.

Trained volunteer firemen in small towns instruct auxiliary firemen in groups . . .

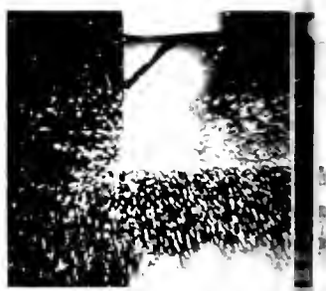


Auxiliaries are given training fo work . . . in the use of equi

Intensive training is required to became an efficient fireman . . .

Learning safety first measures in the use of the thirty-five foot ladder.

This is a typical incendiary bomb, weighing from two to fifty pounds.



The incendiary, penetrating the roof of a building, ignites on the top

. . . flaming steel burns through floors until entire building is aflame.

The factory that has been hit can be saved . . . if proper measures have been taken.

Here on the top floor of the factory, auxiliary firemen are on the job . . .

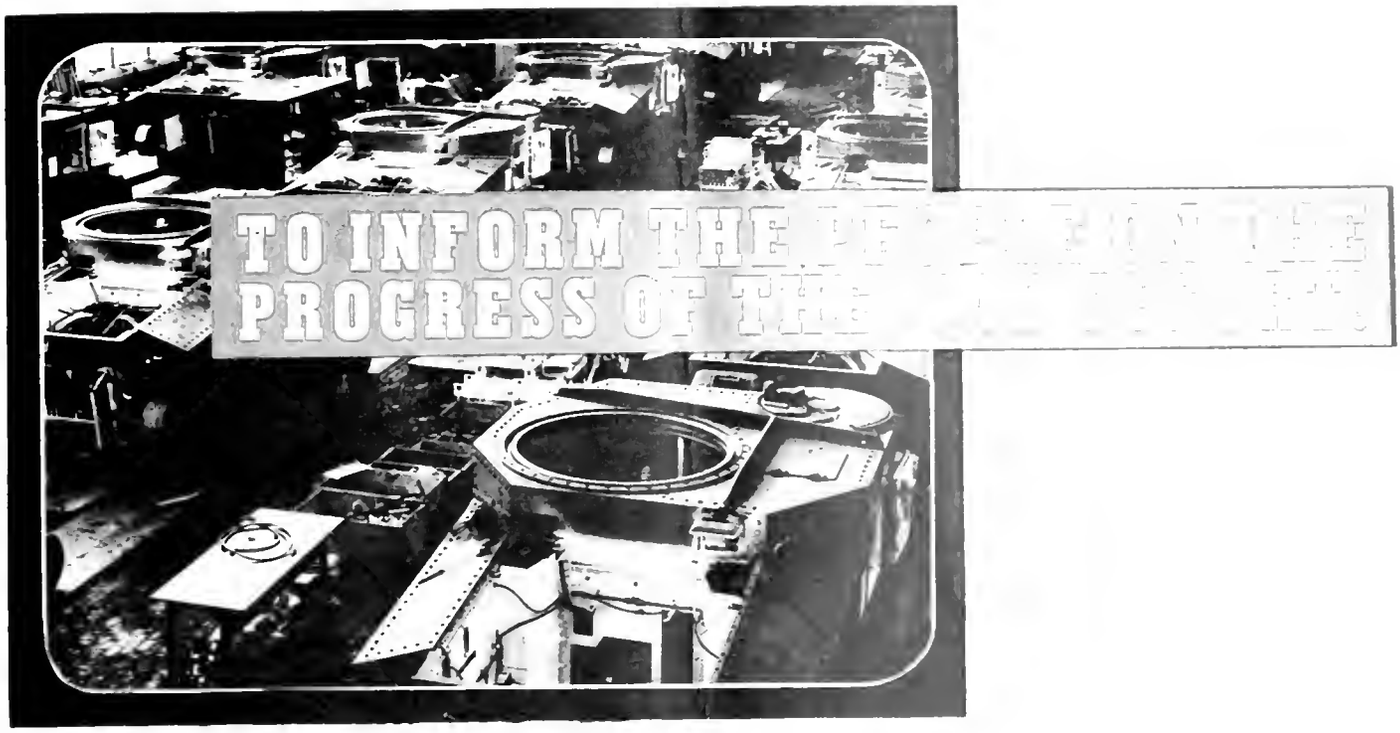
A supply of sand should be avai Also a long handled shavel, meta

In this war, no place on earth is safe from air attack . . .

Destruction by fires such as this fatal catastrophe in London, can be held to a minimum.

. . . if more civilians volunteer immediately as auxiliary firemen . . .

(Note: only the briefest excerpts presented from this complete film



The big job of motion pictures now is to help us to win the war quickly and decisively. Here are some of the ways that motion pictures can be used for this purpose.

First of all, the motion picture is excellent for use in training for developing skills. Through movies we can reproduce endlessly on the screen the work of a master craftsman. This expert may show us how to read a micrometer, how to run a lathe, how to use a bomb-sight, how to build a model plane, or any of the hundreds of other specific operations related to winning the war.

A second way in which films can be used is to build attitudes. Films are especially valuable in building confidence in the justice of our cause, faith in our allies and repugnance to the Fascist ideal.

A third contribution that can be made by the motion picture in war time is that of conveying information—information about the war production program, the issues of the war, the needs of our armed services, and many others.

The Bureau of Motion Pictures of the Office of War Information is making use of motion pictures chiefly for the purpose of conveying information dealing with the war. This office now combines the work of the Office of Coordinator of Government Films and Film Unit of the Office of Emergency Management. The functions of the newly constituted Motion Pictures Bureau of the Office of War Information are as follows:

It serves as a central point of contact between the motion picture industry and Federal officials. This contact has been made through the War Activities Committee of the motion picture industry. All motion pictures produced by the Government for which theatrical release is sought must go through the Motion Pictures Bureau to the War Activities Committee.

The Motion Pictures Bureau produces war films. At the present time the production division of the Motion Pictures Bureau is headed by Sam Spewack, well-known scenario writer and playwright. Mr. William P. Montague, formerly newsreel editor for Paramount Pictures, is employed by the Bureau as Assistant Producer.

All Government films, excluding those produced by the Army and the Navy, must be approved in script form by the Motion Pictures Bureau before they can be produced.

Assistance is given to newsreel companies in securing governmental Army and Navy coverage, and is also given to Government departments in helping them publicize their war information through the newsreels.

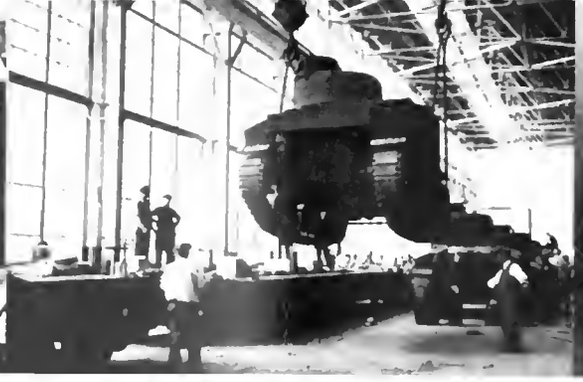
The Bureau arranges the non-theatrical distribution of four to five reels of film per month. Approximately 500 prints of each of these reels are sent out to cooperating distribution agencies.

A division of the Bureau of Motion Pictures prepares research reports for the Hollywood office, dealing with various

(OVER)

OFFICIAL U.S. WAR FILMS

ALUMINUM: A 10-minute story of the conversion of bauxite to alumina and sheeting; a behind-the-scenes story of our most strategic war metal.



TANKS: 10-minute story of the manufacture of the M-3 medium tank; assembly, testing and shipment. *Commentary by Orson Welles.*

LAKE CARRIER: 9-minute subject showing the Great Lakes ore boats and their part in winning the War. *Commentary by Frederic March.*

Basic Principles in the Production of War Information Films

(CONTINUED FROM PREVIOUS PAGE)

phases of the war program. Research reports, for example, have been prepared for Hollywood producers on such topics as Need for War Nurses, Manpower Mobilization, Women in War, Salvage, Rubber, Divide and Conquer, and many others. A Los Angeles office is maintained which offers a two-way channel of suggestions between Hollywood and Washington.

The basic premise on which the Bureau operates is that the American people do not need to be preached at. If the American people are informed concerning the grave problems we face, and learn through the film and other devices what they are expected to do, they will do it. One of our big jobs is to take our cameras out among the people and record the sacrifices, the undertakings, the work men, women, and children are doing to help win the war.

We are trying to make motion pictures which will help us win the war and build a durable peace but we cannot have the durable peace unless we win the war. We can help win the war by making or helping to make motion pictures which deal with these six basic areas.

☆ ☆ ☆

1. The Issues of the War

★ Every American ought to know what Fascism is, what made it grow, what it has done. We need to see that the big thing we are fighting against is the Fascist idea of a master race, of world domination, of methods of education, of religion, of curbing of thought, of force. We are fighting for what we have been proud to call the democratic way of life. We can help win the war by understanding Fascism and by communicating that understanding to others.

16mm sound prints of many of the picture descriptions in these pages are now available at slightly more than print cost through local dealers of Castle Films, Inc.

2. The Production Front

★ We want to increase the production of war goods. This means mobilization of manpower. It means making certain that our transportation facilities are adequate. It means increasing the health and nutrition of our nation. It means raising more meat, more peanuts, increasing milk production. We are trying to produce films which do these things. Samples of films of this kind are *Tanks*, *Bomber*, *Women in Defense*.

☆ ☆ ☆

3. The Home Front

★ Americans are not only producers, they are consumers. We have stopped the production of refrigerators, washing machines, and hundreds of other articles. We must now take extra good care of what we have, including rubber tires. It will help win the war. We must conserve fats, scrap, fuel oil, gasoline. People need also to cooperate with the Government in its program of price control. The cost of the last war was increased by $13\frac{1}{2}$ billions because of inflation. It has a disastrous effect on morale. Information films will help to eliminate the danger of runaway prices. We also need films dealing with civilian defense.

☆ ☆ ☆

4. The Fighting Front

★ How are our tanks doing in Libya? How do the British plan their air raids? Just how did we do at Midway? In the Coral Seas? The Solomon Islands? We are trying to see to it that these facts reach the motion picture screen. One of our staff members works with the newsreel companies and with the Army and Navy in order to bring to the public scenes dealing with our fighting forces and those of our allies.

☆ ☆

5. The Nature of the Enemy

★ What are the Nazis like? What is the so-called "education for death" which they receive? What have the Nazis done in Poland? Norway? France? What was the pattern of activity of the Japanese in the invasion of Manchuria and in their invasion of China? What methods do the Nazis use in carrying forward their propaganda? How do they, for example, "divide and conquer"? Some motion pictures have already been prepared in this field. Hollywood has produced a large number of them. Our production units have produced one film, *The World at War*, which presents many of these ideas.

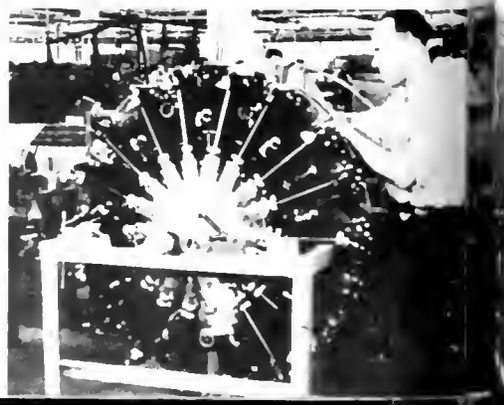
☆ ☆ ☆

6. The Nature of Our Allies

★ Who are the United Nations? What are the British like? What kind of qualities have they exhibited in their repeated bombings? What problems do they face? How does the Lend-Lease work? What is happening on the Russian front? Here are a variety of problems which need filmic expression. We are getting excellent cooperation from the ministries of information of our allies. We are planning in our non-theatrical distribution to send out each month a film which is descriptive of some of the activities of these allies. In the month of August, for example, we made available *Target for Tonight*; in September we made available the *Western Front*. Subsequent releases will deal with Canada, Russia, China, and other countries.

In this war we are demonstrating that the motion picture can be a great instrument for democratic education—education which reaches into every home, rich and poor, farm or city. It brings a message of information that is easily understood and long remembered.

POWER FOR DEFENSE: 11-minute review of war service of hydroelectric power in the Tennessee Valley; arms production, etc.



RGET FOR TONIGHT: A 48-minute (16mm) a of an actual air raid by the Bomber Command the Royal Air Force. *Produced by the Crown m Unit.*

RING OF STEEL: 9 minutes of screen history of the American Army; inspiring review of the fighting tradition of our army. *Commentary by Spencer Tracy.*

BOMBER: Ten-minute inspirational film on the manufacture frame to flight of the famed Martin B-26 medium bomber. *Special commentary by Carl Sandburg.*

The Educational Division of the Bureau of Motion Pictures

1. *What does the Educational Division do?*

The Educational Division is responsible for developing and administering a program to distribute and make most effective use of 16mm Government war films. In meeting this responsibility it is carrying out a widespread film distribution program. We plan during the current fiscal year to allocate approximately thirty thousand reels of war films to film distributors. We plan to carry out a mass informational and educational program designed to stimulate most effective and intelligent use of the available motion pictures.

2. *How does this program fit in with the basic purposes of the Office of War Information?*

The Office of War Information is using motion pictures and other media in a planned program to develop in the American people an intelligent understanding of the status and progress of the war effort and an understanding of what each person can do to help. The 16mm motion picture is an important medium for bringing concrete information to selected groups of people throughout the country who are gathered together in meetings planned primarily for the purpose of giving them needed information. The program of the Educational Division of the Bureau of Motion Pictures is geared directly into the basic purposes of the Office of War Information and provides a comprehensive working plan for the use of this powerful tool of communication.

3. *How is non-theatrical distribution for 16mm films carried out?*

16mm Government war films are distributed through carefully selected established agencies for film distribution. We believe that existing channels are best suited to carrying out the distributional program. These channels will be used to maximum capacity before any new distributional agencies will be set up or used. Commercial rental agencies, university and other educational film lending libraries, the state War Boards of the U. S. Department of Agriculture, and city school systems with well organized visual departments are all being used as depositories for war films.

4. *What kinds of motion pictures are to be included in this program?*

Motion pictures of all kinds—from a half minute poster film explaining why toothpaste tubes must be saved to a five reel picture documenting the way the British Royal Air Force carries out raids over Germany— will be included. But all will be chosen in terms of one basic criterion—suitability for use with non-theatrical audiences to inform them about the war effort and of ways they can aid victory.

Most of the films distributed will be produced by the Bureau of Motion Pictures. Others will be produced by other Government agencies and departments such as the Army, Navy, and Air Corps, the Department of Agriculture, the Treasury Department, etc. Each month we plan to release a motion picture produced by or about our Allies. Altogether the year's program of the Educational Division calls for the release of approximately sixty different reels—five to be released each month.

5. *What are some of the biggest problems of film distribution? Of film use?*

The biggest problem in 16mm film distribution has been to provide adequately for the needs of all kinds of non-theatrical audiences and to take into consideration all the varied existing distribution channels. The audiences may be out-doors in theaterless towns, in school auditoriums, in town halls, in churches. They are gathered in club meetings.

They are the working men in the factories, mothers at Parent Teacher meetings, students in schools and colleges. They are the civilian defense workers and the people at picnics. They are the American people everywhere. The existing film distributors who can serve these groups are many, varied, and unorganized. Objective data are being gathered about all, selections made, and a vast organized distribution system is being developed.

The biggest job in film use is to develop new patterns for use. Many groups that are potentially important audiences have never used films regularly. Schools have used specific films for specific purposes and usually with small groups. War information, however, calls for a continuous use of many films with mass school audiences for broad and varied objectives. A comprehensive film program in war information calls for new techniques and new attitudes in film usage.

6. *Have ways been set up to get evaluations and ideas from film users?*

Distributors are constantly encouraged to send in their comments and suggestions relating to the whole film program. A report card is provided the exhibitor with each film he uses. This card records the size and character of the audience and space is provided for comments. First returns of these cards indicate they will reveal considerable useful data and will give important guidance to the whole program.

7. *Will the non-theatrical war film program effect general educational practice after the war?*

It is inevitable that educational practice will be effected by the non-theatrical film program. Never before has such a comprehensive informational program been attempted through the use of motion pictures. This program will provide new knowledge about the kind of films that are most effective, new knowledge of best ways to distribute films, and new knowledge of best techniques in using films. This knowledge will surely influence future film use. Certainly new force will be given to the use of films in community education, especially that of adults.

WOMEN IN DEFENSE: 11-minute account of important role of women in the war effort. *Commentary by Mrs. Franklin D. Roosevelt; narration by Katherine Hepburn.*

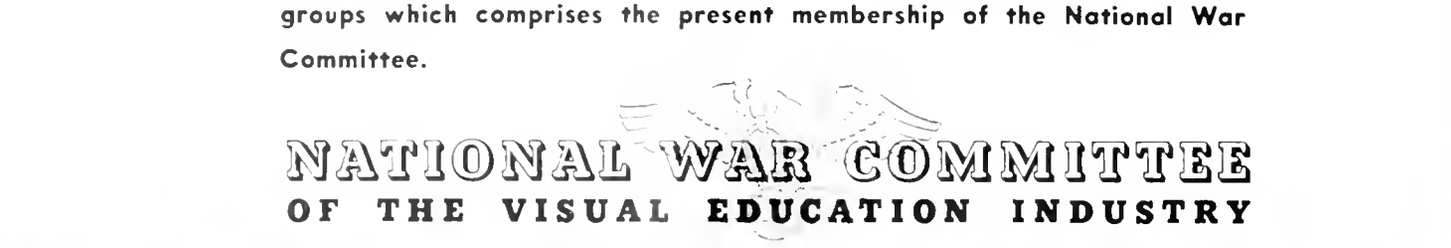
DOING OUR WAR JOBS TOGETHER

All experienced hands in the visual education industry, working together for Victory, are proud of the vital role which motion pictures and filmstrips are playing in the training of our Army, Navy and Marine Corps, in the instruction and inspiration of workers in war industries, the dissemination of war information to citizens and the education of our school population for new wartime responsibilities.

Years of experience in the production of technical instructional films and the specialization of our industrial producers in the screen presentation of facts has provided our armed forces and other war agencies with an efficient, effective and economical source of these films; decades of successful showmanship and public contacts have similarly provided for the widespread distribution of government training and informational pictures through our distributors, libraries and educational dealers.

Doing our war jobs together, meeting the common responsibility of making these visual aids work and assuring their widest effective use, is the wartime objective of the visual education industry working through a broad affiliation of all existing concerns, individuals and associated groups which comprises the present membership of the National War Committee.

NATIONAL WAR COMMITTEE
OF THE VISUAL EDUCATION INDUSTRY



Caterpillar Speeds War Production With Films

By Lyle F. Stewart, Staff Correspondent

★THE CATERPILLAR TRACTOR COMPANY, employing 16,500 men and women, is working twenty-four hours a day and seven days a week to produce essential equipment for our armed forces. Caterpillar is one of the pioneers in the extensive use of visual aids for public relations and for training in the factory and in the field. The company's comprehensive visual aid program is now playing a vitally important role in the company's all-out war effort.

Before the war, Caterpillar track-type tractors and graders were at work on all kinds of construction and earth-moving projects, on logging, clearing land, operating farm machinery, in sand and gravel pits, on transportation and snow removal work. Their Diesel electric sets provided electric power in plants and shops. Their Diesel engines were used by many other manufacturers to power their products; pumps, shovels, derricks, drag lines, mine hoists, well drilling rigs, rock crushers, air crushers, air compressors and industrial Diesel electric locomotives were powered by "Caterpillar" Diesel. The company had made extensive use of visual aids for demonstrating correct service methods to their dealers in this country and abroad, for training classes in the factory, and for advertising "Caterpillar" products through dealers and factory representatives.

Now, in the third year of war production, Caterpillar products are going to the armed forces of the United Nations to haul guns and supplies, building camps, air bases, military roads, army and navy bases and speedily repairing damaged air fields, filling bomb craters and clearing air-raid debris. Diesel engines and electric setsare being produced to meet expanded power and light requirements as well as for the operation of airport beacons and radio apparatus, and emergency lighting equipment for supply depots and hospitals. Now valuable and extensive experience in visual aids is being used to speed training of soldiers and fire wardens in the plants, to facilitate conservation campaigns, to maintain morale, to publicize Caterpillar's part in the war effort and to maintain public relations through their dealers and representatives.

Past Use of Visual Aids

★ DURING the past twenty-five years, the company has maintained the policy of encouraging its dealers in the United States and its representatives abroad to get good pictures. Many of the men became expert in the field of photography and turned in prints that enjoy popular demand. Pictures have been taken in practically every section of the world; they show Caterpillar products working under a wide range of conditions in every type of climate.

The company, according to Mr. Perry B. Johns, advertising department, now has over 60,000 still pictures in its files. In order to qualify for the files, a picture must show action and be accompanied by a complete description of the Caterpillar equipment and work, including: model name and serial number, hours operated per day, average load, rate of doing work, cost and operating conditions such as climate, altitude and dust. The pictures, filed according to a use *classification*, have served as a convincing source of documentary material for publicity and printed advertisements. Cross indexing made the 60,000 pictures readily available for use in preparing different filmstrip subjects. Caterpillar produced about twenty filmstrips in an average (pre-war) year. More than ninety percent of their dealers were supplied with projectors and made extensive use of the many filmstrip subjects.

Caterpillar has also been active in the motion picture field, producing an average of 10 one-reel sound movies per year before the war. The advertising department was made responsible for producing motion pictures intended for exhibition to audiences outside the company and

POSTERS AID PRODUCTION DRIVE

On employee bulletin boards in key locations throughout the huge Caterpillar Tractor Company plant at Peoria, Illinois, war posters are prominently displayed. One poster, on conservation of towels, did a most effective job in reducing previously high losses. The suggestion box is also used and employees get a chance to share in speeding the war effort through increased production efficiency

within the plant. Film-production brings together the personnel from diverse departments to work on a single project. For example, according to Mr. Johns, the departments of administration, engineering, metallurgy, inspection, service parts, domestic sales and export sales have worked from time to time with the advertising department in producing and reviewing various motion pictures.

Present Use of Visual Aids

★ Upon our entrance into the war, the advertising department, experienced in making visual materials, quickly produced the sound motion picture, *Forward For Freedom*, showing Caterpillar's part in the war effort. The management feels that this film which was first produced for the 16,500 workers in the plant, played an important part in developing among employees a better understanding of the company's part in the war effort. *Forward For Freedom* was subsequently exhibited to governmental agencies concerned with war production, to interested members of the armed forces, to representatives of companies engaged in war production, to assemblies in high schools and college engineering classes, and to lodge, church, civic clubs and other groups.

DEALER RELATIONS MAINTAINED

Dealers are now using motion pictures and filmstrips, produced by the company, to show Caterpillar's part in the war effort, to indicate how Caterpillar machines may be properly maintained, to keep alive the interest of prospects until the day when their products are again available for general sale, and to supply a certain amount of entertainment to public gatherings and army posts. As an example of the latter, the advertising department recently received a letter from an army private whose address was simply an "A. P. O.", stating that he greatly enjoyed seeing *Forward For Freedom* and other Caterpillar movies.

APPRENTICE-TRAINING COURSES

Visual materials have been used for a number of years as an integral part of Caterpillar's Training Courses. The training program, established in 1918, has been developed and expanded to include: four-year apprentice courses for Machinists, Pattern-Makers, and Foundrymen; two-year training courses in Production, and Sheet Metal and Arc Welding; a two-year College Graduate Course; and a five-year Cooperative Training Course which makes it possible for a student to receive a bachelors degree and at the same time complete his apprentice training course. On May 1, 1942, over 600 young men were enrolled in the different training courses.

The personnel of the Training Department is made up of a director, nine supervisors and a number of instructors. Air-conditioned classrooms, located in various parts of the factory, are well-equipped with libraries of technical books, shop equipment, motion picture and slide projectors. Technical subjects, related to the different courses, are included as a regular part of the classroom instruction; work in the classroom is carefuly integrated with the practical work in the shop.

The Department has used visual material on an ever-increasing scale for more than twenty years because information presented through visual aids was learned more quickly, thoroughly and remembered longer than information presented without visual aids. All types of visual material — line drawings, models, glass slides, filmstrips, silent and sound motion pictures — have been used for speeding up training in shop work as well as for technical subjects.

Mr. W. G. Schuller, one of the training supervisors, stated that the staff has been particularly impressed by the results obtained with the United States Office of Education Films. Plans are now being made to use the USOE films and other materials as a part of an educational and upgrading program for the thousands of men now producing war materials in the plant.

TRAINING SOLDIERS IN FACTORY

Visual aids are being used with excellent results by the Service Department for training groups of soldiers from the Engineering Corps, echelon of maintenance. Each eight-hour session consists of a two-hour period for class instruction followed by a six-hour period for supervised practice on the maintenance of machines. The class work which is carefully coordinated with the practical work, is illustrated by motion pictures, filmstrips, glass slides, photographs, models and line drawings. Mr. C. L. Schwyhart, Service Department, stated that visual aids were being used in this emergency training program because they had proved effective and efficient over a period of years, for training personnel in their own extensive service organization.

EMPLOYEES ARE FIRE WARDENS

Filmstrips, prepared under the supervision of Mr. L. C. Allenbrand, Plant Defense Coordinator, are now being used in training 2,000 employees as fire wardens to meet wartime emergencies. The company worked out a detailed plan for protecting their plant, applying the principles set forth by the Office For Civilian Defense. This plan was submitted to and approved by the Local Council for Defense auxiliary firemen were then trained and certified as teachers by the Office For Civilian Defense.

Defense instruction in the factory was started without the use of visual aids since no materials were available that applied to the company's specific situation. However, when initial tests showed unsatisfactory results, filmstrips were quickly planned and prepared.

The first set of filmstrips that were completed, describe and illustrate: the need for a United States Civilian Defense Program, fire alarm system, major control

Caterpillar Makes Training Slidefilms

A complete series of filmstrips based on Caterpillar's own plant defense problems was produced for use in Company training classes; subjects included all phases of plant protection including such subjects as Fire Alarm Systems, Major Fire Control Apparatus, Water Supply System and Rope Practice in one typical series.

apparatus, water supply system, rope practice, hose and ladder instruction and practical hose work. A second set of filmstrips is now being prepared; the subjects completed so far include: fire control practices, and control of incendiaries. An outstanding feature of the entire series is that the final frames of each filmstrip include questions (with illustrations) to emphasize the major points taken up in that filmstrip or lesson.

High test scores indicate satisfactory teaching results when these filmstrips are used as an integral part of the class instruction. The auxiliary firemen who were certified as teachers for the factory defense classes, are thoroughly sold on the value of visual aids. They have had the personal experience of unsatisfactory results without visual aids as compared to successful teaching results with visual aids.

BULLETIN BOARD CAMPAIGNS

Effective use of visual materials has been extended to the bulletin boards throughout the plant by the Labor Management Committee. New materials are placed on the bulletin boards at ten-day intervals, and photographs made of the new arrangements for reference. A series of highly successful bulletin board campaigns have been carried on by a systematic and carefully-planned use of pictures, sketches and posters.

The last bulletin board campaign for which data was available was on the conservation of cotton towels; the campaign dramatically illustrated the need and use of cotton for surgical dressings, gun-cotton and clothes for soldiers. Mr. F. Logston of the Labor Management Conservation Committee provided the following report on the effectiveness of this campaign:

"FORWARD FOR FREEDOM" was produced to show the role of Caterpillar tractors and other equipment performing many vital tasks in war service.

"THE WAR AGAINST WASTE" shows salvage possibilities to Caterpillar employees and increases the effectiveness of the plant salvage programs.

"Prior to the campaign, the company issued 32,000 towels daily, lost 60 per 1,000 towels issued, and had no towels left for the third shift."

"The company's towel loss has been below 1% since the campaign ended (period of 4 weeks), the company continues to issue 32,000 towels daily, and they now have 300 bundles of towels left for the third shift."

Films New War Role

I believe that the results of a training program, reported by Mr. V. C. Capfer, "Caterpillar" Export Representative for India, provide an insight into the potential power of visual aids for this emergency, and a possible role of visual aids in the future.

The training program was in connection with a government road building project in India. Young natives were enlisted from submarginal lands known as "famine areas," and trained to handle and work with machinery so that they could earn a living. The project was inaugurated in 1939; four groups had completed the training program by January, 1942. Each group was made up of over 1,300 young natives, and received training for a period of ten weeks at Lahore, India.

The program was confronted at the outset by two apparently unsurmountable obstacles, namely, language difficulty and an absolute lack of background on the part of the natives for understanding what it was all about. Five Indian languages—Hindustani, Urdo, Roman Urdo, Tamille, Madrasi—had to be used for instructing each group. The language obstacle was overcome by having trained natives explain pictures as they were projected on the screen. Background for specific training was presented by a large number of motion pictures, showing tractors at work in all kinds of situations and what they were used for in different fields of work. This background was given during the first two weeks, the "breaking in period," while the pupils were learning to wear shoes and to follow orders.

Filmstrips and motion pictures, produced by the Caterpillar Tractor Company were used for the specific training part of the program. The pictures were projected in large tents at various times during the day as well as in the evening. Specific training material was presented in small units and carefully coordinated, step by step, with actual practice.

The natives made excellent progress throughout the entire training program. Their ready response to the early technical phases of the work showed that the motion pictures were very effective in overcoming language barriers and in providing background information. Their interest, enthusiasm and progress in mastering the more difficult parts of the training showed that visual aids were also effective for presenting detailed material. The native interest and enthusiasm in the work paved the way for a lasting spirit of cooperation and good will toward those in charge of the program. Evidence of lasting loyalty and good will was demonstrated when native construction crews accepted only American equipment; they refused to operate or to work around European tractors that had been loaned for use without charge.

The proper use of visual aids made this difficult training program a success. Results obtained from training over 5,000 natives showed that visual aids were effective in overcoming language barriers, for providing background information that was entirely foreign to the individual, for presenting detailed material, and for sustaining interest and enthusiasm for the work. Products that resulted from the successful training included a number of well-constructed highways, increased agricultural production, higher incomes by the trained natives working on these projects, and a lasting spirit of cooperation and good will for America.

IN TRAINING CLASSES LIKE THESE Caterpillar-produced films are used to aid in technical instruction; shorten training time.

Not only films, but competent instructors assure well-balanced training.

New Workers Pour Into War Plants and Personnel Problems Multiply—

Visual Aids Improve Employee Relations

A THOMPSON PRODUCTS FILM SETS A GOOD EXAMPLE FOR THE NATION'S WAR PLANTS FACING INCREASED PERSONNEL PROBLEMS

★ ABOUT THE TIME Mr. Schickelgruber was beating his chest and screaming that his last territorial ambition in Europe was the Polish corridor, some fifteen hundred men, employed by Thompson Products, Inc., were turning out a large percentage of the automotive and aircraft valves needed in this and seventy-three foreign countries.

Those fifteen hundred men were part of a smooth-functioning organization. They were carefully selected, well trained, serious, competent workmen. They understood its policies, its rules, its objectives, and they appreciated their jobs. The company, in turn, knew its men, returned their loyalty and made every attempt to keep a happy and harmonious working force.

Some three years later, when Mr. Schnickelgruber slipped on the icy pavements of the road to Moscow, the Thompson organization exceeded ten thousand workers. And the expansion was just getting under way.

That same story of expansion is true, to a greater or lesser degree, of practically every industrial plant in the nation. Everywhere, it brings up problems of personnel relations that have an immediate and direct bearing upon production.

They're All Different

Anyone who has been behind the scenes in a war plant has his own set of case histories on the attitude of workers within the plant, each illustrating a different headache for the personnel manager. They run rather true to form. There is the former soda-jerker, now running a drill press at fifty dollars a week, who feels that he's underpaid; the management's pocketing all the profits and he's doing all the work. He doesn't hesitate to tell everyone else about it either.

There's old John Smith who spent the greater part of his life developing his skill (oftentimes it's almost artistry) on a turret lathe. On the next machine the operator is a young fellow just out of the training school who's making almost as much money as he is. The company asks old John to pass along the hard-earned know-how, but human nature tells him just the opposite.

There's the fellow on the precision grinder who has a brother at the front, working next to the guy who got himself a defense job to avoid the draft.

Then there's always the fellow with the inside dope straight from the management. As soon as the war's over the plant's going to shut down for six months . . . on that last government order the company made three hundred and fifty per cent profit . . . the plant down the street is paying ten cents an hour more for the same kind of work. . . .

With the expansion came a demand for foremen, but the supply quickly ran out. Ordinary good workmen had to be placed in charge of entire departments, although they had had little experience in handling men. The situation was further aggravated by the fact that many of the men had never worked in a factory before.

To add to the difficulties, war plants are particularly susceptible to the hysteria of the times. Rumors spread, gossip grows; a minor incident in the morning can become a major catastrophe by noon.

In a war plant or anywhere else a man's job is the greater part of his life. Unless a workman can begin his day with reasonable peace of mind regarding his job and working conditions he will be a poor workman and the results will show on the production record. But, under the terrific pressure of war-time conditions, in the face of war-time expansion, how can industrial management maintain a happy and harmonious working force?

Getting Understanding

Obviously there is no cure-all, no magic formula that will bring the workers singing to their jobs in the morning and send them tripping gaily out at night. But there is a method of promoting better understanding between men and management — an understanding that pays rich dividends in morale and therefore in production. The method has been tried and is being proven in the vast Thompson Products organization.

Every Thompson worker, new

Like other war plants, Thompson faced a growing personnel problem

So a 5-reel motion picture was produced to tell about the plant

. . . and to help employees understand their place in the war effort

The interviewer seeks to determine what applicant is best suited to perform.

A combat soldier on the production front

Thompson men work as a team, have confidence in themselves, each other, and their company

A labor-management conference, a wage question has come up

Arguments and differences of opinion with us from the day we are born . . .

and old, is shown the Escar-produced picture entitled *Men, Management, Production*. Because it is doing a remarkable job of personnel relations for a typical war plant, this five-reel film may have opened an entirely new field of service for the motion picture industry. It is evident from the widespread interest shown in the Thompson picture that the idea of using motion pictures is appealing to the men who are faced with the personnel problems of over-expanded industry. *Men, Management, Production* offers, at least, a successful pattern that can be followed in any industry.

Audience Attitudes

The first and the greatest problem we have to face in getting the picture on paper was the attitude of the people who would see it. Unless we could convince our audience at the outset that this was a genuine, honest attempt to help each individual to acclimate himself to a new job and a new company, the picture would be something less than worthless. We had to assume a negative attitude on the part of the audience before the picture hit the screen. After all, the management had paid for it, management would be doing the talking. A single scene that smacked of insincerity, or propaganda would instantly kill the picture and we had to assume that everyone who saw the picture would be looking for that scene.

Also, the picture was to be shown to every employee in the plant, not only the newcomers. That meant that every scene and every attitude had to be authentic. Otherwise it would again do more harm than good.

There were further complications; one plant was a sparkling, new, attractive place to work, the other was older, without ultra-modern cafeterias, locker rooms and working floors of the other. Where should the picture be shot?

How much should the war enter into it? Should we make a picture that would be entirely useless when the emergency was over, should we make it so that it could be re-edited later, should we include current events that would make the picture very strong at the moment, but which would definitely date it?

There were dozens of considerations such as that. Fortunately, however, the Director of Personnel of the Thompson organization had already made many of those decisions. He had also worked out his ideas of the various appeals the picture should make. It was our job to interpret his thoughts in terms of the motion picture. Ray S. Livingstone, the Chief Personnel Executive of the Thompson organization is recognized throughout American industry as one of the outstanding men in the field. We had the benefit of his experience from the beginning.

Consider yourself starting a new job. You don't know very much about the company you're going to work for; you know nothing of the men and women with whom you'll be working. You know the job you've been hired to do and what it pays. That's about all you do know.

4 Major Questions

There are four major questions anyone starting a new job wants answered. First is stability: Will the job last? Second is advancement; will the job lead to a better one? The third is security; will the management recognize and show appreciation of good work? The fourth is importance; is the job necessary, is it vital to the functioning of the organization?

There are many other considerations, of course, but if we could answer those questions to the satisfaction of everyone we would have accomplished our purpose. The answers provided a theme that runs through the picture.

After the main titles we got down to the business at hand, namely, the war. We made the point directly and simply that unless the war is won the free American worker will become no better than a slave. The appeal was not entirely to patriotism, it was also to selfishness.

The next consideration was to impress the Thompson worker with the importance of his job in the war. The scene is an aircraft engine repair shop, mechanics are overhauling an engine. They "mike" the valves and find them suitable for further service, dependable enough to bet a pilot's life on them. When it becomes necessary to replace a valve they can take one out of a Thompson carton and put in the engine without further consideration, simply because it is a Thompson valve. That confidence in Thompson products extends around the world, wherever American engines are guarding American freedom. Now, what accounts for this universal confidence in Thompson products? It isn't the plants; they're only steel and stone. It isn't the machinery, every plant has that. No, it's the men who do the work, the Thompson employees. The film depicts a typical Thompson worker, at home, at work and at leisure. The man was selected at random from the shop floor.

By means of simple animation we covered the subject of job stability, showing the company's position before the war and at present. We admitted frankly that after the war the company may be left with a surplus of manpower, but we showed the efforts, particularly in engineering and research, which were being made to prepare for that day.

Summarized Review

Further introductory material summarized most of the things we were going to cover in the picture, according to the tested formula of "tell 'em what you're going to tell 'em; tell 'em; tell 'em what you told 'em."

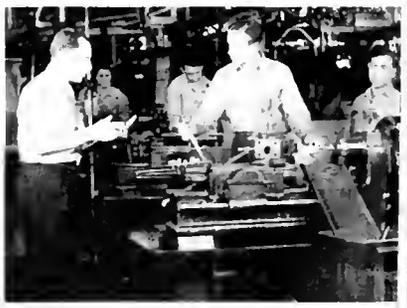
In the employment office a young man approaches the interviewer. He is accepted and given an application blank. One

(PLEASE TURN TO PAGE 36)

mployees are enrolled in the company g school

After the classroom, new men are broken in on the job by their foremen

Thompson old-timers pass along the 'know-how"



Time studies are taken on all productive jobs

t argument reaches the desk of Ray S. tane, personnel manager, to be settled

Personnel supervisors listen to the troubles of employees, help out where they can

Plant protection officers have more to do than look at identification badges

The Thompson Aircraft Production Plant in Euclid, Ohio

12 SLIDEFILM TRAINING PROGRAMS

Number Three of the Industrial Index series; sources of all films listed below (and many others) are available to training classes, etc., in a low-cost card file set; write for details and sources on your school or company letterhead.

Take Care of Yourself (Industrial Health)

93-frame sound slidefilm; screening time 16 minutes.

Scope: Dramatization of the importance of common sense in health matters. An industrial physician and nurse explain to a worker how to keep his health by observing a few simple rules on food, sleep, exercise, recreation, mental attitude, etc. The importance of industrial health programs cannot be underestimated in this war production era.

Bench Work Kit-Set*

10 35mm. silent filmstrips in carrying case.

Scope: The following titles are included in this series: 1. *Tools;* 2. *Hand and Power Hack Saws;* 3. *Drills and Drilling;* 4. *Reaming, Tapping and Threading;* 5. *Finishing Rough Castings;* 6. *Scraping;* 7. *Rivets and Riveting;* 8. *Layout Tools and Measuring Instruments;* 9. *Layout Work* (Part I); and 10. *Layout Work* (Part II). Complete with photographs, charts, diagrams, cross-sections, etc.

Basic Aircraft Metal Skills Kit-Set

11 35mm. silent filmstrips in carrying case.

Scope: Included in this complete educational series are the following titles: 1. *Slotted Anchor Plate;* 2. *Internally Threading a Plate;* 3. *Making a Stud;* 4. *Extracting a Broken Stud;* 5. *Hinge Fitting;* 6. *Grinding and Sharpening;* 7. *Making and Drilling Riveted Patch;* 8. *Hand and Pneumatic Riveting;* 9. *Removing Rivets;* 10. *Flanged Parts-Tray* (Part I); and *Flanged Parts-Tray* (Part II). Complete with manual.

Introduction to Machining (Kit-Set)

16 silent filmstrips complete with carrying case.

Scope; Titles include: 1. *The Machinist;* 2. *Machine Tools;* 3. *Machine Technique* (Part I); 4. *Machine Technique* (Part II); 5. *Measurements and Measuring* (Part I); 6. *Measurements and Measuring* (Part II); 7. *Drill Presses* (Part I); 8. *Drill Presses* (Part II); 9. *Grinding Machines;* 10. *Lathes* (Part I); 11. *Lathes* (Part II); 12. *Milling Machines;* 13. *Shapers;* 14. *Planers;* 15. *Specialized Machines (Turret Lathes;* 16. *Other Specialized Machines.*

Aircraft Slidefilms (Series of Lessons)

21 silent 35mm. filmstrips for educational classes (pre-flight)

Scope The following titles are available: *Historical; Construction; Engines; Instruments; Propellers; Lighter Than Air; Land Planes; Seaplanes; Air Chutes; Maintenance; Autogyros; Gliders and Light Planes; Aerial Photography; Aircraft Industries; Famous Flights; Army Aircraft; Navy Aircraft; Radio; Accessories; Special Equipment; Aircraft Schools.* Low-Cost filmstrips complete with manuals.

Industrial Safety Slidefilms

Approximately 15 sound slidefilms; (restricted).

Scope: Produced under the auspices of a national safety organization, the following titles are available, with certain restrictions, for aid in plant safety programs.

The Fall Guy	*No Use Skidding*	*Fire*
Defensive Driving	*Safe All Around*	*Rules for Tools*
Invisible Red Ink	*Open for Infection*	*If it Happens*
Safety for Defense	*Are Your Feet Killing You?*	
Handle with Care	*Minute Men*	
Grime Doesn't Pay	*Pilots of the Highway*	

Good Teaching Series (Vocational Slidefilms)

9 slidefilms, 8 with sound; 1 silent.

Scope: The following subjects are covered in this basic vocational training series: 1. *The Teacher;* 2. *Some Principles of Teaching;* 3. *I Want to Learn;* 4. *The Lesson Plan;* 5. *Make Your Chalk Talk;* 6. *Teaching a Vocation;* 7. *Shop Teaching;* 8. *Designing Examinations* (Part I); 9. *Designing Examinations* (Part II).

Basic Electricity Kit-Set

12 educational slidefilms (silent) in carrying case.

Scope: Titles include: 1. *Magnetism;* 2. *Static Electricity;* 3. *Current Electricity;* 4. *The Electric Cell;* 5. *The Storage Battery;* 6. *Electromagnetism;* 7. *The Generator;* 8. *Alternating Current;* 9. *Electric Motors;* 10. *Electric Meters;* 11. *Applications;* 12. *Applications.* 837 illustrations, including photographs, cross-sections, drawings, diagrams—all with explanatory text and captions.

The Eyes Have It

35mm. sound slidefilm.

Scope: A graphic, direct case history survey of eye accidents in industry; produced with the cooperation of an outstanding expert in averting eye accidents; also shows cases of accidents which might have cost the loss of sight if goggles had not been worn. Harry Guilbert of the Pullman Company was the cooperating authority.

Oxyacetylene Welding Series (Kit-Set)

15 silent filmstrips, complete with carrying case.

Scope: Titles include: 1. *Introduction to Welding;* 2. *Setting Up and Lighting the Welding Torch;* 3. *Welding Flat Ripples;* 4. *Flat Butt Welds;* 5. *Fillet Welds—Steel;* 6. *Vertical Welds—Steel;* 7. *Tube Welds—Steel;* 8. *Cluster Welds;* 9. *Oxyacetylene Cutting;* 10. *Welding Stainless Steel;* 11. *Brazing and Silver Soldering;* 12. *Welding Aluminum Flat Sheets;* 13. *Welding Aluminum Tubes with Sheets;* 14. *Fuel and Oil Tank Repairs;* 15. *Qualification Test for Welders.*

Supervisory Relations Series

Sound-Slidefilms, in six parts, for foreman training.

Scope: This expertly produced series presents the foreman's principle problems: Part I: *The Foreman as a Manager;* Part II; *The Foreman as a Leader;* Part III: *The Foreman as a Teacher;* Part IV: *Letting Men Know;* Part V: *Proper Use of the Reprimand;* Part VI. *Handling Grievances.* Produced with the cooperation and consultation of the National Association of Manufacturers.

Aircraft Production Series

18 slidefilms for pre-employment, induction and upgrading training in aircraft production plants.

Scope: Titles include: *Engineer's Relation to Production; Engineers Relation to Assembly; Riveting; Blueprint Reading; Gas Welding; Arc Welding; Resistance Welding; Jigs and Fixtures; Fabrication Methods; Assembly Methods; Forming Machines; Cutting Machines; Lathes; Mills; Heat Treatment of Aluminum Alloys; Processings; Safety; The Component Parts of an Airplane.*

*The title "Kit-Set" is copyrighted by the sponsors.

The following subjects are now [illegible] completed for review and mailing to Industrial Index subscribers: *Airplane Riveting, America First in the Air; Behind the Scenes in the Machine Age; Beating Time, Catalysis; Danger [illegible] Lasts, Defense for America, Inside of Arc Welding; Lenses; Motion Study Economy, Parachutes for Study; Punch Press Safety With Increased Production; Spark Plugs in Aviation, Study [illegible] Milling and Broaching; Study of Planing Operations, Study of Punch Press Operation; Women in Defense, Wright Builds for Air Supremacy; Heat and Its Control, Fluid Highway Cont[illegible] Fuel Cell Tank, Orthographic Projection, Airplane Sheet Metal Work*

SUCCESS STORY!

48 SUBJECTS all available on 16mm. Sound-on-Film LOW COST!

5 ON PRECISION MEASUREMENT
1. The Steel Rule
2. The Micrometer
3. Fixed Gages
4. Vernier Scale
5. Height Gages and Standard Indicators

7 ON THE ENGINE LATHE
1. Rough Turning Between Centers
2. Turning Work of 2 Diameters
3. Cutting a Taper with the Compound Rest and With the Taper Attachment
4. Drilling, Boring and Reaming Work Held in Chuck
5. Cutting an External National Fine Thread
6. Turning a Taper With the Tailstock Set Over
7. Cutting an External Acme Thread

5 ON THE MILLING MACHINE
1. The Milling Machine
2. Cutting Keyways
3. Straddle and Surface Milling to Close Tolerances
4. Straddle Milling
5. Plain Indexing and Cutting a Spur Gear

3 ON THE VERTICAL BORING MILL
1. Rough Facing, Turning and Drilling on a Vertical Turret Lathe
2. Rough Facing and Boring and Turning a Shoulder on a Vertical Turret Lathe
3. Facing, Turning, Boring, Grooving, Chamfering on a Vertical Turret Lathe Using 2 Heads

2 ON THE RADIAL DRILL
1. Drilling and Tapping a Cast Steel Valve Body
2. Drilling and Spot Facing a Cast Iron Valve Body

1 ON THE SENSITIVE DRILL
1. Drilling a Hole in a Pin

2 ON THE VERTICAL DRILL
1. Locating Holes, Drilling and Tapping in Cast Iron
2. Countersinking, Counterboring, and Spot Facing

8 ON BENCH WORK
1. Centering Small Stock
2. Laying Out Small Castings
3. Fundamentals of Filing
4. Threading with the Use of Taps and Dies
5. Scraping Flat Surfaces
6. Fitting and Scraping Small Bearings
7. Reaming with Straight Hand Reamers
8. Reaming with Taper Hand Reamers

3 ON THE SHAPER
1. Cutting a Keyway on End of a Finished Shaft
2. Machining a Rectangular Cast Iron Block
3. Machining a Tool Steel V Block

2 ON SINGLE POINT CUTTING TOOLS
1. Fundamentals of Side Cutting Tools
2. Fundamentals of End Cutting Tools

10 SUBJECTS ON SHIPBUILDING!

SEND COUPON NOW!

U. S. OFFICE OF EDUCATION'S MOTION PICTURES *that help to teach* MACHINE SHOP WORK *used to boost production everywhere!*

ALL OVER THE COUNTRY . . . in leading aircraft plants . . . in tank and jeep plants . . . in machine gun factories . . . in railroad yards . . . wherever machine shop "know how" is worth its weight in diamonds . . . U. S. OFFICE OF EDUCATION motion pictures are used today!

They're getting enthusiastic comment: "They cut scrap losses." "They boost worker morale." "Really cut training time." "Help speed-up production." "Best we've ever seen." "Couldn't do without them." "Send five additional sets."

These films are helping to train workers faster . . . and train them better. They are doing a job. They can help you get your job done faster! They're all available in 16 mm. Sound-On-Film. They're all LOW IN COST, to give them the widest possible use. Put them to work in your organization NOW!

FREE! Catalogue describing each film in detail. Also pamphlet, "TIME IS SHORT," telling how these films are getting results on production lines and in vocational schools. Send coupon now!

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CASTLE FILMS, INC. RCA BLDG. NEW YORK FIELD BLDG. CHICAGO RUSS BLDG. SAN FRANCISCO *Address nearest office*

Send FREE Catalogue describing all U. S. OFFICE OF EDUCATION FILMS. Also "TIME IS SHORT."

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DS-98

MICROFILM IN WARTIME

A REVIEW OF WARTIME USES OF MICROFILM, X-RAY AND OTHER FILM PRODUCTS

♦ Film Products are entering increasingly into the industrial war effort. The X-ray, famous for medical purposes, is being increasingly used in radiographing metals where dependability and safety are paramount, especially in the manufacture of airplanes.

Military authorities predict the power, speed, and superiority of American aircraft will have a direct bearing on the outcome of the war. As planes go into action, at all altitudes and speeds, they may be subjected alternatively to intense heat and cold, and violent stresses. Any defect may cause failure. X-ray examination of castings and motor parts is being extensively used during the process of manufacture to detect any possible defects.

Films, intensifying screens, and processing solutions have been developed particularly for metallic radiography. As a medium of inspection for safety, the X-ray is regarded as so vital that radiographic inspection of welds has been incorporated into code requirements for welded pressure vessels, such as boilers.

By use of radiography, the Army and Navy are able to reject defective castings before expensive machining has been done, and at the same time lessen the likelihood of failure in the field of gun mountings and other vital equipment due to material flaws not visible on the surface. In various foundry operations where the greatest care and constant testing are necessary, the X-ray has been widely used. The X-ray, in the hands of an expert, means the utmost safety and efficiency.

While such use of film makes for industrial efficiency, microfilm is being employed in another increasingly extended field. Tiny reproductions of invaluable drawings, documents and records are being made to safeguard against any loss by sabotage, bombing, fire or theft. Likewise, micro-photography duplicates maps, charts, and blueprints.

The war requires the government to safeguard vast quantities of data. The building of a great army has resulted in the preparation of millions of separate records. The storage space necessary for microfilm is only about two percent of that required for the original papers. Facilities for micro-photography are readily available and inexpensive. The records can be refined periodically and kept up to date.

Photographing of soldier's mail is a recent highly interesting use of microfilm. The films are ferried by air across the ocean, eliminating the dangers of sea transport, and the weight of the original letters, to original size photographyically The films then are enlarged back and the prints delivered to the proper party.

Highly specialized aerial films have been developed to photograph troop movements and ground formation from thousands of feet in the air. The minute details on the films are enlarged to visible size and the information read from them form the basis for military action.

Films are now used to train our airmen in machine gun accuracy. Special cameras are attached to training planes and operate in such a way that the results of the flight can be studied by the aviators and errors speedily corrected.

Camouflage detection has been greatly aided by the development of special films. Many an enemy position that is considered invisible will be revealed through the medium of these films.

Medical X-ray in the war assumes a new importance. Hospitals must have the finest equipment possible. The examination of recruits includes X-ray studies of the men who are entering the armed forces. There will be X-ray records kept of them as they were when they entered the service and further such records probably made when they are discharged after the emergency is over.

(CONTINUED ON PAGE 32)

Air Raid Warden Films

♦ Four slidefilms constitute the basic material in an 8-hour training program for air raid wardens, program, films, records, leaders recently announced. The entire manual, and specific suggestions for conducting meetings with sound slidefilms, was written and produced by Sarra, Inc. with the cooperation of the Office of Civilian Defense in Washington.

Distribution of the new program has been undertaken by the American Legian. The legion underwrote the printing and mailing of a descriptive circular and broadside prepared by Sarra, Inc. which has been sent to approximately 12,000 Legion Posts.

Nearly 2,000 of these Air Raid Warden "kits" have already been sold to Legion Posts, manufacturers and local civilian defense councils. In hundreds of communities, the films have been used as training for wardens who had already taken the O. C. D. prescribed course and received their insignia.

The Chicago Defense Council has also purchased thirty sets which are now being used in this re-training program.

DeVry Announces New 16MM Film Catalog

♦ Users of 16 mm. sound and silent educational films should welcome this opportunity to obtain, free, the new, neatly printed, richly bound DeVry Educational Film Catalog.

Hundreds and hundreds of evaluated films available at moderate rental prices from the up-to-date DeVry Film Library are listed, described and illustrated.

Films are classified as to subject: Geography, History, Science, Nature Study, Health, Safety, Music, Literature, Vocational Training, etc. Alphabetical index makes selections easy. Teachers' Lesson Plans furnished with all educational films.

Many of the 16 mm. subjects listed can be rented for as low as $1.00 per reel. This catalog is free to users of educational films—2 to others. For your copy, write DeVry Films and Laboratories, 1111 Armitage Avenue, Chicago, I

KEEP MORALE AT PEAK PRODUCTION PITCH

with these New "Films That Fight for Freedom"

MIDWAY-CORAL SEA BATTLES

Latest war news release. Thrilling actual combat photography of our naval and air forces in action against the Japs.

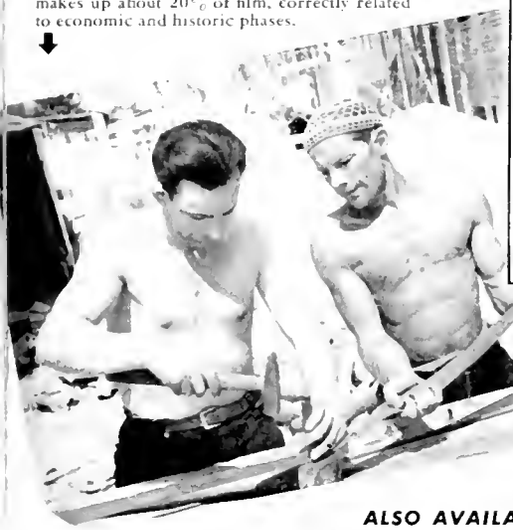
THESE latest releases from the B&H Filmosound Library will keep the morale of *your* organization "flying high." They're timely, thrilling, inspirational! They tell the story of the world today—in the *American* way! Many of these stirring films are exclusive releases . . . all are powerful—vitally important!

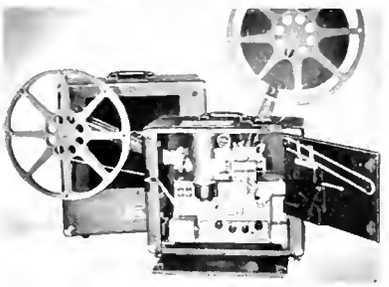
Let us recommend the films which will most effectively boost the morale of your employees—and keep production at top speed.

The extensive B&H Filmosound Library offers the finest professionally made sound films on a wide range of subjects. The offerings reviewed below are typical of thousands available. Use the coupon to request complete information and our experts' advice.

THIS WAS MODERN POLAND

10-minute sound film showing steel mills, mines, harbors, factories, farms—and cultural life of ancient people in new republic. War material makes up about 20% of film, correctly related to economic and historic phases.





FILMOSOUND COMPACT UTILITY

Ideal for commercial users of 16mm. sound films.

MEXICO MARCHES

16-minute film tribute to our fighting ally, Mexico. Powerful combination of artistic Russian-made pictures with modern material supplied by Mexican Government, makes brand-new setting also for feature length "Mexican Symphony."

ALSO AVAILABLE

LIBERIA—AFRICA'S ONLY NEGRO REPUBLIC

New 10-minute sound film showing people, industries, products, schools, transportation—primitive and civilized phases.

THE REAL HAWAII and PUERTO RICO

Two 10-minute sound films—in color or black-and-white. Economic and social approach to islands' life and defense.

TARGET FOR TONIGHT

Stirring 50-minute documentary of bomb raid on German target. Just completed major theatrical run. Other British documentary films also obtainable through Filmosound Library.

CIVILIAN DEFENSE FILMS

The best of those produced by private and government sources.

Let us mail you, free, a complete list of all available new films—as well as the latest supplement to Filmosound rental catalogs. Fill out and mail coupon.

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MICROFILM'S NEW WAR USES

(CONTINUED FROM PAGE 30)

While the film manufacturing industry thus provides the tools to meet the new requirements of a nation at war in industrial and medical fields, its use for the well-known purpose of motion pictures also has a part of the emergency.

Visual instruction by means of motion pictures is at a new high. Great quantities of materials are being shipped abroad. It has been found that time is saved and efficiency helped by taking motion pictures here of the proper way to assemble material. All the workmen in a far away place has to do is to follow the film passing before his eyes. Officers in the armed forces have found that motion pictures of how to carry out an operation, when shown to raw recruits, so familiarizes them with the details of what is necessary that when once in the field the time of instruction is cut down materially.

Air raid precautions, how to handle incendiary bombs, and the proper procedures to follow in various types of crises can all be taught to soldiers, sailors, and the civilian population by means of the motion picture. It is a new era for the use of film products.

Microfilm in War Plants

◆ In addition to the many uses already described, microfilm has an even greater role in war industry. Here the thousands of square feet of blueprints required for complex modern war material can be condensed to a brief length of 35 mm microfilm-strip. A single master set of blueprints is then easily made available to far-flung suppliers, to engineers and draftsmen and to sub-contractors.

The protection thus afforded the priceless master prints is matched by the tremendous convenience and the extreme clarity afforded by the projected filmstrip. Simple readers such as those now manufactured in quantity by the Society for Visual Education, Inc., Spencer Lens Company, etc., can be placed in each office. Filing space, now at a premium in crowded war plants, is reduced to a small cabinet in which hundreds of subjects can be kept.

EASTMAN KODAK GETS ARMY-NAVY PRODUCTION award. In this glimpse of the public ceremony, Kodak's president accepts the award on behalf of the Company's 20,000 workers.

At a recent Civilian Defense class session in Chicago, W. F. Kruse, director of Bell & Howell's Filmosound Library, does his bit for the war effort with a showing of "Emergency First Aid."

Filmsound's Morale List

◆ There are no less than ten distinct fields in which 16mm motion pictures are aiding in the defense effort, according to an attractive red-white-and-blue illustrated broadside just issued by Bell & Howell's Filmosound Library.

War reports by American and United Nations cameramen, civilian defense, democratic principles, aviation, industrial training, emergency first aid, victory gardening, life of friendly neighbors, religion, general education — and morale-building recreation—are the headings, and outstanding new films are listed under each.

Copies of the *Films That Fight for Freedom* folder can be obtained free by writing Bell & Howell, Filmosound Library, 1801 Larchmont Avenue, Chicago.

Delivery Status of Screens

◆ Contrary to the belief of many schools and industrial users of projection equipment, that Projection Screens in metal housings are no longer available, the Radiant Manufacturing Company, Chicago, manufacturers of Radiant "Hy-Flector" Projection Screens, announce that they will be able to supply tripod, wall and ceiling type screens in all sizes from 30 in. x 30 in. to 14 ft. x 14 ft., for immediate delivery.

Washington in Wartime

◆ Timely as today's newspaper headlines is Castle Films' latest 16mm (sound or silent) movie release, *Washington in Wartime*. With the nation's interest focused so continually on our Capital, and understanding of the problems there so vital, this movie is regarded as a very important morale builder in these days of uncertainty.

The picture is a stirring, up-to-the-minute record of action in the city where the destiny of free men is now being shaped. Workers in the War Agencies are seen in all their thousands. Intimate meetings with the War leaders whose every decision is so important to the conduct of the war and to our daily life.

This same effect may take place even though the airplane is not climbing. In this case the resulting lifting force is equal to the weight, and the airplane is in level flight.

1,742 PICTURES To Help Teach Pre-FLIGHT AERONAUTICS

SECONDARY schools everywhere are teaching Pre-FLIGHT AERONAUTICS to help expedite the task of supplying the thousands of trained pilots needed by our Armed forces. Such a program calls for a comprehensive and interesting presentation of the subjects.

To facilitate the planning and instruction in these subjects, available materials have been developed by the U. S. Office of Education, the Civilian Aeronautics Administration and others.

In addition, there has been produced by this organization a Kit-set of 24 slidefilms (based on the official ground school material of the Civilian Pilot Training Program and checked and approved by the Civilian Pilot Training Service of the Civil Aeronautics Administration) to help the teacher of Pre-FLIGHT AERONAUTICS present the subject. These slidefilms are in use by hundreds of schools. In the 24 slidefilms there are 1,742 individual pictures - - -

is a section of a Handy slidefilm, al size.

The Pre-FLIGHT AERONAUTICS Slidefilms

Kit I

1. **Men and Wings** — History of Flight—55 Pictures
2. **Today's Wings** — Aviation Today—55 Pictures
3. **Aircraft Regulation** — Government Rules—37 Pictures
4. **The Pilot** — The Pilot in Aviation—51 Pictures
5. **Traffic** — Air Traffic Rules—62 Pictures
6. **Radio and Control** — Radio in Aviation—94 Pictures

Kit II

1. **Lift and Drag** — The Airflow—92 Pictures
2. **Wing Forces** — Aircraft Wings—88 Pictures
3. **Stability** — Static and Dynamic—67 Pictures
4. **Plane Performance** — Effect of Loading—112 Pictures
5. **Check and Double Check** — Safe Plane Operation—69 Pictures
6. **The Airplane Engine** — Elementary Principles—63 Pictures
7. **Fuel and Feed** — Carburetor Principles—91 Pictures
8. **Airplane Ignition** — Ignition Principles—163 Pictures
9. **Engine Instruments** — Principles and Purposes—44 Pictures
10. **Parachutes** — Care and Use—72 Pictures

Kit III

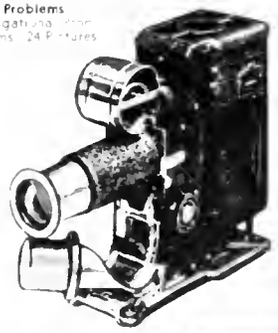
1. **The Air Ocean** — Basic Meteorology—82 Pictures
2. **Air Masses** — High and Low Pressure Areas—95 Pictures
3. **Weather** — Basic Forecasting—78 Pictures
4. **Air Pilotage** — Maps and Charts—116 Pictures
5. **Dead Reckoning** — Planning a Course—78 Pictures
6. **Airway Aids** — Navigational Helps—77 Pictures
7. **Flight Instruments** — Principles and Use—112 Pictures
8. **Pilot Problems** — Navigational Problems—24 Pictures

The JAM HANDY *Slidefilm*

A slidefilm is a series of pictures with textual material arranged in a logical sequence on 35mm film, which can be projected one at a time on a screen for class discussion. A slidefilm is shown with a film strip projector, which projects the single pictures on a screen so that they can be seen by the entire class at the same time while the teacher talks and the students SEE and understand what he is talking about.

The Jam Handy Pre-FLIGHT AERONAUTICS slidefilms can be correlated with textbooks for this course. To preview these slidefilms write for the name of the authorized visual education aids dealer nearest you.

This is the kit-set of 24 Pre-FLIGHT AERONAUTICS slidefilms in the attractive carrying case—$65 complete. Individual slidefilm—$3.50



This is a film strip projector in which a Jam Handy slidefilm is shown. It is as easy to operate as a pencil sharpener.

The JAM HANDY *Organization*

Educational Sound Pictures • Slidefilms • Vocational Training • Visual Aids

★ New York	★ Washington, D. C.	★ Detroit	★ Dayton	★ Chicago	★ Hollywood
1775 Broadway CIrcle 5-5760	Transportation Building REpublic 8136	2900 East Grand Boulevard MAdison 2451	Talbott Building ADams 6285	220 N. Michigan Boulevard STAte 8756	7040 Hollywood Boulevard HEmpstead 5809

CANADA'S FILMS

(CONTINUED FROM PAGE 17)

available from the Canadian Legation in Buenos Aires and from the offices of the Canadian Government Trade Commissioners in Santiago, Chile; Bolivia; Havana, Cuba; Mexico City; Panama; Lima, Peru; and Ecuador. Portuguese prints of these two films can be obtained from the Canadian Legation in Rio de Janeiro. These are only the first of a series which the National Film Board proposes to release throughout Latin America in both Spanish and Portuguese. Considerable circulation of Canadian films is also secured through the British Ministry of Information's film library.

In the United States 16 millimeter distribution is handled in part through prints deposited with the Canadian Government Trade Commissioners in New York, Chicago and Los Angeles and by more than one hundred film libraries. Each of these libraries has one or more programs of Canadian films for the areas which they serve. All libraries maintained by Extension Departments have substantial numbers of Canadian films of value to educational institutions. In addition prints are also distributed by leading commercial libraries such as Bell & Howell, Films Incorporated, Ideal Pictures Corporation, Visual Education Service of Boston and Photo & Sound, San Francisco.

Among educational libraries in the United States which carry the most extensive distribution of recent war films are the following: School of Education, Boston University; New York University; New York University Film Library; Pennsylvania State College; Indiana University; University of Wisconsin; College Film Centre; University of Iowa; Stockton Junior College, California.

A number of films have been placed in the United States with libraries on an extended loan basis similar to that employed by the Office of War Information. Among these are *Wings of Youth*, *Battle Is Our Business*, *Strategy of Metals*, *Wartime Assembly Line* and *Ottawa Wartime Capital*. The recent kodachrome productions of the National Film Board are available in the United States on a sales basis only as are also a number of black and white films of permanent value in the educational programs of American organizations.

The program of distribution in the United States has been considerably modified by the war. One thousand prints of tourist films have been withdrawn from distribution so that libraries do not u their facilities to support a poli which no longer can receive su stantial support from the Dominio Government. At the same time t kodachrome films and some of t black and white titles which are n directly concerned with war are sti of considerable value in that th present the resources of the countr both human and natural, which a now being harnessed to the limi of total war. These films for valuable background material for study of democracy in war and ha a place in the program promote in the United States whose obje is a better understanding betwe peoples of the western hemispher

It has been John Grierson's lon term policy to pick men young a train them and it is in this core youth that the future of Canadia documentary film making lie Grierson's documentary philosoph as well as the characteristics whi he brings to bear on all that does have set the hallmark of u compromising realism on his wor Canadian war films are young a tough. Fearless and realistic, th have become the shock troops of t screen, consistently refusing speak peace where there was non In this technique of actuality he ha been ably supported by Stuart Leg and it is to this combination Grierson and Legg that the Can dian documentary film owes t place which it holds today.

Characteristic of the Film Com missioner's attitude toward his wor are these lines contained in a lett written to the British DOCUMENTAR FILM NEWS: "Let no one tell you th a couple of Academy Awards mea anything more than that a bit of job was done yesterday. Tomo row it is the same old grind wit ever new material to be brough into design, and no percentage in for anyone except the rightest jo of education and inspiration w know how for the state and for th people."

Both in theatrical and non-the atrical fields it is this balance public purpose with positive inte national thinking which the Nation al Film Board has worked to achiev and now works with the same en ergy to maintain.

Throughout Allied and Axi countries the documentary film youngest in the field of public in formation, has been swiftest to es tablish itself. In Canada it is put ting over its message with the forc born of a knowledge that it is th pattern of a people's thinking whic forms the frontline spearhead fo the last ditch stand by which th fate of nations is decided.

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(CONTINUED FROM PAGE 35)

Improving Employee Relations

question on the blank asks the applicant to state the type of work he thinks he could do best for the company. The applicant, however, has only a vague idea of what goes on within the plant. The interviewer begins to explain the various kinds of work that must be done. We fade to the receiving room where raw steel is received, from there to the finished products we trace the major steps in the manufacturing operations, including the various types of workers who do not contribute directly to production, but whose services are essential to it The problem here was to include everyone, without devoting too much footage to the sequence. The purpose, of course, was to let every worker see himself or, at least his job represented in the picture.

Having shown the kinds of jobs that were available the applicant is better able to make his selection. We follow him from the application to the work bench. Through the physical examination, the aptitude test, taking his fingerprints, showing him through the plant, introducing him to his foreman, ringing in his time card and breaking him in on the job.

Leaving the applicant to work out his own destiny we proceed to a new, but related subject; the mechanics of getting a better job.

An electrician's helper is interested in a better-paying position in the instrument repair department. He has done some studying at home or in night school to prepare himself for the kind of work he wants. He knows something about pyrometers, thermo-couples, electrical control instruments, etc., and he feels that he has outgrown his present job. Whenever he can he watches the instrument repairmen at work, finally when he feels his qualifications warrant consideration he goes to the office of the employment manager, fills out a "personnel inventory form" and returns it to the employment manager who files it. Eventually a request comes in from the instrument repair department for a new man. The employment manager, receiving the request, first consults his files to see if anyone within the organization has applied for that type of work. He comes across the form of the electrician's helper; an interview, and the fellow gets the job. This case was selected from records in the employment office. Because it is every-day procedure it made an acceptable sequence, even to the older employees.

The next sequence treated the subject of wage rates and how they are arrived at. The purpose was to show that wage rates were not figures grabbed out of the air, but the result of scientific analysis and comparison, based upon the company's ability to pay and rates paid by other companies in the community and industry.

The manager of the wage incentive department is called into an employee-management conference. A wage question has come up. Employees in a specific department feel that a wage increase is justified. The conference agrees that a new survey of the job should be made. The wage incentive department gets busy. Two men are sent to study similar jobs in other plants, employee representatives accompany them to check their findings. Meanwhile a new survey begins in the department that has requested the wage increase. The considerations are: the type of operation; the amount of skill required to perform it; the cost of error; the hazard involved; the type of set-up required; and some eight or ten others. With this data, the wage incentive director reports back in the conference and makes his recommendations. A vote is taken and in this case a wage increase is decided upon. Again, an actual case was selected to avoid a appearance of artificiality.

The subject of grievance a what to do about them was n introduced. We took great pai to make the point that argume and differences are not confin to industry; they happen in reste rants, churches, and even in n series. Again we selected actu grievances, took them from th source, through the machine which the company has set u to their final solution. The scen were handled in such a way th they encouraged every employ to speak up if he had a grie ance, since nothing can be do about them if they aren't broug to light.

Important Subjects

Many other subjects were co ered in authentic detail, such c how a bonus is earned, how conversation overheard in washroom starts a rumor ca paign that spreads through t plant like a fire and is final squelched by a well-informe employee. The plant protecti department receives considerab footage with an episode th actually happened. A "bomb" discavered which, after conside able excitement, turns out to b a misplaced alarm clock. Th purpose of this sequence was change the average employee attitude toward the plant guard who seem to be a source annoyance because of their i sistence upon seeing badges, i specting lunch boxes, etc. Final employee recreational activiti are covered with emphasis upo the esprit de corps which act ally prevails within the organiz tion.

Approaching the climax, th picture summarizes the poin made previously and strikes new and faster tempo that give every employee a sense of r sponsibility to his country, th company he works for, and hin self. It holds out the hope of brighter, more stable future whe the Thompson team of men, ma agement and production ente the brave, new world.

The measure of any motio picture is its effectiveness in d ing the job it was designed t do. *Men, Management, Produ tion* is paying rich dividends i enlightened employees who ar better workers for having see it. Thus, it is an asset to Thom son Products, to the motion pi ture industry and to the natio

—by Frank Seide

WAR SERVICE REGISTRATION

—A National Honor Roll of Visual Aids Volunteers—

★ TO THE ALREADY extensive list of school, club, industrial and representatives of organized groups who have volunteered their personal services as well as the use of projection equipment for war service assignments, the National War Committee of the Visual Education Industry (which has now taken over this assignment) wishes to acknowledge these names of patriotic Americans

Thomas H. Allen
A. S. Allison
W. C. Ashton
Geo. W. Bechtolt
William D. Beck
A. Francis Beverage
Gus Blaksmith
George H. Boyer
James L. Bradley
Thomas J. Brandon
W. Lyle Brewer
James S. Browne
Almon W. Bushnell
Hal Carver
C. F. Clemens
Ralph H. Cochran
Dr. Victor Coles
Cyril H. Collett
Leon Conrad
Ernest F. Cook
Benjamin Cowan
Bruce M. Crawford
Robert Crawford
Luigi D'Antonio
Francis L. Daugherty
Davenport Y.M.C.A.
C. J. Dowdy
Irving C. Elliott
Claie L. Ellis
Charles A. Elston
C. G. England
A. Enbank
Edward J. Ferris
Harvey Harrison Ferris
Rev. Samuel L. Ford
W. V. Forney
N. Francois
E. Gilbert
Walter B. Gilbert
W. Goldthorpe
Victor Grant
Arthur L. Griswold
D. T. Grussendorf
Brose Hanchett
Gardner L. Hart
Rudolph R. Hartman
La Vern Hemstreet
C. F. Henderson
Geo. Hewis
Evelyn Hoke
E. Fred Holliday
C. L. Horsley
Roy R. Huffman
Hugh G. Hurst
John K. Johnson
Arthur C. Jones
Robert E. Kennedy
M. R. Klein
H. L. Kooser
Kunz Mo. Pic. Service
Mr. Laenloe
W. F. Larsen
Irwin W. Leekowitz
C. C. Logan
Herb. A. Lorenzen
R. C. Lunceford
R. A. Lynch
G. E. Maness
John Mayes
W. H. McCord
Stanley C. McGuire
Wm. J. Meuer
Lowell J. Mills
Bernice A. Mims (Mrs.)
H. L. Minton
Modoc Union H. S.
G. C. Morlan
John F. Mowbray
Carl F. Mueller
Music Specialty Co.
C. W. Nelson
Scott Nixon
Alban J. Norris
H. R. Olson
Palm Beach Art League
James A. Peters
W. Lee Provol
William P. Roach
Alma Rogers
Melvin E. Rogers
M. O. Rothermel
R. M. Satterfield
Howard T. Saunders
H. E. Scholl
Andrew J. Sherbo
Perry J. Sherman
Dr. I. F. Simmons
Mirl H. Simmons
C. B. Smith
Donald Wilson Smith
Major Herbert Smith
Matthew Stephens
Stevens Ideal Pictures
Thompson Film Studios
Ernest Tiemann
Lelia Trolinger
Visual Services
Keith Von Hagen
E. C. Waggoner
Richard Carter Warren
E. B. Weaver
Walter Weidman
Lewis C. Westenbarger
Frank M. Williams
Guy F. Williams
Geo. Wojno
Chas. E. Woods
R. S. Zensen
Fred M. Zuse

ARMY FILMS

CONTINUED FROM PAGE 14

In the Army, films are used in conjunction with lectures and with practical demonstrations in the field. Thus the theoretical aspects of a subject are interrelated with the actual use of the equipment involved.

To cite an example, if a soldier is learning to operate a 75 mm artillery piece, he might get a lecture on the theory of gunnery. After this he might be shown a training film which demonstrates how a crack crew handles the weapon. And then the film might show him, by means of animation, just exactly what happens inside the breech block of that gun when the lanyard is pulled and the gun is fired. Then he would be taken out on the range and given an opportunity of actually firing the gun.

This combination of practical instruction and motion pictures, correlated by an intelligent instructor, has proved to be the soundest teaching method yet devised.

As I said before, the military mission of the Signal Corps Photographic Center is to help train soldiers. In order to engage our enemies successfully we must have millions of men trained in the highly complex business of modern war. These men—they're your sons and the boy next door—come to us as civilians. It's our job to make soldiers out of them. Fighting men can protect themselves and protect our country.

Scene above from the Sarra, Inc., Civilian Defense training slidefilms (see page 30 for details.)

DA-LITE SCREEN'S WAR NEWS

★ THE DA-LITE SCREEN COMPANY, INC., according to information submitted by Mr. Fred P. Heck, Vice-President and General Manager, is no longer able to offer a complete line of projection screens to the civilian trade due to restrictions incorporated in the War Production Board's General Conservation Order M-126 pertaining to the use of iron and steel.

Most dealers and distributors of Da-Lite products still have substantial stocks on hand for sale to the civilian trade. Additional stocks will be sent them in the near future, for Da-Lite has recently been authorized by the War Production Board, to complete the fabrication of certain materials left on hand after the expiration date, August 3rd. After completion of these items, a rather substantial part of the inventory of the finished products will be available for civilian use.

Information as to which products are and will be available to dealers and distributors of Da-Lite Screens will gladly be submitted on request.

Each and every officer and all employees of Da-Lite are contributing a minimum of 10 per cent of their salaries for purchasing War Bonds under the payroll plan and the Company has been flying the Minute Man Flag for a considerable length of time.

THE DIFFICULT
can be done right away...
THE IMPOSSIBLE
takes a little longer!

... Rockwell Barnes

For twenty-five years Rockwell Barnes has kept this maxim before him and lived up to it. Who is "Rocky" Barnes? He is the dean of our specialists in motion pictures of the invisible . . . pictures of things that can't be seen or don't exist . . . pictures of things too small to be seen or too large to be seen . . . too fast to be seen or too slow to be seen . . . hidden things that occur where they can't be observed . . . the operating interiors of machines which function at high temperatures . . . at high speeds or under other conditions that make it impossible to reach them.

The magic of the x-ray, of the stroboscope, of animated drawings and many other scientific devices has been amalgamated with the cinema and has been brought to serve the requirements of his cameras. They have never taken "no" for an answer. He and his group have mastered the unseeable. They have fought with the intangible exposure by exposure and have wrought pictures of the unseen frame by frame.

For a quarter of a century "Rocky" Barnes' only response to assignments of the impossible has been "yes, we can." Then he has gone on to find out the way and to do the job in the most finished style.

There is nothing new in such a mental attitude. The Greeks had a phrase for it. Napoleon had his way of putting it. Henry Ford has his maxim to the same effect and Charles F. Kettering says, "difficulties are a measure of ignorance."

The spirit that has inspired "Rocky" Barnes to demonstrate this consistently for a quarter of a century of unexceptioned performance in making motion pictures of the invisible is the spirit that will train America to win the war and illuminate the way to peace.

We are proud to be associated with "Rocky" Barnes and glad to unite our efforts with those of all Americans who are ready to go forward in the spirit he has expressed and demonstrated.

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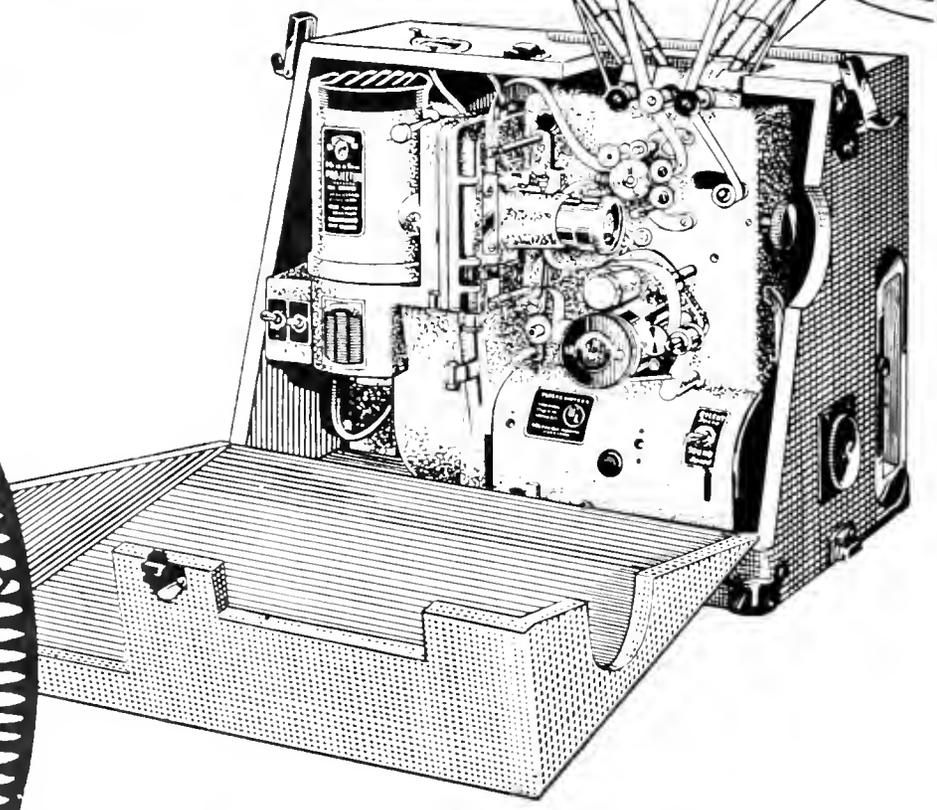

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These Tools of War Will Also Help to Shape a Better World When War Is Ended

ON THE FIGHTING FRONT OF EDUCATION

IN ADDITION to the many training films Caravel is now producing for use by the Army and Navy, we call particular attention to the following films produced under the direction of the U. S. Office of Education . . .

Five Films on the Milling Machine

The Milling Machine . . . Cutting Keyways . . . Straddle and Surface Milling to Close Tolerances . . . Straddle Milling . . . Plain Indexing and Cutting a Spur Gear.

Five Films on Shipbuilding Skills

Preparing and Setting a Keel Block and Bottom Cradle . . . Innerbottom Sections: Sub-Assembly of a Closed Floor, Sub-Assembly of a Solid Floor . . . Side Frames: Sub-Assembly of a Web Frame . . . Deck Girders: Sub-Assembly . . . Deck Plates: Regulating and Setting.

ONCE IN A WHILE we dare look ahead—to a day when the flags of the United Nations float in triumph over Berlin, Rome and Tokio . . .

And when that day comes, as it surely will, we humbly predict that the business of EDUCATION (the most important business in the world) will have been stepped ahead by at least ten years.

Do you imagine, for instance, that our fighting men in the Army and Navy, trained to so great an extent through the use of sound motion pictures and slide films, will stand idly by if they see their children being trained by less effective methods?

Or do you imagine that the heads of great industries—having witnessed the extraordinary power of vocational training films in time of war—will fail to make even broader use of such films when war is ended?

We who are on the fighting front of education have still a tremendous job to do . . .

Until the war is won we must CONTINUE to help speed the building of ships and tanks and planes . . . we must CONTINUE to insure their effective operation, care and maintenance . . . we must CONTINUE to work all-out for the final victory . . .

But let us never forget that in the performance of these tasks we are paving the way for the greatest advance in EDUCATION that the world has ever known.

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Member of: THE INSTITUTE FOR THE ADVANCEMENT OF VISUAL EDUCATION AND VOCATIONAL TRAINING, INC.

VISUAL EDUCATION *in* FOREIGN TRADE

Significant in the news of the period are the lines reported here from the program of Education Group Session, National Foreign Trade Convention held in Boston recently. Discussion leader of the Session on Visual Education was Mr. F. Burnham MacLeary of Caravel Films, Inc., New York City, whose stimulating address is printed below. *(Picture on Page 31)*

★ I should like to suggest five fields in which the potentialities of visual education in foreign trade seem particularly worthy of attention:

The *first* field concerns the removal of language barriers. My good friend Reginald Orcutt will forgive me, I am sure, if I borrow a story from his vast supply to illuminate this need. . . .

On one of his trips to the Orient a student guide who was struggling with the English language was baffled by the saying, "Out of sight, out of mind." "What mean?" he asked. . . . "Out of sight *invisible;* out of mind *insane.* Invisible insane! *What mean?*"

Language Need Is Now Worldwide

At your education session a year ago the need for greater effort in removing language barriers was focused on ways and means of stimulating the teaching of Spanish and Portuguese in the schools of the United States.

Actually, this is only one facet of a far greater problem which will be accentuated, both as to needs *and* opportunities, when the United Nations emerge victorious from this global war.

One of these needs is the promotion of English as a secondary language throughout the world.

Another need is a sharper clarification of the *meaning* of words. When I was a little boy and had just enjoyed a bountiful meal at my father's table, I remarked with boyish enthusiasm, "Say, Dad, that was certainly a *frugal meal!*" "You wouldn't think so," said he, "if you had to pay the bills!" And I learned then and there that the word "frugal" didn't mean what I *thought* it meant!

A Streamlined Teaching Method

Still another need is a streamlined method of *teaching* languages: English, Spanish, Portuguese, Chinese and other tongues.

Always assuming Victory, the teaching of English to non-English speaking people both in the United States and in foreign countries is bound to be immensely stimulated. So, also, the teaching of Spanish, Portuguese, and other languages. . . .

For various reasons—all of which will become apparent as the evening progresses—I am convinced that in the language teaching of the future the use of sound motion pictures and sound slide-films will play an important and indeed a revolutionary part. As a matter of fact, the first step toward better language teaching has already been taken. It will shortly be explained and demonstrated by Dr. I. A. Richards, director of the Harvard Commission on English Language Studies. So at this point I shall merely note *Topic Number One:* The speedier and more efficient removal of language barriers by means of audio-visual aids.

The *second* field concerns a more practical teaching of geography in the schools of the United States.

The geography of world commerce is something which lends itself peculiarly to visual teaching methods. But what is needed, as it seems to me, is not so much the *travelog* type of picture as one that will build up in the student's mind a knowledge of each country as a complex *business* organization: a clear picture of its natural resources; its native skills; its industries; the things which it naturally lacks and must get from other countries; its changing markets; its characteristic methods of doing business. . . .

The *third* field is intimately related to the second since it concerns the spreading of a true picture of the United States—its resources, industries, and marketing methods, its vast strength and its friendly attitude toward other peoples—among the coming generation of business men in foreign lands.

Teaching Pictures For The Schools

A sustained effort to promote such an understanding, through the providing of motion pictures for use in the schools and universities of foreign lands, would in my opinion yield a tenfold return on whatever money was required in order to do the job effectively.

The *fourth* field for visual education concerns the training of men who are to be sent abroad to represent American business firms—such training to treat specifically of the habits and customs of the people with whom they will be doing business.

In the new world situation in which we shall find ourselves it seems altogether likely that more and more large companies will find it greatly to their advantage to apply to the training of their foreign sales staffs the same techniques—with respect to visual education—which they are now using so successfully in the training of far-flung sales and dealer organizations here at home.

Product Films For Foreign Markets

The *fifth* field concerns the greater use of demonstration films—with sound tracks in foreign languages—to convey to foreign buyers a clearly understandable picture of a company's products and their specific advantages over competitive items. Such films will, of course, be supplemented by other films designed to show, among other things, how American machines are operated, cared for, and maintained at high efficiency.

As a rule, films used by American companies overseas have been virtually identical—in respect to picture content—with those used in home markets. More thought is unquestionably needed as to audience reactions in foreign lands. If a foreign market has adequate potentials, it would seem well worth while to point the film directly toward the specific markets a company is desirous of serving. In most cases this will mean not so much *new* film material as a very careful editing of the material embodied in films designed for showings here in America. It seems fairly obvious that if we are to avoid ruffling

(PLEASE TURN TO PAGE THIRTY-ONE)

OWN AND SHOW THE GREATEST MORALE-BUILDING MOVIE OF THE YEAR

CASTLE "NEWS PARADE OF THE YEAR" FILMS'

All this in One Great Film:

- ★ Yanks fighting 'round globe!
- ★ Battle for Stalingrad!
- ★ Battle of Atlantic!
- ★ Dieppe: Prelude to second front!
- ★ Japs bomb Alaska!
- ★ Midway victory filmed by Comdr. Ford!
- ★ Brazil wars on Axis!
- ★ U. S. Marines battle Japs!

See the tumult of a tortured world! See stupendous events that dwarf all past history! See the clash of armies! The earth-shaking meetings of men! Defeats and victories! Grim, gripping action scenes on your own screen! Here is a great historic document that every projector owner should possess! Don't wait! Own it! Show it—NOW!

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CASTLE FILMS INC.

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★ It is most [illegible] year in the history of visual education [illegible] ends [illegible]. Each saw the record production of films for use by the Armed Forces, by Government, by War Industry and in the number of subjects produced, this year's total might well exceed that of several years past. Our resolve for 1943 is clearly predestined: all concerned with films produced for the war effort must now assume full responsibility for their complete and successful utilization.

In 1942 we have seen the country's ablest producers in this highly specialized field give America a wonderful demonstration of this industry's ability to produce for war — and for war alone. Their only answer to the War Production Board's ruling that advertising films were "out" for the duration was that such films had already been "out" as far as they were concerned for almost a year past.

In 1942 we saw the manufacturers of projection equipment convert their resources to the production of ingenious new visual weapons for war, saw their engineers and designers work new miracles in devices to aid the Armed Forces. The world of visual education owes a tribute to those who met each need for critical metal changes, who served the War first and their dealers next. And to those, who by organization and a sincere desire to repay loyalty, are now striving to aid and protect the dealer's vitally important place, now and in the future.

Our own life in '42 was hectic. Every page we wrote, every line we printed *had* to have meaning and value to the war effort. Some pages went a good way in advancing the cause of training films and the men who make them best.

We served both Government and the Armed Forces, both directly and indirectly and without compensation. We wondered, as every man of spirit outside the ranks has wondered, if we were doing *enough* to justify our civilian existence. Deducting the "reward" of peace of mind, we felt that we owed it to an industry and to a particular mission we had long ago undertaken, to continue on the more difficult course, leaving the ultimate decision to those better qualified.

Distinctions were sharp and clear in 1942. Those best fitted to serve were emerging as the true leaders. It was a year of testing and survival. We were glad it came. America needed it. *Here's to 1943!*

BUSINESS SCREEN

THE NATIONAL MAGAZINE OF SIGHT AND SOUND AIDS FOR SCHOOLS, INDUSTRY AND GOVERNMENT

VOLUME FOUR • NUMBER SIX

CONTENTS

* * *

Issue Six, Volume Four of Business Screen Magazine, [illegible] Business Screen Magazines, Inc., 20 East Erie St., [illegible] Telephone Whitehall 4505, Chicago. December 15, 1942. Editor O. H. Coelln, Jr. Editorial Asst. Margaret Mary [illegible]. Western Editor H. L. Mitchell, 2400 Hall Street, Huntington Park, Calif. Phone LAfayette [illegible]. Subscription $2.00 for [illegible] issues. Foreign and Canada $3.00. Single Copy [illegible]. Entire Contents Copyrighted 1942 Business Screen Magazines, Inc. Trademark Reg. U. S. Patent Office.

Your Audio-Visual Dealer Can Help

★ MORE THAN EVER BEFORE, the audio-visual industry recognizes the vital importance of the local visual education dealer. As America's schools are "re-tooled" for special war training such as pre-induction courses in aviation, shopwork, and radio, the local dealer with the "know-how" on available training films, with a free and rental library of films, and the necessary equipment and operators — is the man of the hour.

Maintaining constant contact with audiences, with nearby war plants and schools, traveling the byways of his territory, it is his facilities which have provided our Government with dependable, experienced distribution outlets and with sales facilities for all such programs.

To the parent organizations, the equipment manufacturers, film companies such as Castle Films, Jam Handy and Vocafilm and to Modern Talking Picture Service which provided many with equipment and national business is due a good share of credit for growth of this nationwide dealer organization.

So if you have a problem see your local "specialist" men and women like Frank Pratt, Jasper Ewing, Mrs. Meier, Lucille South, George Cole, Bernard Cousino, W. D. Engleman, Charley Yuille, Ed Stevens, Moore of Portland, Eaton of Omaha, Elliott of Minneapolis, Kunz of Philadelphia, Giles of Oklahoma: men like Stackhouse and C. R. Reagan who pioneered for NAVED, John Allen, and men like O'Neill of Boston, whose visual education services are models of the kind of dealer organizations that have made possible the national growth of visual education.

THESE OUTSTANDING FEATURES WILL APPEAR IN ISSUE SEVEN

VISUAL EDUCATION IN CHINA *by T. Y. Lo, Chinese Military Affairs Commission.*

CASE HISTORIES IN TRAINING *How war plants actually use training films; checked results.*

BRITAIN'S INDUSTRIAL PICTURES *How pictures inform, train and unite British war workers.*

SAFETY EDUCATION IS ESSENTIAL *The toll of industrial accidents; how films help fight.*

A NATIONAL DEALER DIRECTORY *The first "where to get it" source directory is coming!*

FILMS & PRE-INDUCTION CLASSES *A complete digest of machine shop, aviation, radio films.*

PLUS *Fact-packed pages of helpful hints to the industrial and educational film user; news and reviews of the latest films!*

Institute Defines Terms

★ BECAUSE OF THE CONFUSION of terminology as to designation of various visual aids, it was deemed desirable by the Institute for Visual Education & Vocational Training, Inc., to suggest a nomenclature on which the industry may standardize.

Accordingly, the producer members of the Institute have decided on the standard employment of the following definitions which it is hoped may meet with the approval of users of these particular aids:

Discussional Slidefilms: By a "discussional slidefilm" is meant (Reading Slidefilm) a strip of reading film of 35mm safety motion picture film with explanatory text, labels, letterings, legends or notations super-imposed on the film. The specific purpose of this form of film is to permit the instructor to read and speak without interference and to permit the students to talk if desired, supplying illustrated material in illuminated form for class participation and encouraging discussion. Slidefilm projector required.

Strip Film: By a "strip film" is meant a strip of 35mm safety motion picture film, one frame to one scene and unmarked by text, labels, letterings, legends or notations of any kind, for use with accompanying manuscript, lecture or commentary. Slidefilm projector required.

Sound Slidefilm: By a "sound slidefilm" is meant a slidefilm of 35mm safety motion picture film accompanied by disc record supplying a prepared lecture, accompanied by commentary, music, dialogues or sound effects (or any combination thereof) so devised as to permit synchronization of the sound with the slidefilm. Sound slidefilm projector required.

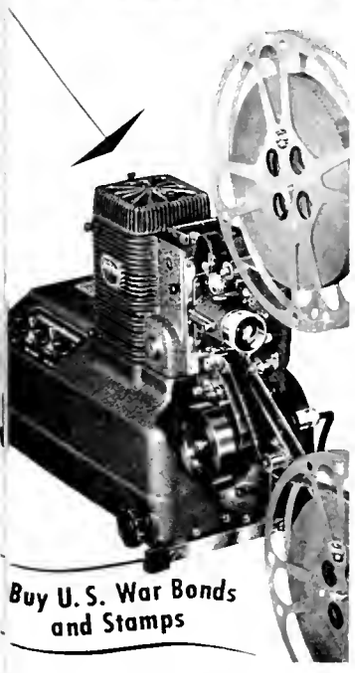
Motion Slidefilm: By a "motion slidefilm" is meant a reel of motion picture film consisting in large part of slidefilm material, but interlarded with motion picture scenes. Motion picture projector required.

Film Slide: By a "film slide" is meant a single, separate slide on

(PLEASE TURN TO PAGE TEN)

GUARDING AMERICA'S OUTPOSTS

Yet, Almost Every Night They See *Movies*



IT'S twilight on the Caribbean . . . the day patrol is ended . . . "Chow" is over . . . and the boys are eagerly awaiting the evening movie show.

"It's a real tonic to see movies after a hard day's work," writes a sailor on a seaplane tender from somewhere on the submarine patrol. "and we see them practically every night we're at anchor."

From the Aleutians to the Solomons, from the Caribbean to Iceland—our sailors, marines, airmen and soldiers are entertained, their spirits buoyed up, their morale maintained with frequent 16mm. showings of the latest releases. The government considers these movies so vital to the war effort that the films are given the right of way on transport planes!

In addition, 16mm. motion pictures are widely used as aid to training in all branches of the service as well as on the production front—and as such have done a great job to speed up learning and increase the effectiveness of practical teaching.

In this connection—thousands of Ampro precision projectors are serving for both training and entertainment in the U. S. armed forces and industry—and many more are on the way. Ampro is engaged 100% in the production of precision war equipment.

Ampro engineering skill is being continuously utilized to provide our government with the most efficient projectors possible. All that this experience teaches—plus the greatly accelerated Ampro developmental work—will be available for civilian users of Ampro projectors when the war is over. In the meantime, you can plan for the future by keeping up with the latest developments in 16mm. projectors. Write today for the latest Ampro catalog.

THE AMPRO CORPORATION, 2839 N. Western Ave., Chicago, Ill.

★ AMPRO ★

PRECISION CINE EQUIPMENT

Buy War Bonds and Stamps

MOVIE NEWS

Save and Salvage for Victory

PUBLISHED IN THE INTERESTS OF INDUSTRIAL AND EDUCATIONAL VISUAL AIDS TO VICTORY

DeVRY — 29 Years of Progress

DE VRY CAMERAS ON THE WAR FRONTS

AT FIVE MILES UP AND TWENTY DEGREES BELOW ZERO, *a DeVry 35mm automatic Model "A" camera delivered unfailing performance to record the world's first films over historic Mount McKinley, highest mountain on the North American continent.*

★ In the air, with the land forces and at sea, DeVry cameras are blazing new trails in cinematography which will be invaluable when peace returns. Meanwhile precision-sure DeVry camera models are ready for many wartime tasks. Outstanding among these are combat and bombsight types, the "Magic Eye" for inspection work and the famed DeVry Model "A" 35mm automatic. From the tropics to the arctic DeVry "covers" the world in action.

MODEL "A" 35MM *automatic newsreel camera. Holds 100 ft. of film. Gets A-1 results 'round the world.*

35MM "MAGIC EYE" FOR INDUSTRY. *A favorite for accurate industrial inspection work is the DeVry 35mm "Magic Eye" camera with electro-magnetic shutter release attachment for single frame pictures.*

35MM BOMBSIGHT CAMERAS *with wast magnification viewfinder, (at top or side), 8, 16, 24 f.p.s., 30-degree shutter, interchangeable lenses.*

35mm Camera Takes First Aerial Films Over Mt. McKinley

★ At 20 below zero, 26,000 feet over Mt. McKinley in Alaska, a DeVry 35mm automatic camera made picture history recently with the world's first films over that historic peak. Technical history was made, too, in the unfailing automatic operation of the camera at sub-zero temperatures.

Scenes recorded on this historic flight are among those in a new one-reel 16mm sound motion picture *Alaska* now available for rental or outright purchase from DeVry Films, 1111 Armitage Avenue, Chicago.

Films on Electricity to Aid Your War Training

Six two-reel 16mm sound motion pictures: Principles of Magnetism; Current Magnetism; Electro-Magnetism; Current Electricity; Electrical Measurement; Electrostatics and Current Generation — now available for rental or purchase from DeVry Films and Laboratories. (Address below).

Free 44-page Film Catalog

Write for your copy of free film catalog listing hundreds of useful educational subjects. Free on request from DeVry Films, 1111 Armitage Avenue, Chicago.

More Mileage For Films

Your films are vital war material - protect them with DeVry "Save-Kote" exclusive film treatment. Write for details or send films to DeVry Films and Laboratories, (address below)

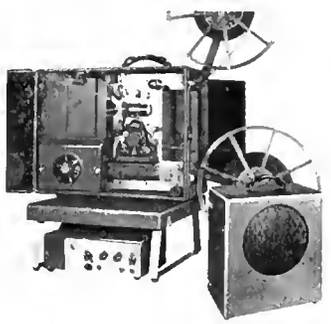
Army Chiefs Praise Movies Role in War

"Motion pictures are of the utmost importance in providing entertainment. . . ."
Lt. Gen. Dwight H. Eisenhower—Africa.

". . . a decisive aid in cementing Anglo-Allied-American unity . . . fill a real need. . . ."
Lt. Gen. Frank M. Andrews—Cairo.

"I feel they are as necessary to the men as rations."
Maj. Gen. Charles H. Bonesteel—Iceland.

"Important . . . contribution to health and morale of troops in the Aleutians and other remote situations."
Maj. Gen. Simon Bolivar Buckner—Alaska.



DE VRY "FREEDOM" 16MM PROJECTOR *The new DeVry "Freedom" Model 16mm sound-on-film projector conserves vital war materials without sacrificing any of many aspects comparing quality, dependability, durability and portability. Choice of two sound systems, 12 watt amplifier 12-inch speaker (Model Z-12 shown) or 20-watt amplifier 12-inch speaker (Model ND-201).*

Your Projector Is A Vital Weapon—Use It Often—and Wisely!

By W. C. DeVry

President, The DeVry Corporation

★ Wherever America is training her manpower for war—in the armed forces here and abroad in war industries — pre-induction schools rural centers, medical schools, and a thousand similar places, the sound projector has become a vital weapon for instruction, information and morale. *If you have one—mobilize it for action!* Our schools now must train for the armed services and war industries; our industrial plants must not only train new workers, both men and women, but they must keep them informed of their part in the war effort.

Because critical materials can be spared only for new projectors to meet the most essential needs we have mentioned, your present equipment is doubly important. Make sure it is constantly in use and that it is competently operated and maintained with care.

Get In The Scrap!

★ Every DeVry user can help the Salvage Drive. First — clean out your film department and return film cans promptly. Old film, worn-out parts, tubes and similar scrap is vital to the war effort. When sending in orders for replacements—return the used or broken part, including lamps and tubes.

Finally if you have an unused projector—sell it now! Help your school or local war plant, serve your community and your country by aiding this all-out effort to put every one of our all too-few projectors on the firing line!

DeVRY

TRAIN FOR VITAL RADIO AND COMMUNICATIONS WORK WITH FILMS *through radio, parts DeForest's Training methods. Learn faster, easier by means of visual lessons in your own home and prepare for armed services or industry. Full details available simply by addressing a card to DeForest's Training, Inc., 2533 N. Ashland Ave., Chicago, Illinois.*

Motion Picture Sound Equipment — DeVry Chicago — Symbol of Quality

In War and Peace The World's Largest Line of 16mm and 35mm Sound Motion Picture Equipment

DeVRY CORPORATION 1111 ARMITAGE AVE., CHICAGO • NEW YORK • HOLLYWOOD

PROJECTOR FIRMS GET IN THE SCRAP

SAVING EVERY POSSIBLE OUNCE OF CRITICAL MATERIALS through organized, continuous salvage efforts plus industry-wide regulation of repair and maintenance (requiring exchange of worn-out or used parts for new) the makers of sound, silent and filmstrip projectors have set an enviable record for all American industry in doing their share for Victory.

(CONTINUED FROM PAGE SIX)

35mm safety motion picture film as distinguished from a glass slide. Film slide projector required.

Army Industrial Relations Staff Aids War Industries

(*Also see pages* 13-14 *of this issue*)

★ The soldiers of the firing line and the soldiers of production daily are learning a great deal about their mutual job of winning this war. Already the fighter and the worker understand one another better than they ever did in any previous war.

The contact point is the Industrial Section, Public Relations Division, Headquarters, Services of Supply. This section was set up about a year ago to assist the Honorable Robert P. Patterson, Under Secretary of War, and Lieutenant General Brehon B. Somervell, Commanding General of the Services of Supply, in their gigantic task of equipping America's largest Army.

Chief of the Public Relations Division is Colonel A. Robert Ginsburgh, G. S. C., who knows the Army thoroughly from 25 years service as a Regular Army officer and who knows production and producers equally well from wide study and virtually unlimited contact with labor and management.

The Industrial Section is no "ivory tower" organization. Its staff of officers and civilian experts includes many with long military experience. All have had close contact with labor problems. They are prepared and equipped to meet and beat the war production's labor headaches and they get plenty of those headaches.

The Industrial Section works on the theory that producers and fighting men must be as one if we are to win this war.

One of the best methods, the Industrial Section has found, of establishing that mutual understanding is to bring the soldiers of the firing line face to face with the soldiers of the production line, both men and women. This has been accomplished by plant visits and by communiques from the fighting front.

Up to December 1, nearly 2,000 plant visits had been made. Heroes of land, sea and air, high ranking Army and Navy officers and the enlisted men from the ranks with their fighting equipment—all have toured war production plants, addressed labor union and management conventions and their families and friends have heard and met our fighting men in that way.

In less than a year, 5,000 communiques, signed by high ranking officers, have been sent to production workers, telling them what their products are doing to smash Hitler and the Japs, praising outstanding production efforts, bolstering the fighting spirit of the workers.

None of this is "one-shot" treatment. Rallies, plants visits and communiques are co-ordinated with a general program that keeps the workers in close contact with the Army at all times, lets them know just how much the nation's fighting men are depending on them.

Speeches, radio programs, photographs, news articles, posters and movies carry the message. Two thousand industrial publications are on the Industrial Section's growing list for news articles and photographs, while 830 labor papers receive a weekly roundup of war production news.

Three movies—*The Arm Behind the Army*, *Combat Report* and *Firepower*, have been produced, for free distribution to war production plants and labor unions. Work is under way on other films.

For outstanding production work, the Army and Navy jointly bestow the Army-Navy Production Award. Details of the presentation of those awards, including arrangements and publicity, are handled by the Industrial Section.

In addition to its own duties, the Industrial Section helps the Ordnance Department publish the magazine *Firepower*, and the Army Air Forces publish their magazine, *Wings*. It also assembles war production news for short wave broadcast to American troops abroad.

How effective the Industrial Section's work is will only be determined completely when American production mounts so high that the fighting forces wipe the Axis from the earth. But in the meantime the Section has telegrams and letters from both workers and management testifying to the gratifying results of the Section's program.

2829

Pictures to help train Automotive Mechanics

he mechanical principles and operations of the 35 subject units of the automobile are clearly explained in these 35 Jam Handy discussional slidefilms.

There are two thousand eight hundred and twenty nine (2,829) pictures — photographs, drawings, diagrams, cutaway sections and charts in these 35 slidefilms. They help the instructor teach Fundamentals of Automotive Mechanics as outlined by the War Department and the U. S. Office of Education. These are the 35 slidefilm subject units ready right now:

KIT A

he Fundamentals of the Inter-al Combustion Gasoline Engine

THE FOUR-STROKE CYCLE INTERNAL COMBUSTION ENGINE (Part I)—*42 Pictures*

THE FOUR-STROKE CYCLE INTERNAL COMBUSTION ENGINE (Part II)—*72 Pictures*

MULTIPLE CYLINDER ENGINES *79 Pictures*

THE CARBURETOR—*175 Pictures*

FUEL FEED SYSTEMS—*62 Pictures*

THE IGNITION SYSTEM—*89 Pictures*

ENGINE LUBRICATING SYSTEMS *69 Pictures*

THE COOLING SYSTEM—*86 Pictures*

KIT B

Principles of Power Transmission

MECHANICAL LINKAGE—*60 Pictures*

2 THE CLUTCH—*55 Pictures*

3 THE TRANSMISSION—*66 Pictures*

4 THE DIFFERENTIAL—*44 Pictures*

5 COMPLETING THE TRANSMISSION OF POWER—*39 Pictures*

6 REAR AXLES—*57 Pictures*

KIT C

Mobility Factors

1 BEARINGS—*54 Pictures*

2 WHEELS, RIMS, AND TIRES—*78 Pictures*

3 BRAKE DRUMS AND SHOES—*85 Pictures*

4 BRAKE OPERATING LINKAGE—*54 Pictures*

5 HYDRAULIC BRAKES—*66 Pictures*

6 POWER BRAKES—*96 Pictures*

7 SPRINGS—*107 Pictures*

8 SHOCK ABSORBERS—*54 Pictures*

9 FRONT AXLES AND STEERING GEAR—*79 Pictures*

10 WHEEL ALIGNMENT AND BALANCE—*118 Pictures*

KIT D

Electricol System

1 ELECTRICITY AND THE STORAGE BATTERY—(Part I)—*94 Pictures*

2 ELECTRICITY AND THE STORAGE BATTERY—(Part II)—*91 Pictures*

3 THE GENERATOR—*125 Pictures*

4 CURRENT AND VOLTAGE REGULATION—*110 Pictures*

5 THE STARTING MOTOR—*93 Pictures*

6 CHASSIS ELECTRICAL SYSTEMS *42 Pictures*

KIT E

General Service

1 IGNITION TROUBLE—*126 Pictures*

2 ENGINE TUNE-UP—(Part I)—*69 Pictures*

3 ENGINE TUNE-UP—(Part II)—*83 Pictures*

4 POWER TRANSMISSION TROUBLE *104 Pictures*

5 SAFETY FACTORS—*105 Pictures*

A Film Strip Projector

The JAM HANDY *Discussional Slidefilm*

These discussional slidefilms supply 35 series of pictures with textual material arranged in logical sequence on 35mm film, which can be projected one at a time on a screen for class discussion. Any Jam Handy slidefilm is shown on any film strip projector one at a time. Any single picture of the 2,829 can be selected and put on the screen any size so they can be seen by the entire class at the same time.

Write for synopses of these Automotive Mechanics Slidefilms

This is the Kit-set of 35 automotive mechanical discussional slidefilms in the attractive carrying case.

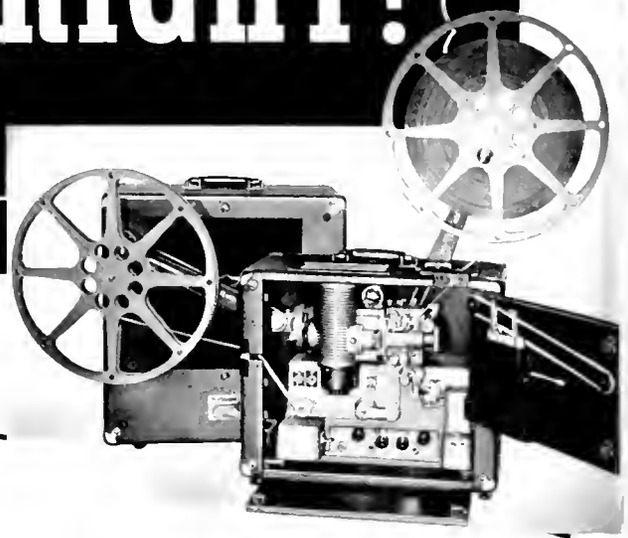
Write for the name of the nearest authorized visual education dealer.

The JAM HANDY *Organization*

★ New York 1775 Broadway Columbus 5-5740 ★ Washington, D. C. Transportation Building REpublic 8038 ★ Detroit 2501 East Grand Boulevard MAdison 2420 ★ Dayton Talbott Building Adams 6288 ★ Chicago 230 N. Michigan Boulevard STAte 6758 ★ Los Angeles 7046 Hollywood Boulevard HEmlock 5809

Do the right thing RIGHT!

SHOW WARTIME FILMS WITH A B&H FILMOSOUND PROJECTOR!



BRING wartime films to life on the screen with a Bell & Howell projector, precision-made to give brilliant, flickerless projection and distinct, full-bodied sound. Latest and most popular model is the "Utility" shown at right. Thousands of these sturdy machines are on active duty on the home and fighting fronts. If you can't get a "Utility" because of priorities, you'll find that our modernization program does wonders with your older model. "No Filmo product has ever worn out." So keep *your* projector all set for duty . . . keep it fighting for Victory!

You'll find all the films you need in the Bell & Howell FILMOSOUND LIBRARY. Thousands are available for use in your morale-building program. These wartime films bring home clearly to everyone engaged in war work the need for keeping production at top speed. Your employees can see stirring scenes from our fighting fronts . . . pictures of our Allies mobilizing for Victory . . . civilian defense activities in our own country . . . and hosts of other wartime films, as well as purely recreational pictures that will entertain and refresh them. Yes . . . every type of motion picture imaginable is available through the Bell & Howell FILMOSOUND LIBRARY.

RENT . . . BORROW . . . BUY from the FILMOSOUND LIBRARY

Rent from our supply of thousands of recreational and general educational films. *Borrow* at low-cost service charges from our hundreds of inspiring Government films—American, British, Canadian, and others. *Buy* practical training films you've tested by renting first (rentals are credited against subsequent purchase price). Use the coupon below to request complete information and our experts' advice.

"Escape" films refresh workers' minds

From "Women in Defense," one of many Government films you can borrow

You can teach green help to "mike" with movies

OUR Share for Victory—To our country's war effort, Bell & Howell are proud to be able to bring over 35 years of experience in the precision workmanship that has earned the highest esteem of industrial and Government users of every type of motion picture equipment. As part of our wholehearted share in the fight for freedom, we hope we can help *you* in your efforts to keep morale flying high, through the use of motion pictures. We shall be glad to answer any questions on your problems.

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Est. 1907.*

BUY WAR BONDS

BELL & HOWELL COMPANY
1808 Larchmont Ave., Chicago, Ill.
Without obligation, please send me information about
- Filmosound "Utility" Projector;
- Films That Fight for Freedom;
- Recreational films.

Name

Address

City State

BS 11-42

PRECISION-MADE BY

BELL & HOWELL

VISUAL AIDS TO WAR PRODUCTION

★ Adding to the Understanding of men and women workers on the war production lines and in training schools is a twofold responsibility. Among thousands of unskilled and shifted workers it first involves *training* for new and specific tasks; but training alone will not solve the manifold human problems arising from unfamiliar work, fatigue, and other effects of the production line routine.

We've mechanized our armed forces to the hilt, but the men who fight 'em and the men and women who build our war machines are humans. They operate most efficiently on a well-balanced mixture of know-how and *spirit*. Morale is another word for this important ingredient of fighting spirit. It's as important on the production line as it is indispensable on the firing line.

Let Them Fight Shoulder To Shoulder

Workers in war plants recently visited in the Chicago area in connection with a Business Screen distribution experiment conducted on behalf of the Army's Industrial Relations branch responded best to motion pictures showing actual battle scenes. This series of showings, so warmly approved by both management and supervisory personnel, included three recent Army subjects which directly link the worker's job with that of men at the front, showing how both quantity and quality in war materials play a direct role in speeding the day of Victory.

These special productions, *The Arm Behind the Army*, *Combat Report* and *Firepower* (reviewed elsewhere in these pages) not only gave the war workers a clear realization of the importance of their tasks to the armed forces but also helped develop a closer kinship between our *two* armies — the one spread over the far-flung battlefronts of Buna and Guadalcanal and Tebourba and the other lighting the torches of freedom at Pittsburgh, Gary, Birmingham, Detroit and in the mills and factories of a hundred other important war production centers throughout America.

Here Are Some Recent Examples

The personnel or industrial relations director facing this problem of worker morale will appreciate the example of a Buffalo arms concern which, for various unnamed reasons, found itself confronted with a fairly widespread condition of worker discontent. Tracing the problem to morale, the company tried a series of war film showings. Within a few weeks the plant was not only operating on full schedule but the spirit engendered has made this type of activity a "must" on the personnel program.

Many concerns use the employee's recreation rooms or cafeterias for noon-hour and between-shift showings; some of the largest war plants set up projection facilities right on the shop floors. Modern projection equipment and special screen arrangements now make it comparatively easy to solve plant lighting and space handicaps.

Types of Material Now Available

The question of regular supply for such showings has been the paramount problem among those contemplating use of the film medium. In answer to this there is the backlog of the three U. S. Army industrial programs, a new industrial version of the *Battle of Midway* films, quite a few regular Army and Navy action subjects, and the impressive list of Office of War Information releases available through nation-wide sources set up by that agency's Bureau of Motion Pictures and sold by Castle Films.

In addition there are the numerous transcriptions of war music and messages listed by War Production Drive Headquarters of the War Production Board. These are available in either 78 and 33 1/3 r.p.m. recordings and are especially valuable to plants with public address systems. Interviews with Army and Navy heroes, official communiques, martial music and war production messages are featured on the discs.

War posters and special bulletins, such as Army & Navy communiques, should be included in a listing of "visual" aids for the industrial bulletin board plays an important part in the worker's routine.

Army and Navy Assist in Morale Program

Both the Army and Navy maintain organizations for industrial relations assistance to war plants. The Industrial Relations Branch of Headquarters Services of Supply headed by Colonel

(CONTINUED ON THE NEXT PAGE)

To war workers like these, millions of them in our great plants 'round the nation, war films have proven an inspiring tonic to renewed production effort.

Robert Ginsburgh maintains localized liaison facilities in the various corps areas. Major Kermit J. Berkson directs these activities from Washington.

Navy's Incentives Division maintains a similiar staff organization for local contact with Commander Leslie P. Jacobs directing from Washington headquarters. Both Army and Navy incentive staffs correlate their individual programs as much as possible.

INDUSTRIALS BUILD PROGRAMS

An increasing number of industrial concerns have developed their own incentives programs. Familiar to all is RCA's nationally discussed (and freely loaned) "Beat the Promise" campaign. Posters, recordings and all kinds of visual materials are included in this fine program. The General Motors Victory Show which is touring all cities where GM plants are located, including the many new war plant subsidiaries, has probably set new all-time attendance records.

Motion pictures, including the Sound Masters - produced *General Motors 'Round the World* and a fine Quentin Reynolds subject especially addressed to GM workers, are highlights of a two-hour stage and screen program that has been playing to packed houses of company employees and their guests. *Combat Report* and *The Battle of Midway* films have also been shown on these programs.

Still other industrials have produced top-flight pictures. Allis-Chalmers, International Harvester, and the Western Electric Company are typical sponsors of inspiring war effort films. Plant town theaters, rented school auditoriums and the company cafeteria are favorite locations for showings.

Lack of adequate projector equipment has been a barrier to further use of the excellent incentives programs available. The scarcity of equipment available has been a decided handicap. In some locations, however, commercial rental services are helping to meet the problem. In this vitally important problem of building a kinship between the firing line and the production line "the show must go on."

THE ARMED FORCES SPEAK TO AMERICAN INDUSTRY

THE ARM BEHIND THE ARMY

SYNOPSIS—American industry and American labor constitute the "arm behind the American Army. The success of the Army on the firing line depends upon the success of labor and industry on the production line. And the security of American industry and labor depends upon the success of the American Army. An Axis victory means the enslavement of both labor and industry. The film shows what happened in Vienna, Czechoslovakia, Poland, Holland, and France: cities destroyed, industry taken over by the Nazis, labor conscripted, men, women, and children subjected to terror and starvation. The Axis has tremendous resources, but so have the Allies—they have the mills of Krupp, we have the mills of Birmingham; they have the armament plants of France, we have those of Vickers in England; they have Rumanian oil, we have the oil of Oklahoma, Texas, and California. This war is industry's war, labor's war to outproduce the Axis.

CREDITS—*The Arm Behind the Army* is an official War Department film, produced by the Signal Corps of the United States Army in cooperation with the Research Council of the Motion Picture Academy of Arts and Sciences. LENGTH: 375 *feet*, 16*mm*. RUNNING TIME: 10 *minutes*.

COMBAT REPORT

SYNOPSIS—The second of the series of industrial relations programs produced by the armed forces graphically relates the story of a coast patrol bomber's mission in search of an Axis submarine. The role which many types of American industry played in the making of the bomber and its precision equipment is shown as the flight crew prepares for action. Skillful use of motion picture techniques bring to the screen a forceful and penetrating war subject. Running time is ten minutes; 16mm sound-on-film.

FIRE POWER

SYNOPSIS—The third and latest of the inspiring series of incentives films produced for use in war plants maintains the thrilling pace set by its predecessors. To the officers of the industrial relations divisions who directed this production project goes a world of credit from American industry. *Firepower* shows the wealth of production ingenuity and cooperation which goes into the making of heavy ordnance. Running time: approximately 10 minutes; 16mm sound-on-film.

★ A YEAR AGO, industry was face with the colossal task of conver ing to war work and expanding i personnel to vast proportions.

Millions of men and women, fo the most part without any industri experience, had to be employed war plants and taught to manip late the tools of production.

The problem of mass trainin presented difficulties on a sca greater than had ever been met b fore. New and improved metho of imparting knowledge and skil had to be evolved to meet th critical situation.

As one contribution to the wa effort, the U. S. Office of Educatio launched a program of film produ tion, to assist instructors in trainin the millions of new workers, and i improving the skill of those alread employed. Forty-eight films wer made on subjects of crucial im portance. These included machin shop and shipbuilding skills.

From the time the first set o films was placed in the hands o users, enthusiastic acceptance ha marked their employment in th hard test of actual practice. Indus try, vocational schools, colleges, th Army and the Navy acquired them

The sales of these films has sur passed figures ever attained by edu cational films before. By Octobe 28, 1942, 19,510 prints were in us in the schools, in industry, in the armed forces, and in such allie countries as Canada, South Africa Australia, England, India, Brazi and Mexico.

Workers attend film showings in th Caterpillar Tractor Co. auditorium

"EMPLOYERS FIND WOMEN WORK WELL at many jobs" says the commentary from the new OWI film subject "Manpower."

"WORKERS add to job problem by rushing to critical areas without knowing skills required"—from OWI's new informational short subject "Manpower."

Increasing Distribution of U. S. War Films

★ Keeping workers and the public at large informed about the progress of the war effort and their own part in it is the objective of the extensive 16mm. sound motion picture program developed by the Bureau of Motion Pictures of the Office of War Information. Making sure that the many available subjects are put to maximum use is the responsibility of both distributor and user of these films.

To date many of these pictures have been distributed in patterns approximating that of the 35mm. theatre field. In other words, the films are going out through school and commercial libraries to exhibitors renting or loaning other subjects to which war films are appended. Changing this pattern of least resistance to one of reaching new and most desirable types of audiences now appears to be a major objective in which government and the distribution field share a major responsibility.

Priority For Adult Groups

Because a fairly limited number of prints of each subject are available in each local depository, it has been suggested that priority be given to *adult* audiences, particularly to industrial organizations, discussion groups, community audiences and similar outlets where these films can accomplish the most direct benefit to the war effort.

Pictures have hitherto followed the available 16mm. sound projectors. Since most of these served by educational libraries are located in schools, it follows that distribution to the school field has been particularly good. The school field distributor will therefore need to concentrate less upon school bookings and more upon the frequent use of the school auditorium and school projector by *new* adult audiences.

The other principal area served by existing 16mm. sound equipment is the industrial field. Here, unlimited opportunities for regular showings exist and are being thoroughly explored by the Bureau. It is in this classification and in the nationwide field of organized club groups, lodges, fraternities and other adult outlets that the commercial war film depository has a great opportunity for service.

Every Projector Needed

Not only maximum use of each available print but the employment of every available 16mm. sound projector is an absolute necessity if the American public is to see these films. Millions of influential citizens who never attend local theatres will otherwise be missed by this potent informational medium. Likewise, the illuminating statement by a top executive of one of the major theatrical organizations to the effect that only 60 percent of the theatres were showing war films, indicates the need for an even better job on the part of all experienced hands in the 16mm. distribution field.

This can be accomplished in two ways: through increased lending of school and organization equipment (difficult because of its value and the lack of experienced operating personnel among potential borrowers) or the rental of commercial units through local depositories, furnished either with or without operator personnel. The lack of available equipment in new and highly important war plant outlets indicates a particular need for the latter type of service. The important thing is to reach the adult audiences *not* using films. *They are the real challenge.*

MANPOWER

Synopsis—To fight this war, ten million more people must go to work by the end of 1943. Today the problem of manpower is crucial in our factories and on our farms. This film presents the problems and confusions now existing—labor pirating, the shortage of skilled workers, living conditions of migrant workers and their families, lack of housing in war industrial areas. Paul V. McNutt, Chairman of the War Manpower Commission, introduces the problem and suggests voluntary steps to be followed. The film shows some of the procedures being carried on in a test area, Baltimore: employers signing anti-labor-pirating pledges; salesmen and storekeepers, once skilled workers, returning to their former occupations; training unskilled workers in war industrial skills; training women to enter war industries; youths working on farms; registering with local offices of the U. S. Employment Service. "By the end of 1943, one out of every two active Americans will be either in war production or in the fighting forces. The rest of us will be feeding, clothing, housing the front-line fighters and workers. Only then can we say that all work is war work."

Length: 305 *feet*, 16*mm.* Running Time: 8½ *minutes.*

Suggested Uses—The film, *Manpower*, is essentially a recruiting picture, designed for employers and workers and showing how both can cooperate.

"Listen to Britain" is now available.

LISTEN TO BRITAIN

Synopsis—This film provides a remarkable factual record of the many sounds and sights of wartime Britain. *Listen to Britain* has no dialogue; the audience literally *listens* to Britain—to the rumble of tanks down the streets of sleepy villages, to the roar of Spitfires rising to intercept enemy planes, to the singing of larks, to the shouting of children. There are Canadian soldiers on a troop train singing "Home on the Range," men on leave dancing to the tune of "Roll Out the Barrel." There is the clatter of machinery in factories, the grinding of a train coming to a stop. There is a Salvation Army band, there are comedians entertaining factory workers eating their midnight meal. There is a noontime concert by the RAF orchestra in London's National Gallery, as soldiers and civilians, including the Queen, sit or wander about listening to the music. But most important of all, here are the English people—soldiers, mechanics, nurses, farmers, children—whom we can be proud to call our Allies.

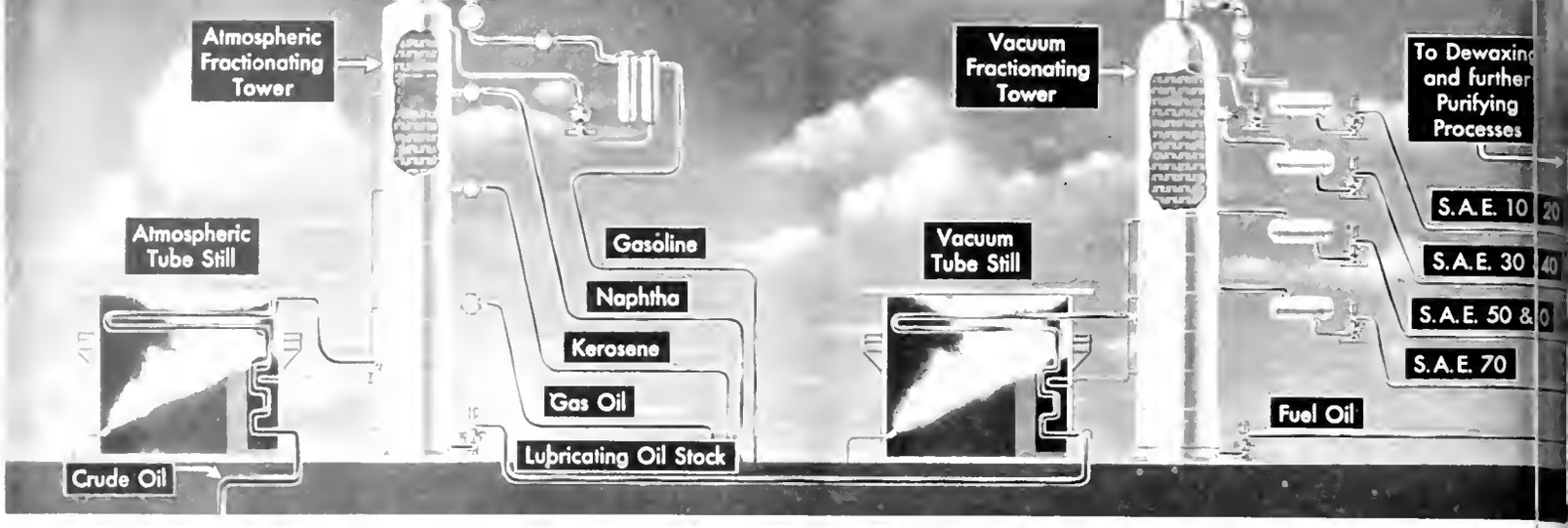
Credits: *Listen to Britain* was produced by the Crown Film Unit for the British Ministry of Information. The producer was Alan Dalrymple and the director Humphrey Jennings.

Length: 710 *feet*, 16*mm.* Running Time: 20 *minutes.*

Suggested Uses—This film is an eloquent tribute to the men and

(PLEASE TURN TO PAGE 360)

From the OWI short reviewed above.



TOO LARGE TO BE SEEN but made clearly understandable by the magic of technical animation is the operation of an oil refiner

VISUALIZING THE INVISIBLE

★ THE GENIUS OF THE MOTION PICTURE SPECIALIST has added hitherto untold chapters to the saga of man's progress through visual education. Making clearly understandable that which could otherwise be described only in complicated language and flat, dimensionless printed pictures and charts, the visual specialist uses the magic of controled motion, microphotography, the x-ray, the stroboscope and tremendously advanced skills in technical animation.

With accuracy and precision in every point of reproduction, men like "Rocky" Barnes, dean of such visual specialists, can place on the screen in one image the whole complicated operation of a modern oil refinery. There is no panoramic glimpse of an industrial maze, but a comprehensive and clearly understandable cross section of the *working* operations. Reducing this square mile of complex engineering and chemical operations to the proportions of a 52-inch classroom screen is just the beginning of their typical daily accomplishments.

FROM MOUNTAINS DOWN TO MERE ATOMS

For a quarter-century, these technicians of the educational and industrial motion picture field have specialized in such assignments. From a huge refinery covering acres of area down to microphotographic studies of a single human hair a thousand-times enlarged—they truly cover all subjects within the realm of human understanding. Picturing the invisible is part of the everyday job which includes analytical studies of the firing of guns or the combustion of engines. What this means to a nation at war cannot be underestimated.

With thousands of new mechanics and machine operators to be trained for new war duties, these simplified visual lessons are proving of vital importance. Animation thus used to reproduce mechanical working parts otherwise impossible to see is indispensable. Other techniques which make entire jobs easy to understand help to speed learning and reduce material and time losses by the worker who has "learned" but who still does not "understand."

ESSENTIAL TO WAR PRODUCTION IN MANY WAYS

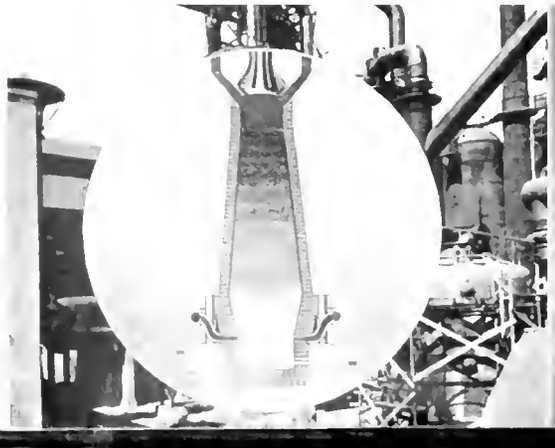
A specific example of the value of this specialized work to war production is the development of chronokinography. As first used some years ago in a short subject produced by the Lam Handy Organization, this technique embraces "time study" photography, vizualizing the rate of motion by "stopping" swiftly moving objects many times during a single motion.

Thus "breaking" the flight of objects or humans into split seconds enables the observer to measure rate of speed or to study mechanical operations under varying conditions or improve rate or direction of motion by clearer understanding of its results. Manual technique are thus "visualized" for concentrated study. For example, gears may be studied to discover variance of "play" in their operation. In the measurement of speed, deceleration of a vehicle may be analyzed to determine perfection of stop and brake action. This is measured by the relative size of the spaces between given points in wheel images visualized by the special

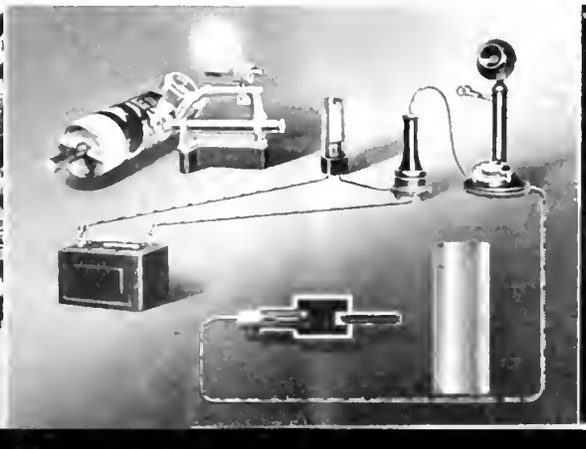
TOO SMALL TO BE SEEN
except by skillful use of microphotography is this tremendously magnified view of a single hair.

TOO SMALL TO BE SEEN
and too slow in its growth is the germination of spores, made understandable by animation

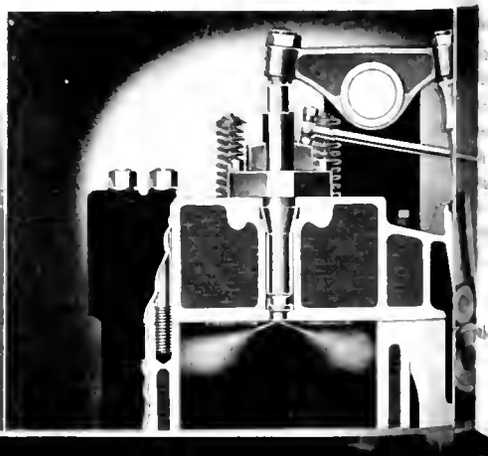
TOO HOT TO BE SEEN
and hidden from view is this industrial furnace operation, visualized in a realistic cutaway view.



TOO COMPLEX TO BE SEEN
is the detailed operation of the telephoto apparatus which is explained by technical animation.



TOO HOT TO BE SEEN
is the operation of Diesel engines, which is re-enacted and clarified by the skilled animato



amera apparatus. A graph placed over the icture offers scientific proof of the rate and noothness of deceleration of the truck or rmored car.

TIME AND TEMPERATURES ARE NO BARRIER

The specialist in pictures of the "impossible" n bring the operating interiors of machines hich function at high temperatures to the reen. Blast furnaces, interior combustion hambers of oil and gasoline engines, and simi- ar operations are within his grasp. The stress nd strains of metals are visible to him as they ss through varying conditions of load and operation while his camera photographs its very components with the aid of the x-ray. The untold value of this in war production is most evident to the plant engineer.

Behind the scenes in the workshops of these specialists, who today are serving the Armed Forces and War Industry on day and night schedule, the unending battle with the intangible and the unseen goes on. Frame by frame they bring new understanding of the complicated world in which we live, thus adding to human progress while nations fight to defend the principles under which that progress may flourish in a free and unfettered world.

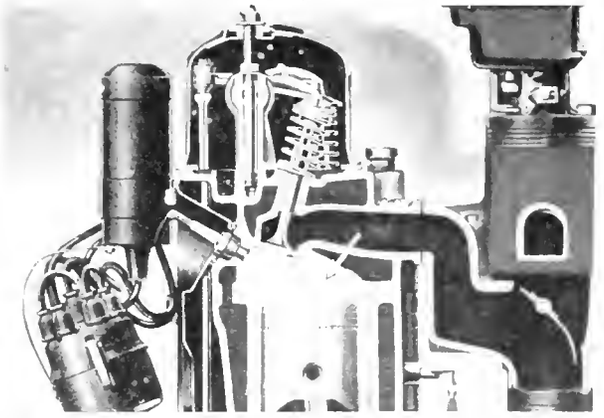
IMPOSSIBLE TO BE SEEN is the wonderful mechanism of the human ear. Skillful and realistic animation makes clearly understandable its functioning, makes comprehension easier and faster and more permanent. A chronophotograph by Jam Handy, Inc.

OO FAST TO BE SEEN the flight of these birds which is "stopped" midair by the magic of chronokinography developed by the specialist in visualization.

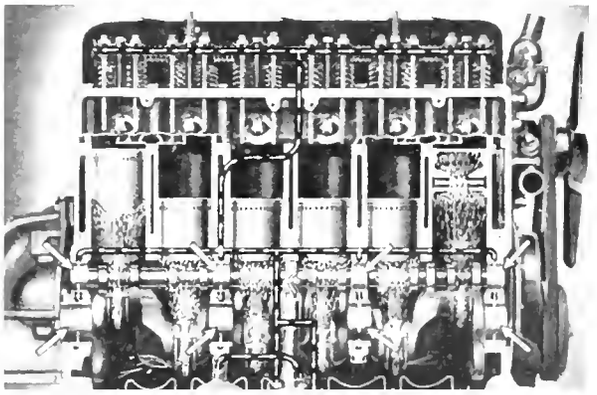
CHRONOKINOGRAPHY stops each motion of the skater's graceful turn and analyzes movements otherwise impossible for the eyes to see and comprehend.

TOO SLOW TO BE SEEN is the interior hardening process of metal revealed by the camera.

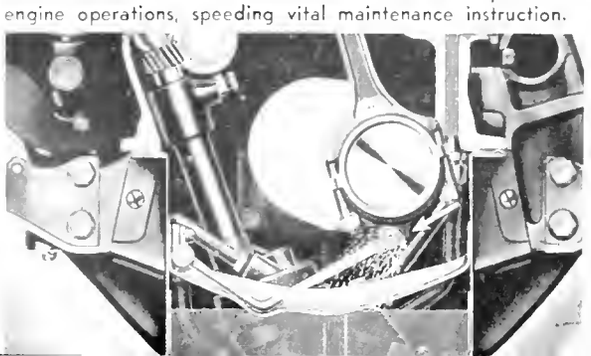
TOO FAST TO BE SEEN is the action of oil in the lubrication of swiftly moving mechanical parts.



TOO FAST TO BE SEEN are complicated engine operations made understandable for training.



TECHNICAL ANIMATION explains engine operations, speeding vital maintenance instruction.



Alcoa Offers Three Aluminum Work Films

PRACTICALLY every plant superintendent and foreman is faced these days with the problem of training green men and women to become capable machinists and riveters and welders. An additional training problem arises when people experienced in the fabrication of parts from the heavy metals must be retrained to work with aluminum.

To facilitate the training of new personnel in the fabrication and assembly of aluminum parts and structures, Aluminum Company of America has produced three "how-to-do-it" sound movies — *How to Rivet Aluminum, How to Weld Aluminum*, and *How to Machine Aluminum*, which is available in 16-mm. and 35-mm. widths. The pictures, which are about a half-hour in length, are specially directed at the large army of war workers who are using aluminum alloys to make more planes, engines and ordnance parts. The pictures were made by Jam Handy.

As a contribution to the war program and in an effort to see that the aluminum alloys are machined and assembled most efficiently, Alcoa is lending these movies to interested people in the various war industries. Any company can have the loan of these three films (or of any one of them) by writing a letter to the Company, c/o the Gulf Building, Pittsburgh, Pa., giving a first, second, and third choice of dates on which the films are desired. It will also be necessary for the borrower of the 16-mm. prints to have access to a *sound* movie projector. The films cannot be used on a 16-mm. silent projector, due to a variation in sprocket holes on these films. No fee is charged for the use of the films.

TRAINING FILM UTILIZATION

Proper Use of Available Training Films Looms As Real Problem Among Industriol Concerns Starting Programs

★ With forty eight sound motion pictures available at low cost for industrial war training purposes as a result of the unparalleled United States Office of Education production program, new users of of these and other visual aids materials are now concerned with important questions of proper utilization.

The Office of Education is meeting this problem realistically. Recent conferences brought together by the distributor, Castle Films, addressed by Floyde E. Brooker, Director of Visual Aids for War Training for that agency, have brought forward a good many answers. At the recent Davenport, Iowa, session, Mr. James D. Shevlin, Training Director for Deere & Company, gave a most illuminating discussion of the way in which that company has met the utilization problem. We quote from Mr. Shevlin's remarks:

What to Do With Films

". . . I have heard more than one training man say that he wouldn't know what to do *without* such films. A statement like that spells the beginning of the end. Actually, many of us do not know what to do *with* such films.

If the facts were known, films such as these are only the end of the beginning. Let me put it another way: If you are not prepared to *use* these films as a background or as a follow-up, or both, for training, then I'd advise you not to buy them.

Let me tell you what Deere & Company is doing with films such as these.

A Double-Barrel Program

Our training program is a double-barreled affair. The full barrel is aimed at the heart of the organization—our foremen. We have streamlined our foreman training program to the war effort by limiting it to three subjects, namely:

1. Job Instruction Training, a six-part 2-hour course on How to Teach a Job.

2. Job Methods Program, a six-part 2-hour course on How to Improve Job Methods.

3. Job Relations Program, a six-part 2-hour course on How to Handle such problems as the induction of women, grievances, reprimands, etc.

In each of the three courses, we are using films: 16mm. silent, 16mm. sound and 35mm. sound strip, *but* in each course we do not depend on the films alone. We supplement each course with individual demonstrations pertaining to the subject and with these so called textcards as a follow-up.

That brings me to the choke barrel of our training gun: namely, Specific Job Training. This barrel is trained on individuals such as welders and machine operators.

Trainees Need Review

Many of you are familiar with General Electric's outstanding films on Arc Welding. We did not believe that as excellent as the films are, welding trainees would carry away from a screening all the meat of the films, so we published handbooks, based on the films as a follow-up and they have done the job, so our welding specialist tells us.

But let me tell you what we are doing with the United States Office of Education films, and let me give credit to training man L. J. Fletcher of Caterpillar for much of the ground work.

Machine operators, as such, are not new to this area, but the number required is not only new but startling to the Tri-Cities.

"Our General company will purchase any one of the films produced by the United States Office of Education if any plant in the organization has need of such film. The General company will then make such films available to the individual plants. That's only good purchasing.

Purchase Films Really Needed

At the present time, we have not purchased the whole series, but only those which vitally affect the type of machine operator we are training. More specifically, we are interested in training our machine operators to read simple blueprints; to use micrometers and vernier calipers; to use jigs and fixtures correctly; to use drills correctly; to use gages correctly and to grind lathe tools correctly—and we have found films on each subject.

BUT—and here's the "key" to our machine operator training—we will not only use films on each subject, but we will use demonstrations, models and printed follow-ups to *drive* home and *keep* home the meat of such films.

For example, let me tell you how we are supplementing the film on the use of the micrometer.

One of our pattern shops is building a wooden micrometer about four feet long—we will use it for demonstrations *after* the film. We have purchased a number of inexpensive die cast micrometers to assist the student to "get the feel" of the "mike"—we will use the *after* the film. And we have secured pamphlets on "How to Use the Micrometer" from a manufacturer of micrometers—we will use these *after* the film.

Check your own experience. How many of you can remember exactly point in a downtown movie after the show is over? But if you were furnished the script and you act out the parts at home, the chances are you'll never forget it. . . .

Visual Learning Guides for War Training

★ A new educational tool which promises to vastly speed the training of war workers in classes using U. S. Office of Education training films, or other training films, is the Visual Learning Guide recently developed by a Chicago publishing organization, The National Audio-Visual Council. The new instructional aid sets a pattern for the use of film, thereby lightening the work of the instructor in the same measure that it increases student achievement.

An Inexpensive Service

The Visual Learning Guide is an inexpensive folder of four pages which quickly grounds the student on the given subject before the film is shown, tells him in advance the important sections to which he must give special attention. It provides a quiz by which he can discover what he has learned and what he has not learned, gives him his grade and enables him to write down the correct answers to questions he has missed, offers him an outline further study and practice, and supplies a permanent reference source for reviewing the subject.

Educators who have been closely checking student reaction to training films have found that, except for those with photographic minds, the quick visual impressions of the film are difficult to remember on one or even more showings of a film. Class tests conducted with and without the "Guides" indicate that their use compensates for this forgetfulness to a remarkable degree—some-times cutting the necessary train time. The Guides reduce the tendency of the "entertainment valu of the film to operate as a distr tion is largely overcome and att tion to the vital details is increas

Test After Film Showing

Immediately upon the conclus of the film showing, the stud uses the Visual Learning Guide test himself on what he has seen heard in the films. He answers fi questions covering the entire les and, of course, is forced to strug to remember points which otherw might get away from him in space of minutes. The very proc of writing these answers causes th to become more permanently bedded in his mind and he thus tains much that would escape student not using the Guide.

The publishing organizati which is preparing the Guides nounces that five subjects on the Engine Lathe and 5 on the Mi ing Machine are ready for i mediate distribution. Others, whi will be complete in the immedi future, cover subjects on the Sen tive Drill, Radial Drill, Vertic Drill, Shaper, Centering and La out, Bench Work, Action of Sing Point Cutting Tools, and Vertic Boring Mill.

The Council advises that quiries addressed to its offices, North La Salle Street, Chica will promptly bring specim copies of the Guides, together wi information on their use and ava ability and cost.

A MANUAL ON FILM UTILIZATION ▶

★ Because the problem of utilization of training films has now become a matter of importance in war industry as it is also in the Armed Services and in our schools, Business Screen is seeking all possible guidance material for our readers in these fields. In this ca gory, the easy to read and imagi tive brochure recently written Mr. Bruce V. Findlay of the L Angeles City Schools is presente Reprints are available at cost written request.

Part II of "PARTICIPATION" will appear in the next issue.

L. For Emphasis:

Many devices and schemes are available to emphasize points or scenes. Here are some of the most effective.

(1) The judicious use of animation is invaluable. Animation alone can visualize the invisible.

(2) A remark may be spoken and written at the same time. The words may fill the entire screen and the volume be increased for emphasis.

(3) Scene or words may be flashed on and off repeatedly.

(4) Words may be spoken without the scene: then reversed—the scene without the words. Words may be spoken: then written—then spoken and written.

(5) The tempo of the voice or sounds may be varied.

(6) The element of surprise may be effectively employed.

(7) Simple repetition is helpful.

(8) Unusual lighting effects, close-ups and trick camera angles add interest and emphasis.

(9) Touches of comedy, using a "fall guy" to carry the load of stupidity or misunderstanding, may direct attention to significant sequences.

(10) Sudden and unexpected pauses stimulate attention.

(11) A small ball of light, or an arrow, or a pointer in the picture itself may be used for emphasis.

(12) Color may be used effectively to emphasize a specific feature.

FAIRBANKS ORGANIZATION

U. S. ARMY SIGNAL CORPS PHOTO

"...PARTICIPATION the last word in ....FILMS"

By BRUCE ALLYN FINDLAY
Head Supervisor of Visual Education
Los Angeles City Schools

The "unprecedented demands of the hour" (as Superintendent Kersey of the Los Angeles City Schools has expressed it) have brought about an even greater need for new training tools. The thoughts on films and their use expressed in this brochure may be helpful to all concerned in that they challenge the imagination and stimulate both instructor and student to more efficient utilization of the sight and sound medium in wartime fields.—*The Editors.*

Something About the Author: Bruce A. Findlay

Formerly: Instructor at University of Southern California; Assistant Superintendent of Los Angeles City Schools; Personnel Director of large Department Store; Manager of Publicity and Promotional Activities Los Angeles Chamber of Commerce; co-author of "Tell A Vision Plays"; "KEY$ and CUE$"; has written, directed, and produced educational motion pictures, sound slide films, and film strips etc. At the present time is Head Supervisor of the Visual Education Section of the Los Angeles City School

THE WHY

I. COMMON DENOMINATOR

A. Same Principles of Learning:

The basic principles of teaching and learning are fundamentally the same, whether the students are raw recruits learning how to salute, mechanics working on intricate ordnance, or navigators fathoming the mysteries of solar and stellar bodies.

The approach will vary, the vocabulary will be different, the complexity of the situation presented will certainly not be the same in all instances. These will constitute the principal differences. The technique, however, will remain practically the same. The underlying fundamental principles of learning will not change.

B. Same Tools Used:

The same tools of instruction may be used: the motion picture projector serves the youngest trainee as well as the experienced officer; the same screen reflects the light; the same subject may be presented; the same teacher may handle both groups. Experience may be considered as the gulf between the age levels.

To the youth every experience is a shining new adventure; to the adult the bromium may be tarnished considerably, though the desire for adventure is still close to the surface. . . . The song is over, but the melody lingers on." In good teaching the spirit of adventure is always present. Another name for adventure is interest. He who succeeds in creating the greatest interest in the subject will probably succeed in getting the greatest amount of real, permanent learning.

Cafe or Cafeteria Schools of Instruction:

There are two broad kinds of instruction. One is the cafe school. To this [illegible] students come and expect service as they would in a [illegible] teacher prepares a film makes a lesson plan registration is very [illegible] teaching.

The [illegible] without question the superior belongs to the [illegible] To [illegible] and/or film the students come and must serve [illegible] To [illegible] teacher and/or film becomes that [illegible] dating [illegible]

The film treatment may be then offered. Further discussion or criticism of this film or of suggested treatment will bring out significant points.

(2) Double Endings

A problem may be presented. At the conclusion of the showing and in the midst of the discussion, the operator or the narrator may announce that a reel of film has been overlooked. He will then show it. This reel may or may not change the meaning of the ending. Fresh discussion can then be started.

(3) Creating New Ending

After the showing of a film, the observers may be invited to offer other conclusions than those presented. Multiple endings create discussion and offer an outlet for creative thinking.

J. Sharing the Screen (Observer-Actors):

(1) Half-frame Pictures (Half-blank Screen)

The screen may present a problem; all the facts are pictured; the problem is again presented with half of the screen blank. With a pointer, one observer may outline on the half-blank screen the probable conclusion, course or source of action.

This is an excellent way to outline probable outcomes of procedures based upon facts or deductive reasoning.

(2) The Duet

The narrator may outline problems, situations or ideas. When he has stated his case, he requests help. One or more observers may furnish the needed advice.

This technique may afford an opportunity for humble and unknown observers to share an experience with the personality on the screen. The same technique may be used to conduct an experiment with a master technician to participate in maneuvers with a recognized authority, [illegible] a theatre experience with a great actor.

K. "The Pause That Refreshes":

As pauses give rhythm to music, so do they add emphasis, rhythm and effectiveness to film treatment. Constant sound or scenes deaden the hearing and vision. Pauses in hearing and vision, aid in teaching. Intervals between points are valuable.

(1) Blackouts

After an important point has been made, a point that requires thought and reasoning, a few seconds of silent black film will afford the observer an opportunity to think through the problem before the next barrage of words is hurled at him.

(2) Silent "Stills"

Occasionally a significant scene can be [illegible] without [illegible]

(a) The advantages and dangers of deductive reasoning may be graphically illustrated by this method.

(b) The correct deductions may be pictured on the screen, or enacted before the group by members of the observers' group.

(2) The Dilemma

One or more problems may be screened—the solution of which presents a dilemma. This is the "Lady or the Tiger" technique. If the hero opens one door, he will get his lady; if he opens the other, a wild tiger will spring at him.

(a) This is an excellent method of developing discussion and reasoning.

(b) This is an excellent way to encourage the observers to slay their own dragons.

(3) Observers Finish Story

At the peak of the film, the character may turn to the group and ask for help. The film may be stopped while various solutions are suggested; multiple endings may be held in reserve and shown after the discussion. Each ending may reveal what would have happened had certain recommendations been followed.

(a) There may be time intervals ranging from a few minutes to longer periods between the first part of the film and the conclusion or conclusions.

(b) Instead of a formal film ending, groups of observers may "act out" a conclusion in line with their own reasoning. This method excites interest and may offer a comedy relief which is always welcome.

(4) Observers' Jury

From the observers, a jury of from six to twelve may be chosen in advance to "try" the "evidence" which the "prosecution" and "defense" attorneys or advocates may present. The jurors take places in front of the group. The session is presided over by a judge and other officials. The "defendant" may be an individual who has done something or the "defendant" may be an idea or suggestion on trial.

(a) Observers may vote secretly to see whether they agree with the jury's ballot.

(b) The entire audience may be asked to vote as a jury, with evidence being presented directly to them.

(c) Multiple endings may be available based on "guilty" or "not guilty" findings of the jury.

I. Developing Creative Thinking:

(1) Creating the Story Treatment Before the Showing

One or more problems may be presented orally by the leader, or the problems may be presented by graphs, charts or field work. The observers are invited to suggest ideas about how a movie or other pictorial presentation might treat the subject most effectively. Such a practice will stimulate thinking concerning the problems at issue.

It is with the cafeteria type of instruction film which necessitates the incorporation of master teaching techniques and tools, that this presentation concerns itself.

To the cafe school of instruction belong such training films as the purely expository, the informational, and the documentary.

To the cafeteria school belong such training films as have woven into the picture itself time honored and proved principles of teaching.

II. "MOVIES": TO BE OR NOT TO BE

When should the motion picture be used? When the subject **REQUIRES**

(1) Sound (2) Motion (3) Emotion

If a producer presents the Bell Song from Lakme, he employs a coloratura soprano from the Metropolitan Opera Company. If his program calls for a blues song, a thousand dreamy-eyed, gravel-throated ingenues can produce the required sound effects.

When there is no sound, or motion, or emotion inherent in the situation being presented, why use the "movie"—the aristocrat of all teaching devices? Why not employ some other vehicle?

III. POTENTIAL ADVANTAGES OF TEACHING WITH FILMS

A. Six Advantages:

The potential advantages of using films of all types in teaching are well known. The major available benefits may be summed up in six statements:

(1) Developing and guiding emotions and attitudes.

CATERPILLAR TRACTOR CO.

(2) Speeding up learning. A picture is the shortest distance between two points.

(3) Increasing retention. Films afford maximum learning in minimum time.

(4) Clarifying subjects.

(5) Bringing the past and the future to the present. Situations which have been faced or which may have to be faced can be presented directly, vividly, graphically and unforgettably.

(6) Establishing standards of performance.

The mere fact that a topic has been filmed is no guarantee that it is a teaching tool. Whether the picturization be filmstrips, sound slides or movies, to fit the subject teaching films must be properly tailored.

B. **Exposition vs. Teaching:**

A great opportunity for the educator lies in the fact that he can build excellent teaching techniques into instructional films. Instructional films should bring the audience into the action in other than a purely vicarious way. Most films obligingly kill all the denizens of the jungle so that the students may follow the teacher safely through the danger zones. This policy requires less time and effort than permitting the students to slay their own dragons. The former method is mere exposition; the latter method is teaching plus **participation.** If the viewer meets the situation and **participates** in the solution of his problem, the real dragon will be less fearful when the observer meets him alone.

COURTESY OF DEVRY CORP.

plus or minus by observers. This may be done at specified times on paper given out before the showing of the film. If the observer agrees, disagrees, or both, he marks his plus, or his minus, or both. At the conclusion of the film, he may readily check his answers with the correct ones.

(2) Grading by Another Person

Another person may grade observer's paper.

(3) Competition

Group or team competition may be injected into this phase also.

F. **Measuring Grasp of the Subject:**

Observers may be asked to rearrange the film "sequences" in the order of their importance or correctness.

(1) Suspense

The problem of rearrangement of sequences may or may not be presented to the observers before the film showing. The keenly observant students and those best informed on the subject will detect needed corrections.

(2) Partially Completed Thoughts

Partially completed sentences or thoughts may be offered for groups to complete.

G. **Sharpening Hearing and Vision:**

(1) Repeating in Unison

Where it is possible to have a group repeat certain key words or short sentences aloud, the oral expression serves doubly.

(a) It encourages mental alertness.

(b) It gives the ear training as well as the eye.

(The eye plus the ear are an almost unbeatable combination in the learning process.)

(2) Reconstructing Sound and Scene

To sharpen wits, as well as hearing and vision, the narrator may announce that for the next few seconds the screen will be black with only the sound track repeating the previous scene. Observers are requested to reproduce in their minds as much of the previous scene as possible.

The process may then be reversed. The scene may be rerun without the sound track. The observers are requested to reconstruct the sound.

Then the picture and sound may be rerun. This is an excellent way to emphasize a point or points. (If this technique is not built into the film, the operator may get the same result by rerunning the film.)

H. **Developing Reasoning:**

Films may and should be more than expository and informational. They should develop reasoning as well. Films offer excellent methods for solving problems of various types.

(1) The Detective Technique

Several situations may be laid before observers. Clues and leads are suggested. From these clues and leads the observers draw their conclusions. Discussion will bring out reasons and reveal knowledge of fundamentals.

(3) Suspense

The observers may be informed by the leader that at the conclusion of the picture one or more of the group will be called upon to summarize the important facts.

(4) Beating the "Experts"

Three or four of the group may be invited to preview the picture and then act as "experts" and sit in front: the job of the class is to beat the "experts."

(a) The "experts" may be chosen from the slower-moving members as an incentive.

(5) Repetition

At the outset of the picture, the narrator may state all the points to be made. After making a point, he may emphasize the one made and the others to be made. With each point made, this is repeated: summarizing and proceeding until a complete summary of points is made at the conclusion.

The repetition of the text and picture will give "eye plus ear" treatment, thereby getting double value.

D. **Checking Alertness of Observers:**

(1) Deliberate Misstatement

Deliberate misstatements may be made to check the alertness of the observers. Such misstatements should be corrected by the film, by the observers, or by the leader.

(a) The correction may be "acted out" before the group by one or more observers.

(b) The group may or may not be told about the mistakes in advance of the showing.

(2) Best Answer

Two or more statements may be made; each may be correct to a degree. The audience selects the **best** answer. Group discussion brings out reasons for selection.

(3) Wrong and Right

The wrong and the right ways of doing something may be presented. Observers must detect which is correct. The right way should always be shown **last** and at least **twice** as often as the wrong.

(a) Observers may or may not be told in advance of the showing that one is correct and the other incorrect. Alertness of observers may thus be measured.

(4) Association of Ideas

At the conclusion of a showing, words or scenes may be flashed on the screen. The observers may be called upon to mention what each word or scene suggests.

E. **Measuring Observer Reaction:**

Of great value are ways and means of encouraging observers to evaluate material as it is presented point by point.

(1) Self-scoring

Screen characters may present specific situations and reactions, to be rated as

C. **Observers are "Actors":**

In drama, one's interest depends upon how much of the play he "acts" himself. Unless he makes love to the heroine and spanks the villain, he does not enjoy the film to the maximum. Educational pictures do their greatest job when they provide ways and means for the audience to **PARTICIPATE** to participate other than merely emotionally.

IV. THE POWER OF MOTION PICTURES

A. **E-motion Pictures:**

No teaching tool ever offered can compete with the motion picture in generating emotions and molding attitudes. The motion picture has changed the styles and patterns of living and thinking as no other force has done in history.

Entertainment movies of today should not be called motion pictures—they should be called E-motion pictures, for that is what they are.

B. **Hollywood Formula:**

The Hollywood formula of entertainment pictures, the type in which the screen puts forth the efforts and the audience merely observes, is well known.

Boy Meets Girl:

Girl sparkles; catches Boy's **attention.**
Each shows **interest.**
They talk it over.
A perfect **understanding** develops.
Result:
Sweet romance,
Marriage,
Lifelong **retention** and **learning,**
or
"Here lies a beautiful friendship!"

Fundamentally, the Hollywood picture is emotion plus action.

C. **Educational Formula:**

The educational film—the film that actually **teaches**, has a formula. The film—the "prima donna" of all teaching tools, has her romance, too.

Eye Meets Film:

Film sparkles; catches Eye's **attention.**
Eye shows **interest.**
Eye asks questions.
Eye **does** something about it!
A perfect **understanding** develops.
Result:
Sweet educational romance with lifelong **retention** and **learning,**
or
"Here lies a beautiful educational friendship!"

Action on the screen is **not** the heart of instruction in film. Developing attitudes, concepts, acquiring information and developing habits are the tasks of the educational film.

D. **Pursuit Plane vs. Transport:**

The Hollywood production may be likened to a speedy pursuit plane, carrying only a couple of men. The educational film is a freight-transport plane, the action of which may be slower, but the carrying capacity considerably greater. Each gets there. The former is made for action; the latter, for conveyance.

E. **The Taleteller and the Teacher:**

Scheherazade, with a thousand nights in which to spin her Arabian yarns, the lusty Boccaccio, the remarkable Balzac, these, and other great raconteurs "fade out" on the silver screen. The genuis of Hollywood has reduced taletelling to a science.

The story, probably the first vehicle of instruction, is still one of its most powerful associates. **Although great teachers are artful storytellers, it does not follow that artful storytellers are teachers.**

The "Boy meets Girl" pattern may be satisfactory to the storyteller, but it is not sufficient for the educator.

F. **The Military Scientist and the Teacher:**

What is true of the storyteller is equally applicable to the soldier and the sailor. The expert in military and naval tactics is not necessarily a master instructor. Teaching is as truly a science as is the science of warfare.

G. **The Teacher and the Doer:**

The teacher should remember that his degrees, his semester of R. O. T. C., and his movies of Johnny, neither cloak him with the mantle of Napoleon nor the genius of De Mille.

The TEACHER is not always a DOER; the DOER is not always a TEACHER.

V. MOLDING ATTITUDES

A. **Emotions—A Major Factor:**

It has been well said that totalitarian philosophers have succeeded in regimenting the will of the masses by the astute use of emotions. Psychologists have generated mass emotion to a white heat and then have riveted those emotions to an idea or a concept.

There is little doubt that emotions are a major factor in the molding and directing of attitudes.

B. **Directing Emotions and Attitudes:**

Purposeful, intelligently planned and directed stirring of the emotions, can achieve inestimable results. The craftsman makes molds into which molten metal is poured. So may the film plus the individual's **participation** form the molds which largely shape his emotions and attitudes. The more the student **does** about the emotion stirred, the firmer the emotion is fixed and the attitude formed. Long after people cease to think or reason, they still "feel." The degree of "feeling" varies with the individual, but basically one's conduct depends

C. **Explaining Skills or Concepts:**

At the opening of the picture, the narrator may announce a specific number of points to be made. He may also enumerate them.

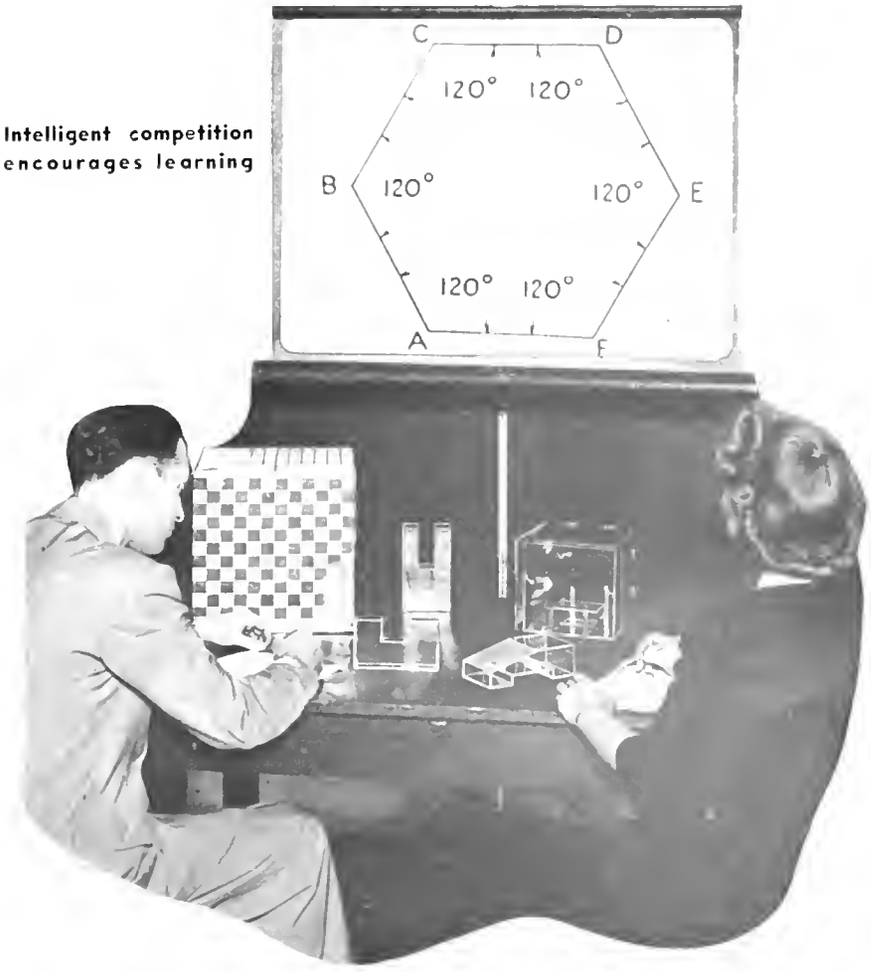
(1) Scoring

The narrator may suggest that each observer rate himself or be graded by another. For example, if there are five points in the film, a score of five correct is 100%; four is 80%, etc.

(2) Competition

Teams, individuals or groups may compete for percentages. Intelligent competition encourages learning.

Intelligent competition encourages learning



(4) A "Leader" for the Observer

It is quite possible, and in many cases highly desirable, to prepare a "leader" or preview for the observers. Such a preview could be a valuable aid to the instructor in calling to the attention of the group significant points and high lights to be especially considered.

B. **Discussion:**

(1) Contribution of Discussion to Participation

The best instructional film ever produced becomes a sharper tool in the hands of a competent discussion leader.

The significance of scientific, carefully planned and directed discussion can scarcely be overestimated. In fact, no substitute has ever been discovered. The origin of the word "discussion" is its best definition. It is a combination of words which mean to "shake apart." Shaking a subject apart and putting it together again are learning activities. If, as psychologists maintain, there is little impression without adequate expression, discussion readily assumes its place of importance.

What is this important contribution which discussion makes to the learning process? It clarifies concepts, it acts as a vehicle of expression, and it offers a gauge by which individual and group reactions may be measured.

Many leaders fall into the error of believing that concepts are clear to the group merely because of an **absence of questions,** or because the concepts are clear to the leader.

Those films that have welded discussion into the main structure of the subject matter assure a better teaching result.

(2) For the Discussion Leader

The ability to lead, control and stimulate intelligent discussion can be developed. Among many suggestions available, the following are offered:

The leader of an orchestra rarely fiddles or blows: the others carry the tune. The leader's job is to control the tempo and emphasis.

If students are "cool" to your proposition, don't get "hot." Heat makes ice run.

Groups, like the Department of Justice, dislike monopolies. Give the little fellow a chance.

Throughout the discussion, make certain that you and your students are on the same train of thought. Keep them on the main track; permit no switching.

The leading lady or leading man rarely "ad libs." Advance preparation is invaluable. Know your subject.

When students are broadcasting, give them a clear channel. Interference is offensive.

Listeners love to "turn off" their ears when leaders insist on lengthy one-way broadcasts.

After students make a point, extract the vitamins from it and restate the point immediately without artificial coloring.

Ask questions calmly and sincerely. You are not cross-examining your students in a movie court scene.

Conclude the discussion with a comprehensive, pointed, snappy summary. **Light,** not heat, is the purpose of the discussion.

upon how he reacts to an idea or a suggestion. A flare of indignation, a tear, a smile, a sigh, a burst of laughter can be allies of learning. Small or large groups may be influenced and their attitudes molded and directed by a skillful playing on the emotions—playing, not drumming.

C. **Intellectual Cement:**

For an intellectual cement that will mold and hold ideas, facts and attitudes far longer than ordinary ways, the following formula is offered:

Carefully stir one part of emotion into several parts of facts or concepts: apply under a competent leader with the aid and cooperation of **each** observer.

THE "TRY" ANGLE

OBSERVATION
Plus PARTICIPATION
Plus APPLICATION

Equals

LEARNING for "KEEPS"

VI. LAW OF LEARNING

A. **The Three-sided "Try"-angle:**

(1) Observation
(2) **Participation**
(3) Application

B. **Learning by Observing and by Doing:**

Students learn by OBSERVING: next, by DOING: then, by APPLYING learning to situations. It is with the observation section of this law that most movies in their present form deal. Producers are content to have their audiences OBSERVE others DO. Until the audience **participates** and applies as well as observes, only partial results are achieved.

No amount of OBSERVING others DO will ever teach one how to play the piano, how to swim, or how to speak a foreign language. **Participating** in the lesson and applying it are necessary. [illegible] Producers should stimulate OBSERVERS to DO something [illegible] during the picture lesson.

C. **Learning for "Keeps":**

There is a direct connection between our muscles—activity, physical, and mental—and our memories. Observation plus **Participation** plus Application equal Learning for "Keeps."

O + P + A = L

If any one of the factors, O, P or A, is omitted, the equation is not yet complete.

Educational movies and slide films which omit the factor, P (**Participation**), overlook a fundamental portion of the equation. Nonparticipating pictures are but illustrated LECTURES, which are rarely worthy of the title of instructional films. They are but exposition: in fact, they are workers not built

D. **Expert Proportioning:**

As the scientist in his laboratory carefully proportions his chemicals, so must the educator **expertly blend** Observation, Participation and Application if the maximum results are to be achieved.

THE HOW

VII. TECHNIQUES FOR DEVELOPING OBSERVER PARTICIPATION

PRELIMINARY to developing ways and means of securing observer participation in motion pictures, it should be noted that the great majority of people enjoy motion pictures and give ready attention; but the picture must hold that attention.

Sound principles of teaching must be **built into** instructional films if the utmost values are to be obtained from this greatest of all teaching tools. It is possible to construct films which meet the most exacting educational requirements. There are many techniques, ways, tricks and devices which can be skillfully used and applied with marked success. Good teachers use them every day in direct teaching.

The concepts or skills which the film aims to teach should not be **buried** in the film so that even the teacher has to use a spade to dig them out. An effective instructional film presents the concepts in such a manner that the audience readily recognizes the issues. It is a fallacy to assume that because a producer can crowd into a single film a given number of concepts the audience will be able to grasp each idea or suggestion.

The highway to learning has its traffic laws. Films, the subject matter of which moves too slowly because the film carries too much information or too many concepts, congest, clog, and distort. On the other hand, films, the subject matter of which moves too fast also violate fundamental educational laws and are judged equally guilty.

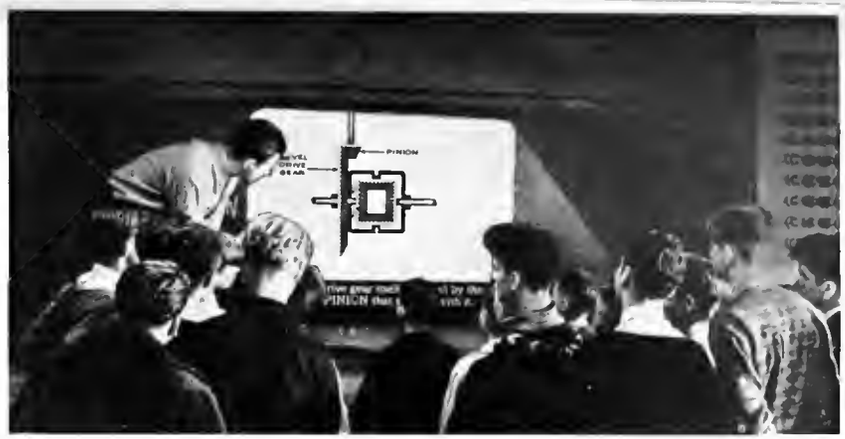
Hitting and running is not teaching!

A maximum of RETENTION must be the ultimate object of the training program of the armed forces. Therefore, producers of educational films should remember that RETENTION and SPEED are not necessarily brothers.

Better one picture of 50 feet, 103 feet, or 238½ feet clearly understood than 1000 feet, much of which is vague or moves too fast. Who said a film must be of standard reel length?

The degree to which the film itself contains master teaching techniques will determine the acceleration of its use by teachers.

It is good practice for the **screen** to do the instructional pick and shovel work which teachers would otherwise be obliged to undertake. Such pictures free the teacher to devote time to clearing up problems and concepts.



IAM HANDY ORGANIZATION

A. **The Preview:**

(1) No Substitute for **Personality**

The most perfect self-operating, self-adjusting and seemingly automatic machinery requires the human touch- that quality which nothing else can supply. Man has never been able to free himself from the need of mental and physical effort in the operation of his mechanical servants. Like the machine, the motion picture improves with the influence of personality.

Instructional films, however cleverly "tailored" to the fundamental principles of excellent teaching, are even more serviceable in the hands of well-prepared leaders.

(2) Pressed for Time

Teachers, whether in the armed forces or in private life, are pressed for time. Too many instructors do not, or cannot, find the necessary moments to preview the film or to read study guides in advance of the showing to the class. This lack of adequate preparation greatly discounts the effectiveness of the best picture. It therefore becomes necessary for the producers of instructional films to find ways and means to lay before the teacher in a condensed, handy "package," the contents of the picture.

(3) A "Leader" for the Leader

What better method could one find to bridge the gulf between the desired preview and the class showing than to incorporate such helps into the picture itself? It would be a comparatively simple matter to direct a message exclusively to the teacher. Such a foreword would be seen by the instructor in advance of the assembling of the class. The "preview" could outline the primary objectives of the film, the type of subject being presented, the major points to observe and a recommendation concerning the most effective treatment.

By this technique the use of films would be greatly accelerated and the results more acceptable.

WAR FILMS UNITED SOVIET RUSSIA

(Above:) scene from a recently-produced National Film Board (Canada) film subject shows a modern Soviet Military Academy.

by Gregory Irsky

During the war period, Soviet nematography has been able to organize its resources to meet the mands of the times. All documentary, scientific, and military ms which are produced by our udios, have one basic idea, one ain purpose—that is, to show not ly to the Soviet people themlves, but to the whole world, how e Soviet citizen is living and fightg; how the people, at short notice, ve reestablished their factories d plants in new localities; how ey have increased their tempo of oduction; and how they have crificed themselves in every way strike blow after blow at the oodthirsty Fascists. These picres are very valuable in acquaintg the Red Army and the Soviet ople with the modern technique hich is helping us to crush our mmon enemy.

Cameramen Risk Lives

Our documentary films and newsels, which are being released gularly, are especially outstandg in this respect—the directors d cameramen risk their very lives make these films under the fire battle, working side by side with e soldiers, to give the world the ue picture of the present war. hese films show the terror and rocities brought by the Hitlerite spots. These films show how the Soviet people are heroically and valiantly defending not only the liberty of their own country, but that of the entire world as well. Despite grave dangers and great difficulties our cameramen film the most vivid episodes in the heroic struggle of our Red Army against the Hitlerites. Flying with the bombers, they film serial bombings of enemy troops and parachute landings, while on the battlefield they film the actual operations of our tank units, infantry, cavalry and artillery. Behind the enemies' lines they find excellent subjects in the activities of our people's fearless avengers—the guerrillas—both men and women.

A few of our documentary films, as for instance "OUR RUSSIAN FRONT," "MOSCOW STRIKES BACK" and others have already been shown here in the U. S. Their reception by the American people and the American press has been excellent and very gratifying.

The subject matter of our documentary films is very diversified, portraying the intensity and the strenuousness of our people. Aside from the more recent military aspects of these films, the majority of them deal with our industrial achievements, and our scientific progress. They also reveal the intense research of our laboratories. They show the great experiments being conducted in our leading factories, and on our collective farms, where our peasants, using modern methods, have successfully surmounted many obstacles and are supplying the towns with their products.

Our Soviet people know only too well, how much success on the front lines is dependent on the home front.

More than a million feet of documentary film has been taken by our cameramen from the time the Hitlerite hordes suddenly attacked our country.

A Record For History

Years will pass, and these historical films will be a permanent record, forming a perfect tribute to our heroes. They will show our future generations how heroically and valiantly their forefathers fought for liberty, suffered profoundly, and died nobly to insure the future happiness of their children. These films will ever stand as an example of the great heroism of the millions of people in the present war, who have never faltered nor surrendered their right to liberty. These films will inspire our future youth also to hold high the banner of liberty and independence.

Let us consider now what we are doing along scientific and educational lines. Undoubtedly, you all know, very well, what great attention we give in our young country to the matter of educational films, since the law gives every youth the right to an education. We have a great many high schools. We have special technical schools where the people can listen to lectures by various specialists in order to improve the quality and increase the quantity of their production. We have many institutes, universities and colleges with students representing all the nationalities of the Soviet Union. All the peoples of our country start on an equal basis and enjoy equally the inherent right to study and pursue their respective studies.

Before the war, there were approximately 700,000 students enrolled in the country's 800 institutes. Among the 600,000 graduates of these institutes are to be found engineers, doctors, teachers, leading scientists, artists, architects, design engineers, famous Red Army commanders and leading experts in industries and transportation. In War time the Soviet institutes continue their work, revising their schedules and programs of study to meet the basic requirements and demands of the times. By increasing the number of study hours in the week and shortening the holiday periods without lower-

(PLEASE TURN TO PAGE 31)

NEW FILMS

♦ The vital role of the public schools in wartime has been interpreted in a top flight sound motion picture sponsored by the Illinois Educational Association. The film *Backing Up the Guns* also points out the danger of loss of trained teacher personnel because of industry competition and challenges citizens to do their part in keeping the schools operating at a high rate of efficiency during this critical wartime period.

Pronounced by Dr. S. D. Shankland, executive secretary of the American Association of School Administrators, as "one of the finest documentary films that has ever been produced in the field of education," this fifteen-minute picture was made by Chicago Film Studios.

Distribution throughout Illinois is being handled by the sponsor with two versions available: a 16mm. 15-minute sound-on film version for community meetings and a 35mm. 5-minute short subject for theatres.

The Commission for the Defense of Democracy Through Education recommended the film "without reservation" for exhibition to the general public and urged "that it be given the wide showing it fully deserves."

New Plant Safety Film

♦ *We're On The Spot*, produced with the cooperation of The National Committee for the Conservation of Man-power in War Industries, United States Department of Labor, Division of Labor Standards, Washington, D. C., ties in our war effort with the basic safety needs of every plant producing materials used by the Armed Forces.

This film is not designed as a "technical" training film for any specific industry, but rather is a "safety primer" for the use by safety and industrial relations directors in training new employees or persons unfamiliar with the fundamental A. B. C.'s of safety in all types of plants.

Right-Wrong procedure is visualized and discussed in important matters, such as the use and abuse of tools; oil and water hazards; machine guards; use of goggles; proper work clothes; personal cleanliness and first aid. The film also touches on employer and worker responsibility and foreman and worker relationship, and places strong emphasis on the high cost of lost man and woman hours.

The running time of all versions is just over ten minutes. This allows ample time for the person directing the meeting to make introductory remarks. The film can then be shown and followed by a general discussion of the hazards portrayed and the proper method of eliminating any unsound situations.

We're On The Spot is available in 16mm. sound or silent; 35mm. sound or silent; and 35mm. slide film with record. Write BUSINESS SCREEN for the address of a convenient purchase source.

BACKING UP THE GUNS in the nation's schools during wartime is the theme of a new Chicago Film-produced sound motion picture for the Illinois Educational Association—which is winning wide acclaim.

Borden's "Food for Freedom"

♦ *Food For Freedom*, a film depicting the importance of milk in the American wartime food program has been widely shown in recent months among the various units of The Borden Company in the United States and Canada.

The film was designed for exhibition to company employes. It contains a wartime mesage from Theodore G. Montague, Borden president, describing the part the company and its employes are playing in the war effort, and reviews the ways in which employes can further increase their contributions to the war cause.

The picture describes the company's employes as "workers in the great agricultural assembly line producing food for freedom". Milk and dairy products are shown as "white ammunition" destined for our allies throughout the world, and as vital to the war effort as shells, torpedoes and bombs.

The picture is being shown at mass meetings for employes and their families.

Pocker's Safety Slidefilms

♦ Employe education through the medium of the sound slidefilm has enabled many commercial and industrial organizations to increase efficiency, speed production and to lower plant costs and time lost brought about by avoidable accidents. Latest in the growing list of those who have successfully employed this medium is John Morrell and Company, packing firm.

Working Safely at Morrell's is the title of the company's latest production. Produced by Chicago Film Studios, the program dramatically points out common causes of accidents among meat plant employes, "emphasizing that most accidents can be prevented by attention on the part of the workers."

Clever use of supplementary animation in the form of a cartoon character "Axie Dent" personifies the causes of accidents. By following "Axie" alert workers can go a long way toward increasing their war effort contribution in reducing the heavy toll taken by needless accidents.

BUSINESS SCREEN IS READ BY OVER 700 LEADING U. S. OFFICIALS CONCERNED WITH VISUAL AIDS IN WARTIME

Army & Navy Air Films Released for School Use

U. S. Army Air Corps Motion Pictures

1-135 Aircraft Engines—Types Mechanisms and Oiling Systems
1-136 Aircraft Engines—Elements of Electricity as Applied to Ignition Systems
1-137 Aircraft Engines—Carburetion
1-174 Aircraft Hydraulic Systems—Part I—BC-1 Airplane
1-211 Airplane Structures—Part I—Structural Units—Materials and Loads for which designed
1-212 Airplane Structures—Part II—Wing Construction
1-213 Airplane Structures—Part IXX—Fuselage Construction
1-214 Airplane Structures—Part IV—Control Surfaces
1-215 Airplane Structures—Part V—Alighting Gear
1-312 Airplane Structures—Part VII—Static Testing
1-323 Airplane Structures—Part VI—Manufacturing Methods
1-366 Servicing the Aviation Spark Plug
1-246 Aircraft Propellers—Part I—Principles and Types
1-451 Aircraft Propellers—Part VII—Hamilton Hydromatic Propeller—Theory and operation
1-162 Airplane Hydraulic Brakes—Part I—Principles and Types
1-305 Airplane Hydraulic Brakes—Part II—Types Construction and Action

Weather and Navigation

1-133 Modern Weather—Theory and Structures of Storms—Part I—Primary Circulation
1-134 Modern Weather—Theory and Structures of Storms—Part II—Development and Characteristics of Atmospheric Waves
1-290 Celestial Navigation—Part I—Introduction and Location of Celestial Points
1-204 Celestial Navigation—Part II—Principles of Celestial Navigation—Position Finding on the Earth
1-245 Aerial Navigation—Part I—Maps and the Compass
1-327 Aerial Navigation—Part IV—Radio Aids
1-328 Aerial Navigation—Part V—Airways Flying

Radio

1-474 Airplane Radio Antennas—The Creation and Behavior of Radio Waves

Miscellaneous

1-160 Aerodynamics—Air Flow
1-161 Aerodynamics—Forces Acting on an Air Foil

How to Get These Films

★ The official statement concerning these pre-flight subjects states: "Through the courtesy of the U. S. War and Navy Departments, motion pictures and slidefilms that relate to pre-induction training, have been released to the U. S. Office of Education for distribution to schools cooperating in giving such courses. These visual aids are released by the U. S. Office of Education through Castle Films, Inc." See your local visual education dealer for details, available soon.

☆ In one of the war's most sweeping contributions to vocational training and visual education, the U. S. Army Air Corps and the U. S. Navy have officially released a complete list of thirty-eight motion pictures and more than twice that number of silent filmstrips for use by pre-induction flight classes in the nation's schools. The entire list was released this month by the United States Office of Education which is the correlating Federal agency making pre-induction training program arrangements for the schools giving these courses.

The pictures will be available for purchase by the schools at cost. They are being released by the Office of Education through Castle Films, Inc., who hold the contract for the distribution of U. S. Office of Education visual aids. In addition to Dr. John W. Studebaker, U. S. Commissioner of Education, officials in charge of these visual aids programs are Dr. C. F. Klinefelter, Assistant to the Commissioner and Floyde E. Brooker, Director of Visual Aids for War Training.

Films Are Authoritative

These programs, released through courtesy of the War and Navy departments, were produced through the official picture departments of the services. They are completely authoritative and a great many of the subjects, particularly those concerned with meteorology, navigation, and other principles underlying modern flight, will be worthy additions to audio-visual libraries for many years to come.

Costs are expected to be under $10 per reel for the motion pictures, depending on the exact footage of the selected subjects. Filmstrips will be obtainable at less than $1.00 per title. The complete filmstrip library, requiring only a 35mm projector of the SVE type, will require an investment approximating less than $100 for a complete pre-flight filmstrip series.

Other Pre-Induction Courses

Following the request of the armed services that schools prepare seventeen and eighteen year-old youths before induction, schools are setting up courses in other fields as well. The pre-induction program calls for preparation in the Fundamentals of Shopwork, Electricity, Radio, Machines and Auto Mechanics in addition to Aviation. Shop Work and Machine Operation courses are already supplemented by the excellent Office of Education motion pictures (See Issues 1, 2, 3, 4 and 5 of Vol. IV, Business Screen).

Electricity, Shopwork, Aviation and Auto-Mechanics courses are also aided by the complete kitsets of filmstrips produced by the Jam Handy Organization. (See Issues 1, 5; also page 11 of this issue). These are obtainable through local branches of the producer in New York, Washington, Detroit, Chicago and Los Angeles.

Other Motion Pictures

In the field of aviation, Erpi Films have produced noteworthy motion picture subjects including *The Airplane Changes the World Map* and several other outstanding educational films. Bray Pictures, New York, Walter O. Gutlohn and Eastman Classroom Films are other valuable sources. A complete list of additional outlets has been presented in Issue 5 of Business Screen Magazine.

U. S. Navy Training Motion Pictures

MN-40a-AH—The WAFT System o Aircraft Identification—Basi
MN-40b-AH—The 3-Point Systen Identification of Surface Vessels
MN-66-J—Doping Technique
MN-70-J—Useful Knots
MN-575-J—Forming a Tray Botton
MN-10e-AH—Identification of Ai and Surface Vessels—The WAF System of Aircraft Identificatio —Special Characteristics
MN-83a-BG—Celestial Navigation-The Earth
MN-83b-PG—Celestial Navigation-Charts
MN-73-J—Flashing Light Signals
MN-142-J—Drilling in Metal, Woo or Plastics
MN-83c-BC—Practical Astronomy
MN-201-a-P—Close Order Drill

U. S. Navy Training Film Strips

N-30-AD—The Care and Use of Hand Shears
N-41-J—The Recoil Operated Machine Gun
N-81-AC—Fire Room Safety Precautions
N-82-AC—Lighting Off, Securing and Cleaning Precautions
N-102a-J—Part I Fabric Tools
N-121-J—Cleaning the Airplane
N-151-J—De-Icer Servicing and Installation
N-166-J—Removing, Cleaning and Replacing Cowl
N-171-J—Exhaust and Intake Manifolds
N-184-J—Metal Finishing
N-191-J—Cowling Repairs
N-230-J—The Electric Cell
N-250-J—Layout Tools and Measurements
N-321-J—Men and Wings
N-405-AC—The Uniform Efficiency Rating System
N-802-J—Engine Instruments
N-803-J—The Airplane Engine
N-807-J—Forces in Flight
N-60a-J—Aircraft Nomenclature—Part I—Airplane
N-60b-J—Aircraft Nomenclature—Part II—Wings
N-60c-J—Aircraft Nomenclature—Part III—Fleats
N-60d-J—Aircraft Nomenclature—Part IV—Cockpits
N-108-J—History and Theory of Landing Gear
N-127-J—Care and Repair of Flight Controls
N-136-J—Rigging Changes After Flight Check
N-252-J—Handling the Airplane
N-253-J—Removing and Replacing Power Plant in F4F
N-289-AD—Construction of an Airfoil Template
N-291-AD—Making Curved Flanges
N-292-AD—Making a Round Metal Container
N-293-AD—Sand Bag Bumping
N-294-AD—Preserve the Original Strength
N-295-AD—Forming Outside and Inside Flanges
N-296-AD—Draw Bench Operations
N-297-AD—Repairing Channels and Stringers
N-298-AD—Flush and Blind Riveting
N-928a-SK—Emergency Equipment for Seaplanes—Part I
N-928b-SK—Emergency Equipment for Seaplanes—Part II—Life Rafts and Life Jackets
N-292-SK—Anchoring and Mooring Seaplanes
N-932-J—Splicing a Line
N-53-J—Line
N-111-J—Hydraulic Mechanisms
N-115-J—Servicing Hydraulic System
N-135a-J—Major Assemblies and Disassemblies
N-144-J—Cold Weather Starting
N-173a-J—Theory of Valve Operation—Part I
SN-173b-J—Theory of Valve Operation—Part II
SN-258-AD—Draw Bench Operations
SN-733-SM—Fire
SN-734-SM—The Use of Fire Extinguishers
SN-926-J—The Metalsmiths' Tool Kit
SN-952-J—The Story of Aircraft Propellers
SN-1035-AD—Simple Calculations for Flat Layouts
SN-1036a-AD—How to Develop an Intersection—Part I
SN-1036b-AD—How to Develop an Intersection—Part II
SN-1037-AD—Form Blocks and Forming

U. S. Army Air Corps Film Strips

1-8—Aerodynamics

MECHANICAL:
1-9—Aircraft Engine Repairs
1-10—Introduction to Airplane Structures
1-15—Principles of the Internal Combustion Engine
1-16—Structural Units of the Airplane
1-17—Aircraft Storage Batteries
1-22—Principles of Liquids & Gases
1-23—Introduction to Airplane Instruments
1-26—Tachometers & Synchronism Indicators
1-29—Airplane Flight Control Surfaces & Wing Flaps
1-34—Aircraft Engines—Carburetion
1-51—Thermometers
1-52—Pressure Gage
1-53—Generator & Regulator Systems: Principles
1-58—Fuel Level Gages
1-60—Aircraft Engine Pumps
1-64—Intake & Exhaust Systems
1-66—Aircraft Engine Troubles—General
1-72—Aircraft Engine Operation
1-82—Aircraft Engine Troubles—Starting

PARACHUTES:
1-46—Parachutes—Part II, Construction and Care of
1-46—Parachutes—Part III, Maintenance of Parachutes—Inspection
1-49—Parachutes—Part IV, Maintenance of Parachutes—Folding & Packing
1-83—Parachutes—Part VIII, Instructions for Using Parachutes

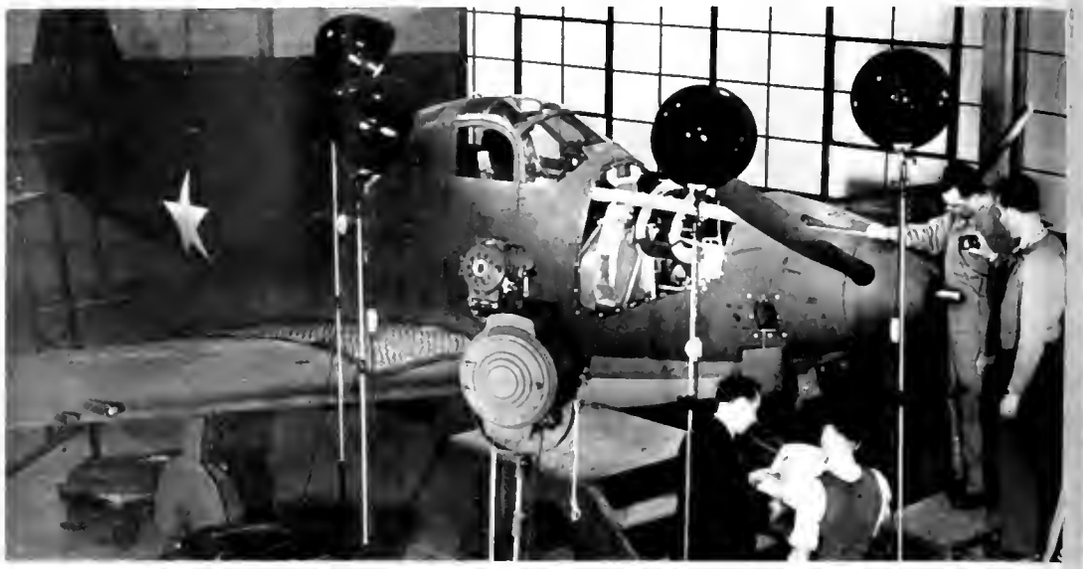
NAVIGATION:
1-67—Aerial Navigation: Dead Reckoning Problems—Part I, Radius of Action, Returning to Same Base
1-68—Aerial Navigation: Dead Reckoning Problems—Part II, Radius of Action, Returning to Alternate or Moving Base

IDENTIFICATION:
1-31—A Preliminary Study of the Identification of Aircraft
1-38—Points to Look for in the Identification of Aircraft
1-79—Identification of Aircraft—ME109F

MOTION PICTURES TO KEEP THEM FLYING

by Norman Mathews
Bell Aircraft Corp.

Service Training Films Produced by Bell Help Keep the Aircobras in Fighting Trim at the Front



LIGHTS! CAMERA! ACTION! One of the famed Bell Aircobras is trimmed down for a service operation scene to be filme for the instruction of aircraft maintenance crews on some fighting front or at an air training school here at hom

★ The present war seems to be largely one of numbers and it seems likely that victory will go along with the side having the greatest numbers of men, guns, tanks, ships, and planes. The story of aircraft production in this respect is well known: the unheard of number of planes asked for by the President some time back is in fact becoming a reality and it is said that the war of production is well on its way to being won.

But having planes in sufficient numbers is only a part of the battle. There is needed, as well, the men to fly them, and equally important, trained mechanics to keep the planes in service. This war cannot be won by planes on the ground, no matter how great their numbers. For every plane in the air, three to twelve men are needed on the ground for its maintenance. The modern airplane is a complex machine and to service it properly there must be trained personnel in sufficient numbers.

All Kinds of Training

Each branch of our armed forces was faced with the big job of training many men rapidly, not only in the maintenance of aircraft, but in every phase of modern warfare. A large share of this training job could be done by means of motion pictures. Although the United States Army was producing many training films dealing with aircraft maintenance, the Bell Aircraft Corporation believed that it, too, could help in this respect.

The Bell Aircraft Corporation is a relatively young company, but it has some rather firm beliefs; one of these is in the value of visual education. On the strength of this belief the Department of Visual Training was organized a short time ago, and as a part of this there was created in April of this year a Motion Picture Division, whose first job was to be the production of an extensive series of training films, dealing with specific service operations on the P-39. As the number of combat aircraft of all types increased, so did the need for training adequate personnel for maintenance. This company believed that motion pictures could do the job best in the shortest time and since its Service Department had been in the field close to the problems of maintaining this one particular type of aircraft, it was from their experience that material could be drawn for the production of these films.

To avoid possible duplication of effort, this work was to be coordinated with the Office of the Directorate of Individual Training of the Army Air Forces in Washington. The Bell Service Department drew up a list of some sixty-six subjects for which it felt instructional material was needed. The Army Air Force also submitted brief outlines for a series of subjects recommended for film treatment, and the two lists were nearly identical.

Service Dept. Sets Needs

The production of these films was to be closely coordinated with the Service Department. They had first hand information as to which subjects were needed most urgently and they were asked to draw up, in order of their importance, outlines of procedure for each operation. On the basis of these outlines, working scenarios were prepared by writers in the Motion Picture Division and upon completion, the scenarios were submitted to the Service Department and to the Office of the Directorate of Individual Training. Upon being approved, they were put into production.

The Motion Picture Division necessarily started out rather small and with a large job to do. Although the original agenda of sixty-six subjects had been consolidated into forty-five actual films, it was still a big job and time was an important factor. With the limited staff, it was not possible to highly departmentalize the work of motion picture production and it was necessary that each man be able to "double in brass." Thus, the sound man is also a cameraman, the cameraman cuts, and the directors write, cut and even bloop effects tracks. The films were to be produced in 16 mm. on black and white reversal type film, with a dupe negative for release printing. All phases of production, with the exception of laboratory work, were to be done in the department.

Since only one airplane could be made available for demonstration purposes, and since only one small corner of the plant could be set aside for the motion picture studio, a scheme was worked out to keep production constantly moving. The staff was arranged in alternating crews. During a period when one crew was shooting a picture, the other crews were either cutting a picture they had shot previously, or writing scripts for subsequent films they would put into production. Thus, all phases of production on a series of films were kept in constant motion. A crew consists of director, a cameraman and an ele trician. When not shooting, t director prepares scripts he w later shoot. He supervises cutti and usually writes the recordi script. In this way, he is able follow a picture through the va ous stages of production from t first script to the final release, a it has been found to be a very sat factory working arrangement bo from the standpoint of the in vidual and of the production p gram as a whole.

Scenario Details Operation

The scripts prepared are n strictly shooting scripts, for w the intricacies of some of the ope tions, it is found that too much ti would be required to prepare accurate shot-by-shot script in ter of picture continuity. Rather, scenario is an accurate account the operation in terms of key sho The actual picture continuity worked out on the spot by director. The cutting is done strict in terms of picture continuity a the recording script is then writt to the picture. When prepared recording, the Service Departm is called in to see the picture a hear the script for any possible c rection before recording, then agn after recording, the first relea print is screened by them for fi O. K. before release. It was fou in many instances that service ope tions could be done in quite a nu ber of ways and for these filmi

he job of the Motion Picture ion to find the method best l for instruction but at the time acceptable to both the ce Department and the Army Forces. This was not always hut in the final analysis it was n the effort, since the films to have something of a solidi- effect upon these procedures.

OUND HAS TEACHING VALUE

was found in some instances sound could have a high in- tional value in these films. For nple, there is only one way to e when an adjustment on the ing gear clutch selector rod is ect; that is by the sound made wo gears as they ride over one her when the electric motor is nentarily switched on.

nother factor about which there been considerable concern in Motion Picture Division is the ber amount of intricate detail to w in these films. These pictures largely a matter of nuts and s. At the outset the Service De- tment advised that the more de- ed the pictures were, the better, e they were to instruct men se background were quite varied very often bore little relation he job of maintaining aircraft. s advice was followed, but after ime the members of the Motion ture Division, themselves, be- ne a little weary with seeing ge close-ups of cotter keys, safety ing, split-end pins and camloc eners. Aside from the pros and s of too much detail, little was ially known as to how well the is already released were doing r job. It was decided that some d of an evaluation was in order. A questionnaire was drawn up l sent out to service representa- s who were using these films to ruct personnel at operational es. Although the results of this stionnaire could not be con- sered conclusive, they were e indication, and a number of stions in the minds of the Motion ture Division were answered, at st in part. It was found that the hes about the amount of detail e wrong, according to the re- s of the questionnaire: there s not too much detail. A number other interesting things were rned as well; at least two show- gs of each film were recom- ded; the films were considered carry as much as three-fourths of instruction required for a given ration; and the boys did not fall eep while viewing the pictures. t of this there was some doubt. ce a number of suggestions were de that more shots be included guns firing and planes in flight. Judging also from the results of the questionnaire, the pace of the films was about right and the commentary was not too verbose. All in all, the films seemed to be doing a good job and invariably in the space on the questionnaire reserved for "remarks" there were requests for more films as quickly as possible.

The distribution of these films is effected in two ways. The Bell Service Department has a number of service districts covering the various war areas, and the head of each district is equipped with a small sound projector and a complete set of these films. It is his job to see that the films do the most possible good in his district. For those areas which the Service Department does not manage to reach, the Army Air Forces can make up for distribution as many prints as is required from the dupe negative with which they are furnished. At the outset some fifty or more prints were being made by the Army of each of these films, and by now that number may have increased. The films are now being designated as official Army training films.

AIR FORCES RECOMMEND SUBJECTS

The Army Air Forces often submit recommendations for the production of subjects which would be of value to their training program. Among these is a film on Pilot Indoctrination dealing with the check-out procedure for pilots on the P-39. This film, recently completed, has been released and it is planned to be used in conjunction with the Air Force's recently organized campaign designed to reduce the number of accidents. They feel that more accidents could be avoided, were there more information available regarding the operation and performance of the various types of aircraft.

This film is intended for the advanced pilot and its purpose is to point out the characteristics and features of our plane in so far as it differs from others he has flown. In production now is another film requested by the Army Air Forces dealing with daily inspection of the P-39.

In addition to the Service Training Films it is felt that there is a great deal which instructional films can accomplish in other directions. It is planned in the near future that the work of the Motion Picture Division will be expanded to include industrial training, for which

Editor's Note: This interesting article by Mr. Matheus was recently read at the annual meeting of the Society of Motion Picture Engineers in New York City.

MEETING A VITAL WARTIME PROBLEM

by Malcolm T. MacEachern, M. D., Associate Director

The American College of Surgeons, Chicago

★ IN PLANNING AN ATTACK on war problems, a medium of informing and winning the co-operation of the public that should always be considered is the motion picture. As an example, one of the most critical shortages that faces the people of the United States today is that of nursing service. In endeavoring to help to relieve this shortage by increasing nursing school enrollments, the American College of Surgeons decided a short time ago to produce a film. Through this means, it was felt, the largest number of young women would be reached who might be interested in a career in nursing. With 32,000 nurses expected to be serving with the armed forces by the end of 1942, and 62,000 by the end of 1943, it is imperative that more student nurses be available to prepare to fill the gaps in nursing service in our civilian hospitals, public health departments, schools, clinics, and home duty.

EDUCATIONAL OR EMOTIONAL?

After the decision to use the screen was reached, the question arose as to what type of picture should be made. Should it be a teaching film, depicting nursing procedures in detail? Should it be an appeal to ambition, showing nurses who have won conspicuous notice through exceptional devotion to duty? Or should it sympathetically approach the problem of the young woman graduating from high school or college who is about to make up her mind on a choice of careers, and give her true glimpses of what the student nurse studies and does, and suggest to her the satisfactions of a career in nursing?

The new two-reel sound film, *R.N. Serving All Mankind*, is the result of agreement to take the latter course. It follows two girls of contrasting types, Merrily who lives up to her name and Joan who takes life quite seriously, through the absorbing process of choosing a career; deciding upon nursing; entering nursing school; studying, working, and enjoying the associations and experiences in the school and hospital; and, finally, graduating, happy in the assurance that before them lies adventure in interesting, varied, and greatly appreciated service. The story is simple, depending for highlights upon those colorful events in the life of the student nurse, the capping ceremony when she ceases to be a probationer, and the graduation exercises, when she thrills to the prospects before her of playing an important role in the dramatic warfare against disease, pain, and death.

REACHING THE AUDIENCE

In a production of this kind, effectiveness hinges in large measure upon details of behavior that strike a responsive chord in the onlooker's heart a knowing look, a wink. Merrily preening herself before the mirror when she gets her new cap, Joan listening wide-eyed to the graduation speaker—human touches that give a sense of reality and heighten the persuasive power.

The principals, Marilou Neumayer as Joan and Ninette Klowden as Merrily, were carefully selected from a large group of professionals for their likenesses to typical student nurses. Kay Campbell is the nurse narrator, and Jack Brickhouse of WGN is the graduation speaker. Personnel of the institutions in which scenes were taken comprise in large part the supporting cast.

R.N. was produced by Burton Holmes Films, Inc., under my general supervision with the assistance of Eleanor K. Grimm, and with Tom Gordon directing. The production was made possible by a grant from the Becton Dickinson Foundation for the Extension of Scientific Knowledge which was represented by Mervin W. La Rue as motion picture consultant.

Co-operation by many different groups is essential in producing a good film of the *R.N.* type. The nurses', the physicians', and the hospital administrators' viewpoint were sought, to insure correct procedures and to convey the right impressions. Edna S. Newman, director of the Cook County School of Nursing, and Sister M. Theresa, director of nursing education, Mercy Hospital School of Nursing of St. Xavier College, and members of their faculties, were advisers from the nursing standpoint. Most of the nursing school scenes were taken in the former institution. The campus scene is that of St. Xavier College. Most of the hospital scenes were photographed at Wesley Memorial Hospital, Chicago, with Edgar Blake, superintendent, and his staff advising and helping with the arrangements. Wesley and other hospitals and a number of hospital furnishing and supply organizations contributed equipment and accessories needed in the film. The setting for the graduation exercises is the Murphy Memorial Auditorium of the American College of Surgeons' headquarters office in Chicago.

STUDIO PROBLEM SOLVED

A wartime difficulty that arose in producing the film was shortage of studio facilities due to pressing picture work for various branches of government service, mainly. In the emergency the Chicago Civic Opera Company made available, through arrangement by Burton Holmes Films, the largest acoustically correct stage and studio in the Midd

LEFT, (Top to Bottom) Scenes depict chronological events in the career of the student nurse from "R.N." the Burton Holmes-produced film for the American College of Surgeons, national sponsor

Graduation Day — climaxing months of intensive study for the student nurs

West—the 95 foot high stage of the Civic Opera House. There all the sound work was done and certain of the scenes were set up and taken, with the closest co-operation by the opera company management and staff.

NOW BEING DISTRIBUTED

By the time this article is published, *R.N. —Serving All Mankind* will be ready for showing in motion picture theaters, schools, clubs, hospitals, and other interested institutions. Distribution to organizations other than theaters will be through Burton Holmes Films and Bell and Howell Company. Arrangements have not yet been completed for distribution for theatrical showings. The charges will be nominal, covering transportation and servicing, the fee for the latter being fixed at $1.75.

Another film in the "Serving All Mankind" series, completed a few months before *R.N.*, is *White Battalions*. This picture also has high entertainment value along with its informative and morale building purposes. The aim is to promote appreciation of the fact that one of the great community resources in time of sickness, accident, or disaster is the modern hospital—an institution to which few give thought when there is peace on the health front, but which is a fortress of defense anxiously sought when disease strikes or autos crash.

There is great need in these critical days for films such as these, films that have power to direct people into essential work and to reassure them concerning provisions for their health, safety and welfare. Engaged in vital work, and feeling reasonably secure of life and health protection, the people on our home front will contribute their utmost to winning the war.

FOREIGN TRADE

(CONTINUED FROM PAGE 1)

the feelings of foreign customers we must be more studiously attentative to the habits and *customs* of our customers.

Here, then, are five great potentials for visual education in foreign trade:

First, films to help remove language barriers;

Second, films to provide the coming generation of American business men with a more practical and more thorough understanding of the geography of foreign trade;

Third, films to create among the coming generation of customers in foreign lands a better understanding and appreciation of the United States;

Fourth, films to train prospective salesmen for service overseas;

Fifth, films to demonstrate American products to foreign customers —and, of course, products brought in from abroad to customers at home.

Assuming that these objectives are worth striving for, it would seem worth while to devote a portion of our time this evening to an exploration of ways and means.

If we keep our sights high *and keep driving toward our goal*, we may one day be astonished to see what a long, long way we have traveled —and how greatly we have been assisted in our journey through the use of visual aids.

HONORED GUESTS AT THE NATIONAL FOREIGN TRADE CONVENTION held in Boston recently and in attendance at the Education Group Session included (from left to right) F. Burnham MacLeary, Caravel Films, Inc., New York; Dr. Ivor A. Richards, Director, Commission on English Language Studies, Harvard University; James S. Carson, Vice-President, American & Foreign Power Company, New York; and Elliott S. Hanson, Administrator, Inter-American Training Administration, Office of the Coordinator of Inter-American Affairs.

12 INDUSTRIAL TRAINING PROGRAMS

Number Four of the Industrial Index series; sources of all films listed below (and many others) are available t training classes, etc., in a low-cost card file set; write for details and sources on your school or company letterhead

Airplane Riveting

16mm. Silent About 22 minutes.

Source: Sponsored by leading educational distributors.

Scope: The film shows the various air hammers and bucking bars used in riveting and explains the function of riveting and the necessity of teamwork and long practice. The primary three riveting projects are shown: roundhead riveting, flush riveting, and riveting of small rivets.

Beating Time

16mm. Sound About 9 minutes.

Source: Commercially sponsored production.

Scope: This film portrays symbolically this company's role in producing the things our country needs. We see the hero, the American worker, taking over the tireless lathe from his fellow workman who has guided it all night. We see the quickened routine, the increased pressure of this job of production; and behind it all, we are able to perceive the result –in armaments.

Behind the Scenes in the Machine Age

16mm. Silent—3 Reels.

Source: Educational distributor.

Scope: A production of the Women's Bureau of the U. S. Dept. of Labor. The part that women play in modern industry; human waste in industry; convenience for workers; safety first; types of labor-saving machines.

Catalysis

1 Reel, 16mm. Sound.

Source: Educational distributor.

Scope: Presents several factors which may be responsible for catalytic actions, including concentration by absorption, intermediate compound formation, chain reactions, breakng of reaction chains, poisoning of catalysts, and negative catalysts.

Dangerous Dusts

1 Reel, 16mm. Sound.

Source: Government Bureau.

Scope: Shows the results of dust explosions and statistics regarding magnitude of them; experimental dust chambers; explanation of mechanisms; pictures of experimental explosions; necessity for cleanliness; dust collecting systems which provide protection.

Heat and Its Control

16mm. Sound—1600 Feet.

Source: Educational distributor.

Scope: Shows how heat can be used to do work if it is controlled properly. The uses of various types of insulation material, especially asbestos, are described.

Lenses

16mm. Silent—400 Feet.

Source: Educational distributor.

Scope: Emphasizes those phases of lens refraction admirably shown by animation: action of converging lens, real and virtual images, changes of magnification; effect of a diverging lens and formation of a virtual image; construction and explanation of achromatic lenses.

Orthographic Projection

16mm. Silent—2 Reels.

Source: Educational distributor.

Scope: A demonstration, with models, of the proper methods for representing objects on paper with the three orthographic views. Shows how to transfer dimensions, and use the instruments.

Punch Press Safety With Increased Production

16mm. Silent—1 Reel.

Source: Commercially sponsored production.

Scope: This film shows the operation of the automatic and semi-automatic feeds and power press guards in use.

Study of Planing Operations

16mm. Silent—1 Reel.

Source: Commercially sponsored production.

Scope: A high speed, highly magnified film showing a planer in slow motion. Using steel, cast iron and brass as the work material, the effect of high and low speeds and of cutting fluids are shown. Arbor deflection with relation to various materials is also shown.

Study of Punch Press Operation

16mm. Silent—1 Reel.

Source: Commercially sponsored production.

Scope: High speed, highly magnified study of a punch press slotting various materials of various thicknesses at different speeds. Frame and punch deflections are shown by distortion of two parallel steel scales mounted on the frame.

Opinion: Should be shown with either the milling machine or planing pictures, in classes of shop practice.

Women in Defense

16mm. Sound—1 Reel.

Source Government Bureau: War information film.

Scope: A topical exposition of the various roles women are assuming in the war effort; women of science, women in industry, and women in the voluntary services.

Note—Because of the limited number of individual prints available on the more technical films reviewed in these pages, industrial organizations making these useful training aids available to other plants and vocational schools, etc., have requested that only those engaged in actual war production or in training activities for the same purpose request this particular type of subject; other films, such as *Beating Time*, *Women in Defense*, an Office of War Information short, and similar general topics are not so restricted. Restricted subjects are easily identifiable by their technical nature. This will also explain why we do not divulge sources in these pages and why such source material is given only to Industrial Index special service subscribers such as training directors, instructors, etc.

RUSSIA'S FILMS

(CONTINUED FROM PAGE 23)

ing our standards of education, we have been successful in accelerating the graduation of students with such favorable results that in the year 1941-42, the institutes gave the country 170,000 trained specialists, which is almost double the number normally turned out. The institutes and colleges which have been evacuated and removed to safer localities from the territories temporarily occupied by the enemy, continue to function normally. Upon arrival in the new towns, professors and students rapidly establish their laboratories and classrooms and begin working. Odessa and Kharkov's universities are functioning very well in their new homes and the Kiev industrial institute now in Tashkent has already graduated 200 engineers. The above resume shows us that the war has not stopped nor even hindered the progress of the educational and scientific life of our country. Therefore, the role of scientific cinematography remains on a very high level as a vitally important factor in the training of our personnel.

During the years 1940-1942, as many as 150 scientific and educational films containing 1,559 reels and 1,500,000 feet were made. These films cover various subjects, such as: geography, history, technology, agriculture and military tactics. In other words, the topics or the subject matter of the films are closely inter-related with those studied in the programs of our schools and colleges.

The Peoples Commissariat of Education has a cinema department which has approximately 20,000—16 mm. projectors which are furnished for lectures to the high schools upon request. Many of our technical and educational films are so effective that they enable us to teach our people without the actual presence of a teacher. Under the direction of Academician Chondakov, a cinema film entitled *The Automobile*, containing 90 reels was produced. With the assistance of this film, several hundred thousand drivers of cars, trucks, tractors, tanks and motorcycles received instructions in the correct methods of driving.

If some collective farm needs skilled drivers for tractors, this film is sent and the group of prospective drivers study the principles of the motor and other parts of the tractors and receive the consultations of an adviser. After reviewing the film they have actual practice in driving. Then they are qualified to drive.

When Moscow's famous turner Goudov invented a new method of increasing the tempo of production, we made a special film showing this method. This gave us the opportunity of utilizing Goudov's method in many factories throughout our country. Several pictures were made of the great work of our Academician Tsisin in growing a new kind of grain for Siberia. This film helped us to explain simply to our collective farmers this excellent experiment and as a result in many barren lands, where farmers had never grown any wheat before, there appeared a harvest of wheat.

Pictures were also made for the medical profession, for students, medical institutes, and scientists.

In the Institute for Medical Research and Experimentation, there was conducted a great experiment in the revitalization of organisms. In order to familiarize our medical circles with this great experiment, we made a film under the title of *Experience in Revitalizing* (by Director Iashin). This film shows how the separate parts of an organism — the heart for instance — after having been taken out and put in a

(PLEASE TURN TO PAGE 35)

Below: Scene from the inspiring Russian war film "Moscow Strikes Back."

To Mobilize the Home Front

ONLY ESSENTIAL WAR PURPOSES SERVED AS SCREEN ADS CONVERT FOR DURATION

by Stoff Correspondent

Preface: Immediately upon issue of WPB Order No. L-175, controlling the use of raw film stock the responsible film companies engaged in production and distribution of advertising shorts, theatrically released, announced their desire to cooperate under the new restrictions for Victory. But unlike other elements in commercial motion pictures, the one-minute theatrical short isn't long enough for production training messages, tool maintenance explanations, etc.

★ Today roughly three months after the issuance of Limitation Order L-175, the early doubts and confusion have vanished, replaced by a wide War Effort program in cooperation with a number of advertisers. Already many campaigns have hit the screen, still others are in the planning stage. The large majority are new adaptations of the medium to meet both new marketing conditions and also film restrictions. For example:

Conservation a Major Theme

The Office of War Information has just released a three-minute short on fuel conservation. This message will reach millions of people, importantly, via theater screens. This opens the door to the use of sponsored minute movies. The conservation story could be followed up, not with one message, but week after week, driving home the story six, eight, ten times or more. Variations on this story are adaptable to fuel advertisers, makers of insulation and home repair products, etc. Such a follow-through has already reached the planning stage in more than one office.

Or, take an actual minute movie conservation example. One of the big manufacturers of consumer dyes has been and is now running a series of color minute movies which stress the importance of buying fewer new clothes yet show how to keep up appearance and morale by putting a new face on last year's purchases through the expenditure of just a few cents worth of dye. This series already has impressed that story on more than eight million actual reader-hearers. A trail-blazing idea perhaps for other companies whose products, in themselves, further consumer standards within the economic necessities of war.

Other Examples

Even before film was designated as critical material, some advertisers recognizing the institutional possibilities were exploring new methods of utilization. One advertiser, pre-eminent in his field, built a series of minute movies with war locales, dramatizing the efforts of American women in the factories, in civilian defense, in bond sales, and as voluntary workers in hospitals. A prominent utility company is using minute movies as a means of instruction about one phase of its service—such films come under the heading of vital community information.

Film Companies Show Initiative

Nor has this activity been solely confined to manufacturer initiative. More than a year ago, some of the film companies connected with the distribution of minute movies prepared great numbers of war effort playlets—i.e. drive for "War Bond Sales," "save the fats" campaigns, etc. Financial institutions and others have sponsored these films to theater audiences realizing the value of the efforts plus their attendant name remembrance value and advertising good will. Recent figures show that such playlets represented 25% to 33-1/3% of the entire production and distribution program of these companies and since then, this figure is definitely on the increase.

Nutrition Also Important

In discussing the various problems with some of the short length industry officials, it seems to this writer that one of the big fields which should welcome minute movies is the makers and processors of food products. To me this breaks down naturally into two classifications:

1. Firms whose products have a health and nutrition story important to the well being of the Home Front. The dramatizations of better eating habits, careful buying, war time budget menus, are all in line with the publicity needs and wishes of our government.
2. New product education. Those makers of a long string of war foods such as meat extenders, protein substitutes, dairy replacements, etc., have newsworthy stories to demonstrate and describe . . . stories which are in harmony with current film restrictions.

There are many other fields as well, too many to enumerate individually any product or service which has a war effort record to dramatize to former and future customers . . . any product whose use will lessen needless consumer buying . . . such firms may look to minute movies today, and find a coast-to-coast war conscious audience of more than 11,000,000 people. Such an audience, with eyes and ears fastened to the theater screens, is a guarantee in itself that within the critical film limitations minute movies can ably shoulder their part of advertising's war duties.

Protection Against Gas Warfare—New 35mm Filmslide

♦ Protection Against Gas Warfare. A 35mm filmslide for science teachers, doctors and defense groups who have been assigned the difficult task of educating the public regarding the practical aspects of protection against chemical warfare. The work consists of 30 frames entirely self explanatory. The first 10 are especially for the layman and are intended to correct some of the popular misconceptions of gas warfare. This is followed by 16 charts of the more common war gases, their properties, effects and first aid measures. The last part deals with gas mask drill, protective clothing and gas shelter. (Post Paid $3.00) Address Visual Sciences, Suffern, New York.

Lieut. Hedwig to Tampa

♦ Lieut. Gordon W. Hedwig, President of Nu-Art Films, Inc., N.Y.C., is ending his furlough here in New York on Thanksgiving Day, and is then leaving for Tampa, Florida, where he is stationed with the Air Corps.

RUSSIA'S FILMS

(CONTINUED FROM PAGE 34)

special receptacle, continued to function for a certain period.

A very good reception was given to that film, directed by Mr. Zgurydi, which was taken on the sea bottom. In this film the director and cameraman, very completely and entertainingly show the colorful life at the bottom of the sea. For the filming of this picture, Soviet engineers designed a special camera and cabin in which the cameraman dived to the bottom of the sea.

Very complicated work in the field of filming scientific biological films was made under the direction of Professor Lebedev, who also designed special equipment for taking pictures of microbes.

In producing scientific and educational films, we have always paid particular attention to the military aspect.

The training and instructional films have not only helped our fighters to familiarize themselves with tactics and the principles of the operation of military equipment, but also with the methods of proper upkeep and servicing.

Naturally, the war has required more consideration of the filming of military pictures, and in order to meet the demand during recent years, our studios have had to make many military films which are successfully utilized in our military schools, and camps on the battle fronts. In illustration, I will mention a few such pictures:

Hand to Hand Fighting—In this film are shown the methods of hand to hand fighting under various conditions.

The Training of Ski Troops—This film helps the Red Army fighters to study quickly the technique of using skis in combat, in reconnaissance and marching.

Defense in Tank Warfare—In this film the director and cameraman very successfully show existing methods of defense against the onslaught of tanks under various conditions in open fields, forests, and so on.

Marksmanship—This film is intended to teach the soldiers and civilians the minute details of good marksmanship so that they will at all times be ready to defend their native land from the enemy.

Camouflage in Winter—This film was made on the basis of much experience gained when our Red Army fought the Hitlerite invaders in the winter time and is a very good subject for training new fighters.

Mine Control—This film emphasizes the caution which must be exercised in regard to the mines planted by our enemies and the modern methods of mine sweeping.

Training of Parachute Troops—This film shows the jump of the parachutist under various conditions, and illustrates methods of training parachute troops.

The Anti-Tank Rifle—Shows the principle and the actual action of the anti-tank riffle designed by Soviet inventors. This particular rifle has had exceptional success in the struggle against Nazi tanks, and the film makes possible the training of masses of our fighters.

The great experience gained in producing documentary and scientific films will enable us to utilize our resources to the utmost advantage in the future for the purposes of reconstruction.

HANDS ACROSS THE SEA: Reminescent of their meeting not so many months past, these honored representatives of Fighting China were greeted by W. C. DeVry, President of the DeVry Corporation. Now representing Chungking here are T. Y. Fung, Associate Delegate of the Political Department, Military Affairs Commission, Chinese National Government, (extreme left) and (extreme right) T. Y. Lo, Chief Delegate, Military Affairs Commission, Chinese National Government who recently addressed the S.M.P.E. in New York City. W. C. DeVry is in the foreground, second from the left and next to him, in the immediate background, is E. B. DeVry, Secretary-Treasurer of the DeVry Corporation.

ARMY-NAVY "E" TO BELL AND HOWELL

★ Presentation of the Army-Navy "E" award to the Bell & Howell Company recently added further laurels to war service acknowledgments officially given concerns in this industry. The ceremony was held at the Company's new Lincolnwood plant.

ABOVE: MR. J. H. McNabb, President and Treasurer of Bell & Howell accepts the "E" flag on behalf of his fellow workers. Other events on the program included the presentation of Treasury's "Minute Man" flag for employee bond purchases. Mr. John G. Gallaher of the Treasury made the presentation. The Great Lakes Naval band and an official Navy color guard also participated in the ceremonies. The entire program was filmed and is available in 16mm sound through the Filmosound Library.

(LEFT) REAR ADMIRAL C. H. Woodward addresses assembled employees and guests in the official ceremony during which he awarded the "E" flag. (Below) Major L. J. Brunton of the Army's Ordnance Department presents lapel "E" insignia to be worn by all employees to Roy Richardson, president of the Pioneer Club, who accepted on behalf of the workers.

(ABOVE) LEFT TO RIGHT: DISPLAY COVETED "E" FLAG. Mr. Richardson, Admiral Woodward, Mr. McNabb and Major Brunton display the "E" flag to the assembled throng of more than 5,000 employes and guests of the Company who were present on the occasion.

U. S. WAR FILMS

CONTINUED FROM PAGE 1

women of Britain. Both scenes and sounds are of the people, the people who are our Allies. *Listen to Britain* will give Americans a new respect for Britain's fight against the Nazis, a deeper appreciation of the men and women who are carrying on that fight. The film can be shown to practically any group of adults or older students, but because of its unique approach will probably not appeal to children.

U. S. NEWS REVIEW
Issue No. 1

SYNOPSIS: The first of a series of monthly news reviews, this issue covers seven subjects:

1. *Women at War.* Women working at the Army proving grounds at Aberdeen, Maryland, firing guns, driving tanks, recording test performances.
2. *War Rules for Fuel Saving.* What to do to save fuel needed so urgently in wartime.
3. *New Flag Made for the President.* From the blueprints of President Wilson's wartime flag, making a new flag for President Roosevelt.
4. *Malta Fights On.* The courageous men and women of Malta and the British sailors who man the convoys supplying the island.
5. *Keep the Coal Coming.* Campaign of soldiers, operators, and at Mt. Carmel, Pennsylvania, to increase coal production.
6. *War in the Pacific.* Significance of the Pacific battleground, from Midway to Australia.
7. *Wartime Harvest.* Bumper crops this year and their wartime significance.

LENGTH: 775 *feet*, 16*mm*. RUNNING TIME: 21 *minutes*.

SUGGESTED USES—This film is the first issue of a series, U. S. NEWS REVIEW, designed to present important subjects dealing with the war at home and abroad. This series is intended as a *motion-picture magazine* rather than a *news-reel*; the subjects should be timely for three to six months, perhaps longer. Potential users of U. S. NEWS REVIEW are as broad as non-theatrical audiences—children and adults, men and women, labor and management, urban and rural—in short, the American people.

How to Obtain These Films

♦ Nearly two hundred local depositories, including school and commercial film libraries and other distributors, now have available prints of the U. S. War Films described in these pages. See your film library for information concerning the latest releases or write BUSINESS SCREEN for the name of the distributor nearest you.

Lack of projection equipment is no problem. Local distributors can arrange for this service.

PROJECTOR CARE IS A PATRIOTIC DUTY

r PROPER CARE AND MAINTENANCE of your 6mm sound projector is now a matter of atriotic obligation. Your projector has un-oubtedly already gone to war, either in the nowing of vital war informational films, voca-onal training subjects or one of the other war-me programs. Because every projector has an nportant part to play in America's all-out drive Victory, school and industrial owners should

★

Precision testing and adjustment of Ampro projectors—typical care given to maintain these machines for active service.

e that every available unit is ready for service. In the midwestern plants where 16mm sound ojectors are being produced on a 'round the ock schedule for use by our armed forces, ecial facilities are maintained for inspection, pair and prompt reshipment of projectors sent by local representatives. When BUSINESS CREEN visited the busy Ampro Corporation ant in Chicago recently, we were especially im-pressed with the care and interest taken in this vitally important work.

Because of the precision-tested nature of the equipment, only experienced workmen should be allowed to undertake such repair work. Ampro, for example, maintains a complete service department staffed by experts in reconditioning and rebuilding used projectors. Ampro dealers are best able to judge the necessity of such work. Inspection, cleaning and adjustment work is customarily handled by these experienced local representatives. Priority given such work is now adequate to take care of all schools, industries and similar users since repair and maintenance of communications equipment of this type has been granted AA-1 rating by the War Production Board.

In Chicago, where the Bell & Howell Company and the DeVry Corporation are among the other outstanding manufacturers of this type of equipment, and in Davenport, Iowa, the home of the Victor Animatograph Corporation, the same extensive service facilities are maintained for users of these machine types.

Dealer representatives of all projector companies are available in metropolitan centers and in hundreds of other communities throughout the United States and Canada. With such complete facilities at the disposal of the user, no projector owner can or should have inactive equipment during this critical war period.

To Improve Your Film Performance

★ To assure the best possible show conditions in either classroom or industrial shop, film users should investigate the complete line of "blackout" shades and other room-darkening aids offered by the Draper Shade Company, Spiceland, Indiana.

Specialists in this type of product, the Company has materials and types for almost every purpose. Shades are easily demountable, if necessary, and provide excellent darkening facilities which adapt ordinary rooms for projection. The Draper Pakfold is typical of the dual-shading type for darkening or blackout shade purposes.

George Cole Elected Mine Force Officer

★ George H. (King) Cole, nationally known film distributor, has been elected secretary-treasurer of the New York Chapter of the North Sea Mine Force Association, an organization composed of men who saw service in World War I, in the assembling, planting and sweeping mines laid between Scotland and Norway.

EQUIPMENT DIGEST

New Golde Filmatic Projector

♦ A new triple-purpose Film Slide Projector has been designed by the Golde Manufacturing Company of Chicago for use in war training and industrial education.

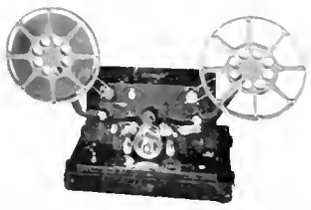
The new Golde Filmatic is precision engineered for the extra utility, efficiency and service so essential today. It can be used 3 ways: (1) for 2x2 Kodachrome or black and white slides; (2) for single frame slide film; (3) for double frame slide film.

A new non-rewind feature eliminates rewinding after showing—the film is ready for showing immediately after use without rewinding. Film is held flat in the optical plane by polished, hardened glass pressure plates. This assures continuously sharp, clear screen images. Vertical position of image is instantly adjustable. Feed capacity up to 300 single frame pictures. Instant framing.

The filmatic is compact, sturdy—built like a motion-picture projector, yet easily portable. It is motor-driven forced air cooled. Larger air capacity blower and heat absorption filter doubly safeguard slides or film against heat damage—permit use of 300 as well as 200 and 100 watt lamps. Has efficient optical system, with precision four-element projection lens (5" f:3.5). Gives brilliant, faithful reproduction of line and color. Provides easy, fast focusing to hairline sharpness. Mammatic Slide Carrier automatically stacks 50 paper or 20 glass slides as they are shown. Modern functional design makes for attractive streamlining. Finished in baked wrinkle enamel. Complete with cord and switch and custom-built carrying case. Size, 15½"x8½"x8". Net weight 17 lbs. Shipping weight 21 lbs. Available on priority.

Portable Multiple Track 16mm. Sound Repraducer Perfected

♦ A new compact and selective sound-on-film reproducer unit recently perfected by the Litho Equipment and Supply Company of Chicago



has capacity sufficient for playing continuous five hours of music and sound from one 2,000 foot, five-track 16mm. film recording.

Technical features include 25-watt amplifier, separate input for microphone, motor driven automatic rewind, 12-inch speaker, retractable reel arms. The selective sound unit and amplifier are in one case, the speaker in another.

DIRECTORY OF SUPPLIERS

Protective Standards for the Buyer of Picture Production

Inasmuch as the commercial motion picture industry has been called upon in the war emergency to render public service by producing visual film aids for the purpose of war training, and

Inasmuch as the glamour and fascination of picture-taking has been such as to present intriguing temptations to many individuals and companies to engage, with the best of intentions, in undertakings far beyond the scope of their aptitudes, capabilities or experience, and

Inasmuch as many purchasers of such films have had unfortunate experience with non-competent persons and companies and

Whereas qualified producers of established competence are apprehensive lest the fundamental soundness and scientific effectiveness of visual education through the medium of industrial motion pictures be obscured by further occurrences of a similar misguided character, however well intentioned, and

Whereas if any such film fiascos were to occur in connection with a government sponsored training program for the war effort, such failures would not only be a disgrace to the commercial film industry but also a serious disservice to the cause of education — and, more importantly, to the successful prosecution of the war.

Established producers of comprehensive experience in the production of educational films have set forth the fundamental requisites which must be immediately available to any producer who is to be depended upon to deliver a good and usable product *on time*:

1. Financial Responsibility
2. Studio and Equipment
3. Permanent Production Staff
4. Experience

ALL RESPONSIBLE PRODUCERS WHO SUBSCRIBE TO THE INSTITUTE'S CODE OF ETHICS AND MEET ITS STANDARDS OF PRACTICE ARE ELIGIBLE FOR MEMBERSHIP. FULL INFORMATION, ON REQUEST, IS PROMPTLY SENT.

"Mass Training for Mass Production for Victory"

Educational Building

THE INSTITUTE *for the Advancement of*

70 Fifth Avenue
New York City

VISUAL EDUCATION AND VOCATIONAL TRAINING, Inc.

Everybody attracted to Picture Street has to choose his side of the street according to his requirements and desires . . . for glamour and fantasy or for science and training . . . as his pursuits may dictate.

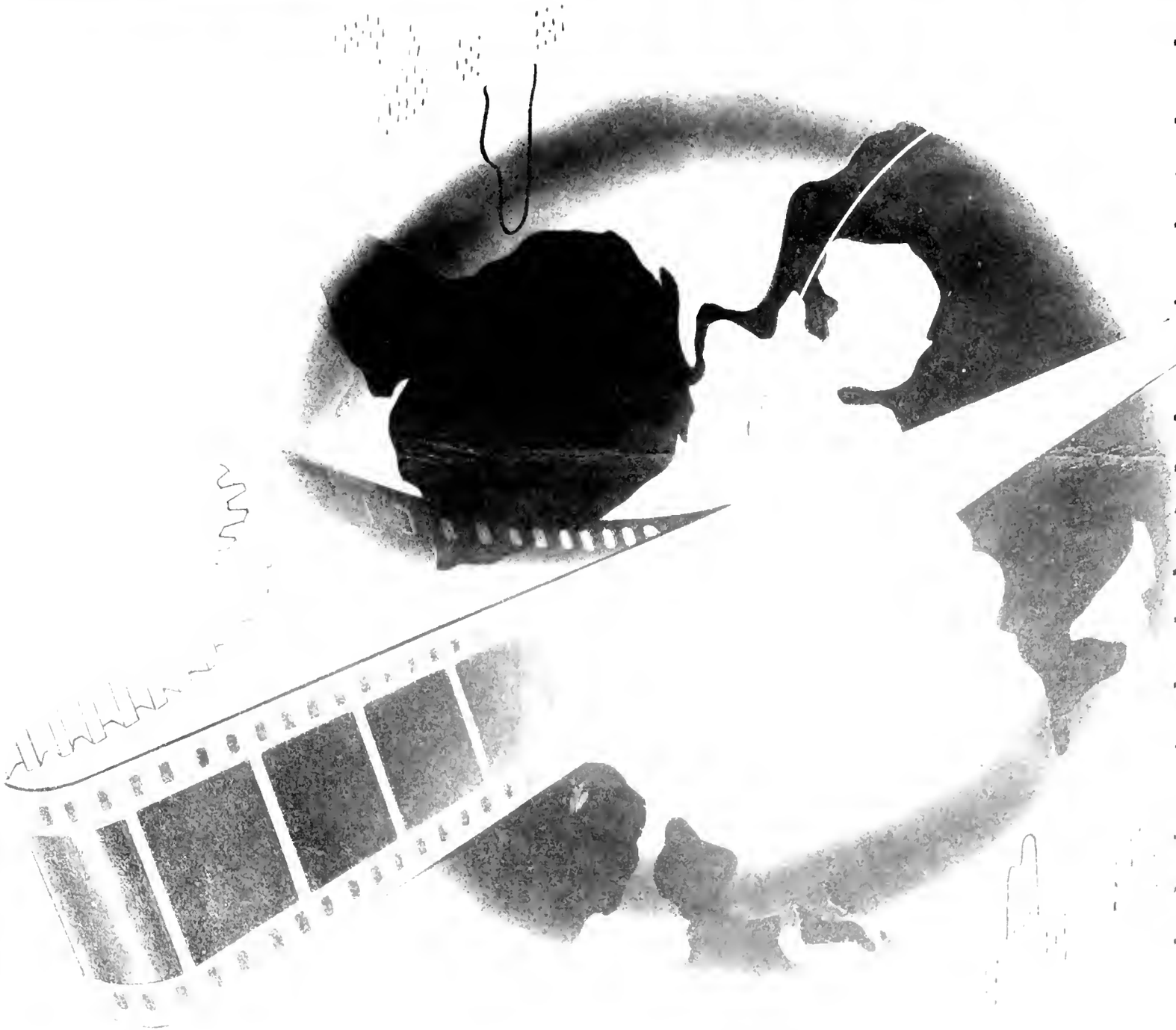
He comes on business or on pleasure and he has a choice to make. On one side are those who can best serve him with entertainment. *There* is offered him the best of escapism for the emotions . . . love, mystery, comedy and fiction.

On the other side business is to be done. In the field of the factuals is education, is science, is distribution, is production training and all the vocational arts.

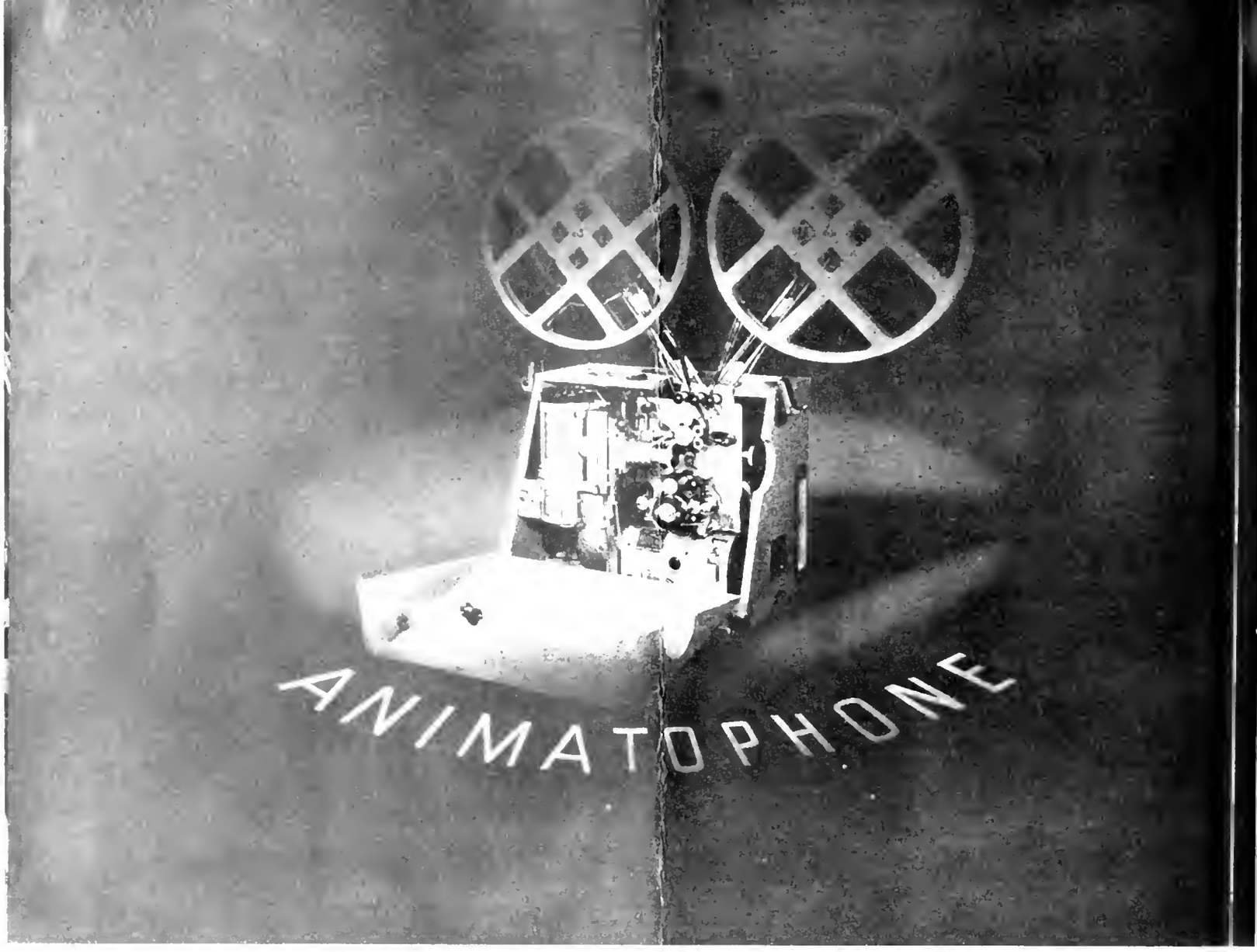
On *both* sides of Picture Street creative imagination and inspiration are to be had. Powerful are the instruments and stimuli of both. *Each, in its own way, provides the best in the world.* But when either side of the street is expected to provide the other's specialty, only disappointment is likely to result.

Let the buyer choose his side of the street according to his needs of the time.

ISSUE SEVEN BUSINESS SCREEN MAGAZINE 1943



FILMS



A VITAL TRAINING FORCE FOR VICTORY . . . WITHOUT EQUAL

Materially aiding in the increased Tempo of War Training, Victor Animatophones—the outstanding Sound Motion Picture Projectors in the 16mm field—are playing a vital role in instruction and inspiration for our millions in Military Service, Civilian Defense, and War Industries. There is no stronger training force than Sight—Sound—Sequence. . . . The almost continuous gruelling service these machines are receiving today, attests to Victor quality and precision craftsmanship developed painstakingly in years that have passed.

VICTOR ANIMATOGRAPH CORPORATION

242 W. 55th Street, New Yor
188 W. Randolph Street, Chicag
. . . DAVENPORT, IOW

DISTRIBUTORS THROUGHOUT THE WORI

Let the Forces of Education Now Be Armed for All-Out Victory!

ON THE FIGHTING FRONT OF EDUCATION

IN ADDITION to the many training films Caravel is now producing for use by the Army, the Navy, and the Coast Guard, we call particular attention to the following, produced under the direction of the U. S. Office of Education:

Five Films on the Milling Machine

The Milling Machine . . . Cutting Keyways . . . Straddle and Surface Milling to Close Tolerances . . . Straddle Milling . . . Plain Indexing and Cutting a Spur Gear.

Five Films on Shipbuilding Skills

Preparing and Setting a Keel Block and Bottom Cradle . . . Innerbottom Sections: Sub-Assembly of a Closed Floor, Sub-Assembly of a Solid Floor . . . Side Frames: Sub-Assembly of a Web Frame . . . Deck Girders: Sub-Assembly . . . Deck Plates: Regulating and Setting.

JUST AS THE WAR has effected revolutionary changes in the vehicles of Flying, so the War is compelling a revolutionary change in the vehicles of Learning.

This change is witnessed vividly in the use of motion pictures and slide films to train our armed forces, to train millions of workers in the war industries.

But changes of even greater import are in the making! Here are a few of the indicated possibilities:

—Films, specially made, to coach foremen, superintendents, managers in the fine art of keeping fellow-employees working contentedly and at high efficiency;

—Films, specially made, to teach the English language to the foreign-born, and by that same token to create a more thoroughly unified America;

—Films, specially made, to carry to the school children of the world a TRUE PICTURE of this country: its people, its government, its resources, its commercial and industrial activities, its way of life;

—Films, specially made, to delineate to millions of Americans gathered in Forum Groups the tremendous issues of this war, and thus to make more immediately practical the vision of the Four Freedoms.

Wars are not won by weapons alone; the seeds of victory must first be planted in the human mind. The adequate IMPLEMENTING of the Forces of Education will not only speed the victory, it will help to assure the KIND of peace which alone can "bring us to a happier world."

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

Member of: THE INSTITUTE FOR THE ADVANCEMENT OF VISUAL EDUCATION AND VOCATIONAL TRAINING, INC.

RESEARCH PROJECT STUDIES WAR TRAININ(

Effectiveness of Industrial Training Films Object of Chicago Study Now Being Conducted Among War Plant Apprentice Groups

★ A WARTIME RESEARCH PROJECT of far-reaching significance to American industry in the measurement of learning benefits from the use of job instructional films is now being conducted in the Chicago area by Abram Vandermeer of the University of Chicago. Mr. Vandermeer's study, in the fulfillment of his requirements for a doctoral degree, is being made with the cooperation of the Training Department of the Amertorp Corporation through its Morton High School training classes and with the further assistance of the National War Committee for Visual Education. The study outline as submitted to the faculty of the Department of Education of the University follows:

Hypothesis: That the use of sound motion pictures as integrative teaching aids shortens the training period for metal lathe operators.

A. *Evidence should be obtained from this experimental study to provide partial answers to the following questions:*

1. To what extent can films used as integrative teaching devices shorten the training period of industrial workers learning new jobs. If films do save training time for the lathe workers:
   a) Do they save time equally for learning simple and complex jobs?
   b) Are the most promising trainees helped as much by films as the less promising trainees?

2. Are groups trained with films more homogenous with respect to their development of skill than groups not trained with films?

3. Does the use of films in training tend to make individual workers more or less skillful in the various lathe operations that they are called upon to perform?

4. What are the major principles observed in successful sound motion picture utilization in a learning situation involving the development of complex motor skills?

5. Do lathe operators instructed through the use of sound motion pictures learn more facts and generalizations about their trade than those instructed without the use of these teaching devices?

6. What is the relationship between the ability to recognize facts and generalizations about motor skill and ability in that skill as measured by the speed with which it can be used to turn out a satisfactory product?

7. What is the predictive value for speed in learning lathe work of a knowledge of age, sex, experience, education and scores on tests of perception, motor coordination, and mathematical ability?

TEST PROCEDURE IS OUTLINED

A. Groups Used in Research.

1. Six groups of 15 prospective lathe operators hired by the Amertorp Corporation will be used: three groups will be experimental and three control.

2. The same teachers will teach both experimental and control groups.

3. The following will be considered in equating groups: age, sex, amount and character of formal education, previous work experience, score on tests of motor coordination, intelligence, perception, simple blue print reading skills, and shop mathematics.

4. If groups cannot be equated without losing too many cases, a technique* involving the use of a regression formula will be employed.

B. Instructional Methods.

1. Two well defined methods will be used. The essential difference will be that in the experimental groups training films produced by the U. S. Office of Education will be used to introduce the trainees to the various lathe operations, while in the control groups the usual lectures and demonstrations will be employed. Film teaching will be in accordance with the better practices, that is, the students will be prepared for film learning, then there will be showing of the film as a whole, then discussion and explanation, and finally repeated whole and or part showings as dictated by apparent group needs.

2. For both groups the instruction pertaining to the lathe is divided into two parts: group instruction for the purpose of providing preliminary information, and practice by individuals on selected lathe jobs. Neither part is given all at once, rather each is divided into units ranging from very simple to more complex. The first unit, for example, involves rough turning between centers while a later unit involves the cutting of an external national fine thread. In addition to the preliminary instruction, each unit involves one or more practice jobs which must be turned out to rigidly defined specifications by each trainee before he goes on to the next job.

C. Factors in Measurement.

1. The variable to be measured is the time required for the individuals of a group to reach a specified degree of proficiency on the lathe. The justification for time as a criterion of proficiency rests in the assumption that since products of the workers are accepted or rejected according to whether or not they are within rigidly defined tolerances, the test of the worker's ability is the speed with which he can turn out work that meets specifications.

2. Each trainee, under the supervision of the instructor, will keep an accurate record of the amount of time he spends on each practice job. Since both control and experimental groups will be required to turn out identical products, comparisons may be made for single jobs, appropriate groups of jobs, and all jobs.

3. The instructor will keep a time record of the total group instructional time (as differentiated from time for individual practice) and this will be made the basis for further comparisons.

4. If possible, trainees will be followed into the factory for a period of four weeks, during which time they will keep record of time spent on each job turned out. Thus where jobs are the same for both groups comparisons may b

*Peters, Charles C. "A Technique of Matching Groups for Experiment with No Loss of Population" *Journal of Educational Research*, XXXIV, (April, 1941) 606-12.

(PLEASE TURN TO PAGE THIRTY-FOUR)

BRING THE FIGHTING FRONTS HOME TO YOUR WORKERS WITH CASTLE FILMS'

War Movies!

Reduce absenteeism

Increase morale and production! Let workers see and understand the impact of total war... the importance of the materials they are producing!

USE Castle Films to show your workers how the equipment they are making is used in modern war! Here are pictures of battle actions that will thrill them . . . shock them . . . awaken them! Let them see "U. S. CARRIER FIGHTS FOR LIFE and RUSSIA STRIKES BACK" (both in one film) and they will know how vital it is to keep up production. Let them put themselves in the place of an American boy in a foxhole in the Solomons . . .and then see if they countenance loafing! Here are movies that show all kinds of American equipment in action! Tanks! Guns! Planes! Ships! All the battle gear that helps a modern army fight! You'll find no difficulty tying the story of the products you make right into these historic actions. Put these films to work! Show them to your workers!—Now!

U. S. Carrier fights for life in Pacific!

American equipment helps fighting Allies!

Yanks invade Africa, opening Second Front!

Victory over Rommel...with American supplies!

LOW COST! 16MM. SOUND-ON-FILM $17.50
16MM. TITLED VERSION 8.75

24 GREAT FILMS FROM WHICH TO CHOOSE!

All of these vital films now on sale—see your nearest photo or visual aids dealer.

- "U. S. Carrier Fights for Life—Russia Strikes Back"
- "Yanks Invade Africa—Victory Over Rommel"
- "News Parade of 1942"
- "Fight for Egypt"
- "Midway and Coral Sea Battles"
- "MacArthur—America's First Soldier—Manila Bombed"
- "U. S. N. Blasts Marshall Is."
- "Russia Staps Hitler"
- "Pearl Harbor—Normandie"
- "Commandos in Action"
- "Japs Bomb U. S. A."
- "News Parade—1941"
- "America's Call to Arms"
- "Tacoma Bridge Disaster—French Fleet Blown Up"
- "News Parade of 1940"
- "Battle for France"
- "Bombs Over Europe"
- "Graf Spee Scuttled"
- "War in Europe"
- "News Parade of 1939"
- "News Parade of 1938"
- "Germany Invades Austria"
- "News Parade of 1937"
- "War in China"

CASTLE FILMS INC.

RCA BLDG. NEW YORK · FIELD BLDG. CHICAGO · RUSS BLDG. SAN FRANCISCO

NEWSREEL

♦ Four sound slide films are now being prepared by the National Safety Council for safety instruction of the land army of 3,500,000 boys, girls, business men and women asked for by Secretary of Agriculture Claude R. Wickard to help in the production of food for home use, for our allies, and for our military forces abroad.

No. 1 is to be inspirational and will explain to the land army some of the difficulties which farmers face, how accidents curtail production, and how it is up to them to do everything in their power to avoid accidents and to do their work well and do it safely.

No. 2 deals with safety rules that should be followed around the farmstead, explains the type of clothing that should be worn, and in general prepares the land army for carrying on their duties around the homes and farm buildings in a safe manner.

No. 3 is an introduction to accidents that may involve the use of farm machinery and cautions the members of the land army on the importance of knowing exactly how a machine should be operated before they attempt to handle it. Safe handling of the farm tractor is explained in considerable detail.

No. 4 is an introduction to the handling of livestock. It covers a wealth of safe practices, which, if followed, will enable members of the land army to work with animals in greater safety.

M P E Acquires Plant

♦ A. J. Bradford, President of Motion Picture Engineering Company, announces the acquisition of the plant and facilities of Carl Bromel & Sons of Detroit.

The Bromel Division of Motion Picture Engineering Company, as it will be known, is credited with making some of the finest industrial displays and stage settings.

In their present 100% activities of building war materials, Motion Picture Engineering Company has had a definite need for a plant of this type where certain requirements for training and educational devices are essential to the war effort. This makes the fourth plant purchased or leased by Motion Picture Engineering Company in the last two years.

Canada's Chicago Office

♦ The National Film Board of Canada announces the opening of an office in the International Relations Center Building at 81 East Randolph Street, Chicago, with Miss J. Margaret Carter in charge. The non-theatrical distribution in the United States of National Film Board productions will be handled from this office. A supply of 16mm prints will be kept on hand for shipment to educational film libraries dealers and other outlets

BUSINESS SCREEN

THE NATIONAL MAGAZINE OF SIGHT AND SOUND AIDS FOR SCHOOLS, INDUSTRY AND GOVERNMENT

VOLUME FOUR • NUMBER SEVEN

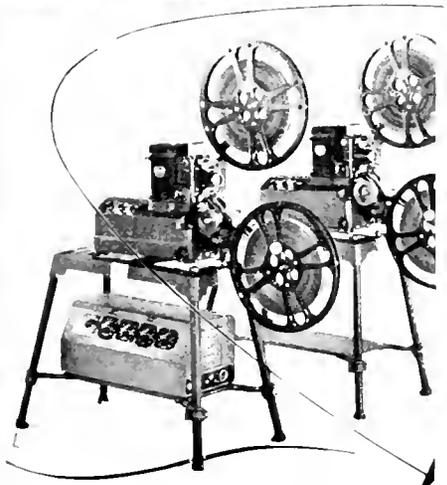
CONTENTS

* * *

Staff Members in Service: *Robert Seymour, Jr.*
H. H. Mitchell, (Western Editor)

Issue Seven Volume Four of Business Screen Magazine, issued by Business Screen Magazines, Inc., 157 East Erie Street, Chicago, Illinois. Telephone WHitehall 6808. February 15, 1943. O. H. Coelln, Jr., Editorial Asst., Margot Martens-Hughes. Subscription: $2.00 for Eight Numbers; Foreign & Canada $3.50. Single Copy 50c.

MOVIES ARE EAGERLY AWAITED
at our far distant outposts



The above dual unit Ampro-sounds are typical of those used in "special services" overseas

The roar of a huge U. S. Patrol bomber ploughing to a stop in the harbor is always welcome music to American fighters at faraway bases. Among other things, it means mail from home *and a fresh supply of the latest motion picture releases!*

Every inch of space in our vast fleet of cargo planes is precious — is urgently needed for transporting vital medical supplies and important war materials. Still our government considers motion pictures so valuable to the maintenance of high morale in the U. S. armed forces that the latest films, in 16mm. versions, are classed as a "must" for our wartime skyway freight lines.

Thousands of Ampro projectors are being utilized in a vast 16mm. motion picture program for training and entertaining United Nation soldiers on both fighting and production fronts. Still more projectors are needed! Private owners of 16mm. projectors are urged to contact Civilian Defense authorities in their local communities and enlist their machines in this vital wartime program.

100% of Ampro facilities are engaged in the production of projectors and precision war equipment for the United Nations. Ampro engineering research continues undiminished — assuring civilian users more efficient projectors than ever when the war is over. In the meantime you can plan for the future by keeping up with the newest developments in 16mm. projectors. Write today for latest Ampro Catalog!

The Ampro Corporation, 2851 N. Western Ave., Chicago, Ill.

★ AMPRO ★

PRECISION CINE EQUIPMENT

IN A GREAT MOVIE THEATRE, *an audience of thousands—carried out of their everyday lives—look, and listen, to the drama pouring from a strip of photographic film about one inch wide. Everything is on this—not only the living, moving scenes of the story, but on the tiny "sound track" at the left, the sound: whispered words of love . . . a terrified scream . . . the nerve-shattering roar of a dive bomber . . . an enchanting voice crooning a lullaby. Film carries it all.*

Most Hollywood movies are on film made by Kodak

FROM the time when Thomas A. Edison and George Eastman worked together on the early, flickering movies, the improvement of materials for professional motion pictures has been one of the chief fields of Kodak research. Kodak has been the pacemaker, and is by far the largest supplier of Hollywood.

From "the flickers" to art

Kodak's original production of transparent roll film, the key to motion pictures . . . specialized negative and positive films . . . the production of high speed panchromatic materials . . . the modern color phase, now rapidly expanding . . . these are important scenes in the advance from "the flickers" to today's work of art, in which Kodak has played a leading role. And there is another . . . The success of "sound" pictures hinged on making the spoken words, or music, or "sound effects," a basic part of the picture. That is what you have today, because . . .

Sound, too, is pictured

With special fine-grain emulsions, Kodak "sensitizes" film for sound recording. In effect, sound is changed into light, and this light is recorded on the film, simultaneously with the recording of the scenes. Lips move—a voice speaks. Yet the voice is also a "picture"—an effect of light on film. The voice changes from a whisper to an angry roar—each tone is a series of "light" pictures, different in quality.

As you sit in the theatre, the process is reversed—the "light pictures" on the sound track are changed back into sound . . . The "sound" newsreels are made in much the same way.

Movies for everybody

For children, movies are education. For normal men and women they are the grandest form of entertainment, reaching almost everyone. For those distraught by worry or sorrow, they are wholesome escape. For our service men on ships or in distant camps, they are a little of everything that is needed to give a man a "lift" . . . Eastman Kodak Company, Rochester, N. Y.

Serving human progress through Photography

This institutional advertisement is one of a series covering a wide variety of Kodak products and services. It appeared in December popular magazines read by millions.

We consider it an honor and a privilege that virtually all of our organization and extensive facilities are now devoted to the creation and production of training sound motion picture and slide film subjects for the Armed Forces.

Until Victory—any remaining portion of our capacity will be necessarily limited to the production of sound motion picture and slide film subjects which definitely contribute directly to the war effort.

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

WAR FILMS

DIVIDE AND CONQUER

[illegible] Nazi technique of [illegible] hate and fear to destroy trust [illegible] systematically [illegible] motion picture, appropriately titled *Divide and Conquer*. Without pulling punches, it shows how Hitler used every devices of propaganda and sabotage to destroy the morale of [illegible] French people: starting rumors of weaknesses and graft in the French Government, setting race against race and class against class, spreading the myth of invincibility of the Germany army, preaching that only Hitler would bring peace to Europe, encouraging defeatism and passivity among the French people. Through radio broadcasts, paid German agents, and fifth columnists, Hitler used the weapons of propaganda—*words*—to pave the way for bombs and shells and the Nazi armies.

CREDITS—*Divide and Conquer* was made by Warner Brothers Pictures, produced by Gordon Hollingshead and directed by Lewis Seiler.

LENGTH: 515 *feet*; 16*mm*. TIME: 14 *minutes*.

SUGGESTED USES—This war, we have been told, is a total war being waged on civilian fronts just as much as on military fronts. *Divide and Conquer* drives home this fact without apology and without equivocation. As such, it should be seen by all Americans, for today as never before, "United we stand, divided we fall."

Divide and Conquer can be programmed with *The Arm Behind the Army* to stress the importance of military-civilian cooperation, with *Listen to Britain* or *Western Front* to give meaning to the United Nations concept, with *The Price of Victory* to show what we are fighting against as well as what we are fighting for.

THE PRICE OF VICTORY

SYNOPSIS—With candor and conviction, Henry A. Wallace, Vice President of these United States, explains the ideals we are fighting for and the price we must pay for victory. Here, in a motion-picture, Mr. Wallace presents a condensation of the now famous speech which he delivered before the Free World Association in New York City on May 8, 1942.

Any summary of the film must necessarily be a summary of Mr. Wallace's address, for the film footage is distinctly secondary to Mr. Wallace, who makes an impressive performance, and to his message, which is a dramatic challenge to the American people.

"This is a fight," Mr. Wallace believes, "between a slave world and a free world. . . . There can be no half measures. No compromise with Satan is possible. . . . The march of freedom of the past 150 years has been a long drawn-out people's revolution. . . . The century on which we are entering—the century which will come out of this war—can be and must be the century of the common man. . . . The people's revolution is on the march, and the devil and all his angels cannot prevail against it. . . . We who fight in the people's cause will never stop until that cause is won."

CREDITS: *The Price of Victory*, produced by Pine-Thomas and directed by William Pine, was released for theatrical distribution by Paramount Pictures.

LENGTH: 480 *feet*, 16*mm*. TIME: 15 *minutes*.

NEW OFFICE OF WAR INFORMATION 16MM SOUND FILMS now available on free loan through 180 local depositories include such outstanding subjects as "Divide and Conquer," from which the above is taken. Other titles are reviewed on this page. Write Business Screen for further details and address of nearest source.

OUT OF THE FRYING PAN INTO THE FIRING LINE

SYNOPSIS.—Through the use of two nationally known characters—Minnie Mouse and Pluto—this Disney film shows the wartime need for fats and greases and the steps to be taken by every housewife in salvaging these materials of war. As Minnie offers Pluto "some hot delicious bacon grease", a radio voice breaks in saying, "Don't throw that bacon grease away!" Pluto pouts but when the radio announcer explains that fats make glycerine and glycerine makes explosives, Pluto becomes convinced. Saluting a picture of Mickey in uniform, Pluto disdainfully refuses the bacon grease and follows the announcer's directions for straining, storing, and saving fats. Carrying a pound of grease to the meat dealer, Pluto collects his money in wieners and marches proudly down the street.

CREDITS: *Out of the Frying Pan Into the Firing Line* was produced by Walt Disney and presented by the Conservation Division of the War Production Board. It is a Technicolor film.

LENGTH: 118 *feet*, 16 *mm*. TIME: 3 *minutes*.

SUGGESTED USES—This film is an exposition of the need for fats and greases and should be shown to audiences of women.

HENRY BROWNE, FARMER

SYNOPSIS—This is a simple and moving story of Henry Browne, a Negro farmer, and his family—what they are doing individually and collectively to win the war. Farmer Browne, rooted in the soil, goes about the daily tasks of farming so important in wartime. Henry Browne's family, too, do their jobs. Mrs. Browne has a Victory garden, young Henry milks the cow, sister has a flock of chickens, and the eldest son is serving with the 99th Pursuit Squadron of the Army Air Forces.

CREDITS: *Henry Browne, Farmer*, was produced by the U. S. Department of Agriculture, directed by Roger Barlow and narrated by Canada Lee, star of the New York stage success, *Native Son*.

LENGTH: 400 *feet*, 16*mm*. TIME: 11 *minutes*.

SUGGESTED USES—The film gives general information on the responsibilities and achievements of American farmers today; presents specific ways to conserve farm land, machinery, and food, and provides a sympathetic tribute.

* * *

♦ Other recent titles are also available for war plant, club or other use including *Bomber, Tanks, etc.* Write Business Screen for address of nearest free loan source.

Blood, Tears and the Production Line

by O. H. Coelln, Editor of Business Screen

★ Evidence Gathered in an extended personal tour of Eastern war production areas, in an experimental Midwestern film distribution project on behalf of a branch of the Armed Forces and in a constant flow of correspondence between this paper and war plants throughout the country plus the actual physical experiences of local film distribution organizations has brought the following conclusions concerning the showing of films to war workers:

1. Labor and management agree that motion pictures are an excellent medium for inspiring workers in our war plants. They are better than most speakers, far excell transcriptions played on plant sound equipment, and are the best mechanical form of entertainment and education which it is possible to bring to the industrial plant.

2. As to the kind of pictures most wanted at these showings, both the worker and the employer are further agreed—*action films straight from the war fronts* is the unanimous decision of all in the war plants.

3. There are widespread facilities for showing these films among the most important of our war plants. Approximately 1,000 companies and their subsidiaries now produce the greater part of our war materials and the majority of these plants are equipped with 16mm sound motion picture projectors. In addition, several thousand plants in key war production areas are either equipped or readily accessible by development of commercial distribution services in production areas.

4. The development of visual training aids in the increased use of films for morale-inspirational purposes, and vice-versa. Regular use of sound projection equipment soon overcomes the small physical problems which at first seem insurmountable to the company personnel concerned.

5. The labor unions are fast taking up the visual medium. Particularly in the Detroit area, labor unions have been most active in promoting their own use of training and inspirational films, with emphasis on the latter. Many union halls have 16mm sound motion picture equipment. The medium is deemed excellent for the promotion of membership attendance.

6. It must be repeated that the universal request of war plants is for films showing the use of equipment under actual battle conditions or pictures portraying the hardships and sacrifices endured by our fighting men abroad. In this category, films made by the Army and Navy, by the Office of War Information and by commercial companies such as Castle Films share equal popularity whenever they deal in this kind of material. The most complete program thus far directed at war plants is that provided by the Public Relations Branch, Headquarters Services of Supply, U. S. Army.

Pre-Shift Showings Preferred

From these field experiences, a general preference has been noted with regard to showing time. Contrary to expectations, the lunch hour period is not the only time for film performance in most plants. While exceptions prevail in the case of showings in places where workers bring their own lunches, service and time limitations in plant cafeterias make it difficult to use this otherwise convenient location during the actual lunch or dinner hour.

But the plant cafeteria or recreation hall makes a perfect showing place for the period just preceding a change in shift. The ideal formula calls for a twenty or thirty minute war film program ending about ten minutes before the shift change. This time has many advantages.

Workers Get There On Time

In the first place it brings the men and women to work a little earlier. One West Coast airplane plant has found such showings excellent competition for nearby taverns. Films also afford an excellent substitute for idle time otherwise spent in locker room gossip. And the psychological advantages

NATIONAL SURVEY REVEALS EFFECTIVENESS OF BATTLE ACTION FILMS IN RAISING MORALE OF WAR WORKERS AND REDUCING ABSENTEEISM

are [illegible] tmp attar

The worker [illegible] atmosphere, as a result of [illegible] and other family [illegible] scare, not objected to [illegible] pressure, will not always [illegible] give [illegible] good frame [illegible] for the day's work ahead. [illegible] pictures serve as an excellent mental conditioner, [illegible] workers' thoughts to [illegible] importance of the jobs [illegible] to do.

In this regard, the introduction of [illegible] safety instructional material at these showings will pay dividends along the production line. As a general rule, however, no other educational or problem films should interfere with the emotional appeal and high interest quality of battle action pictures. Use of any films with a discussion theme or those which possess any argumentative theme is to be carefully avoided. Nothing which contains a message of a political nature should be shown at these periods.

Many Ways To Show

Our industrial firms own thousands of 16mm sound projectors, many use them constantly for training small groups. Just as many have had to learn how to apply this potent weapon to the attack on absenteeism and disinterest. Here are some of the ways in which technical problems have been solved: 1. Enclosing a floor area (either temporary or permanent) for a combination training and morale theatre. 2. Use of rear-screen projection methods which eliminate much of need for darkening rooms (two Detroit auto companies report considerable success in meeting this common difficulty of excess light, skylight illumination, etc.) 3. Use of present lecture rooms, training center classrooms and recreation halls. (This obvious possibility is quite often overlooked in plants.) 4. Use of automatic self-contained continuous projection equipment (cabinet style) which reduces floor space needed to a minimum. An ingenious enlarged rear projection screen attachment has been developed for such machines.

Editor's Note

This brief introduction to the subject of film showings to war workers is Part One of a comprehensive analysis to be continued in Issue Eight of BUSINESS SCREEN. *War plant personnel are invited to submit queries concerning sources, etc. of any films or technical material described in these pages. It is part of our contribution to the war effort to answer these inquiries promptly and without obligation.*

SCENES LIKE THESE FROM "RUSSIA STRIKES BACK", recent news film release (16mm sound-on film) by Castle Films, are typical of the war action material now most popular for worker showings in our war plants.

Music in War Industry

By Delos Owen

★ UNDER THE STRAINS AND stresses of all-out war production, industry is experiencing an awakening to changing conditions. Until the last few years, it was a rarity to find a plant where the employee did other than "punch-in"-work, rest at noon, work and then "punch-out". Now war, and the real test of co-operative effort. Extra hours, extra effort, extra hardships, fatigue. Seasoned employees leaving for the armed forces, their places taken by unfamiliar hands spoils, rejects, accidents, carelessness. And withall, continually increased speed to supply vital equipment to the armed forces.

Stimulating Production

Many employers realize that means of stimulation are imperative that the worker, being human, works best when inspired. Much has been done to give the employee the shoulder-to-shoulder feeling that he stands behind the man with the gun. Government agencies distribute posters, booklets, leaflets and cartoons. Inspired writers supply material for company employee magazines and pamphlets. Patriotic motion pictures are shown at employee rallies. "E" awards are given for meritorious work.

All these are effective, as are the buttons, the ribbons, the "V" buttons, the merit cards and the many other rewards now given. But the worker being human DOES become fatigued after several hours at his task, and particularly if it be a monotonous one; he DOES become careless and this is usually due to fatigue. Production charts are mute evidence of the definitely fluctuating schedule. Almost everything has been tried. Gum chewing, it is claimed, soothes nerves, keeps the mouth moist and forms a counter activity for busy hands. Rest periods, time-out-for-smokes offer a needed breathing spell but, naturally, stop production ten or fifteen minutes each time.

A Great Boon to Industry

Revolutionary as it might seem to be, music has been found to be industry's greatest production boon. Music has generally been aligned in the popular mind with the concert hall or the stage but hardly ever with industry. Yet in the past workers were hired according to the kind of music they could sing. The pyramids were built to chants. Negros in the deep South sang at work; the band plays when a ship is coaled; the housewife hums or sings at her tasks; some of the most carefully selected men in the armed forces are those supplying music. No parade is complete without a band. And by the same token, music will put zipp into the production parade.

Music Widely Used Abroad

Germany has used music for years. So has England. England's radio is government controlled. When it was found that Hitler did more harm by holding up production (air raid shelters vying with production lines) than he did by actual bombs, it was made mandatory that plants be equipped with speaker systems. By this establish-

(PLEASE TURN TO PAGE 33)

5. Portable projection stand moved from one department to another for lunch hour periods. Schedules permit at least one showing per week in a department. 6. Locker room setup for incoming employees just prior to shift change. Previously mentioned, this method also includes use of the company cafeteria during such favorable periods of relaxation.

The Films They Liked

One personnel director graphically describes the kind of films best suited to these worker showings:

"We are very anxious to get films that employees would not see if they go to the average motion picture house but we also want these to stand on their own feet in the matter of interest and choice of subject. Pictures showing violent destruction which also paint a vivid picture of the necessity for war production and pictures of actual combat action will be very welcome."

It is the news pictures of recent battles that are first choice all along the line. The Service should be indentified with these if possible, in the opinion of many interviewed. The authenticity and feeling of close relationship to our fighting men which results from the personal appearances of visiting combat veterans and the "exclusive" nature of these "battle reports" are important ingredients to keep in mind. It is *production* the constant flow of such subject from official Washington which is the real question of the hour. Film *distribution* facilities are adequate and the methods of putting them to use, subject to ready improvement whenever needed.

Management Stresses Need

The attitude of management toward this problem of morale on the production lines may be best summed up in the statement of a prominent Indiana industrialist head of a manufacturing concern which has received the Army-Navy production award. He says:

"We believe that we need films showing some of the hardships and horror of the war in order to bring home to our employees the seriousness and importance of the work in which they are engaged. The people of [illegible] are so far removed from the war that it is our belief that 'by and large' they do not realize the seriousness of the situation and the part which they are to play in it."

The Material Is at Hand

Projectors are available in many plants. Where they are not, service organizations are ready to furnish them at low cost. An increase in

the number of "battle reports" is definitely needed but plenty of films are already made for plants which have not yet tried them. A good formula for the proper showing time has already been given.

Let Donald Nelson tell you how important this problem is:

"I am told that we could get 10 per cent more production," he declared recently, "if we had a decrease of 50 per cent in absenteeism. Absenteeism must be cut down. We must get the maximum of production that our factories are capa-

ARMY-NAVY "E" TO JAM HANDY ORGANIZATION

All Industry Proud of Achievement

• News from Washington late this month disclosed that the esteemed Army-Navy Production Award has been given the Jam Handy Organization, producers of training motion pictures and slidefilms for the armed forces.

The entire industrial motion picture fraternity, now wholly converted to film production for direct war purposes, takes pride in this recognition accorded one of its members. It is understood that this is the first time in the history of the "E" award that it has been given for professional service as distinguished from material delivery or tonnage. *O. H. C.*

the [illegible] boat as the [illegible]

Many [illegible] recent [illegible] for [illegible] say that the best cure [illegible] so far reported in our war plants is notice of a war casualty in the family of one of the workers. But blood and tears may be pretty remote to most workers and in their absence, the living breathing symbols of the battle fronts as captured by the magic of the screen can help to instill the feeling of responsibility which is vital on our war production lines.

U.S. Army Presents "Attack Signal"

THE FOURTH OF A WAR INDUSTRY SERIES PRODUCED BY THE PUBLIC RELATIONS BRANCH, HEADQUARTERS SERVICES OF SUPPLY

SYNO-REVIEW OF "ATTACK SIGNAL": The Commentator: "Initial operation: to engage enemy coast patrols and establish beachhead. Complement? One company put ashore in small boats and barges.

Enemy resistance encountered. CAMERA (Medium shot): Jap soldiers perceived with difficulty through foliage, firing toward beach.

Attacker's command post. Under cover of sand dune. A Sergeant crawls into scene. SERGEANT: "Beach cleared, sir. They fell back to the brush."

MAJOR: (to Corporal) "Report beachhead established." CORPORAL: "King Easy 9 from Jig Affirm 7 Sitting Tight 80.41. Sitting Tight 80.41 (Repeats message) No confirmation, sir . . . (Examines radio) "Broken connection, sir." (Men are sent to locate unit).

COMMENTATOR: A long chance-crossing that beach under fire—and no assurance that there will be another walkie-talkie if they get through. Were enough produced to equip BOTH Major Brown's and Captain Forrest's detachments"!

INTERIOR PRODUCTION MANAGER'S OFFICE: OFFICER: "We need 6,000 walkie-talkies in six weeks. Can we get them?" PRODUCTION MANAGER: "Two years ago I'd have said 'impossible'. Today the answer is 'yes'.

DISSOLVE (AFTER PRODUCTION SEQUENCE) BACK TO ISLAND ATTACK: MONTAGE: Main force on boats; landing; dissolves of action between Japs and Americans (Communications re-established, main assault was ordered on confirmation of established beachhead via Capt. Forrest's second radio unit).

ROOF. JAP HEADQUARTERS. American soldier climbs up and rips down Jap flag, raises Old Glory. SCREEN DISSOLVES showing workers making all kinds of communications equipment—radios, telephones, wire, cable and the equipment being used by our troops on the fighting fronts.

COMMENTATOR: Mission accomplished! Good work American soldiers, sailors and Marines! Good work, American Labor and American Industry. Success in modern warfare depends on split-second communication. Together they will give it to our fighting men!

FILMS THAT SERVE AMERICA

★ [illegible] Upjohn Company, Kalamazoo, Mich. These subjects are available in [illegible] and each has a running time of approximately thirty minutes.

"First Steps in First Aid"

♦ This picture, made in cooperation with the United States Bureau of Mines, is an outstanding film on the subject of First Aid. It shows both what should be done, and many things that should not be done in typical accidents to civilians. It teaches correct methods of handling the victim, controlling onlookers, directing assistants, and providing as much comfort as posible to the victim.

Full instruction is given in first aid fundamentals such as transportation, control of bleeding (both arterial and venous), treatment of shock, and artificial respiration. The circulatory system of the body is sketched and pressure points are demonstrated. The use of antiseptics, first aid treatment of burns, and how to handle fractures is discussed and demonstrated.

This film is available for use by the general public through the United States Bureau of Mines, Burton Holmes Films, Inc., and The Upjohn Company.

"Industry for Health"

♦ This picture is ideal for showing to general audiences such as schools, science clubs, and other similar organizations. It tells the story of pharmaceutical research and manufacture.

The film is free from commercial exploitation and is intended to be a means of conveying some idea of the effort and care needed to produce a fine pharmaceutical. It moves interestingly and rapidly through such fields as chemistry, pharmacy, bacteriology, pharmacology, endocrinology, and nutrition, all of which are embodied in an industry whose purpose is improvement in the health of a nation.

Westinghouse in the War

♦ Motion pictures showing Westinghouse production of implements of war have been made with the sanction of Army and Navy authorities. The film, entitled *We Shall Win*, is designed to show as much as possible about miracles being performed on the production line without revealing military secrets.

Show Ordnance Work

At the Westinghouse Elevator Company plant in Jersey City, N. J., manufacture of mounts for rapid-firing 1.1 inch anti-aircraft guns is shown.

Four Company Plants

After "shooting" at the Elevator plant, manufacture of vital war weapons at other Westinghouse plants was filmed. The picture, soon to be released for national showing, will be shown first to Company employes, then will be available for schools, clubs and churches.

Soundmasters, Incorporated, is the producer.

KEEN AND EAGER FOR HIS PLACE AT THE FRONT, this young West Pointer learns his trade thoroughly as scenes in the new Castle Film production, "West Point—Symbol of Our Army" depict.

West Point Feature Is Released By Castle Films

♦ A timely, new 16mm motion picture that will be of particular interest to educators is *West Point Symbol of Our Army*. The picture has just been released nationally by Castle Films.

A Wartime Document

Through the direct cooperation of Academy authorities, Castle camera crews were able to make a film record of West Point in wartime. This picture shows the classrooms and laboratories of "The Point" itself, and describes the theories and "book learning" which the cadets are taught are applied in actual field maneuvers under battle conditions.

Replete With Tradition

This picture has captured, too, too, the traditional color and glamour of West Point. It is not difficult to imagine in the trim ranks a future general of the caliber of Grant, Lee, Sherman, Pershing, and MacArthur, as we see the cadets march into the great mess hall or trotting on the double to their classes at the military school.

WRITE A LETTER TO A SOLDIER OR SAILOR is the theme of this scene from the new Paramount-produced NAM short, "Postmark U. S. A.," now releasing via Modern Talking Picture Service, Inc.

Timely and Important

Col. Meade Wildrick, now stationed at the Academy, has this to say about the film: "*West Point—Symbol of Our Army* will be readily accepted by projector owners everywhere. Today, with millions of Americans serving in our armed forces, the training and philosophy of the leaders of our Army are matters of first importance and vital concern to the entire nation. This film represents a thoroughly up-to-date, fast moving pictorial review of a West Pointer in the making."

"We feel that this picture represents an outstanding contribution to visual education in our country and is especially timely, in view of the present trend of the educational world to conform our peace time training to meet war conditions."

"Postmark" a Top Short

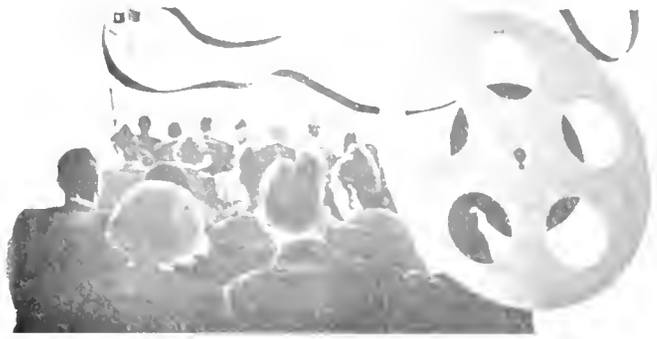
♦ Paramount's Educational Film Division mustered the ace producers of its popular one-reel films to turn out a short but snappy new 10-minute opus entitled *Postmark*—U. S. A. Written by one of Paramount's leading scenario writers, John Herman, *Post Mark* U. S. A. presents a refreshing approach to a subject which is of personal interest to every American whose father, uncle, son or friends are out on the firing lin. Contributing greatly to the success this short should enjoy is the direction of Leslie Roush, "Oscar" winning director of one-reel films for Paramount, and the excellent camera work of George Webber, whose treatment of Leslie Roush's preference for interesting lighting and camera angles is particularly well handled. While the cast is not a well-known one, all contribute ably to the smoothness and high quality of this picture in the handling of their individual roles. Important supporting if not starring roles in future full-length pictures can be foreseen for John Hudson, Richard Irving and Jacqueline Gately, who play the leading parts.

Now Showing in Theatres

It was shown for the first time in preview to over 1,000 of the nation's leading manufacturers and businessmen attending the War Congress of American Industry at New York's Waldorf-Astoria, and is now being released to thousands of top-run and neighborhood motion picture houses throughout the nation. 16mm circulation follows.

FILMS UNITE THE FREE NATIONS

A FEATURE SECTION ON VISUAL EDUCATION
IN AUSTRALIA, BRITAIN, CANADA AND CHINA



Canada's Answer to Industrial Morale

by Geoffrey Hewelcke

★ "YOUR PLACE AT THE LATHE is just as important as if it were behind the gun of a corvette," says the personnel manager of one Canadian munitions plant to his workers. . . . then he proves it!

He proves it with films of ships being built in Canadian yards. Merchant ships these are –and Canada turned out a million tons of merchant shipping last year, a figure of which Canadians are proud for it compares well with the eight million tons launched by the shipbuilders of the United States. The U. S. A. has, you see, twelve times the population of its northern neighbor.

CARGOES FOR VICTORY

The films show these merchant ships sliding off the ways, and presently butting through the slow swell of the Atlantic with badly needed cargoes of food and munitions—yes—and men of the fighting services—for Britain.

The workmen munch sandwiches at their machines and watch the screen. They see the German submarine wolfpacks attack the ships. They see the screen of Canadian corvettes darting in to intercept the undersea wolves. They watch Y-guns fire depth charges and towering columns of water rise from the sea as the Canadian escort ships sow their deadly patterns of explosives about the attackers. And they see the convoys finally win through. They're pretty proud then. The commentary on the film has told them that the Canadian Navy, now 500 vessels strong, escorts nearly 50 percent of all the merchant tonnage reaching Britain from this side of the Atlantic.

MAKE WORKERS PROUD

Why are they proud? Let D. Shand, personnel manager of Darling Brothers, Ltd., of Montreal, explain.

"We make pumps. We make marine equipment for the Canadian Navy. Our men know that their work is to be found in those corvettes. They feel that they have a real part in escorting those convoys across the Atlantic. It makes them feel good!"

SHOW THEM WHAT IT DOES

Men are better workers when they feel good about the use of what they have made, according to Mr. Shand. They're more interested in what they're doing. They're proud of their jobs and they want to do it even better. Mr. Shand follows up that very natural desire of the men by making the next showing one of technical training films, telling them and teaching them how to be better and more skilful craftsmen!

Here is a new approach to the application of technical training films which is being developed in Canada. First morale films, inspirational films. Then the technical training films which holds the attention of the men and women workers who want to do their very best in the fight against the "herrenvolk" that would reduce the rest of the world to slavery!

IS COMMISSIONER'S POLICY

It is a part of the new policy instituted by John Grierson, dynamic commissioner of the National Film Board of Canada, to build up a non-theatrical film audience comprising farmers and fighting men: munitions workers –and housewives, for the morale building films of his organization. It is a tribute to his ability in morale building that he has just been named general manager of Canada's War Information Board, corresponding to the O. W. I., while continuing to head the Film Board.

Since the beginning of this year the National Film Board has started going into the industrial plants of Canada to build up film circuits which will bring morale-building pictures to Canada's workers.

Modelled in part upon the excellent system of rural circuits whose travelling projectionists bring films to farmers and other isolated residents of Canada's countryside to show them that they too have a stake and an important part in the war, the industrial circuits are now reaching out to the industrial worker.

REACHING THE WORKERS

They show him what the 700,000 men of Canada's fighting services are doing; how they are using the tools of war which the men in the munitions plants make. They show him how the farmers, the miners, the workers of the forests and the fishermen have been mobilized for victory. They show him, also, how the housewife, typifying the consumer, can serve in reporting violations of Canada's price ceilings and economizing in the home; how she can reduce the strain on Canada's civilian consumer supply industry.

When all circuits are completed, morale films and informational pictures will carry constant reports of all sections of Canada's social structure to every other section.

In the meantime however, as organization of the industrial circuits proceeds, reports from field managers indicate that morale films and technical training films are definitely going to be partners in increasing the scope of Canada's industrial war effort.

COMBINED WITH TRAINING

When the showing of morale films is discussed with plant managers so is the showing of industrial training films. Projectionists of the new industrial circuits have standing orders to show any industrial training films which plant managements may have on hand, after the conclusion of their programs and providing their time schedules permit of this.

The National Film Board has a large stock of industrial training films available. It acts as agent for any government department of Canada which may wish to buy them. But it does more than this. It distributes catalogs of training films and if a manufacturer wants to buy material covering specific subjects, the NFB will let him view the films it has. When he has made his choice, he is directed to the Canadian agency handling the films commercially.

EXPERTS REVIEW FILMS

A committee of industrial experts is about to be set up to view competing technical training films in order that the National Film Board's recomendation of any particular film may be based upon sound knowledge.

In addition to proprietary training films, the National Film Board also has the pictures produced for the U. S. Office of Education and these are finding considerable use in the Canadian Emergency Training Plan which has turned the technical schools of the country into a source of semi-skilled labor for Canadian industry.

Australia's Film Program

★ The Southwest Pacific has more than held its own as an area of wartime film production through the extensive work of Australia's producers.

Recent titles listed by BUSINESS SCREEN included such topics as *Australia Marches With Britain, Road to Victory, Australia Has Wings, Fashions for Men, Defenders of Tobruk, Soldiers Without Uniforms, It's the Navy, Keeping the Fleet at Sea* and similar subjects. Production for the armed forces is matched by films for the home front and civilian defense.

★ Seven million people a week are shown films in one year by the Celluloid Circuit of the British Ministry of Information's 130 mobile film units, most of them equipped for 16mm films. A few for 35 mm. These vans drive to all the country, set up and give their programs in villages and small towns, to Womens' Institutes and social clubs, in barns or churches, to factory workers in their canteens during lunchtime or midnight breaks, to seamen and dockers' clubs along the waterfronts, anywhere from the outer Hebrides to the Scilly Isles.

Subjects Are Varied

The programs usually last from 30 to 90 minutes, and are made up of films of general interest and instruction, training films for civil defense workers and fire guards, films to show factory workers how vital a part they play in the problems of war, films for farmers, for amateur gardeners changing over from rose growing to cabbages, films on blood transfusion, accident prevention and the need to keep healthy in the stress of war, films about the men and women in all the fighting services on every war front, the British and the other United Nations, too.

Another million of a total annual audience of twelve million people has been reached by special showings arranged in movie theatres out of ordinary hours. These cinemas have often been lent free of charge. The programs frequently showed training films to Civil Defense audiences, or were tied up with special campaigns launched by the Ministries of Labor or Health, Agriculture or Food.

Other Distribution Outlets

The third method of reaching the audience has been through the free lending of films by the London Central Film Library, the Scottish and South West of England Film Libraries. With a supply of 750 different films, these libraries took care of 83,000 bookings during the year, an increase of more than 200% over the previous year—lending to 1300 organizations and individuals with their own projectors. The average audience at these showings was approximately 100 people.

The Central Film Library also includes the pre-war Empire and General Post Office film libraries of about 400 films, many of these the now famous first documentary films to be made, in addition to the Ministry's own post-war production of 350 current films.

The borrowers of these pictures includes people of widely differing interests: there were 500 adult organizations of various kinds, 480 local authorities, 387 youth organizations, 650 schools of all grades, Army Units and Royal Air Force Stations, factories, churches, hospitals and prisons. So no matter what anyone's job may be in Great Britain now, how few leisure hours or how inaccesible the camps, billets or hotels, anyone who wants to attend these films can always find out just what is happening on the other war fronts, and how each job fits into the complicated pattern of total war.

MOBILE UNITS TOUR BRITAIN

SOME RECENT 16MM BRITISH FILM RELEASES

Britain's Paratroops: 1 *reel;* 10 *minutes.* Reportage of the training of paratroops and their functions in warfare, by Bob Considine.

Motorcycle Training: 1 *reel;* 7 *minutes.* Training of the Canadian Army Motorcycle Corps in England. Examples of hazards cyclists overcome in running a message under combat conditions.

Shock Troops: 1 *reel;* 11 *minutes.* Britain's Commandos go through a tough workout on their training course; then combine with Navy and Air Forces to raid the enemy coast.

Street Fighting: 1 *reel;* 14 *minutes* A realistic demonstration by the Coldstream Guards of the tactics of house-to-house and street fighting.

Battleship: 2 *reels;* 16 *minutes.* A detailed tour of the battleship HMS King George V, with shots of the Admiral and his staff at work.

America Moves Up: 1 *reel;* 13 *minutes.* A report by Bob Trout, CBS commentator in London, on the many ways in which the U. S. is moving materials and men into action.

Via Persia: 1 *reel;* 8 *minutes.* Army Film Unit production with diagram maps, showing transportation of heavy war materials through Iran for Russia.

Control Room: 2 *reels;* 23 *minutes.* Through diagrams and detailed pictures we see the whole of the Civilian Defense organization working during a heavy raid on a large city.

Eating At Work: 1 *reel;* 13 *minutes.* This film explains the difficulties factory workers have in getting adequate meals, pointing out that the solution lies in factory canteens managed by nutritionists. The running of such a canteen is shown.

Women Away From Home: 1 *reel;* 10 *minutes.* Three girls are moved to Birmingham to do war work. Two are billeted and one goes to live in a hostel. The film follows them until they have settled down in their new homes.

Dig for Victory: 1 *reel;* 7 *minutes.* An instructive appeal to everyone to get a piece of land and grow vegetables. Gardening, from spading the ground to the gathering of the grown vegetables, is demonstrated by a master of the craft.

The Harvest Shall Come: 4 *reels;* 38 *minutes.* The story of Britain's agriculture from 1900 to the present, told through the life of a farm worker. It is a story of neglect and decay, relieved only when farmers were needed during the last war, and again today. The film stresses the post-war aim of revitalized agriculture and fair wages.

Winter on the Farm: 2 *reels;* 16 *minutes.* One of a series of films showing typical farm activities in each of the four seasons. The film gives a clear and instructive description of the problems of mixed farming and shows the various duties that must be carried out in all types of weather.

How to Dig: 2 *reels;* 17 *minutes.* Here are demonstrated various methods of digging for planting different types of seeds in different types of soil.

Information concerning films described in these columns may be obtained through these local offices of the British Information Services nearest you: 30 Rockefeller Plaza, New York City; 360 North Michigan Avenue, Chicago; and Californian Street, San Francisco.

One of Britain's 130 mobile film units which bring war films to the people

LATIN-AMERICA

★ The Good-Neighbor program has two sides to it and one fails when the other is neglected. This two-fold responsibility has been duly noted, however, in the film policies of the Office of the Coordinator of Inter-American Affairs.

While our 16mm projectors and films do an excellent missionary job in the South and Central Americas, a good and sizeable library of educational subjects about these neighbors has been made available to U. S. audiences. These films today form the nucleus of the great film reference libraries of the future in which no phase of the cultural and commercial life of these lands need be misunderstood.

U. S. distribution of the Coordinator's films has been carefully decentralized for convenience and maximum usage. R. G. Maroney, an experienced showman soundly schooled in the business side of the theatre, is in charge of this phase of distribution. That millions of Americans have been able to see these subjects despite a very real scarcity of prints of each title is a tribute to this distribution setup and to all who participate in it.

Disney's "Saludos Amigos"

In the production of the month, *the* event on our goodwill program was Walt Disney's recent release of *Saludos Amigos.* The characters and theme of this colorful cartoon were evolved by Disney and his artists during a length trek through South America.

Showings of the film Rio and other South American capitols brought enthusiastic acclaim and a satisfying reward to the Cordinator's Office for having sponsored the idea. The animated cartoon thus again proves a wonderfully universally medium and the good taste and thoroughness of observation which enabled Disney to make this perfect gesture toward the customs and culture of our neighbors has once more proved him a master of this international medium.

An EXCLUSIVE article by the Deputy Chief Film Section of China's Military Affairs Commission, Vice-President of the China Film Studio, at Chungking, China (Below: Generalissimo Chiang Kai-Chek's

CHINA'S WAR FILMS

by T. Y. Lo

THE SCREEN UNITES THE 400,000,000 AGAINST THE AGGRESSOR

★ There are two old Chinese sayings:

"*It is better to see a thing once than to hear about it hundred times.*"

"*A picture is worth more than a thousand words.*"

These two Chinese sayings were meant to advise men that in learning and in working they should make it a point to see the task with their own eyes. Those were the days when science was still in its infancy. There were no motion pictures to serve as demonstrations for the benefit of those who wanted to study a certain subject. But painting, printing and the making of wood-cuts were China's earliest and best-developed arts. There was also the shadow play, which dates back to 121 B. C. It was an attempt to represent by means of moving images, or shadows, some incident in history or a story that carried a moral. These, then, were the instruments which the ancient Chinese employed to spread popular education, and their use persisted until the advent of the twentieth century, when a drastic transformation in the methods of education began to take place in China as the result of the impact of western influence.

One of the distinctive features of the history of China is the predominant part played by agriculture in her social development. Agricultural production and technique form the basis upon which the community established itself and flourished. In a self-sufficient rural economy, people were apt to be contented. They lived peacefully with one another in their own community and would not think of interfering with the affairs of people in another community or invading their territory. For the same reason, they could not imagine how others should break into their domain and take away their means of livelihood. Their primary producing units were rural family groups engaged in agricultural and household industry. Hence, large-scale industry could not develop and industrial science and technique remained on a low level.

Agrarian Tradition Persists

It is the persistency of the agricultural society that accounts for the backwardness of all branches of industry in China up to a very late period. However, since the opening of the door of China by the Opium War, 1842, the prosperity and stability of the self-sufficient agricultural society had been somewhat shaken and the foreign influence that came in the wake of that war brought with it advanced industrial technique, which introduced a gradual transformation in the condition of life. This transformation was accompanied by social and political changes and disturbances usually consequent upon any general struggle to get rid of the binding force of the institutions of an agricultural and feudal society.

An Arena of Exploitation

These changes and disturbances continued through the founding of the Republic to the conclusion of the Northern Expedition which finally united the country under one central government. A new political framework was thus set up. But being an industrially backward country, China was still the arena where industrial powers competed with one another for the control of her vast resources and labor. Owing to her proximity, Japan was the most ambitious and aggressive. By dint of the power which she newly acquired through the adoption of Western scientific technique, she penetrated into China through economic means and invaded China with military might.

Films and Industrialization

Faced with the double task of putting China's house in order and fighting the Japanese aggressor, the Chinese realized that they had to adopt western methods to industrialize the land. The educational film, product of advanced industrial technique and one of the most effective instruments of popular education, naturally entered into the scheme. Remembering that "It is better to see a thing once than to hear about it a hundred times" and that "A picture is worth more than a thousand words," the Chinese gave the film a very important place in the educational program of the country.

Previous to the outbreak of war in 1937, the Chinese Ministry of Education had already announced the following principles to guide the making of educational films.

1. *To develop national consciousness among the people.*

♦ According to this principle, the following films were produced: *Between Death and Honor*, (the story of a great scholar and patriot at the end of the Sung Dynasty);

A SIGNIFICANT CONTRIBUTION TO THE WORLDWIDE HISTORY OF VISUAL EDUCATION

須緊記一尺之影
Remember—one foot of film
使用途正當有如
properly used, is as deadly
致命之槍彈
as a bullet fired against
以射抗敵人
the enemy . . .

LEGEND ON WALL OF CHINA FILM STUDIO, CHUNGKING, CHINA

HEROIC CHINESE SCHOOL BOYS resist a Japanese attempt to force obeisance to a traitor: from "Victory Symphony" story of the second Chinese victory at Changsha.

Shih Ke-fa, (the story of a learned minister who would rather die than surrender to a foreign invader); *Emperor Yu*, (the story of an emperor who made great personal sacrifices in order to carry out his task of diverting a disastrous flood from his country); *The Life of Dr. Sun Yat-sen*, (about the father of the Chinese Republic); *Good Husband*, (encouraging people to join the military service); *Defend Our Land*, (a film about the present war).

2. *To impart general knowledge.*

◆ The following films can be included in this category: *War Orphanages; Refugees Work on Undeveloped Land; The Legal Tender; Wartime Chungking; First-Aid; The Prevention of Malaria;* and *Eyes and Their Protection.*

3. *To impart scientific knowledge.*

◆ The following films come under this category: *Vehicles Driven by Vegetable Oil; Gasoline Substitutes; Charcoal-Engine Vehicles;* and *Solar Eclipse.*

4. *To teach the technique of production.*

◆ Under this category are films like: *Hog Bristles; Tea; Tung Oil; Cotton; Salt from Artesian Wells, Szechuen;* and *Wool.*

RIVER craft carry a combined medical and mobile cinema unit of the YMCA

5. *To supplement school education.*

◆ Under this category are some geographic films: *The Province of Sikang; The Omei Mountains.* There are also films which serve as illustrations for text-books. These include educational films made by the Ministry of Education itself, or by the Ministry in co-operation with other government film production units or by these units in behalf of the Ministry. All these films were made in accordance with the principles set down by the Ministry as mentioned above. The films are distributed under the above-mentioned categories thus:

Category	*Number of Subjects*
No. 1	32
No. 2	16
No. 3	11
No. 4	31
No. 5	12

Film Imports Difficult

As to importation of foreign educational films, there have been great difficulties ever since the war began. First, it was the difficulty of obtaining foreign exchange for the purpose. (During the early part of the war, the greater part of the foreign currency which China could command was expended on the purchase of arms and ammunition.) Then, after Pearl Harbor, when China was enabled to make purchases abroad through lend-lease provisions, there arose the insoluble problem of transportation. Hence, there has practically been no import of foreign educational films since

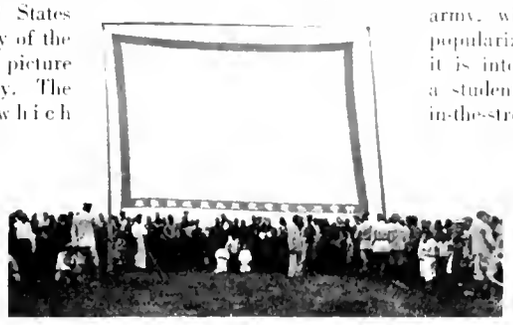
T. Y. Lo in his Chungking studio office

Script conference in the China Film Studio

Animated cartoon production at the Chungking Studio.

the outbreak of war between Japan and the United States.

Basing upon the principles governing the production of educational films as related above, the Ministry of Education organized a Visual Education Committee to direct the affairs of visual education in China. The Committee consists of representatives from the various government departments concerned and from the existing government film producing units. The present writer is a member on that committee and had attended many of its conferences before he was sent to the United States for a survey of the American picture industry. The problem which the Committee discussed was how to make use of the limited film materials and equipment to obtain maximum results.



Thousands gather for outdoor cinema shows.

Three Production Units

There are at present three large film production units in Free China. The China Film Studio, under the direction of the Political Department of the Military Affairs Commission, works principally on films for educational and training use in the army. There is the Central Film Studio, under the direction of the Central Information Bureau working principally on educational and informational films for use among the public. The third is the Educational Film Studio, under the Ministry of Education and working principally on films for use in schools. The first and the second organizations were established before the war and have a history of well over ten years. They have followed the transference of the seat of the government from Nanking to Hankow and from Hankow to Chungking. The third one, the Educational Film Studio, was set up only at the end of 1940. All these studios suffered greatly from the shortage of film materials and equipment after the outbreak of war between Japan and the United States, and their regular production is seriously hindered on that account.

In production, following the principle of "making use of limited materials and equipment for maximum results," the producer, in making an educational film for the army, will try to popularize so that it is inteligible to a student, a man-in-the-street or a farmer. He will have to seek for methods to arouse interest in his variegated audience and to reap the widest results possible.

On the films produced by the China Film Studio, for example, there is not only a sound track, but also subtitles. The narrator will read, word by word, what is in the subtitles. This will help those who cannot read to learn some of the characters in the subtitles, and those who already can may have a chance to check their own pronunciation of the words against the standard pronunciation which the narrator is required to use."

Teaching Tank Defense

As an illustration, we may again take the film *Anti-Tank Methods* produced by the China Film Studio. Since China cannot manufacture her own tanks and cannot produce a large number of anti-tank guns, it is found necessary to omit details in anti-tank warfare that are connected with the use of aeroplanes and anti-tank [illegible]. Passive defense methods are [illegible] emphasized, such as digging [illegible] of tank barriers and traps, [illegible] "dead angle" of a tank [illegible] with a detailed description and treatment, so as to acquaint the soldier or guerilla fighters with the weakness in a tank and by teaching them to make use of their knowledge of the "dead angle", to reduce their fears.

The tank is known in the film as "the deaf and blind contraption," and it is explained that the operator and the gunners, while the engine is in operation, will not be able to hear anything, and that since the observation window is small, the visual angle is extremely limited, so that the men inside it are almost blind in effect. It is further pointed out that the violent shaking and the closed interior of the tank cause great discomfort to those inside and that [illegible] within a very short time.

The principal purpose of [illegible] is to teach the audience whether it consists of soldiers or men in the street, how to construct barriers and traps to hinder the advance of enemy tanks, and at the same time to reduce their fears of these "deaf and blind contraptions." Hence, we might also say that the making of films which teach war methods on the one hand and strengthen morale on the other is another aim in the visual education policy of Free China.

Dramatization Is Avoided

Generally speaking, the majority of films produced in China avoid too much "dramatization." Their tempo is generally slow. The idea is to let the average person in the audience grasp the full significance of every action and every word uttered. Sometimes a pamphlet form text book is issued to the audience either before or after the screening, so as to ensure their full understanding of the subject. In the army, all set training in the regular army course is mostly omitted from films. Similarly, a film will not include any subject that can readily be made clear in the text book or a lecture. The main reason for this omission is that the limited materials for the making of films will be employed for their specialized function.

In order to train personnel for the making of educational films, the Nanking University and the Ministry of Education have collaborated and instituted a course in Visual Education. After the outbreak of the Sino-Japanese war, the Nanking University has removed to the province of Szechuen. The course is still retained. In 1939, the University sent one of its professors, Mr. Sun Ming-ching, to the United States, where he studied the administrative aspect of visual education. In his research, he also received much valuable help from

(PLEASE TURN TO PAGE 22)

A WORD BY THE EDITOR

★ We deem it a great privilege to present this exclusive article by Mr. Lo, which relates for the first time in the pages of any U. S. publication the inspiring story of visual education in the New China. It is particularly significant since it was in this land that the invention of printing brought the light of learning to the world.

O. H. C.

Young China pays homage to a flag of freedom.

Crowds throng nightly showings in the marketing squares of Free China.

[illegible] Mr. [illegible] at specialized field. Mr. [illegible] returned to China in 1940 and is at present still teaching in the Nanking University. This University, then, is the first one in China to have a course in visual education.

It has been mentioned in a previous paragraph that all the materials and equipment needed in the production of educational films, too, or fact in making any films at all, have to be imported. This naturally puts many limitations on production. But the urgency and exigencies of war make it impossible to wait for ideal conditions in which to carry on the work, and there is nothing for it but to make the best out of the existing situation.

China Needs Projectors

As in production, so it is in exhibition. There are not enough projectors in Free China. But what is lacking in equipment is made up with manpower. Travelling projection units are organized, one to one projector. Each unit has a captain, a projectionist and a generator operator. These units are assigned to cover widely scattered areas. Once setting out on an assignment, they are entirely on their own in regard to finding audiences and their means of transport. They will ride on mules, when mules are available. Otherwise, they will travel on foot, carrying all their equipment. They take the wonders of the motion picture to outlying districts where people have never seen a film before, and bring back with them experiences of hunger and privation and thrilling excitement.

In 1935, the Ministry of Education ordered provincial and municipal governments to mark out their administrative areas into districts in order to facilitate the promotion of visual education. At that time, eighty-one such districts were marked out. In 1936, the number of districts had increased by thirty-one, and in 1937, by an additional twenty-three, making altogether a total of one hundred and thirty-five districts. The Ministry of Education supplied each unit with projection equipment, so that in each district there are one slide projector, one cinema projector and one generator for their operation. The cinema projector is in most cases a machine for 16mm. silent films.

Districts Cover Wide Area

Each of these districts covers a rather extensive area. The audience is mostly confined to school students. On the average, there is one showing every week, the screening of foreign films not counted. Then, there is a small number of schools and other institutions which have their own projectors. Owing to the shortage of projection bulbs and some parts, however, the use of these projectors has now become extremely limited.

In 1938, the Political Department of the Military Affairs Commission founded ten mobile cinemas, each equipped with a 35mm. sound projection equipment and subject to army discipline. Their activities are chiefly at the front and in field hospitals. Most of the times, however, the screening is done on open ground. A transparent screen is set up, so that on one side, there are soldiers, and on the other, people of the village or town. According to a radio broadcast from Chungking on January 6, 1943, the number of audience for the past five years totals 56,700,000,667, half of that audience being soldiers. These are the returns gathered from 113 different localities. In 1942, one of the units followed the Chinese expeditionary force to Burma and showed films in eight different localities.

YMCA Uses Mobile Units

There are other institutions, like the YMCA, which have their own mobile cinemas. The YMCA often uses a mobile medical unit, a mobile cinema and other facilities for popular education put on a barge, which travels up and down the river, rendering free services to those who need them.

During the writer's investigation tour in the United States, he is very much impressed by the tremendous development that has been made in the field of visual education in the country. Comparing two to three thousand projectors for a population of 100,000,000 in China (counting both 16mm. and 35mm. projection equipment and including those owned by the government and those owned by various institutions and private individuals) with the some 16,000 theaters and thousands upon thousands of projectors available for furnishing visual education in the United States, he cannot but feel that there is yet a lot to be done in the field of visual education in China.

Mobilization of Manpower

The chief concern of China today is to mobilize her immense manpower to fight against the aggressor. After the war, she still has to make a great effort to develop her rich resources in order to meet the needs of an industrial society. In view of this, an instrument to help spread popular education is indispensable. The cinema will certainly exert a tremendous influence on the country in its reconstruction.

Technically speaking, one may predict that the 16mm. sound film will most probably be more widely used in China than in any other country. There are at present only about three hundred theaters in the whole of China. (In Free China, there are only 112.)

Interests Closely Related

Since the Japanese attack on Pearl Harbor, the relation between the Chinese and the American people has been much closer than before. There is an eager hope to obtain American technical aid and cooperation. For the sake of world peace, prosperity and human welfare, there is need for the development of China's resources. The motion picture, utilized as a means to promote technical education and to foster friendly international relations, is bound to make vital contributions toward the building of a new China and a new world.

Announce Organization of Sutton-Malkames, Inc.

◆ Announcement of the incorporation of Sutton-Malkames, Inc., new film production organization with offices at 605 Broad Street, Newark, New Jersey, and production unit offices at 2 West 16th Street, New York City, was made last month.

Key men in the new organization are N. F. Sutton, President, for four years head of Sound Pictures Corporation and formerly with the Jam Handy Organization; Don Malkames, Vice-President in Charge of Production and a well-known producer of many years experience in the industrial and commercial field; G. W. Kelly, Secretary and Director of Technical Writing, and Mort Corwin, Director of Slidefilm Production.

INDUSTRIAL CONFERENCE BOARD ISSUES A REPORT ON TRAINING PICTURES

★ The National Industrial Conference Board has undertaken a fairly comprehensive report on the use of films for training workers and in the recent issuance of its study *Visual Aids in Industrial Training* has added considerable favorable evidence on the value of these materials in speeding our war program.

239 companies, many of them outstanding producers of war materials, were surveyed by S. Avery Raube of the Management Research Division of the Board. The result appears to be "an overwhelming opinion that films are a valuable supplement to an industrial training program." The "considerable differences of opinion concerning their uses, advantages and limitations" apparently form the major part of this analysis.

Section Five of the Report which deals with the evaluation of the contribution of visual aids to industrial training offers the most interesting testimony in the study. In discussing the advantages of visual aids, for example, executives of 121 companies cooperated by providing a detailed compilation in which eleven different advantages were mentioned most frequently. *Understanding of Subject Matter* was an advantage stated most frequently (by 103 or 89.3% in the replies.) *Interest in Learning and Retention of Material Learned* were advantages also most frequently agreed upon.

Other sections of the Report deal with the general use of pictures in education, their current use in industrial training, relation to programs, future use and problems and methods of projection. Copies are available only to member Associates of The Conference Board and are not available for public sale.

NEW TRAINING MATERIALS

★ A new film *Drafting Tips*, designed to be shown to students who have had 40 to 50 hours of drafting instruction in order to impress standard practices and procedures not emphasized in textbooks on the subject, is available through the production facilities of Pennsylvania State College, at State College, Pa. Another subject, *Construction of a Light Airplane*, produced by the same source, will be of especial interest to flight classes.

♦ The National Safety Council has announced *Women and Machines* as the latest in the well-known series of sound slidefilm programs produced for its members.

(Above) Scenes from the National Safety Council slidefilm "Women and Machines"

U. S. Office of Education Awards Picture Contracts

♦ Announcement was made the past month of the awarding of contracts for 105 sound motion pictures for war training by the United States Office of Education. Films on shipbuilding, aviation construction, machine tool operation and other subjects have been awarded the following:

Atlas Educational Film Company
Bray Pictures Corporation
The Calvin Company
Defrenes and Company
The Jam Handy Organization
HarFilms, Incorporated
Hugh Harman Productions
Jamieson Film Company
Medical Film Guild
Photo and Sound, Inc.
Ray-Bell Films, Inc.
R. C. M. Productions
Spot Film Productions, Inc.
Emerson Yorke Studios

♦ R. M. McFarland & Associates, Chicago visual specialists, have a series of sound slidefilms on problems relating to women workers in war industry, for general sale at economical cost.

WHAT THE PLANTS WANT

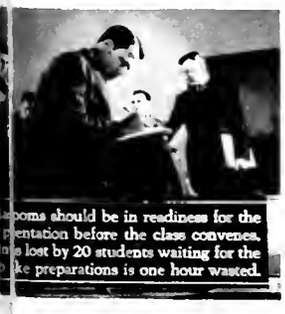
♦ A universal need for pictures dealing with blue print reading is noted in the volume of correspondence received by Business Screen on the subject. Apparently subjects now available do not completely fill the demand. The field of radio production and electronics in general is almost completely devoid of training subjects and again the demand is extremely heavy. Next in volume of requests is the universal plea for a strong, psychologically, powerful motion picture dealing with industrial safety. Thousands of plants unequipped with sound slidefilm apparatus also feel that there is an emotional appeal to be stressed that can be made most successfully in this way as well as serving their equipment.

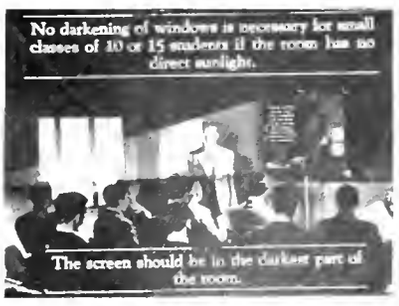
Needless to say a need still exists for a motion picture on the *utilization* of visual training aids. Plans for such a production have been made and the sooner one is provided for the guidance of war plant training departments, the better. Sequences on the operation and care of modern 16mm sound equipment would be an important help to thousands of present owners.

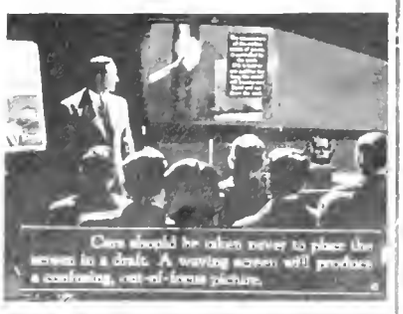
In the field of industry, films dealing with structural tests are needed for all aircraft plants. The electrical industry also needs films.

How to Hold a Slidefilm Program—

These brief scenes from a complete new filmstrip presentation on good showmanship are worth remembering (OVER)







PROGRAM: CONFERENCE ON U.S. NAVY TRAINING FILM PRODUCTION

Brief Summary of Events at Training Film Conference Held in Washington, D. C., January 31-February 2, 1943.

THE PLAN OF THE CONFERENCE

Speaker: *Lieutenant Orville Goldner, U. S. N. R., Senior Project Supervisor, Training Film Section.*

INTRODUCTORY REMARKS

Speaker, *Captain H. B. Taylor, U. S. N., Director of Photography, Bureau of Aeronautics.*

CURRICULUM DEVELOPMENT IN THE NAVY AND ITS IMPLICATIONS FOR TRAINING FILMS

Speaker, *Lieutenant Commander L. C. Larich, U. S. N. R., Officer-in-Charge, Curriculum Standards Section, Training Division, Bureau of Naval Personnel.*

Discussion: Led by *Dr. Reginald Bell, Senior Educational Consultant, Training Film Section.*

EDUCATIONAL STANDARDS FOR TRAINING FILMS

Speaker: *Mr. Floyde Brooker, Director, Visual Aids for War Training, United States Office of Education.*

Discussion: Led by *Lieutenant R. B. Lewis, U. S. N. R., Training Film Section.*

THE TRAINING FILM SECTION TO DATE

Lieutenant Thomas Orchard, U. S. N. R., Officer-in-Charge, Training Film Section. (Paper read by *Ensign John E. Bauernschmidt, U. S. N. R., Training Film Section.*)

PHOTOGRAPHIC AND SOUND STANDARDS FOR TRAINING FILMS

Speaker: *Mr. John A. Maurer, Chairman Committee on Nontheatrical Equipment of Society of Motion Picture Engineers.*

Discussion: Led by *Lieutenant J. Walter Evans, U. S. N. R., Training Film Section.*

BELLS AND SMELLS

(Screening of some of the Training Film Section's "Bests" and "Worsts"

Discussion: Led by *Mr. George H. Griffiths, Training Film Section.*

POSSIBILITIES IN ANIMATION

Speaker: *Lieutenant Berkeley Anthony, U. S. N. R., Training Film Section.*

Discussion: Led by *Lieutenant J. C. Hutchison, U. S. N. R., Training Film Section.*

TECHNIQUES IN SLIDEFILM PRODUCTION

Discussion: Led by *Lieutenant Lawrence Crolius, U. S. N. R., Training Film Section,* assisted by a number of project supervisors.

THE FUNCTION OF THE FILM UTILIZATION OFFICER

Speaker: *Lieutenant F. W. Noel, U. S. N. R., Bureau of Naval Personnel.*

Discussion: Led by *Lieutenant D. G. Williams, U. S. N. R., Training Film Section.*

FILM DEVICES

Speaker: *Mr. Sidney Kaufman, Training Film Section.*

COMBAT PHOTOGRAPHY

Presiding: *Commander H. B. Miller, U. S. N., The Head of Training Literature Section, Training Division, Bureau of Aeronautics.*

Speaker: *Commander John Ford, U. S. N. R., Officer-in-Charge, Photographic Section, Office of Strategic Services.*

New Slidefilm Shows Good Meeting Tips

♦ Many visualized meetings fall short of their objectives because of faulty meeting management.

The most effectual slidefilm meeting is the meeting that is planned carefully to provide against interruptions, interferences, digressions, accidents.

As a result of experience in many thousands of slidefilms sales training meetings in the years past, The Jam Handy Organization has produced and made available a slidefilm titled *Tips On Slidefilms*, the purpose of which is to show, first, what makes for a perfect visualized meeting, and second, on the other hand, what can serve to nullify the efforts of the best possible meeting leader, and the most receptive attention of an interested audience, or group.

LITTLE THINGS COUNT

Simple as the modern slidefilm projector is to use, efficient as are the appurtenances that are needed for showings, there is yet a surprisingly large list of "little things" so little that they are often overlooked or neglected because they *are* little which have to do with the quality of a meeting.

The new slidefilm is of the reading or discussional type. It totals 30 frames, and is presented in five sequences:

1. Preparing the classroom or meeting room
2. Use of the projector
3. Use in the classroom
4. Use in the workshop
5. Use as a reference library

Perhaps the suggestions contained in the first section of this subject will be of the greatest use and interest to the majority of slidefilm users preparing the class or meeting room for a smooth and effectual session.

HOW TO OPERATE PROJECTOR

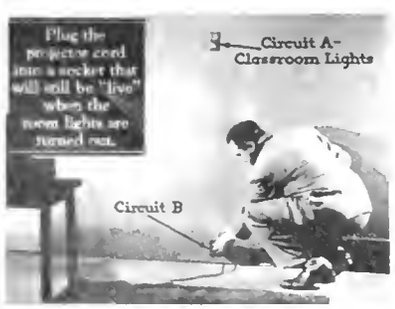
The second part illustrates and explains how to load the projector and adjust it for use.

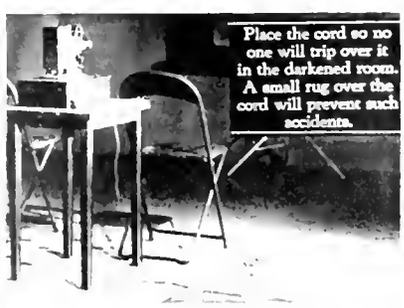
An interesting phase of this new picture is that which visualizes how the slidefilm may be used in the workshop. It is pictured how the image may be projected on the wall floor or even the ceiling to guide and help the student or worker actually engaged in executing a mechanical principle visualized for him on the slidefilm.

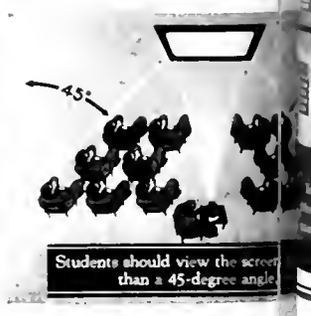
Slidefilm kits or subjects as the basis of a reference library is also explained. It is shown how subjects may be racked and indexed for quick reference purposes by the instructor, how a few frames from a certain subject may often be used to supply background information for an advanced lesson. Also how the slidefilm image may be projected on the blackboard as a pattern for a blackboard chalk drawing.

How to Hold a Slidefilm Program—Con'td:

More scenes from the new production: "Tips on Slidefilms" now available at cost to help cause of good showmanship.







★

SCENES SHOW the detail of step-by-step instruction in the Coast Guard slidefilms. Scenes below from another recent film show method of inserting questions and blanking out words in the review section

★

COAST GUARD

★ WORD HAS COME from the Coast Guard Visual Training Section announcing new technics in the use of training films. One involves a combination of motion training films and slide films, and the other aids the instructor by giving him a complete lesson embodied in the film.

The first technic is one that can be used to teach any job that can be done with the hands, such as knot tying, cleaning and repairing guns or other mechanisms and speeding up manual operations of any sort.

SAVES COUNTLESS HOURS

The motion training film shows "what" is to be done and the correct manipulation of doing it. Then, the slide film is shown which helps the instructor teach the student exactly "how" to do the job, step by step. The students actually do the job along with the film, being guided by the film and doing just what is shown on the screen for them to do. As in using other training films, the films may be repeated as many times as is necessary.

The value of this new technic was proven in a demonstration by Lieutenant Commander Patrick Murphy, USCGR, Chief Visual Training Officer, Coast Guard, before a group of approximately 1000 members of the New York Sales Executive Club where he taught this group, in the short period of approximately seven minutes, to tie a square knot.

SHOWS "WHAT" AND "HOW"

The value of this technic can be seen since we know that it previously took an instructor from five to fifteen minutes of individual instruction to each recruit to tie this knot.

The other technic now used by the Coast Guard is that of including information and directions for the instructor in the film itself. This takes up only a few frames preceding the main body of the film and eliminates the hazard of the loss of printed instructions, booklets, etc. which are generally released with new training films. It also is much more convenient for the instructor than delving through printed material, preceeding the showing of the film.

This technic also includes a question and answers sequence which are shown after the main body of the film is reviewed.

In this question and answers series, the frame giving the original

(PLEASE TURN TO PAGE 31)

APPRAISAL OF TRAINING FILM

TITLE

RUNNING TIME ..... MUS. (Color) (B&W) (Sound) (Silent)
PURPOSE

DIRECTIONS. Appraise each element of the picture as you see it, in column B. Then refer to a text previously prepared to which you have also referred, for example, allocate A, Section I, a possible 100 for the section total of 100%. If the purpose is not clear, or if the picture as a whole is considered entirely ineffective, the score would be 0. In entering column B, make allowance in total for the degree of relevance of the film, as measured against the purpose as stated.

A	B	TO WHAT DEGREE:
%	%	
		I. PURPOSE
50		A. Is the purpose clear?
60		B. Is the purpose achieved?
10		C. Is the film length in correct proportion to the purpose?
100		
		II. SELECTION OF CONTENT
30		A. Does the film present its information with convincing genuineness?
30		B. Are enough ideas included in pictures and sound to make the subject clear?
10		C. Is the number of ideas in correct proportion to film length? (Too many?)
10		D. Is the medium suitably employed (motion picture vs. film strip)?
20		E. Does the film succeed in avoiding objectionable, unimportant, or irrelevant materials?
100		
		III. DEVELOPMENT OF CONTENT
40		A. Is the idea development clear?
20		B. Is the story continuity smooth?
30		C. Does the film challenge attention and sustain interest?
10		D. Do camera angles and distances aid in explaining subject?
100		
		IV. PHOTOGRAPHY
20		A. Is the eye effectively focused by scene layout?
20		B. Are closeups, lighting, and varying scene footage technically well done?
20		C. Are dissolves, wipes, fades, slow motion, effectively employed?
15		D. Are titles and captions legible and effective?
15		E. Is optical definition good?
10		F. Is camera movement smooth (panning, dollying, zooming)?
100		
		V. SOUND
10		A. Is the character of the voice suitable?
15		B. Is the enunciation clear and delivery effective?
10		C. Is the vocabulary appropriate?
15		D. Does the narration succeed in avoiding over or under writing?
10		E. Does the narration highlight important material?
15		F. Is the speed of speech appropriate to content?
10		G. Are background or natural sounds effectively used?
15		H. Is the reproduction clear?
100		
		VI. ANIMATION
30		A. Does the animation tell a clear story?
30		B. Does it stimulate interest?
30		C. Does it aid in understanding?
10		D. Is it well integrated with the balance of the film?
100		
		Total B
		Total for film

(Typical appraisal form developed for Navy film subjects.)

★ [illegible]

[illegible] Department of [illegible] National Committee [illegible] Evaluator of Management Training Aids, based on the [illegible] six-hour USMWT Safety Executive program.

Offer Complete Program

Films combine narrative and exposition, thus holding interest and imparting essential points systematically in a way that is easily remembered and include a printed general course outline plus a conference leader's program to accompany each film and record for ten two-hour safety meeting. The films are prepared so that a safety management course for supervisors and foremen can be conducted with a minimum of management effort and without the services of a professional conference leader.

Each meeting opens with introductory remarks by the leader. The sound slidefilm is then presented and is followed immediately by a quiz made up of ten questions of the true and false type which do not require a great deal of time and writing to answer. This quiz serves as a review to fix the important points in the minds of the conference group as well as a check for management to determine the effectiveness of the presentation.

Conference Follows Quiz

Following the quiz a conference is conducted, based upon an outline which includes specific discussion provoking questions. Provision is made in this outline to tie the subject in with local conditions and practices. At the close of each conference, the outline provides for a summary of conclusions and commitment by members of the group for action on the conclusions reached.

Below is a brief summary of subjects covered in each of the films in the series:

1. Introductory film covering management and supervisors responsibility. How to organize and begin course.
2. Methods of discovering and correcting accident causes.
3. Principles of safeguarding against mechanical hazards
4. Plant housekeeping — importance of providing safe working conditions.

ON THE PRODUCTION FRONT

DEVRY CORPORATION EMPLOYEES HEAR PACIFIC WAR EPIC FIRST hand as Lieut. Commander Henry P. Michiels, USNR, addresses an employee rally at the Corporation's Chicago projection plant. Shown, left to right, in the picture above are: Ed. DeVry, Secretary and Treasurer of the DeVry Corporation, Commander Michiels, William C. DeVry, President of the DeVry Corporation, and another honored Navy guest. (Story in column at right).

5. Correct supervision in handling materials.
6. Need for proper clothing and personal protective equipment.

DeVry Workers Hear Epic of War in Pacific

♦ Straight from the scene of recent Pacific sea battles in which he participated since the epic day at Pearl Harbor, Lieut. Commander Henry P. Michiels, USNR, came to bring an inspiring message to his home town and to workers on the war production lines at the DeVry Corporation.

Commander Michiels was the author of a widely-publicized letter (reprinted below) which was received by President William C. DeVry of the Corporation some months ago. The letter graphically told of the importance of motion pictures to the men of the Navy in requesting emergency parts needed to keep a DeVry projector operating on one of the "battle-wagons." The request was filled in record time and delivery made via air through cooperation of the Ferry Command.

Commander Michiels returned the favor with his personal visit.

Original Letter From Pacific

"I am going to collect on a favor you promised me several years ago. That's if you remember? When the old TYPEE caught fire due to a short in the battery circuit and I and my boys saved her. I could sure use that favor now, which I didn't need then.

"Here it is:—We have one of your projectors, Model "XD", but we are fresh out of projection lamps so no movies. We have had them on requisition through official channels for four months and still haven't got them.

"Out here in the Pacific movies are the one and only diversion our boys have apart from chasing Japs, so if you'll be good enough to send me a half dozen of those projection lamps via air mail, it will really be the biggest favor anyone could do for our crew.

"We have had a little action and of course are prepared for more. Never did I dream, when I was Harbormaster there, that someday I'd be back at sea fighting Japs—but here I am."—Lieut.-Commander Henry P. Michiels, USNR.

Latest OWI War Films

♦ Especially interesting to war plants are two new film releases from the Office of War Information *Keeping Fit* and *The U. S. News Review, Issue Two. The Marines Hymn*, another song short, and *The Spirit of '43*, new Disney color cartoon, are also among the films.

SHOWN LARGE AND LIGHTED UPON THE SCREEN are scenes like these from new First Aid training materials now available for use in war industry

First Aid for Your War Workers

★It has been estimated that in 1941, American industry lost something like 160,000,000 man-days, and a money loss of about four billion dollars due to preventable accidents. That 1942 figures will show even higher percentages, due, first, to millions of inexperienced workers joining in the war production effort, second, to the need for speeding up output, is taken for granted, and this in spite of a greatly intensified program of safety first education, and worker protection now under way in industry.

Pictures Important Role

In this program of safety education the picture screen is playing an ever widening part. Since accidents will happen, however, the importance of the broadest possible base of first aid knowledge among employes in large plants is recognized as a "second line of defense" against loss of priceless time and labor.

To make possible this broader knowledge in the most effectual and speedy way, a new slidefilm kit-set of 20 separate subjects has now been made available to industry and institutions everywhere, which already has proved its value in the emergency.

It is not the purpose of this slidefilm series to completely train employes in first aid procedures. They simply add *visualization* to the lecture, text-book study, and to actual demonstration.

Text and Slidefilms

In fact, this Kit-set includes both lecture and text-book study as well as provision for practical demonstrations. The lectures are on disc records synchronized with the films, and for each slidefilm there is a printed text-book. It will be seen that the Kit provides a complete and approved course in first aid which does not require a professional doctor or nurse. Any intelligent person after taking the course complete, is in a position to conduct classes with authority, and with a pictured "pattern" for each lesson which assures a logical and effective presentation.

Two Are In Technicolor

Two of the slidefilms have been produced in Technicolor, and the Kit includes a printed instructor's guide or manual. At intervals in the slidefilms "cues" are provided so that practical demonstrations can be made by the instructors and classes are permitted to try a hand at procedures explained on the record and pictured on the screen. For this purpose it is customary to have a live model in a bathing suit in the classroom together with necessary simple appurtenances for practice and demonstration.

It has been pointed out that the great size of the modern war industry plant, spreading over many acres, demands that there be some one in every aisle or every section familiar with the proper procedure "till the doctor comes" in all of the most common emergencies. Procedures which would require hours to explain through lecture or text study are much more quickly grasped when actually seen in pictured form, large and illuminated.

Course Is Complete

The continuity of the series of 20 slidefilms and records provides a complete course and there is little left for the instructor or class leader to do but make the simple demonstrations called for in the course as the lessons proceed.

Time is usually a vital element when most accidents happen. To do the wrong thing till the doctor comes is often to subject the victim to unnecessary suffering. To do the right thing instantly through a knowledge of what to do means that the victim runs a better chance of getting back on the job more quickly than might otherwise be the case.

Also of Value In Home

There is also another advantage in training more war workers in the fundamentals of first aid. Such knowledge is of value in home and community life, and in OCD organization work in and near the factory or plant.

There is a total of 1,031 individual photographs, charts, graphs, drawings and exhibits in the series of 20 slidefilm subjects.

Typical subjects are as follows:

Purpose of First Aid (55 *pictures*) A preview of the course, and some of its applications.

The Body Part One (*Color* 15 *pictures*) Muscles, tendons, skin, blood, skeleton, head, trunk, upper and lower limbs.

The Body Part Two (*Color* 54 *pictures*) Heart, arteries, capillaries, veins, breathing, nutrition, and nervous system.

—for sources of programs described on this page address inquiries to Business Screen, 157 East Erie Street, Chicago—

Training Films Serve on Three War Fronts

FULL REPORT ON FIRST A. V. A. VISUAL AIDS SECTION MEETING AT TOLEDO IS GIVEN BY ELDON ROBBINS

★[illegible] and discussed their contributions in furthering the production and utilization of vocational visual aids.

Plans for the first training films produced for the Office of Education were made in January, 1941, almost a year before Pearl Harbor, Brooker said. When the Japanese launched their sneak attack upon the American naval base in the South Pacific, eighteen of these sound motion pictures were available for distribution to classes for vocational training of war production workers both in the public schools and industry. These eighteen subjects carried the brunt of the vocational visual aids training program during the first months of the war when millions of new workers were needed to man the machines on the production front.

Brooker Addresses Session

Speaking as a representative from the Nation's war worker training front, Lloyde E. Brooker, director of visual aids for war training in the United States Office of Education, traced the development of machine tool and shipbuilding films

New Program In Work

Brooker disclosed that the Office of Education is producing 110 motion pictures and the same number of film strips for vocational training of war production workers. This program is dwarfed, however, by the production of training films for the armed forces. He reported that the Navy has approximately 1,000 subjects produced or under production and that other branches of the service are engaged in extensive production programs.

Although America had an unprecedented production of training films, this does not of itself indicate that we have outstripped our enemies in the utilization of visual aids for mass instruction, according to Brooker. The nation faces a shortage of men skilled in the efficient use of vocational training films and there is a problem of adequate projection equipment.

Nazis Started In Early

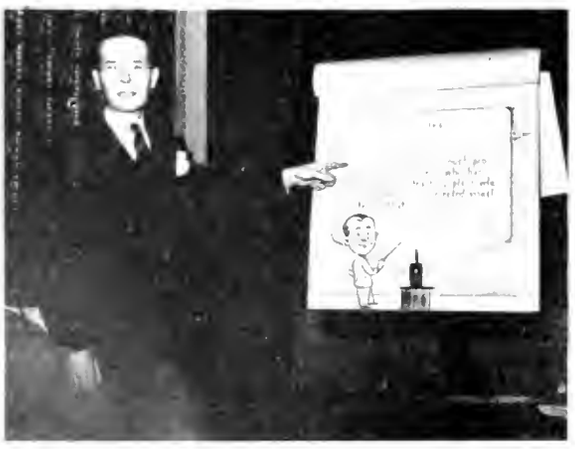
"At the beginning of the war Germany had a head start on the rest of the world in training films as well as in airplanes and tanks and guns," said Brooker. "In 1940 the Nazis had five times as many 16mm sound motion picture projectors as did we in the United States. They had produced twenty times as many training films and they were

Candid Glimpses at the Toledo A. V. A. Meeting

(LEFT ABOVE) A "LITTLE theatre" exhibiting U. S. Office of Education training films was well attended by members of the AVA Conference. Projectionist: Bernard Cousino of Toledo. (RIGHT) Instructor's guides for USOE and ERPI films were displayed by Audio Visual Aids Council, Inc. Howard Pfau of the Council is giving service to an interested group

BELOW: J. C. COFFEY OF THE JAM Handy Organization, Detroit tells the assembled vocational teachers about new aids which have been provided to speed the task of training for wartime responsibilities. The illustrated discussion was presented at the vocational visual aids breakfast in Toledo

EXPLANATIONS OF "HOW IT WORKS" were given by members of the Jam Handy Organization to vocational educators attending the A. V. A. Conference first visual aids section meeting at Toledo.



ABOVE THE PANEL DISCussing "Utilization of Training Films" consisted of (left to right) Maurice Trusal, Williamsport, Pa.; Mrs. Emma Green, Fifth Service Command, Fort Hayes, Columbus, Ohio; Lyle Stewart and William P. Loomis of the United States Office of Education

making fifty times as much use of them. There is no doubt that films played a major role in imparting skills to civilians and soldiers during Germany's amazing rise to power in the years she was preparing for her present conquests."

The films that are being produced today by the United States Office of Education are tested by what is essentially the same technique that was developed before Pearl Harbor, according to Brooker. In order to pass this test, the film must be specific, it must be practical, and it must show material in great detail.

New Techniques Predicted

Despite the rapidly increasing production and use of training films in America, Brooker believes that we are still in the Stone Age of visual aids. He predicted new techniques both in the production and utilization of films and said that we have but scratched the surface of the potential use of pictures for instruction. He intimated that the present day motion picture projector would compare with the projector of the future as the famous Model T compares with our modern motor cars.

"But the pro's and con's of visual aids are no longer merely a subject of emotional academic discussion," he said. "We are approaching the production and utilization of training films from a scientific basis and we must continue in this direction. It is no longer a matter of convenience or a question of whether or not we have time to show training films in America today. Rather, the question is whether we can afford not to."

Dr. C. F. Klinefelter Sends Paper to Meeting

The training films produced by the United States Office of Education are designed as teaching aids and are not intended to supplant the shop instructor, C. F. Klinefelter, assistant to the U. S. Commissioner of Education, asserted in a paper prepared for presentation at the Toledo Conference.

During the months of preliminary planning in the Office of Education prior to requesting funds from the Bureau of the Budget and Congress to enable the vocational shops to be opened for training unemployed persons to enter defense industries, it was recognized that any comprehensive expansion of training opportunities would necessitate securing large numbers of mechanics as instructors while available teacher training facilities would be entirely inadequate to give any considerable amount of assistance to such mechanics prior to their actually being placed at work to train unemployed people even for specialized operations, Dr. Klinefelter explained.

Plan to Aid Instructors

Planning, thereupon began to take place looking toward the production of some teaching aids that would be of definite assistance to such inexperienced shop instructors as well as to foremen and supervisors in the expanding war industries. Accordingly, the Office of Education eventually set up a visual aids program and by last June had made available to the country at large some 33 sound motion pictures dealing with machine shop operations and 10 dealing with shipbuilding skills.

In constructing these sound motion pictures, Dr. Klinefelter continued, occupational analyses were made in the first instance by an Office of Education Committee. The analyses were then broken down into proper length teaching units that could be handled in the average length sound motion picture and the content was deliberately arranged in terms of learning difficulties and steps in teaching with Richard's Formula* as a guide to essential material to incorporate in the films.

Tools For the Teacher

These motion pictures produced by the Office of Education were definitely designed as teaching aids and not with a view of supplanting instructors as such, Dr. Klinefelter maintained. For this reason, none of the motion pictures on machine shop operations, for example, attempted to cover each and every operation involved in the subject treated as it was agreed that certain things should be left out so that shop instructors in using the pictures would recognize at once that they must do some active teaching themselves.

The primary test that was applied as to material that was to be left out and that which was to be incorporated was whether or not the point to be included was one that the average shop instructor, even if relatively experienced, would normally have some difficulty in putting over with a group of learners.

Certainly, the present stupendous training program with which

(CONTINUED ON THE NEXT PAGE)

*(Editor's note. Richard's Formula is to the effect that efficiency in training varies as the degree of manipulative skill required, the specific applications of technical knowledge that must be known in order to do the manipulative job, excess auxiliary information and knowledge; trade judgment and morale.)

(CONTINUED FROM PREVIOUS PAGE)

the vocational training schools of the country are confronted, bearing in mind the situation with reference to untrained instructors, and the constant changing of students receiving intensive short courses, demands as an absolute necessity, the use of every available teaching aid, whether in the form of books, charts, or film material that can be of service in speeding up the absorption of learning and enlargement of understanding on the part of those being trained, Dr. Klinefelter declared in conclusion.

Influx of Women Workers

Especially is this true at the present time when girls and women in ever increasing numbers are being brought into the training picture, since the very great majority of them are persons without any previous mechanical background whatever.

It is to be hoped, therefore, that every person having the responsibility for providing training in connection with the war effort, whether employed in the public school system or industry, will seriously explore the possibilities of using effectively such modern educational aids as motion picture films, slide films and other visual aids—the machine tools of modern education.

Norman Mathews

Bell Official Tells Program

◆ Norman Mathews, director of the motion picture division of Bell Aircraft Corporation, presented a behind-the-scenes description of the production and use of training films in one of the nation's vital aircraft industries. He corroborated statements of previous speakers to the effect that it was necessary to turn to visual aids in training large numbers of people quickly. A motion picture division was established at Bell Aircraft in April, 1942, and work began immediately on the production of a series of training films on subjects requested by the United States Army Air Force and the Bell Aircraft service department.

"In developing these training films," Mathews explained, "our first concern was with content, for it was our feeling that picture, not sound, should carry most of the information. Thus, we sought to design our films with a logical, coherent picture continuity. We were gratified to hear the comment at the screening of a silent rough cut of our first picture that no sound track was needed to make clear the procedure of the operations shown."

Keep Audience In Mind

"We tried at all times to keep our audience in mind so that when the camera moved about the complex mechanics of the airplane it would be known at all times just where we were and where we had been," he continued. "We wanted to show as much as possible an operation as it would appear to the individual who would tackle this particular job himself. We wanted the camera to have its fullest fluidity in terms of cutting and movement. Camera angles were considered important both from the standpoint of audience orientation and the cutting pace, and they were chosen with care."

Detail Insures Learning

Mathews confirmed the experience of the Office of Education as reported by both Brooker and Klinefelter to the effect that the success of training films depends largely upon the inclusion of elaborate detail. The advice of the Bell Aircraft service department was "to leave no cotter key unturned," and this was found to be sound advice in producing films to meet the needs both of pilots and service men.

Panel Discusses Utilization

◆ In a panel discussion led by Maurice Trusal, visual education director, Williamsport Technical Institute, Williamsport, Pa., panel members William P. Loomis and Lyle Stewart of the United States Office of Education; and Mrs. Emma Green, supervisor of training films, Fifth Service Command, Fort Hayes, Columbus, Ohio; described the utilization of training films by war worker trainees and Army personnel.

"Ten years ago there was no such thing as a film library, preview room, or laboratory technicians at the Fifth Service Command," Mrs. Green said in her discussion "How The Army Uses Training Films." Maintenance and care of films were entirely optional with the ever changing enlisted personnel to whom they were entrusted. Today our office is staffed with two assis-

(PLEASE TURN TO PAGE 32)

SLIDEFILMS AID P.I.T. STUDY

★ ADAPTATION of available slidefilm subjects to tie-in with the outline courses in the PIT (pre-induction training) Program is now in progress. One on basic electricity has been already printed and made available to instructors everywhere.

This corelation has been achieved by well-known educators, and is one of the five initial outline courses prepared by The United States Army, in co-operation with the U. S. Office of Education.

The five are:

1. Fundamentals of radio
2. Fundamentals of auto-mechanics
3. Fundamentals of machines
4. Fundamentals of shop work
5. Fundamentals of electricity

OTHER COURSES IN WORK

Corelation work with suitable slidefilms of the other four courses outlined in the PIT Program, is also under way.

It will be seen that these five original course outlines, based on technical and field manuals of the Army, have to do with communications and transportation.

The outlines serve as guides to teachers in giving pre-induction training to high school students in order that they will have the basic knowledge of one or more study upon induction. The outlines chart the course and suggest suitable text-books, workshop and demonstration equipment, and simple work projects, including slidefilms. It is up to the individual teacher to assemble this material in order to conduct a course as desired by the Army and Office of Education.

It has been recognized that for the individual instructor to locate and corelate slidefilms with the courses would make a heavy demand upon time and energy, and for this reason the corelations are being made by others and furnished to teachers in printed form. By following the corelation, the teacher will have at hand, as needed, the proper slidefilms to augment each and every phase of the course.

CONTAINS 1,581 PICTURES

The slidefilm Kit-set selected for the course on basic electricity consists of 21 subjects with a total of 1,581 individual pictures photographs, charts, diagrams, drawings, maps, charts and exhibits.

These slidefilms are of the reading or discussional type. They cover all phases of basic electricity, and upon completion of the course the student is ready for more advanced training upon being inducted into the service.

Pictures are to play an important part in the entire development of the PIT program in the schools of the Nation.

Charles Goetz Joins M. P. E.

◆ Motion Picture Engineering Company of Detroit, announces the association of Charles P. Goetz with the Motion Picture Engineering Company organization.

Mr. Goetz takes over the duties of Assistant to L. H. Larimer, who is in charge of Development and Research on special camera and projection devices for military use.

Mr. Goetz comes to Motion Picture Engineering Company with many years of engineering laboratory experience at General Electric

AMERICA'S YOUTH ANSWERS THE CALL as schools begin Pre-Induction Training programs, speeded with the use of visual aids. Address Business Screen for sources in all fields of pre-induction training, including subjects above

TOLEDO FORUM

(CONTINUED FROM PAGE 30)

tants, four laboratory technicians, and one shipping clerk. Our spacious library contains three hundred sets of films, all neatly arranged on racks and shelves. A work room contains equipment for maintenance of films and provides facilities for storage of projectors. A library theatre is used by loanees for previewing films."

"The few silent films which came into existence about 1917 for training Army personnel were gradually superseded by sound films," Mrs. Green explained and added that it was not until about 1929 that a thorough study was made of the potentialities of training films and the beginning of a real program initiated. The number of subjects expanded until now there are films covering every branch of the service, from the most intricate parts of an airplane or gun to the correct procedure for putting a gas mask on a horse.

Visual Aids Are Doubled

"The release of new subjects during the current and coming year is expected to double the output of the last fifteen years, which was approximately 100 subjects," Mrs. Green announced. "Training films are designed to speed the martial education of every man in the army from raw selectees to ranking specialists."

"It is quite apparent," Mrs. Green continued, "that although the War Department has spared no effort to produce films to accelerate training, there still exists an urgent need for educators in the field to see that visual aids are administered according to accepted principles of procedure. Plans are being formulated for the assignment of an educator, or coordinator to our library for administrative work in the field."

Media Expert Gives Sources

♦ William P. Loomis, supervisor, Instructional Materials Section, U. S. Office of Education, recommended the Office of Education publication entitled, "Sources of Visual Aids for Instructional Use in Schools," in his discussion of sources of training films. This pamphlet, he explained, is available from the Superintendent of Documents at the Nation's capitol and lists the agencies from which visual aids may be obtained. This includes Federal government departments and agencies, State government departments and agencies, libraries, museums, associations, and commercial dealers.

"This pamphlet is valuable as a reference to sources of visual aids and is classified as to types of visual aids available from these agencies," he said, "but it does not include titles of films available."

He recommended another publication of the Office of Education, entitled "Partial List of References on Visual Aids," (Misc. 3183) for locating titles of films. This reference list, he explained, contains titles of visual aids, together with films specifications, prices, and in most cases, brief annotations.

Film Selection Is Vital

"Assuming that training films are acquired for specific training purposes, the problem of selection becomes an important consideration," Loomis said. "Training films may be used for purposes of orientation or demonstration of tool and machine processes, safety, and so on. The title of the film or even a description of it may be inadequate to determine its usefulness for specific demonstrations. About the only way to determine exactly whether a film is suitable for specific training purposes is to see it and analyze its application to training requirements. Some means should be provided to make possible the viewing of films by instructors for purposes of determining the adaptability to instructional needs before an appreciable investment is made from any source."

Elements of Utilization

It was the consensus of the panel that efficient utilization of training films requires planning, preparation, and presentation in terms of good instructional practices. Training films, it was pointed out, should be repeated several times if necessary to help trainees understand intricate and complicated details.

Film Subject To Abuse

The panel agreed that training films, no matter how excellent, could be abused as could textbooks, charts, or other instructional materials. Intelligent use of films, it was decided, does not depend so much upon the amount of time spent in showing the films as the use to which this time is put. As an example, four half-hour sessions at which training films were shown and discussed were declared to be of greater value from an instructional point of view than a two-hour session at which an equal number of films were shown. The importance of preparing the class to see the films and of follow-up by questions and discussion was emphasized.

MUSIC IN INDUSTRY

(CONTINUED FROM PAGE 14)

ment of immediate contact, workers stayed on their jobs until the actual warning sirens sounded. Plant systems became valuable as paging mediums, saving thousands of man hours, and then became conveyors of music. It gave the necessary lift and inspiration to the worker who may have, the night before, had his house blown to bits by a bomb, or, at best, spent a restless night in a raid-shelter. A rousing "Tipperary" greeting the coming-to-worker seemed to put the needed starch in the backbone. So, music, tried experimentally at first, became a "must". And production, accordingly, increased as high as 11%—(official statistics BBC.)

KAISER YARDS FEATURE MUSIC

In the eastern states, many of the largest firms now play music to employees. Many of the ship yards and arsenals are equipped with plant loud speaker systems, over which comes music. The Henry Kaiser plants have 500% more employees than a year ago and less accidents—they use music, also safety talks and other employee helps over their system. The noisy weave sheds of the Botany Worsted Mills has special speakers to pipe music through factory din. Since frequency range of music is wider than that of factory sounds, music doesn't add to the noise, but is heard plainly. At the Morey Machine Tool Plant in Long Island, sweet strains miraculously come through a din kicked up by several twenty ton cranes. On the other hand, for brain workers, music should be as background, completely unobtrusive.

EMPLOYEES CONDUCT PROGRAM

At Chicago Flexible Shaft Company, Chicago, two noon broadcasts are each week devoted to employee participation. The employee talent furnishes the programs, reads news bulletin, portrays comic characters, their orchestra plays, their singers sing, and everybody loves it. In the editorial rooms of Readers Digest, editors are treated with 12 to 20 minutes of planned harmony every hour. The battleship Alabama was built in record time to music—and nothing is noiser, possibly, than riveting a battleship together. Acme Steel Company's tests show that music comes through perfectly in the noisest parts of the plant.

So whether the work be mental or physical, music is a stimulating factor. The more monotonous the job, the greater the value of music to relieve its fatiguing influence. And here is an important reaction. Music once started, is never discontinued. Employees demand it—and it pays for itself many times over in increased production and morale stimulation. The workers themselves comment like this: "Keeps me alert" "Makes time seem shorter" "relieves my mind" "relieves my tired feeling at certain times of the day" "starts the day off right" "I leave the plant whistlin'" . Some don't even mind coming back to work from vacations because music makes working conditions pleasant.

ACCIDENT TOLL REDUCED

Twenty five percent of accidents are caused by fatigue. Some plants, in addition to music, broadcast safety talks. Some use "jingles" like the familiar Pepsi-Cola one, with safety lyrics and "gang-sing" them by all employees at rest periods or noon hours.

One of the more recent to adopt music is The Operadio Manufacturing Company, St. Charles, Ill. A test was inaugurated about the first of November to determine what results might be expected from "Music In Industry". This company has two plants, each equipped with loud speaker paging systems which were converted to also accommodate music. Popular recordings were played during the 10 A.M. and 2:25 P.M. ten minute rest periods only for the first week. The employee reaction was immediate and vociferous. This first week brought out three things: that employees DO like it, that the choice was toward popular music, and that they demanded it during working hours. Operadio now plays six programs per shift. Production has correspondingly increased over 6%.

ABSENTEEISM ALSO AFFECTED

One of the biggest problems of present day production is man hours lost through absenteeism and tardiness. In a series of tests made by Professor Harold Burris-Meyers of the Stevens Institute of Technology, Hoboken, N. J., it was found that music reduced Monday absenteeism from 22% to 25.8% and other days in near proportion. Employees enjoy working under pleasant conditions, and, additional, a few well chosen and pointed remarks over the speaker system just before they leave Saturday brings them back on Monday. Piece workers, stimulated through music, make more money with less effort, so why SHOULDN'T they work—thus they don't "knock off" in the middle of an afternoon. Incidentally, there are about two billion man hours a year lost through absenteeism, and this is vitally important right now.

WAR RESEARCH PROJECT—

(CONTINUED FROM PAGE FOUR)

made between experimental and control groups. Significance of the study:

A. The U. S. Office of Education will have expended a total of $1,250,000 on films of the type used in this study. Where there are excellent logical grounds for assuming that such an expenditure will be justified by the time it will save in training for the present war production and the post-war change-over, there is little experimental evidence on the subject. If a controlled experiment bears out what logic would seem to suggest, more industrialists may be encouraged to use films and the time saved in training workers may be put to good use.

B. In addition to its immediate practical importance the study has significance for the general problem of motor learning. Studies have shown that films are useful in the analysis of motor skills, but the idea of using films as an integrative teaching device in which they, by setting the model, provide the starting point for motor learning has not been investigated under controlled experimental conditions.

COAST GUARD TESTS—

(CONTINUED FROM PAGE TWENTY-FIVE)

series, the frame giving the original information is used with important words deleted, questions asked or a choice of words given to the student to replace or answer.

The answers sequence also includes the frame which gave the original information as shown in the main body of the film.

It is believed by Lieutenant Commander Patrick Murphy, Chief Visual Training Officer of the Coast Guard, that these review technics will further increase the rate of successful learning when visual aids are used.

MODERN DISPLAY OF VISUAL FACTS

♦ Continuous automatic presentation of visual facts will help explain the complexities of point rationing, educate consumers and sell war bonds

these are among the many uses to which the compact new cabinet model Adslide projector may be put, according to its Chicago maker. Write BUSINESS SCREEN for details.

CABINET MODEL OF ADSLIDE PROJECTOR is equipped for either manual or automatic projection. Projects a 9 x 12 inch picture from 16mm film. Capacity to 130 pictures.

The Code for Producers of Educational and Industrial Pictures

We hold that producers of visual aids for vocational training and public education have an obligation not only to their customers, but to their personnel, to the groups for whom the visual aids are intended, to the public, to each other, and to the interest of the national economy.

The principles which govern the discharge of this responsibility are various in application. Some are rooted in a standard of honor which all fair minded men acknowledge and others are based on the requirements of good business. What is unfair in the operations of producing, supplying visual aids and assisting in their use in vocational training and educational pictures, is explicitly stated in our Standards of Practice.

It is our purpose to compete with each other in the interest of quality of product, character of service and economy of pricing without any limitations whatsoever in the vigor of such competition. However, certain competitive methods are condemned in the Code — not because they are competitive, but because they tend to retard and limit the extension of visual methods in education, vocational training and public information and, in fact, to destroy the confidence of its patrons.

Producer members subscribing to the Code of Ethics and to these Standards of Practice are to devote their best efforts and attention to the best of their ability to the advancement of visual education and vocational training, refraining from all pretenses as to being theatrical producers or as to being documentary producers, it being recognized that only in this manner can they give the greatest assistance in advancing the professional production and effective use of educational, commercial and industrial films and eliminate the confusion which promotes mistakes and invites exploitation of purchasers who fail to distinguish between the trade school and the theatre and particularly to discover the different character of experience required for entertainment and theatrical studio production as distinguishd from educational and factory production.

ALL RESPONSIBLE PRODUCERS WHO SUBSCRIBE TO THE INSTITUTE'S CODE OF ETHICS AND MEET ITS STANDARDS OF PRACTICE ARE ELIGIBLE FOR MEMBERSHIP. FULL INFORMATION, ON REQUEST, IS PROMPTLY SENT.

"Mass Training for Mass Production for Victory"

Educational Building

THE INSTITUTE *for the Advancement of*

70 Fifth Avenue
New York City

VISUAL EDUCATION AND VOCATIONAL TRAINING, Inc.

BUSINESS SCREEN

M A G A Z I N E

ISSUE
EIGHT
1943

BUILD WORKER MORALE WITH THIS STIRRING MOVIE OF YANKS IN ACTION!

CASTLE FILMS' "Battle for Tunisia"

TEN MINUTES of gripping, front-line action! Scenes . . . filmed under fire . . . that will bring the war home to every worker. Let your men and women join the fighting Yanks as they thunder into battle! Let them know the inside of a fox-hole as Stukas swoop down upon them. Put them behind an anti-aircraft gun as it blazes away in the face of dive bombers. Have them witness the most amazing tank battle ever filmed . . . with both sides in camera focus. Here are all the thrills, dangers . . . all the heroism of war. There'll be cheers as a strafing fighter plane blasts enemy troops, tanks and trucks . . . as enemy shipping is smashed.

And there'll be full appreciation for the courage and sacrifices of our boys in Africa . . . on every front. As you show your people this mighty epic of American fighting fury, they'll resolve to back these heroes with all of their working might.

★ *On this same reel the dramatic highlights from the "Surrender at Stalingrad." A living record of a victory that will live through the ages!*

Get this morale-building two-in-one film today! Show it tomorrow!

---

24 Other Castle War Films! The full meaning of "Total War" dramatically told in pictures including every major event. See your photo dealer or send today for a catalog of Castle morale-building films.

THIS FILM WILL ADD GREATER INCENTIVE TO EVERY MAN AND WOMAN ON YOUR PRODUCTION FRONT

LOW COST

16 mm. Titled version . . $87.50

16 mm. Sound-on-film . $175.00

CASTLE FILMS INC.

RCA BLDG. NEW YORK | FIELD BLDG. CHICAGO | RUSS BLDG. SAN FRANCISCO

Your Post-War Sales-Training Program Can't Be Organized Overnight

Important to Shape Plans Now for Speedy Readjustment—after Victory

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
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Black & Decker Manufacturing Company
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Calco Chemical Company, Inc.
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Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

YES, WE QUITE UNDERSTAND that we're in for a long, long war. But we wouldn't have been if America had been PREPARED.

So, too, there's going to be a period—AFTER Victory—when American business firms will be fighting to recapture markets . . . to win to themselves their proportionate share of those newly released consumer dollars. Fairly good going for those who are PREPARED. Extremely difficult for others.

Here is what's going to happen, and it doesn't take much of a prophet to foresee it: Victory will one day loom on the near-horizon. Then all the energies bent on producing tools of war will at once be focused on the forthcoming Battle of Competition . . .

And by and large those companies who "get there fustest with the mostest men"—men who are TRAINED, may we add—will almost immediately step far out in the lead.

It's no easy task to train hundreds of inexperienced salesmen in a few short months . . . to re-energize thousands of quiescent dealers . . . to acquire a host of additional dealers, make them quickly productive . . . to coach all the people involved in bringing the product from plant to consumer . . .

—Which is ample reason why you should lay out a comprehensive training program NOW and be ready to put it into instant action!

Impossible? Some of the largest companies in America don't think so. They insist that the BASICS of selling, merchandising, servicing are perennially the same. May we tell you how they are planning for the Day of Victory?

CARAVEL FILMS

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Member of: THE INSTITUTE FOR THE ADVANCEMENT OF VISUAL EDUCATION AND VOCATIONAL TRAINING, INC.

An "E" to Visual Education

A MEDIUM AND AN INDUSTRY WORK FOR VICTORY

★ The cover of this issue is a tribute to the entire visual industry we are proud to serve. The Army-Navy "E" flag, symbol of production service to the armed forces, might well be given to Visual Education, the new dimension in communications which is playing such a magnificent part in speeding the learning and understanding and in providing the entertainment of our fighting men in the Army, Navy, Marine Corps and Coast Guard.

Our cover thus pays tribute to the entire visual industry and in so doing, we pause in acknowledgment of some of the little-heralded but no less great contributions of individual companies. A number of these, such as Bausch and Lomb, Bell & Howell, the DeVry Corporation, Eastman Kodak and the Jam Handy Organization have been specific recipients of the coveted Army-Navy Production Award.

Many War Contributions Untold

But to those of us who have kept in constant and close touch with the wartime contributions of this industry, the greater part of this saga of industry-wide service remains untold. While much of it must remain in the category of confidential war information for the duration, we are mindful of the ingenious production developments in visual equipment and other war products contributed by such companies as the Ampro Corporation, the Society for Visual Education and the Victor Animatograph Corporation. Specialists such as SVE and the Motion Picture Engineering Company and others in this industry have made little-publicized but vitally important contributions to the visual training of our air forces and other arms of the services.

In the steaming jungles of the South Pacific as in the bleak outposts of Iceland and Alaska, our fighting men pay nightly tribute to the men on the production lines of Ampro, Bell & Howell, DeVry, and Victor, who turn out the sound projectors on which the only means of entertainment and relaxation are provided. At our home bases, on the sea and abroad, too, these projectors are also helping train our fighting forces in the special skills of complex modern warfare.

They Produce Films For War

Equipment production is only half the story. Experienced hands with years of success in the visual definition of mechanical, scientific and other practical arts for industry and education are now helping to provide films for the Army, Navy, Coast Guard and for the many branches of our armed forces. Industrial producers such as Audio, Caravel, Chicago Film, Burton Holmes, Jam Handy, Sound Masters, Springer Pictures, Loucks and Norling, Wilding, Esear, Ray Bell, Visual Training, Sutton-Malkames, Atlas, Vocafilm and others have already rendered invaluable service in the field of training film production.

A Challenge to Greater Effort

The record of wartime service by this industry is not reviewed in tribute only—we are mindful of the fact that for each company and each individual involved, there is a challenge to *greater* perfection and performance. Because we are favored in this unprecedented adoption of the visual medium for war service, it is our common responsibility to see that it gets results. That means perfection and precision in equipment *unfailing performance* — and *thoroughness* as never before in the preparation of training film materials. These things *must* be achieved as our small part in the final victory: *not only is the visual medium enduring its greatest test* but the fighting strength of the nation depends on the swift and thorough training of our mobilized millions.

The Editor's Newsreel

♦ The revised list of essential industries and activities received from the War Manpower Commission on April 17, 1943, specifically lists under Section 29: Communication Services the production of motion pictures (including technical and vocational training films for the Army, Navy, and war production industries. Under Section 33: Educational Services the production of technical and vocational training films is also listed.

♦ Word was received the past month of the organization of the Educational Film Library Association with headquarters in New York City. This is an outgrowth of the Educational Film Lending Library Committee which was first created in March 1942, subsequent to the disbanding of the Association of School Film Libraries. L. C. Larson of Indiana University is Chairman of the Board of Directors.

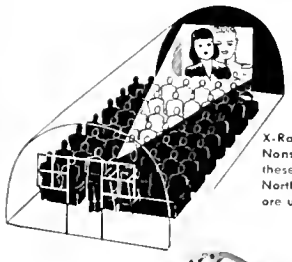
♦ The Department of State has issued a request to commercial sponsors for the submission of pictures for the "assembling of suitable footage for a series of short documentary motion pictures portraying various phases of life in the U. S." Write Mr. John M. Begg, Division of Cultural Relations, Department of State, Washington, D. C., for full details.

Cover: *In "E" to the Visual Education Industry: by Beldone Nyder*

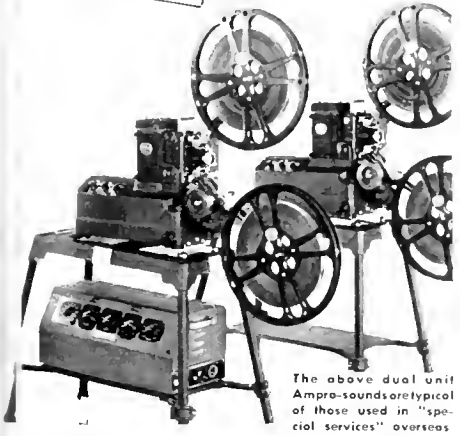
[illegible] Vol. [illegible] No. [illegible] BUSINESS SCREEN Magazine [illegible] Business Screen Magazines, Inc., 155 East Erie Street [illegible] Telephone: WHItehall [illegible] April [illegible] 1943 [illegible] O. H. Caslin, Jr., Editor; Editorial Asst. M. Marietta Hall [illegible] No. [illegible] Single copies [illegible] Entered as [illegible] Chicago, Ill. Under Act of March 3, 1879. Entire contents copyrighted 1943, Business Screen Magazines, Inc. Trademark Reg. U. S. Patent Office

☆ ☆ On Guard at 50° below ☆ ☆

—but looking forward to evening Movies



X-Ray view of interior of Nonsen hut showing how these standard U S Army Northland living quarters are used for motion picture projection



The above dual unit Ampro-sound set typical of those used in "special services" overseas

IN the bleak loneliness of Arctic regions where fighting men maintain our defenses . . . motion pictures are more than a diversion! They are a vital link to that far away homeland . . . to that world of sunshine, trees, friends, and family. They are an effective force for counteracting the rigors of "OUTPOST DUTY"—they are making life more bearable.

No wonder officers in Iceland say: "*Motion pictures are as necessary to the men as rations.*" In New Delhi, India: "*Motion pictures constitute practically the only diversion for troops in many scattered stations.*" In North Africa: "*Motion pictures are of utmost importance in providing entertainment and building morale.*"

Enlist Your Projector!

The War Department urges civilian owners of 16mm. sound projectors to resell them to the makers who are authorized to pay a reasonable price for acceptable machines which will be reconditioned and shipped overseas.

100% of Ampro facilities are engaged in the production of precision war equipment and projectors for education, training and maintenance of morale—assuring more efficient projectors than ever when the war is over. Plan for the future by keeping up with the newest developments in 16mm. projectors. Write today for latest Ampro Catalog!

The Ampro Corporation, 2851 N. Western Ave., Chicago, Ill.

★ AMPRO ★

PRECISION CINE EQUIPMENT

MOVIE NEWS
DeVRY

How vital motion pictures are to a Global War of vast and lightning movement is portrayed in natural color by LIFE MAGAZINE for February 22nd. From battle-fronts "a world away" films of all important actions are rushed by air for diligent, painstaking over-and-over-again review and study by our chiefs of staff. No opinion, no elegant writing, no personalized interpretations these historic films—but WAR as it was *FOUGHT* to guide and perfect subsequent maneuvers to *VICTORY*.

* * *

Will you sell your 16mm. Sound Projector? If your 16mm. sound projector is *not now* doing a *full time, vital war job*—you can best serve the interests of your country by selling it to DeVRY. We will recondition where necessary and see to it that the projector is mobilized for *front line duty*. Check up now! We'll pay top cash prices! Write or wire the following information: make, model, year purchased, serial number of projector and sound systems, condition.

* * *

How important a part motion pictures will play in world reconstruction to come with the Peace is definitely in the minds of America's postwar planners. To educate, to train, to sell and to inform—these are functions for which DeVRY cameras and projectors are being perfected even beyond the rigorous demands of War.

* * *

From "Somewhere in North Africa" Corporal Dave Golding writes former editorial associates on FILM DAILY: "On one of my trips I picked up a print of 'Son of Fury' . . . Back at camp we showed the picture under a canopy of North African stars, brighter than any interior roof of a Loew's deluxer . . . It was quite a scene, since most of us stood up with rifles slung over our shoulders, forgetting the chilly night at the sight of Gene Tierney . . . Electricity to operate our 16mm. projector was piped from one of our KWA sets, and occasionally the sound would diminish when someone turned the lights on in the camp area . . . But we had that all under control, and the show came off swell for sight and sound . . . What I want to say is, how important to have these films available!" . . . How important, too, to have available DeVRY projectors designed and built to insure theater-like production, even under adverse conditions.

BUY WAR BONDS

Institute Plans Industrial War Forum

★ THE NEED FOR better understanding of the functions and contributions of the industrial film medium in the war effort on the part of sponsors, producers and the various war agencies has been formally acknowledged this month in plans announced by the Institute for the Advancement of Visual Education and Vocational Training, Inc., for an invitational forum to be held in Chicago later this month.

At the present writing, plans call for the appearance of leading personalities from the field of industrial training, public and industrial relations, safety education, advertising, war training schools and Government. Tentatively programmed as a Conference on Industrial Films in the War, the meeting is to be held in Chicago at the Palmer House. All representatives of film departments in industry, associations, agencies and other business organizations are invited to attend the morning and afternoon sessions. Formal announcement of speakers, film and other facts will be made by mail early in May.

TO AID THE WAR EFFORT

From an authoritative review of the contributions which the medium has already made in the training and information of both employees and the public, those in attendance may expect to get information for the improvement of their film programs. Although the supply of available raw film stock is stringently regulated during the current period of wartime shortages, it was pointed out that no important contribution to the war effort need be denied access to these materials.

Technicians and experts on industrial film production will be present to answer questions from the audience. While the meeting is being sponsored as a public service contribution of the Institute, the program is being wholly turned over to all experienced users of the medium and to all qualified producers.

WILL SHOW ESSENTIAL FILMS

Program panels now tentatively announced for the day-long session include such subjects as War Products Training, Industrial Relations and Films, Consumer Education, Service Advertising and Film Regulations. On each of the panels, which will be headed by a leading figure from industry as a key speaker, outstanding recent films will be shown. Representatives of advertising and public relations associations and clubs have also been invited to appear.

Facts concerning the Conference will be announced by mail.

Communications concerning the program may be addressed to the Institute at its headquarters, 70 Fifth Avenue, New York City.

Announce Feature Edition

♦ USDA IN WARTIME: a review of the film contributions and history of the U. S. Department of Agriculture, first government agency to use films, will be the subject of a feature section in the forthcoming issue of BUSINESS SCREEN.

1943 Safety Film Index

♦ As a wartime contribution to industrial and vehicle safety, fire prevention and allied fields where visual aids plays an important educational role, BUSINESS SCREEN staff research assistants are completing the 1943 Index to Safety Films to be published in cooperation with the National Safety Council. Approximately 500 subjects have been indexed with sources thus far. Thirty-six of the most useful titles are being especially reviewed for Industrial Index subscribers.

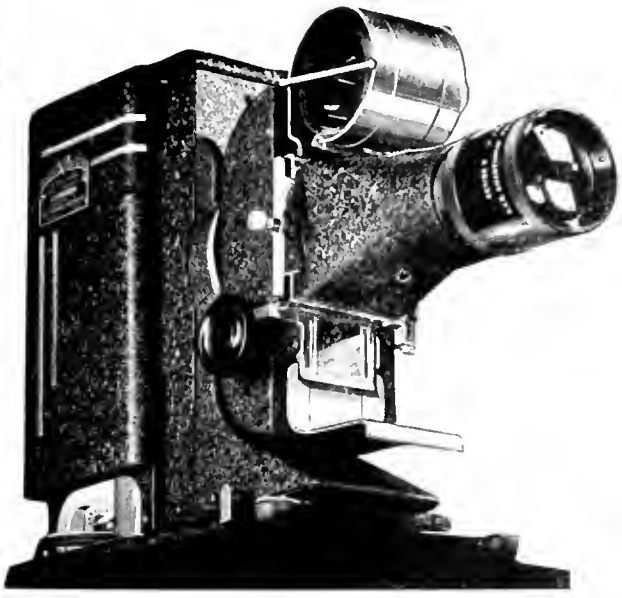
A Vital New Slidefilm Series for War Plants

♦ As our war industries face the tremendous task of absorbing ever-increasing thousands of green hands to man the production lines, the development of competent foremen has become an equally vital responsibility of management.

To meet the need for training these new leaders in the most pressing and immediate problems, visual training has come into its own. Already familiar with the excellent work done in the field of leadership training, management now has a new basic 20-hour safety course especially developed to meet the wartime training problem through the combined facilities of the National Safety Council and the United States Department of Labor.

Produced by the Photosound Division of Sarra, Inc., under the direction of Ray Ballard, the new

(CONTINUED ON PAGE THIRTY)



S.V.E. TRI-PURPOSE PROJECTOR, Model AAA

S.V.E. Projectors are designed to show single and double frame slidefilms and 2" x 2" miniature slides (black-and-white or Kodachrome).

AND HELP *Shorten* THE WAR

In the armed forces and in the plants which produce the guns, tanks and other needed war supplies, slidefilms and 2" x 2" miniature slides (black-and-white or Kodachrome)—projected by S.V.E. equipment—are cutting weeks and months from training schedules. By showing men "what to do" and "how to do it," these visual aids assure more thorough learning to the end that our visually trained forces on production and firing lines do their work better and hasten the day of Victory.

Although the current output of S.V.E. Projectors is going to the Army and Navy, some equipment is available to industry on a priority basis. If you need projectors for training purposes, please write us. Our Priorities Department will be able to tell you quickly whether or not your projector needs can be met.

SOCIETY FOR VISUAL EDUCATION, INC.
100 EAST OHIO STREET • CHICAGO, ILLINOIS

MANUFACTURERS • PRODUCERS • DISTRIBUTORS OF *Visual Aids* ★ ★

We consider it an honor and a privilege that virtually all of our organization and extensive facilities are now devoted to the creation and production of training sound motion picture and slide film subjects for the Armed Forces.

Until Victory—any remaining portion of our capacity will be necessarily limited to the production of sound motion picture and slide film subjects which definitely contribute directly to the war effort.

Wilding Picture Productions, Inc.

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VITAL

in Today's War— and Tomorrow's Victory

Outstanding in training millions for War . . . Outstanding in training more millions for Peace . . . Victor Animatophones provide the most modern medium for faster learning, more intelligent understanding, and lasting knowledge. These amazing 16MM Sound Motion Picture Projectors — working both regular shifts and "swing shifts"—are continually doing their dynamic War job in this preferred method of teaching. Their precision craftsmanship, their exclusive features, their world-wide use—are the reward that come only to the pioneer's efforts in this rapidly growing industry. Look to Victor for your future training and teaching methods.

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188 W. Randolph Street, Chicogo
242 W. 55th Street, New York

The Worker Learns About War

Battle Pictures from World Fighting Fronts Gain Wide Popularity in War Plant Showings

THE COLD HARD FACTS of battle and the hardships of war endured by our fighting men are proving potent weapons in laying the ghosts of indifference and "absenteeism" wherever they exist on the production lines of our war industries.

On the screens of hundreds of war plant "theatres" conveniently set up in cafeterias, locker and recreation rooms and other locations where employees gather before the change of shift or at lunch periods, war films are helping weld the bond of kinship between the worker and the man at the front. Many useful facts concerning this widespread and successful activity were learned in the past few months by the Editor of BUSINESS SCREEN in a ational survey of war plants conducted on behalf of the Bureau of Motion Pictures, Office of War Information.

PLANTS CITE RESULTS

That factual films from the war ronts have the greatest appeal is ited time and again by worker and nanagement personalities contacted luring this survey. Such organizaions as Kearney and Trecker, Milvaukee; the Detroit Diesel Engine)ivision of General Motors at Deroit; Stewart-Warner, Westingiouse, Western Electric, and Stewrt Die Casting in Chicago and nany others emphatically concur hat scenes of combat action proluce the most favorable response rom worker audiences.

Beyond these general war action hemes, the most valuable subjects re those showing armed forces usng equipment similar to that prouced by the plants showing films.)ne answer to this has been found ı recent Army films specifically roduced for worker showings. *lttack Signal*, one of the latest of ıese subjects, deals with the use f the walkie-talkie radio equipnent during an attack on a Jap ase in the South Pacific. (Reiewed in the last issue of BUSINESS CREEN.) Dozens of plants in the arious electronic industry groups ıroughout the country have shown this picture to enthusiastic worker audiences.

MANY SUBJECTS AVAILABLE

Through official Government sources, spokesmen for the incentives branches of the Army and Navy and from commercial film distributors, plants are now able to secure many worthwhile subjects. Army and Navy sources are communicating such information to war plants. Government film depositories, of which there are nearly 200 conveniently located in commercial and educational film libraries throughout the country, are also being instructed to give particular attention to war plant requests.

More than 1,000 plants are already equipped with the necessary 16mm sound projection apparatus, but those who do not have equipment may rent or borrow it or hire [illegible] services of [illegible] operators at [illegible] hourly rates.

At least a hundred [illegible] 16mm sound films are available for free loan, rental or low-cost purchase by interested plants.

SHOWING IS SIMPLE

The most widespread objection encountered in the recent survey was that of projection difficulties. Many plants were unfamiliar with film projection and could not imagine how to set up the screen or projector under the pressure of wartime production conditions. Short lunch periods, crowded gates and floors operating at capacity were common problems. But here are a few of the ways cited by other plants in meeting these projection difficulties:

"Films are shown to day shift workers by means of a shadow box [illegible] auditorium."

A special screen was developed which permitted showing pictures in the canteens while same were still illuminated."

"We have a full-sized screen in the cafeteria where all of our personnel eat. We show as frequently as possible during their eating time."

"Due to lack of auditoriums we use the open space we can find in the various departments of the plant and, to reduce interference with production, films are shown mostly at the lunch period. To improve our projection possibilities I have built a special canopy over the screen."

SHOWN AT MAIN GATE

"Our steel plants have always worked the clock around, and we

Three Weapons of War

he binoculars, machine gun and movie ımera are vital weapons of modern ar: a scene from the new British war film "Desert Victory."

The camera men [illegible] the realities of war [illegible] the home front. "Desert Victory" [illegible] with an American motion picture camera.

decided last year to show moving pictures at the main entrance of our largest plant to employees going to work. The results were very gratifying."

"We recently installed a projection booth in our plant cafeteria, and, by using rear projection methods are able to have showings in the daytime as well as on night shifts."

"Lunch rooms, class rooms, conference rooms and plant aisle-ways are used for film showings."

Thus, solving the projection problem is not as insurmountable as it first seems. If possible, 1,000 watt illumination should be used in the customary 750-watt projector appears generally satisfactory. Projectors are easily portable and one plant has emphasized this feature by mounting one on a tea cart which is moved from department to department during the lunch hours so that each group sees a film about once a week. An office girl or general utility employee can put on the show with a little training.

Completely portable, self-enclosed continuous machines of the coin-machine type are also enjoying newfound popularity. Only a service call is needed since the machines are fully automatic. By means of an extension screen a good-sized picture image is achieved suitable for fairly large audiences. Few such units are owned by plants but they are now generally available on a rental basis.

Pictures in Use

The experiences of plants showing these war films give some interesting clues to subject popularity. In citing their preference for war themes, plant people are even more specific:

"We are anxious to get films that employees would not see if they go to the average motion picture house. Pictures showing violent action which paint a vivid picture for the necessity of war production."

"Our experience in showing films has been that employees react very strongly to actual war films. In this way they can visualize what is going on with the man behind the gun."

"A representative of the War Production Drive Committee has informed the writer that we have covered a series of news pictures (Castle) which ran for ten weeks. Since the completion of this series the Committee has had numerous requests that these pictures be continued."

"We at home would like to know some of the *real* difficulties and hazards that our armed forces have to endure . . . to make us realize that we are sitting 'too pretty' for our own good."

"They made a tremendous hit with the nearly 600 foremen and supervisors gathered for this meeting. We have also shown *Combat Report* to every employee in the plant. It took 63 showings and nearly a week to do this. We plan to repeat both of these operations with other films."

Do Pictures Help?

It would be unfair to suggest that the millions of our workers in war industry need this kind of inoculation with war fervor because of personal indifference or lack of patriotism. The bubble of unexcused "absenteeism" due to this kind of attitude was burst by the recent acknowledgment of real causes such as physical and mental exhaustion due to new and unfamiliar working conditions, uncertain wartime transportation, housing problems and other causes which account for a great percentage.

Films have a more valuable role. They *help* the worker forget his own problems and home grievances and give him that needed drive for the job at hand. They make her or him feel a definite part in the distant fighting. Films quicken the emotions and establish a sense of responsibility to a common cause.

An Ideal Formula

In response to many requests, here is the ideal formula for the

Desert Victory: Official British War Film

AMERICAN PREMIERES OF THIS PICTURE ARE NOW BEING HELD IN WAR PLANT TOWNS AS A TRIBUTE TO AMERICAN WORKERS

Through dust and smoke of shellfire, infantry leap forward for the advance in the battle of El Alamein.

Tanks of the British 8th Army sweep forward to bring enemy tanks to battle.

British commanders watch the progress of the battle of Egypt as the advance continues.

Nearing the enemy, the leader of an Australian group crouches, steadying himself on the rocks.

A strong-point is overrun. Trampled field telephone wires and a dead German bear mute witness.

An irrepressible British Tommy gives the "V" sign to a couple of German prisoners just taken.

use of pictures in the average war plant:

♦ In plants where an area is provided where workers may gather before the change in shift, put an operator and a projector to work showing these action films. The entire summer season will offer a perfect opportunity for this on the night shift. Pictures shown at this time will bring workers down a little earlier. If seats can be provided, so much the better. West Coast aircraft plants have discovered that a half-hour or even fifteen minutes spent in this way saved that same time which many had spent in a nearby tavern.

♦ Otherwise set up a showing area on the plant floors, in a storage space or in the plant cafeteria. Don't forget that you may have a 16mm sound projector in a training department class-room or in one of the commercial departments. If you can't get one there call your local film dealer for advice.

♦ Solving space and projection problems isn't as difficult as it sounds. Rear-projection (translucent) screens are available which permit showings under unfavorable lighting conditions. Show pictures outdoors at night during good weather. Shadow box the screen or show in a storage area of the plant floor where light conditions are generally unfavorable anyway.

Serving Twenty Buildings

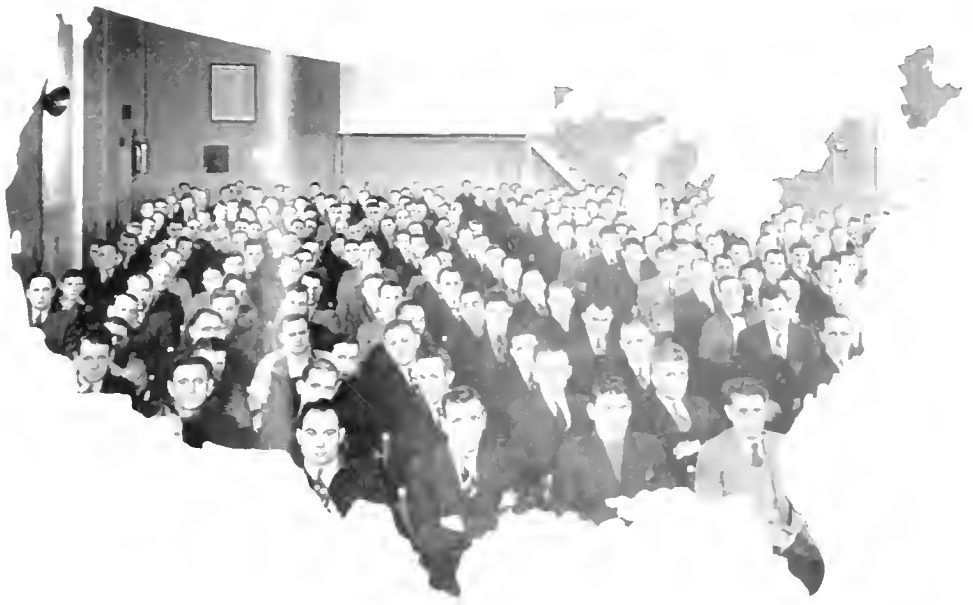
Fairchild Aircraft Division at Hagerstown, Md., has operations in more than twenty different buildings. The projector is set up in either cafeteria or conference rooms. Western Electric in the Chicago area utilized plant floor showings, found them so successful that projection facilities are planned for the plant gymnasium.

Advice on utilization of present projection equipment and solution of difficult showing problems is freely given by visual dealers.

Select Good Pictures

A word of caution: screen your picture selections before showing them. Local plant interests vary and careful selection will help make a successful program.

For film sources see lists and advertisements published elsewhere in recent issues of this magazine. Show pictures once a week, at least, and two or three times a week or more if possible and change the program at least that often. War films are a valuable weapon in our fight against the Axis. They are a common asset to labor and management. Let's put them to use.



SELECTED PICTURES FOR WAR PLANT SHOWINGS

The Arm Behind the Army: 1 *reel;* 10 *minutes.* 16 mm., sound, 1942. The stakes of American labor and American industry in this war—freedom security, life itself. An official War Department film, produced by the Signal Corps of the U. S. Army. (OWI)

Attack Signal: 1 *reel;* 10 *minutes.* 16 and 35mm. How communications equipment serves our armed forces under combat conditions; shows actual battle enactment. (PRB-U. S. ARMY)

Battle of Midway: 2 *reels;* 20 *minutes.* 16mm. Now available in special war plant version; this is the epic color picture of the heroic defense of Midway. Filmed by Commander John Ford. (Navy, Incentives Div.)

Battle of Tunisia: 1 *reel;* 10 *minutes.* 16mm sound. The Americans in battle against the Afrika Korps of Marshall Rommell. Battle action sequence by official cameramen. (CASTLE)

Bomber: 1 *reel;* 10 *minutes.* 16 and 35 mm., sound, 1941. The manufacture, speed, and power of the B-26 Army bomber. Commentary specially written by Carl Sandburg. (OWI)

Bombing of Tokyo: 1 *reel;* 10 *minutes.* 16mm sound. Just announced, this news feature includes all the epic scenes in the flight from Shangri-La (the Hornet) over Tokyo. (CASTLE)

Combat Report: 1 *reel;* 10 *minutes.* 16 and 35mm. Another of the series of U. S. Army-produced industrial shorts. The mission of a bomber in an attack on a submarine off the East Coast graphically depicted, showing role of industries which made instruments, radio, engines, etc. (PRB-ARMY)

Commandos in Action: 1 *reel;* 10 *minutes.* 16mm sound. The feared raiders strike on Norway's coast; official British films of the Lofoten raid as witnessed by the camera. (CASTLE)

Conquer by the Clock: 1 *reel;* 10 *minutes.* 16mm sound. A minute lost may lose a battle or valuable cargos. Minutes are vital in wartime. (OWI)

Divide and Conquer: 1 *reel;* 14 *minutes.* 16 and 35mm., sound, 1942. The Nazis at work deliberately spreading hate and fear, distrust and confusion among the French people. A sober and dramatic reminder that this war is being fought on civilian as well as military fronts. (OWI)

Firepower: 1 *reel;* 10 *minutes.* 16 and 35mm. An inspiring tribute by the U. S. Army to American workers, particularly in the field of ordnance production. Europe's workers, enslaved because of lack of Firepower are compared. (PRB-U. S. ARMY)

Keeping Fit: 1 *reel;* 10 *minutes.* 16 and 35mm., sound, 1943. Absenteeism, today one of the Nation's number one problems, is the theme of this film. Presents entertainingly the five simple rules of health that can reduce this problem. (OWI)

Safeguarding Military Information: 1 *reel;* 10 *minutes.* 16 and 35mm., sound, 1942. Dramatic exposition of the results of careless talk—a ship torpedoed, a train wrecked. The need for secrecy by soldiers and civilians. Produced by the Signal Corps of the U. S. Army. (OWI)

Salvage: 1 *reel;* 7 *minutes.* 16 and 35mm., sound, 1942. The need for salvaging metals, rubber, and greases to be turned into materials of war. Narrated by Donald Nelson, Chairman, War Production Board. (OWI)

Tanks: 1 *reel;* 10 *minutes.* 16 and 35mm., sound, 1942. Manufacture and performance of the M-3 Army tank. Narrated by Orson Welles. (OWI)

U. S. News Reviews Issue No. 1-2-3-4: 2 *reels;* 21 *minutes.* 16mm., sound, 1942. Official Government motion picture reviews of war information. Six subjects are included in several issues. (OWI)

Western Front: 2 *reels;* 21 *minutes.* 16mm., sound, 1942. China's heroic fight and desperate struggle against the war lords of Japan. A tribute to the courage and tenacity of the people of China—fighting with us in the battle for freedom. (OWI)

Yanks Invade Africa: 1 *reel;* 10 *minutes.* 16mm sound. The first invasion of the Nazi-dominated lands; actual scenes of the landings in North Africa. (CASTLE)

Key to Film Sources

♦ Pictures reviewed in these columns are available throughout the United States; (OWI) symbol indicates an official U. S. Government war film produced by the Bureau of Motion Pictures, Office of War Information. OWI 16mm subjects are available through 135 local depositories who are largely visual education dealers or outstanding non-theatrical film libraries. They are also available on print cost sale basis from offices of Castle Films, Inc., RCA Building, New York.

Four special industrial films produced by the U. S. Army reviewed here are available from the Public Relations Branch, Headquarters Services of Supply, War Department, Washington, D. C., and through local outlets now being established. Write Business Screen for full details. They are indicated by the (PRB-U. S. Army) symbol. (Castle) symbol denotes a Castle news film released for print sale through nationwide dealer outlets.

PART TWO OF A NATIONAL SURVEY ON THE USE OF FILMS IN AMERICA'S WAR PLANTS

U. S. FILMS FOR

PARATROOPS

SYNOPSIS One of the most dramatic jobs in modern warfare—at least to civilians—is that of the paratroops. Most people know little of the rigorous training given these soldiers of the sky, and the film, *Paratroops*, gives a quick overview of the weeks spent in learning to maneuver, and fall, in practice jumping from a tower and from a dummy plane, packing the parachute one's life depends on, in learning to jump from a plane in half a second, to guide his way by working the shroud cords, to land without splintering a leg, to disengage the chute and come up fighting.

Then, too, there are specialized skills to be learned, since Americans are fighting all over the world. One company of paratroops, skilled in jumping and fighting, goes back to "school" to add zing to their accomplishments. The film shows paratroopers learning these new skills and becoming "paraskitroopers"—picked men carefully trained to perform a special, yet vital, job in modern war.

CREDITS *Paratroops* was produced by the Bureau of Motion Pictures, Office of War Information.

LENGTH: 382 *feet*, 16*mm*. TIME: 9 *minutes*

U. S. NEWS REVIEW
Issue No. 3

SYNOPSIS Issue No. 3 of the NEWS REVIEW covers these six subjects:

1. *A Plywood Bomber.* Meeting the shortage of aluminum, a bomber made of wood, the Mosquito, is being made in Canada and England.
2. *Fixit.* With no new household appliances being manufactured, Americans must keep what they have in working order. Today the slogan is "fixit!"
3. *A Report from New Guinea.* The occupation of Milne Bay by American and Australian troops.
4. *Liberators Blast Naples.* Giant four-motor Liberator bombers take off from Africa, roar over the Mediterranean, and drop their "eggs" upon Naples.
5. *A Letter from Hocking.* Arthur Hocking, machinist in a war plant, deeply moved by the death of his son in action, writes a letter to all workers everywhere, urging increased production.
6. *United States Coast Guard Song.* The little-known but magnificent song of the Coast Guard, "Semper Paratus," is the background for a complete two-minute story of Coast Guard training and action.

CREDITS U. S. NEWS REVIEW was produced by the Bureau of Motion Pictures, Office of War Information.

LENGTH: 690 *feet*, 16*mm*. TIME: 19 *minutes*

CONQUER BY THE CLOCK

SYNOPSIS In war as in peace, carelessness costs lives. But today the result of carelessness and of negligence are a thousand times more tragic. Through two short but dramatic episodes, *Conquer By the Clock* drives home the fact that there is little difference, as far as results are concerned, between the patriotic-but-thoughtless American and the saboteur.

CREDITS *Conquer By the Clock* is an Eastern Film Laboratories release, produced by Frederick Pittman, Jr.

LENGTH: 785 *feet*, 16*mm*. TIME: 11 *minutes*

WAR SHOWINGS

KEEPING FIT

YNOPSIS—Absenteeism, today one of the nation's number one problems, is the theme of KEEPING FIT. At a noon meeting of aircraft workers, the plant manager explains that absenteeism is one of their big problems, that many absences are due to sickness, and furthermore, that most illness can be avoided by following five simple rules of health. Irene Harvey learns that nutritious, well-balanced meals keep her husband, Dick Foran, healthy and happy. Robert Stack finds out that even the strongest person needs plenty of rest, and Andy Devine discovers that exercise and recreation can be fun.

Missing workers slow down production lines and planes remain unassembled. "These planes," the manager tells assembled workers, "are as surely lost to our fighting forces as if they had been shot down by enemy guns." The film closes with a slogan for all workers, "Keep fit to do your bit."

EDITS—*Keeping Fit* was produced by Universal Pictures and directed by Arthur Lubin. The cast includes many familiar players—Robert Stack, Broderick Crawford, Andy Devine, Dick Foran, Lon Chaney, Jr., Anne Gwynne, and Irene Harvey.

NGTH: 370 *feet*, 16*mm*. TIME: 10 *minutes*.

THE THOUSAND DAYS

NOPSIS—Canada has been at war since September, 1939—over three years, a 1,000 days. What happened during this time? What changes have taken place in Canada? What does Canada's experience forecast for us in the United States?

These questions are answered dramatically in the motion picture, *The Thousand Days*. Factories were converted to war production, new plants were built, and from them came guns and tanks and shells. Canada became a haven for English children bombed from their homes, an internment camp for Nazi prisoners, a school for airmen from the whole British Empire, a hospital for men wounded overseas. Price control and rationing were instituted, men and women registered for national service.

EDITS—*The Thousand Days* was made by Associated Screen Studios. The producer was B. E. Norrish, the director Gordon Spaulding.

NGTH: 755 *feet*, 16*mm*. TIME: 21 *minutes*.

A LETTER FROM BATAAN

NOPSIS—In the jungles of Bataan, two American soldiers, unable to see enemy planes because of night blindness, are hit by a Jap bomb. Pete is killed outright. Johnny dies on the operating table, his last words, "I've got to write a letter."

Johnny's "letter," the one he was going to write, reaches home in America one morning as a neighbor is bragging of her hoard of groceries, as his kid brother skids his car around a corner on two wheels. Johnny's letter is a moving plea to the folks at home to see to it that other American soldiers have the things he and Pete lacked on Bataan—food so that they won't have night blindness and hunger cramps, guns and shells and planes so that they can fight.

EDITS—*A Letter from Bataan*, released by Paramount Pictures, was produced by William C. Thomas, was directed by William H. Pine.

NGTH: 505 *feet*, 16*mm*. TIME: 14 *minutes*.

PHYSICAL CHECKUP
LTS absenteeism is
... lost production
... the ...
... the OWI
... KEEPING FIT
... Broderick Crawford
... enter ... a short respite
... visited club groups
... and ... with
... Bellamy ... Foran
... a ... film ... that
... stars ... appears

ELIS A. DENT

SVE NAMES DENT GENERAL MANAGER

★ [illegible] Dent, formerly RCA Educational Director, has been appointed General Manager of the Society for Visual Education, Inc. It has been announced by J. Miss Marie Witham, President of SVE. He began his new duties in April.

Mr. Dent received his early training and education at the Kansas State Teachers College of Emporia. This was followed by graduate work in Education while in charge of the Bureau of Visual Instruction, University of Kansas, a service organization for the schools of Kansas. During his ten years at the University of Kansas he expanded the visual instruction services to meet the growing needs of schools, including one of the first loan libraries of educational slidefilms.

Has Wide Experience

His next assignment was the organization of visual instruction service for the Inter-Mountain Area at Brigham Young University, Provo, Utah. This was followed by nearly three years with the United States Department of the Interior, where he became Director of the Division of Motion Pictures and supervised the production and distribution of pictures, films, and slidefilms for educational use.

For the seven years prior to his appointment as General Manager to SVE, Mr. Dent has been Educational Director of the RCA Victor Division, Radio Corporation of America.

Author and Lecturer

Mr. Dent is widely known for his numerous demonstrations and lectures on the application of visual aids to instruction. He is co-author of *The Educational Use of Radio*, now in its fourth edition, which is widely used as a text and reference in radio-visual training courses and by school executives.

FARM FRONT: Picture Pioneer

By KENNETH H. ANDERSON

★ [illegible]

[illegible]

[illegible] devoted [illegible]

[illegible] Mr. [illegible] has been [illegible] Secretary Claude R. Wickard to [illegible] secretary for [illegible] operational program of the U. S. Department of Agriculture.

What 4-Hers Do By Visuals

Extension agents draw heavily upon the material produced and made available from the Motion Picture Division of the U. S. Department of Agriculture. In 39 States, USDA films are available from educational film libraries within the State, usually located at the State Agricultural College or University. Many of these libraries also rent non-theatrical films produced by other governmental agencies and commercial sponsors.

It is estimated that at least half of the county extension offices own or borrow motion projectors using films from whatever source they can obtain them. No doubt many more would make use of projectors available within the county if given a bit of "selling" on the use of films and if more good films were available for rural audiences. Proof of the latter point is that about 200 counties have 16 mm. cameras and make their own films.

Filmstrips Are Popular

Strip films have been widely used by extension workers for years and the U. S. Department of Agriculture maintains a library of several hundred. In recent years the double frame has rapidly succeeded the single frame strip.

Because strip films are somewhat lacking in flexibility in presentation there has been a great trend since about [illegible] and the use of 2 x 2 colored slides. Many county extension workers [illegible] cameras and make [illegible] about local activities [illegible] Don Bennett, in charge [illegible] for the Federal Extension Service, estimates [illegible] extension [illegible] of visual [illegible] most extension workers like to present local material along with their visual aids, the 2 x 2 slides are very popular. Color is appealing and the sequence of material can be arranged to fit the situation.

Meeting once a month or oftener in homes, schools and community centers, these 4-H Club groups of rural boys and girls between the ages of 10 and 21 years look to their volunteer local leaders (usually a parent or neighbor) and county extension agents for program guidance—which is where the V for Visual comes in. Very often the parents and neighbors attend the meeting, too. Many is the dad who fattens a market hog more economically and faster and the mother who cooks a more nutritious meal because the children belong to 4-H. In fact, entire communities have changed their old-time farming practices through 4-H — but that's another story.

Child Is Best Salesman

Film sponsors and producers should not overlook the fact that the best salesman in the family is often the child. There are still plenty of farm families who prefer not to be told how to do a better job of farming and homemaking—but let Johnny learn a new idea from the 4-H Clubs and the family is soon taking the cue.

Under the guidance of 150,000 volunteer local leaders, 4-Hers are enrolled in 30,000 clubs in every State in the Union, conducting well over two million projects relating to virtually every phase of rural betterment.

"Feed a Fighter in '43" is the wartime slogan of 4-H members but this does not mean that food projects are conducted to the exclusion of others. The wide range of interests in 4-H work and the potential field for visual devices is apparent in the list of more than 50 farm and home projects in which club members are enrolled. Most of the projects fall into following categories:

Agricultural economics	Soil conservation
Foods and nutrition	Cereals
Child development and parent education	Legumes and forage crops
Clothing	Potatoes, cotton, etc.
Home management	Horticulture
House furnishings	Forestry
Handicraft	Dairy
Home health and sanitation	Animal husbandry
Wildlife conservation	Poultry
	Agricultural engineering
	Rodents and insects

(TURN TO PAGE THIRTY-ONE)

VISUAL EQUIPMENT IS MATERIEL OF WAR

♦ Those who truly serve the field of visual education will be proud of the important contribution it is making to the training and morale of millions in our armed forces. They share the pride of visual equipment manufacturers whose facilities are taxed to the limit to meet the increasing demands of the Army and Navy for essential visual devices and projectors.

Where the production facilities can be provided beyond these requirements for the armed forces, manufacturers will do everything possible (where permitted by appeals from War Production Board regulations and exceptions thereto) to supply equipment for essential home front activities, particularly in the field of war training. But only vocational schools, war plants, hospitals, health and welfare agencies and similar organizations directly vital to the war effort need apply.

Meanwhile, if you own such equipment, take care of it. And if it is not serving a useful war purpose, dispose of it so that one of the very essential civilian purposes above may be expedited. —O.H.C.

Right: A Chicago-made dual projector unit on duty at an Army outpost. *Page 28*

FACTS about Civilian Supply

RULE NUMBER ONE in all war production and particularly among manufacturers of visual equipment is that the needs of the armed forces must be supplied *first*. Now faced with increasing demands by Army and Navy for visual devices and projectors vitally needed for training and morale purposes, visual equipment makers will be able at best to satisfy only the *most essential* civilian needs in the period immediately ahead. We have a *war* to win.

This situation prevails through the entire field of electronics and other allied industries. With more than a million civilian radios already silenced by tube shortages, it must be apparent to every civilian that the situation is a difficult one that requires the cooperation and understanding of all. It is equally true in the field of raw film supply, where an added complication of over-taxed laboratory facilities now also prevails. Here is what civilians can expect:

For Activities Essential to War Effort

New Equipment: Motion or still projectors will be available *only* to the most essential civilian users:[1] production of equipment by individual manufacturers is entirely dependent on facilities available after completion of Army and Navy orders *and* upon appeals from existent War Production Board limitation orders granted by the WPB for such essential civilian purposes only. Apply to individual projector manufacturers for information on new equipment *only* if you are engaged in one of the essential civilian fields defined below.

Operating Supplies: Projection lamps, with certain exceptions, are available for industrial and educational users generally. But amplifier tubes are a critical problem for the owner of sound motion picture or sound slidefilm equipment. The Visual Equipment Manufacturers Association is doing everything possible to protect users by cooperative action and purchase of reserve stocks by each projector concern.

Many repair items are subject to delayed deliveries to the projector manufacturer by other suppliers. Motors and lenses are particularly critical at all times.

The recent action of the War Production Board in assigning a rating AA-2X to educational institutions as well as to war plants and other essential civilian activities in order that they might obtain repair and operating supplies should not be accepted as assurance of availability of such supplies in the field of visual equipment. Tube supplies, for example, are governed by the ability of tube manufacturers to produce tubes in excess of present military demands. Many repair items are subject to similar production limitations.

Manufacturers of visual equipment are actively aware of the importance of the many thousands of existing equipments now in use in war plants, training schools and other essential civilian activities. The acquisition of reserve stocks of tubes, for example, has been undertaken solely for the protection of these users. The projector owner, on the other hand, will recognize the complicated tangle of constantly changing relations, contradictory ratings, etc., which these companies face in handling even the simplest of repair and replacement requests.

New equipment is even more restricted. Here the manufacturer has often been placed in the embarrassing position of rejecting a high rating because of the existence of metal limitation orders specifically prohibiting the delivery of equipment to all except the armed forces. We repeat: only if you are engaged in activities essential to the war effort can you *expect* to acquire either motion or still projection equipment in the near future and this is entirely subject to the ability of the individual manufacturer to produce *for such purposes only*.

Take Care of Your Present Equipment

Write to projector manufacturers for specific details *if you are in an essential category* or address Business Screen for further information. If you own equipment, observe sensible rules of operation: handle equipment with care and don't burn expendable tubes and lamps when there isn't a useful picture on the screen. Your projector should be used for one of the many purposes helpful to the war effort whether owned by a school or business concern.

[1] Essential civilian activities include such vocational schools, war plants, manufacturers training workers, hospitals, health and welfare services and allied agencies.

How 16mm sound projectors are now serving the war effort at home:

IN WAR SERVICE:

"This company is heavily engaged in the War Effort and projectors are being used in the prosecution of that effort."
—General Petroleum Corp.

". . . being used continually for educational work in the production of food crops. Not only used by two groups owning but also being used by county Civilian Defense and Navy Recruit Office."
—State College of Washington.

"Showing films about 40 hours each month, not only to own membership which is entirely war workers but also to public."
—United Automobile Workers of America.

"Putting on Labor-Management War Production Drive and equipment we own will play important part in giving interest and impetus to this drive. Also being used in defense training classes, safety training and for air raid instructions."
—Merck & Company Inc.

"Three projectors in constant use in educational work. Loss of even one would seriously affect this project."
—Glenn L. Martin Company.

"Projector being used full time in the training of war workers."
—Teletype Corporation.

"Projectors are in daily use by War Products Service Training Department and in our employe morale building activity."
—Frigidaire Division.

". . . the only 16mm sound projector in Hot Springs County . . . used by Civilian Defense Council, Farm Bureau, all civic organizations, Forest Service, Red Cross and Public Health Association."
—Thermopolis (Wyo.) City Schools.

"Present equipment is being used 6 days a week in the government's War Training Program."
—University of Connecticut.

"Using our projector constantly in the education of student nurses for the Federal program . . ."
—Western Pennsylvania Hospital School of Nursing.

for [illegible]

[illegible]

GOV. DWIGHT GREEN; PRES. W. C. DEVRY AND CAPT. FRANK LOFTIN

[illegible] that they, too, have a share in our "E" award, and that later we shall find opportunity to repay their patience with new and finer wartime DeVry motion picture sound equipment.

In a congratulatory message from Donald Nelson, Chairman of the War Production Board, Mr. Nelson acknowledged a DeVry tribute to the men of the Motion Picture and Photographic Equipment Branch of the Board whose efforts had helped make possible the company's production record.

The colorful presentation ceremony was highlighted by addresses by Governor Green and Chicago's Mayor Kelly and by the appearance of a United States Navy Band and Color Guard.

Special tribute was paid to the pioneer efforts of the Company's late founder, Herman A. DeVry and to twenty-seven employees of the Corporation now serving in the armed forces.

REAR ADMIRAL WILLIAM C. WATTS

in RECOGNITION

OF WAR SERVICES

JAM HANDY ORGANIZATION AWARDED ARMY-NAVY "E"

Edith Embury (center, holding one of the "E" pins) and other employees of the Jam Handy Organization

THE signal honor of being the first professional organization to receive the Army-Navy Production Award was given the Jam Handy Organization in Detroit last month when high-ranking officers of the Army and Navy paid tribute to employees in a colorful ceremony.

IMPORTANCE OF TRAINING AIDS CITED

In his presentation address, Rear Admiral William Carleton Watts of the Navy cited the basic importance of training in modern warfare and complimented the organization on the "splendid contribution" it is making in the development of special devices, training aids, motion pictures and slidefilms to meet the training needs of the armed forces.

The Production Award presentation was made by Rear Admiral Watts and Col. Alonzo M. Drake, U. S. Army, and received by Jamison Handy, president of the company. Otto Simunich, Edith Embury and Hugo Anders received the individual "E" pins from Col. Drake on behalf of the artists, writers, women workers and technicians of the company. Dr. Joseph W. Barker, special assistant to the Undersecretary of the Navy, was master of ceremonies.

SERVE WIDE FIELD OF WAR TRAINING

Detroit studios of the Organization have been engaged in the production of motion pictures, sound and silent slidefilms and other visual aids for Army, Navy, Coast Guard and other arms of the services as well as vital industrial training projects for the U. S. Office of Education and war product educational subjects.

(Above) Admiral Watts and informal group of guests and employees in a post ceremony glimpse; (below) Jamison Handy, president of the Organization, makes acceptance address on behalf of the company.

Visualizing HIGH-SPEED ACTION

By CAPTAIN E. M. WATSON

During the last few years a number of articles on high-speed photography stroboscopes have been published, each dealing with a particular device but no attempt seems to have been made to classify or relate the methods employed. Hence, in this article there will be presented a classification of the various principal methods and devices, and also a brief description of each.

The classification of means for analyzing motions that are too rapid for unaided visual observation is included as Table I. The column at the left lists various general types and arrangements of apparatus; the middle column outlines the manner in which investigations are made when the subject is continuously lighted; and the column at the right applies to methods employing intermittent light on the subject.

In almost every setup the following points must be considered:

1. Means must be devised for placing the image (with necessary sharpness and steadiness) on the medium where the exposure is to take place.

2. Arrangements must be made for starting and stopping the exposure.

3. Means must be devised for placing the subsequent exposures on recording material at the proper time and location to obtain the desired results.

Recognition of these requirements give some idea of the method of accomplishment in each case.

Visual Observation

Item 1 of Table I refers to the visual observation of repetitive phenomena, such as take place in the action of engines or of other devices where a specific motion is continually repeated.

When continuous light of sufficient intensity is reflected from or radiated by the subject that is to be observed, some type of shutter must be employed to pass light from the subject to the observer only at times when similar images will be seen.

Such a shutter control of the light that reaches the eye is provided in the Ashdown Rotoscope (London), shown in Fig. 1. The observations are made through two slots in a tube which is revolved on its axis by a spring motor. These slots are fitted with vanes which further restrict the passage of light to only a very short interval out of each half revolution. By means of an adjusting knob, the observer can control the speed of the rotating tube and hence can view the performance of the subject at any one point in its operating cycle (by adjusting the rotoscope to synchronism with the subject) or throughout its cycle (by adjusting the rotoscope to a slightly different speed). Included also are speed-change gears which provide for a choice of any one of four basic speeds and thus give the device a considerable speed range of application.

Under conditions where existing continuous light reflected or radiated from the subject is not so bright as to overcome the contrasts introduced by an addition of intermittent light, the stroboscopic method of examination can be used to advantage.

Fig. 2 shows the stroboscope that was used in the House of Magic demonstrations at the New York World's Fair. The tube mounted in the reflector is filled with neon. The power to operate the tube is taken from a condenser which quickly discharges during each flash, causing the light to be of very short duration. The necessary circuit is provided for recharging the condenser at sufficient speed to allow the flashes to take place at the rate of once for each revolution of the wheel, which is driven by a synchronous motor. The circuits used depend on how the equipment is to be employed.

When a particular point of an operating cycle is being studied, the flashes of light should be made to coincide with that point of the operating cycle, though the timing of the light may also be varied somewhat to bring other points of the cycle into view. Appa-

Fig. 1. (Left) Ashdown Rotoscope for making observations under conditions where light from subject being observed prevents the use of ordinary stroboscopic methods. Fig. 2. (Center) Stroboscopic equipment used for demonstration purposes in the House of Magic. The tube and reflector are turned toward the wheel. The useful light from the stroboscopic tubes originates either in mercury vapor or rare gases. Fig. 3. (Below) Camera and lights with synchronizing equipment for obtaining single exposures at high shutter speeds.

Fig. 4 (Below). Photograph of a .30-caliber bullet (velocity 2700 ft. per sec.) striking an electric lamp bulb. Note that the cracks in the glass travel faster than the bullet. An exposure of less than 2×10^{-6} sec. is required to "stop" the bullet without blur as shown in this picture.

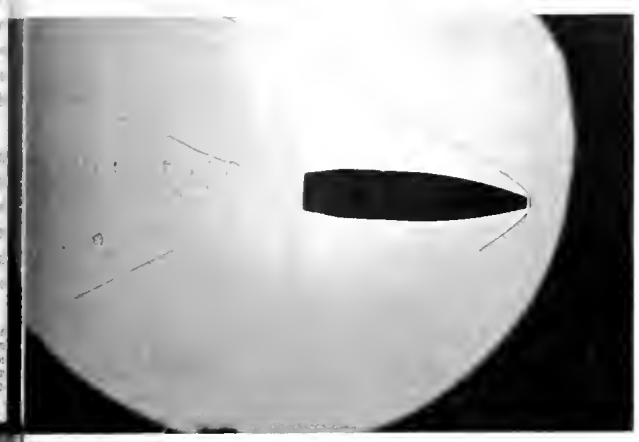


Fig. 5 (Top) A microsecond silhouette photograph taken with stroboscopic polarized light to show the stress pattern during the growth of the cracks in a glass plate when violently broken. The crack velocity is 5000 ft per sec. It is measured by taking two photographs spaced in time by 15 microseconds. Fig. 6 (Below) A single-flash silhouette picture of a 50-caliber projectile in flight.

An Important Wartime Asset

★ IN THE DEVELOPMENT of ordnance and other machines and materials of war, the study of mechanisms operating at high speeds is of the utmost importance in determining their perfection or need for improvement. The unaided eye is useless to observe the behavior of mechanisms that move at high speed.

As in the article *Visualizing the Invisible* which appeared in these pages recently, BUSINESS SCREEN points out the skills and devices available in the field of the visuals. Captain Watson, formerly of the Lamp Development Laboratory, General Electric Company, is now occupied in the field of research for the Army. We are most indebted to him and to the *General Electric Review* for their kindness in furnishing the technical data and illustrations for these pages. Subsequent articles on innovations in these fields are planned for early issues of BUSINESS SCREEN.

tatus for his work can sometimes be constructed from equipment that is at hand, but in most cases it is more economical to purchase special apparatus.

STILL CAMERAS

Whenever the subject being investigated does not repeat its motion at all or not often enough to use a stroboscopic device, it is necessary to use some form of photography for quickly recording the action for later study. When complications are not great, still cameras can be used.

Single Images

When it is not necessary to know what happens before and after a given instant, a single exposure on a stationary film may suffice. In Table I, this condition is listed as Item C. For many applications much can be accomplished with still cameras, particularly if the camera's shutter is capable of a speed of the order of 1/1000 of a second.

Fig. 3 shows a setup used by Jack Price in taking single shots at very high shutter speeds. Attached to the camera is a synchronizer which makes possible the electrical signal that the opening in the curtain shutter is approaching the film. This signal is in advance of the uncovering of the film by an amount which will allow the photoflash lamps to reach the desired plateau of light intensity by the time the exposure is started. The synchronizer reduces the voltage on the grid of a thyratron tube to a point where the tube is made conducting, thus causing the lamps to be set off. The lamps in each cluster are connected in series. The leads from the clusters are plugged into the box containing the thyratron tube, etc., and the usual arrangement is to have them in parallel.

Single-shot exposures may also be taken by stroboscopic light, examples of which are shown in Figs. 1 and 5. Stroboscopic pictures such as those in Fig. 7 have been produced by Dr. Harold E. Edgerton, K. J. Germeshausen, and H. E. Grier, who have very ably used the technique of flash photography at the Massachusetts Institute of Technology.

Even with a still film or plate and no camera, instructive silhouette photographs can often be taken by interposing the moving objects between the stroboscopic light source and the sensitized material. For example, in the study of the flight of projectiles fired from a gun, the compression and rarefaction of the air due to the sound wave will refract the light, causing it to show in a photograph. Fig. 6 shows a .50-caliber projectile traveling about 2100 ft. per sec., as photographed by Dr. A. C. Charters of The Aberdeen Proving

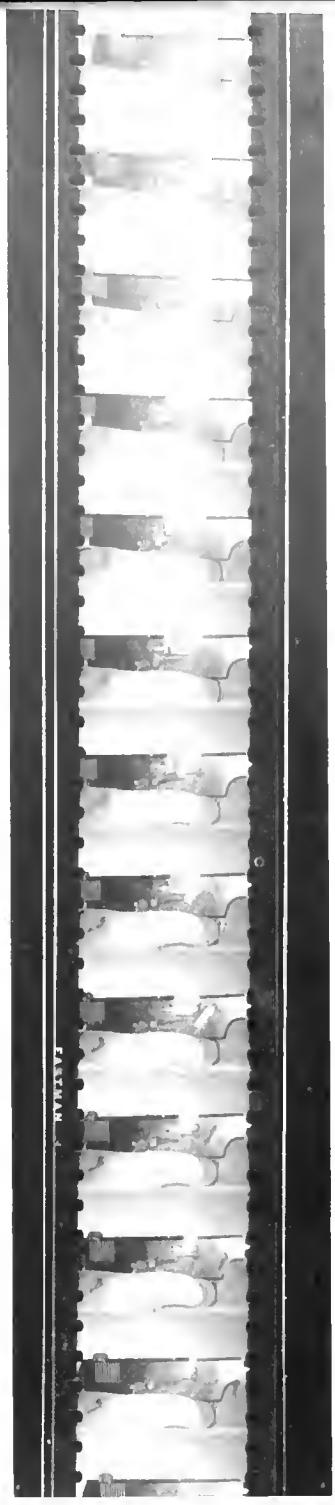


Fig. 7. Motion picture of the action of a .22-caliber automatic pistol. This is a sequence from a high-speed 35mm film taken at approximately 500 frames per second.

Fig. 8. High-speed multiple-exposure photograph of arc interruption, showing successive stages of the arc at intervals of about 1/200 of a second.

Fig. 9. Interior of the high speed Boys camera, showing the stationary film cylinder and the rotating lenses and prisms.

Fig. 10. Front view of high-speed pinhole camera that can take pictures at the rate of 120,000 per second.

Fig. 11. Rotor with pinhole lenses which supports the film in the camera shown in Fig. 10.

Ground (Mdc). The sound wave from the bow and stern may be seen, as well as the wave from the grooves caused by the rifling. The turbulence of the air in the path just traversed by the projectile can also be seen.

Multiple Images

When the action to be studied moves across the field of view, multiple exposures on a single plate can be used to record what takes place. In Table I this condition is listed as IIdbc. The photograph in Fig. 8, taken by Otto Schurig, of an arc in a contactor,[2] is an example of an action recorded by multiple-image photography. A disk with a series of radial slots near its periphery was revolved before the still camera lens during the time the arc took place. The various positions of the arc were recorded when the slots in the disk successively uncovered the lens. The difference in brightness of the various images of the arc is caused by their being taken at various points on the alternating-current cycle.

Motion-Picture Cameras

When a single picture is insufficient and the motion occupies approximately the same area, causing multiple images to overlap and to be confused, one must resort to motion pictures. Motion pictures taken at speeds in excess of the regular projection speed will, when projected, show the action in slow motion. In Table I motion pictures are listed as III.

Intermittent Film Movement

If the difference between taking speed and projecting speed need not be very great, an intermittent camera IIIcav would be suitable. In this type of camera the film is drawn from the supply reel and wound on the take-up reel at constant speed. However, film is stationary adjacent to the lens aperture when each exposure is made. It is advanced intermittently past the aperture for the exposure of each successive frame, and the light through the optical system is interrupted during the motion of the film. The Bell and Howell super-speed 16mm camera will operate at about 128 frames per second or eight times the normal projecting speed. Most slow-motion pictures of athletic events, etc., are taken at about this number of frames per second.

An Eastman Cine-Kodak Special fitted with a stroboscope has been used to study the operation of looms, etc., by the Bigelow Sanford Carpet Company, Inc., as shown in Fig. 12. A commutator is attached to the shaft on the camera which would otherwise accommodate a crank. This commutator, extending to the right of the camera operator, is connected to the stroboscope control apparatus that is in the black box. The stroboscope lamp is caused to operate at the time the camera shutter has completely uncovered the film.

Continuous Film Movement

When it is desired to operate at a picture frequency in excess of that attained with an intermittent camera, a camera in which the film moves continuously without stopping must be employed. In the class of cameras designated as IIIcbc in Table I, the film is passed from one spool to another at a constant speed, once the desired speed has been attained. The images are either placed on the film almost instantaneously by means of stroboscopic light or allowed to travel with the film for a short distance by means of an optical system.

The stroboscopic camera of this type is very simple in construction, because its optical system consists of only an ordinary lens which is arranged to focus the image on the film as it passes. The stroboscopic exposures are usually so short that the motion of the image on the film is less than the dimensions of the optical errors of the lens (circles of confusion), and therefore the motion of the image is not noticed. This method has the advantage of stopping very fast motion which would blur the image on the film if continuous light and a camera which allowed a longer period of exposure were used. Another advantage of this type of camera is that the light is on the subject only while a picture is being taken and, therefore, has less heating effect than if it were left on continuously.

◆ Cameras that employ an optical system to move the image with the film can be used to advantage in photographing subjects which radiate continuous illumination. Various methods have been used in constructing cameras of this type. The Jenkins camera displayed in the Smithsonian Institution at Washington (D. C.) employs a ring of lenses which move with the film. The Eastman high-speed cameras employ a revolving glass plate which moves the image along with the film. The same effect is accomplished in the Zeiss camera by means of mirrors. The top speed of all these cameras which use spooled film is limited by the rate at which the camera can pass film from one spool to another without serious damage to the film.

At the present time the practical upper limit of film speed seems to be about 100 miles per hour. Using full frames of 16mm film, this speed would correspond to a picture frequency of 6000 to 7000 frames per second. When several pictures are placed in the area regularly occupied by one picture, it is possible to increase further the picture frequency. This usually cannot be done, without major alterations, in a camera having an optical system that moves the image with the film, but it is not difficult to accomplish in a stroboscopic camera. To make the change in the latter camera, about all that is necessary is a mask to limit the field on the film and a means of producing the stroboscopic flashes at the desired increased frequency. Pictures taken under these conditions and intended to be projected as motion pictures should be rephotographed with an animation camera, enlarging to full-frame size the section of the film on which the desired action took place.

Fig. 7 shows an enlargement from a strip of film taken at approximately 600 frames per second with a stroboscopic camera. The sequence shows the action of an automatic .22-caliber pistol. This is a subject which can be taken with either the special-shutter type or stroboscopic type of camera that utilizes continuously moving film, a fact that is true in most instances of practical high-speed photography.

◆ When there is required a picture

Fig. 12. Eastman Cine-Kodak Special fitted with a stroboscope and setup to make a high-speed record of an action in the operation of a loom.

frequency greater than that which can be obtained with the types of camera in which the film is passed from one spool to another, it is necessary to mount the film on a drum for support. This arrangement is listed as III(c) in Table I. The greatest speed so far known is that attained by D. C. Prince and W. K. Rankin who constructed a camera that will take 1000 pictures at rates up to 120,000 pictures per second.[2] A front view of this camera is shown in Fig. 10 and the rotor in Fig. 11. The film used is 1¼ in. wide by 10 in. long and contains space for ten rows of images, each row consisting of 100 individual pictures. At maximum rotational speed, the length of the film is sufficient to record an event lasting 1/120 of a second, which is equal to one alternation of 60-cycle alternating current.

Cameras of this type are limited to the photography of phenomena which are complete in one revolution of the rotor, unless special precautions are taken to prevent interference from multiple exposures on the film or unless a high-speed shutter is used to block out the light except during the one revolution. Because of the very short exposure the subjects should be of very great brightness. Either black-and-white or color film can be used.

(2) "A 120,000-exposure-per-second Camera," by D. C. Prince and W. K. Rankin, General Electric Review, vol. 42, p. 391, September, 1939.

This camera was built to study the performance of high-speed switchgear, and when operated at the highest speed it is especially valuable in photographing arcs which are extinguished after one alternation. The film is held, by centrifugal force, on the inside of the rim of the rotor, with the emulsion away from the main shaft. The rotor is so constructed that it consists essentially of 1000 very small cameras having pinhole lenses. These pinholes correspond to the first zones of zone plates, and are of such size as to give the best image under the conditions in which they are used. The pictures are exposed progressively from one row to the next, until the tenth row is reached. This is followed by repetitions, beginning each item with the first row. The pictures may be printed on paper for examination in the same manner as is done in still photography. If it is desired to show them as a motion picture, it is necessary to photograph individual views with an animation camera in order to locate each picture properly in the desired frame area.

Instead of causing the film to rotate, it may be placed in a stationary drum and the [illegible] used to sweep over it if the objects to be photographed give off light sufficiently stroboscopic to permit intelligible images to be obtained. Such devices have been used by Dr. K. B. McEachron, L. H. Hagenguth, and C. J. Kettler for studying lightning discharges.[3]

In addition to facilitating the study of the formation and history of lightning strokes, cameras of this Boys type may be used to study the phenomena associated with the start of sparks and arcs and also the entire history of a spark or arc. Two such designs of cameras have been built, known as the low-speed and high-speed types. A record made with the high-speed camera is shown in Fig. 13. Fig. 9 shows the end of the camera in which the film cylinder is located. The housings for the two objective lenses and the two prisms may also be seen. The rotation of these causes the light to sweep along the film.

This type of camera will give a continuous record of the propagation of a spark during its formation and the change in intensity after it is formed. The maximum power of resolution so far obtained is 11/1,000,000 of a second or 11 μs per mm of the film. By

(CONTINUED ON THE NEXT PAGE)

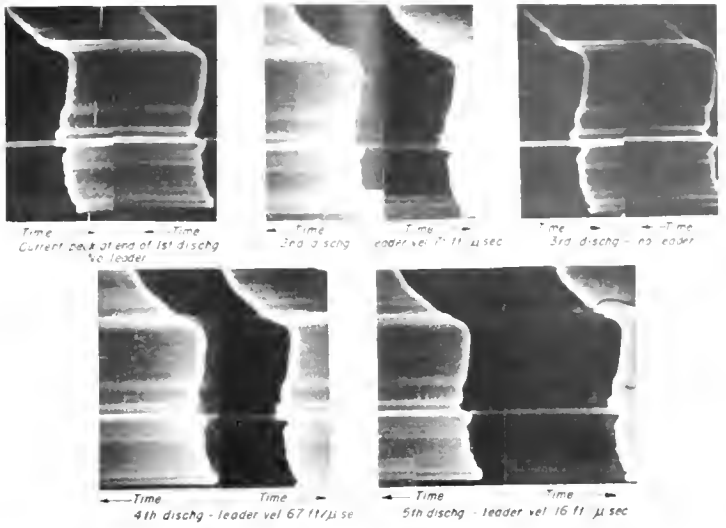


Fig. 13. High-speed Boys camera photographs of multiple-stroke lightning to the Empire State Building tower.

(3) Lightning to Empire State Building, by K. B. McEachron, *Jour. Franklin Inst.*, vol. 227, pp. 156, 159, February, 1939.
"Lightning Recording Instruments," Part II, by J. H. Hagenguth, General Electric Review, vol. 43, p. 218, June, 1940.
"Cameras for Lightning Studies," by C. J. Kettler, *Phototechnique*, vol. 2, p. 38, May, 1940.

TABLE 1: PRINCIPAL METHODS FOR STUDYING PHENOMENA THAT ARE TOO FAST FOR UNAIDED VISUAL OBSERVATION

CLASSIFICATION	SHUTTER METHOD Used where subjects radiate light of themselves or reflect utility light not used to determine exposure time. Exposure time is determined by shutter.	STROBOSCOPIC METHOD Used where other light does not materially interfere with stroboscopic light. Exposure time is determined by stroboscopic flash.
I. Direct visual observation	Visually observing through a shutter the action of devices that perform repetitive cycles.	Visually observing without optical apparatus the action of devices that perform repetitive cycles.
II. Still Cameras		
(a). Single-image	Camera with shutter which will give a single exposure of adequate shortness of time.	Camera with its shutter open during a single stroboscopic flash.
(b). Multiple-image	Camera with continuously open shutter, and exposure repeated at short intervals by means of moving perforated disk or other special light-interrupting device.	Camera with its shutter continuously open during several stroboscopic flashes.
III. Motion-picture cameras		
(a). Cameras with intermittent motion which allows film to remain stationary during exposure. Speed limited by strength of intermittent mechanism and film.	Ordinary motion-picture camera which may be operated up to about 150 frames per second.	Ordinary motion-picture camera fitted with stroboscope which may be operated in synchronism with film.
(b). Cameras in which the film is transferred from spool to spool at continuous speed. Speed limited by strength of film.	Special cameras in which exposures are controlled by a shutter, and images are moved with the film by means of optical devices, such as prisms or mirrors that are used in addition to the objective lens. Most common operating speed, 1000 frames per second. Maximum speed about 6000 to 7000 frames per second.	Special cameras in which the film is moved past the objective lens, and synchonized stroboscopic flashes are used to produce exposures that are so short that no appreciable motion of the image on the film can be detected.
(c). Cameras which operate at such high speed that the film is not strong enough to run unsupported. This difficulty is overcome either by supporting the film while in motion or by allowing it to remain stationary and optically moving the image.	Special cameras of various types of construction where exposures are controlled by shutters. Maximum speed thus far attained about 120,000 exposures per second for 1000 exposures.	Special cameras for taking pictures of phenomena such as lightning, etc., which are somewhat stroboscopic of themselves.

VISUAL ACTION

CONTINUED FROM PREVIOUS PAGE

enlarging the pictures obtained, shorter times can be investigated. Speeds of propagation of lightning strokes as high as 65,000 miles per second have been measured.

CONCLUSIONS

In any kind of high-speed photography, all the limitations of ordinary photography are encountered plus some special restrictions imposed by the high speed. As types of cameras are changed to obtain increased speed, compromises in image quality and in exposure must be made. In the operation of an intermittent camera of the type mentioned as IIIa or in Table I, the film is stationary while the exposures are made. This allows the best quality of image to be obtained from the lenses, a variety of which may be used. Only a moderate amount of light is needed, and both black-and-white and color film can be used.

At high speeds where a camera of the type designated as IIIb or in Table I is used, in which the film is passed from one spool to another without intermittent motion, it is necessary to increase the intensity of the illumination because the time of exposure is shortened. It is fortunate, however, that, owing to the deviation from the reciprocity law, the intensity of illumination does not have to be increased quite in proportion to the reduction in exposure time. Focal length and width of aperture of objective lenses are often limited for cameras which require an optical device for moving the image with the film.

Of the two general types of cameras, the stroboscopic type will usually give the better quality of image. With it there is no restriction on the focal length of the lens or the wideness of the aperture. When the camera is run at regular speed, there are only minor variations such as vibration, etc. which might cause the film to take a slightly different position than was intended. The lighting requires the most attention, since it must be of extremely short flashes for which special electrical equipment is required. The stroboscopic light thus produced is usually quite actinic, which simplifies the film requirements for black-and-white photography. If color photographs are to be made, attention must be paid also to having proper color balance.

For cameras in which the images are moved optically with the films, the lighting is simple but the lens and other camera requirements are more complicated. For most purposes, the light from incandescent lamps, the sun, or the subject itself will be adequate.

Among the optical systems of these cameras are some in which the motion of the image does not follow the film exactly, and in which the optical distance through the system varies slightly during exposure. These two factors contribute to the conditions that prevent high-speed pictures being as good as those obtained with the same lenses when no optical system for moving the image is employed. The loss in quality in most cases is about the same as that occasioned in changing from 16mm film to 8mm film when running at normal speed. The part of the optical system for moving the image limits the use of lenses to those of the longer focal lengths, restricts the amount of light that can be passed by increasing the lens apertures, and causes some loss of light en route.

The speed range of high-speed photography is continuous. At one extreme there is the example of the telephone companies' photographing of call counters. Here the visual observation period can be very long but the detail is necessarily great. By these pictures, errors can be checked. The other extreme is the camera for studying lightning flashes. Here the detail to be observed may not be great but the visual observation period is very short.

There is opportunity in high-speed photography for anyone having only modest equipment, but many of the applications require very expensive equipment which has little versatility.

Eshbaugh Joins Sutton-Malkames

◆ Sutton-Malkames, Inc., announces the appointment of Mr. Ted Eshbaugh of the Ted Eshbaugh Studios, Inc., New York, as associate and Director of Technical Animation. His organization, including personnel and equipment, becomes an affiliate company. The staff has had many years of experience in the field of animation, including extensive time spent with Disney Studios.

In addition to producing many technical animation subjects for an impressive list of National Organizations, Mr. Eshbaugh has had producing contracts with Metro-Goldwyn Mayer and R.K.O., and in 1935 produced a series of pictures in color for the Van Buren Corporation, all of which had their premier showing at Radio City Music Hall.

FOR WAR PLANTS

Safe Use of War Tools

♦ Salvage and care of now-precious tools is the subject of a one-reel, black and white, sound picture available to other war plants from the International Harvester Co.

In these days of urgent stress on production, with the shortage of high quality materials for tools, it becomes almost mandatory that tools be used to their full capacity.

The picture shows how the Harvester Company's tool salvage program was organized and its functioning methods, from salvage at individual plants to the central clearing house for the utilization of excess and obsolete tools.

Emphasis is given to the low-temperature brazing process of repairing broken or damaged tools.

Regrinding to smaller sizes or reworking to different types are given attention.

Slitting saws, reamers, drills, broaches, hobs, milling cutters, etc., are repaired, ground smaller, or made over to assure valuable tool material giving all possible service.

This picture has been highly approved by W.P.B. officials and many organizations interested in the acuteness of the tool problem. Workmen will profit from seeing the picture. Prints are available in 35mm or 16mm sizes, with no charge other than transportation, upon request to International Harvester Company, 180 North Michigan Avenue, Chicago.

Bethlehem Steel Series

♦ Currently offered to war plants is an outstanding 2-part sound motion picture series on the making, treating and testing of steel provided by Bethlehem Steel Company.

The two pictures on steel for the armed forces each run about 10 minutes and give a complete background on steel making and testing. *How Steel is Made* shows blast, Bessemer and open-hearth operations, analysis, control and the various rolling operations. Animated drawings and still cross sections are profusely used. *Steel Treating and Testing* is equally complete. Address the Motion Picture Office, Room 311, Bethlehem Steel Co., Bethlehem, Pa., only if you are a war material plant or training group.

Norton Films On Grinding

♦ LESSONS IN GRINDING: This series consists of four motion picture films. The shortest is 11 minutes long and the longest one 20 minutes. The Norton Co. is sponsor.

Surface grinding is one of the topics in the Norton film series.

The series was produced to meet the demand of war work plants, industrial apprentice schools, Army and Navy training schools, etc., for detailed information on grinding subjects. The films are intended to present merely the fundamentals of grinding in a way that the inexperienced man can understand.

The four subjects covered are *Cutter Sharpening, The Cylindrical Grinder, The Surface Grinder, The Grinding Wheel, Its Care and Use.*

The films were produced and are being distributed by Norton Company, Worcester, Mass., manufacturers of grinding and lapping machinery, grinding wheels and other abrasive products. The films are loaned free of charge and are booked direct from the Norton Company Publicity Department.

Fruehouf's Training Film

♦ Another sound slidefilm in a series for training truck-trailer drivers is provided by the Fruehauf Trailer Company of Detroit. *The Skill Behind the Man* shows in detail the finer points of truck trailer driving and covers emergency conditions of all types.

A sequel to an earlier subject *The Man Behind the Wheel*, this is an advanced educational feature. Both films are offered free to companies concerned with the problem.

GE's Arc Welding Films

♦ Widespread loan and purchase of the instructive 16mm sound motion picture series on *Arc Welding* available through district offices of the General Electric Company is reported. The series was produced by Raphael Wolff.

For information call or write your local G. E. branch or address the Visual Instruction Section at Schenectady, N. Y.

New 16mm Amprosound

★ Last year, The Ampro Corporation was confronted with the urgent necessity for reducing to a minimum the use of critical materials in making 16mm. sound projectors for the government. This in spite of the fact that Ampro projectors were being made exclusively to help train U. S. fighters all over the world. At the same time, this reduction had to be accomplished without in any way lowering the effi-

ciency of the Ampro units which had passed severe government tests for overseas service with flying colors.

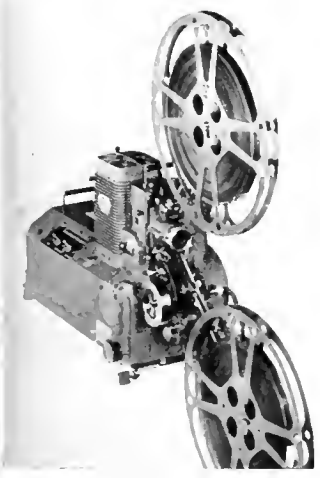
Ampro engineers went to work on this problem with a will. The result is a new Amprosound model with a greatly reduced percentage of critical materials and an actual increase in efficiency and convenience of operation.

Ampro engineers were able to make these changes and at the same time increase the ease of operating and servicing, and also maintain the tone quality, cooling, quietness, and illumination which have made Ampro famous throughout the world.

Some of the improvements incorporated in the new Amprosound are:

1. Heavier reel belts and larger pulleys for improved operating efficiency when operating 2,000 ft. reels.
2. Improved film snubbers for protecting film.
3. Improved belt shifter and belt guard that provides positive shifting of take-up belt which is more convenient to the operator. Also prevents danger of damaging belt through careless handling by the operator.
4. Sound-silent speed switch (and reversing switch on Model YSAO) moved to right hand front cover of amplifier housing for greater convenience of the operator.
5. Removable governor cover on right front center of amplifier housing for easier access to governor, drive belt, and threading lamp. This simplifies maintenance and operation.
6. Added carrying handle on top surface of amplifier housing near rear of amplifier for more convenient handling.

The New 16mm Amprosound Model.



COMING EVENTS IN THE EDITORIAL PAGES OF BUSINESS SCREEN

★ A Complete Digest of All Safety Films

Prepared by a special staff in cooperation with the National Safety Council, contains contents and sources of all available safety subjects.

★ U. S. D. A. in Wartime: A Special Feature

The history, past and present, of the oldest and most consistent user of Visual Education in U. S. Government: Films, Audiences and Personnel.

★ Pro and Con of Films as Instructional Aids

An exclusive feature article by Col. Melvin E. Gillette of U. S. Army Training Film Production Post at Astoria, L. I.

★ Pictorial Feature: Rural Canada Sees War Films

Candid glimpses from Canada's extensive rural circuit show a typical picture night in a small town.

PLUS A NEW DEPARTMENT FOR VISUAL EDUCATION DEALERS: PERSONALITIES OF THE INDUSTRY REVIEWS OF NEW WARTIME TRAINING FILMS NOW AVAILABLE

FILM PATTERN

★ Something new in motion picture technique is revealed in Associated Screen Studios' *The Thousand Days*, directed by Gordon Sparling, production supervisor. This Canadian Cameo is an example of the "rhapsodic" treatment used to develop a new form in the art of motion picture expression.

The technique used has been termed "rhapsodic" because the story is told in disconnected bits and pieces. Visually and orally there are a large number of disconnected sequences. Each by itself has little or no meaning, yet all are blended in natural relationship when assembled in the complete composition.

As in musical expression, the rhapsodic technique uses recurring themes to carry the pattern through with sweep and flow. Visually, characters may be introduced repeatedly to provide conjunctive scenes. Recurring words or voices also serve this purpose, as do repeated individual sounds. Repitition of musical themes and in building an emotional climax from these disconnected bits.

The rhapsodic technique differs from the dramatic or the documentary treatment in that there is a less obvious progression. The dramatic technique develops its plot through the words and actions of its characters. The documentary technique depends upon a commentator who delivers a lecture illustrated by scenes, usually chosen for their factual rather than their aesthetic value. The rhapsodic treatment utilizes intimate, seemingly unrelated bits from life (eavesdropping on conversations, employing only the key bits of scenes. No one commentator carries the main theme of the motion picture, but many voices are used.

In *The Thousand Days* a newspaper editor lifts a phone to reveal a bit of the thread that carries the story. He is heard in conversation with his assistant. There is no reason for us to be there, but what we see and hear has an important bearing on the entire composition. Two stock brokers idly scanning the ticker tape speak two brief sentences that lend color to half a dozen sequences to follow. Short bits from speeches of public leaders keynote the trend of the story. A blacksmith at his anvil talks to a friend and the recurring sound on anvil is a reminder of a thought he has spoken. Both sound effects and musical background are important to the flow of the "rhapsodic" motion picture.

Overhearing part of a song lends emotional meaning to a number of scenes. A crumpled body, a dagger on whose handle is the word "Italy" and strains of the "Marseillaise" paint a vivid picture.

The rhapsodic treatment has been used experimentally in a number of Associated Screen Studio productions, usually only in some sequences. For the first time an entire two-reel "featurette" has been produced in this style. In the case of *The Thousand Days* the rhapsodic technique takes a review of current events out of the dusty and prosaic to make it a living, stimulating experience.

League Closes Film Office

♦ The National League Film Bureau has announced that a new baseball picture was not produced during the 1942 season. This has made it necessary to close the film department. Many prints of previous productions have been placed with our armed forces both here and abroad so this will explain the inability to provide pictures from the usual sources. These are now appearing in Alaska, Iceland, China, Hawaii, Australia, New Caledonia, Panama Canal Zone, South America, Central America, Puerto Rico, Mexico, Canada and every state in the United States.

Some time ago The Coordinator's Office of Inter-American Affairs asked the Film Bureau to assist in the production of an instructive baseball picture for use in Central and South America. Such a film has materialized and is available from The Coordinator's Office in Spanish and Portuguese and an English version is filed with the National League office at Radio City, New York. The picture incorporates the best instructive sequences from the last three National League

SAFETY SERIES

(CONTINUED FROM PAGE EIGHT)

course consists of a complete series of ten sound slidefilms. These are provided for use in conjunction with the basic ninety-six hour ESMWT Safety Engineering Course and are furnished complete with conference leader's outlines. The programs provide for a series of ten complete two-hour safety meetings.

The following titles are included: *Follow the Leader* (management and supervisors joint responsibility); *Cause and Cure* (Methods of discovering and correcting accident causes); *Guard Duty* (Principles of safeguarding against mechanical hazards); *Safety Is In Order* (Importance of providing safe working conditions); *Brain Beats Brawn* (Correct supervision in handling materials of all kinds); *Right Dress* (Need for proper clothing and personal protective equipment); *Doctor's Orders* (Provisions for care of industrial injuries through First Aid); *Principles and Interest* (Maintaining employee interest in the safety program); *Stop Look and Listen* (A plant safety inspection committee at work); *and Production With Safety* (Controlling worker's acts through training and supervision).

FARM FRONT

CONTINUED FROM PAGE 18

—Pennsylvania is doing one of the most outstanding jobs in the Extension Service visual field. In 1912 Geo. F. Johnson, visual aids specialist in that State, reported that 2 x 2 natural color slides were used at a larger percentage of meetings (nearly 50% of all meetings) than were all forms of projected pictures in 1935, when the first accurate statistics were kept. Visual aids of some form were used in almost 90% of all indoor, subject-matter meetings conducted by the 200 agricultural and home economics extension workers in Pennsylvania during 1942, according to Mr. Johnson.

Although the Extension Service is charged with doing an educational job, entertainment and inspirational films are naturally used along with the other subjects. The entertainment - inspirational films help provide variety and frequently aid in drawing a crowd.

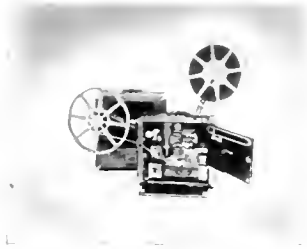
With its practical farm and home projects, its stress on democratic procedure, better rural-urban understanding, leadership, and related factors which make for good citizenship, there is opportunity to use visual aids more widely in the 4-H field. Many of the State agricultural colleges now have full-time or part-time specialists helping to extend the use of visual techniques.

"Tomorrow's Leaders"

Producers, distributors and users of visual aids are becoming increasingly aware that today's youths soon become tomorrow's leaders. As a matter of fact, a film with that very name, *Tomorrow's Leaders*, has just been produced in 16 mm. color and sound by the Allis-Chalmers Company. Taking for its theme the inspiring work of 4-H'ers in Milwaukee county, Wisconsin, the film shows individual and group activities in the farm and home, in camp and at the fair. Since *Tomorrow's Leaders* points up the wartime contributions of 4-H Clubs and as the only 4-H film released in many months it is certain to be in popular demand.

Chicago Film Studios co-operated in the production of *Tomorrow's Leaders*.

Adolf Hitler realized the importance of youth and the power of the visual technique when he placed 39,000 movie projectors in the 50,000 schools of Germany. Here in the United States visual aids can be an equally powerful force for good—among rural youth through the 4-H Clubs. It is these youth who will inherit the farms of the nation and overflow to the towns and cities, there to exert a substantial influence on urban life. The field for films among 4-H Club groups is not limited to teaching agricultural and home economics subjects: it should also include those visual subjects which will help build a better understanding and appreciation of democracy and the institutions which have made this country the greatest in the world. V for Visual should help win Victory and help keep that Victory won.



The New "V" Filmosound

♦ A new Filmosound "V" Projector, announced by Bell & Howell, is in every way typical of the quality and precision typical of this company's products. Sturdy, precision built, and easy to operate, it contains every feature essential to fine projection and film protection . . . and incorporates these features in spite of the fact that critical materials are restricted in its manufacture.

A new sound head of welded sheet steel has been substituted for the casting formerly employed. A carrying case of waterproof fir provides the extra strength required for the slight additional weight of substitute materials. Die castings, formerly of aluminum, are now zinc. A larger carrying handle has been designed with an automatic spring to prevent the handle from resting over the lamphouse vent when the machine is in operation. A positive latch on the case door prevents accidental opening.

Gear case ventilation has been improved with the result that oil vapor is now exhausted through the cooling system to prevent the formation of oil film on optical components of the projector.

Other improvements include a loud speaker of more efficient construction and special treatment of all condensers and resistors to reduce the effect of humidity. Amplifier temperatures are lower in this model, as a result of improved sound head ventilation.

The new "V" Filmosound is available now *only to our armed forces* but is indicative of the better "things to come" from Bell & Howell craftsmen, *after* Victory.

Films to Inform America

By PAUL REED

★ [illegible] Executive Order [illegible] the Office of War Information [illegible] recognized the importance of the motion picture as a medium of information. The Director was given definite responsibility to "Formulate and carry out, through the use of press, radio, motion picture and other facilities, information programs designed to facilitate the development of an informed and intelligent understanding, at home and abroad, of the status and progress of the war effort and of the war policies, activities and aims of the government."

One month later in OWI staff order number one the Bureau of Motion Pictures was set up with Lowell Mellett as Chief and Arch Mercey as Deputy, to develop and administer a program that would use the great power of the motion picture as a means of war information to inform people about the war. The importance of the 16mm motion picture was recognized from the start with the establishment of the non-theatrical division of the Bureau as one of five divisions within the Bureau. The non-theatrical division is concerned primarily with the distribution and use of 16mm war information motion pictures.

Program Was Planned

When this Division was created last July, it was not starting from scratch. It had a well thought out program and plan of action ready to put into effect. And it began to put this program into effect immediately. Within the first week of its existence letters were sent out to organize a nation wide comprehensive network of 16mm film distributors and within the first two weeks the first OWI 16mm films were in the mails and on their way to these carefully selected distributors of official Government war information films.

This plan was not devised in a week, however. It was a plan based upon two months of intensive planning and the experience of many people who had spent anywhere from a decade to a lifetime in the non-theatrical motion picture field. It was a plan that evolved from the thinking of many people and was crystallized by the urgent wartime needs for using to the utmost every available channel of information to reach the American people.

Principles Are Outlined

Briefly outlined here, are the principles at the base for OWI's program of 16mm distribution, a description of the program in action, and some of the conclusions drawn as a result of the first eight months.

Here are the principles:

First. The distribution of 16mm motion pictures is a specialized activity requiring specialized experience and skills. There exist more than two hundred well-organized 16mm film distributing agencies in this country. The first principle, then a comprehensive national program for film distribution should make use of the experience and knowledge of existing film libraries.

Second. The non-theatrical film audience is wide and varied. It is as wide and varied as the American people. Existing film libraries serving this audience are varied too. Some are commercial agencies operating for profit—others are non-profit organizations supported by local and state governments or through private subsidy. Some specialize in serving school audiences, others in serving entertainment needs of theaterless towns. Some specialize in distributing one reel instructional pictures, others specialize in distributing industrially sponsored pictures, others feature length entertainment pictures. The second principle is that any truly comprehensive plan for nation-wide non-theatrical film distribution must recognize all kinds of film distributing services.

Third. the principle is that only well-established and existing distribution organizations should be used. This principle is really a corollary of the first. OWI's program is an emergency wartime program. War information needs were immediate. The program had to be put into effect swiftly and *without waste*. There was not time then, and there is not time now for experimentation. Existing resources must be used and film services with a record of success in film distribution are the ones most likely to succeed with the emergency job to be done.

Fourth. This principle is so obvious it wouldn't even be stated here except for the fact that it is frequently ignored. Distributing films cost money. there is no such thing as the "free" distribution of films. In a program for distributing Government films, if the Government does not provide for covering these costs, they must be borne either by the distributors of the films, or the users, or both.

185 Film Distributors

These, then are four fundamental principles upon which our distributional system is based. Now what has been done to build a program of action upon these principles.

There are now more than 185 distributors of Office of War Information films. They are located in 17 states and in Hawaii. These distributors have been carefully selected on the basis of the best data that could be gathered concerning their activities. Consideration has been given to what they themselves have said about their film distribution services and on what others have said about them. Some have been selected upon the recommendations of members of the OWI staff who have investigated film services at first hand. All have been selected because it appeared from all the evidence we had that they could and would contribute energetically to the job of distributing motion pictures.

Distributor Field Changes

The list of distributors is not fixed. It shifts from month to month and sometimes from week to week. Every week brings new requests from others who want to serve. And several distributors for various reasons have discontinued their Government film service. There is no fixed idea of how many dis-

tributors there should be—but the total number of distributors is not increasing rapidly. New distributors are being added only when they can definitely strengthen the program.

These distributors are a varied group. There are representatives of all kinds of 16mm film distributing organizations—commercial organizations of all kinds, university libraries, and city and county school systems with well organized departments of visual education. And all have had a record of achievement in film distribution before they became distributors of Government films. All were well-established going concerns.

34 Pictures Released

New war information films are allocated and sent to these distributors on a regular release schedule each month. This schedule has now been met for eight consecutive months. From two to six new subjects make up a month's releases and since last July a total of thirty-four OWI 16mm motion pictures have been released. When this fact is translated into the number of prints released it means that at the present time approximately 12,000 prints are now in circulation.

What is the basis for allocation of prints to each individual distributor? This is not a matter of arbitrary judgment or guesswork. The number of duplicate prints sent to a distributor depends squarely upon his distribution record. The facts are collected in two ways: from the simple booking reports sent in each month by each distributor telling to whom he booked each film and when; and from the attendance report cards that are mailed back by the one using the films. These two sets of records are carefully cross-checked and three important figures emerge.

Three Vital Statistics

(1) The average number of times each print was booked during the month. (2) The average number of times the print was shown, and (3) The average number of people who saw each film. By and large, the allocation of prints to distributors is made on the basis of this factual information. Careful records are kept to show what is being done with every print in circulation and how well each distributor is serving the total program.

Mentioned above as the fourth principle is the fact that film distribution costs money. Here is further comment on that principle. The costs for OWI 16mm film distribution is being shared by the users of the films and the distributors. It seems clear that the small nominal maximum service charges distributors are permitted to collect from the film users does not cover the costs. This means that distributors must make up the difference. There are several reasons why distributors are willing to do this, but it seems evident that the most important reason motivating most distributors to absorb this cost, is their sincere patriotic desire to contribute their best efforts to the winning of this war. They are convinced of the importance of the 16mm motion picture as a means for communicating war information. And they are making real contributions in helping to disseminate war information as released by the Office of War Information through its motion picture program.

Distribution Is Flexible

Some tentative conclusions have been drawn about 16mm film distribution as a result of the first eight months' experience. It is apparent that the unique characteristic of the 16mm motion picture is its flexibility. The 16mm motion picture can reach all kinds of groups wherever they are located in schools, in churches, out-doors, in town halls, in large community rallies, in plant cafeterias, in hotel conference rooms—in fact, wherever groups of people gather. The 16mm motion picture is an ideal medium for reaching particular groups with particular information.

Reaches Wide Audience

Large total national audiences can be reached and can be reached promptly and speedily. Experience with the specialized distribution of the film *Point Rationing of Food* proved that 16mm prints can be placed in active use serving large numbers in all sections of the country within ten days from the time prints are ordered.

Certain films on certain subject matter can be beamed to certain areas and to certain kinds of groups. The OWI national 16mm distribution system is a flexible one that can serve varied purposes.

Varied as the people are who know how to distribute 16mm films, varied as their ways of doing business are, they can be organized and joined together to do a common job when they are convinced of the importance of the job to be done.

* * *

Editor's Note: Mr. Reed is head of the Educational Division of the Bureau of Motion Pictures, Office of War Information.

The Power of a Minute

Industrials Find New Slidefilm Potent Weapon in War Production

★ Slanted on the basic psychology that the one person who can remedy the evils of absenteeism and time waste is the worker himself, and that whether he will do it or not depends on his own conscience, a new sound-slide film entitled *The Power of a Minute*, produced by The Dartnell Corporation of Chicago, was recently released to war industries throughout the nation as a novel and compelling means for keeping workers productively on the job.

The purpose of the film is to go straight to the worker's heart; to jolt his conscience; to make him want to make every minute count. Its essential value rests in the fact that the message which it presents does not issue directly from management. Not even the most quarrelsome worker could argue that the appeal for greater productivity has any selfish motive hidden behind it.

Strong Emotional Impact

Written and directed by George Carillon, visual training specialist for Dartnell, the film has proved to have a strong emotional impact on both white collar and shop workers. No tear-jerker or flag-waver, *The Power of a Minute* nevertheless succeeds in getting under the skin of the worker with a memorable message that effectively combats absenteeism and time waste.

Using a highly dramatic technique of sound effects, music and voice to accompany unusually effective photography, the film tells the first-person story of a Marine killed in action at a South Sea post, who traces the progressive steps of an armament order from the prime contractor's office through the sub-contractor's shop to eventual delivery. The accumulation of lost minutes along the way by idlers, gossipers, accidents, faulty instruction, time-clock jumpers and absentees, both in the general office and the shop, results in failure to meet shipping schedules.

In summing up, the Marine says: "The shipment was late. We never received it. Maybe bullets did kill me but I think it was *minutes*." Then, in a final stirring appeal which strikes deeply into the audiences' conscience, he says: "Y'know, when I joined up I knew that I wouldn't be the guy who'd win this war but I did figure that if I could help bring Victory just one minute sooner, in my own small way I'd have done my part."

Tests made among typical shop and office employees have proved that the film's message remains vivid in the minds of all who see it for many weeks after the initial showing. Its influence on women workers, who are the worst offenders as absentees, is particularly constructive. Oddly enough, however, a majority of moist eyes have been noted among the men. In all audience reaction tests, there has been a unanimity of emotional shock observed, and workers are heard to comment on their sincere desire to hurry back to their jobs and not waste any more precious time.

Meeting Plan Prepared

A meeting plan which accompanies the set of film and record outlines methods for applying the film to various types of group showings. The basic plan is to show it first to foremen, supervisors and shop stewards, together with a management group, to acquaint this body with whatever anti-absentee and time waste campaign the company intends to promote. Following this "preview" it is recommended that the film be shown to assistant foremen and other key men for the purpose of having them confer with their supervisors on the arrangement of showings. (In some companies, for example, time wasters and habitual absentees are being shown the film in special private meetings.) Groups of general shop employes are then shown the film, concurrently with screenings made to office personnel.

Follow Suggestions Given

The meeting plan also includes poster material and other suggestions for following up the initial showings of the film and making its message remain alive for weeks to come. Among these suggestions is that of playing the record over the company's P.A. system. Since the recording is similar to that of a radio broadcast and is fully dramatic even without the film, this latter plan is most effective as a follow-up.

Because of many requests from concerns having 16mm sound motion picture projection equipment, but who do not have sound-slidefilm projectors, Dartnell is now considering the making of a special adaptation of *The Power of a Minute* for a 16mm sound film. If this is done, it will be a "motion slide" version, using the same pictures and recording in a form convenient for use on a motion picture projector.

The gratifying success of *The Power of a Minute*, and the need among industrial concerns for morale-building films, has indicated to Dartnell the practicability of producing immediately another six films dealing with various phases of human relations in industry.

New MPE Chicago Plant

♦ A. J. Bradford, President, Motion Picture Engineering Company, Detroit, announces the acquisition of additional facilities in Chicago. The new plant is at 2300 West Cullon Avenue, corner North California, where the entire second floor has been leased.

Bradford states that this plant will be devoted to development and research on Government Projects. Michigan plants of the corporation, of which there are four, will continue with Government business on tools, dies, production and assembly.

Film Abroad

Britain's War Plants Show Films Regularly

★ The total audience for the Ministry of Information's non-theatrical film shows in the United Kingdom, between September 1941-August 1942, was 12 millions. The weekly audience has now risen to 350,000.

This audience is reached in three ways:

(1) *Mobile Film Units.* During the year 1941-42 the mobile film units gave 38,000 shows to an audience of $6^3/_4$ millions. There are now 130 units on the road, and they are giving 1,200 film shows a week. 124 of the units are 16mm. and 37 of these are equipped with petrol generators to provide electricity where there is no mains supply. Six of them are 35mm. units.

(2) *Shows in public cinemas.* In the year 1941-42, 300 shows were given in cinemas out of ordinary cinema hours to a total audience of 900,000. Now 50 a week are being given, including a large number of training shows for Civil Defense and National Fire Service personnel.

(3) *Central Film Library* loans to borrowers. The Central Film Library with its sub-libraries in Scotland and the South-West Civil Defense Region in 1941-42 made 48,000 bookings of Ministry of Information films to 3,500 separate organizations with their own projectors. The audience reached by the loan of films was $4^1/_2$ millions. The Library is now booking 1,500 Ministry of Information films a week to these borrowers.

The Central Film Library, London, also incorporates the pre-war libraries of films about the Overseas Empire and the United Kingdom, including the G. P. O. films. A further 10,000 bookings of these films were made in 1941-42, and 1,000 reels a week are now being sent out.

The film officers at the Ministry's Regional Offices are responsible for the shows given on the mobile units and in cinemas out of ordinary cinema hours. The facts and figures given in this report are a record of their work. They were set the target of 10 shows a week in each unit in operation, 38,000 shows were given, and this represents 92 per cent achievement of a possible maximum of 42,000 shows.

Factory Shows

About one-third of the shows given each week are in factories, the majority of which have a show once a month. Another third are shows to village audiences, women's organizations and groups in small country towns. The aim is to give village shows regularly every two months. Shows for other Government departments of a more specialized kind, including training film shows to Civil Defense and National Fire Service personnel represent roughly another third. A large number of these shows are given in cities and urban districts. They are not organized on the same regular monthly and two monthly circuits as factory and village shows.

Shows in factories are usually given during the midday and midnight breaks, and cannot therefore contain more than two or three films, lasting in all about 25 minutes. For factory shows films are specially produced, which aim at relating the work done in factories to the achievements and problems of the fighting fronts. 35mm mobile units are now in use for the large factories so that as many as 3,000 workers can see the show at one time.

General shows in villages usually consist of five or six films, lasting in all about 30 minutes. The series of programs are devised to give varied and coherent pictures of the war, both at home and on the fighting fronts and in terms of this country, the Overseas Empire the United Nations. Specialized films made for other Government departments are also included in these general programs where they are needed to direct attention to special local problems.

Catering for Specialists

Instructional films for special audiences are made and distributed by the Ministry on behalf of other Government departments. During 1941-42 these films have included films for farmers on silage, ploughing, hedging, ditching, etc.; films for allotment holders and films about food; films on blood transfusion, diphtheria immunization and accident prevention; training films for Civil Defense personnel, both part-time and full-time. Specialized films for this kind are usually shown together with other more general Ministry of Information films to make up a program of about 30 minutes in length. Some of the films made on behalf of other Government departments are of such wide application that they are included in every possible program. In this way, for example, the film *Fire Guard* was shown to more than two million people in six months.

PEOPLE Make News

Corcoran Joins Sound Masters

♦ Harold E. Woodsel, President of Sound Masters, Inc., New York City, producers of industrial and training motion picture films, announces the appointment to Vice-Presidency of Mr. Laurence M. Corcoran, who for the past six years was director of motion picture activities for General Motors.

Mr. Corcoran, after operating a circuit of small town theatres in Virginia and West Virginia, became associated with General Motors in 1930, where he has contributed to the growth of industrial pictures in the public relation and employee morale fields.

His activities have worked new advances in industrial pictures with the creation of such pictures as *America Can Give It*, starring Walter Houston and Quentin Reynolds, *This Precious Freedom*, starring Claude Rains, *You Is the Time*, a documentary film of considerable note, and numerous others.

Visual Training Enlarges

♦ Visual Training Corporation, producers of educational programs for the Army, Navy and Air Forces, announces its removal to its new building at 815 Bates Street, Detroit. The company more than doubles its editorial, production, and studio space in the new building, which has been remodeled especially for the most efficient production of visual media.

Visual Training, originally Associated Sales Company, started business in 1931. In 1938, G. A. Florez, D. S. Benedict, and A. G. Rippey, the principals in the company, purchased the assets, and moved to larger quarters. By 1939, more space was needed, and another move was made. After Pearl Harbor, an increasing amount of the company's volume became devoted to technical training for the armed forces.

Dybing Gets Commission

♦ Arnold N. Dybing, formerly with Pathescope Company of America, Inc., and Pathescope-Ideal Productions, New York City, received his commission as Lieutenant in Army Ordnance at Fort Aberdeen OCS in early April, six months after induction as a Volunteer Officer Candidate.

DESERT HERO AT DEVRY

LT. COL DAVID MACDONALD, director of the British Army Film Unit which lensed the famed war subject "Desert Victory," addresses DeVry employees on a recent visit to the Chicago projector plant.

TOM HODGE, head of the British Information Services Chicago and Midwestern offices, takes the microphone to introduce Col. MacDonald.

Col. MacDonald shows President W. C. DeVry one of his favorite features on a DeVry camera. Most of the footage of this desert epic was filmed with DeVry equipment.

♦ Inspiring DeVry employees with his modest, unaffected appearance and the knowledge of the heroic exploits of his British Army Film Unit, Lt. Col. David MacDonald, producer of the epic *Desert Victory*, was a recent guest at a plant rally held in honor of the distinguished visitor.

Most of the cameramen in this Army Unit made their historic pictures with DeVry cameras. The picture has just been released

New Fields for Visual Training

WAR PLANT STUDY PROVIDES IMPORTANT UTILIZATION DATA

★ With the first important study on the utilization of training films in machine operation now nearing completion, a brief report on its progress was made to BUSINESS SCREEN by Abram Vandermeer. Mr. Vandermeer is undertaking this study in Morton High School war training classes of the Amertorp Corporation, and with the full cooperation of the Training Director of that important war plant. The study has been going on since December 7th and many hundreds of hours of research are already involved. Notes by Mr. Vandermeer follow:

♦ This experiment on the economy of time is drawing to a close. Four classes have completed their training and the remaining experimental groups will be through in a few weeks. Although all the data are not yet in, it may not be too early to describe certain tentative hypotheses drawn from preliminary evidence and general observation.

STUDY IS NEARING COMPLETION

In the first place, it would appear that advantages do accrue to lathe trainees using the U. S. Office of Education films. On the basis of incomplete data, groups whose instruction has included an integrated use of films, compute satisfactorily practice jobs involving straight turning, turning work of several diameters, taper turning, and threading, in less time than groups not using films. It must be reemphasized that at present the evidence supporting this hypothesis is incomplete. It is entirely possible that the data to come may nullify what appears at present to be a distinct advantage for film teaching.

An obvious explanation of the more rapid skill development of the film group—if indeed they do develop their lathe skills more rapidly—would be that they learn more thoroughly the facts concerning the operations to be performed. The truth of this explanation is being checked by means of standardized tests of information on machine operation. Another interesting possible explanation suggested itself early in the experiment when both the investigator and the instructors noticed that trainees who saw films seemed to attack their work with greater vigor and enthusiasm than those who did not see the films.

MEASURING THE MORALE LIFT

An attempt is also being made to measure this apparent lift in morale obtained from the films by an instrument designed to measure the degree to which all individuals liked their work. Such morale building influence of the films, if it exists, might logically be explained in terms of the trainee's increased self-confidence in his knowledge of just what he must do to complete his required work successfully. Greater self confidence would be the natural result of any superior instructional method.

FILMS MUST BE PROPERLY USED.

If the present research proves that using films saves time in industrial training it will not mean that films *alone* can produce such results. It will prove that films *used in a certain way* result in an economy of time. A complete description of the methods of film teaching employed in the present research will be published later. It may be appropriate at this time, however, to point out one striking fact about effective film utilization that has become apparent: namely, that the success of a program of film teaching depends to a large degree upon the adequacy of the administrative provisions for such a program. Experience shows that executives in charge of training must provide for the following points:

1. Films should be provided on all aspects of training that are susceptible to film teaching.
2. Films, projection equipment, and projection facilities should be available *at the times when* film viewing will be most helpful. One time especially is critical: namely, just before the trainee is called upon to perform a certain task.
3. Instructors should be relieved from the details of securing films and projection facilities as far as possible.
4. Instructors usually should be given some guidance in the effective classroom utilization of films.

Films for War Production

♦ Two new safety-health sound films, available in either motion picture or slidefilm versions are announced by Vision Educational Productions, New York City. *Danger, Women at Work* and *Tomorrow's Too Late* are available on sale only basis from the producer.

♦ A new sound motion picture, *Help Wanted*, produced with industrial sponsorship, is now available from the Graphic Service Section, Bureau of Mines, at 4800 Forbes Street, Pittsburgh. The film presents basic first-aid information in graphic form.

♦ Goodyear Tire and Rubber Company (Industrial Conservation Dept. T-7) has offered *Goodyear Wages War on Waste*, an educational slidefilm on conservation practices ideally suited for plant showings.

♦ *Aluminum, Mine to Metal* and *Aluminum, Fabricating Processes* are now available from the Bureau of Mines.

FOR SERVICE ABROAD

16mm Projector Units Selected by Army for Overseas Showings

(see illustration on page nineteen)

★ There has been an important change in the type of equipment used to project the latest motion pictures on battle fronts all over the world. During World War I and the peace that followed, our army used 35mm projectors in the army camp theatres. At the outbreak of the present war it was thought that these same 35mm projectors could be used for overseas troops. It was quickly realized however that this latest war is a war of movement. Space in ships, planes and trucks is at a premium. Compactness, light weight and portability are urgent requirements.

When the possibility of using 16mm projectors with the narrow 16mm safety film was first discussed, Army leaders were doubtful of the ability of this lighter more portable equipment to deliver sufficient volume and illumination to produce satisfactory motion pictures under the varying conditions in Army Camps in U. S. and abroad.

Auditoriums Seat Two Thousand

Most of the temporary recreation halls built overseas had a projection distance of approximately 119 feet, with a seating capacity of nearly 2,000. In addition, at advance bases, where there were no buildings, the shows would be given outdoors under all types of conditions with a throw of over 100 feet to audiences of from 2,000 to 3,000 men.

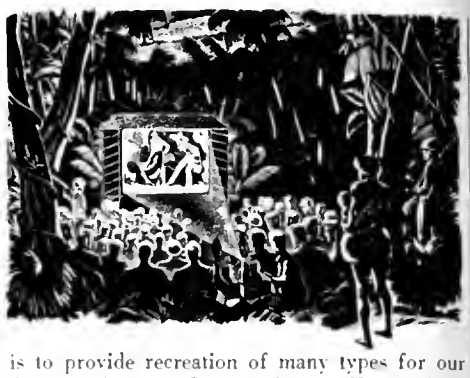
At this point, the Ampro Corporation suggested that its latest 16mm sound film projector with 1,000 watt lamp and P.A. amplifiers be tested for projection under these conditions. To the surprise of many who had not fully realized the tremendous strides made in 16mm projection during the last few years— the Ampro 16mm units passed all tests with flying colors.

Satisfactory projection of sound films was made outdoors at night to as many as 3,000 men. As a result, the Ampro 16mm Dual Unit was selected as standard equipment for the mobile units operated overseas by the Special Services Division of the U. S. Army.

Hundreds of J Kits Now in Use

Today hundreds of these Dual Units are furnishing morale-building entertainment to hundreds of thousands of U. S. fighters in Alaska, Africa, England, Australia, the Solomons -wherever the U. S. Army has established bases. As each division leaves the country, a number of Ampro projector units go with it. When a division goes into action, the Special Services unit moves up immediately behind the front and helps entertain the men when they come back for a brief rest period before going back into action. The latest Hollywood films, reduced to 16mm prints, are furnished free for this work by U. S. motion picture producers, and are rushed to overseas units by transport planes. This means that our overseas forces are seeing the newest Hollywood productions, in many cases before they are shown in the theatres of this country. The films for all overseas units are handled by the Overseas Motion Picture Service of the Army, a division of the Special Services.

The function of the Special Services division



is to provide recreation of many types for our fighters abroad. Special Service Kits include sport equipment, musical instruments, theatrical supplies, books, radios and phonographs. The Ampro Dual Unit is the "J" Kit which many men report is the most popular of all Special Services Kits.

Artist Sets National Standard

♦ Reproduced at the top of this column and showing one of the new Amprosound "J" Kits now in service at a distant tropical outpost of our Army is one of the series of fine advertising illustrations created by Wesley E. Sharer, Chicago artist, for this Chicago projector firm.

The series has set a new high standard in the advertising of the industry and deserves special mention. As an example of its widespread interest, the company recently received a letter from a Naval Operating Base in Cuba commenting on the accuracy of a Caribbean night setting used in a recent drawing.

On Behalf of All Qualified Producers

This organization is devoting all its efforts toward helping apply visual methods to the war effort more quickly and more effectively.

The average experience of producers who are members of The Institute is 23 years . . .

Not as amateurs

Not as advertising agents

Not as theatrical producers

But as professional producers and guides to users in the specialized field of industrial picture production.

Truly experience alone can light the way to doing a competent job. Those who "know the ropes" and have been "through the mill" do know their way around and can provide capable guides in the field of industrial training with visual aids.

ALL RESPONSIBLE PRODUCERS WHO SUBSCRIBE TO THE INSTITUTE'S CODE OF ETHICS AND MEET ITS STANDARDS OF PRACTICE ARE ELIGIBLE FOR MEMBERSHIP. FULL INFORMATION, ON REQUEST, IS PROMPTLY SENT.

"On behalf of all qualified producers"

Educational Building

THE INSTITUTE
for the Advancement of
VISUAL EDUCATION AND VOCATIONAL TRAINING, Inc.

70 Fifth Avenue
New York City

Devoted to the secrecy requirements of some of America's most progressive companies, with whose confidences we have been entrusted for periods of many years, skilled in keeping product information under cover and in helping to get competitive plans executed without disclosure, the Jam Handy Organization is well prepared by previous scientific and industrial experience to maintain security while getting the job done right and right on time.

**This much we can tell: our greatest contribution to the war effort is keeping our mouths shut, as all of us must do.*

The **JAM HANDY** *Organization*

EDUCATIONAL SOUND PICTURES • SLIDEFILMS • VOCATIONAL TRAINING ASSISTANCE • VISUALIZATION

★ NEW YORK
1775 Broadway
COLumbus 5-7144

★ WASHINGTON, D.C.
Transportation Building
District 0611

★ DETROIT
2900 East Grand Boulevard
MAdison 2450

★ DAYTON
311 Talbott Building
ADams 6289

★ CHICAGO
230 N. Michigan Boulevard
STAte 6758

★ LOS AN
7046 Hollywood
HEmpstead

BUSINESS SCREEN

MAGAZINE

A SPECIAL EDITION ON THE UNITED STATES DEPARTMENT OF AGRICULTURE WAR FILM PROGRAM

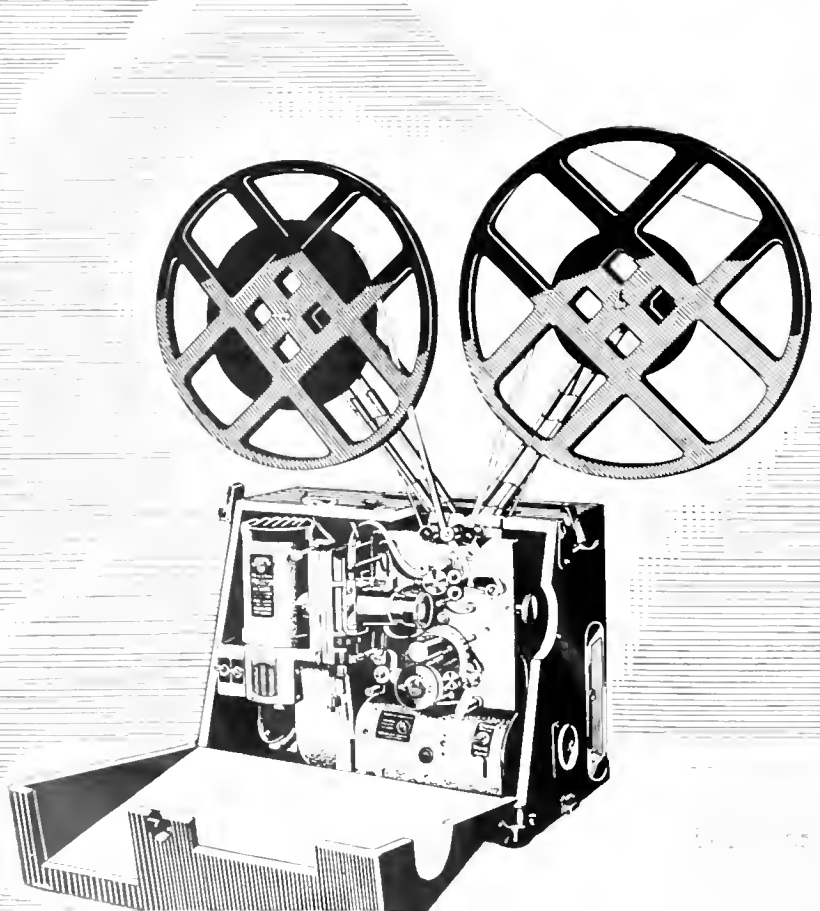
★ ★ ★ ★ ★

No. 1
VOLUME 5 • 1943

Every Continent Knows

Motion Picture Equipment

Victor Cameras and Projectors are favorites the world over, because only the finest picture and sound quality can be tolerated in today's vital teaching, combat training and entertainment programs. Their professionally perfect performance makes them the faithful servant to millions in War or Peace.



VICTOR
REG. U.S. PAT. OFF.
16 MM

CORPORATION

Chicago · Davenport, Iowa

Serving the World

SHOW YOUR WORKERS THEIR PRODUCTION *IN ACTION*

WITH THIS TERRIFIC MOVIE

"AXIS SMASHED IN AFRICA"

HERE'S a film that brings war . . . with all its fury . . . home to those on the production front. You see the amazing last moments of the Nazis in Africa. Joyous demonstrations of liberated peoples. Meetings of Yanks and Britons . . . of Eisenhower and Montgomery. Then you see the final moments of the once proud Afrika Korps as it is driven to frantic rout and unconditional surrender. This historic movie record is thrilling, inspiring!

It is also full of meaning: of the importance of increased production; of the need for sticking to the job to provide the tools for fighting men; of the sober truth that this African victory is actually only the beginning of a far greater job—that of smashing the Axis in Europe and Asia. Show this movie to your workers now! Use it to maintain morale!

LOW COST 16mm. Titled Version $8.75
16mm. Sound-On-Film $17.50

OTHER GREAT FILM BUILDERS OF MORALE:

"YANKS BOMB TOKYO" ***"BATTLE FOR TUNISIA"***

In Castle Films you have a wide selection of significant movies for showing today. The full meaning of total war is dramatically told in 25 other Castle Films recording every major battle action of World War II. Still other films present interesting and timely subjects of importance to the war effort. See your photo dealer or send today for a catalog of Castle morale-building films.

CASTLE FILMS INC.

RCA BLDG. NEW YORK | FIELD BLDG. CHICAGO | RUSS BLDG. SAN FRANCISCO

AUTHORS & ARTICLES IN THIS ISSUE

A SPECIAL EDITION DEVOTED TO USDA WAR FILMS

FOOD FOR FREEDOM

FIRST AND MOST CONSISTENT user of visual education among the agencies of government is the United States Department of Agriculture. Since 1908, when it undertook as its first assignment the filming of the flight of the U. S. Army's first airplane, the Motion Picture Service has produced hundreds of motion pictures and countless filmstrips and slidefilms. It is in recognition of these years of solid achievement, passing with little publicity and less glory to the men who made them possible, that we dedicate this Special Edition of BUSINESS SCREEN to the wartime film program of the Department. USDA films are intended for U. S. farmers. They possess little glamour and yet they frequently attain majestic proportions through the very grandeur of the vast plains and forests and rivers on which the cameras focus.

DUNCAN WALL

CHESTER A. LINDSTROM

♦ The foreword to this Edition, as is most fitting, is the personal contribution of the Secretary of Agriculture, Mr. Claude Wickard. The Secretary's belief in the immense value of visual education adds important and original testimony which many will regard most highly.

For the record, also, are the outstanding articles in this Edition contributed by Duncan Wall, Assistant Director of Information of the Department, in charge of motion pictures, and by pioneer Motion Picture Service executive, Raymond Evans, present Chief of Production. Mr. Evans has given the field its latest and most comprehensive historical survey of the film work of the Department. The article on production is by Chester A. Lindstrom, Associate Chief of Production for the Motion Picture Service under whose personal supervision and direction most actual filming in the studio and field is done.

RAYMOND EVANS

The important place of slidefilms in the Department's program is adequately described by Don Bennett, in charge of the Visual Aids Section of the Department. Coordinating the work of all who produce the pictures is the office of the Chief of Distribution. In a special article, together with extensive field reports and actual case histories, Oliver Griswold, Chief of Distribution, tells of the widespread use of USDA films in the field.

DON BENNETT

PERSONALITIES IN THE NEWS

ORGATEX *Bell & Howell has announced the appointment of J. Harold Booth as Vice President in charge of War Negotiations, War Expediting, Subcontracting, Employee Training, Personnel and Public Relations, Industrial Relations, Sales, Service and Advertising.*

★

CLEETE *Jack Rheinstrom, head of the Chicago office of Campbell-Mithun, Inc., has been elected vice president of the advertising agency. Until he joined the agency, Mr. Rheinstrom was associated with the Jam Handy Organization and Wilding Pictures.*

Your Post-War Sales-Training Program Can't Be Organized Overnight

Important to Shape Plans Now for Speedy Readjustment—after Victory

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

YES, WE QUITE UNDERSTAND that we're in for a long, long war. But we wouldn't have been if America had been PREPARED.

So, too, there's going to be a period—AFTER Victory—when American business firms will be fighting to recapture markets . . . to win to themselves their proportionate share of those newly released consumer dollars. Fairly good going for those who are PREPARED. Extremely difficult for others.

Here is what's going to happen, and it doesn't take much of a prophet to foresee it: Victory will one day loom on the near-horizon. Then all the energies bent on producing tools of war will at once be focused on the forthcoming Battle of Competition . . .

And by and large those companies who "get there fustest with the mostest men"—men who are TRAINED, may we add—will almost immediately step far out in the lead.

It's no easy task to train hundreds of inexperienced salesmen in a few short months . . . to re-energize thousands of quiescent dealers . . . to acquire a host of additional dealers, make them quickly productive . . . to coach all the people involved in bringing the product from plant to consumer. . .

—Which is ample reason why you should lay out a comprehensive training program NOW and be ready to put it into instant action!

Impossible? Some of the largest companies in America don't think so. They insist that the BASICS of selling, merchandising, servicing are perennially the same. May we tell you how they are planning for the Day of Victory?

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. Circle 7-6112

Member of: THE INSTITUTE FOR THE ADVANCEMENT OF VISUAL EDUCATION AND VOCATIONAL TRAINING, INC.

We consider it an honor and a privilege that virtually all of our organization and extensive facilities are now devoted to the creation and production of training sound motion picture and slide film subjects for the Armed Forces.

Until Victory—any remaining portion of our capacity will be necessarily limited to the production of sound motion picture and slide film subjects which definitely contribute directly to the war effort.

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

FOR AMERICAN FIGHTERS

Sound Movies . . . IN THE JUNGLE

It seems unbelievable—but U. S. fighters are seeing the latest sound movies, with rich, life-like tone quality, projected brilliantly clear right in the middle of the steaming, malaria ridden, insect infested jungles of the Solomons.

The above illustration is based on an actual set-up in New Guinea, one of a chain of theatres in which Red Cross Field Director James Stewart projects the latest sound films to American and Australian front line fighters.

Today, the Special Service units provide each overseas division of the U. S. Army with several complete portable 16 mm. sound projector outfits. Films are rushed to the various fronts via transport planes. In this way, U. S. fighters from the Aleutians to Tunisia, who consider movies as important as food, are thrilled with the cream of America's best and latest motion pictures.

The Ampro Dual Unit here illustrated known as the "J Kit" is standard equipment for Special Service Units. In addition, thousands of Ampro 16mm. projectors are being used in training men in the Army, Navy and Air Corps. Ampro facilities are engaged 100% in producing projectors and other precision equipment for the U. S. War effort. Ampro engineering is going ahead at full speed. To keep in touch with the latest developments in 16 mm. projection, make certain your name is on the Ampro mailing list. Write today!

AMPRO

PRECISION CINE EQUIPMENT

AMPRO CORPORATION, 2851 N. Western Ave., Chicago, Ill.

NAVY FILMS
FOR WAR PLANT USE

A NATIONAL motion picture distribution service has been established by the Industrial Incentive Division of the U. S. Navy for the handling of its programs of motion pictures, it is announced by Rear Admiral C. H. Woodward, Chief of the Incentive Division. The films to be distributed under this system are designed especially for war workers and their immediate families.

The film subjects will illustrate the importance of the worker on the production line and will depict the close relationship between plant and shipyard workers and the men of the Fleet, the Admiral stated. Most of these films will be "restricted" and cannot be seen in commercial theaters. Some commercial films, however, which have a strong appeal to war workers, will be included in the program.

Companies interested in procuring this service for their plant should address their requests to: *Industrial Incentive Division, Navy Department;* 2113 *Massachusetts Avenue, N.W., Washington, D. C.*

The request will be forwarded to the film distributor in the locality of the plant. Company officials then will be contacted by a representative of the film distributor to arrange the loan of the motion picture. Once a plant has indicated to the Industrial Incentive Division its interest in showing incentive films, and has been approved, the plant may deal directly with the distributor for all future film showings.

The distributor for the Division is permitted to make a nominal charge of $1.00 plus transportation charges, to cover cost of handling, insurance, inspection and general maintenance of the films and the charge covers three reels or less in any one shipment.

Arrangements also have been made with the film distributors to furnish 16-mm projectors and experienced projectionists where plants and shipyards do not have projection facilities available for showings. This service will be furnished at a reasonable cost upon request. These projection points have been established in 300 localities. Distributors also will assist plant operators in arranging locations for showings where no suitable auditorium is available.

Requests for use of film should be accompanied by information as to whether the company has its own projection equipment or wishes to make arrangements to rent such facilities from the distributor.

New Aircraft Identification Kit

♦ A very complete new kit of 336 aircraft identification silhouettes in 2" x 2" miniature slides, recently prepared by FLYING magazine is now being distributed exclusively through the Society for Visual Education, Inc. The kit has been tested with excellent results in approximately 150 aircraft identification courses in high schools, colleges, and among various units of the Armed Forces.

Material for this kit was prepared by a highly specialized staff of experts and is specifically designed for group instruction. It includes 110 different types of aircraft used by the world's major air powers. Each type of aircraft is completely identified with three individual silhouettes on separate slides, which show side, bottom, and front views. In addition, there are six introductory slides, showing front and bottom views of various wing types.

The kit includes an indexed case, slides, and an instructor's manual. Each slide is accurately keyed to the master-index on the cover of the case, which lists the guide number and type of aircraft. The instructor's manual includes an alphabetical index of aircraft types.

ISSUE 1 **BUSINESS SCREEN** VOLUME 5

THE NATIONAL MAGAZINE OF VISUAL AIDS TO INDUSTRY & EDUCATION

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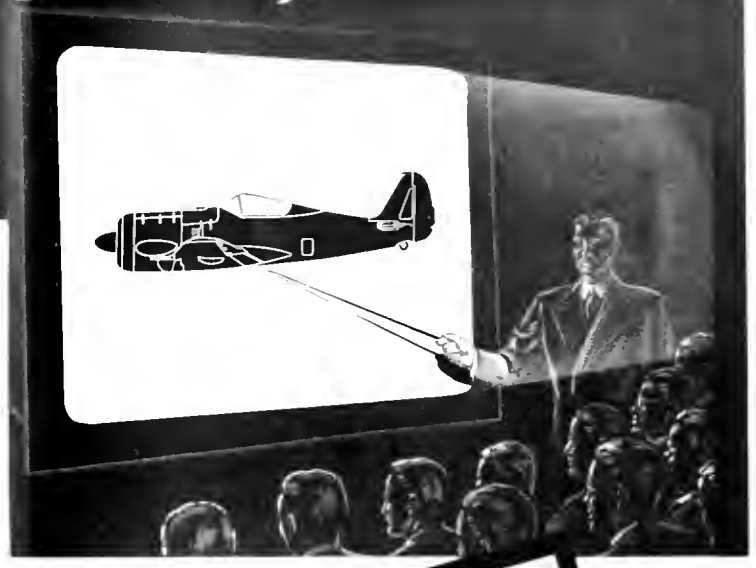
Here It Is! The Perfect Answer to a Vital War Need—

S.V.E. *Aircraft Identification Kit!*



Prepared by *FLYING* Magazine for Use in Group Instruction Wherever Teaching of Aircraft Identification Is a Vital Work.

This complete kit of 330 slides shows students how to recognize instantly the principal fighting planes of all major air powers. The Royal Air Force uses similar material for classes in identification. The slides in the S. V. E. Kit are authentically correct and up-to-date. They were made under the direction of aeronautical experts of *FLYING* magazine. There are six introductory slides, and three silhouettes of each plane—side view, bottom view, and front view. The slides are 2" x 2" and can be projected by any S.V.E. or other miniature slide projector.

330 MINIATURE SLIDES OF PLANES IN USE WITH U. S. ARMY & NAVY, ROYAL AIR FORCE, BRITISH FLEET AIR ARM, RUSSIA, JAPAN, AND GERMANY.

COVERS 110 DIFFERENT TYPES OF AIRCRAFT

With Three Views of Each

COST (WITH CASE) LESS THAN 11c PER SLIDE

The complete kit, including 330 slides in cardboard binders, indexed sturdy case, and Instructor's Manual is only $35.00—**less than 11c per slide.** The De Luxe Kit, with slides permanently mounted between glass in unbreakable S.V.E. Slide Binders, will be $55.00. Order today! If you prefer additional information, write Department IB for illustrated folder. You are under no obligation.

**Prices subject to change without notice*

SOCIETY FOR VISUAL EDUCATION, INC.

100 EAST OHIO STREET • CHICAGO, ILLINOIS

Manufacturers • Producers • Distributors of Visual Aids

★ RECIPE FOR VICTORY ★

A scene from "Secret Weapon", a 1943 Sound Masters production for National Dairies.

WHEN this war is won . . . and the peace that follows made secure . . . the victory will owe as much to the man with the hoe as the man behind the gun. Mud-caked overalls will share honors with the khaki and blue. Such is the conviction of the men and women of the motion picture industry who today film the story of Food . . . essential ingredient in our recipe for Victory.

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

PRODUCERS OF INDUSTRIAL MOTION PICTURES

War Service and Postwar Planning

INCREASED EFFORT IN BOTH FIELDS IS GOAL OF INDUSTRY ORGANIZATION

CHICAGO, JULY 1, 1943.– The men who make the nation's visual communications, producers of motion pictures, slidefilms and other sight and sound media now regarded as a wartime essential for such purposes as indoctrination, training and information by the armed forces, government, war industry and the schools, have organized the industry's first national trade body.

Defining the better understanding and use of the visual medium as their foremost objective, representatives of seventeen leading producers of factual films met in Chicago on Thursday, June 10. It was the industry's first national trade conference and the largest single gathering of industry executives in recent history. Twelve additional companies were represented by proxy, their delegates having been unable to attend in person because of urgent wartime commitments or travel restrictions. Twenty-nine companies have thus formally joined or have indicated acceptance of membership in the new trade body with many additional applications now pending.

SUCCEEDS PREVIOUS GROUPS

The new producer organization thus consolidates the majority of factual film production facilities in the country. By unanimous vote of members present, it also succeeds the only other existing trade group in the field, The Institute for the Advancement of Visual Education. The seven producer members of this organization have accepted membership in the new body.

Pending the selection of a permanent chairman, O. H. Coelln, Jr., Editor of BUSINESS SCREEN, was unanimously elected to serve as acting head of the new organization. Formal details such as the selection of a name, budget and other matters are being worked out by two regional committees. Coelln will serve as liaison chairman of both these groups during the organization period.

NATIONWIDE REPRESENTATION

Delegates to the conference included the representative of at least one Pacific Coast group, six New York companies, four from Chicago, two from Detroit and one each from Kansas City, Philadelphia, Cleveland and Peoria, Illinois. Companies and their representatives present included the following:

I. R. Rehm, representing Atlas Educational Film Company, Oak Park, Illinois; Lawrence Fox of Audio Productions, Inc., New York City; Burton Depue of Burton Holmes Films, Inc., Chicago; F. O. Calvin of the Calvin Company, Kansas City; Irving Ungar, Castle Films, Inc.

Robert McKean of Caravel Films, Inc., New York City; Frank Balkin, Chicago Film Studios, Chicago; Mr. Joseph DeFrenes, of DeFrenes and Company, Philadelphia.

Jamison Handy, the Jam Handy Organization, Detroit; Donald C. Jones, Motion Picture Productions, Inc., Cleveland; Frederick K. Rockett, the Fred. K. Rockett Company, Hollywood; Harold E. Wondsel, Sound Masters, Inc., New York City; Clarence Schmidt, Spot Film Productions, Inc., New York City; Mr. and Mrs. C. L. Venard, the Venard Organization, Peoria, Ill.; Genaro Florez, the Visual Training Corporation, Detroit; Norman E. Wilding, Wilding Picture Productions, Inc., Chicago; and Ted Westerman of Willard Pictures, New York City.

Letters and wires of response were received by the conference from other concerns. Such well known industry leaders as Ray-Bell Films, Inc.; Loucks & Norling Studios, William J. Ganz, Escar Motion Picture Service, Jamieson Film Company, Mode-Art Pictures, Roland Reed, West Coast Sound Studios and many others have responded in enthusiastic approval of the fundamental objectives and truly national representation now evident in the new organization.

WAR SERVICE FIRST

While the primary objective clearly outlined by the Conference is the efficient and increased production of successful visual training aids for the war effort, plans are being made for much-needed research in the vocational field.

Establishment of review facilities for technical and industrial subjects including a special film reference library for the benefit of users is also contemplated. Reports on subjects of general interest will be prepared with the aid of research grants, especially in fields of visual training. It is expected that such services will do much to insure greater results in the use of visuals.

The importance of widespread public education to present and potential users of the visual medium was also considered for the immediate program of activities. Pointing out the vast differences which exist between the making of pictures for amusement purposes as opposed to the essential needs of war industry and government, the Conference went on record as declaring the need for clarification of the raw film supply and allocation problem.

Although the action is without precedent in the allocation of strategic and critical material of war such as aluminum, copper, steel, etc., motion picture officials in the War Production Board have based allocation of raw film stock upon the nature of the business in which the applicant was engaged.

WPB MAKES DISTINCTION

Under this premise, producers of entertainment films and particularly seven major producing companies, have received a flat allotment of seventy-five per cent of their 1941 consumption. While this amount totals nearly one billion feet of the 35mm negative and positive film produced, the makers of industrial communications subjects have been required to apply for film on the basis of subject matter. Since the total consumption for these essential business purposes totaled less than two per cent of that consumed by Hollywood majors alone in 1941, it was pointed out that little saving of film was actually accomplished while the basis of submitting scripts for approval might well be interpreted as censorship, however unintentional, whether of advertising or other media of communication.

CLARIFICATION IS SOUGHT

With war commitments for many industrial purposes handicapped by present arrangements and with considerable loss entailed through correspondence and red tape pending approvals, once also subject to the Office of War Information, industrial film producers will seek to improve the situation through industry-wide action. Confidence was expressed in the personal fairness and cooperation of leading Washington figures concerned.

The new industry association plans to gather again in July for a second general national meeting. Reports of organization committees and other formal matters will be presented at this time. Association headquarters are at 157 East Erie Street, in Chicago.

Scott Fletcher Addresses Visual Executives

★ The plans of the Committee for Economic Development, the nation's authoritative post-war planning body, for the extensive use of "visuals" in preliminary field organization work and for industry education meetings were outlined on Thursday, June 10, to executives of the production and manufacturing branches of the visual industry by C. Scott Fletcher, Field Development Director of the Committee. Its headquarters are in Washington.

Mr. Fletcher, general sales manager of Studebaker, now on leave for this important post-war planning activity, is an enthusiastic advocate of the visual medium through his years of successful use of the medium in Studebaker sales and advertising programs.

Mr. Fletcher's challenge for organization and service to the Committee to facilitate the best possible application of the medium was promptly taken up by the assembled producers in a later afternoon session. Norman Wilding, president of Wilding Picture Productions, was selected to head a committee of producers for this purpose. The work of locating visual equipment to be made available for Committee purposes has already been started.

Both producers and manufacturers were guests at a combined luncheon held at the Medinah Club following Mr. Fletcher's address.

OUR BLOCK GOES TO WAR

THE HUMAN STORY of the folks next door and their neighbors, Americans working together to beat the Axis, is the narrative theme of one of the year's outstanding employee morale films, *Our Block Goes to War*, produced for the Chrysler Corporation. Wilding Picture Productions was the producer.

Our Block is being shown war worker employees of the company in tent theatres conveniently located near workers' homes.

The story presents a series of finely-drawn portraits of the everyday folks who are helping assure Victory by their efforts on the home front. On *Our Block* is a typical doctor who is so busy these days. An Italian who works in an aircraft plant and Mr. Tucker, the automobile dealer, are fellow neighbors. So is Morrie Abrams who helps build tank engines.

Anatole Giroux has two sons in the Navy and a brother fighting for the Free French. Stan Kubasinski lives across the street. He has a fine vegetable garden and works in a tank plant. Newt Humphrey is an engineer. His son, home from the front, reminds *Our Block* that "these guys we're fighting are plenty tough but we can get even tougher if we all work together."

Put all these people together and they spell America! *Our Block* is the kind of war-born motion picture that reflects great credit on both the sponsor and industrial film producer. Pictures like these have already proven of untold value in keeping men and women on the production lines aware of their part in the war.

There are no hero's medals for the folks on *Our Block* but there is a special kind of honor due Morrie Abrams. With his son he wrote this description of what the Army-Navy "E" stands for "*Emergency, Every* hour of *Every* day, *Each* man will give, *Earnestly* and *Efficiently*, *Everything* he's got to these *Essential Engines* so our *Expeditionary* forces can *Engage* the *Enemy*, *Encircle* and *Eventually Exterminate* him and *Establish Everlasting Equality* of opportunity."

Through the medium of pictures like these, the worker and his family are stimulated to new appreciation of their part in the war effort. The relative importance of thousands of "little jobs" to the "big one" faced by our expeditionary forces is brought home with especial clarity and forcefulness. *Our Block* is a warm and moving human document of more than ordinary interest.

NICK DUNLAP, *at ... at ... plant which started ... as to the Army ... early as 1934 ... completed 75% ... before Pearl Harbor ... and up to now has shipped ... more than 20,000 ... Nick's father-in-law ... Uncle Henry ...*

SVEN ERICKSEN, *of Swedish extraction, right, helps to make Bofors guns which are one of the best defenses against dive bombers and torpedo planes. Emil Schwartz, of German extraction, works at an ammunition plant.*

MORRIS ABRAMS *works on tank engines. He not only ... the awarding of the Army-Navy "E" flag to ... but "war product ... and achievement", but also ... an unusual piece ... what the "E" stands for*

STAN KUBASINSKI, *... works at ... Chrysler Tank ... lives ... has ... at ... gives ... garden*

This is "Our Block" Main Street America

LUCILLE AND NORMA BEEBE, *of English extraction, are very proud of the housekeeping of the Bomber plant where they work. However, they claim they do not work harder than their mothers and grandmothers did before them ... they just have different jobs.*

JIMMY HUMPHREY, *son of Newt Humphrey, the engineer, is back from the fighting fronts with a wounded leg. He is anxious to get back to the fight again. Among other things, he said, "You folks back home must realize that you are soldiers, too, just as we are . . ."*

ANATOLE GIROUX, *of French extraction, works in a plant that builds gyro-compasses. At home he spends much time keeping his tools in perfect order. He says, "So I keep the tools always clean and bright for such an instrument as the ... so beautiful gyro-compass . . ."*

Left to right, front row, are old Mr. Nesbitt, Nick Dunlap, Pete Angelo. Second row, left to right, Anatole Giroux, Norma Beebe, Emil Schwartz, Morrie Abrams, Sven Ericksen, Lucille Beebe

PICTURES SERVE INDUSTRY

ONCE AGAIN PROVING their indispensable role in wartime industrial communications, both motion picture and slidefilm programs made important news last month. First aid, nutrition, employee morale and public relations were principal themes of current releases.

★ *To Each Other*, a new motion picture which draws its title and theme from the closing pledge of the Declaration of Independence, was exhibited for the first time last month at the annual meeting of stockholders of U. S. Steel Corporation at Hoboken, New Jersey. The film, which features Walter Brennan, three time Academy Award winner, is keynoted by the phrase, "We mutually pledge to each other our lives, our fortunes and our sacred honor."

Stockholders saw in the film the first complete motion picture record of U. S. Steel's vast wartime expansion program and production achievements. Several camera crews spent many weeks in photographing production of war materials in major steel centers from coast to coast. Many of the outstanding scenes were photographed in Chicago district plants. The Jam Handy Organization was the producer.

Wartime Safety Program

★ Hit or miss safety instruction for foremen has been eliminated by the development of the most practical course on the subject yet devised.

The course, known as *Safety Management for Foremen*, was sponsored by the National Safety Council with the collaboration of the Bureau of Labor Standards of the Department of Labor.

The production of ten sound slidefilms which form an integral and basic part of the instruction was handled by Sarra, Inc., of Chicago and New York. Ray Ballard, of that organization, wrote the scripts and was largely responsible for the development of the instructional methods which have made this course one of outstanding utility. Ballard, a former school administrator who became a successful sales manager, has applied combined educational and business experience to the use of visual aids in sales and mechanical training.

On the Production Line:

★ Throughout the country, machine tool, aircraft and other war plants as well as shipyards were "on location" settings for current training film production. Producers completing U. S. Office of Education contracts were among those most active with company-sponsored subjects of importance also in the list of top-flight releases.

This Is Sabotage, Too, produced for the Visual Education Service of the Westinghouse Co., Mansfield, Ohio, is an important contribution on dietetics and war worker nutrition. (Roland Reed, producer). *Help Wanted*, a fine 31-minute sound motion picture on first aid principles was produced for Johnson & Johnson by the Jam Handy Organization. The film graphically outlines basic principles of first aid and general procedures in caring for victims before the doctor arrives. Available on free loan from the sponsor, *Help Wanted* contains no advertising, except a credit title.

Other titles in the news: *Northern Illinois Farm Life in Wartime* (in production for the Public Service Co. of No. Ill. by Chicago Film Studios), and *Safe Handling of Wartime Freight* (for the American Assn. of Railroads) produced by the same studio.

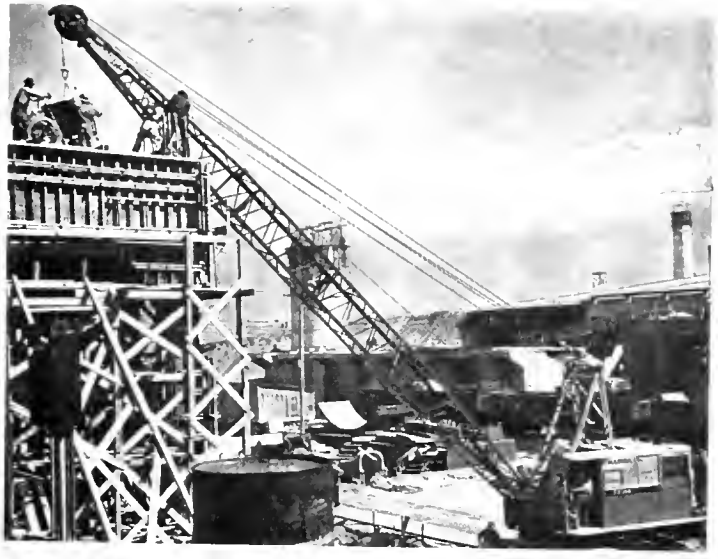
Canning the Victory Crop

♦ A new, full color, 16 mm. motion picture with sound called *Canning the Victory Crop*, is being produced by GOOD HOUSEKEEPING MAGAZINE as a contribution to the Government's food conservation program. The film, which runs about twenty-five minutes, will be released for public distribution about June 21st.

Canning the Victory Crop will be loaned, without charge, to department stores, communities, industrial concerns, Victory Garden Clubs, Women's Clubs, and other organized adult groups.

WORKING TOGETHER *for Victory, men and women in U. S. Steel plants are the real featured players in "To Each Other" just produced by Jam Handy.*

"HELP WANTED" BEST OF RECENT FIRST AID *motion pictures is now available on a free loan basis to war plants, OCD units, civic organizations, etc., from Johnson & Johnson, sponsors, at New Brunswick, N. J.*



STEEL'S WAR PRODUCTION ACHIEVEMENTS *are depicted in "To Each Other," latest U. S. Steel motion picture report to stockholders and the public.*

CANADA'S MEN OF STEEL ARE FILMED *by Associated Screen News cameramen for the Atlas Steels Ltd. picture "Vision Fulfilled," a 16mm. color production.*

DEPARTMENT OF AGRICULTURE
WASHINGTON

To the Editor of Business Screen:

A most difficult undertaking is to re-create, in the mind of another, the idea that seems so clear and complete in your own mind.

The spoken word is impermanent and inexact. The printed word is more permanent, but inexact. The camera is clear, detailed, but static. With the motion picture camera, the audience can be shown motion, the whole and the part, the before, the now, and the later-on —all in a moment on the screen, in their most enlightening juxtaposition. Add the opportunity to reproduce speech, and combine with it the re-creation of mood through music, lighting, and sound-effects, and we have potentially the most useful medium of education yet created.

These are the reasons why the Department of Agriculture, with a vast wartime and peacetime job of education to do, values highly visualization and especially motion pictures. Visual education has helped enormously to do many important jobs in agriculture. It will help to do many more.

Sincerely yours,

Claude R. Wickard

Secretary

IN THESE PAGES DEVOTED TO THE WAR EFFORT PROGRAM OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, THE EDITORS OF BUSINESS SCREEN PAY TRIBUTE TO THE FIRST AND OLDEST U. S. GOVERNMENT AGENCY TO UTILIZE THE VISUAL MEDIUM AND TO ITS PRESENT PROGRAM OF WAR SERVICE.

PLANNING THE FILM PROGRAM of the United States Department of Agriculture

By DUNCAN WALL, *Assistant Director of Information, In Charge of Motion Pictures*

FIRST CHARGE WHICH the Congress laid upon the Department of Agriculture it created in 1862 was to acquire knowledge. Second, logically, was "to disseminate knowledge." for locked-up knowledge is sterile. The Department uses the screen as a marvelous key for unlocking knowledge.

Other tasks than these first two have been added to the assignments of the Department of Agriculture, but a primary job remains this one of making useful knowledge available to that fourth of our population engaged in farming, and to the four-fourths who are fed and clothed by farming.

Beginning even before Pearl Harbor, the Department has concentrated its film work upon motion pictures which make significant contribution to meeting the war-time needs of the United Nations for food and fiber. Other films, including some partly finished, were laid aside for the duration.

FILMS IMPORTANT MEDIA

With its broad educational assignment, the Department has tried to use all the rich media of communication which America affords, fitting each to the part of the task which it can best do. Motion pictures and slide film carry a most important part of the total job: that part which the press, the radio, the public speaker, the pamphlet, and the county farm agent's demonstration cannot do as completely or as well as film.

Within this broad field of education, or information, there are three objectives to be reached. The Department, by film and otherwise, tries to answer three kinds of questions: Why? How? What?

Our American system of democratic self-government is based on the faith that people are intelligent; that when they have the fullest possible information they will act, individually and together, in their own and the common welfare. To help provide this full information, the Department of Agriculture tries, by means of the screen and other media, to answer the question "why?" about some of the perplexing problems in agriculture.

Some of the oldest and some of the newest Department motion pictures have this purpose. Years ago, when cattle owners saw, on the screen, why the government dipped cattle to kill the ticks which carried the fever which killed the cattle, they joined whole-heartedly in the program. Until they knew why, they opposed it. Some of them dynamited dipping vats. Now the Texas fever tick is nearly stamped out. Movies helped do it.

EDUCATE TO COOPERATE

Nowadays, farmers gladly grow more flax when they see, on the screen, why flax is needed to make oil for paint for war uses, replacing oils we no longer can import.

The information job isn't done with explaining the "why." There's "how" to be answered. Years ago, when Manila hemp from the South Pacific proved better for rope, American farmers almost stopped growing hemp. Few farmers remained who had the knowledge of how to plant, harvest, and mill the cranky crop. Suddenly the war brought new need for American hemp. The government contracted with farmers to grow a seed crop, set up mills, distributed the seed, and asked farmers to grow a hugely expanded acreage for fiber. From the screen, the almost-lost arts of producing hemp fiber were shown to thousands of farmers, many of whom had never seen a hemp crop.

Less striking, but important, are other instances of "how to do it" information on film. If the methods of "good farmers" can be shown to their neighbors, and the discoveries of research which improve efficiency, can become the knowledge of all, then both farmers and the whole public benefit. In some cases even better than actually seeing it done, the screen can teach "how to do it."

AGENCY REPORTS TO PUBLIC

Finally, the public has the right constantly to require reports of what progress and accomplishments its agencies have made. The Department of Agriculture, as such an agency, has an obligation to report its actions to the public. It reports in various ways—to the Congress directly; through the inquiring reporters of the press and radio; through the inquiring lens of the newsreel camera; and on film produced by the Department.

A basic consideration in planning the Department's total information program is that film should be used for those jobs of communication in which film is supreme because it focuses both the eyes and ears of the audience upon the subject and delivers the message with greatest effect. Per person reached, its costs are moderate and compare favorably with printing or any other medium.

SCREEN AIDS OTHER MEDIA

However, the screen is used not to do a job all alone, but to supplement and make more effective the other media. Their use, in turn, makes the screen more effective. For instance, a County U.S.D.A. War Board might use a newspaper story to bring farmers to see a film about the need for more milk in the war food program. This film would stimulate interest in another shown by the county agent on why cows should be fed balanced rations. This in turn would bring farmers to the county agent for advice, and perhaps for publications containing detailed tables of feeding value of various grains and forages, which would not be suitable subject matter for a film. Thus used together, the effect of the various media is greater than the sum of them used separately.

To use the screen most effectively in such an integrated informational program in fields as full of complex problems as those now confronting agriculture requires planning and organization. The problems of organizing the film program in the Department are understood better if the structure of the Department itself is known.

The Department is made up of a number of bureaus or agencies, each authorized by the Congress and provided with funds to carry out certain activities designed to meet specific problems or groups of problems. All are under the general direction of the Secretary of Agriculture—or, in the present war emergency, of the War Food Administrator.

Some are research agencies, commissioned to acquire information and working now on war food and fiber problems. Some are "teaching" agencies, commissioned directly to disseminate information, such as the Extension Service with its cooperative State Agricultural College Extension Divisions and County Farm and Home Demonstration Agent systems. Some are

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FARMERS HELP THEMSELVES *when new machinery is unobtainable. Joe Moiso, New Jersey farmer, demonstrates his "doodlebug" plow, formerly the family car. From the U.S.D.A. Slidefilm "Labor Efficiency on the Farm".*

[illegible] extend to all farms [illegible] special wartime aids [illegible] to meet production, [illegible] financing problems. Seed certification, inspection, quarantine, and regulatory work to safeguard health and orderly marketing operations.

Though each bureau or agency has its own field of subject matter and its own authorized program, the lines of special knowledge and responsibility must merge at many points. For instance, a farmer producing food for freedom may need economic information on what products are needed most; expert crop and livestock production information on what his soil and facilities are best fitted to produce; how to produce most efficiently and protect his output from pests and disease; credit to provide enlarged facilities; help in organizing, with his neighbors, effective marketing machinery; help in maintaining productivity of his soil against erosion.

Farmers Viewpoint Vital

To this farmer, it's the knot of problems on his farm, not the "bureau lines" that matter, and obviously it is from the standpoint of the farmer that the Department should present its information. For this reason, the Department's central Office of Information has the task of integrating the lines of action and information into a smooth, coordinated and helpful presentation to the individual farmer and the individual citizen.

Some of the individual bureaus with active programs in which wide participation by individual farmers is required for success, such as the Forest Service with its responsibility for forest fire prevention and control, effectively use motion pictures directly upon the work for which they are responsible. Such films are usually made by the bureau under the general supervision of the central Office of Information through its Motion Picture Service, or for the bureau by the Motion Picture Service.

Bureaus Work as Unit

After the separate bureaus have laid out their film plans, however, there may still be gaps in the scope of information which should be presented on the screen, which can be filled only by films made at the all-Department level, or by joint action of several bureaus involved.

In order to bring the planning of such a Department-wide film program together, an informal film council, embracing representatives of the bureaus, meets under the leadership of the central Office of Information. The various bureau plans for future film making are discussed, and cooperation among bureaus arranged and facilitated.

With a forward program laid out, the Department's film library can be built up from surplus footage obtained in the course of making the various pictures, and thus is of greater service to all.

In agriculture, much of the activity is seasonal, and no studio set can substitute for actuality. The vagaries of nature are such, moreover, that the exact situation or condition wanted may not often occur; when it is found whatever camera crew is near should seize the opportunity to record it on film. For this reason, each camera crew must have as broad a knowledge as possible of the total film program in progress or planned ahead.

U.S.D.A. Wartime Duties

Under wartime conditions, the Department's motion picture program requires to be integrated into the national film program under the direction of the Motion Picture Bureau of the Office of Information. In frequent consultations, Agriculture's representatives outline the informational problems in their field and their plans for meeting them. In turn, OWI suggests to Agriculture general informational problems which lie partly in Agriculture's field. Thus the programs are made supplementary.

Both through OWI and by direct contacts, the Department of Agriculture's motion picture workers endeavor to keep in touch with the film work of other public and private agencies. This is helpful not only because of the stimulation of new ideas, but also because their work may often be supplementary.

None of the Department's motion picture or other screen visual workers would contend that this program works perfectly. All are painfully conscious of shortcomings, but the effort for improvement is honest and continuous. Let the products speak for themselves on that score.

A Plan for Farm Training

The critical shortage of manpower for the production of food is as great a problem on the farm front as it is in war industry. It will be intensified by increased demands upon our acres for the feeding of peoples in occupied lands, by the armed forces and our own needs at home.

As Dr. F. B. Knight points out, farm management is hardly holding its own as experienced farmers die or get older and as no new blood comes into the industry. Equipment shortages and delays, lack of protein feeds and natural setbacks of weather and pests all contrive to hold down food production.

Some of these problems, the farmer will meet with his customary ingenuity and sweat, equipment production is in the hands of the WPB and only the Almighty can make the weather right. But increasing acreage under cultivation as well as handling that already tilled demands more help and city youth appears to be a great potential reservoir from which to draw it.

In thousands of urban centers, an educational campaign should be instituted through the high schools during this coming Winter. Its first objective should be to arouse interest in the soil and rural life. Its great need is to inculcate by intensive methods practical knowledge of farm work, animal husbandry, etc. The Editor of Business Screen proposes that a series of educational sound motion pictures and slidefilms be produced for an intensive eight-week course.

Not only would these prove invaluable for the emergency but they are needed for the long-term educational program of agricultural schools and colleges anyway. Pictures on soil chemistry, the raising of stock, dairying, scientific farm methods and similar subjects could be produced in this series.

Financing of these pictures should be within the means of Government but if not, there is an opportunity for the film-minded makers of farm implements to serve the entire field of agriculture with credit and distinction by cooperative action. We envision a complete agricultural short course with prints available in every rural county in America as well as for this urban high-school program.—*OHC.*

HOUSING FOR WAR WORKERS *demands lumber production in immense quantities. Agriculture's wartime tasks in this field are depicted in "Wood for War" and "Trees on the Warpath".*

THE NEGRO FARMER'S ROLE *in the Food for Freedom campaign is an important one, no matter how few his acres. A scene from the USDA film "Henry Browne, Farmer".*

The U.S.D.A. Motion Picture Service
—1908-1943—

By RAYMOND EVANS, *Chief of Production, Motion Picture Service U. S. Dept. of Agriculture*

BY AN ODD TURN of circumstances it happened that the first motion picture produced by the United States Department of Agriculture was not an agricultural film, but a military film. That was in 1908, when all the motion picture facilities of the Department, to wit, one Jenkins camera and two or three pin-racks for tray development, were devoted to the filming of the performance of the first airplane owned by the United States Army. Now, after half a lifetime, and for the second time since 1908, the Department finds it necessary to take the Prophet Micah in reverse and convert its pruning hooks into spears. So this chronicle of the activities of the Department of Agriculture Motion Picture Service must both begin and end on a military note.

U. S. D. A. Film Pioneers

The beginning was modest enough, almost furtive, as will appear presently. The Department had acquired a motion picture camera, the first owned by the Federal Government, and the persons interested were on the lookout for scenes that might serve to prove the worth of the motion picture as an educational medium. So when the Wright brothers came to Fort Myer to demonstrate their pioneer biplane for the Signal Corps, the Department of Agriculture made a film record of the demonstration—the first government motion picture.

This first U. S. Department of Agriculture film was shot and edited by W. S. Clime, under the direction of Lewis Williams, who was then chief of the Section of Illustrations. (Mr. Clime later became nationally known as a landscape painter.) This negative was turned over to the Signal Corps. It seems likely that this is the negative of the flight of the Wright biplane which is now in the files of the National Archives. It is possible, however, that the negative turned over to the Archives is that shot on the same occasion by E. B. Thompson and Carl Gregory.

The airplane film was followed by a few experimental agricultural shorts, which Mr. Clime photographed with the same Jenkins beater-type camera with which he had worked at Fort Myer. The film was developed, fixed and washed on pin racks in open trays, and dried on the same racks, by whirling. The printer used was also manufactured by Jenkins, probably the same printer that is now cherished among the few museum pieces saved as representative of the equipment of the Department's pioneer days in motion pictures.

For these technical details as to the early work of the Department motion picture laboratory we are indebted to George R. Goergens, veteran U. S. D. A. cameraman, who, in point of years of service, now outranks all the rest of us on the Department motion picture staff.

Laboratory Established

In 1912, under the direction of Andre Boetcher, then chief of the Section of Illustrations, Messrs. Clime and Goergens were regularly assigned to motion picture work and a laboratory was formally established—the first government motion picture laboratory in the world, so far as we have been able to determine. It appears also that this laboratory was established without the knowledge of the Secretary of Agriculture—certainly without any effort having been made to bring to his attention the fact that the Department was dabbling in the then more or less disreputable medium of expression the motion picture.

The beloved and revered Secretary James Wilson ("Tama Jim") had his own ideas about the movies. He thought, and said, that the motion picture was the work of the devil, and took no pains to conceal his feelings on the subject.

Importance Is Recognized

It remained for O. H. Benson, one of the pioneers in the 4-H Club movement, to overcome the Secretary's prejudice by a neat stratagem. The Secretary was to address

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PICTURES HELP FARMERS FIGHT THE CATTLE TICK

A mobile projection unit carries the war against the cattle tick to Florida farmers. Showing of "Molly of Pine Grove Cut" in 1939.

FLOOD WATERS SLOW CROP PRODUCTION *as uncontrolled runoff carries away precious top soil in this scene from "Muddy Waters", a recent Soil Conservation Service picture.*

THE CATTLEMAN'S WAR PRODUCTION *of livestock for fighting men, the home front and our Allies is graphically told in the USDA sound motion picture "Home on the Range".*

[illegible] corn club boys, [illegible] were made to [illegible] event with the camera so [illegible] that the Secretary wouldn't [illegible] likely to notice it. It seems to [illegible] moot question as to who turned the crank on this historic occasion [illegible] thirty years ago. Mr. Goergens believes that it was Mr. Cline. Mr. Benson's recollection of the event is that the cameraman was C. Francis Jenkins himself, celebrated inventor and pioneer in motion picture and television engineering. Maybe they were both there. In any event it was a Jenkins camera that exposed the film, the original of which is now in the files of the Archives of the United States.

We are told that when the film was printed up, Mr. Benson, probably with the help of Mr. Boetcher, surreptitiously had a projector set up in the old Main Building, lured the Secretary in front of the screen, and showed him a motion picture of himself addressing the corn club boys. He was amazed and delighted and from that moment the motion picture program of the Department ceased to be a bootleg enterprise.

TWENTY-FOUR YEARS AGO, *this USDA silent film "Sir Lacteus, The Good Milk Knight", told in fairy tale manner the importance of milk as a nutritious essential for children.*

First Official Approval

On September 12, 1913, Secretary David Houston in Memorandum No. 11, set up a temporary committee to determine whether the Department should enter the educational motion picture field in earnest. This committee reported, rather cagily, its conclusion: "That while the direct educational value of the motion picture could not be definitely predicted, the employment of films offered other advantages which warranted the Department in using them in its extension work." This cautious approach doubtless reflects the committee's awareness of the fact that "Tama Jim" was not the only Elder Scientist in the Department who had preconceived notions about movies.

Under the direction of a permanent committee which superseded this temporary body, the Department began to produce pictures in considerable number. The chairman of this committee was the late George Wharton, then chief of the Press Service. The other members were O. H. Benson, A. B. Boetcher, Don Carlos Ellis, J. A. Evans, C. H. Hanson, L. M. Pickens, and C. W. Thompson.

The laboratory was now newly equipped and moved from the little 8X12 foot attic room where it had been hidden, to ample quarters in the then new Bieber Building. The new Pathe cameras (then the last word), a Simplex projector and an Erneman printer were bought, and during the period of 1913-14 more than a dozen films were released, including several made in cooperation with the Panama-Pacific Exposition Board.

War Increases Duties

By 1917 films had become a fixture in departmental work, both as reports of the results of research and as a means of furthering regulatory work. During that year Don Carlos Ellis was appointed as Assistant in Charge of Motion Pictures, and when the United States became involved in World War I the work mushroomed to large proportions in a short time. For a year the Department laboratory was devoted to war work under the direction of the Committee on Public Information, the OWI of that day, under its chairman, George Creel.

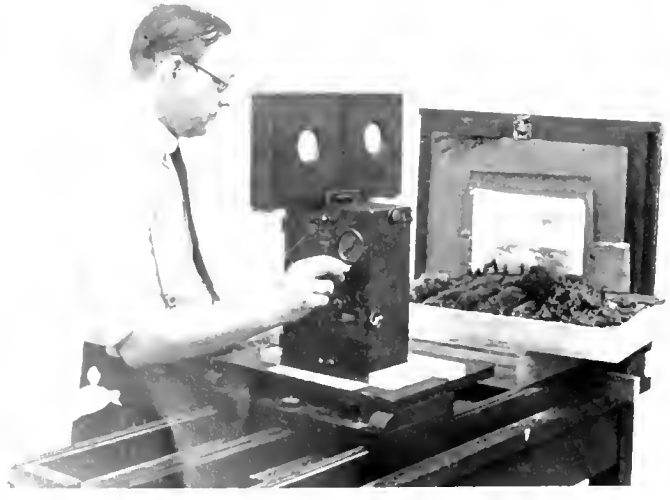
The annual report on motion picture activities for that period might almost pass for a report for the current year. A film was released entitled *Meeting the Farm Labor Problem*, another on *Home Drying of Fruits and Vegetables*, and negative was supplied to eight commercial newsreels on backyard poultry raising and the farm labor campaign "appeals for the enlisting in farm work of people from cities." In preparation then were films on farm labor, cow testing, clean milk, and one on *Control of Cooties* the latter made for the office of the Surgeon General. (One of the countless jobs the Department of Agriculture laboratory has done in the past thirty years as accommodation to other agencies, largely without reimbursement. Indeed, until the passage of the Economy Act in 1932, there was no legal way by which the Department could be reimbursed for such work.)

First Animated Cartoons

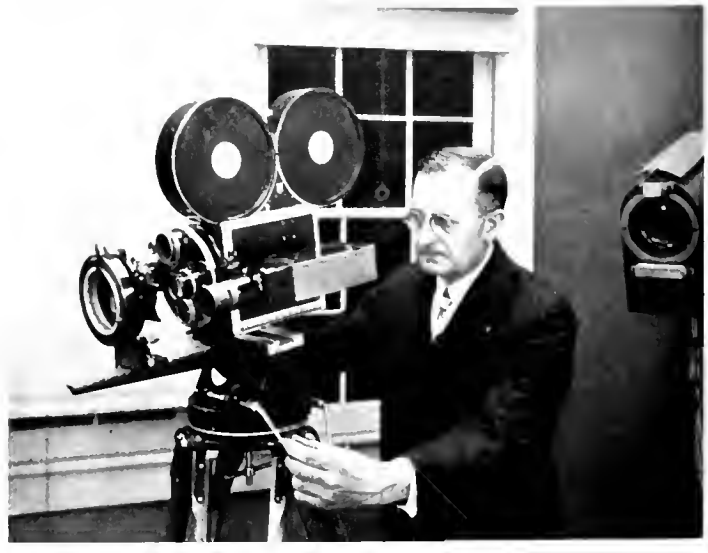
The next year, 1918, was a notable one in the annals of the service, for during that year was released *The Charge of the Tick Brigade*, the first agricultural animated cartoon, and the first of the several Department films that have played important parts in the various campaigns for the eradication of pests and diseases of plants and farm animals. This one-reel cartoon, made for the Department by Bray, was the spearhead of a long and arduous campaign that finally resulted in the eradication of the cattle fever tick from practically the whole of the continental U. S.

Other films released in 1918 or early in 1919 were *The Leak Disease of Potatoes*, including re-

USDA PICTURE PIONEERS *began their labors with a Pathe camera purchased in 1913. Harry K. Sloat (now retired) was one of the Department's first pioneers to experiment with micro-cinematography.*



ANOTHER USDA FILM PIONEER *was George R. Goergens, veteran cameraman, shown here with the original Bell & Howell camera No. 237, joint survivors of an airplane crash and a dust explosion blast.*



markable cine-micrographs made by H. K. Sloat, and a picture on the control of wheat rust, called *The Barbarous Barberry*. Those who think that "wipe" effects are something new under the sun should see the wipe effect that Harry Sloat devised for this film twenty-five years ago, using a stalk of ripe wheat as the apparent means by which the wipe was effected.

It was about this time (1918) that Chief Cinematographer George Goergens, while filming forest patrol work, achieved the unenviable distinction of being the first Department cameraman, if not the first in government service, to become a casualty in an airplane crash. He suffered some 28 cuts and a fractured kneecap in this misadventure, which netted him a game knee and a letter from General Billy Mitchell, transmitting a photograph of the wrecked U. S. Army crate that let him down. On another occasion, a little later, Goergens again narrowly escaped death in line of duty, when his shelter booth was shattered and all but blown away while he was filming a violent dust explosion at the Pittsburgh laboratory of the Bureau of Mines.

Film Section Expanded

In 1920 F. W. Perkins, now a prominent Washington correspondent, became chief of the Section of Motion Pictures, and under his administration the laboratory was moved to a new building built especially for the purpose along plans that he prepared. In 1923 the section was transferred to the Extension Service as the Office of Motion Pictures. The present writer became chief of the office in 1926, when Mr. Perkins left the Department for the industrial field, and a few

(CONTINUED ON PAGE THIRTY-TWO)

FRED W. PERKINS, *one of pioneer chiefs of the Department of Agriculture Section of Motion Pictures (from 1920 to 1926).*

Producing Motion Pictures for the U. S. Department of Agriculture

By CHESTER A. LINDSTROM, *Associate Chief of Production, Motion Picture Service*

A visitor to the Department of Agriculture stopped short in his tracks with a look of surprise and amazement. From behind closed doors in the huge South Building of the Department came sounds such as he would expect to hear only in a stockyard—certainly not in the modern office structure of the staid U. S. Department of Agriculture. The commotion ceased abruptly, and presently through the door came a young man with a round, flat can under his arm. An "effects" sound track had just been run to determine how the grunts and squeals of the hogs had recorded a couple of days before.

Visitors to the Department of Agriculture are invariably surprised at the number and variety of activities being conducted by the Department. None apparently surprises them more than a startling experience like the above, and to learn that a modern motion picture studio and laboratory are located right in the South Building (at this writing and for the duration on loan to the Office of Strategic Services for vital work in connection with the armed forces).

Large Quantity Produced

Perhaps no organization has produced more educational pictures during its lifetime than has the motion picture producing unit of the Department of Agriculture. At least a thousand pictures have rolled from its racks, tanks and editor's tables since it started serious work in 1913, and these have been produced under difficulties—regulations and restrictions—that would make a producer accustomed to commercial procedures a fair subject for apoplexy. If they were to be paid for at commercial rates, the Department producing unit would have assets over two million dollars.

Since 1913 the Department of Agriculture has been producing movies as an aid in its educational, regulatory and administrative work. During that time our permanent staff of laboratory technicians, cameramen, editors, and directors has varied in size according to available funds (averaging about $50,000 a year for both production and distribution), but has never been large enough to produce the number of pictures needed in the agricultural field. Therefore, the aim for many years necessarily had to be to produce the largest number of urgently needed pictures possible with the staff and funds available.

High Quality Maintained

A certain standard of quality, that could be obtained with a minimum of expenditure, was maintained. Good photography costs no more than poor—in fact less—and that is a field in which our cameramen uniformly have been tops. But as to incurring expense for the hire of actors, that was rarely done. In that respect Department films are the original "documentaries." From the earliest days most of the Department films have shown farmers doing the things they do in real documentary style. Of course, the temptation to produce "story" pictures could not be denied, but even in these the "actors" were usually real dirt farmers, not professional actors.

In every possible way expense was kept down, no time-consuming or expensive "trucks" on field shots, no elaborate sets, no expensive optical work, no zooms, trucks or effects on titles, no field trips without careful scheduling and then with crews reduced to the minimum needed for the particular job. For every dollar and hour saved on one job, just so much more was made available for another. Only by such penuriousness were we able to provide in the earlier days of the motion picture, a service for which there was an ever increasing demand. Production costs averaged $1,000 per reel!

U.S.D.A. Keeps Pace

But there came a time when the public was no longer satisfied with the silent "straight educational" which had been our specialty for many years. Sound, with its appeal to another of the senses, had created a revolution in the production of motion pictures. A new art had been created for the producer to master. Still working on the thousand-dollar-a-reel basis, we tried to use untrained (free!) voices for narration and any music that was available without cost, but soon learned that such pictures did not click. It was necessary to change the policy and keep pace with the times, even though it meant fewer pictures. Now we use the best talent obtainable with the funds at our disposal for the particular picture in production.

Any agency faced with the necessity of doing a job within a specified time must surmount many difficulties arising from the rules, regulations and procedures with which employment and expenditures necessarily are surrounded in the government service. But I am convinced that motion picture production presents more problems never considered in the framing of these rules and regulations than any other activity in which the government is engaged.

For instance, regulations prescribe that personal services must be obtained through appointment by the Civil Service Commission, and that at least three bids in writing for items costing in excess of $50.00 must be obtained and purchase made from the lowest bidder. Imagine the predicament of the producer when he finds himself with a crew and staff all set to shoot at 10:00 a.m. and something goes wrong that requires the services of plumber and paperhanger for whom appointments have to be obtained through Civil Service, and material costing $100.00 for which bids have to be obtained in writing!

Problems of Production

Innumerable problems such as these have had to be solved. We have of necessity become adept at advance planning. Gradually, through the years, with the assistance of such men as Ralph Koebel, able attorney of the Department Solicitor's Office, and others, recognition has been obtained for the unique and special needs of motion picture production work. The Civil Service Commission has cooperated to facilitate procedure in securing personal services. However, aggravating though amusing incidents sometimes take place. Recently, in New York, after much negotiation, a well-known character actress particularly well suited for a part in a picture in production with a dead

(CONTINUED ON THE NEXT PAGE)

was induced [illegible] at a sacrifice rate [illegible] with the necessity of [illegible] a Civil Service force which had been brought to [illegible] at a moment when time and temperament seemed propitious for her to declare her age, place of birth, etc., etc., she exploded, but finally was persuaded to fill it out. Our harassed business executive was told that we had usurped prerogatives in recruiting talent, that the actress must present herself at the Commission's office to be interviewed and appointed in the prescribed manner. However, the appointment was made and the picture completed on time.

War Again Interrupts

Late in 1941 our laboratory, projection rooms and studio facilities were transferred to the Coordinator of Information (now the Office of Strategic Services) for the duration. With the facilities went fourteen members of our technical staff, and most of our production equipment. Under the agreement of transfer, the studio and projection rooms are available for our use when not required for strategic war work, and our laboratory work is handled on order. This transfer left the Motion Picture Service with a skeleton staff, inadequate production equipment and no suitable working space.

With motion pictures urgently needed to help to inform the thirty million farm people concerning the necessity for conversion of agricultural crops to the needs of war, the Motion Picture Service was faced with the necessity of using every possible method of production. Entire production units were employed, contracts for production were entered into with commercial producers, the old Washington Paramount Exchange Building was rented, and work progressed with a minimum of delay, but production was necessarily slowed down. In 1941, before the transfer, 30 pictures were produced, and in 1942, after the transfer, only 17 were turned out—four of them under contract.

Film Production Procedure

The present Department production staff consists of 11 directors, editors, cameramen and technicians, under the direction of Raymond Evans. Seven of them are employed by the Motion Picture Service and three by the Forest Service and the Agricultural Adjustment Administration. Our present cameramen, Walter Scott and George Ortlieb, are old-timers, graduates from Hollywood studios.

Thirty years of experience has taught us the necessity of having a working script fully prepared and approved all along the line before production begins. A procedure, therefore, has been worked out which we endeavor to have followed so far as practicable in every production. The first step is the submission by the sponsoring agency of a "Motion Picture Project Proposal," which is designed to bring out information from which it is determined whether or not the picture should be made. A typical presentation is the following:

1. *Subject Matter.* The dehydration and concentration of foods
2. *Purpose.* To show how fruits, vegetables, meats, milk, eggs, soup and other foods are dehydrated and concentrated, the advantages of this method of preserving food, the problems involved, the significance in

(CONTINUED ON PAGE THIRTY)

STUDIO PRODUCTION CREW AT WORK *on a typical small interior set in the Department of Agriculture pre-war facilities.*

SLIDEFILMS and Agriculture

THE DEPARTMENT OF AGRICULTURE has been making and using slidefilms for many years. We have gone about it quietly, on a modest budget, trying this and trying that, achieving modest results and always striving for something better.

At one time the Department, through its Extension Service, maintained a large library of glass slides. These were popular and used not only by Extension and other Department workers, but also by schools. When the earliest slidefilm projectors were placed on the market, the Extension Service started experimenting, recognizing in this lightweight projector a visual aid that would lessen the burden on the county agent's back.

County Agents Important

Perhaps you don't know the county agent system? Nearly 3,000 agricultural counties are staffed with one or more cooperative representatives of this Department. They are the county agents. In some states they have other names, Farm Advisor, County Extension Director, etc., but they're county agents just the same. On the distaff side we have the ladies with the formidable title: County home demonstration agent. These ladies do for the farm women what the county agent does for the farmer. They bring the latest information on home economics and kindred subjects right to the farm home through the club work fostered in each rural community. Then, a great many of the counties have agents who work with the farm boys and girls of the 4-H Clubs.

These extension workers, collectively and individually, act as go-betweens for the Department and for the state college of whose staff they are members. They keep in touch with scientific advances and translate them into the everyday language of farming and home-making. They have long used visual aids, first under demonstration conditions, using a life-sized field or animal and demonstrating through good old formula 17-B of industrial movies—before and after. This was accomplished through tours and meetings.

Filmstrips Replace Slides

The next step was to bring the demonstration to the groups, at any time of year—by photographs. This was done by means of picture books and lantern slides.

The next logical step was for the Federal office to produce visual materials of demonstrations on a national scale, or of local demonstrations which could be reproduced anywhere in the country. This was the start of what was then called the Film Strip Service of the Department.

A set of lantern slides is so expensive that few county agents can afford to own many of them. On the other hand, the same information on film is so cheap that every agent can afford to own them. For this reason the slide library was gradually dropped. Arrangements were made through competitive bidding for the agents to buy the prints they need from contractors. This practice has continued through the years and has been so successful it will probably continue for some time to come.

Film Local Subjects

The only change in prospect is a transition from single-frame to double-frame. Many commercial producers cannot understand the reason for this, but it is really quite simple. With the advent of 35 mm. miniature cameras, and especially Kodachrome, many of the agents bought cameras and started producing slide sets on local subjects. They frequently used the Department's slidefilms as a scenario and simply duplicated the frames in color with local scenes. Experience has shown that this is most effective. Instead of the demonstration area being miles away, the idea is shown at work right in the home county. The "selling" advantages of this local material are evident.

Frequently the agent wanted to mix a frame or so from a Federal strip with his slides. The change from single to double-frame was quite evident on the screen and good showmanship prescribed that something be done about it. The answer was to produce the films in both single and double-frame sizes. This practice has been followed for several years and has proved to be successful. We expect to gradually drop the single-frame size in favor of the double, except for what we call "scenario films," films made to act as a scenario for local shooting and for no other purpose.

The practices followed in making

By DON BENNETT. *In Charge. Visual Aids Section. Extension Service*

the slidefilms closely parallels that of commercial practice, except that fewer pictures are made especially for the strips. The Department has a file of over 50,000 prints and negatives showing almost every agricultural practice recommended. These form a good library from which to draw when making a film. When the scene wanted cannot be found in the files, Department photographers go out and make the needed scenes.

More recently we have found it expedient to start from scratch and build a film entirely from new photographs made especially for the occasion. This is, of course, an old-established practice in the commercial field. It is somewhat more costly, but well worth the added expense and trouble.

The Farmers and the War

Since December 7, 1941, only films of a strictly war nature have been produced. And these have all been directed at helping farmers increase their production of food and fibre for the war. In some cases they have been direct teaching material; in some, of an inspirational nature; in others the films have carried the message of efficiency, organization or some equally related subject supporting the war effort by indirect contribution.

A few of the titles will demonstrate the theme of the current program. *Pigs Can't Shoot*, *Gardening for Victory*, *The New Gardener*, *Labor Efficiency on the Farm*, *Finding Minutes*, *Neighborhood Leaders Mobilize the Farm Front*, *Farm Women in Wartime*, *Any Bonds Today*, to name but a few.

The original material is prepared as uniform-sized prints, with the necessary art work and titling. It is then turned over to the contractor who makes single and double-frame negatives. As soon as the proof print is approved an order is placed for sufficient copies to supply each state extension information office with a print. While these prints are being made the final lecture notes are prepared and mimeographed.

The final lecture awaits the screening of the proof print because we have found that the author writes differently when he sees the pictures actually on the screen. He writes for reading aloud, whereas when writing from a pile of pictures he uses a bulletin technique and does not always choose words which can be easily spoken.

The lecture is supplied either as notes and supporting material from which the county worker can derive his own talk, or as a straight talk to be read in synchronized form. The lectures are never recorded, nor are recorded lectures listed for sale or use. Few if any of the agents have equipment available for showing sound slidefilms and the expense of recording is not justified.

Helps for the Operator

By using a cued lecture we have managed to overcome this lack of equipment and provide a nearly equal effect. The script is cued with the frame number, placed wherever the change of scene is desired. Two copies of the script are furnished, one for the operator, the other for the reader. An instruction sheet specifies that they should rehearse at least once before putting on the show. The operator follows the reading on his copy of the script and when the reader reaches the cue, changes the frame. To the average audience the synchronization is uncanny, and there is no gong to distract. Frankly, the technique is an expedient devised to meet a specific equipment problem and it is not advocated that anyone else adopt it.

Good Future for Visuals

Publicity about the slidefilms goes out through regular Extension chan-

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GLAMOR GIRL OF THE GARDEN *is this featured player from the USDA slidefilm and color motion picture "Gardening for Victory".*

TYPICAL USDA SLIDEFILMS *show (top) farm poll, mobilizing for war in "Farm Front"; (center) production line techniques in "Labor Efficiency on the Farm" and (below) a scene from the USDA slidefilm "Farm Women in Wartime".*

Distribution and Use of U.S.D.A. Motion Pictures

WARTIME MOTION PICTURE distribution of the Department of Agriculture has two main objectives:

1. To put the Department's own films on screens before adult farmers *as farmers*.
2. To put some of the war films of other Government producers on screens before adult farmers *as citizens*.

The Department's current films are designed to help the farmer do his war job better. He has a prime need for them. But he is also concerned with the films of other Government agencies, as a citizen with the same interests as any other American parent, war worker, consumer, bond buyer, tax payer and salvage collector.

Other U. S. Films Shown

The same distribution channels that carry the Department's films also carry the several other types of films to him, his wife, and the older members of his family. He frequently sees the films of several Government agencies at the same showing.

Because the motion pictures of the Department of Agriculture are produced for a considerable variety of agricultural purposes, the Department distributes its prints through several different channels.

Sales of nontheatrical prints are handled for the Department by Castle Films, Inc. Theatrical distribution is cleared through the Motion Picture Bureau of the Office of War Information.

Nontheatrical distribution goes through several different agencies of the Department. The main channels are:

1. 11 State U.S.D.A. War Boards. (Not Del., R.I., Nev., or Ariz.)
2. 50 Cooperating Depositories at universities, colleges, etc.
3. 7 Soil Conservation Service Regional Information Offices.
4. 10 Forest Service Regional Offices.
5. 12 Farm Credit Administration District Offices and their numerous local Production Credit Associations.
6. 13 Agricultural Adjustment Administration State Offices.

Handled Through Field

These six types of "field depositories" serve the users in their States and regions. With minor exceptions, no prints are provided directly to exhibitors from Washington. Washington simply gets the prints out to the State and regional points from which they are distributed to the users.

This decentralization is obviously practical. If Washington sent all prints direct to users, the waste of transportation, time, and money would be enormous.

The guiding slogan of the distribution section of the Department's Motion Picture Service is: "Our films are for farmers." There are exceptions, of course. Certain films are important to nonfarm audiences, too, but it is always "too." The farmer is our first audience. Notable exceptions are the Forest Service films designed to prevent forest fires and to promote conservation equally among all people, urban and rural.

Films in Related Program

Since virtually all of the Department's films are made as collateral material for programs of information that usually include all media, publications, press releases, magazine articles, radio, slide films, exhibits, and still photographs, they must be given comparable handling not only in terms of audience to be reached, but timing and territorial allocation.

A good example is the recent release *Farm Battle Lines*, made to explain to southern farmers why the production of peanuts must be stepped up again in 1943, even over 1942. The Japs have captured the Asiatic sources of vegetable fats and oils on which our industries relied heavily. Now, enormous crops of peanuts must help replace them in manufacturing war armament and supplies. The picture also explains the war need for cotton linters for explosives.

It contains incentive information for cotton and peanut farmers. To anybody else, it is just an interesting picture. So, the all-too-few prints allowed by the Department's budget must be directed to audiences of farmers in the cotton and peanut States, rather than to urban school children or urban adults. They will find it interesting in the theaters where they mingle with the farmers, and they can use the nontheatrical prints when the need with farmers has been met, or they can buy them now from Castle Films.

For theatrical release, the help of the OWI Motion Picture Bureau was enlisted to obtain the cooperation of Republic Pictures, Inc., in distributing *Farm Battle Lines* through its Southern exchanges with the request to "skip the big cities and play it off as fast as possible in the towns and villages where farmers attend the movies."

War Boards Serve

At the same time, the Southern State U.S.D.A. War Boards were grinding their all-too-few prints through their 16 mm. projectors at farmer meetings in situations not reached by the theaters. One of the heartening developments in war motion picture distribution is the agreement of theatrical distributing companies to work fast and in special cases to understand the need for simultaneous nontheatrical dis-

By OLIVER GRISWOLD, *Chief of Distribution, Motion Picture Service, U. S. Dept. of Agriculture*

tribution. This war spirit was recently summed up:

"Sure, we've all got an information job to do together. We'll catch a lot of 'em in the theaters, and you get the others with those little portables. Folks need this war stuff shown 'em."

However, only two of the Department's war one-reelers have been in theaters: *Farm Battle Lines* and *Henry Browne, Farmer*, the latter only in theaters catering to Negroes, and both well distributed as special subjects by Republic Pictures, Inc. The War Activities Committee, through arrangements made by the Motion Picture Bureau of O.W.I. has handled two forest fire-prevention trailers: *Vigilance* in the Pacific Coast States, and *Your American Tragedy* nationally.

The recent release *Farmers At War* was both produced and released by O.W.I.'s Motion Pictures Bureau.

Emphasis on Adults

The most important war development in the Department's distribution is the stricter emphasis on reaching adults with war messages. For years, the major outlets for U.S.D.A. films were the cooperating depositories, most of them in universities and State colleges of agriculture. These still continue to handle U.S.D.A. films, and recently were increased to 50.

They are expected to serve primarily the county farm agents, home demonstration workers, 4-H club leaders, and other agricultural officials using chiefly types of film keyed to the educational program of the Extension Service. Then, during the period when schools, both urban and rural, were buying many projectors, their demands increased so vastly that the original adult objectives of many of the films were almost lost. Even the combined prints purchased by many of the depositories and the free prints from the Department couldn't keep up with demands.

It was a very natural thing to happen, which all nontheatrical distributors can easily understand.

Today, when a Department film is made, the purpose is to fill an urgent need for quick, concise information for the use of the farmers who are straining to produce the food and fiber that has got to be produced to beat the Axis.

First Prints to Boards

So the prints of U.S.D.A. war films go out first to the action agencies of the Department which are organized at the State and County levels into U.S.D.A. War Boards. The staff personnel of these agencies meets frequently with thousands of farmers to discuss and plan war-crop production and a score of other pressing war matters. These staff members use the films as a part of their meetings.

The War Boards report their distribution in considerable detail at the end of each month to Washington. These reports are the practical guide for the distribution unit's work.

Whereas the audiences reached by the cooperating depositories used to be something like 60 to 30 per cent juveniles and urban adults most of the War Boards now reach about 70 to 30 per cent *farm* adults. A lot of the children are there only because parents can't leave them at home.

The War Board membership in-

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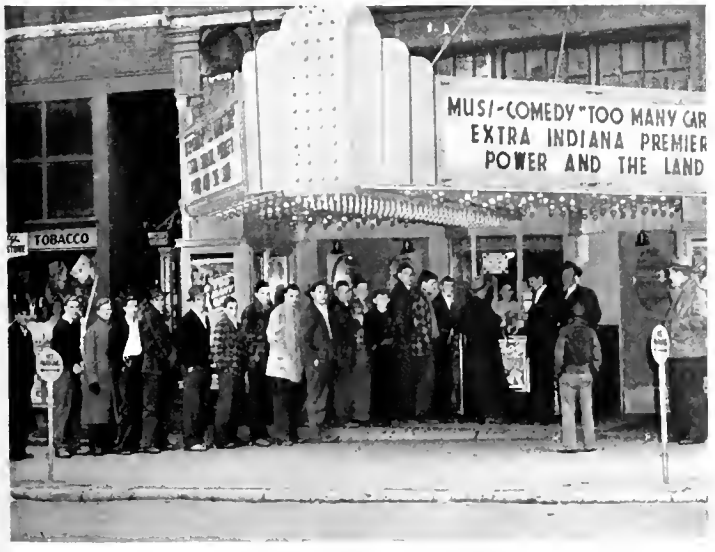
SMALL TOWN THEATRES SHOW FARMERS *the latest Department of Agriculture short subjects. A typical audience awaits "Power and the Land".*



FIELD REPORTS
on USDA Motion Pictures

Entertainment pictures are judged by the receipts at the box office. This test can't very well be applied to educational motion pictures shown as part of the authorized public service in education rendered by the Department of Agriculture. However, these educational films do not escape their testing. Rural audiences are critical of motion pictures dealing with the life and work they know so intimately. The people who show pictures to rural audiences know whether their "bookings" are acceptable by whether audiences come to the next meeting at which pictures are to be shown. These "exhibitors" of agricultural educational pictures, also, are in the educational and informational business, and so know whether the pictures they show are hitting the mark in their educational effort.

To get some crosssection report on the exhibiting end of the Department of Agriculture's film efforts during recent war months, several State U.S.D.A. War Boards were asked to summarize their experiences with wartime agricultural education films. Here is what they reported:

Tennessee Field Report

♦ Tennessee (Gilbert Yarbrough): Tennessee farm leaders are agreed that visual education is growing in popularity as a method of teaching and that farmers grasp a movie "lesson" much quicker than they do the spoken message of even a fluent speaker.

G. C. Wright, special extension agent in charge of Farm Demonstration Work in Tennessee, is convinced that "pictures will do more to make people war conscious than any other thing." He prefers such pictures as *U. S. News Reviews, Divide and Conquer*, (both OWI) and for cooperation one like *Team Work* (U.S.D.A.) as its name suggests.

Wright relates how effective *U. S. News Review No. 2* was as used in the Red Cross drive in a rural community of Dickson County. "The goal in this community was $100," Wright said. "After this film was shown they raised $250 and every man in the audience contributed."

Farm leaders seldom request the "speech" type of picture. They have noted that their audiences become restless as they listen 15 or more minutes to the same voice and such pictures are only slightly more effective than a long-winded speaker. Round-table discussions on film are almost as tiresome.

War films showing what is needed of farmers in the production of food and how to do the job have a strong appeal to farmers. *Salute to Farmers* (British), showing how Britishers fell into line for production, has been most effective.

Henry Browne, Farmer has proven popular with Negro audiences in Tennessee. It is impressing the Negro farmer with the fact that however small an operator he may be he can do his bit. Some audiences would prefer a more prosperous Henry Browne.

Want War Action

The Tennessee U.S.D.A. War Board constantly receives requests for pictures showing American forces in action. Greatest weakness of our visual education program is the lack of comprehensive films showing as much as censorship permits of America's war effort and this Nation's forces in action. Families represented in all parts of the globe are keenly interested in this type of picture. Such pictures, it is believed, would be an inspiration and a service in carrying on the war on the farm and home fronts.

Teamwork for Victory

In DeKalb County *Divide and Conquer* was presented by teams that covered every rural community. Team No. 1 was composed of the county agent, an SCS technician and an FSA supervisor. Team No. 2 was the home demonstration agent, FSA supervisor and SCS technician. These teams met with an AAA community committeeman in each of the 33 communities visited. The complete food production program was discussed at each of the meetings and dates were set for demonstrations in contouring. In addition to showing *Divide and Conquer*, slides of local scenes emphasizing conservation practices were flashed on the screen. Results have been a large increase in the number of farmers agreeing to plant row crops on the contour and to increase production through other conservation practices.

Indiana's Field Report

♦ Indiana (Harry Campbell): Dur-

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FIELD REPORTS

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in March, films booked through [illegible] U.S.D.A. War Board office were shown to approximately 47,000 Hoosiers. These films deal directly or indirectly with the work being carried on by the State and County U.S.D.A. War Boards.

Leading the list in popularity are the three prints of *Hidden Weapons*, with a total of 11 showings to a total audience of 5,600 people. *The Farmer's Wife* was shown 13 times to a total of 5,100 persons. (Both U.S.D.A.)

The film most in demand at present is *Divide and Conquer*, though figures on its showings are not impressive since only one print is available. *Letter from Bataan* promises to be an effective movie.

Other films most in demand from this office are *Tanks*, *Price of Victory*, *Teamwork*, *Home on the Range*, *The Farmer's Wife*, *Hidden Weapons*, *Wartime Farming in the Corn Belt*, *Salvage*, and *Listen to Britain*.

A majority of our film bookings are through our county AAA farmer fieldwomen, who contact farm groups, women's clubs, schools and other groups in every community.

Informing the People

L. M. Vogler, Chairman of the Indiana U.S.D.A. War Board, says: "If we are to produce food and fiber needed to win the war and the peace that will follow, it is necessary that our people be well informed on what is needed, why it is needed, and how it can be produced. The part that good films has played, and will play in the future, in getting the necessary information to people in each and every community, both urban and rural, cannot be overestimated."

Indiana had never produced hemp, and at the first meetings of farmers and contractors there was some hesitancy on the part of the farmers to pledge themselves to produce this strange crop. Since it would be necessary to contract with growers to produce at least 4,000 acres of hemp in the vicinity of each of the two new mills to keep the plants running at capacity, there was some doubt about the success of the new venture. After the unsuccessful first meeting, the film, *Hemp for Victory* was shown at all sign-up meetings. Both plants now have contracts for a sufficient number of acres to keep them running at full capacity, and farmers and contractors are agreed that the film was largely responsible for the change of attitude.

Mrs. Floyd Connolly, LaGrange County, AAA Farmer Fieldwoman, reports: "In our county, we have only one motion picture theater and since gas rationing many people do not have the opportunity to see movies very often; they are, therefore, particularly happy to have me bring films to their community gatherings.

"I try to select films that are appropriate to the type of gathering. For instance, I have found that the films *Tanks* and *Salvage* are effective for Civilian Defense group meetings. *Hidden Weapons* ties in very well with farm machinery repair schools. *Democracy in Action*, pointing out vividly as it does how vital a part U. S. agriculture must play in winning the war and writing the peace, has been very effective in showing farmers how necessary it is for them to plant more and more of the war crops so badly needed by us and our allies.

Women Enjoy Films

"I have found *The Farmer's Wife* has been well received at the many Women's Club meetings where I have shown it. One urban lady remarked, 'Well, if a farmer's wife can arrange her work so that she can accomplish so much, surely there is something wrong with my system.'"

♦ Mississippi (Fred J. Hurst): The motion pictures furnished the Mississippi U.S.D.A. War Board by the United States Department of Agriculture have been one of the effective means of acquainting large numbers of farm people with the need for all-out support of the Food for Freedom Program and other important phases of the whole war effort.

County agents, county AAA administrative officers, soil conservation service technicians, and others who have shown these films to rural audiences are unanimous that these motion pictures are highly effective. They indicate ways in which farm people can increase production, conserve food supplies, contribute scrap, salvage waste material, support war bond sales, and otherwise give more effective support to the war effort.

44,913 Go to Shows

In Mississippi 19 "War Board" films have been shown at 295 rural meetings with 44,913 people attending. The attendance included children as well as grown-ups.

Of course this report does not include other U.S.D.A. films shown to farm audiences during the same

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Visualizing the War Program *of* Soil Conservation Service

Motion pictures play a very special role in the educational work of the Soil Conservation Service—a part that no other medium can do quite so well.

That part is to make clear the relationship of conservation to farming and to the daily lives of all the nation's 132,000,000 people. Currently, films are being used to show how conservation helps advance the war effort.

Primarily for the Farmer

While many SCS films have been and are shown to urban and other general audiences, most of them are made for and shown to rural audiences. The reasons for this are plain. While conservation is just as important in the final analysis to a New York subway guard as to an Indiana farmer, it is to the farmer we must look to get conservation applied to the land. Furthermore, it is the farmer's own land—or land for which he pays a good rental in cash or otherwise—that is at stake. Therefore, we make pictures for the farmers and ranchers of America primarily, and they are mainly shown to such groups because that is where it is felt they will do the most good.

The appeals are to the farmer's pride, to his love of the land, to his natural desire to provide well for his family, and to his patriotism. Nor is patriotism merely a wartime appeal. The Soil Conservation Service always has held that conservation of the nation's soil resources—intelligent productive use that will maintain those resources for the use of future generations, as opposed to exploitation—is a patriotic obligation resting upon the farmers of the country in time of peace as well as war. This point has been made in numerous SCS films as well as other educational material.

Films Answer Problems

One notable point about SCS motion pictures is the fact that all of them are made from a constructive standpoint. Some of them are regional in character, some tell one conservation story and some tell another. Some of them are valuable social studies in film form, but in all cases the approach is constructive. If a question is raised, the answer is indicated; if a problem is presented, the solution is shown.

Where films like *The Plow That Broke the Plains*, *The River*, and the more recent *The Land*, present tremendous problems—economic, physical and social problems—and indicate the answers in very general terms, such Soil Conservation Service pictures as *Muddy Waters*, *Rain on the Plains* and others, give the answers to these same problems in very specific terms. These films show exactly what can be done to solve these problems, *and what is being done* in various parts of the country.

Conservation to Produce

The outstanding SCS film today is *Wartime Farming in the Cornbelt*. It shows how cornbelt farmers

"TERRACING IN THE NORTHEAST" *shows farmers "how to do it" in a typical Soil Conservation Service film which helps avoid the costly inroads of erosion.*

are using soil and water conservation measures to obtain increased yields of the vital war crops. Since conservation methods produce amazing increases in yields of corn, vegetables, fruits, soybeans, and hundreds of other vital crops—including meat and dairy products—*Wartime Farming* is a timely film, and is being exhibited extensively throughout the vast region in which it is appropriate.

Other outstanding SCS pictures are:

A Heritage We Guard, shows the exploitation of America's virgin resources and tells how a complete conservation program benefits all resources, and mankind as well.

Roots in the Earth, a social document of the Spanish-speaking people of the upper Rio Grande. Unwise use made the land and the people poorer, but conservation is helping to improve conditions. (This film is available in both English and Spanish narrations, as are the two following.)

Grassland, conservation in the range country of the Southwest.

Muddy Waters, showing how land in that region of aridity and cloudbursts, of deserts and flash floods, can be safely farmed.

Rain on the Plains, a film setting forth the problems of drouth and wind erosion in the plains country, and the use of conservation methods to conserve water and prevent blowing soil.

Technicalities Avoided

None of these pictures, it will be noted, are technical pictures. There are only two on the Soil Conservation Service motion picture list that can be termed technical: *Terracing in the Northeast* and *Roads and Erosion*. The former is a clear-cut instructional film designed to show farmers what the job of terracing is, and the latter is a discussion of roadside erosion and means of overcoming it. For presentation of detailed technical information, the Soil Conservation Service uses film strips. The reason for this is that the one-frame-at-a-time exhibition of film strips permits longer study of important details than do motion pictures, while the sweep and movement of movies are most valuable at creating impressions and ideas.

A film is now in preparation, which will show the activities of a whole year on a typical general farm, including erosion problems which the farmer has to fight, installation of conservation measures, and the results. This film actually will be a full year in the shooting, before it is completed.

Use of the relatively few films

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Guarding National Resources *for* the U. S. Forest Service

TREES MAKE FILM; and the United States Forest Service, Department of Agriculture guardian of our forest resources, is placing increasing reliance on film as the most effective medium for recording and recounting the gospel of what's needed to keep plenty of trees coming today and tomorrow.

Needless wasteful cutting of the forests under the guise of war necessity threatens the post-war economy of vast forest regions. Fires carelessly set in the timber by thoughtless citizens are wreaking as much havoc as enemy bombs or carefully planned saboteur action. Shortages of certain forest products vital in the manufacture of war essentials are threatening our war effort.

Three Cardinal Aims

Wasteful cutting must be stopped. Forest fires must be prevented. Output of select logs must be stepped up through technical advice and marketing assistance primarily to farm woods owners.

These are three cardinal points the Forest Service is now seeking to drive home to the American public to a large extent through the use of educational films.

Titles of the eight Service productions released since the outbreak of hostilities are indicative as follows: *There's More Than Timber in Trees*, *Trees on the Warpath*, *Wood Vital to Victory*, *Vigilance for Victory*, *Wood for War*, *The Tree in a Test Tube*, *Alaska's Forest Arsenals*, *Your American Tragedy*.

Color Film Coming

Nearing completion is a color film showing how natural rubber is being produced from the cultivation of guayule, a desert shrub native of the arid Southwest and Mexico. With their record as the largest and most experienced tree planting agency the Forest Service was assigned the task of establishing nurseries, leasing suitable lands and placing large areas under guayule cultivation. Films telling the guayule story to landowners who lease their fields for rubber production; and training films teaching project workers correct planting and handling procedures were of first importance.

Administration of the 170,000,000 acres of wild forest and range lands in the national forests involves management problems of broad and varied latitude. To obtain from these vast public holdings "the greatest good for the greatest number of people in the long run" public education is necessary in many subjects. In the list of available Forest Service films are pictures on timber management, range management, big game management, stream control and watershed management, forest protection and forest recreation. Geographic, social and economic variations add additional educational complications and call for different films to fit different parts of the country.

Use of films by the Forest Service began in the days when 35 mm. silents were the only cine medium. With progressive reductions in cost through development of cameras, projectors, and film manufacture, processing and printing, the number of Forest Service films increased and their quality improved proportionately. None of the 35 mm. pictures and only a few 16 mm. silent productions remain in circulation. All releases in recent years have been sound films. Also, with the rich scenic background of the forest outdoors as the natural setting, the tendency is toward use of color.

Production Specialized

Primarily due to the highly specialized and complicated nature of the forestry story the Forest Service has found it expedient to remain an individual producer.

An exception is the current Wartime Forest Fire Prevention Program trailer *Your American Tragedy*. This, a Hollywood production, was made in cooperation with the National Advertising Council and released through the Office of War Information and the War Activities Committee of the Motion Picture Industry to all commercial theaters.

BIG TIMBER TAKES BIG MEN *in the Pacific Northwest. Scene from the Forest Service film "There's More Than Timber in Trees".*

One of the most popular Forest Service productions to date is the dramatized story of America's present forest situation *There's More Than Timber in Trees*. This three reel educational picture in Kodachrome, filmed in all forest regions of the United States, represents a new departure from the usual off-stage narrative type of government release. The picture has been well received by schools and adult groups.

Under impetus of great action

(CONTINUED ON PAGE THIRTY-SEVEN)

THE RAVAGES OF FOREST FIRES *from "Your American Tragedy" produced by the Forest Service in cooperation with the wartime Forest Fire Prevention Campaign.*

CANADA'S WAR FOOD FILMS

Scene in "Battle of the Harvests".

THE NATIONAL FILM BOARD of Canada, headed by the dynamic John Grierson and staffed by such able editors as Stuart Legg, has covered the agrarian side of the world conflict in at least two comprehensive and, as usual, thoroughly told film subjects.

The first of these, *Battle of the Harvests*, is now generally available for use by county agents and extension workers in the United States. Prints may be purchased on the economical cost-plus basis through Castle Films, Inc., exclusive U. S. sales outlet.

Battle of the Harvests shows the farmer and his fields, mobilized in a world battle of food production to serve the fighting nations. Food represents half the weight of goods moving today between the allies, and upon the western world rests the grave responsibility of producing the essential foods for wartime and preparing to rebuild the fighting fiber of populations released from hunger. The complete 22-minute production costs only $17.63 for a 16mm sound motion picture print.

The other subject, *Food, Weapon of Conquest*, has been widely shown as a United Artists theatrical release in the U. S. and is now available for U. S. sale or rental to members of the Educational Film Library Association. *Food* is a 20-minute subject.

Based on captured German war films, Allied newsreels and original material filmed in Montana, Pennsylvania, Iowa, the Canadian Northwest and Britain, *Food* is one of "World in Action" series. It tells the story behind the Nazi's use of food as a weapon for ruling their conquered peoples. It also portrays the valiant stand of blockaded Britain and the vital importance of food production in the Western Hemisphere.

Chicago headquarters of the National Film Board of Canada is at 84 East Randolph Street. J. Margaret Cutter is in charge.

Canadian headquarters of the Board are in Ottawa with Wesley Green, as chief of distribution.

"FOOD—WEAPON OF CONQUEST" *is an outstanding war film contribution by Canada's National Film Board. American audiences, both rural and urban, should see this forceful story of food's vital role in wartime. (Above) Graphic map of Axis-dominated Europe.*

New Training Film Catalog

★ Illinois Institute of Technology, Chicago, is the sponsoring publisher of a new and most complete industrial training film directory, prepared by the visual education office of this technical training center under the direction of James Engle and H. L. Minkler. Prof. J. I. Yellott is head of the Engineering Defense Training Program at the school.

The new directory, containing a complete cross-indexing system and detailed listing of hundreds of technical film subjects (intended for war training purposes) is available at cost ($1.00) including quarterly supplements.

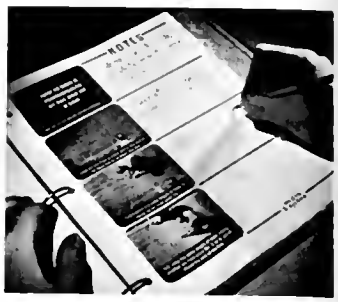


Photo & Sound's Manuals

• On the theory that if it's worth learning it's worth retaining, a program of supplementary manuals designed to accompany their series of discussional slidefilms on shipfitting has been developed by Photo and Sound, Inc., San Francisco producers of motion pictures and slidefilms.

The manual has a variety of valuable uses. It is handy for making special notes of class discussion and instructor comments during the showing of a discussional slidefilm, and it is convenient and comprehensive for home study following the presentation of the corresponding training film. It provides the trainee with a thorough and completely illustrated reference work on the principal factors involved in the slidefilm.

Users of these supplements to the visual training program have found that the cumulative effectiveness of the training films is greatly enhanced when students keep the supplements in binders for repeated future use, the complete set constituting an unusual and invaluable text book of the entire training course.

In format the manuals are simple and inexpensive, consisting primarily of reproductions of the visual material and text, plus ruled spaces adjoining each slidefilm frame for expanded notes on questions, comments and points of discussion stimulated by the film itself.

Photo and Sound's slidefilm series for shipfitters includes titles for every major shipfitting practice. The supplementary manuals are available only to purchasers of the corresponding film subjects. The low cost of producing the manuals in quantities makes it practicable for purchasers to distribute them to their trainee classes without charge to the individual student.

Included in the shipfitting series produced by Photo and Sound is a unit of five films on blueprint reading that has found a responsive market among schools and firms outside the shipbuilding field that carry on blueprint instruction.

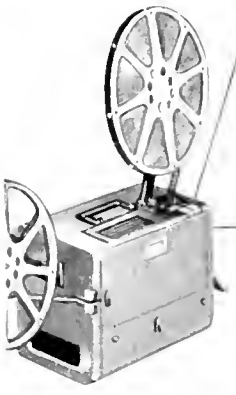
All work and no play? Not where personnel men are alive to their jobs. Workers need relaxation and thousands of late releases—like "Hellzapoppin"—do the job well.

Soldiers learn with movies. So do high school students, using Army-Navy films in preinduction, preflight courses

War industry training is speeded and broadened by U. S. Office of Education films rented and bought from Bell & Howell.

MOVIES solve the world's greatest "GREEN HELP" problem

Victory Gardening is only one of many films on Civilian Volunteer Activities, designed to teach and inspire home-front fighters



THOUSANDS of youngsters are pouring into Army Camps and Naval Bases daily. Most of them have never seen a tank—never fired a gun or ridden in a plane. They're our toughest, *biggest* "GREEN HELP" problem.

But they don't *stay* green long. Movies show them the intricate insides of an aircraft engine . . . teach them self-preservation . . . how to come out of a dogfight *alive* . . . even how to carve a quarter of beef!

Your "green help" will season faster, too, when they learn with film. Sound films *show* how and *tell* how—clearly, completely. Movies teach more in each hour of training . . . teach workers in *groups* instead of one by one . . . turn out able, efficient employees by the *dozens* in the same training time required for one.

Save Old Projector Lamps

New lamps can be supplied only when burned-out lamps are turned in.

Buy War Bonds and Stamps

A Library Full of the Training Films You Need

In the Filmosound Library there are films for almost every training use. Many are specific job instruction. Others are designed to build morale. Still others are for out-and-out entertainment—so vital when all workers are working harder. New subjects are being added daily, after thorough analysis has proved their worth. Mail the coupon below to give us an idea of your specific needs. We'll see that you receive detailed information about how the Filmosound Library can help you.

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Please send detailed information on Educational and Training Films of the following categories

Name

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City State

MOTION PICTURE CAMERAS AND PROJECTORS

PRECISION-MADE BY

Bell and Howell

(CONTINUED FROM PAGE TWENTY-TWO

war effort, in order to encourage the development of the industry.

Defense Significance. Dehydration and concentration decreases the weight and bulk of food products, saves critical materials used in containers, and by saving transportation and shipping space, simplifies the supplying of essential foods to our armed forces on distant battle fronts, to our allies and to peoples released from the Axis yoke.

2. SYNOPSIS. Dehydration is one of the oldest methods of preserving foods. Dehydration of meats and of the flesh of fish was practiced by Indians when the Pilgrims landed on these shores. Our forebears sun dried a variety of products. Commercial drying of certain products has been an established practice for years. The overloading of our transportation system and the inroads upon our shipping by the demands of war has pointed to the necessity of reducing the weight and bulk of all goods destined for shipment. The need for some method of preserving foods destined for our armed forces also became apparent, as did also the need for saving critical materials used in packaging foods. Dehydration points to a solution for both of these problems, by reducing bulk and weight to an average of about 1-10 of the original and by preserving the food indefinitely if properly packaged. With dehydrated and concentrated food, one car or one ship can do the work of ten. The methods used to dehydrate vary with the product. The material is selected and prepared by grading, washing, peeling, trimming, checking, subdividing, pitting, seeding, traying, conveying, blanching or processing, sulphuring, drying, curing, packing and storing. Show various steps and the final results, with comparisons by size and weight, and reconstitute for the table.

This information is submitted to the Assistant Director and Director of Information for their approval. After approval the project is assigned to a director, who prepares a detailed shooting script, or the script may be written by one of the writers in the Department. Subject matter is furnished or reviewed by specialists of the Department. The shooting script in turn is submitted for approval as above and also to the Office of War Information. Approval of all motion picture projects is required by that office. Approvals obtained, shooting is then begun.

"On Location" Procedure

Ordinarily when scenes are to be taken on farms, without actors and silent, the crew consists of two or three men: director, cameraman and assistant. The general locations are selected in advance, but it is up to the crew to make all necessary arrangements for photography, using their judgment in the selection of scenes to illustrate the script.

If sound on location is required a sound crew of two men usually is dispatched to the scene. Shooting finished, the director with the assistance of a cameraman proceeds to edit the picture and complete the final script. Optical work is done on contract. Music may be furnished either under existing contracts or selected and arranged by our own staff. Recording may be done under contract at some commercial establishment, or by our own sound recording unit, depending upon where the talent desired is located. The finished picture is then presented to various interested agencies for final approval.

Usually if the above steps have been scrupulously followed, acceptance is unanimous, but occasionally haste or some other element has permitted a false note to creep into the film and then revision is in order. However, all these safeguards make it fairly certain that the statements made in a Department of Agriculture picture are true, insofar as it is humanly possible to determine the facts.

Film Subjects Limited

Since Pearl Harbor, Department production has been limited to subjects having to do with agriculture's part in war and defense—to problems involved in the conversion of our six million farms to the efficient production of the foods, fibers and oils needed in the prosecution of total war.

Among the 64 pictures produced since July 1, 1940, ranging from shorts to five reels, are the following, which may be considered as representative of the types of pictures now being produced.

Trees to Tame the Wind, 1 reel. A story of one of the most unusual tree planting programs ever undertaken in an effort to reclaim land ruined by wind and drought. A reenactment of the past with documentation of the present. Directed and photographed by Allen Luey.

Live at Home, 1 reel. Pointing out how and why farmers should grow the foods needed for their own families to help win the war. A narrative type of picture. Directed and photographed by Walter Scott.

Home on the Range, 1 reel. Shows the range country busy at its big job of providing meat for the foes of the Axis. Narrative type with documentary of range activities. Directed and photographed by Tom Hogan.

Vigilance for Victory, 1 reel. Depicts causes of forest fires which destroy vital wood resources needed for war purposes and shows how, through vigilance, fires can be prevented. A dramatic presentation. Directed and photographed by Carl Clancy.

The Farmer's Wife, 1 reel. A tribute to the farm women and an explanation of their part in winning the war. Produced by Wilding Productions, Inc., under the supervision of Duncan Wall and the writer. Documentary treatment with professional actors.

Six-Legged Saboteurs, 1 reel. A satirical combination of cartoon, live action and phantasy in which Axis leaders are pictured as insect enemies destroying American lives, property and crops, with Uncle Sam advising us what to do about it. Written and directed by Raymond Evans. Cartoon by Cartoon Films, Ltd.

Other Film Personalities

These are a few representative films made by permanent members of the staff. A roster of directors who have been temporarily employed on Department pictures from time to time would include the names of many men prominent in the film world, including Joris Ivens of *Spanish Earth* fame; Robert Flaherty, a pioneer in documentary film production (*Nanook of the North, Man of Iran*), and Pare Lorenz, whose direction of *The River* and *The Plow That Broke the Plains* brought documentaries to the fore.

Now! Automatic Sound Motion Picture PROJECTORS

Available for Immediate Purchase

BY SPECIAL government authorization, a limited number of superb new Mills automatic portable sound projection units are now available for immediate sale to war industries, schools, hospitals, government and public service agencies, projection service dealers and other outlets contributing to the war effort. This is the complete self-contained portable 16 mm sound motion picture theatre containing all operating parts—projector, speakers, amplifier, controls and screen—within a single large deluxe cabinet. All-electrically operated by push button switch. No attendant required—darkened rooms unnecessary!

Ideal for showing employee morale and training films, Army or Navy production incentive subjects, safety films, OWI war films, musical and news shorts as well as YOUR OWN COMPANY PICTURES—sound or silent—black and white or full color!

Only a limited number of these brand-new units are available! Purchases will be filled and deliveries made in the order received.

Complete Unit INCLUDING SCREEN AND A SECOND LENS **$595**

SPECIFICATIONS: Cabinet contains RCA 16 mm specially designed sound projector with RCA sound-15 watt amplification. Continuous reel holds 1,000 feet of 16 mm film, equivalent to 30-minute program. (Reel easily demountable for changing or servicing.) Uses any 16 mm sound or silent film in black and white or color. Conveniently portable cabinet equipped with casters for moving from one location to another. Operates on 60-cycle AC current, 110 volts. Six perfectly-balanced synchronized speakers. Net weight 446 lbs.—Width 35½ in.—Depth 29½ in.—Over-all height 79 in.—Screen size 17 x 22½ in. Special film forming drum and additional reverse image lens included. Each unit guaranteed against defective material and workmanship.

Auditorium-size screen attachment available at small additional cost.

A FEW OF THE MANY USERS:

- U. S. Navy
- U. S. Army
- Western Electric Co.
- General Electric Co.
- American Hospital Association
- Carnegie-Illinois Steel Corporation
- General Motors Corp.
- Stewart-Warner Corp.
- Swift & Company
- Packard Motor Co.
- Fergusan-Sherman Corporation
- Link-Belt Company
- Lockheed Aviation Corporation
- Wright Aeronautical Corporation
- Sears, Roebuck & Co.
- Marshall Field & Co.
- Illinois State Board of Health
- Eloise Hospital & Infirmary
- Appleton Electric Co.
- Alfred Decker & Cohn

Advantages for War and Post War Use

- Continuous automatic projection—no attendant required.
- No separate screen to set up or hang.
- Darkened rooms unnecessary.
- No separate outside speakers or amplifier required.
- Unit on casters; can be moved from department to department, floor to floor.
- Dual use—group or classroom education; also suitable for large gatherings with use of large screen attachment.
- Continuous reel automatically repeats program without rewinding or changing reel until complete new program is desired; also can be set for interval showings if desired.
- Ideal for use in cafeterias, recreation rooms, working departments for lunch period use, canteens, at factory gate during change of shifts, classrooms, hospital wards, solariums, etc.
- Just plug into a wall socket, press a button and the program is on!
- Added advantages for post war use: Branch office and dealer display for employee and sales training, office lobbies, product advertising, Film [illegible]

Address Inquiries to Industrial Sales: Automatic Projector Division

MILLS NOVELTY CO.

4100 FULLERTON AVENUE

CHICAGO, ILLINOIS

USDA FILMS from 1908 to 1943

CONTINUED FROM PAGE TWENTY-ONE

... Chester A. Lindstrom ... Associate Chief. With the completion of the Department of Agriculture South Building in 1935, the Motion Picture Service moved into a new laboratory in that building, the largest and best equipped in the government service, including a commodious and well-appointed sound stage.

On July 1, 1942, with a view to integrating motion picture work more closely with other informational activities of the Department, the Secretary of Agriculture transferred the Motion Picture Service from the Extension Service to the Office of Information, under the immediate supervision of Assistant Director of Information Duncan Wall, with Oliver Griswold in charge of distribution.

History Repeats Itself

For the present the Service is working under great difficulties, so far as production is concerned. Immediately after the attack on Pearl Harbor the U. S. Department of Agriculture laboratory, together with the technical staff, was taken over by the Office of the Coordinator of Information (now the Office of Strategic Services) to do secret war work, primarily for the President and the General Staff. Thus, for the second time in a quarter of a century the Motion Picture Service of the Department has been dispossessed, just at a time when its own work was expanding tremendously.

And so our annals, to date, close as they began, with our pruning hooks doubling as spears. Ways are being found to get Department work done, but by and large, the situation remains as General Sherman so aptly described it.

* * * *

Of the more than seven hundred films produced by the Department since 1913, many were ephemeral and negligible; and many more adequately served their purpose without being distinguished as examples of the motion picture art. A few, however, seem deserving of special mention, either because of the signal service they have rendered to American Agriculture, or because of their novelty or technical excellence from the scientific standpoint.

Remote Areas Contacted

We have mentioned *The Charge of the Tick Brigade*, first of the cattle tick films. This was followed by *Molly of Pine Grove Lot*, a frankly melodramatic silent film that for years served as the front line in the long, bitter, and sometimes bloody fight for the eradication of the cattle fever tick by compulsory dipping of live stock in quarantined areas. Thousands of persons still alive in the hinterland districts of the South will remember this as the first motion picture they ever saw, for the Bureau of Animal Industry motion picture truck carried "Molly" to many remote communities where commercial films had never been seen. The cost of producing "*Molly of Pine Grove Lot*" was not more than $3,000; the saving to the farmers of the south attributable to the campaign in which this picture played such an important part certainly runs into the millions. "Molly" was directed by E. W. Perkins, and photographed by the late Eugene Tucker.

Another picture directed by Mr. Perkins, "*Out of the Shadows*," achieved an all-time high among Department films in length of service and number of showings to farmers. Designed to further the campaign against bovine tuberculosis, this simple, two-reel story film was used intensively from 1921 to 1930 when the last remaining print was worn out, and during that time it was shown in every State and almost every County in the union 6,576 exhibitions, with audiences aggregating more than three million persons. The success of the effort to free our milk supply from contamination by the germ of tuberculosis is attributable in considerable measure to this film and its sequel, *Clean Herds and Hearts*. *Out of the Shadows* was photographed by George Goergens.

Subjects Suit Locality

The U. S. Forest Service early adopted the motion picture as a major medium of education in its anti-forest-fire campaign, and the Office of Motion Pictures produced for that bureau many films designed to inform the public as to the imperative need for care in handling fire in the woods. Among the early films of this type may be mentioned *The Fiery Lance* and *Red Enemy*. The Forest Service, like the Bureau of Animal Industry, has relied largely on motion picture trucks, with portable projectors and generators, to carry films to the remote districts where they might be expected to do the most good. Thus many of the Forest Service films have been made for specific regions. *Trees of Righteousness*, for example, was made primarily for use in the Ozark region of Arkansas.

Scientific Value Seen

The Department of Agriculture was a pioneer in the production of time-lapse cinematography, and some of its more important scientific films were made by the use of this technique. As early as 1899, long before most people even had heard of motion pictures, Gifford Pinchot, then in charge of certain forestry investigations for the Department, employed the late C. Francis Jenkins to make time-lapse pictures of the germination of seeds and the growth of young plants. A clock-controlled, motor-driven camera was set up in the Department greenhouse for the purpose, but the experiment failed, because the roof leaked and spoiled the film, after the mechanism had been running for some time.

Many years later George Goergens devised and began to assemble a time-lapse mechanism, but because of lack of funds this outfit was neglected and never given a fair trial. It was not till about 1923 that the late Howard Greene built the first time-lapse mechanism which Department scientists were able to use successfully in research. A film entitled *Studies in Plant Growth*, which attracted wide attention among scientists, was one of the early films shot with this mechanism.

Further Experiments

As an example of the use of this time-lapse camera in research may be cited an experiment made some years ago by Dr. George R. Greenbank, of the Bureau of Dairy Industry. By photographing at intervals the progress of a culture in

a spiral coil of glass tubing. Dr. Greenbank was able to establish the fact that the growth of the culture was rhythmically intermittent, a fact not revealed by the appearance of ordinary cultures on plates, and one that may possibly have a bearing on the problem of undulant fever.

About ten years ago an improved time-lapse mechanism, with controls operated electrically, instead of mechanically, was installed in the Department laboratory. It was with this outfit that Dr. E. I. Evans, of the Bureau of Dairy Industry, and Carl Turvey, of our laboratory staff, made the remarkable negative of the ovulation, fertilization and early division of the mammalian egg, from which was made the film entitled *In the Beginning*, which has proved to be far and away the most popular of all U.S.D.A. scientific films.

Final Goal Achieved

Up to the time when this work was done, few biologists anywhere had ever even seen the microscopic mammalian egg; certainly no one had photographed the sperm entering the egg and the ensuing division of the fertilized cell. So this monumentally laborious feat in the coordination of biological, microscopic and cinematographic techniques may be said to stand as unique in the annals of scientific cinematography. No one unfamiliar with the difficulties involved in such work can have any adequate conception of the great amount of labor and the special skills required for an achievement of this kind.

We only wish we had more jobs like that to cope with. We believe that the time-lapse camera is potentially one of the more important of the instruments available for research. Unfortunately it is also one of the relatively neglected—even in the United States Department of Agriculture, which we are proud to think of as the greatest scientific organization in the world.

[illegible] PAGE TWENTY-SIX [illegible] also contributed [illegible] carried vital [illegible] farm problems.

Of the different War Board films *Food Is a Weapon* and *Farmers and Defense* have been shown most with the highest attendance. *Safeguarding Military Information* and *Democracy in Action* rank next. Some of these have been available over a longer period of time. *Teamwork*, a more recent film, is also popular.

Extension Service Task

The Mississippi Extension Service, through its county agents, has been the principal medium for showing these films to farm audiences. The State War Board transmits all films to W. C. Massey, Assistant Extension Agricultural Engineer, at State College, who is in charge of the mobile sound motion picture outfit of the Extension Department and has charge of the extension film library.

Mr. Massey not only shows pictures throughout the State but furnishes films to county agents and others upon request. About two-thirds of the counties have their own sound motion picture projectors and equipment and can put on good shows anywhere electrical current is available.

Others who have obtained films and shown them to a lesser extent include local Farm Bureaus, chambers of commerce, and the Soil Conservation Service. These showings, however, are small compared to the operations of the State Extension Service and county extension agents.

All Classes Attend

Motion pictures are shown to all classes of farm people. For example, in February the Choctaw Indian Agency showed War Board films at five meetings to 585 Indian farmers.

The Negro county agent in Coahoma County used the Farm Bureau motion picture outfit to put on shows at eleven meetings with an attendance of 2,981 Negroes.

Summing up the comments of county agents and other agricultural leaders with experience in holding farm meetings they say that "if you want to get the people out to meetings arrange for a good picture show with at least one short comedy."

Attendance Holds Up

During February War Board films were shown 23 times with an attendance of 7,527. In March, War Board films were shown 53 times with 9,328 people attending. With gasoline rationing and tire conservation this is considered a good attendance.

◆ Utah (Milton Mangum): Farm

USDA FILMS in the FIELD

Mobilization was the signal gun for the biggest food offensive ever opened. Farmers and ranchers of Utah—as of the other 47 States—were being asked to break the all-time production record of 1942. Something was needed to start these meetings off well, off on the right foot. Dick Harris, Utah State AAA range examiner, realized this. So, at every meeting he attended in the farm mobilization drive, he showed a short sound film first. As he said, "It was just what we needed."

"Perhaps we'll never know," he said, "how much more beef will be produced because our ranchers saw the film *Home on the Range*, but I'm sure that the ranchers who did see it went home more determined to 'knock the heil out of Hitler.'"

Besides using films to spark farm mobilization and sign-up meetings here in Utah, they've been used on regular circuits.

The Soil Conservation Service held a series of educational meetings in the southern part of the State which proved very successful. Doyle S. Lund, district conservationist, hit upon the idea of showing the films in the high school during the day and then holding a meeting in which films were a part of the program at night. The students were used in this way to advertise the night meeting for their parents. It worked.

Now as to the type of film which takes best with the rural folks:

The River will be remembered for a long, long time. Nearly every conversation sooner or later comes around to the question, "Have you seen *The River?*" And the advice, if one hasn't, is always, "You should see it."

Teamwork, *The Farmer's Wife* and *The Battle Is in Our Hands* have been received with open eyes as well as open arms. The farmers and ranchers of Utah like them.

The battles on the farm front are largely without the color attached to other war efforts. It's milking cows twice or three times a day; it's cleaning out barns day after day; it's hoeing row after row of beets, or plowing acre after acre of land.

When a farmer sees his occupation flashed on the silver screen and hears a voice that speaks his language, he feels honored. He wants to be appreciated. Seeing a fellow farmer on the screen is a form of appreciation.

But he is also very critical of scenes that don't ring true. *Mom* in *The Farmers Wife* using a washboard was out of place, according to Mr. John Farmer of Utah.

War pictures are interesting but battle shots from the home front are what he likes. The music and scenes of *Home on the Range* hit a bull's eye. It made him proud of what he's doing to "lick Hitler and Tojo."

Oklahoma Field Reports

◆ Oklahoma (W. Lee Stevens): We do not know exactly what it is . . . whether it's the subject matter of the pictures, or the psychological effect which the announcement of a motion picture showing has upon the farmers, but our County War Board members say that they have much better success in getting a crowd out to attend business meetings if they feature a motion picture showing.

We have two 16 mm. sound projectors which are at the disposal of the county War Board members at all times. We have followed a practice of routing these machines on individual circuits to five or six counties at a time. When one county on the circuit finishes its showings, the machine is sent directly to the next county on the schedule. We keep the schedules far enough in advance so as to provide ample time for the counties to advertise their meetings and the motion picture showings. In certain instances, we are in a position to furnish machines on call from county agents and other War Board members.

One of the county AAA administrative officers remarked the other day, "Our turn-out for meetings is twice as large when we advertise a

motion picture film as when a straight discussion program is announced." This man is from a fairly prosperous area, and parts of the State which are less prosperous have even greater audiences.

As for the types of films which the people seem to enjoy, we have had a very favorable reaction to practically all the pictures which have been distributed to us through U.S.D.A. War Board channels. One picture in particular has been highly applauded . . . *Home on the Range*. A large part of Oklahoma is range country, and the scenes depicted in the film are in complete harmony with scenes from our everyday life. It also contains some very good information on meat rationing, which is of interest to every one of us today.

Show "Henry Browne"

Another film which has come to our State is the Negro picture, *Henry Browne, Farmer*. The first time it was screened was at a Negro agricultural leaders' conference at Langston University. When the lights were turned on immediately after the last scene, there were tears running down the cheeks of many. The Negro Extension District Agent asked that we lend him the film so that he could show it to his people all over the State. And from the reports which have come in, he has done a good job of showing it. For instance, during the month of December, 1942, the picture was shown seven times to 1,312 people.

In recent months our motion picture material has received more use than ever before, probably due to the increased number of farmer meetings which have been held to promote agricultural production in Oklahoma. During March we have reported a total of 42 showings with a total attendance of 2,158. We have not heard from some of the counties. From November, 1942, through March, 1943, a total of 10,431 persons, chiefly farmers, have attended meetings where U.S.D.A. motion pictures were shown. This represents 98 showings with an average of 107 persons attending. During January, Farm Mobilization month, we had 16 showings with a total attendance of 3,098. About all we have to say about motion pictures is to keep 'em coming our way and we'll see that they are distributed in the places where they will do the most good.

West Virginia Reports

♦ West Virginia (Roberta Clark): In West Virginia, we have discovered that the showing of movies or colored slides will increase the attendance of farmers' meetings between 50 and 75 percent if farmers know about the films ahead of time. Such get-togethers of farmers for morale and educational purposes are of inestimable wartime value at a time when community cooperation is often the only solution to such bottlenecks as shortages of machinery and manpower.

Extension agricultural agents in 19 of West Virginia's 55 counties have projectors and are showing many U. S. Department of Agriculture films to rural audiences and certain ones to urban audiences. From the State U.S.D.A. War Board office in Morgantown, they can borrow timely war films produced by the Department, OWI, and the British Ministry of Information, as well as slide projectors, slides, and film strips. Thirty-one counties in the State have formulated specific visual aids programs.

Serve Other Fields

Member agencies of the State War Board make varied uses of moving pictures and slides. Improvement of pastures with limestone and super-phosphate for increased production—AAA's number one job in West Virginia—is the subject of more than three hundred Kodachrome slides which belong to the State AAA Committee. Oliver Johnson, working with the State Extension Service, last spring filmed a West Virginia garden movie, which has since been in constant demand, and another popular movie on dairying. Extension folks say the "how to do it" information in the Victory Garden film taught a lot of would-be gardeners how to supplement Uncle Sam's food supply. Soil conservation—a truly uphill task in the mountain State—has been the subject for hundreds of slides photographed by the Soil Conservation Service and Extension's soil conservation people.

Much of this visual aids program preceded Pearl Harbor—but it served a vital wartime purpose in getting West Virginia's crop and pasture lands in tip-top shape for war production. Pasture lands fertile with white clover lay ready for increased numbers of milk cows and beef cattle in the spring of 1942, for West Virginia's food goals in the past two years called for more beef and more milk as well as more pork, eggs, chickens, and Irish potatoes.

Much Still Needed

The present visual aids program leaves much to be desired, Chairman J. Ward Wood of the U.S.D.A. War Board points out. First of all, we need to show more films at rural

(CONTINUED ON THE NEXT PAGE)

FIELD REPORTS on USDA FILMS

CONTINUED FROM PREVIOUS PAGE

meetings not only to attract audiences but to stimulate interest in the subject at hand. Secondly, we must follow up the showing of films with direct farmer contacts. Pictures alone will not bring immediate action.

In addition to these, we feel that more "how to do it" films must be utilized, while movies shown should also be more regionalized. Farm problems are often local in nature.

SHOWS TO 14,873

Oliver Johnson, Hancock County Agent, reports that in 1942 visual aids materials, largely sound motion pictures, were personally presented to 14,873 people in 224 communities relative to soil conservation, livestock and crop production, "Food for Freedom," and national defense.

"The wartime tasks on the farm are basically the same as always" says Mr. Johnson. "Soil fertilization for increased crop production, sanitation with baby chicks to control coccidiosis, and vaccination for hog cholera are carried out by the same methods now as before December 7, 1941. In prewar days the farmer might take two to five years to make up his mind that contour strip cropping and treatment of sheep for parasites were essential for profitable farming in West Virginia. Now time is short.

"Farm people are eager to receive information through motion pictures of what is being done on the farm front. The addition to regular educational film programs of such War Board movies as *Farm Front, Home on the Range, Salvage* and *The Farmer's Wife* are just the stimulant the farm people need. It gives them the faith that their job is an all important one and that they must do all they possibly can. Thursday afternoon, April 8, a West Virginia garden movie was shown to the Pughtown Farm Women's Club of Hancock County. This movie was followed by the War Board movie *The Farmer's Wife*. At the finish of this movie there was complete silence. "Mom" in this picture was their very selves. This helps them all to see that theirs is a war job which none exceeds in importance."

"TEAMWORK" IS CITED

Frantz L. Taylor, Putnam County Agent, says: "The film, *Teamwork*, which portrays the work of County U.S.D.A. War Boards, was very enlightening as to just how the agencies of the Department of Agriculture are teaming up to help the farmer go over the top in his 1943 production program.

"As a special news film, *U. S. News Review No. 2* proved very popular. Actual battle scenes of World War II were seen by many people for the first time. One rural school teacher made this statement: 'This is an excellent educational film portraying to us at home what war really means to those on the front, in comparison to the security we have here at home.'

"Another farmer states: 'I'm just beginning to realize how big this war really is. I'll do my utmost to see that those Marines on Guadalcanal are fed properly.'"

J. E. Prettyman, Mineral County Agent, says: "I have used the following War Board films in Mineral County: *Bomber, Democracy in Action, Aluminum, Army in Overalls, Home on the Range, Tanks, U. S. News Review No. 1, Salute to Farmers, Spring Offensive.*

"I feel that the pictures have done a great deal in advising the farmers of the critical situation we are in today and it has stimulated their action to produce more this year. In my work as county agent I find that it is a lot better to show the farmers a picture rather than tell them about need for production."

SLIDEFILMS

(CONT'D FROM PAGE TWENTY-THREE)

nels and the agents buy from the contractor as their needs dictate. Some agents carry a rather complete set and build them right into their programs. Others never use any visual material. On the whole, however, Extension workers have led the way in using visual aids for teaching and have found that it pays. Their contribution has not been world-shaking by any means, but they have proved that the screen offers ample opportunity for stimulating people to want things, for showing them how to get them and use them, and that the eye is one means of approach that needs little supplement and no apologies.

After the war is won, who knows? Visual aids will certainly not backtrack. The county extension worker can be expected to keep on using them, probably more intensively than he ever did before, with greater emphasis on locally produced materials and less waiting for Washington to give him what he needs. Without a doubt, those agents who come back from the war after having been exposed to the Army's excellent visual program will adapt it to rural teaching.

SAVING SOIL RESOURCES

(CONT'D FROM PAGE TWENTY-SEVEN)

at SCS makes it intensive. Service eld men find them invaluable in eir educational work, and it is gnificant that a recent request by ie Chief of the Service for employee suggestions brought numerus urgent pleas for more motion ictures for educational use in the eld. Plans are now being studied or producing within the next year lms that will directly benefit war nd post-war production and enable armers to overcome, at least partially, certain unfavorable weather actors.

Soil Conservation Service films re shown before a great variety of udiences. County War Boards have een using them extensively—and articularly *Wartime Farming in he Cornbelt*—to arouse interest nd enthusiasm in the gigantic task hat lies ahead of American agriulture: producing enough food to eed our armed forces, our civilian opulation, and help feed some of ur allies.

Film Audiences Varied

Other groups that make audiences or SCS motion pictures include Grange and local Farm Bureau neetings, and Production Credit Association meetings, as well as group meetings arranged by SCS ield men. 4-H clubs, vocational griculture classes, and many other ural and small town groups, particularly now those interested in war work.

Distribution is made through the Department of Agriculture film distribution channels and via film libraries maintained at the various regional headquarters of the Service.

In addition to the motion pictures, the Service has a score of film strips now in circulation. These are largely "how to do it" strips and are more or less technical in nature. They are used by field technicians to make clear to farmers the details of the various conservation practices that will help produce the increased crop yields so vital for the war effort.

A Distribution System

With ten regional offices, 150 national forest headquarters and some seven hundred ranger stations located in all parts of the United States and Alaska, the Forest Service reaches a large audience with its films through the medium of its own organization. Forestry education work in schools and communities is part of the responsibility of all forest officers. Projection equipment for showing 16 mm. sound films is circulated from forest to forest in each region. In some back country areas where electricity is not available showboats with self-contained power units have been employed. Isolated families in parts of the Appalachians and deep South have been known to walk as much as five miles to attend these showboat showings.

Films of the Service are also distributed through public film depositories such as those of State Colleges, YMCA centers, and the Extension Service. Occasional subjects are contracted to commercial distributors for showings in commercial theaters. Prints of any of the films may be purchased at Government rates by anyone who desires copies.

HOME ON THE RANGE *is the USDA screen story of our great livestock industry and its vital importance in the war program.*

FOREST SERVICE

(CONT'D FROM PAGE TWENTY-SEVEN)

programs such as the Civilian Conservation Corps and more recently the Emergency Rubber Project, the Forest Service is likewise making increased use of films for personnel training. One of the most important uses of this type of film is in the training of vast numbers of forest fire fighters. With hundreds of experienced fire fighters already gone and others constantly leaving for the armed forces the fire training problem has become accentuated many fold. Production and use of additional fire training films now appears as one of the best answers to fit younger boys, older men, and in some cases women for this arduous and often hazardous type of work.

DISTRIBUTING USDA FILMS

(CONT'D FROM PAGE TWENTY-FIVE) cludes such Department agencies as Agricultural Adjustment Administration, Extension Service, Soil Conservation Service, Forest Service, Farm Security Administration.

In some States, the job of motion picture handling is done by the visual aids unit of the Extension Service as a member of the War Board. The practice is not uniform state by state, since the member agency or agencies to handle the films at the State level are decided by the board, which so to speak, is closer to the ground than Washington. In some States the Forest Service may use some or all of the prints for a month, or the Soil Conservation Service, or the Extension Service. It depends on the season of the year and the meeting schedules of the various agencies.

Boards Are Handicapped

Many of the boards have had difficulties. None has a full-time motion picture specialist. Sometimes the personnel is inexperienced. Sometimes it's a case of leaving for the armed services or some other war job. Projectors are wearing out or becoming busier with other types of war films. Nevertheless, more and more adult farm audiences are seeing war films, despite all handicaps, despite even gasoline and rubber restrictions and longer working hours.

While the War Boards, as new distributing sources, are carrying on, the older channels of distribution are still in effect. The Forest Service continues, with its harder-worked personnel and scarcer time, the use of film in its campaigns of fire prevention and conservation education through its regional depositories. The new films all bear on the war.

Other Distribution Outlets

Soil Conservation Service, with its wartime importance in stepped-up farm production, continues to reach its special audiences out of its regional film libraries. The Agricultural Adjustment Administration continues distribution from its State offices. Extension workers continue to draw on the 50 cooperating depositories. Farm Credit Administration and its Production Credit Associations still handle films from their district and local offices.

At the same time, the personnel of all these action agencies obtain the new war films from the State U.S.D.A. War Boards of which they are members.

The 50 cooperating depositories continue to receive Department films in three ways. As the war films are played off through the War Board agencies serving adult meetings, the prints are recalled, inspected, serviced, and dispatched to the depositories for their general type of distribution. Meanwhile, some of them purchase their own prints. Some Department films, like *Democracy in Action*, *Home on the Range*, and *Henry Browne, Farmer*, contain enough broad facts about agriculture to be valuable war information to urban audiences, who as consumers are interested in seeing the farmer's end of the situation. These have been put into broad nontheatrical distribution by the Motion Picture Bureau, O.W.I., so some of the depositories which have cooperative agreements with the Department of Agriculture receive prints of these subjects from O.W.I.

Influence on Libraries

There was a time when a fairly large proportion of the films being handled by the film libraries of educational institutions throughout the country were agricultural. Even up until the war, only a few Government agencies distributed films, with the bulk coming from Interior, Bureau of Mines, and Agriculture. But now many new war topics are being treated in pictures by Motion Picture Bureau, O.W.I., Coordinator of Inter-American Affairs, Office of Education, War Department, Navy and Marine Corps, etc., plus the British Ministry of Information, National Film Board of Canada and other United Nations units.

As a pioneer in the production and use of educational motion pictures, the Department has a long and interesting record. But it is definitely not content to rest on that. In distribution the modern watchword is flexibility to meet changing conditions. The Department, as a Government motion picture user, is no longer working alone. We help and are helped, both in production and distribution, by the numerous film units of the U. S. Government and the United Nations.

Some Eventful Years

A lot has happened since the Department distributed the world's first government-produced film, and even since the Extension Service of the Department issued "Miscellaneous Circular No. 78—Use of Mo-

tion Pictures in Agricultural Extension Work," in 1926. (Now out of print and a collector's item among educational film distributors.) A few quotes:

"The agricultural extension agent contemplating the purchase of a motion picture projecting machine (the pamphlet was referring to 35mm. silent portable, of course) may expect late hours, some worry, and considerable expense for upkeep, but he can reach three times the number of people that can be reached in any other way. . . .

"With his own machine, he can carry his film message to any place in his county where there is electric current, and if he has portable generating equipment he can show his films in any locality he desires. (The pamphlet devoted eight pages to hooking up a generator with the fan pulley or the rear wheel of a jacked-up car, and how to use storage batteries.)

Used Portable Generators

"The most striking results recorded in the use of Department of Agriculture films have been those in which the films were carried to the people with portable generators and projectors and were shown in the surroundings where they would have most effect.

"In many instances Department of Agriculture films thus exhibited in some out-of-the-way church or schoolhouse or in some secluded grove have given the local population its introduction to 'the magic of the silver screen.' Instances are recorded of women with babies in their arms walking 10 miles and standing 90 minutes to witness such exhibitions. In another case a farmer with his entire family followed a Department of Agriculture 'movie' truck for three days; they saw the same films in different localities on three successive evenings, and seemed to get more benefit from them with each repetition. . . .

"Music greatly enhances the value of a picture. Organ music, orchestra music, piano music, or even phonograph music, played while the pictures are being shown, will be found very helpful. The music should be soft and unobtrusive, not much more than an undertone, and should either definitely reflect the spirit of the films or be of such a neutral tone as to harmonize with anything. . . .

Tom Hogan, ace USDA cameraman

This Was History

"The Department of Agriculture distributes most of its films from its motion picture laboratories in Washington, but urges that the State agricultural colleges or extension divisions take over this work within their respective territories. . . . Adoption of such a plan in all States would save time and expense involved in shipments between Washington and all States of the Union."

Because the State U.S.D.A. War Boards are natural channels to farm leadership, the Department periodically distributes appropriate types of O.W.I. films to that segment of the rural audience. For example: *Salvage, Letter from Bataan, Divide and Conquer.*

Agricultural films are exchanged with the British Ministry of Information. They show some of ours in England and we have three of their wartime farm-production films in distribution. Some of the Office of Inter-American Affairs films are similarly handled, and that office has put Spanish and Portugese sound tracks on some of the North American agricultural films for showing in Latin America.

Over-Seas branch of O.W.I. likewise, has used numerous Department of Agriculture films in its foreign distribution. The State Department also is working on some for export.

Well-Balanced Library

From the official releases of the various Government producers, we are able to provide the State U.S.D.A. War Boards with a library of well-balanced programs. By recalling and reallocating among the States, the variety is kept reasonably current. In large part, the increased use of films may be ascribed to the better quality of production, both technical and in terms of its satisfying the rural desire for new facts about the war.

As of this date, the personnel of the Distribution Section, Motion Picture Service consists of one chief, one head of booking unit, one secretary, one supervisor of shipping and inspection, two clerks, one film inspector. The production unit and the distribution unit share one projectionist. Morale is high and hours are long. All personnel knows what the films mean to the farmers and what the farmers mean to the country.

IN THE SERVICE:

★ The widespread use of visual aids in the Army, Navy, Marine Corps and Coast Guard is reflected in this new department of BUSINESS SCREEN. H. L. Mitchell, one of our staff members in the service, brings us this first report:

♦ It is common knowledge that the Army, in common with other branches of the service, is using training films with increasing effectiveness. Some indication of what "effective use" amounts to is always of interest, however, and the program at Camp Livingston, La. which calls for films may serve as a more or less typical case.

In this southern camp alone, attendance at screenings has reached nearly a million in one month, and as many as 1,817 showings of 450 subjects have been made. In addition to motion pictures, the camp film library also has about 1,500 filmstrips which are used in training lectures. The library is under supervision of Thomas F. Huggins, an educator from west Texas and a pioneer in the use of films in classrooms. Subjects, of course, cover a wide variety of military subjects—even to the proper way to do KP.

The camp has available 17 projectors, and a five-hour course is conducted for projectionists, completion of which gives those who take it—usually one man from each unit in training—an Army projectionist's card. The telescoped course trains men both in operation and upkeep of the equipment.

Adjacent to the film library is a preview room for officers, and while use of films throughout the training plan is not compulsory, the extensive use of the previewing facilities indicates a high degree of acceptance.

With the Marines in the Pacific:

★ From the other side of this global battle front, Lt. Col. George O. Van Orden, United States Marine Corps, "somewhere in the South Pacific," praises the efficacy of the Signal Corps' training films in a personal handwritten letter to Maj. Charles F. Hoban, Jr., of the Army Pictorial Division.

"You are working for a swell outfit," Col. Van Orden writes. "We would have been utterly sunk without those training films. I have had considerable experience with visual training aids for several years before coming out here, and there was a day when I felt rather despondent about military training films.

"The pictures are swell. They are interesting as they are instructive, and I do not see how anyone could consider omitting them from the demonstration phase of the cycle of instruction. Films such as 11-321, 7-393, and others are magnificent. I thought at first that the ending of 7-275 was corny as hell—but after screening it before some twenty-five audiences I changed my mind. These young fellows ate it up. *All* your work is swell."

New Screen Aids Training

★ A new projection screen unit designed primarily for our Armed Forces, and now available for educational and other visual training use, is announced by Radiant Manufacturing Corp., of Chicago, Illinois. The new item, called the Radiant Day-Time Projection Box permits showing pictures in broad daylight by means of a shadow box construction. It has large audience capacity and provides greater light intensity due to a glass beaded, brilliant "Hy-Flect" surface.

The construction of the Radiant Day-Time Projection Screen permits visual training directors, instructors and educators to set up the unit quickly and easily and to adjust the height to four different positions. Folds compactly and all parts are easily fitted into a storage case. Films or slides can be clearly projected to audiences up to 150 persons. This new unit is most useful to training schools, war industries, shipyards, hospitals, conventions.

Interior of the completely equipped modern visual research classroom at studios in Detroit

Jam Handy Opens "Eye" School

★ The Jam Handy Organization, Detroit, Mich., announces the opening of Jam Handy Eye School No. 1, a model school house completely equipped to integrate motion pictures and slidefilms with routine methods of teaching.

The primary purpose in establishing this first school room of its kind, is to inaugurate a series of clinics on visualized instruction as a means of determining the most effective methods of using the picture screen in school and college classes, in vocational training, and in training in industry.

It was felt that only in such an institution as this can the various visual aids problems and needs of the instructor, and the experience and products of the picture producer, be effectively integrated for the benefit of education and training in general.

A wide range of teaching experiments will be conducted in the Eye School Clinics with the cooperation of professional teachers and instructors both from schools and from industry. Experiments will enlist the help of pupils, students and industrial workers of the average type, and of all ages as the clinics progress, and findings of the clinics will be made available from time to time to all those interested.

The wide and rapid expansion of the wartime visual training program, has been partly responsible for the founding of this first experimental school, as well as the need to establish visual teaching and training upon a firmer foundation of techniques, to make visualized education and training most effectual.

Special studies will be conducted as to how visuals may best be used to take more of the burden off the shoulders of the teacher—at a time when the Nation is over 50,000 teachers short, due to the war.

It also was realized that the tremendous step-up in industrial training, involving the use of the screen, demands that more information and guidance based upon experience be made available to employers in war plants and factories.

The first Eye School is not only equipped for the most effective use of visualized teaching but compares in every other respect with the most efficient and advanced of modern public schools. The proper placement of projection equipment, screens and lighting facilities have been worked out, as well as the maximum convenience for the instructor in utilizing them in every day work.

Entrance of the new "Eye" School

Photo & Sound Add Animation

♦ Complete facilities for motion picture cartoon animation have just been installed by Photo and Sound, Inc., San Francisco motion picture and slidefilm producers, the first equipment of this type to be set up in San Francisco.

CAMERA EYE

A PAGE OF EDITORIAL COMMENT AND REVIEW

THEY'RE PASSING AMMUNITION in the fields and pastures of America these coming harvest months. Winning the battle of food production *now* won't depend on how many films are shown to farm audiences this summer but the campaign for production in 1944 must be laid out *today*. That is the editorial keynote of this Special Edition of BUSINESS SCREEN which we have almost wholly devoted to the past and present film program of the U. S. Department of Agriculture.

Whether your interest is that of the county or extension agent seeking new material for showing to your farm audiences during the coming winter season or the manufacturer of farm products or foodstuffs, this program deserves your thorough understanding and your utmost cooperation. The FOOD FOR FREEDOM campaign is hardly begun. From the soil of America must come the guarantees of freedom from want and starvation that might otherwise soon undo the results of military success. Not only in lands abroad where the peace is to be won and held but in the toughest, hardest months of combat and war production still ahead, we must look to the American farmer and his fields.

As Secretary Wickard has so well said, in films "we have potentially the most useful medium of education yet created." Pictures are needed in the field of nutrition, of food conservation and rationing. As we have pointed out elsewhere in this edition, we should show visual indoctrination films to thousands of urban young people whose services will be needed on our farms again next year. The entire field of agriculture still stands in need of permanent visual education materials on basic subjects taught in rural classrooms and in our agricultural colleges. We envision entire sequences such as the University of Wisconsin short course to be produced in sound films of long-range value.

The challenge to use this medium wisely and well is again laid down this time to the staff and personnel in charge of visuals for the Department, and to the 5,000 hard-working county agents and other field workers. The challenge and opportunity to provide NEEDED films where they cannot otherwise be produced from available Federal funds should be seriously considered by the manufacturer of agricultural implements and other products. Such service to the American farmer and the equally wise expenditure of budgets will earn the goodwill of the farm audience and the gratitude of the entire country. Food is a weapon. We must produce more to win both the war and the peace that follows.

Twenty Fighting Men

★ An example of the inspirational value of pictures in stimulating those who produce food to greater effort is Ralston Purina's new sound motion picture *Twenty Fighting Men*. Produced by Jam Handy for public showing, the new subject was recently premiered for company audiences. To be reviewed in our next.

USOE "In Production"

★ Without much fanfare, the production by the U. S. Office of Education of vitally important visual training materials needed on the war production front goes on in schools, shops and studios all over the U. S. Last we heard, Floyde Brooker, chief of the Visual Aids for War Training staff, was in California, Ford Lemley in Texas and then back in Washington. Lyle Stewart was in Buffalo and the other hard-working specialists on this tremendous production project were similarly and literally making the chips fly. There are about twenty subjects in production in the Aircraft Work Series; thirty in the field of Shipbuilding Skills; forty-nine additional in Machine Shop Work; twenty in the field of advanced engineering and inspection methods. Of these, the all-important field of electronics is to be covered in four subjects and equally vital instruction in foremanship will be given in a comprehensive series.

To the list of producing companies previously given in these pages (ATLAS, BRAY, PHOTO & SOUND, JAM HANDY, RAY-BELL, etc.) there should now be added such names as AUDIO PRODUCTIONS, INC.; BELL & HOWELL CO.; CARAVEL FILMS, INC.; HERBERT KERKOW; LOUCKS & NORLING STUDIOS, JAMES L. BAKER (MODE ART PICTURES, INC.) and GENE K. WALKER. To these additional contractors, the Office of Education has awarded the final series of subjects, thus completing allocation of the year's program.

A section of the forthcoming issues of BUSINESS SCREEN will be devoted to production news and reviews of these subjects. We hope to be able to present (as before) a comprehensive special edition.

They Serve America:

★ A little while after we started this book "Ted" Curtis paid us a friendly visit at our first offices in Chicago. You don't easily forget the kindness and good faith which were manifest in this and in later visits to his office in Rochester. So when the United States Senate confirmed the promotion in June of Brigadier General Edward P. Curtis, formerly sales manager of Eastman Kodak's motion picture film department, we reserved the item for this, our personal column. General Curtis' promotion was given in recognition of conspicuous leadership during the Tunisian campaign. We are proud beyond words.

★ Richard M. Hough, formerly Midwestern manager for Modern Talking Picture Service, now Lt.j.g. at the Navy's Photographic School, Pensacola. *Sons in service club:* Captain Paul L. Brand II; Ensign Malcolm P. Ewing. Lt.j.g. Fred Roberts writes from San Diego where he is audio-visual training officer at the Base there. The New York chapter of the Society for the Advancement of Management heard Lieut.-Commander Patrick Murphy, chief of the visual training section, U. S. Coast Guard on May 7th. Commander Murphy spoke on "New Techniques of Visual Training in the Armed Forces."

A Boon to Visuals

★ The great contribution made to the cause of widespread use at low cost of visual training and informational subjects of our government and Canada through the distribution facilities of Castle Films should somehow, someday be told. For the U. S. Office of Education, the Office of War Information, and the Department of Agriculture the Castle organization pioneered the cause of low-cost to the user. While this has sometimes meant great effort at small return to the visual dealer, all who have served America and the cause of visuals through this activity can take pride in the fact that this has been the greatest impetus to the nationwide use of 16 mm. films this country has ever seen. In post-war America Federal sponsorship must be supplanted by similar mass-scale production by private enterprise. Who can doubt that it will be done?

Equipment Available

★ You can get tube and lamp replacements and other electronic parts for sound projectors according to WPB limitation order L-265, providing the particular item has been produced by basic manufacturers in this field. But you will have to turn in the old part or used tube *or* certify that you lost it. *See your dealer.* Repair, maintenance and operating supplies are covered in the AA-2 category. Products available in this category include items under $100 such as SVE's Model DD projector, all types of screens (subject to metal orders) and similar supplies such as reels, cans, shipping cases *where supplies permit.*

Coming Attractions:

★ In addition to the industry's first and most complete catalog of SAFETY FILMS, the forthcoming Issue 2 of BUSINESS SCREEN will feature the film story of the OPA, an article about Nutrition Films, a survey of the film programs of outstanding agricultural concerns and reviews of the latest films. Among these: *Twenty Fighting Men*, the new Purina sound motion picture; and *This Too Is Sabotage*, new Westinghouse feature.—OHC.

HERE IS THE MOTION PICTURE STORY OF THE FOOD FRONT

in United States Department of Agriculture 16mm. Sound Films

Never before has food . . . its production, distribution and conservation . . . been so important to this nation . . . and to the world. This country must face the problem of converting its food production to the needs of total war. Never before has there been such a necessity for all the people to cooperate so thoroughly on the food front. Here are motion pictures that show how America is fighting the war on the Food Front. These pictures are LOW IN COST! Show them now!

8 SIGNIFICANT SUBJECTS!

WARTIME FARMING (A106) 10 mins., $8.53

A timely picture on the importance of the corn belt region in American agriculture. Story of erosion during World War I. Conservation measures taken. Corn belt's contribution to the war effort today.

DEMOCRACY IN ACTION (A100) 10 mins., $8.53

America's vast agricultural resources and how farmers are meeting the ever-increasing food needs of the nation. Interesting scenes of the production and processing of milk, eggs, beef, grain, and cotton.

NOME ON THE RANGE (A101) 10 mins., $8.53

A beautifully photographed action picture of the Western range country. Explanation of why there may not be enough meat to give all civilian consumers the cuts to which they are accustomed. Included is a fast-action round-up, complete with vaccine injection and branding.

HIDDEN WEAPONS (A104) 10 mins., $8.53

Need for wartime repairs and conservation on the farm. Waste and carelessness revealed as saboteurs. Many examples on how to conserve materials, produce and valuable time. Special stress given to the need of making efficient use of time. Ideal for showing to any workers.

TEAMWORK (A107) 9 mins., $8.01

How various agencies of the Department of Agriculture can help meet production problems of wartime farmers. By teamwork between the farmer and the local organization of the War Board, problems which the farmer cannot solve himself are met jointly.

THE FARMER'S WIFE (A103) 8 mins., $7.49

This inspiring film is a tribute to the farm women of America and their essential part in the war effort. How women and girls in rural areas are carrying on important work which is a parallel to that done by women in factories. A thrilling picture for men and women.

HENRY BROWNE, FARMER (A102) 10 mins., $8.53

A simple, moving story of a Negro farmer and his family—what they are doing individually and collectively to win the war. Farmer Browne plants more. Mrs. Browne has a victory garden. Young Henry milks the cow. Sister has a flock of chickens. A heart-warming ending.

FARM BATTLE LINES (A105) 10 mins., $8.53

In action scenes of troops and ships, this picture shows the way farm products are actually used . . . cotton for explosives and plastics, cottons and peanut oil for aircraft engines and paints. An inspiring film that shows how different workers serve the cause of freedom.

FREE! **Folder describing these films at greater length. Fill out and mail coupon below.**

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DISTRIBUTOR FOR

U. S. DEPARTMENT OF AGRICULTURE

Castle Films, Inc., is the distributor of 16 mm. sound film for these Government Agencies:

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(including machine shop training films and U. S. Army and Navy pre-flight, pre-induction training films)

OFFICE OF WAR INFORMATION
DEPARTMENT OF AGRICULTURE
NATIONAL FILM BOARD OF CANADA

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Protecting His Future

KNOWING how to run 'em and how to fix 'em "when the chips are down" is *important* to him. Keeping mechanized equipment in working order under tough combat conditions may mean life or death to the man over there.

VISUAL TRAINING AIDS help make sure that the men who use, maintain, and repair war products understand their operation and how to keep them running.

MEN CUSS what they don't understand and DISCUSS favorably the products they have learned to use right.

We are privileged to assist farsighted manufacturers who contribute to the training of men in the satisfactory use of their products. To other manufacturers we can give the benefit of much that has been learned in this important phase of the war effort.

The JAM HANDY *Organization*

Visualizations ◦ Educational Sound Pictures ◦ Slidefilms ◦ Vocational Trainin

NEW YORK	WASHINGTON, D. C.	DETROIT	DAYTON	CHICAGO	LOS ANGELES
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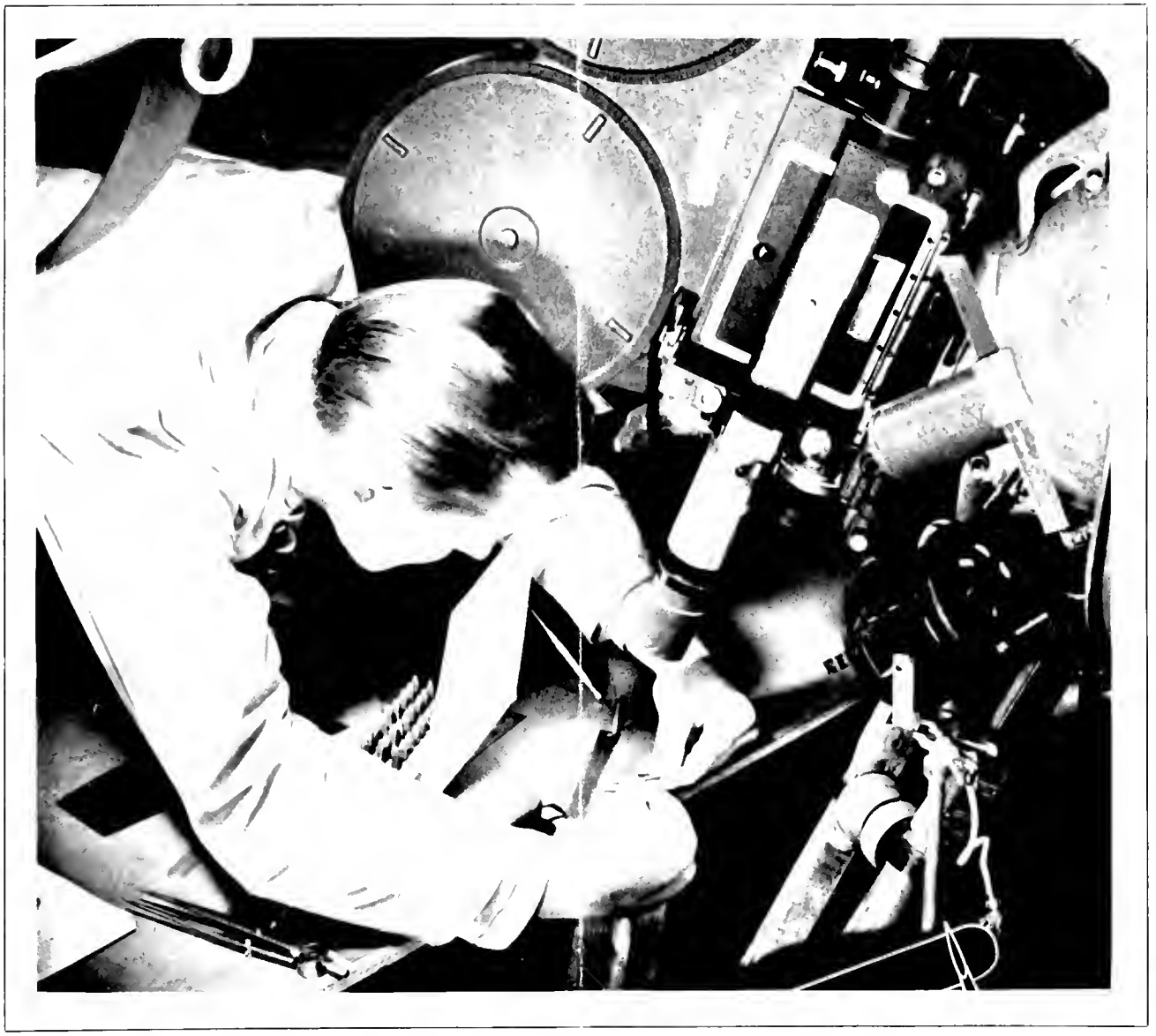
COlumbus 5-7144	District 0611	MAdison 2450	ADams 6289	STAte 6758	HEmpstead 5809

BUSINESS SCREEN

M A G A Z I N E



No. 2 VOL. 5-1943

BY DAILY WIRE, by phone, by mail — we learn of the extreme urgency for Victor 16mm Motion Picture Equipment — Animatophones — from the Signal Corps, from the Navy, the Army, the Marines, the Air Corps, from Industry, and training schools — the world over.

There's but One Answer — that nothing can equal the Sight - Sound - Sequence advantages in 16 mm Motion Picture Equipment for training millions faster, faster, always faster.

It took a war to do it . .

Some would have continued perhaps for generations with the "Little Old Red Schoolhouse" methods — others might have gingerly given it a haphazard trial — but today, all concede its unquestioned superiority as a teaching-training medium.

Wars are lost because of inadequate training. Every day faster and better training, highlighted with Sound Motion Pictures, is saving lives, bringing Victory closer. Every day quick, efficient training is speeding up war production. Every day 16mm Sound Motion Pictures are entertaining, building fighting morale of our Armed Forces.

In all—this is the greatest worldwide proof of the unbelievable accomplishments of 16mm Motion Picture Films and Equipment. Yes, something has happened . . . something that makes bright the future of teaching and training.

VICTOR—IN ACTION. *Today Victor is supplying Victor 16mm Cameras and War Motion Picture Projectors to all military fronts, all home war training fronts—and in addition "round the clock" production of important radar, airplane, and other highly technical war devices. Tomorrow —Victor, the active force in 16mm Equipment developments since the origin of 16mm, will supply your peacetime demands with the newest, latest war-born improvements.*

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Animatograph Corporation
Home Office and Factory: Davenport, Iowa
242 W. 55th St., New York
188 W. Randolph, Chicago
Distributors Throughout the World

FIGHTING FILMS!

FOR THE WAR EFFORT

It would take a book to tell the many ways in which Castle 16mm. film is being used by the armed forces in training schools, in camps, in the field, and at remote battle stations. They are serving from the foxholes of New Guinea to the bleak barrens of Attu. They are shown on destroyers and on submarines. Wherever fighting men need entertainment and relaxation from the rigors of war, these films serve as morale builders.

FOR THE HOME FRONT

Castle 8mm. and 16mm. movies bring the war fronts of the world to American homes...keep Americans aware of the hugeness and the importance of this war. Castle films help maintain morale not only in homes, but in plants and factories, and they play a major educational role in colleges and schools. They are a growing force in the enlightenment of the nation.

FOR BUSINESS and INDUSTRY

Castle distribution of machine shop and shipbuilding training films for THE UNITED STATES OFFICE OF EDUCATION has helped speed the training of workers throughout this country, and in Canada, Australia, Great Britain and India. Castle Films also distributes films for the U. S. DEPARTMENT OF AGRICULTURE, the U. S. OFFICE OF WAR INFORMATION, and the NATIONAL FILM BOARD OF CANADA. It is a leader in making and distributing business and industrial films.

CASTLE FILMS
INC.

RCA BLDG. NEW YORK, 20 | FIELD BLDG. CHICAGO, 3 | RUSS BLDG. SAN FRANCISCO, 4

★

WORLD'S LARGEST DISTRIBUTOR OF 8 MM. AND 16 MM. MOVIES

When Post-War Competition Starts, How Quickly Can You Train a Sales Force?

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

APPROACHING VICTORY is a challenge to every company producing war materiel to step up output . . . shorten the war . . .

Meanwhile, it is also a challenge to managers of sales personnel and training to be ready with a top-flight training program.

The planning of such a program need not slacken your war-time effort in the least.

To the contrary, there are many things you can set in motion—just by saying the word—which will save you months of headaches and delays when the moment for conversion comes.

For example, there's research to be done, by an experienced producer of training films, to help determine basic needs . . . to establish a sequence of subjects to be covered . . . to devise the most effective treatment . . . to prepare preliminary outlines . . .

More than that, there are certain training films which presumably can be put in work RIGHT NOW—so that when war ends, you can swing into instant action.

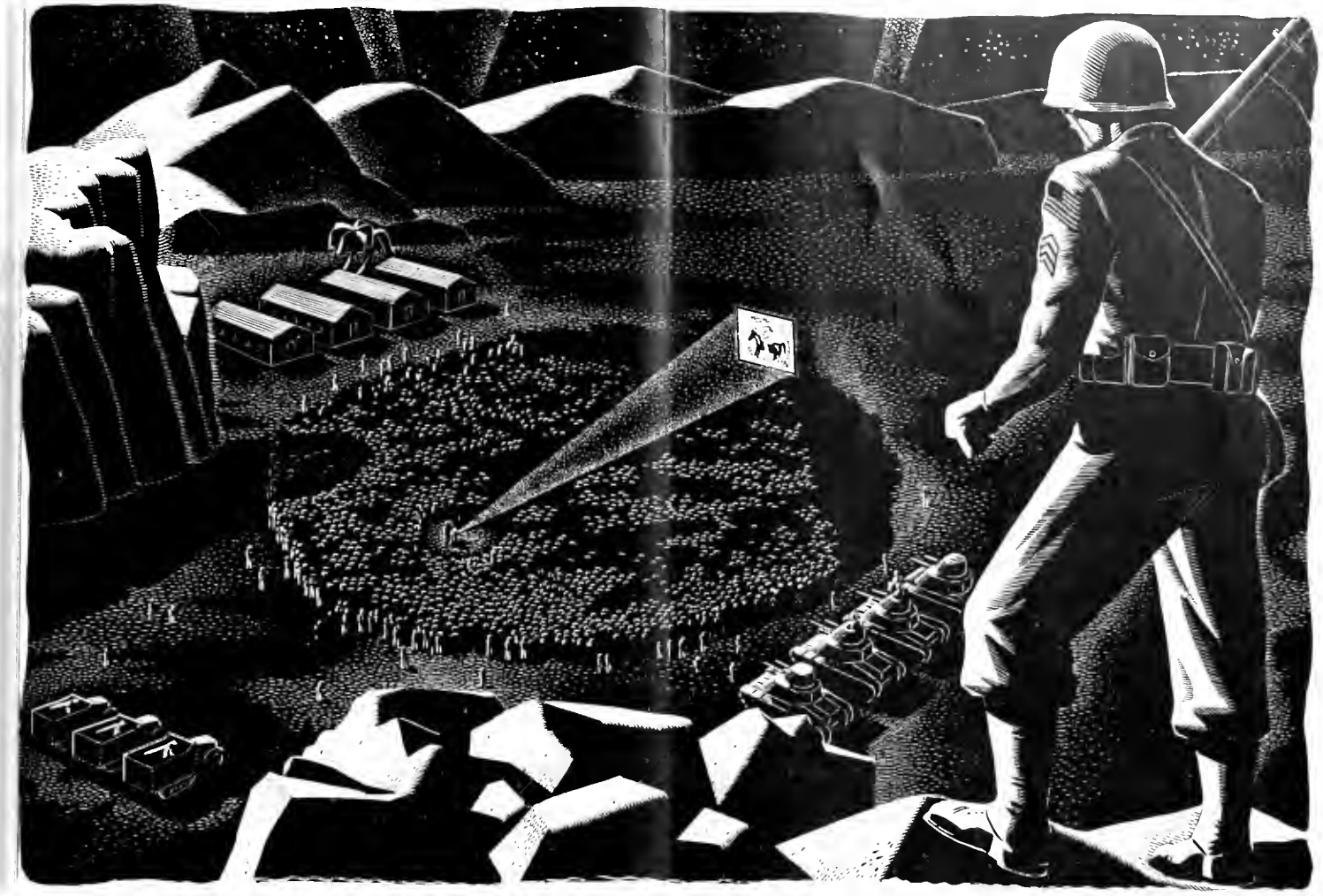
Already some of the largest companies in America are organizing and preparing comprehensive sales-training programs against the Day of Victory. May we offer suggestions as to a sound and practical procedure?

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

Behind the Battle Line...



Motion Pictures *Refresh* our Fighting Men

These dual unit Ampro-sounds are typical of those used in "special services" overseas as part of the Army's "J" kit

PRECISION CINE EQUIPMENT

AGAINST a backdrop of rugged mountains and desert skies, two thousand American soldiers are enjoying a showing of one of the latest Hollywood films. The scene is immediately behind the battle lines at a U. S. Army base where our fighting men came to rest and relax before going back into action.

Here the Army Special Service Units make available to the men every type of recreational material from books and athletic equipment to musical instruments and amateur theatrical supplies. Most important, according to men in the Special Service Units, is the compact portable motion picture outfits known as the "J" kits—which are used to show the films rushed by Air Transport from Hollywood. Next to food and mail from home, these outdoor movies are the most potent force for maintaining morale.

The Ampro Dual Unit shown here has been adopted for use in the "J" Kit. In building these precision projectors to meet the exacting demands of high standard projection under the most trying conditions, Ampro engineers are accumulating valuable experience that will result in some astonishing developments for post-war civilian projectors.

Be sure your name and address is on the Ampro mailing list so that you can keep in touch with these developments. Write today.

The Ampro Corporation, 2851 N. Western Ave., Chicago, Illinois

AMPRO

CAMERA Eye

NOTES AND COMMENT ON VISUAL MATTERS

★ New Teaching Ideas have always met severe obstacles principally through teachers and instructors unwilling to risk their reputations on an untried innovation. This was notably so when early development of visual aids found teachers slow to adopt the new and unknown tools. This has also been true in military training. Seasoned military commanders have preferred to rely on traditional military tactics and nomenclature and those introducing new training methods fought a stiff battle for recognition.

The use of visual education and training films was no exception. Training films in the Army have proved their value the hard way and only tremendous pressure, responsibility and emergency in training nine million soldiers has elevated visual education to its high plane of value and respect.

Only one out of every twenty-five officers is a professional soldier, with the result that officer training had to depend on established and static curriculum. Training procedure has always been definitely established by the General Staff and basic field manuals, army regulations and orders controlled every phase, based on military precedence, tactics, strategy and logistics.

Prior to World War II, the Chief Signal Officer, responsible for the production and distribution of training films, had developed a fairly adequate training film library, but since these films in the main had been produced illustrative of military practices which were outmoded when Hitler introduced blitz warfare, they glaringly disclosed poor scenario, amateurish production, and showed obsolete field equipment. In fact, when certain training films were shown with horse drawn field equipment, soldiers familiar with mechanized and modern armament, laughed at both the equipment and old style uniforms. With this result these films had to be withdrawn from circulation and new modern training films had to be planned and produced hurriedly.

CONTINUED ON PAGE THIRTY-FOUR

BUSINESS SCREEN

NUMBER TWO 1943 VOLUME FIVE

Cover — Production on Aircraft Work Skills series, U. S. Office of Education by Bray Pictures Corporation, New York

★ ★ ★

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available right now!

A Complete Line of RADIANT Brilliantly Clear Projection Screens for All Purposes

Radiant screens in wall, table, portable, combination wall and table models, and in a wide range of sizes are now ready for PROMPT DELIVERY. They incorporate the famous "Hy-Flect" glass beaded surface that gives extraordinary brilliance and clarity to movies and stills. Other RADIANT features include: Compactness, light weight, ease of setting up and dismantling, ripple-free, smooth screen surface and convenient carrying cases. Prices range from $1.95 to $125 in the largest available sizes.

New, FREE Radiant Screen Catalog just off the Press . . .

The last word in screen information—showing the newest improved line of non-priority and priority RADIANT SCREENS of all types and sizes. Fully illustrated . . . contains much valuable screen information. Gives full specifications and prices. Every screen user should have a copy.

Bring Old Screens "Up to Date"

New RADIANT Catalog gives full information on how to transform old, discolored, damaged screens into brilliant modern screens at little cost.

Send Coupon Below for Free Copy

Just fill out the coupon right now and mail it TODAY. Your copy of the new RADIANT Catalog will be mailed to you at once.

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New RADIANT Daytime Projection Screen

Enables you to show brilliant pictures in broad daylight in lighted rooms to large audiences. Ideal for use at conventions, sales meetings, plant meetings, demonstration set-ups, training classes. Has "Hy-Flect" beaded surface—is quickly set-up and disassembled—adjustable to any height—and is completely portable.

RADIANT

MOVIE NEWS DeVRY

You are invited to participate in an informal survey of what business and industrial concerns are doing with motion pictures to speed or improve their participation in the War Effort. For instance, Westinghouse Electric & Manufacturing Company has produced a 25 minute sound film titled. *This Too Is Sabotage*." The film deals realistically yet constructively with the problem of absenteeism. The film is available FREE from Westinghouse Visual Education Section, Mansfield, Ohio. Are you using motion pictures in your personnel relations activities? What have you done with training films? Have you found films effective in educating sub-contractors on your policies, practices, methods? Can you tell us of any interesting film projects that can be described in this column for the benefit of all? Are you interested in such reports we of DeVRY issue on this increasingly important subject of motion pictures as a tool of business and industry? Your cooperation is appreciated. Your inquiry means no obligation.

• • •

GET YOUR **FREE** COPY OF THE NEW DeVRY FILM CATALOG

A mighty collection of 16 mm sound and silent EDUCATIONAL FILMS on history, geography, vocational training, health, safety, literature, music, the sciences, current events *plus* a wealth of 16 mm sound Hollywood RECREATIONAL FILMS—full length features, comedies, cartoons, selected shorts. Subjects for every occasion. Moderate rentals. Attractive discounts for long term bookings. Get a copy of this catalog for your files it's FREE. Address your request to DeVRY Films & Laboratories, 1109 Armitage Ave., Chicago (14), Illinois. Do it NOW!

• • •

Speaking of motion pictures as a tool of business, and the increasing recognition being given this effective tool, prominent newspaper space was given to a description of U. S. Steel Corporation Board Chairman Irving S. Olds' recent visit to Chicago. "More than 1,000 businessmen," the newspapers stated, "were treated to a quick, composite and comprehensive look at the corporation's war production through a motion picture shown in the Grand Ballroom of the Palmer House." Just as motion pictures bring the War Front to Washington and to the public, so conversely they report accurately and adequately to the public and to the men at the front what is being done by the men and women behind the men behind the guns. Remember the Chinese proverb: "A picture is worth 10,000 words."

• • •

And your purchases of all the War Bonds you can buy are better than hours of patriotic speeches. For those who are giving their lives, the least we can do is invest our dollars. We get our money back with interest!

BUY THAT WAR BOND NOW!

Visual Training, tested and proved in the crucible of combat, has paid incalculable dividends in American lives. Time saved and thoroughness gained by the use of motion pictures and slide films are vital factors in battle-conditioning our fighting men in record time. • We of Sound Masters are proud that our Visual Aids for Navy and Coast Guard have in some measure helped to put the "V" in Victory.

(Packing S m Visual Training Kits for shipment to the U. S. Coast Guard.)

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

Films Role in the War Food Program

SOUND MOTION PICTURES and slidefilms, many of them provided through the sponsorship of industries and associations, are helping America put over the "Food Fights for Freedom" campaign this fall. Many more subjects are needed.

Realizing that the screen has unusual powers of conviction and understanding to offer the American people, government agencies concerned with the related problems of increasing food production while restricting its domestic consumption, are turning to the visual medium with real enthusiasm. The Office of Price Administration has, itself, been one of the most consistent users of visuals—(principally slidefilms) for its own educational problems.

FIVE FOLD DRIVE LAUNCHED

The current educational Food drive has for its objectives the reduction of food waste through public cooperation, increasing of food production, assurance of equitable distribution of available supplies, discouragement of hoarding and the black market and, finally, public and business compliance with rationing and price ceiling regulations. In each of these areas, visual media have done or will yet provide real assistance through their educational use before meetings of clubs, dealers, schools, industries and other outlets.

Government agencies concerned are the War Food Administration, the Office of Price Administration, Office of War Information and the War Advertising Council. WFA is official sponsor of the drive. Where funds are not available to these agencies, various industrials have already come to their assistance in providing excellent visual materials. *There is real opportunity for further patriotic service in providing other needed films.*

NAME "TWENTY FIGHTING MEN"

In the field of stimulating increased food production, the new Ralston Purina Company "incentive" picture for farm audiences entitled *Twenty Fighting Men* has been cited as a good example of films' power to inspire a selected audience. *Twenty Fighting Men* (produced by Jam Handy) is an inspiring screen story of farm management and of the potentialities of increased livestock production (necessary to our war effort) through careful feeding methods. There is no advertising and the picture has already worked wonders among farm groups to whom it has been shown.

VISUAL EDUCATION OF WORKERS, FARMERS & PUBLIC AIDS NATIONAL NUTRITION CAMPAIGN

PICTURES TO AID FOOD PRODUCTION & NUTRITION CAMPAIGNS

Food Keeps You Fit. Sound Slidefilm (Healthful eating as a prime essential to industrial production; an A-B-C explanation)
Available on sale basis (filmstrip and recording) from the producer, Commercial Films, Inc., 1300 E. 30th St., Cleveland, Ohio.

Food—Weapon of Conquest. 2 reels, 16 mm., 35 mm., sound. (Importance of food in warfare.)
Produced by the National Film Board of Canada, available in U. S. through facilities of various educational film libraries.

Fun in Food. 1 reel, 16 mm., sound, color. (Elementary information on food illustrated through allegories.)
Distributed by Films, Inc., 330 W. 42d St., New York.

Health for Defense. 1 reel, 16 mm., 35 mm., sound, color. (The role of food in good health.)
Bureau of Motion Pictures, Office of War Information, Washington.

Hidden Hunger. 2 reels, 35 mm., sound. (Symbolic presentation of importance of food production and good selection.)
Distributed by Hidden Hunger, 130 Graybar Building, New York.

Home of the Free. 1 reel, 16 mm., silent, color. (Good food selection in home and Army. Milk and dairy products stressed.)
Produced and distributed by St. Louis Dairy Council, 1030 Chouteau Ave., St. Louis, Mo.

Keeping Fit. 1 reel, 16mm., sound. Combating absenteeism and production slowups through 5 rules of health and proper nutritious meals.
Distributed by local visual dealer library depositories of Motion Picture Bureau, Office of War Information; Motion Picture Bureau of the YMCA and Castle Films (sale prints).

Modest Miracle. 1 reel, 16 mm., 35 mm., sound. (Dramatization of discovery and importance of the "morale" vitamin B.)
Produced by Wilding for Standard Brands, Inc., 595 Madison Ave., New York.

More Life in Living. 1 reel, 16mm., sound. Shows value of balanced diet and importance of milk; describes protective foods.
Produced by Burton Holmes Films for the National Dairy Council and available through the producer, 7510 N. Ashland Ave., Chicago, on free loan.

Proof of the Pudding. 1 reel, 16 mm., 35 mm., technicolor. (Presentation of some general suggestions of food needs for family.)
Produced and distributed by the Metropolitan Life Insurance Co., New York.

Secret Weapon. The importance of nutritious foods in the Fight for Freedom. A 1943 Sound Masters, Inc., production for National Dairies, New York.

Twenty Fighting Men. 16mm., sound. For farm audiences only to show the importance of proper livestock feeding for increased production essential to victory.
Produced by the Jam Handy Organization for the Ralston Purina Company, St. Louis.

This Too Is Sabotage. Nutrition as a key problem in war plant production. Produced and distributed by Westinghouse Electric & Manufacturing Co., Mansfield, Ohio.

V Men. 16 mm., 2 reels. (Role of vitamins, laboratory experiment showing losses of vitamins in cooking, and demonstration of proper preparation of vegetables.)
Produced and distributed by Westinghouse Electric & Manufacturing Co., Mansfield, Ohio.

Vim, Vigor & Vitamins. (Sources of vitamins in foods for a day's menu.)
Produced and distributed by Finer Films, 7936 Santa Monica Building, Los Angeles, Calif.

You Can, Too. Shows in detail home canning processes, depicting entire procedure including both pressure cooker and hot water bath methods.
Produced by Atlas Ed. Film Co. for Ball Bros. Distributed by Castle Films.

British films available in United States of America (through Information Service Offices in New York, Washington, D. C., Chicago, San Francisco and Los Angeles.

[1] *Eating at Work.* 1 reel, 16 mm., 35 mm., sound. (Industrial nutrition.)

[1] *Dig for Victory.* 1 reel, 16 mm., 35 mm., sound. (Victory gardens.)

[1] *Dinner at School.* 1 reel, 16 mm., 35 mm., sound. (Children of wartime working mothers.)

Men in Danger. 1 reel, 16 mm., 35 mm., sound. (Industrial health and accident prevention.)

Miss T. 1 reel, 16 mm., 35 mm., sound. (Correct diets from childhood to wartime industry job.)

Mrs. T and Her Cabbage Patch. 1 reel, 16 mm., 35 mm., sound. (Victory gardens.)

No Accidents. 1 reel, 16 mm., 35 mm., sound. (Prevention of man-hour losses.)

Wartime Factory. 1 reel, 16 mm., 35 mm., sound. (Importance of health of worker.)

[1] Reviewed and approved by the Nutrition Division, Office of Defense Health and Welfare Services, Washington, D. C.

SHOW TO WAR WORKERS

For war worker audiences pictures like the new Westinghouse subject, *This Too Is Sabotage* serve the direct purpose of presenting basic facts concerning the importance of proper feeding of industrial personnel. In the same vein are pictures like *Keeping Fit*, an OWI short; *Fasting at Work*, a good British film; and *Food Keeps You Fit*, a sound slidefilm.

Use of pictures in war plants is spreading widely. Lunch hour showings are preferred although some plants have successfully begun preshift showings to early arrivals. Projection equipment is brought into departments where workers gather for lunch or placed in cafeterias. With the aid of recently developed shadow-box screens and rear projection, daytime shows are now quite feasible. On the night shifts, the problem is simplified for in the summer and early fall, employees may watch outdoor movies on the midnight lunch period.

Slidefilm equipment is widely available in industrial training departments and this medium may also be employed with real value. The important thing is to get the key points in the Food drive to as many persons as possible but to get them *understood*.

ALLIED NATIONS KNOW IMPORTANCE

Two pictures typify the excellence of production achieved in food subjects of other Allied nations. The National Film Board of Canada has set a notable example with three productions, *Food, Weapon of Conquest*, *Battle of the Harvests* and *Thought for Food*. The first two of these titles are becoming widely used in the U. S. and 16mm prints are being made available.

Britain's studios have contributed other interesting material and it is well-directed to the problems which

(CONTINUED ON THE NEXT PAGE)

SERGEANT GEORGE BARTON *tells a Grange meeting the importance of food to our armed forces. (From "Twenty Fighting Men" new sound motion picture production of the Ralston Purina Company.)*

are common to both of the countries as nearly as geography will permit.

WFA Extends Invitation

As official sponsor of the "Food Fights" campaign, the War Food Administration is seeking to encourage food industries, retailers, the restaurant industry and other allied businesses to promote the campaign in *privately financed advertising in all kinds of communication mediums*. Films may thus not only present public appeals but should be deliberately created to meet immediate and urgent problems.

As an example of what may be accomplished by one industrial, the motion picture department of Westinghouse reports that an average of 1,000 women, high school girls and men see its current pictures every day. Pictures like *Modest Miracle* (Standard Brands) play to even greater audiences through theatrical release by experienced distribution agencies.

Finally, in the home field, there is one most useful subject *You Can, Too*, which is mentioned here for the importance of its subject matter more than for any other reason. *You Can, Too* fully describes the entire procedure of canning vegetables and fruits.

New Westinghouse Food Film

• *This Too Is Sabotage*, a 25-minute sound film dramatizing the importance of well-balanced meals to America's health, was produced by the Westinghouse Electric and Manufacturing Company as an aid in the nationwide fight against industrial absenteeism, and as a contribution to the national nutrition program.

Based on health statistics provided by government and other authoritative agencies, the picture shows that proper eating habits for war workers play a vital role in combatting absenteeism and preventing the fatigue that causes many industrial accidents. Scenes illustrate that the use of properly-balanced meals based on the government-recommended seven essential food groups may help reduce the 150 million man-days of work that estimates indicate will be lost during the next four months because of accidents.

One part of the movie shows homemakers banding together in nutrition clubs to study the relationship between food and health and the necessity of serving war workers and children health-building meals that contain essential vitamins and minerals. This part of the picture was based on the Health for Victory nutrition program launched 16 months ago and now used by more than 1,111 war plants and other organizations. *This Too Is Sabotage* was supervised by Mrs. Julia Kiene, Director of the Westinghouse Home Economics Institute and founder of the Health for Victory plan, and J. Gilbert Baird, director of the Company's Visual Education Section.

The picture was filmed by Roland Reed Productions at the RKO-Pathe Studios, in Hollywood and features a cast of motion picture actors headed by Wynn Gibson. It can be obtained for showings at war plants, schools, women's clubs, civic organizations, rural groups and nutrition meetings by writing to the Westinghouse Visual Education Section, Mansfield, Ohio, and stating choice of at least two dates. Both 16 and 35-millimeter prints are available.

Background for Post-War

IN A nationwide tour of leading centers of the photographic industry, Eugene W. Castle, President of Castle Films, Inc., has delivered a series of pertinent addresses this past month on wartime advances in the field of photography and post-war potentialities. In his inspiring talks, he also laid down a frank challenge to active citizenship as a prerequisite to continued private initiative now and in the post-war period.

Highlights of Mr. Castle's address before outstanding leaders of the visual industry and dealers in the Midwest as presented at the Blackstone Hotel in Chicago in August are briefly presented here. Previews of the new Castle releases for the coming fall and winter season were additional highlights on the program.

Calling special attention to the tremendous strides made by visual media during the war, Mr. Castle declared:

"The millions employed in our war industries and services and the millions in our armed forces have, as a direct result of the war, gained a new and greater appreciation of photography . . . all types of photography . . . that will have a new bearing and a new impetus upon their lives in the era to come."

In his talk he said that photography, both still and movie, is bound to go forward. Only bad management in Government and false economic concepts translated into bad times and low purchasing power for everyone can stop the future forward march of photography. The photographic industry should begin now to spend a great deal of time and thought in an honest endeavor to protect, for the future, both our way of life and our business. If one goes out the door, the other goes out the window and simultaneously.

We, as individuals or collectively, he declared, cannot afford to be indifferent to future political and economic developments. This is especially true of everyone of us who earns our livelihood through photography, an industry which in 1941 amounted to $2,000,000,000.00. An industry comprised of both large and small corporations, including many thousands of personal busi-

CONTINUED ON PAGE 340

"THIS TOO IS SABOTAGE" *stars Wynn Gibson shown below in a typical scene from the film.*

INDUSTRIAL ACCIDENTS *are caused by poor eating habits as illustrated in this scene.*

WELL-BALANCED MEALS *may help reduce the 150 million man days of work lost in accidents.*

A PRODUCTION REPORT ON THE

USOE War Training Films

IN THE STUDIOS of film companies from the Pacific Coast to New York, in St. Paul, Kansas City, Dallas, Pittsburgh, New Orleans, Chicago and Detroit, production of war training motion pictures and filmstrips for the United States Office of Education is moving steadily ahead toward early release.

The new series of 140 sound motion pictures for job instruction embraces the field of aircraft metal skills, shipbuilding practice, machine shop work (operation of complex machine tools), advanced engineering (electronics, X-ray inspection of metals), optical work, welding, farm skills and foremanship. 88 subjects previously produced were in the field of machine shop work, shipbuilding and precision measurement.

MANY SUBJECTS NEAR COMPLETION

Production in the field of machine tool operation, aircraft work and shipbuilding is rapidly nearing completion. Each unit in the new series includes a sound motion picture, filmstrip and instructor's manual. Thus every potential user in war industry classes and vocational schools, as well as in the armed services (extensively using these subjects) is provided with complete material for instruction, review, quiz and instructor orientation.

Backed by the solid evidence of over 16,000 prints sold thus far through Castle Films, the official distributor, the Office of Education is undertaking important new areas of job instruction. Twenty subjects in the field of aircraft work, for example, will provide America's plane builders with an excellent audio-visual library in this most critical field.

* * *

(Below) Visual Aids Director Floyde E. Brooker (center right) confers with Franklin B. Judson (left) and Bill Betts of Photo & Sound, in San Francisco.

EXPERIENCED HANDS LEND COUNSEL

Under the general direction of Dr. C. L. Klinefelter, Assistant to the U. S. Commissioner of Education and Floyde E. Brooker, Director of Visual Aids for War Training, the counsel of experienced men in charge of war production training in Government and private industry has been an important factor.

Production firms currently at work on the new series include Atlas Educational Film Company, Audio Productions, Bray Pictures, Caravel Films, DeFrenes & Company, Harfilms, Hugh Harman Productions, Jamieson Film Company, the Jam Handy Organization, Loucks & Norling, Medical Film Guild, Mode-Art Pictures, Photo & Sound, Ray-Bell Films, R.C.M. Productions, Spot Film Productions, Gene K. Walker, and Emerson Yorke Studios.

A report received from the West Coast indicates current trends in this phase of the production program. Similar reports are scheduled for the next issue of BUSINESS SCREEN.

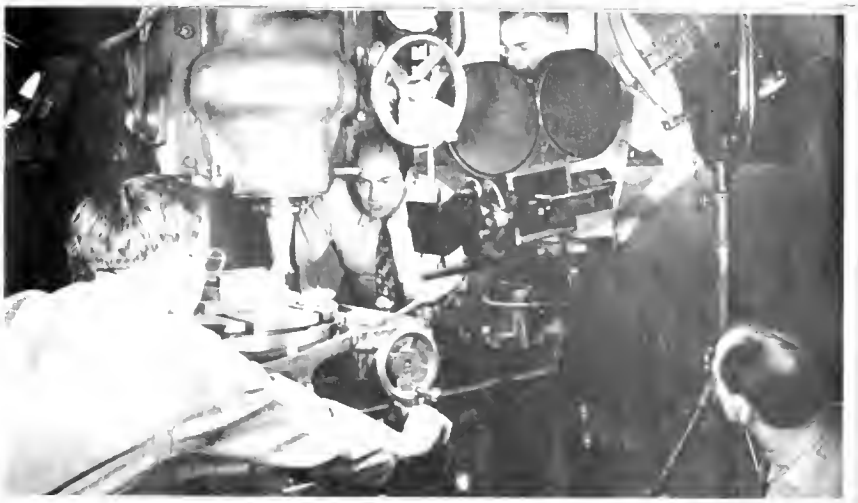
SHIPBUILDING SUBJECTS IN WORK

♦ Photo & Sound, Inc., of San Francisco has been playing its part in the U. S. Office of Education war training program with the production of a series of visual teaching units on marine pipefitting and insulation. Inasmuch as the Bay Area is rimmed with shipyards, both Maritime and Navy, the producer is ideally situated to gather information and develop films directed toward training inexperienced shipyard workers.

From the start, Photo & Sound has acted as a sort of experimental proving ground for new and improved techniques in production. The story board technique was followed in the preparation of scripts

(CONTINUED ON PAGE 42)

WAR FILM PRODUCTION (Top right, above) Ray-Bell crew at work on Vertical Milling Machine unit. (Below) Pipefitter Committee meets in San Francisco (at Photo & Sound). L. to R. Bill Betts, D. M. Hatfield, F. E. Judson, J. W. Ralston, Victor Buhler, Marian Gross, E. L. Mathe, R. A. Weaver, A. Kroustchoubbe. (Third picture) Aircraft Work committee and producers (Ryan at Buffalo). L. to R. H. Nordwelski (operator), Ed Strand, Anthony Fabler, M. L. Stoller, Paul Ryan, F. Welsh (Buffalo, right). L. to R. V. N. Henderson, M. Dorbert, Ed Strand, Frank Ebell, Ken Tate, Stuart Ball, Dr. Francis Wood, William Kirkpatrick.



Plant Shows for Workers

• WESTERN ELECTRIC SURVEY PROVES VALUE •

★ One of the many large plants in the country to turn to the 16 mm. motion picture as a major part of its morale building program is the Western Electric Company's Hawthorne plant in Cicero, Illinois.

There, for the past several months employees have been given the opportunity of seeing regularly scheduled shows consisting of comedies, musical shorts, war production pictures and war action films. The program has not been one that would be outlined in normal times. Lack of equipment, manpower and suitable showing locations has handicapped the program. But, wherever possible, missing parts were constructed out of non-essential materials and projector operators worked long hours in order to give all shifts an opportunity to see the pictures.

The ease with which present-day projectors operate was largely instrumental in getting the Hawthorne program rapidly under way. The fact that no master electrician was needed to make the necessary hook-ups, and that no sound expert was needed to make the music and speech intelligible, that a child, with some instruction, could capably thread the machine, meant that no long period of training was necessary. As a matter of fact the salesman spent less than an hour showing the operator, who was totally unfamiliar with the projector, how to operate it.

Location Problem Overcome

Greatest handicap to overcome was the lack of showing locations. Too often there was no practical way of darkening a room or the noise level was so high that the sound was far from professional in quality. Various experiments in the placing of speakers has improved the sound; it was found that they operate most effectively placed high on both sides of the screen. And the light problems were solved through the construction of a shadow box.

Somewhat clumsy though it is the shadow box has worked wonders. With it, cafeterias brilliantly lighted with fluorescent lamps have been turned into theaters for lunching workers. The equipment has been taken into shop locations where no shades covered the windows, and set up so that tired production line men and women could see their products in action, or could see Popeye triumph again via spinach. This through the utilization of lunch and rest periods without the loss of a minute on the part of the army of workers.

The shadow box is built of non-essential light pine with black leatherette curtains holding out the beams of unwanted light. Cheap, and in some ways impractical, it nevertheless makes these shows possible. Western Electric's Hawthorne Information Department, which handles the movie program, also had a wood truck constructed which houses the projection and speaker equipment and also boasts of a rack for screen and folded shadow box. Light and mobile, it can be locked up so that the entire layout may be left in any location without laying temptation before the curious. The truck is even equipped with a fire extinguisher easily accessible to the operator.

With the original equipment, added shadow box and truck and such extras as supplementary lenses and extension cord, the Information Department has been able to take movies into almost any location.

Typical arrangements were made for numerous showings of "Attack Signal," the Signal Corps' excellent picture on communications equipment.

Operating Plan Procedure

Before scheduled showings the operator conferred with department chiefs on location in an effort to determine the best spot for the program. With 1½, 2, 2½ and 4 inch lenses to choose from, almost any size space was capable of being turned into a temporary theater. In some cases seating arrangements were made. In others there was not room to seat the "customers." Consequently short programs were planned.

In every instance an executive, usually the superintendent in charge, spoke briefly concerning the essential part those in attendance were playing in war production. In his talks he often used parts manufactured in the department in brief demonstrations. Whenever possible an effort was made to have the resident Signal Corps officer present. Capt. Alvin Grauer of Army Public Relations also appeared successfully on several programs. A microphone attached to the projector provided amplification for the speakers. Fortunately "Attack Signal," with its staccato narration was particularly adaptable to shop showings where the noise level was high despite the fact that machinery in the immediate vicinity of the showing was shut down.

In some cases it was necessary to call in an electrician before the showing to test line voltages and sometimes arrange special power hookups. These instances were few, however.

PREPARING FOR A SHOW *in a cafeteria location during lunch hour, the operator finds the home made shadow box makes high noon projection or night projection with lights on no problem. The truck in the foreground is used to transport projector, speakers, screen, unassembled shadow box, everything necessary for a showing in any plant location.*

Employee Reaction Favorable

A survey was conducted at the Hawthorne plant after the workers had been given ample time to become acquainted with the movie program and had been given an opportunity to see almost every type of available 16 mm. short. The results were amazing.

Of 1,000 office and shop workers interviewed in a cafeteria location,

(CONTINUED ON PAGE 33)

Safety Film Directory

★ As a contribution to the cause of industrial and public safety in wartime, the Editors of Business Screen have compiled the National Directory of Safety Films which is a feature section of this current issue. All current catalogs, bulletins and special publications on this subject have been carefully reviewed by the special research staff assigned to this project with the result that, as nearly as possible, you are presented with a very complete source book of available sound and silent motion pictures, sound slidefilms and filmstrips.

We are indebted to the editors of the National Education Association with whose kind permission we have included factual reviews of content material; we are also indebted to Mr. Dale Nolan of the National Safety Council and to a special staff of Northwestern University students who were employed for this survey.

Many of the subjects reviewed are available on a free loan basis. Under wartime conditions and with supplies of prints necessarily limited, it is advisable that these facilities be readily available to war plants *first*; unless you have real use for such material for a fairly sizeable audience you will render a patriotic service by restricting your demands.

On the other hand, many subjects are available on reasonable short-term rental and purchase plans through convenient dealer and school depositories. These sources are listed in detail on the closing pages of the Directory.

How to use: This section may be removed from the magazine for convenient reference and folds into an efficient 32-page booklet. Trim pages at top after folding and stitch or tie the pages. If you wish to keep your copy intact for reference write for a ready-made reprint copy of the Directory itself, available at cost.

Additional Reprints of the 1943-44 Safety Film Directory are available in complete 32-page book form, at cost price of 15c each, postpaid. Address your requests to BUSINESS SCREEN MAGAZINE, 157 East Erie Street, Chicago 11, Illinois.

Lewis Film Service, 216 E. First St., Wichita, Kansas.

N.

National Film Service, 515 W. Broad St., Richmond, Va. 14 Glenwood Ave., Raleigh, N. C.
Non-Theatrical Pictures Corp., 165 W. 46th St., New York, N. Y.

Panorama Pictures, 7936 Santa Monica Blvd., Hollywood, Calif.

V.

Visual Education Service, 131 Clarendon St., Boston, Mass.

EXTENSION LIBRARY SOURCES OF SAFETY FILMS

Write your state library listed below for descriptive literature, rates, etc., on available safety subjects.

A.

University of Alabama, Extension Division, Tuscaloosa, Ala.
University of Arizona, University Extension Division, Tucson, Ariz.
Arkansas State Teachers College, College Relations, Conway, Ark.

B.

Boston University School of Education, Division of Teaching Aids, 84 Exeter St., Boston, Mass.
Brigham Young University, Bureau of Visual Instruction, Provo, Utah.
Bucknell University, Classroom Film Library, Lewisburg, Pa.

C.

University of California, Extension Division, Dept. of Visual Instruction, 261 California Hall, Berkeley, Calif.; 809 Hilgard Bldg., 813 S. Hill St., Los Angeles, Calif.
University of Colorado, Extension Division, Boulder, Colo.
University of Connecticut, Audio Visual Aids, Storrs, Conn.

F.

University of Florida, Dept. Audio Visual Instruction, Gainesville, Fla.

G.

University System of Georgia, Division of General Extension, 244 Walton St., N.W., Atlanta, Ga.

I.

University of Idaho, Extension Service, Boise, Idaho.
University of Illinois, Visual Aids Service, 1206 Springfield Ave., Urbana, Ill.
Indiana University, Extension Division, Bloomington, Ind.
University of Iowa, Department of Visual Instruction, Iowa City, Ia.
Iowa State College, Visual Instruction Service, Ames, Ia.

K.

University of Kansas, Extension Division, Department of Visual Instruction, Lawrence, Kansas.
University of Kentucky, University Extension, Lexington, Ky.

L.

Louisiana State University, Baton Rouge, La.

M.

University of Maine, [illegible] Education, Orono, Me.
University of Michigan, Bureau of Visual Education, Ann Arbor, Mich.
University of Minnesota, Bureau of Visual Instruction, Minneapolis, Minn.

University of Missouri, University Extension Division, Columbia, Mo.

N.

University of New Hampshire, Visual Service, Hewitt Hall, Durham, N. H.
University of Nebraska, Extension Division, Dept. of Audio Visual Aids, Lincoln, Nebr.
University of New Mexico, Extension Division, Albuquerque, N. M.
New York University, Educational Film Institute, 71 Washington Square, New York, N. Y.
University of North Carolina, Extension Division, Chapel Hill, N. C.
Division of Correspondence Study, Film Library, State College Station, Fargo, N. Dak.

O.

Ohio State University, Bureau of Educational Research, Columbus, Ohio.
University of Oklahoma, Bureau of Visual Education, Norman, Okla.
Oregon State System of Higher Education, Department of Visual Instruction, Corvallis, Ore.

P.

Pennsylvania State College, Audio Visual Aids, State College, Pa.
Pennsylvania College for Women, [illegible] Service, Pittsburgh, Pa.
Purdue University, [illegible] Bureau, Lafayette, Ind.

S.

Sam Houston State Teachers College, Huntsville, Texas.
University of South Carolina, [illegible], S. C.
University of South Dakota, [illegible] Vermillion, S. D.
Syracuse University, Cooperative Educational Film Library, School of Education, Syracuse, N. Y.

T.

University of Tennessee, Division of University Extension, Knoxville, Tenn.
University of Texas, Visual Instruction Bureau, Austin, Texas.
Texas Technological College, Dept. of Visual Instruction, Lubbock, Texas.
West Texas State Teachers College, Bureau of Public [illegible], Canyon, Texas.

V.

University of Virginia, Charlottesville, Va.
University of Vermont, Robert Hull Fleming Museum, Burlington, Vt.

W.

Central Washington College of Education, Ellensburg, Wash.
State College of Washington, Pullman, Wash.
University of Wisconsin, Madison, Wis.
University of Wyoming, Director of Correspondence Study, Laramie, Wyo.

OTHER LOCAL AND STATE LIBRARY SOURCES

Colorado State Department of Motor Vehicles, [illegible] of Safety, State Capitol Bldg., Denver, Colo.
Connecticut State Department of Health, Bureau of Public Health Instruction, Hartford, Conn.
Georgia State Patrol, [illegible] Safety, Atlanta, Ga.
Illinois Education Association, [illegible], Springfield, Ill.
Illinois Department of Labor, [illegible] W. Washington St., Chicago, Ill.
Illinois Department of Public Health, Springfield, Ill.
Iowa State Department of Health, Public Health Education, Des Moines, Ia.
Kansas City Safety Council, Dwight Bldg., Kansas City, Mo.

Museum of Modern Art Film Library, 11 W. [illegible], New York, N. Y.
National Conservation Bureau, Education Division, 50 E. 42nd St., New York, N. Y.
New England Educational Film Association, Durham, N. H.
National Fire Protection Association, 60 Batterymarch St., Boston, Mass.
New York State Department of Health, Albany, N. Y.
Ohio Department of Education, Columbus, Ohio.
Texas Visual Education Co., [illegible] W. 11th St., Austin, Texas.
State Department of Education, Richmond, Va.
Motor Vehicle Dept. of Wisconsin, Madison, Wis.
Wisconsin Conservation Department, Madison, Wis. (Loans to Wisconsin schools only)

1943-44
EDITION

Prepared by the Editors of Business Screen Magazine as a wartime contribution to the cause of national safety.

PART I · MOTION PICTURES

These are 16mm and 35 mm sound and silent motion pictures. Sound films can be shown **only** on **sound** projection equipment; silent films may be used on either sound or silent projectors

INDUSTRIAL SAFETY

Care in Use of Shovel 16 mm sound (4 minutes)
Distributor Film Text Productions. Price: Rental, 75c per day. Purchase $6.00
Primarily of interest to shovel gang. Illustrates the right and wrong way of carrying a shovel and spading and skinning with a shovel. Importance of checking and cleaning a shovel is stressed.

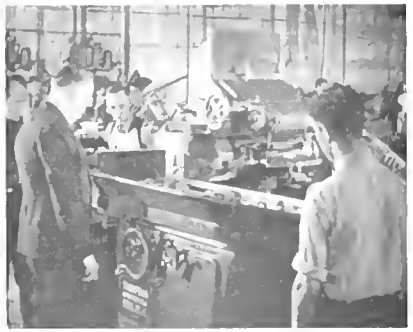
Danger, Men Working 16 mm sound
Distributor Aetna Casualty and Surety Co. Price: Free loan
This picture demonstrates that complete cooperation between management and worker can conserve manpower. Modern safety precautions are explained and demonstrated and the need for close adherence to safety rules is shown. The man-to-man relationship between new and inexperienced workers is emphasized, with particular attention to the human factors involved in safety training.

Danger . . . Women at Work 16 mm sound (12 minutes)
Distributor Vision Educational Productions. Price: Purchase $4[illegible] Rental Privileges. Preview $1.50 per day
A [illegible] women in war industry. The [illegible] include [illegible] safety precautions [illegible] proper posture at work, correct [illegible] absenteeism, etc. A woman [illegible] through the film, learning how the [illegible] to her job. Also [illegible]

Dangerous Dusts [illegible] reel
[illegible] Price: Free loan
A film [illegible]

Eye Accidents [illegible]
[illegible] Price: [illegible]
A film [illegible]

Factory Safety 16 mm sound (1 reel)
Distributor The Jam Handy Organization. Price: Purchase $36.50 (or Detroit)
A complete picture of safety work in the average industrial plant. Illustrates methods of conducting a safety program. Illustrates planning and engineering for safety, safety meetings and their activities, and the individual worker's own part in the safety work.



Falling Ground 16 mm [illegible]
Distributor Lake Shore Mines, Ltd. Price: Free loan
Right and wrong [illegible]

Foot and Shin Protection [illegible]
Distributor [illegible] Price: Free loan
Shows several types of [illegible] with demonstrations of their strength.

Handling Timber 16 mm silent (1 reel)
Distributor Lake Shore Mines, Ltd. Price: Free loan
[illegible] right and wrong methods of [illegible]

Keeping Fit [illegible] Fourth [illegible]
[illegible] Work [illegible]
[illegible]

HOW TO SECURE FILMS LISTED IN THIS DIRECTORY

[illegible]

Index to Primary Sources [illegible]
national
local

ADDITIONAL COMMERCIAL DISTRIBUTION SOURCES

A.

Akin and Bagshaw, Inc., [illegible] W. 44th St., New York, N. Y.

B.

Bray Pictures Corp., [illegible] Ave., New York, N. Y.
Burke's Motion Picture Co., [illegible] Ave., Atlanta, Ga.

C.

Cinema, Inc., [illegible] Ave., Washington, D. C.
College Film Center, [illegible] Princeton, N. J.
Cosmopolitan Film Libraries, Inc., [illegible] Ave., New York, N. Y.

D.

The De Vry Corp., [illegible] N. Sheffield Ave., Chicago, Ill.
The Distributor's Group, [illegible] W. 57th St., New York, N. Y.

E.

Eastin 16mm Pictures, [illegible] Ave., Oakland, Calif.
Eastin Pictures, Inc., [illegible] Ave., Oakland, Calif.

G.

General Films, Ltd., [illegible] Ave., New York, N. Y.

I.

Ideal Pictures Corp., [illegible] Wabash Ave., Chicago, Ill.
[illegible] Ave., New York, N. Y.
International Film Bureau, [illegible] Chicago, Ill.

Distributor: National Safety Council. Prices: $10.00 per set of five, f.o.b. Chicago, Ill. Titles in this set:

Home Safety . . Shows common hazards and bad practices in various rooms and how to correct them.

In Case of Fire . . What to do in case of fire and how to safeguard against it.

Play Safe . . Correct and safe habits on the school playground.

tices in traffic and includes safe condition of bicycle.

Tom Joins the Safety Patrol . . Explains function of patrol and how one can become a member.

The Science of Seeing

Distributor: General Electric Co. Price: Free loan.

Shows how more and better lighting can improve visibility, make visual work easier and reduce eyestrain and fatigue.

LOCAL SOURCES OF ADDITIONAL SAFETY SUBJECTS

These sources have produced some additional (motion pictures, filmstrips, etc.) for purely local use only. If you are located adjacent to one of these sources, write for further rental, purchase information.

Elwood Bancroft, [illegible] Ill.
Central Junior High School, [illegible]
Greater Cleveland Street Railway Co., Cleveland, Ohio.
Colorado Youth Administration, [illegible]
Connecticut State Dept. of Motor Vehicles, [illegible]
Cuyahoga Falls School Dept., [illegible]
Dover Public Schools, [illegible]
Minnesota Safety Council, [illegible]
New Jersey State Highway Dept., [illegible]
Pittsburgh Public Schools, [illegible]
Providence Fire Department, [illegible]
Saugus School Dept., [illegible]
Scott Safety Council, [illegible]
South Bend Public Schools, [illegible]
Wilson Junior High School, [illegible]

INDEX TO PRIMARY SOURCES OF FILMS LISTED

The [illegible] principal [illegible] of safety films listed in this [illegible]. Addresses and [illegible] are [illegible] subject to change without notice. [illegible] on the following page.

A.

Aetna Casualty and Surety Co., [illegible]
American Automobile Association, [illegible]
American Legion, Office of Dept. Adjutant, [illegible] Local American Legion Post.
American Museum of Natural History, 77th St. and Central Park West, New York, N. Y.
American Red Cross, Mr. Harold [illegible], [illegible] 17th St., New York, N. Y.
American Social Hygiene Association, [illegible] Broadway, New York, N. Y.
Associated Factory Mutual, [illegible]
Atlas Educational Film Co., [illegible]
Automobile Manufacturers Association, [illegible] Lafayette, Ind.
Automotive Safety Foundation, [illegible] Washington, D. C.

B.

Bailey Film Service, [illegible] Hollywood, Calif.
Bell and Howell Film Libraries, [illegible] Lake Ave., Chicago, Ill. [illegible] 1801 Larchmont Ave., Chicago, Ill. [illegible] 1700 Shaw Ave., Cleveland, Ohio. [illegible] 1207 N. Wells St., Chicago, Ill.
Better Vision Institute, [illegible] Center, New York, N. Y.
Bike-Webb Manufacturing Co., 41 W. 25th St., Chicago, Ill.
Boy Scouts of America, [illegible] Bedford Ave., Brooklyn, N. Y.
Brandon Films, Inc., 200 Broadway, New York, N. Y.
British Information Services, [illegible] Rockefeller Plaza, New York, N. Y. [illegible] 30 N. Michigan Ave., Chicago, Ill. [illegible] 1 St. Louis, Mo. [illegible] 210 Post St., San Francisco, Calif. [illegible] 510 W. 6th St., Los Angeles, Calif.
E. D. Bullard Co., [illegible] San Francisco, Calif.

C.

Carnegie-Illinois Steel Corp., [illegible]
Castle Films, Inc., [illegible]
Central Washington College of Education, [illegible] Ellensburg, Washington.
Greater Cleveland Safety Council, [illegible] Terminal Tower, Cleveland, Ohio.
The Coca Cola Co., 310 North Ave., N.W., Atlanta, Georgia. Branches in principal cities.
Commercial Films Inc., 1400 E. 40th St., Cleveland, Ohio.
Coronet Productions, Glenview, Ill.

D.

Delaware Safety Council, [illegible] Wilmington, Del.
Detroit Street Railways, [illegible]
Bruce Dodson and Co., [illegible]
E. I. du Pont de Nemours & Co., [illegible]
Duquesne Light Co., Mr. [illegible], [illegible] Information, 435 Sixth Ave., Pittsburgh, Pa.

E.

Eastman Kodak Co., [illegible] Rochester, N. Y.
Educational Film Service, [illegible] Ave., Grand Rapids, Mich.
Employers Mutual Insurance Co., [illegible] Wausau, Wis.
Erpi Classroom Films, Inc., [illegible]

F.

The Farmers Auto Insurance Assoc., [illegible]
Federal Works Agency, [illegible] Washington, D. C.
Films, Incorporated, [illegible] E. Ontario St., Chicago, Ill. [illegible] 330 W. 42nd St., New York, N. Y. [illegible] 1104 S. Wabash Ave., Chicago, Ill.
Films of Commerce, 11 W. 42nd St., New York, N. Y.
Film Text Productions, [illegible] Ave., Oakland, Calif.
Fireman's Fund Indemnity Co., [illegible] San Francisco, Calif.
Fruehauf Trailer Co., [illegible]

G.

William J. Ganz Co., [illegible] 25 Broadway, New York, N. Y.
General Electric Co., [illegible]
General Motors Corp., Dept. of Public Relations, [illegible] Detroit, Mich.
State of Georgia, [illegible] Highway Dept., Atlanta, Ga.
P. H. Glatfelter Co., Spring Grove, Pennsylvania.
Grand Rapids Safety Council, [illegible] Grand Rapids, Mich.
Walter O. Gutlohn, Inc., 35 W. 45th St., New York, N. Y.

H.

Harmon Foundation, Inc., 19 West 44th St., New York, N. Y.
Harvard Film Service, [illegible] Cambridge, Mass.
Burton Holmes Films, Inc., [illegible] Michigan Ave., Chicago, Ill.

I.

Illinois Agricultural Association, [illegible] Champaign, Ill.
International Association of Electrical Inspectors, [illegible] New York, N. Y. Attn: Louis Bell, [illegible]

[illegible] 16 mm. sound—(33 minutes).

Distributor: U. S. Bureau of Mines. Prices: Free loan.

Illustrates lead mining operations at the St. Joseph Lead Co. Covers entire process from extraction to milling. Portion of the film shows the use of safety hats, shoes and lamps and also underground theatre where miners are taught safety methods.

Men in Danger 16 mm. sound. 20 minutes.

Distributor: Bell & Howell Co. Price: Free loan. Rental: 50c per day.

An exceptionally interesting film on workers' health and safety. It deals with certain types of industrial accident and some of the more occupational diseases.

Motor Accidents 16 mm. silent. (1 reel).

Distributor: Lake Shore Mines, Ltd. Price: Free loan.

Gives an impression on typical [illegible] dent in underground mines.

Mucking

Distributor: [illegible] Free loan.

Demonstrates the right and wrong methods of shovelling coal or ore.

No Accidents [illegible] sound. [illegible] minutes.

Distributor: Bell & Howell Co. Price: Free. Rental: 50c per day.

[illegible]

No Short Cut [illegible] sound. [illegible] minutes.

Distributor: [illegible] Rental: $[illegible]

[illegible]

The Outlaw

Distributor: [illegible]

Price: Purchase $[illegible]

[illegible]

Plan for Safety

Distributor: [illegible]

[illegible]

Punch Press Safety with Increased Production 16 and 35 mm. silent.

Distributor: Liberty Mutual Insurance Co. Prices: Rental or purchase price on request. Shows the operation of the automatic and semi-automatic feeds and power press guards in use.

A Safe Day 16 mm. sound. (10 minutes.)

Distributor: The Jam Handy Organization. Price: Purchase $46.50 f.o.b. Detroit.

Subject matter covers home, highway and industrial safety. Effective safety measures to the average worker on the value of safety in his daily life. Shows typical safe workers in his daily routine of driving, working and at the home.

[illegible] Jam Handy Org. Acme Pic.

Safety on The Job [illegible]

[illegible]

Salvaging Waste Light for Victory [illegible]

[illegible] Three Dimensional Seeing. [illegible]

Stop Silicosis [illegible]

[illegible]

Three Dimensional Seeing [illegible]

[illegible]

This color motion picture demonstrates the new methods of improving industrial seeing conditions through the correct application of color and light to machinery operation

Tomorrow's Too Late—16 mm. sound—(12 minutes).
Distributor: Vision Educational Productions. Prices: Purchase $42.50
Safety rules, the misuse of tools, care of colds and other important topics are considered. The drastic results of idle machines, misuse and absenteeism are brought out. These points are also covered: proper food for health, safety rules, dermatitis, general mental adjustment to changed conditions.

We're On The Spot—16 mm. sound or silent, 35 mm. sound or silent.
Distributor: Vision Educational Productions. Prices: Purchase $42.50
An industrial safety film graphically portraying common accident hazards found in all industrial plants. Takes up proper use of tools and keeping tools in proper places, machine guards, checking work properly, use of goggles, correct working clothes, personal cleanliness, first aid. Includes demonstration of employer and worker responsibility, foreman and workman relationship. Also ties up safety with the war effort. Prepared with technical assistance of the Greater New York Safety Council.

What Price Safety? 16 mm. sound. (20 minutes.)
Distributor: Teaching Films Custodians, Inc., YMCA Motion Picture Bureau. Prices: Purchase, Film: Rental $10.00 for two weeks; Projector: YMCA: Rental $3.00 per day.
[illegible] the inside working of a building construction racketeering gang which attempts to circumvent the regulations of the building code but is finally apprehended. Emphasizes problems in public safety and should be most useful in classes in social studies and to individuals interested in safety in building construction.

Wildwood . . . A 100% Mechanized Mine—16 and 35 mm. sound. 45 minutes.
[illegible] U. S. Bureau of Mines. Prices: [illegible].
[illegible] and efficient methods [illegible]. A coal cutter, preliminary [illegible] and mechanical loading [illegible] conveyor, with [illegible] and timbering [illegible] employees [illegible] and time-saving [illegible].

Your Eyesight [illegible]
[illegible] Safety Council. [illegible] Rental, $5.00 per day; $25.00 per [illegible] purchase. Purchase [illegible].
[illegible] eye [illegible] Mech[illegible] and pre[illegible] [illegible] eyes.

PUBLIC SAFETY

Street and Highway

The Chance to Lose—16 mm. sound—(10 minutes).
Distributor: National Safety Council. Prices: Rental, $3.00 per day.
Received award as best safety film for 1937. Has scenes showing the construction of modern motor cars. Illustrates the chances taken by many drivers as compared with the chances taken in various forms of gambling.

Check Well Before Using 16 mm. sound. (10 minutes).
Distributor: Vision Educational Productions. Prices: Purchase, $38.50.
Primarily useful for commercial vehicle operators, this film emphasizes conservation during the present emergency. Shows the important parts of the truck which should be checked before leaving the garage. Illustrates proper checking of tires, oil, lights, gas, brakes, radiator, etc. Useful to directors of school bus transportation and shop foremen.

Drive for Victory—16 mm. sound—(10 minutes).
Distributor: Vision Educational Productions. Prices: Purchase $27.50
This picture is designed to show how proper car care contributes to victory. Illustrates how to conserve tires, gasoline, brakes, batteries, etc. Should be of especial interest to driver-training and civilian defense classes and operators of all types of vehicles.

Driving Hazards—16 mm. silent. (15 minutes).
Distributor: Employers Mutual Insurance Co. Prices: Free loan.
The main thesis of the film is that careful, courteous and considerate drivers will keep out of accidents. A number of suggestions for safe driving are given and illustrated. Incorrect practices are also shown.

Everybody's Business 16 mm. silent and sound, 35 mm. sound.
Distributor: National Safety Council, Inc. Prices: Rental, $2.00 per day, silent version, $3.00 per day, 16 mm. sound, $4.00 per day, 35 mm. sound.
Illustrates interesting test in which one car travels the length of a city obeying all traffic regulations. The other car travels the same route, speeding, beating traffic signals, etc. Stresses auto condition and responsibility of drivers and pedestrians. Originally produced for Plymouth Division, Chrysler Motor Car Co.

Follow The White Traffic Marker 16 and 35 mm. silent. (1 reel).
Distributor: U. S. Bureau of Mines. Price: Free loan.
Tells of the importance of cement in making highways safer. Deals particularly with white cement highway markers.

Formations 16 and 35 mm. sound. (1 reel).
Distributor: General Motors Corp. Prices: Free loan.
[illegible] safety as a means of preventing [illegible] accidents. Character, Invisible Brick

Child Accidents in the Home—
Distributor: Society for Visual Education, Inc. Prices: Purchase, $2.00

City Fire Department Length: 16 frames.
Distributor: Stillfilm, Inc. Prices: Purchase $1.50
Shows fire department safety devices, apparatus at a fire, fire alarm system, and a fireboat. Limited value for safety purposes.

First Aid Bandaging Length: 55 frames.
Distributor: Film Text Productions. Prices: Rental, 75c per day; Purchase, $2.00
After a dressing is defined, descriptions and illustrations of various kinds of dressing, are shown. Various kinds of bandages are also shown. Film concludes with some "don'ts" of bandaging. Instructional manual included.

First Aid Series
Distributor: Society for Visual Education. Prices: Purchase, $2.00 each, including instructor's manual.

Film Aid to First Aid . . . Bandaging Length: 39 frames. How to apply bandages and dressings to head, hand, arm, chin, chest, shoulder, cheek, and ear, elbow, and thigh.

Film Aid to First Aid . . . Wounds Length: 35 frames. Describes various types of wounds and treatment for each type.

Film Aid to First Aid . . . Control of Bleeding Length: 33 frames. Locates main pressure points in the body, explains how pressure should be applied, and tells how to use and apply various types of bandages and tourniquets to control excessive bleeding.

Film Aid to First Aid . . . Fractures Symptoms and treatment of fractures, with use of various types of splints are demonstrated.

Film Aid to First Aid . . . Artificial Respiration . How, when, and why to use artificial respiration.

Mechanical Safeguards in Construction Equipment Length: 41 frames.
Distributor: University of Toledo. Prices: Available on request to groups outside of Ohio.

Plan for Safety Length: 61 frames.
Distributor: Wyoming State Dept. of Health. Prices: Free loan.
Home safety film, placing emphasis on how to avoid accidents occurring to young children. Statistics of accident in Wyoming for the period 1932-6 are shown. Most common causes of accident, such as burns, heat burns, shock, cuts and poisons are listed and suggestions for their prevention are given.

Planned Highway Safety Length: 15 minutes.
Distributor: Federal Works Agency. Prices: Free loan.
Emphasis on good road planning and construction for safe driving. A plea for improvement for uniform traffic laws. Demonstrates importance of correct highway marking and signs.

Poisonous Snakes of the United States
Distributor: Film Text Productions. Prices: Rental, 75c per day; Purchase, $[illegible].
Shows various types of poisonous snakes found in the U. S. [illegible]

[illegible] and treatment and precautions are also presented. An instruction manual accompanies the film strip.

Safe Electrical Equipment for the Home—
Distributor: Society for Visual Education, Inc. Prices: Purchase, $2.00.

Safe Housekeeping Practices—
Distributor: Society for Visual Education, Inc. Prices: Purchase, $2.00.

Safety and Health in Arc Welding Length: 56 frames.
Distributor: Society for Visual Education, Inc. Prices: $2.00 (includes teacher's manual)
Shows correct methods in arc welding with the workers safely equipped for protection against chemical and mechanical hazards in welding.

Safety Factors Length: 77 frames.
Distributor: The Jam Handy Organization. Prices: Purchase, $3.50 per film strip, $99.00 per set of 35.
The maintenance of brakes, steering gear, horn, lights, and windshield wiper is demonstrated. Points out that safe careful driver is the most important safety factor of any vehicle.

Safety First Length: 31 frames.
Distributor: Stillfilm, Inc. Price: Purchase, $1.50
Deals with traffic situations particularly hazards caused by careless pedestrians. Shows result of disobedience, playing in the streets, failure to obey traffic signals, riding two on a bicycle, and hitchhiking. A group of boys and girls are shown obeying school boy patrol and passing in and using a pedestrian tunnel.

Safety in Bicycle Riding
Distributor: Society for Visual Education, Inc. Prices: Purchase, $2.00

Safety in the Home Length: 36 frames.
Distributor: Visual Sciences. Price: Purchase, $1.00
Covers the many hazards existing in the home. Negative instruction makes the film almost entirely a "don't" type of story.

Safety Kinks in the Metal Industry Length: 38 frames.
Distributor: University of Toledo. Prices: Available on request to groups outside of Ohio.

Safety on The Highways Length: 71 frames.
Distributor: [illegible]. Price: Purchase, $2.00
Presents twenty-five pictures and interests them from the viewpoint by the [illegible] published by the Motorists' Commentary [illegible] with humorous [illegible].

Safety Thoughts Length: 71 frames.
Distributor: [illegible]. Price: Purchase, $[illegible].
[illegible] and safety year [illegible] presented with present day needs and [illegible] way. Twenty-five traffic cases taken from [illegible] Incidents [illegible] published. Where [illegible] were [illegible] were [illegible].

Schoolboy Patrol
Distributor: [illegible]. Prices: Purchase, $2.00

for good electrical connections, and value of repairing defective flue or stovepipes.

Farm Safety Set

Distributor: National Safety Council. Price: Purchase. Set of Four f.o.b. Chicago, Ill., $17.50. Titles are:

Scene from "Farm Safety Set" (Four Sound Slidefilms)

Seven Million Hands — This film presents the facts behind President Roosevelt's call for new farm workers. It purposes to encourage young and old to volunteer their services for farm work and to break the ice relative to accident possibilities that await them if their services are accepted.

Strictly Personal — What clothes are best suited for farm work? What precautions should be followed around the barn, home, and around the barnyard to avoid accidents? These questions and many others are answered by this film. It explains the use of many small hand tools that are a part of the daily life in the average American farm.

Hand Helpers — Machines are taken so much for granted on the modern farm as they are in the modern factory. Wherever there are machines, potential accidents exist. This film shows practical methods of accident prevention, insuring total production of food by all who heed them. Labor-saving devices, various hand tools, tractors, and other farm machines are covered.

Let's Be Friendly — This film offers suggestions for the treatment of such farm animals as horses, cattle, hogs, and man's best friend, the dog. Educational for both old and young.

Distributor: National Safety Council. Prices: $7.50. (With the Farm Safety Set of four films at left, $22.50) f.o.b. Chicago, Ill.

Shows how one farmer trained his new helper in a minimum amount of time, and with great effectiveness. Shows the arrival of the youth on the farm, describes how the farmer put him at ease, explains his tasks to him, and calls attention to the dangers of carelessness. Recommended for farmers employing inexperienced workers and for volunteer workers.

MISCELLANEOUS

The Home Frontier — Length: 15 minutes.

Distributor: Zurich General Accident and Liability Insurance Co., Ltd. Price: Free loan.

Gives negative instruction, showing a number of incorrect practices. Statistics on the major types of accidents are shown. Shows how tragedy may be brought to a family by a single careless mishap. Should be useful in home economics and general safety classes. Primarily for adult audience, suitable for upper classes in high school. The whole film is an indirect advertisement for Zurich Insurance coverage.

Safe Currents — Length: 30 minutes.

Distributor: New York University Center for Safety Education. Price: Rental $1.00 per day. Purchase $6.00.

Shows the safe way of using electricity in the home, including approved practices for avoiding fires that result from the misuse of electrical appliances. Part I, "Safe Currents," shows how electrical shocks can be prevented. Part II, "Fire by Wire," illustrates the prevention of fires which result from electricity in the home.

Seventh Column — Length: 15 minutes.

Distributor: Liberty Mutual Insurance Co. Price: Free loan.

A general inspirational film enlisting the aid of civilians for the war effort by guarding against accidents on the home front. Covers safety at work, on the street, and in the home.

The Unwanted Guests — Length: 14 minutes.

Distributor: Welsh Studios. Price: Purchase, $12.00.

Deals with hotel safety for showing to hotel safety committees and employee groups.

PART III · SILENT FILMSTRIPS

These subjects may be shown on available 35 mm. silent filmstrip projectors.

Alcohol Problems Visualized

Distributor: Society for Visual Education, Inc. Price: Purchase, $2.00.

Effects of alcohol on human functions and skills, including the problem of automobile accidents. In color.

Care in Use of Shovel

Distributor: Film Text Productions. Price: Rental 75c per day. Purchase $2.00.

Illustrates the right and wrong ways of carrying and using a shovel. Primarily of interest to shovel gangs, might be used in agricultural school classes.

The Chance of a Lifetime

Distributor: Society for Visual Education, Inc. Price: Purchase $2.00.

tactics and how they should be corrected.

Guilty—16 mm. sound—(30 minutes).

Distributor: Kansas City Safety Council. Prices: Purchase, $95.00.

Story of a young man, who disregards the persistent warning of his brother-in-law about careful driving. Brother-in-law, who is very safety-conscious, finally loses his wife when young man smashes up car in which wife is riding. Considerable specific traffic safety information included.

Hell Wouldn't Have Him—16 mm. sound. (30 minutes).

Distributor: Bruce Dodson & Co. Prices: Free loan. Purchase, $150.00.

Prepared for adult truck drivers; this film is intended to show the results of carelessness on the highway. Strong emotional appeal represents an effort to curb recklessness in truck driving. Negative approach used throughout. Might be useful for showing to serious traffic offenders.

Highway Beautification—16 and 35 mm. silent and sound. (2 reels).

Distributor: U. S. Department of Agriculture. Prices: Free loan.

Suitable chiefly for driver-training courses or for classes where community safety is being studied. Concerned primarily with demonstrating how highways can be made more sightly and at the same time more safe.

Highway Mania—16 mm. sound. (2 reels).

Distributor: Walter O. Gutlohn, Inc. Price: Rental $3.00 per day.

Sponsored by the New Jersey State Highway Commission. Interviews of traffic authorities by Lowell Thomas. Dangerous driving hazards are illustrated and correct methods given.

Highway Sabotage—16 mm. sound. (20 minutes).

Distributor: Actna Casualty and Surety Co. Price: Free loan.

Portray, the bureaucratic effect of [illegible] accident on American war effort. Before interviews the initial phase of investigation of a serious accident, including visit to the hospital where the victim were taken, the war industry where some of them were employed, and the garage where the damaged cars were to be repaired. Summarizing the reported conversations of speeder and careless driver, with enemy of motor.

Hit and Run Driver—16 mm. sound. (2 reels).

Distributor: New York University Council on Human Relations. May be rented for educational purposes when no admission is charged. YMCA Motion Picture Bureau, free loan.

This excerpt from an MGM film deals with the hit and run driver. A boy and motorist tries to evade responsibility for running down and seriously injuring two pedestrians on a highway. He finally relents, when faced with the result of his [illegible].

Horse Sense and Horse Power—16 mm. sound—(1 reel).

Distributor: American Automobile Association.

Industry with scenes from the early days of motoring and action shots of testing modern motor cars. Appeals to the motorist to recognize his responsibility on the road.

Hustle and Bustle—16 mm. sound—(1 reel).

Distributor: Vision Educational Productions. Prices: Purchase only, $38.50.

Deals with safe bus transportation and illustrates typical safe driver to point out checking of vehicle, stopping, starting, following distances, safe speeds, turns, pedestrians, courtesy and reporting of hazards. Both metropolitan and cross country buses are included. Covers many important problems and illustrates them clearly and on a positive basis.

It's Up To Us—16 and 35 mm. sound. (11 minutes).

Distributor: General Motors Corp. Prices: Free loan.

Presented in the interests of the conservation of our natural resources, this film pictures the value of correct driving habits in better car performance by saving gasoline, oil, rubber, and metals now needed in national defense. Shows how drivers waste gasoline and oil at high speeds and burn up rubber through improper stops, creeping curb speeding, unnecessary use of brakes, turning corners too fast. Final scene demonstrates correct driving practices for efficient use of vehicle.

Keep Up With Traffic [illegible]

Distributor: Portland Cement Association. [illegible]

The main theme of this picture is that modern highways are unsafe and that engineering offers the best way to make them safe. The making and use of concrete is shown. Also shown are various ways of making highways safe: divided highways, underpasses, pedestrian sidewalks, and safe intersections. Scenes are taken in many different parts of the country and add to the picture interest. Recommended for use in high school [illegible].

Knights of the Highway [illegible]

Distributor: [illegible] Handy Organization. Price: Free loan. $9.50.

Picture deals with [illegible] safety, and [illegible] straight thinking.

Learn to Live [illegible]

Distributor: Actna [illegible]. Price: Free loan.

A [illegible] available only from [illegible]. Outlines essential How to [illegible] safely, [illegible] to [illegible] how to [illegible] how to [illegible] the street, when to cross the street, and how to walk on a highway.

The Man at The Wheel [illegible]

Distributor: [illegible]. Price: Free loan. [illegible] Price: Rental.

A March of Time film showing [illegible] safe [illegible] driver who [illegible] highway [illegible]. Emphasis on the [illegible] safety [illegible] the part that [illegible] [illegible].

to reduce accidents through education, enforcement, and engineering. Safe intersections, underpasses, divided highways, and pedestrian tunnels in various cities are shown.

Once Upon A Time 16 mm sound (1 reel)
Distributor: Metropolitan Life Insurance Co. Prices: Free loan
Animated cartoon picture with fairy tale setting showing what happens when Carelessness and Discourtesy motivate motorists. Familiar characters such as the Mad Hatter, Simple Simon, Jack the Giant Killer and Cinderella and her Prince are shown in various safety situations.

The Other Fellow 16 and 35 mm sound (1 reel)
Distributor: General Motors Corp. Price: Free loan
Features comedian Edgar Kennedy who plows his way through unsuspecting motorists and helpless pedestrians. Strongly emphasizes the need for careful driving on the part of everyone.

Over Here 16 mm sound (1 reel)
Distributor: YMCA Motion Picture Bureau. Price: Free loan
An appeal for safety by Eddie Rickenbacker [illegible] with pictures of various [illegible] and a description of the [illegible] by Rickenbacker. This is followed by a comment on the number of deaths resulting from highway accidents. Members of the American Legion and others are urged to cooperate in reducing the accident rate.

The Policeman 16 mm sound
Distributor: Erpi Classroom Films Inc. Price: Purchase $50.00
[illegible] typical city patrolman through [illegible] of his regular shift of duty. [illegible] patrol car with two-way radio [illegible] explained. Lessons in [illegible] and pedestrian and vehicular traffic [illegible] are developed.

Remember Jimmy 16 mm silent and sound [illegible] (1 reel)
Distributor: Fireman's Fund Indemnity Co. Price: Free loan
[illegible]

The Road of Tomorrow 16 mm [illegible]
[illegible] YMCA Motion Picture Bureau [illegible]
[illegible]

Safe Bus Operation [illegible]

Prepared by the Detroit Street Railways for instruction of new drivers. Deals with safety and service angles of bus operation, covering all phases very well.

Safety Driving 16 mm sound (1 reel)
Distributor: Mogull's Inc. Prices: Rental, $1.00 per day
A non-advertising version of **Horse Sense and Horse Power.**

Screw Drivers of 1940 16 mm sound (13 minutes)
Distributor: Shell Oil Co. Prices: Free loan
Chiefly an advertisement to encourage drivers to join the "Share the Road Club" sponsored by the Shell Oil Co. Lew Lehr, motion picture comedian, follows Mr. Anybody in his car and points out the practices of a screw driver: cutting out of line without hand signal, passing car on right, weaving in and out to the left of center of road, blocking traffic and double parking.

Seeing Green 16 mm sound (1 reel)
Distributor: The Jam Handy Organization. Prices: Purchase $36.50
In this picture we look inside a traffic light and see how it works. We look at traffic lights all over the country and see the fine job they do to make the streets and highways safe for motorists and pedestrians. From the wide variety of traffic signals now in use we learn the need for more standardization, although throughout the country red means "Stop" and green means "Go."

Short Stops 16 mm sound (1 reel)
Distributor: The Jam Handy Organization. Prices: Purchase $36.50
On the principle that the more we know about the brake, the safer we will be, picture explains operation of the perfected hydraulic brake. The effect of speed and road surface on stopping distance is shown and expert drivers explain how to use brakes most effectively for smooth and safe stops. The film employs special devices, technical animation and narrative treatment.

Singing Wheels 16 and 35 mm sound (23 minutes)
Distributor: Automobile Manufacturers Association. Prices: Purchase $27.00
Dedicated to the truck drivers of America, this [illegible] picture, the part played by the men and machines of the motor transport system in the [illegible] of highways, dams, homes, skyscrapers and buildings, in assisting the railway and marine in bringing farm products to the city, delivering food and materials to stores, homes, and factories, and in taking part in the defense program. Shows what would happen if all trucks were suddenly stopped. Several scenes show the importance of a complete physical examination in the selection of drivers and the testing of drivers on the [illegible] of the road.

Stop This Killing 16 mm sound (1 reel)
Distributor: State Highway Patrol, Atlanta, Ga. Prices: Free loan
[illegible] what the Georgia State Highway Patrol is doing to cut down accidents on the highways. General traffic safety

tures, together with an instructor's manual, and correlated printed material for distribution to the class. Produced in cooperation with the Bureau of Medicine and Surgery, Bureau of Aeronautics, United States Navy.

(1) The Purpose of First Aid. 55 pictures. Gives a preview of the course and some of its applications.
(2) The Body, Part I (technicolor). 45 pictures. Shows muscles, tendons, skin, blood, skeleton, head, trunk, upper and lower limbs.
(3) The Body, Part II, technicolor. 54 pictures. Shows heart, arteries, capillaries, veins, breathing, nutrition, and nervous system.
(4) Shock. 31 pictures. Shows how to recognize and treat victims of shock.
(5) Unconsciousness. 62 pictures. Deals with unconsciousness due to heat stroke, heat exhaustion, apoplexy and fainting.
(6) Common Emergencies. 56 pictures. Deals with appendicitis, choking, diarrhea, earache, toothache, common cold, sunburn, poison ivy, poison oak and sumac, insect bites, and fainting.
(7) Minor Injuries. 62 pictures. Covers strains, sprains, dislocations, bruises, frostbite, and foreign bodies in eye, ear, nose and stomach.
(8) Wounds, Part I. 49 pictures. How to stop bleeding and prevent infection.
(9) Wounds, Part II. 57 pictures. Covers abrasions, clean-cut wounds, deep punctured wounds, animal bites and snake bites.
(10) Dressings and Bandages, Part I. 75 pictures. Materials used in bandages and how to apply bandages.
(11) Dressings and Bandages, Part II. 77 pictures. Shows commonly used bandages.
(12) Artificial Respiration. 32 pictures. How to apply artificial respiration by the prone pressure method.
(13) Burns. 39 pictures. Show treatment for burns and scalds.
(14) Poison. 39 pictures. Treatment for drug poisoning, food poisoning and carbon monoxide poisoning.
(15) Fractures, Part I. 59 pictures. Shows two principal types of fracture and sets forth general first aid treatment. Specific treatment for fractures of leg, forearm, upper arm, elbow, finger and collarbone.
(16) Fractures, Part II. 56 pictures. Shows how to treat fractures of skull, nose, jaw, spine, ribs, pelvis, thigh, knee cap, feet and toes.
(17) Fractures, Part III. 64 pictures. How to apply fixed traction splints.
(18) Moving the Injured, Part I. 47 pictures. Shows how to move the injured on various types of stretcher.
(19) Moving the Injured, Part II. 63 pictures. Shows how to improvise a stretcher and how to carry an injured person when a stretcher is not available.

Open for Infection—Length 20 minutes.
Distributor: National Safety Council. Prices: Purchase $7.50, f.o.b. Chicago, Ill.
Story features workman who cuts finger then scoffs at first aid and is ordered to first aid room by foreman. While having finger treated he learns from the doctor great danger in neglecting even the smallest cuts or injuries. Film shows the important reasons for prompt first aid and examples of neglected first aid.

HEALTH AND HYGIENE

The Cold Bug Length 14 minutes
Distributor: Commercial Films, Inc. Price: Purchase $12.50
Brings home to plant employees the dangers of neglecting even "a case of sniffles" which may lead to serious illness and financial loss. The Cold Bug introduces the subject in an attention-getting manner, then points out the way to prevent and treat colds.

Food Keeps You Fit Length 15 minutes
Distributor: Commercial Films, Inc. Price: Purchase $12.50
Food every worker needs [illegible] results of proper eating are shown. [illegible] are advanced why [illegible] food is health insurance [illegible] will make every worker more efficient and agreeable both at home and at work.

Take Care of Yourself Length 16 minutes
Distributor: Commercial Films, Inc. Price: Purchase $12.50
A dramatization of the importance of common sense in health matters. An industrial physician and nurse explain to a worker how to keep his health by observing a few simple rules on food, sleep, [illegible] mental attitude [illegible]

FARM SAFETY

The Devil to Pay Length 11 minutes [illegible]
Distributor: [illegible] Agricultural A[illegible]
Price: Free [illegible] charge.
[illegible] farm fire prevention [illegible] Fire Demon [illegible] and their [illegible] fire hazards [illegible]

Farm Fire [illegible]
Distributor [illegible]
Price: Free [illegible]
[illegible]

Six Steps to Safety Length 15 minutes
Distributor: Superior Coach Corp. Prices: Free loan.
Measures which contribute to school bus safety. Recommended for students of junior high level and above and for P.T.A. groups. Narrated by Lowell Thomas.

The Skill Behind the Man.
Distributor: Fruehauf Trailer Co. Prices: Apply
A sequel to **Man Behind the Wheel**, deals with advanced fundamentals of tractor-trailer driving. Produced under technical direction of Edison Smith, twice winner of World's Driving Championship.

So You Want A Driver's License Length 15 minute.
Distributor: New York University Center for Safety Education. Prices: Rental $1.00 per day, Purchase $6.00.
Explains the steps taken by an applicant in getting a driver's permit in New York State, and also gives a number of good driving practices.

Stop and Go Selling Length 15 minutes.
Distributor: Athis Educational Film Co. Prices: Purchase $15.00.
For dairy deliverymen. Pictures deliveryman who concentrates all his efforts on selling and disregards safety in driving his vehicle. Shows how the reckless driving further spoils all his other accomplishments.

Stop! Look! and Live! Length 15 minute.
Distributor: The Jam Handy Organization. Prices: Purchase $15.00.
Deals with pedestrian safety. An interview with a postman and a city policeman for tips on urban and metropolitan walking hazards. Followed by interview with state policeman for information about safe walking procedures on the highway and in rural district.

Stop That Thief
Distributor: National Conservation Bureau. Prices: Free loan.
An expose of the accident racket. Fake claims experts are exposed with examples of their work which annually results in the theft of millions of dollars.

Testing The Drinking Driver Length 20 minutes.
Distributor: National Safety Council. Prices: Free loan.
Recommended by American Automobile Association Motion Picture Traffic Safety Committee as the most effective sound slide film on traffic safety during 1949. A dramatic story of how new scientific tests are being used in drunk driving cases.

Victory Highways Length 15 minutes.
Distributor: Automotive Safety Foundation. Prices: Apply.
This film describes the great wartime highway traffic program developed and effectively promoted by the organization and deals with such subjects as conservation of rubber and other limited materials, uniform traffic regulations, safe operation of vehicles and similar objectives of the program.

Wheels of Safety Length 15 minutes.
Distributor: Liberty Mutual Insurance Co. Prices: Free loan.
A newspaper want-ad brings several applicants to apply for the job of driver-salesman. Sitting in the waiting room, they discuss their respective accident records. In the interviews with the personnel manager of the firm, each one reviews his accidents record, and some of the accidents are demonstrated. The man with the clean safety record is hired.

The Wheel of Chance – Length 30-40 minutes.
Distributor: Branch Offices of the Coca Cola Co. in various cities. Prices: Free loan.
Gambling scenes at Monte Carlo are compared with the chances which automobile drivers take. Near accidents and correct driving practices in connection with the operation of a Coca Cola truck are shown. While this film was prepared for the instruction of Coca Cola truck drivers it can be used to advantage in any truck driver training classes.

You Bet Your Life –Length 25 minutes.
Distributor: Travelers Insurance Co. Hartford Conn. Prices: Free loan.
Features the comic character "Ozzie," and his adventures on the highway. Humor is used effectively to get across the rights and wrongs of driving. Best for general audiences.

FIRST AID

First Aid –Length: 15 minutes.
Distributor: Zurich General Accident and Liability Insurance Co., Ltd. Prices: Free loan.
After first aid is defined, the procedures advocated by the American Red Cross in rendering first aid treatment are suggested and demonstrated. Methods of applying various bandages are illustrated. Also shown are treatments of shock, serious bleeding, stoppage of breathing, burns, scalds and poisons. The picture is particularly desirable for showing to first aid and adult classes.

First Aid Training 19 slidefilms and records; 13 instructor's guides, 1 general instructor's manual.
Distributor: The Jam Handy Organization. Prices: Complete, $122.50; Individual subjects: Black and white, $5.90, color $9.50.
This is a visual training course for first aid, composed of 19 slidefilms with recorded lec-

Scene from "First Aid Training Series" – Jam Handy

driving, night driving, etc.

The Streetcar—16 mm. sd.col.—(15 minutes)
Distributor: Bailey Film Service. Prices: Purchase, $24.00.
Sponsored by the Los Angeles Railway, this film shows streetcars run and operated as public carriers. Primarily a picture to accompany the training of streetcar motormen.

Take It Easy . . . With Safety 16 mm. sound (23 minutes)
Distributor: National City Lines, Inc. Prices: Rental $7.50 per day, Purchase $125.00.
An excellent film on metropolitan bus operation. Built around the theme of Safety, Courtesy and Service. Thoroughly covers bus maintenance, personnel relationships, and safe and efficient bus operation. Produced by and for National City Lines. Various types of buses are illustrated.

Take It Easy 16 mm. sound (2 reels)
Distributor: Bell and Howell Film Library.
Prices: Service charge $1.00.
Scientific study of causes and nature of fatigue as encountered in the work of drivers of trucks. Interesting possibly to college science courses of a demonstration of controlled experimentation.

Thou Shalt Not Kill 16 and 35 mm. sound (1 reel)
Distributor: Aetna Casualty and Surety Co.
Prices: Free loan.
A dramatization of the Law of Responsibility Law in New York State following the portrayal of the irresponsible driver as the cause for most traffic accidents the film illustrates five fundamental rules to be followed by the driver who wants to retain his driving privileges.

'Tiz Better to Be Safe 16 mm. sound
Distributor: The Farmer Automotive Service Association, Peoria, Ill. Prices: Free loan.
Covers truck and bus safety operation including particularly rural highway hazards. Produced for farm and truck operators and Illinois State Truck Association employees. Illustrated. Vivid graphic scenes dramatize emphasize wrong driving practices and enactments show how accidents could have been avoided.

Tomarrow's Drivers 16 mm. sound
Distributor: World Studios. Prices: Apply.
Produced in cooperation with the Center for Safety Education, New York University, New York City.
Designed to help drivers of tomorrow, high school students, understand the rules obtained by the pupil from the driver training and the good driver himself makes.

The Truck and the Driver [illegible] reel
Distributor: National Safety Council. Prices: Rental $3.00 per day.
A convincing and effective picture of correct procedure in city driving and on the country highway. Covers [illegible] truck operation and essential [illegible]

Uncle Jim Tells 'Em 16 and 35 mm. sound – (1 reel)
Distributor: Wilding Picture Productions. Prices: Apply.
An interesting dramatization of safe rules for driving.

War and Order 16 and [illegible] minutes)
Distributor: British Information Services. Prices: Apply.
The story of the Police Force in [illegible] wartime duties. Shows actual [illegible] to demonstrate the emergency activities of the Police Force.

We Drivers 16 mm. sound and [illegible] sound, [illegible]
Distributor: General Motors [illegible]
Prices: Free loan.
Features the [illegible] Safety Round Table. Traffic director and advocate [illegible] Girl [illegible]

When You Know 16 [illegible]
Distributor: The [illegible]
[illegible]
A [illegible] true [illegible] the [illegible] drivers. Excellent [illegible] trying [illegible] to [illegible]

With Care [illegible]
[illegible]
Prices: [illegible] $[illegible]
A [illegible]

Young America on Wheels [illegible]
[illegible]
Prices: Purchase $[illegible]
A [illegible]
Work in [illegible]

Youth Takes to the Highway [illegible]
[illegible]
Distributor: [illegible]
Prices: Purchase $[illegible]
An [illegible]
Driving [illegible]
with [illegible]

Pedestrian Safety

Danger on The Street—16 mm. silent—(12 minutes).
Distributor: University of Missouri. Prices Rental, 35c per day in Mo.; 60c per day outside of state.
Emphasizes the incorrect habits of children which lead to accidents on the street, jaywalking, playing on streets, riding on rear of car, crossing street between parked cars, riding two on a bicycle, and hitchhiking.

Foot Faults—16 mm. sound—(11 minutes).
Distributor: The Princeton Film Center. Prices: Rental, $1.50 per day, Purchase $36.00.
During 1942 far more Americans were killed and injured on the home front than the country lost at war. Many of these were pedestrian accidents and this film shows how to prevent them. Interesting, informative and valuable to everyone who sees it.

Heedless Hurry . . . Endless Worry 16 mm sound (1 reel).
Distributor: American Automobile Association. Prices: Free loan.
Deals mostly with pedestrian safety. Safe and unsafe driving practices are also shown. Good for audiences of all ages.

'Readin', 'Ritin' and 'Rithmatic 16 mm silent (1 reel).
Distributor: American Museum of Natural History. Price: Service charge 50c.
Prepared for the American Transit Association, this film deals with safety while riding busses and streetcars. Correct methods of boarding and leaving streetcars and of crossing streets are shown. Picture concludes with a summary of safety rules given by a classroom of elementary students. Particularly suited for elementary classes in an urban area.

Steps to Safety 16 mm sound (17 minutes).
Distributor: New Jersey Dept. of Motor Vehicles. Prices: Purchase $50.00.
Many of the unsafe things pedestrians do are illustrated by nature giving the picture a great many laughs. Aimed at adult audience to explain what New Jersey is doing to curb pedestrian accidents.

Street Safety . . . For Advanced Grades 16 [illegible] silent 1 reel.
Distributor: Eastman Kodak Co. Prices: Purchase $24.00.
[illegible] fundamental safety principles designed to [illegible] activities and adults [illegible] the right way to cross street, right from [illegible] right places to play, how to walk along roads where there are no sidewalks. There is a review of all the correct practices at the end of the picture adapted to classroom [illegible]. Made in cooperation with the National Safety Council and the American Automobile Association.

Street Safety . . . For Primary Grades 16 mm [illegible]
[illegible] Eastman Kodak Co. Prices: Purchase $[illegible]
[illegible]

traffic lights and signs, where to play. Some of the scenes show a trained police dog illustrating the safety habits to children. The positive approach is used throughout. Made in cooperation with the National Safety Council and the American Automobile Association.

Watch Your Step 16 mm silent in color (1 reel).
Distributor: Grand Rapids Safety Council. Prices: Free loan.
A film release on pedestrian safety. Effectively photographed in color it illustrates proper walking procedures on streets and highways.

We Who Walk 16 mm silent (15 minutes).
Distributor: Employers Mutual Insurance Co. Prices: Free loan.
Opens with the scenes of the Hindenburg disaster in 1936 when 36 lives were lost. This loss is compared with the daily accident death rate. Shows incorrect habits of pedestrians in everyday traffic situations, stopping to greet friends in the middle of the road, crossing between parked cars, and jay walking.

School Patrol & Bicycle Safety

Bicycling With Complete Safety 16 mm sound and silent (12 minutes).
Distributor: National Conservation Bureau. Prices: Free loan.
A boy on a bike is involved in an accident. The way in which he could have avoided the mishap is illustrated. [illegible] are shown inspecting bicycles, demonstrating correct ways to ride and [illegible]

The Bike Parade 16 mm sound (11 minutes).
Distributor: Films Incorporated. Prices: Rental $2.00 per day.
Narrated by Ted Husing who is shown riding a bicycle, this film traces the growing interest in bicycles, the changes that have occurred in bicycle styles, and the uses which have been made of bicycles during the past 40 years. Excellent photography.

Handlebar Hazards 16 mm silent in color (20 minutes).
Distributor: Employers Mutual Insurance Co. Prices: Free loan.
Shows what Appleton, Wis. is doing in training school pupils in the correct use of bicycles. Bicycle registration and inspection by the [illegible] are shown. Various causes of bicycle accidents are illustrated. Scenes in which young offenders are given tickets for each violation by police may cause audience to laugh and thus miss safety lesson.

How Patrols Operate 16 mm sound technicolor (15 minutes).
Distributor: American Automobile Association. Prices: Free loan. Purchase $90.00.
Designed to train new school patrols, correct and instruct existing patrols. Shows patrol members on duty at various types of intersections. Also illustrates duties of patrol officers [illegible] patrols [illegible] duty.

Life's Too Short 16 mm silent in color (12 minutes).
[illegible] Oakvale Public Schools, Oakvale, W. Va. Prices: Rental $1.00 per day. Purchase $[illegible]

[illegible] ing, forward turns, backing, uncoupling.

Mind Over Motor Length, 15 minutes.
Distributor: Zurich General Accident and Liability Insurance Co., Ltd. Prices: Free loan.
Prepared primarily for showing to truck drivers. Emphasis is placed on the necessity for clear thinking, good judgment, caution, and care in preventing accidents while driving. Gruesome scenes illustrate the result of bad habits. Advertising is confined to mention of the sponsor's name at beginning of film.

Night Driving Length, 15 minutes.
Distributor: The Jam Handy Organization. Prices: Purchase, $15.00.
The important part of this film lies in the emphasis on three rules for night driving: 1. Inspect and adjust headlights regularly. 2. Use meeting beam of headlights when meeting other cars on the road. 3. Do not over-drive your own headlights. Charts and statistics on night driving are also shown.

Scene from "No Time for Goofers" Traffic [illegible]

No Time For Goofers Length, 20 minutes.
Distributor: National Safety Council, Inc. Price: $5.00, f.o.b. Chicago, Illinois.
An off-the-job traffic safety film for workers who are contributing to the success of the war effort. Illustrates the daily hazards facing those who walk, ride bicycles, drive, share rides, or depend upon public transportation facilities to get to and from work, which cause accidents that result in war production delays.

No Use Skidding Length, 20 minutes.
Distributor: National Safety Council. Prices: Purchase, $7.50, f.o.b. Chicago, Illinois.
A fast-moving film explaining the major causes of winter traffic casualties. Tells the driver what he can do to avoid accidents during the winter months. Braking distances on ice, packed snow and wet pavement are contrasted with those on dry pavement. Some of the important questions asked and answered are: What can be done about the weather? Do tire chains really help? Why does it help to pump the brakes? Does spreading sand help? Can be shown to all types of drivers.

The Other Fellow Length, 15 minutes.
Distributor: The Jam Handy Organization. Prices: Purchase, $15.00.
Suggestions are presented to communities on reducing traffic accidents by means of a 15 point safety program. Shows what Evanston [illegible] was able to gain its reputation as a safe city.

Pilots of the Highway Length, 20 minutes.
Distributor: National Safety Council. Prices: Purchase, $7.50, f.o.b. Chicago, Ill.
A dramatization of Interstate Commerce Commission safety regulations for cross-country truck drivers. Opening scenes explain the great responsibility of commercial vehicle operators in safely transporting millions of people and billions of dollars worth of valuable material. Story is built around new driver as he learns the I.C.C. safety regulations on such matters as speed, checking of vehicle, road signs and signals, turning, following distance, etc.

Safe Seeing—Safe Driving Length, 25 minutes.
Distributor: General Electric Co. Prices: Free loan.
A technical presentation of the advantages of good highway lighting. Causes and prevention of night accidents are included. Discussion is made of headlight adjustment, various types of lamps, etc.

Safety for Sale Length, 22 minutes.
Distributor: Northwestern University Traffic Institute. Prices: Free loan.
While this film was prepared for the [illegible] the examples [illegible] the principles [illegible] advance [illegible] Makes an excellent presentation [illegible] and [illegible] Highway program [illegible] for police and safety council organizations.

Safety in Numbers Length, 10 minutes.
Distributor: American Automobile Association. Prices: Free loan.
Presents a plan for community safety and the part civic groups [illegible] in solving local traffic problems.

Safety On The Highways Length, 20 minutes.
Distributor: Aetna Casualty and Surety Co. Prices: Free loan.
Covers driving subjects such as how to turn at an intersection, how to drive on the highway and how to avoid [illegible] skidding. Also deals with pedestrian problems such as how to [illegible] the street [illegible] the street and how to walk on the highway.

Selective Enforcement Length, [illegible]
Distributor: Northwestern University Traffic Institute. Prices: Free loan.
[illegible]

Sense and Safety Length, [illegible]
Distributor: Maryland State [illegible] Prices: Free loan.
A vivid presentation of highway traffic problems [illegible] A [illegible]

plants. Stresses foremen's and supervisors responsibility in the safety program.

Supervisory Development Set—Length 15 to 20 minutes each
Distributor Vocational Corp. Prices Apply.
Four films designed to teach foremen and supervisors how to put safety across to the employees working under them. No. 1 **Let's Face the Facts**, shows what to look for in safety, and dramatizes the fact that any interruption to production is a clue, pointing to the fact that something has gone wrong. It will enable the foreman to plan safety on a sound basis. No. 2 **Do the Job Right** realistically faces the problem the foreman is up against in trying to do the job right. It shows how he can find time to plan his program, delegate duties, sell the men and follow through. No. 3 **Off to the Right Start**, outlines what the foreman can do to capitalize on the value of first impression in getting a new man off to the right start and thereby assuring himself that the work will be performed according to safety rules and good safety practice. No. 4 **Getting Results**, outlines methods of handling different types of men, and shows how the foreman can sell them on cooperating to obtain the objectives he has set up. These films are part of a set of 12 on supervisory training.

TRAFFIC AND PEDESTRIAN

Are Your Feet Killing You? Length [illegible]
Distributor [illegible] Safety Council. Price [illegible]
A dramatic portrayal of America's growing pedestrian problem. Shows many ways to attempt to jaywalk, illustrates walking hazards, and explains and emphasizes correct procedures. Covers jaywalking, intersection traffic signals, night walking, and the importance of being alert at all times.

Dangerous Trails Length 10 minutes
Distributor Illinois Agricultural Association. Price Free loan. Purchase Apply.
This film was prepared primarily for boys and girls in rural districts. The dangers faced by horseback riders and children playing near roads are compared with the dangers boys and girls face on the busy streets and highways today. Good habits and bad habits of the pedestrian on rural highways are shown.

Death Takes No Holiday Length 30 minutes.
Distributor [illegible] Conservation Bureau. Price Free loan.
A dramatic presentation of the causes and results of traffic accidents. Presents suggestions for reducing accidents. Gives accident facts to date and points up the appeal for more uniform traffic regulations.

Defensive Driving Length [illegible] minutes
Distributor Motorists Safety Council. Price Purchase $7.50 to [illegible] Chicago, Ill.
An entertaining and instructional program for both private car and truck drivers. Two newspaper reporters are given the assignment of finding out why truck drivers are asked to drive such big, heavy vehicles with so few mishaps. Interviews with drivers of various types of trucks and demonstrations of "defensive driving" tactics.

Drive Defensively —
Distributor Liberty Mutual Insurance Co. Prices Free loan
A highway accident, involving a car full of young persons, and a commercial truck driver happens at a blind corner. The truck driver legally was in the right, but his boss asks whether he honestly believes he did everything possible to avoid the accident. Accident is demonstrated with miniature sets and story is interestingly told.

If It Happens Length 20 minutes
Distributor National Safety Council. Price Purchase $7.50 f.o.b. Chicago, Ill.
Primarily for showing to commercial vehicle drivers. A fast moving program explaining and demonstrating what to do after an accident. Three main topics are covered: how to keep the accident from getting worse, how to get and report all facts about the accident and how to get back on the job quickly.

Inertia Length 15 minutes
Distributor The Jam Handy Organization. Price Purchase $15.00
Demonstrates the law of inertia as applied to safe driving. The importance of slowing up for curves and starting slowly is explained. Mental reactions and other safe driving practices are compared with the law of inertia.

Learning to Drive Length [illegible] minutes
Distributor New York University Center for Safety Education. Price Rental $1.00 per day. Purchase $6.00
Prepared primarily for high school students in driver training courses. Part I deals with adjustment of the parts of the car, the physical reactions of the driver, contributions made to safety by education, enforcement and engineering. In Part II a beginner is shown behind the wheel learning about the controls and actual practice, proper turns, using correct signals, parking, starting on a hill, without holding back, and demonstrating other skills.

Life Savers of the Highway Length 10 minutes
Distributor Northwestern University Traffic Institute. Price Free loan.
Made primarily for demonstration of proper highway first aid methods to police officers. Describes the great dangers involved in unskilled handling of accident victims.

Live Longer With Light Length 20 minutes
Distributor General Electric Co. Price Free loan.
Stresses the value of good highway lighting. Gives statistics on night accidents and offers plans for improving highways for night driving.

The Man Behind The Wheel —
Distributor Fruehauf Trailer Co. Price Apply.
Demonstrates safest and most efficient operation of tractor trailer units designed primarily to assist new drivers in learning the fundamentals. Produced under the technical supervision of Edwin Smith, twice winner of the World's Driving Championship. Covers meet in being transported in school buses and the manner in which the students of the Oakvale Schools solved these problems. Dangerous habits of bus riders are illustrated and are then followed by scenes showing youngsters entering the bus and leaving carefully obeying the patrol man, crossing in front of the bus when the way is clear, remaining in line, and playing safely off the road.

On Guard for Safety 16 mm. sound, color (17 minutes)
Distributor American Automobile Association. Price Free loan.
Traces the growth of the safety patrol movement with emphasis on the part played by the AAA. While crossing a typical street intersection, walking on a rural highway, and boarding and leaving school buses, boys and girls are reminded by patrol boys to be careful. Procedure for setting up patrols, awarding service certificates, and training new recruits are shown. At the end of the film, the viewers are voted to choose of the month a lovable and gentle dog in Washington, D.C.

On Two Wheels 16 mm. sound [illegible] minutes
Distributor [illegible] Motor [illegible] Conservation Bureau. Price [illegible]
Opens with rub [illegible] which is illustrated [illegible] traffic court. [illegible] spoken [illegible]

Safety Patrol—16 mm.
Distributor [illegible] Motor [illegible] Conservation [illegible]
Tells [illegible] who keep [illegible] and how [illegible] wise [illegible]

Safety on Street and Highway [illegible]
Distributor [illegible] Motor [illegible]
Price Free loan.
Made by the New York State [illegible] to be used by the [illegible] accident.

Speaking of Safety [illegible]
Distributor American [illegible]
Price Free loan.
[illegible]

Spinning Spokes [illegible]
Distributor [illegible] and Howell [illegible]
Price Rental $1.00 per day. Purchase $36.00
A bicycle [illegible] is involved in an accident. He refuses to ride in the police car and insists on riding his bicycle home. However, the safety patrol and [illegible] take the boy and his bicycle home. [illegible] prevention. He [illegible] correct procedure [illegible] riders. Picture closes with an exhibition of trick bicycle riding and races.

Trained to Serve 16 mm. sound in color—(23 minutes)
Distributor American Automobile Association. Price Free loan.
A story of how the Chicago Motor Club trains school safety patrol leaders in camp. Scenes show boys engaging in sports, working with their hands, learning how to recognize poison ivy and poison oak, swimming, cleaning up cabins and camp, making maps of the school area to determine the best route to school, practicing patrol duties under simulated traffic conditions, attending a school safety court session, and taking tests to determine what they have learned. The name of the AAA is mentioned frequently throughout the film. Appeals particularly to parents and teachers.

Why Be A Goose? 16 mm. silent
Distributor National Conservation Bureau. Price Free loan.
Cartoon. Children are compared to a flock of geese and are shown taking various sorts of chances. The geese are punished by [illegible] swimming against hatchlikinker.

FIRE PREVENTION

General

The ABC of Fire 16 [illegible]
[illegible]
[illegible] Mutual [illegible]
Mutual members. Purchase $6.00
[illegible]

Approved by the Underwriters [illegible]
[illegible]

Before The Alarm 16 and 35 mm. sound (10 minutes).
Distributor: The National Board of Fire Underwriters. Prices: Free loan.
Fundamental fire prevention and protection needs of an average American community. The fire chief and a National Board engineer arouse audience interest in problems of fire equipment as they put apparatus and personnel through fire tests and drills. Also available in 2 reel version, the second part of which is an illustrated lecture on fire prevention and its relation to other community activities.)

Control of Flammable Liquids 16 mm. silent (25 minutes).
Distributor: Protectoseal Co. Prices: Free loan.
An advertising picture. Lays emphasis on the safety factors found in the flame arrester and storage cans manufactured by the sponsor of this film. Methods of handling volatile and flammable liquids are portrayed.

Duplicating Industrial Fires 16 mm. silent (about 30 minutes).
Distributor: Inspection Department Associated Factory Mutual. Price: Free loan to Factory Mutual member. Purchase: $60.00.
Various types of fire extinguishers are demonstrated in action on gasoline and oil fires at the experimental station of Factory Mutual Insurance Co. The film is divided into two parts, the first showing how fires start and the second how they are extinguished.

Electrical Safety 16 mm. silent (20 minutes).
Distributor: Inspection Department Associated Factory Mutual. Price: Free loan to Factory Mutual member. Purchase: $60.00.
Shows how electrical fires start and how they may be prevented. Stresses importance of proper installation of electrical equipment and the necessity for periodic inspection. Shows how to detect overheating and how to prevent it. Also shows how electrical fires may be extinguished.

Fire Department Safety Equipment 16 mm. silent (10 minutes).
Distributor: Ohio Chemical & Manufacturing Co. Price: Apply.
Demonstrates the use of fire fighting methods and equipment and pictures the work of the fire department.

Fire Fighters 16 mm. sound. Free loan.
Distributor: Bell & Howell Co. Price: Apply.
Shows the operation of various types of fire fighting equipment.

The Fire Hose 16 mm. sound. Price: $45.
Distributor: Bell & Howell Co.
Shows the proper handling and maintenance of fire hose.

The Fireman 16 mm. sound. Free loan.
Distributor: Bell & Howell Co. Price: Apply.
Shows the operation of various types of fire fighting equipment.

Fire Prevention 16 mm. silent—(1 reel).
Distributor: Eastman Kodak Co. Prices: Purchase $24.00.
Film is in two parts. First half deals with fire prevention in building construction and second half is an appeal for fire prevention in the home.

Fire Protection 16 mm. silent (1 reel).
Distributor: Eastman Kodak Co. Prices: Purchase $24.00.
A sketch of the history of fire fighting in this country. Shows various types of fire extinguishing equipment and tells how to operate it. The correct procedure in turning in an alarm is demonstrated, as is the method of training firemen. Brief exhibition of artificial respiration. Concludes with a school fire drill showing correct method of leaving building.

Fire Safety 16 mm. silent (1 reel).
Distributor: Eastman Kodak Co. Prices: Purchase $24.00.
Deals mostly with fire prevention in the home. Covers proper treatment of burns.

How Fires Start in Industry 16 mm. sound (about 30 minutes).
Distributor: Inspection Department Associated Factory Mutual. Price: Free loan to Factory Mutual member. Purchase: $125.
Shows various causes of industrial fires. Emphasizes importance of good housekeeping, combustible storage, careful use of portable electric tools, etc. Shows how proper supervision and elimination of fire hazards can be accomplished.

Men of Fire 16 mm. Sound. (1 reel).
Distributor: Johnson Fibre Company. Price: Apply.
Dramatizes the evolution of fire fighting methods and equipment and pictures the work of the fire department today.

Modern Magic in Fire Protection 16 mm. sound. (1 reel).
Distributor: Rockwood Sprinkler Co. Price: Free loan.
A general appeal for industrial fire prevention. Shows the operation of certain types of sprinkler systems. Advertising for Rockwood sprinkler equipment, well presented.

More Dangerous Than Dynamite 16 mm. sound. Price: Apply.
Distributor: Inspection Department Associated Factory Mutual.
Shows the fire hazards of certain types of industrial dust explosions.

Preventing Fires Through Electrical Safety 16 mm. sound. Sixteen reels.
Distributor: Department of Agriculture, Office of Information. Price: Free loan, except for transportation both ways.
Instructs the proper handling and maintenance of electrical equipment to prevent fires. Prepared for the guidance of Farm Bureau groups.

Safeguard America Against Fire 16 mm. sound. 35 minutes.
Distributor: Chicago Board of Fire Underwriters. Price: Free loan.

tion is eliminating "battle necks" in war industries. Outlines six most common causes of industrial accidents and demonstrates how industrial workers can avoid accidents from these causes. Designed to inspire workers to a greater safety effort.

Stay On The Beam Length: 14 minutes.
Distributor: Commercial Films, Inc. Price: Purchase, $12.50.
Every plant has workers such as "Walter the Worrier," "Defeatist Dan," "Outer Space Steve," "Harry the Hurrier," "Belligerent Bert," etc., who unconsciously sabotage the war effort because of their natures. A mental hygiene expert points out the absurdities in such attitudes, then discusses a few simple hints for good morale and good mental health.

Three Futures Length: 15 minutes.
Distributor: Zurich General Accident and Liability Insurance Co., Ltd. Price: Free loan.
The audience looks into the lives of three people at work. Mr. Master becomes involved in an accident due to Johnson's negligence in leaving a box in the aisle of the shop. Only after the causes of several other accidents are traced to Johnson is he fired. The need for correct thinking to avoid such accidents is stressed. Several gruesome scenes are shown. Might be used for showing to industrial shops.

Tomorrow's Too Late
Available in sound, indefinite form. See under Motion Pictures for complete information as to distributor, etc.

To the Women (The Women Can Do It). Length: 15 minutes.
Distributor: Commercial Films, Inc. Price: Purchase, $12.50.
This film meets the need for an authoritative presentation on the general illnesses which cause the majority of absenteeism in war women war workers. Industrial workers, industrial doctors, nurses and personnel directors.

We're On The Spot
Available in sound, indefinite form. See under Motion Pictures for complete information as to distributor, etc.

Women and Machines
Distributor: National Safety Council. Price: Purchase, $7.50 (1 Chicago).
A factory girl is the new weapon in industry. Stresses importance of safety in the United States industrial war effort. Shows why safety is necessary in the interest of war production. Covers instruction of women workers, proper clothing for factory girls, safeguarding machines, various methods of lighting and explains the importance of safety. Shows that women can do all types of work and points out the need for safety in the home, on the road and in the field, as well as in industry.

Women Working for Victory Length: [illegible]
Distributor: Inspection Department, Ltd. Price: Apply.
[illegible]

tions, etc. States main provisions of the laws of Illinois pertaining to the employment of women workers and recommends practices to meet their special psychological and physical needs.

Foremanship Training

Safety Management for Foremen Set of ten 20 minute sound additional including text material for conducting series of ten 2 hour safety conferences.
Distributor: National Safety Council, Inc. Price: Purchase, $37.50 complete set. Chicago.
This illustrated 20 hour safety course provides a very interesting and effective program for studying accident causes, controlling industrial management. Prepared in such simple form that a thorough well organized course of safety instruction can be conducted among supervisors and foremen with minimum of effort and without service of a technical expert or professional instructor. Between [illegible] and [illegible] hours of study.

Follow The Leader. [illegible]

Cause and Cure. [illegible]

Guard Duty. [illegible]

Safety Is In Order. [illegible]

Brain Beats Brawn. [illegible]

Right Dress. [illegible]

Doctor's Orders. [illegible]

Principles and Interest. [illegible]

Production With Safety. [illegible]

Stop, Look and Listen. [illegible]

Safety for Sale [illegible]

Includes meeting guide.

Lady Luck's Husband Length 30 minutes
Distributor Travelers Insurance Co Hartford, Conn Prices Free loan
Features the comic character "Ozzie" and his adventures in an industrial plant. Ozzie does everything wrong and gets himself in all sorts of accidents. But with an amazing streak of luck manages to escape serious injury. Last part of the film analyzes Ozzie's mistakes and illustrates how to correct them.

Let's Use Our Heads and Save Our Feet Length 20 minutes.
Distributor International Shoe Co. Prices: Free loan.
A film promoting the use of safety shoes. Stresses safety shoe construction, why it is important to wear them at work, the many foot hazards encountered in daily work, and the suffering and expense that follow foot injuries.

Minute Men Length 30 minutes.
Distributor National Safety Council Prices Purchase $15.00 f.o.b. Chicago, Ill.
A train-packed story of safety in the Public Utility industry. Opening scenes portray the capable men of the Public Utility employees' job. Explains why safety is so important in all operations and the efforts made by employers to train them about. Illustrates safe practices in line work, power stations, meter inspection, first aid and resuscitation, personal protective equipment, lifting and handling.

Invisible Red Ink Length 20 minutes
[illegible] Prices
Purchase $7.50 f.o.b. Chicago, Ill.
An appeal to business management to recognize the importance of a planned safety program not only from humanitarian standpoint but from actual dollars and cents.

[illegible] Machine

[illegible] Length 20 minutes. [illegible] friendly [illegible] way to safety reward and respect. The other complains of the number of accident in his factory. The safety keeper is shocked by his friend that a well planned safety program will tend to reduce the cost of accidents and methods by which it may be done.

Nothing Upstairs Length 10 minutes
Distributor National Safety Council Inc. Price $1.00 f.o.b. Chicago, Illinois.

characters Lulu Dripp and Hank Fizzle, who are forever getting injured as a result of most common unsafe acts. Covers typical causes of accidents in the average industrial plant.

No Time For Goofers Length 20 minutes.
Distributor National Safety Council, Inc. Price $5.00, f.o.b. Chicago, Illinois.
An off the job traffic safety film for workers who are contributing to the success of the war effort. Illustrates the daily hazards facing those who walk, ride bicycles, drive, share rides, or depend upon public transportation facilities to get to and from work, which cause accidents that result in war production delays.

Parade to Safety Length: 15 minutes
Distributor Zurich General Accident and Liability Insurance Co. Prices: Free loan.
Made for industrial groups, this film demonstrates the extent to which thinking influences our lives. Shows what business manager does to make plant safe. Portrayal of unpleasant scenes tends to make the usefulness of the picture questionable below senior high school.

Rules For Tools Length 20 minutes
Distributor National Safety Council Price Purchase $7.50 f.o.b. Chicago, Ill.
An interesting story of the safe use of small hand tools built around the four rules: "select the right tool, "be sure it is in good condition, "use it properly," "put it away safely." The tools themselves play the leading roles and carry on a conversation with "Ol' Man Accident." Each tool explains how the safety rule should be applied to him.

Safe All Around Length 18 minutes
Distributor National Safety Council Price Purchase $5.00 f.o.b. Chicago, Ill.
A story of off-the-job safety dealing with hazards in and around the home. The hazards are analyzed and methods for their elimination suggested. Typical accidents occurring in the yard, the garage, the basement, the bedroom, the bathroom, and the kitchen are shown and an appeal is made to workmen to walk and drive safely.

Safely We Work Length 15 minutes
Distributor National Safety Council, Inc. Price Purchase $5.00 ($3.75 lots five or more) f.o.b. Chicago, Ill.
Shows railroad yard and crew men how they can avoid accidents on the job, whether getting on or off cars, operating hand brake, throwing switches, coupling or uncoupling cars, and many other such tasks.

Safety Yours Length 20 minutes
Distributor R. M. M. Portland, Ore.
Price Purchase $15.00
A help in teaching the woman employee the story behind safety, its necessity, and the things which contribute to reduction of accident. Includes references to many interesting and valuable ideas and suggestions.

Safety For Defense Length 20 minutes
Distributor National Safety Council Price Purchase $7.50 f.o.b. Chicago, Ill.
A stirring and powerful film program explaining why safety is so vital to the National

preventing the huge annual loss created by fires. Covers methods of preventing and fighting many different types of fires and shows progress made in eliminating fire hazard.

Sixty Seconds to Safety 16 mm sound (1 reel 11 minutes)
Distributor Bailey Film Service and Brandon Films, Inc. Prices: Bailey, supply. Brandon Rental $1.50 per day, Purchase $32.40
Demonstrates some of the common causes of fires in the school such as waste paper carelessly left on steps, furniture blocking exit doors and many other things often overlooked.

Walk . . . Do Not Run 16 mm sound (1 reel, 15 minutes.)
Distributor Harmon Foundation, Inc., Ohio Department of Education. Prices: Harmon, rental $1.50 per day.
Deals with the correct method of school fire drills and traffic regulation during fire drill. In a typical drill a teacher is shown leading the way to a safe place where she then takes attendance to make sure no one is missing. The young hero recalls what will then be said and the correct way of using the fire escape. A good picture for teaching fire drill in school.

Waterlog . . . Master of Fire [illegible] and [illegible] color (47 minutes.)
Distributor Rockwood Sprinkler Co. Prices: Free loan.
Shows graphic extinguishment of flammable liquid fire with [illegible] Water Fog. Explains principles of operation and how to [illegible]. Also demonstrates Water Fog [illegible] equipment, nozzles, and application [illegible] and specific application of Water Fog for protection against fire in industrial plant.

A Word to The Wise [illegible] and [illegible]
Distributor National Retailer Mutual Insurance Co. Prices: Free [illegible] agent or company.
Points out some fire prevention [illegible] many fires. Informs [illegible] the home and how they can be [illegible].

Worst of Form Disasters [illegible] (1 reel)
Distributor U. S. Department of Agriculture. Prices: Free loan.
A pretty little woman [illegible] free in the farm with [illegible] truly proper [illegible] fire.

Forest Fire

The ABC of Forestry [illegible] and [illegible] (10 minutes)
Distributor U. S. Department of Agriculture. Prices: Free loan.
Explains fundamentals of forestry with [illegible] weather. The cultivation, [illegible] forest fires, followed by an appeal [illegible] forests. Particularly [illegible] general interest in forestry and forestry.

Chaparral 16 and 35 mm sound [illegible]
Distributor U. S. Department of Agriculture. Prices: Free loan.

of forest fire protection in general conservation programs. The first reel gives a story of the conservation of water in Southern California placing particular emphasis on the Los Angeles water supply. The second reel shows how forest fires lead to soil erosion and help cut down the water supply. Will be of interest chiefly to schools on the Pacific coast.

Fire Weather 16 and 35 mm sound (2 reels).
Distributor U. S. Department of Agriculture. Prices: Free loan.
A factual description of the cooperation between the Weather Bureau and the Forest Service. Activities of both departments during the hot, dry weather are shown. Second part contains description of location of actual fire and use of radio truck in fighting the fire. This picture is largely technical in nature, and is of particular value to men having fire protection. Most of the scenes in this picture are filmed on the Pacific coast.

Firemen of the Forest [illegible]
Distributor [illegible] Prices: [illegible]
Lumber [illegible] method of prevention employed in [illegible]

Forest Fires or Game? [illegible] and [illegible]
Distributor [illegible] Prices: [illegible]
An appeal [illegible]

The Forest Ranger [illegible] and [illegible]
Distributor U. S. Department of Agriculture. Prices: Free loan. Purchase [illegible]

Friends of Man [illegible]
[illegible]

It Might Have Been You [illegible]
[illegible]

utes).
Distributor: Bell and Howell Film Libraries; Bailey Film Service. Prices: Bell and Howell, Rental $1.50 per day; Purchase, $36.00. Bailey, apply.
Using a carelessly discarded match as symbolic of the thoughtlessness which annualy causes millions of dollars of property damage and loss of life from forest fire, this picture shows how forest and brush fires start, how they can be prevented. Point is also made that fires cause floods by destroying the watershed and flood scenes illustrate this important part of the picture.

Pine Ways to Profit 16 and 35 mm. sound (20 minutes).
Distributor: U. S. Department of Agriculture. Price: Free loan.
A Forest Service picture showing the profitable results forthcoming in protecting the woods from fires. Scenes of the devastating effects of fires upon the woods of the South along with the location of actual fires, and use of chemical trucks in combatting them. Preventing fires through plowing wide fire breaks, and planting cattle grass advocated.

Prevent Forest Fires 16 mm. sound (15 minutes).
Distributor: U. S. Department of Agriculture. Price: Free loan.
Trailers prepared primarily for distribution during the summer months. The following subjects are covered: (1) organized work in the woods, (2) the careful fisherman, (3) how to build a campfire. Each reel deals with short scenes in adequately clear treatment of its subject. Excellent for school use.

The Red Poocher 16 mm. sound and silent (25 minutes).
Distributor: Walter O. Gutlohn, Inc. Prices: Rental, sound $3.00 per day, silent $2.00 per day.
Demonstrates proper forest fire fighting methods and use of modern equipment in actual fire scenes. Strong appeal for fire prevention in the forest.

Smoke 16 mm. 35 mm. silent. 1 reel.
Distributor: U. S. Department of Agriculture. Price: Free loan.
A Forest Service picture which gives a practical lesson in forest fire prevention. A man [illegible] upon two campers who are [illegible] a fire. The man [illegible] the fire then demonstrates [illegible]

Stop Forest Fires! [illegible]

Unburned Woodlands [illegible]

Laid largely in the forests of North Carolina. It deals with the results of forest fires, showing a forest and its inhabitants before and after a fire. Disastrous effects of the fire are shown in soil erosion, dead game and fish, polluted water and loss of property.

Vigilance 16 and 35 mm. sound- (½ reel).
Distributor: U. S. Department of Agriculture. Prices: Free loan; Purchase, 16 mm. about $8.00, 35 mm. about $18.00.
Warning to the people of the Pacific coast of the seriousness of fire hazard, in order to correct careless attitudes. The Arsenal of Democracy must be kept operating continuously to back the fighting forces. The Pacific coast is the front zone of any possible enemy action. The people must guard against anything that will give aid to the enemy. How to prevent forest fires is demonstrated.

Vigilance for Victory 16 and 35 mm. sound – (1 reel).
Distributor: U. S. Department of Agriculture. Price: Free loan. Purchase 16 mm. about $8.00, 35 mm. about $18.00.
Designed to impress the general public with the importance of the nation's forests to show how they are yielding countless wood products necessary for victory and that whatever impairs their output retards the day of victory. It shows that forest fires weaken our war effort by destroying vital materials and wasting manpower. Depicts the various causes of forest fires and shows how they can be prevented through daily vigilance by everyone.

What Price Fire? 16 and 35 mm. silent. 1/2 reel.
Distributor: U. S. Department of Agriculture. Price: Free loan.
A fictionalized account of a forest fire's damage to the tourist business of mountain dwellers. It tells the story of a man who goes into the business and [illegible] successful season and then loses his means of livelihood through fire. The careless smoker who caused the fire is apprehended and punished.

Incendiary Bomb

Civilian Fire Fighters 16 mm. silent and sound (10 minutes).
Distributor: Bell and Howell Film Libraries; Brandon Films, Inc.; The Princeton Film Center. Prices: Silent, $1.00 rental, $8.75 pur-

[illegible] from "Civilian Fire Fighters" (Castle Fil[illegible]

PART II · SOUND SLIDEFILMS

(All sound slidefilms printed on 35 mm. film and accompanied by sound message on 33⅓ r.p.m. recording. Sound slidefilm projector with 33⅓ r.p.m. turntable necessary.)

INDUSTRIAL SAFETY

Employee Training

Care and Use of Chain Falls Length: 5 minutes.
Distributor: Photo and Sound, Inc. Prices: Purchase, $13.00.
A review of importance of giving chain falls good care together with detailed information on selection, operating techniques and loading factors involved in their use. Produced at the Mare Island Navy Yard in collaboration with the Safety Engineer's Office. A comprehensive meeting guide for conducting meeting in connection with film is included.

Danger . . . Women at Work.
Available in sound slidefilm form; see under Motion Pictures for complete information as to distributor, etc.

Eyes For Victory Length: 20 minutes.
Distributor: National Safety Council, Inc. Price: $7.50 f.o.b. Chicago, Ill.
Shows how the many eye injuries resulting from chipping, welding flashes, etc. can be eliminated in the shipyard industry. Also applicable for use in other industries where such hazards exist.

The Eyes Have It Length: 20 minutes.
Distributor: The National Society for the Prevention of Blindness, Inc. Price: Purchase, $7.50.
A dramatic appeal for the use of goggles in Industry. Their value and importance is demonstrated in case histories of eye accidents and how they could have been prevented.

Scene from "The Eyes Have It" [illegible]

Eyes On The Job Length: 20 minutes.
Distributor: Better Vision Institute. Price: Purchase, $10.00.
An interesting cartoon in rhyme featuring Sammy Squint who advocates need for better vision in industry for more direct and better work and more at a lower accident

less time lost and a better all around attitude toward the job.

The Fall Guy Length: 20 minutes.
Distributor: National Safety Council. Price: Purchase, $7.50, f.o.b. Chicago, Ill.
A convincing story of falls in industry, interspersed with humorous dialogue and episodes. A workman makes tour of a factory with "death," in the form of a skeleton. Death points out how he goes about collecting fall victims. Many fall hazards are illustrated and the methods of eliminating them are clearly shown. The workman learns his lesson and vows never again to take chances on falling.

Fire Length: 20 minutes.
Distributor: National Safety Council. Price: Purchase, $7.50, f.o.b. Chicago, Ill.
Opens with exciting episode of large manufacturing plant being destroyed by fire. Hundred of workers lose their jobs because of the careless flip of a match. Scene switches to home of fire chief. Chief explains to daughter and daughter's boy friend the tremendous annual loss in money and jobs caused by industrial fires. Correct methods of preventing and fighting fires are explained and illustrated.

Grime Doesn't Pay Length: 20 minutes.
Distributor: National Safety Council. Price: Purchase, $7.50, f.o.b. Chicago, Ill.
Shows how important good plant housekeeping is in reducing accidents. Story depicts a manhunt for the criminal "Poor Housekeeping," who is finally caught and taken on a tour of the plant by "Good Housekeeping" during which the latter points out the many hazardous conditions existing because of filth and careless housekeeping. The criminal is later beaten up and the workers, when the workers are convinced that "grime doesn't pay."

Handle With Care Length: 20 minutes.
Distributor: National Safety Council. Price: Purchase, $7.50, f.o.b. Chicago, Ill.
Features workmen with poor safety [illegible] Cartoon characters, safety posters [illegible] and explains the importance of handling and handling materials properly. Humorous and [illegible] [illegible]

Handling Pressure Cylinders [illegible]
Distributor: [illegible] Price: Purchase, $18.00.
Detailed information [illegible] handling [illegible] and [illegible]

climbing on unsteady furniture, fire and handling matches, protruding nails, loose rugs, etc. Children are shown performing unsafe actions and are then corrected by others.

Safety At Play 16 mm silent—(8 minutes)
Distributor Eastman Kodak Co Prices: Purchase, $12.00.
A safety film for children of the first three grades Contrasts safe and unsafe places to play, safety in the use of play equipment, good habits of play, proper care of the playground, and first aid for minor injuries

Safety At Sea—16 mm silent (1 reel)
Distributor Eastman Kodak Co Prices: Purchase, $24.00.
Built around the work of the Coast Guard Shows lighthouses and bell buoys in operation and concludes with dramatic rescue carried out by means of breeches buoy This picture is particularly useful to demonstrate the work of the Coast Guard but the safety situations depicted are not those in which the average person is likely to be involved.

Safety in the Air 16 mm sound (1 reel)
Distributor Films Incorporated Prices Rental, $2.00 per day.
A basic and thoroughgoing study of the devices and methods used by transportation lines in the air and on the ground to maintain flying safety at peak level The elaborate system developed for and by the lines under the "Federal Airway Traffic Control Station" system is revealed in detail.

Safety in the Home 16 mm sound (1 reel)
Distributor National Safety Council, Inc
Prices: Rental, $3.00 per day.
Recent film release on home safety Shows the many precautions taken by a typical safety-conscious family in guarding its home against needless accidents An interesting film for any type of audience

Safety on the Federal Skyways 16 mm silent (4 reels)
Distributor U S Bureau of Air Commerce
Prices: Free loan
Illustrates the duties of the Bureau of Air Commerce which include the obtaining of weather reports the maintaining of beacons the establishment of landing fields etc, and shows what the Bureau has done and is doing to make travel by air safer

Safe Use of Tools 16 mm sound black and white or color (1 reel)
Distributor Coronet Productions Prices: Apply
How to use such simple tools as scissors, knives, hammers saws, files clamps, and

and in the home . . . the playground and in the backyard Designed for elementary schools.

Sentinels of Safety—16 mm sound—(9 minutes)
Distributor Aetna Casualty and Surety Co.
Prices: Free loan (Limited number of prints)
This picture deals with accident prevention in the home The varied and dramatic sequences all emphasize the central theme that in every household lurk many hazards, which if unrecognized, may easily cause serious injury and even death

Then Came July 5 16 mm sound—(12 minutes)
Distributor Bailey Film Service, Princeton Film Center Prices: Bailey, apply, Princeton, Rental $1.50 per day, Purchase, $36.00.
Graphically presents the case against the unrestricted sale and use of dangerous types of fireworks and also offers a safe and sane solution for celebrating Independence Day

The Unwanted Guests 16 mm sound—(1 reel).
Distributor Welsh Studios Price: Purchase, $30.00 (Includes name of organization presenting)
Deals with hotel safety for showing to hotel safety committees and employee groups

They Need Not Die 16 mm sound in color Length 33 minutes
Distributor American Red Cross Prices: Purchase $190.00, Rental $15.00
Shows the necessity of co-operation in disaster and the importance of quick efficiency as demonstrated by the work of the Red Cross in time of flood fire, etc Narration is delivered by Lowell Thomas

Vacation Safety 16 mm silent (15 minutes)
Distributor Eastman Kodak Co Prices: Purchase $24.00
For use in grades four to six and in junior high schools The film units are 1 Water Swimming in an Organized Camp good swimming precautions 2 Boating correct method of handling boats 3 Safe Conditions in Camp the dangers from broken glass and poisonous 4 Fire Building correct methods for building and extinguishing campfires.

Why Not Live? 16 mm silent (1 reel)
Distributor William J. Gunz Co Price: Free loan.
Covers home highway and farm safety and the work of the American Red Cross in first aid activities

EDITORIAL ACKNOWLEDGMENTS

The Editors of this wartime guide to visual aids for safety education are indebted to the National Education Association with whose kind permission we have included content reviews of a number of safety subjects The N E A publication "Visual Aids in Safety Education" and its 1942 Supplement I, and numerous other individual catalogs and guides issued by educational and commercial sources have furnished valuable reference all of which have been thoroughly checked in order to furnish industry and education with this new and complete source list The research staff of Business Screen Magazine contributed months of effort in the preparation of this material Omissions and news of recent material will be supplied by the issuance of supplements from time to time

chase from the producer, Castle Films, Inc. An interesting and instructive picture which describes the organization of auxiliary fire-fighting units. Tips on how to teach the non-professional and the newcomer the all important knowledge of how to combat various types of fires

Fight That Fire 16 mm. sound—(12 minutes).
Distributor The Princeton Film Center, Transfilm Inc., Brandon Films, Inc Prices Rental, $1.50 per day, Purchase, $25.00
An OCD-approved training picture which every type of civilian and industrial group should see It provides exact knowledge of what to do in the event of fire, large or small Explains types and uses of extinguishers, how to handle special types of fires Stresses danger of carelessness and need for speed in fire fighting

London Fire Raids—16 mm sound—(12 minutes)
Distributor British Information Services. Prices: Rental, 50c per day, Purchase $8.50.
Photographed during fire raid on London of December 29, 1940 Dramatically illustrates the emergency operations of firemen, London Fire Brigade and Women's Auxiliary Fire Service in extinguishing blazes

The New Fire Bomb 16 mm sound (9 minutes)
Distributor British Information Services Prices: Rental, 50c per day, Purchase $8.50
Made on the basis of the latest information gathered from recent raids over England this OCD-approved film shows how to combat the new and heavier type of explosive incendiary which the Nazis are known to be using Replaces **Stop That Fire**, which is made obsolete by the new type of incendiary bomb

Shunter Black's Night Off 16 mm sound (8 minutes)
Distributor British Information Services Prices: Rental, 50c per day, Purchase $8.50
Need for dealing with incendiary bombs quickly as possible is emphasized During a surprise enemy attack Joe Black a shunter rushes to the railroad junction to assist other railroad men in fighting a fire in a box car loaded with wheat Joe at the risk of his life uncouples car of explosives and extinguishes the blaze

They're Dropping Incendiaries 16 mm silent color (33 minutes)
Distributor Factory Mutual Insurance Co Prices: Free loan to Factory Mutual Members, Purchase $99.00
A bomber flies over London and the bombs he drops start fires and burn out the heart of the city Interesting and instructive scenes of how magnesium fires are handled in industry and how the danger of the non-explosive magnesium bomb can be successfully overcome Shows how the original magnesium bomb is constructed and how to control fire with water and sand Included also are scenes showing how to handle phosphorus and oil bombs

FIRST AID

General

Artificial Respiration 35 mm silent—(1 reel)
Distributor National Safety Council. Prices: Rental $2.00 per day.
The approved methods of resuscitation are demonstrated clearly and effectively in this film Excellent for showing before audiences of almost all types or ages

Artificial Respiration 16 mm sound in color (21 minutes)
Distributor Public Service Corp of New Jersey Price Free loan
Produced by the Public Service Corp of N J this film illustrates resuscitation and first aid practices as prescribed by the American Red Cross Opens with a demonstration of artificial respiration by a Public Service first aid squad Scenes are then woven about the three principal [illegible] of unintended respiration drowning electric shock and gas poisoning

Before the Doctor Comes 16 mm sound silent 37 minutes
Distributor American Red Cross Prices: Rental $3.50 per week per reel $8.00 per week for all four reels Purchase $74.20, (Individual reels, Apply)
Reel 1 A demonstration of the [illegible] points Controlling bleeding [illegible] neck shoulder arms legs Stopping bleeding with tourniquet bandages compresses Covering shock keeping victim warm [illegible] stimulants etc
Reel 2 Artificial respiration [illegible] burns
Reel 3 [illegible]
Reel 4 [illegible]

Electricka [illegible]
[illegible]
Shows safety [illegible] trucks [illegible]

Emergency Care for Safe Transportation of Fractures of the Long Bones [illegible]
[illegible]
Two [illegible] the Red Cross and Medical [illegible] the [illegible] It [illegible] pure splint [illegible] Appeal [illegible] be [illegible]

Emergency First Aid—16 mm. sound and silent—(6 reels).
Distributor: Bell and Howell Film Libraries. Prices: Rental, $1.50 per day sound, $1.00 per day silent; $3.00 per day silent in color. Purchase. Apply.

A complete series for classroom or group instruction. Titles of the films are: I Bleeding, Resuscitation, Shock; II Treatment of Wounds and Burns; III First Aid in Fractures; IV Fixed-Traction Splinting; V Transporting the Injured, and VI Roller Bandaging.

Emergency Splinting for Fractures of Lower Extremity—16 mm. silent (14 minutes).
Distributor: Dr. Kellogg Speed. Prices: Free loan.

Shows in detail contents and use of doctor's automobile fracture kit. A doctor and two assistants arrive at the scene of an accident and apply a Thomas splint. They apply a ample hitch to the foot, increase traction, bandage the victim's foot into the splint to steady it, and finally lift the patient onto a stretcher.

Emergency Treatment of Fractures—16 mm. silent (1 reel).
Distributor: Aetna Casualty and Surety Co. Prices: Free loan. Limited number of prints. Film is designed for advanced first aid in training Industry. Rather technical [illegible]

First Aid (No. 8-33)—16 mm. [illegible] and [illegible] minutes.
Distributor: U. S. Army Corps Area Offices. Prices: Free loan to civilian defense agencies and other defense groups.
Shows techniques used by the Army in treating hemorrhage and fractures, and in transporting the wounded.

First Aid Bandaging—16 mm. silent (4 minutes).
Distributor: Film Test Productions. Prices: Rental 75c per day. Purchase $6.00.
A short presentation on the application of [illegible] [illegible] [illegible]

First Aid . . . Care of Minor Wounds [illegible]

[illegible]

First Aid—Carrying the Injured [illegible]

[illegible]

First Aid—Control of Bleeding [illegible]

[illegible]

and venous hemorrhage in various areas of the body.

First Aid for Wounds and Fractures—16 and 35 mm. sound—(10 minutes).
Distributor: Erpi Classroom Films, Inc. Prices: Purchase 16 mm. $50.00, 35 mm. $100.00.
Shows procedures in caring for an injured person until medical aid arrives. Making the patient comfortable, examination for wounds, calling an ambulance, stopping bleeding, application of tourniquet and splint.

First Aid—Injuries and Accidents—16 mm. [illegible] and 35 mm. [illegible]
Distributor: U. S. Army Corps Area Offices. Prices: Free loan to civilian defense agencies and other defense groups.
Various types of accident and how they are treated in the Army are shown. Eye injuries, suffocation, fainting, drowning, electric shock, burns, heat stroke, sun stroke and frostbite.

First Aid in Transportation of Back Injuries—16 mm. silent (18 minutes).
Distributor: Dr. James E. M. Thomson. Prices: Rental $1.00 per day. Purchase $13.50.
A short presentation on the handling of [illegible] back injuries. [illegible] and correct technique in transporting victims are demonstrated. [illegible] especially [illegible] PTA groups.

First Aid in Transportation of Fractures of the Leg, Spine and Arm—16 mm. silent (1 reel).
Distributor: Massachusetts General Hospital. Prices: Rental $3.00 per week plus transportation charges both ways. Purchase $.50.
Demonstrates [illegible] methods when Murray, [illegible] and Keller-Blake splints are not available.

First Aid—Life Saving and Resuscitation—16 mm. silent (1 reel).
Distributor: Eastman Kodak Co. Prices: Purchase $24.00.
[illegible]

First Aid Treatment [illegible]

[illegible]

Distributor: Aetna Casualty and Surety Co. Prices: Free loan.

Emphasizes the importance of properly balanced diet in maintaining good health. The best food sources for obtaining adequate amounts of vitamins, minerals and other essential body elements are shown in natural color and valuable suggestions are given for preparing and choosing inexpensive meals. Here is nutrition [illegible] within the understanding of everyone.

Wartime Factory—16 mm. sound (10 minutes).
Distributor: British Information Service. Prices: Rental 50c per day.
How the factory workers of Britain are protected against the strain of their greatly speeded production program for war. Good meals are served at the factory, recreation during lunch hour, music during working hours protect health and mental outlook. Organized and well drilled air raid protective service demonstrated.

Welfare of the Workers—16 mm. sound (9 minutes).
Distributor: British Information Service. Prices: Rental 50c per day.
[illegible] film than **Wartime Factory** [illegible] general subject dealing with [illegible] the benefit the Trade Unions [illegible] workers.

MISCELLANEOUS

Farm Inconveniences—16 and 35 mm. sound (1 reel).
Distributor: International Harvester Co. Prices: Free loan.
This picture was made to show the [illegible] things we do needlessly around our farms and homes—things that are inconvenient, sometimes hazardous, and yet unnecessary. Incidents with which all of us are familiar are shown in very comical sequences, then comparisons are made to show better, safer and more pleasant methods. Every sequence emphasizes a point worth remembering.

How Jimmy Won The Game—16 and 35 mm. silent (1 reel).
Distributor: Institute of Makers of Explosives. Prices: Free loan.
[illegible]

Kitchen and Dining Room Safety [illegible]

[illegible]

ing, carrying and placing trays are stressed, as well as the hazards of burns, scalds, cuts, etc. Suitable for use by hotels, popular price restaurants, coffee shops and tea rooms.

The Making of A Shooter—16 mm. sound or silent, color (3 reels).
Distributor: National Safety Council, Inc. Prices: Rental $3.00 per day.
Designed to advance the proper handling of firearms and to help keep hunting a safe sport. While the picture is primarily a safety film, it also presents in a most effective manner the recreational appeal and character building possibilities of hunting and other forms of shooting. It traces the development of a young boy under expert supervision into a real sportsman with full knowledge of how a gun should be handled safely and efficiently and how he should conduct himself with firearms at all times.

My Model Farm—16 mm. and 35 mm. sound (1 reel).
Distributor: International Harvester Co. Prices: Free loan.
The title signifies [illegible] the picture shows the [illegible] farmer who is proud to show his farm. While he takes [illegible] [illegible] having things [illegible] the way he wants them. [illegible]

National Ski Patrol—16 mm. [illegible]
Distributor: National Ski Association of America. Prices: Rental $5.00 per day.
[illegible] primary [illegible] of the National Ski Patrol System. The Patrol [illegible] members are required to have completed [illegible] courses in first aid and winter sports [illegible] shown applying splints, improvising [illegible] sled and [illegible] other first aid equipment.

Pleasure Afloat—16 mm. sound [illegible] minutes.
Distributor: Aetna Casualty [illegible] Prices: Free loan.
Intended primarily [illegible]

Safety First [illegible]

[illegible]

Safety At Home [illegible]

[illegible]

Distributor British Information Services. Prices: Rental, 50c per day.

The city organization of London's hospitals is shown by diagrams. The sick are moved into the country, in the city the city hospitals are organized for air attack victims and civilian casualties . . . for peace time accident are not forgotten. In the center of the city the casualties receive first aid treatment in the next outlying district are the Base hospitals, the specialized services such as plastic surgery are next removed, farthest out are convalescent and pre-natal hospital.

In Defense of the Nation 16 mm sound (11 minutes)

Distributor American Social Hygiene Association. Price: Rental $5.00, Purchase $50.00. Deals with the problem of prostitution as it presented itself before we entered the war. How prostitution hinders defense. The film appeals to the community to eradicate it and to create recreational facilities for servicemen and defense workers. Mainly for community leaders, social workers and camp and industry.

Local Health Problems in War Industry Areas [illegible]

Distributor New York State Dept. of Health. Price: Free loan from New York State Public [illegible]

The machinery [illegible] per month [illegible] Training [illegible] and [illegible] Public Health [illegible] and [illegible] the health [illegible] accommodations in the form of new [illegible]

Mother and Child [illegible]

Distributor [illegible] Price: Rental 50c per day.

[illegible] health [illegible] Future. A mother [illegible] with the [illegible] with the [illegible] and [illegible] children.

A New Day [illegible] minutes)

Distributor [illegible] Price: Free [illegible]

methods of dealing with pneumonia.

The Pay-Off 16 and 35 mm silent and sound (20 minutes)

Distributor YMCA Motion Picture Bureau. Price: Free loan.

This picture attempts to show the effect of alcohol upon the individual and family as well as the effect of poor driving ability. But while there is a brief discussion of the relation between driving after drinking and traffic accidents the major part of the film deals with the misfortunes of an habitual drinker and his family.

Preventing Blindness and Saving Sight 16 mm sound, silent (30 minutes)

Distributor National Society for the Prevention of Blindness. Price: Free loan.

Visual defects and their correction, eye diseases and their prevention, rules for eye health through correct lighting of the school room and care of the eyes in industry are shown.

Proof of the Pudding [illegible] 16 mm sound [illegible] 10 minutes)

Distributor Modern Talking Picture Service. Price: Free loan.

A [illegible] episode [illegible] wins the [illegible] that proper nutrition [illegible] in maintaining health.

Sand in The Gears [illegible] and 16 minutes)

Distributor [illegible] Price: [illegible] Rental $5.00 per day.

[illegible] President Hurt wanted [illegible] how the armed forces [illegible] and explains the need for preventive measures. Several war workers and [illegible] the [illegible] and [illegible] importance. The film [illegible] health [illegible] and [illegible]

Save a Day [illegible] Health [illegible]

Distributor U. S. Public Health [illegible] Free.

A [illegible] the important [illegible] and [illegible] in the Public Health [illegible] Industrial Hygiene Division of the National Institute of Health, and the [illegible] of [illegible] and men in the following warning: Be [illegible] If [illegible] you should [illegible] PTA group and [illegible]

The Sneeze [illegible] minutes)

Distributor Modern [illegible] Price: Purchase $15.00 (Cannot be [illegible])

Shows two [illegible] of [illegible] in extreme [illegible] and [illegible] by [illegible] Explains that [illegible] may be [illegible] by [illegible] and [illegible] [illegible]

Vitality for Victory 16 [illegible] minutes)

hemorrhage, location of pressure points and application of pressure to these points; control of bleeding, dressing wounds, treatment of burns and removal of foreign bodies from the eye. Scenes on pressure points well done.

First Aid Treatment for Snake Bite 16 [illegible] silent (4 minutes)

Distributor Film Text Production. Price: Rental 75c, Purchase $6.00.

A rattlesnake [illegible] was taken from walking thru weeds. First aid treatment is pictured, showing the patient having wound [illegible] tourniquet [illegible] and [illegible] applying suction to remove poison. Incorrect tourniquet [illegible]

First Steps in First Aid [illegible] minutes)

Distributor [illegible] Price: Free loan. User pays shipping [illegible] Purchase [illegible]

[illegible]

Beginner's first aid [illegible] deals [illegible] bandaging [illegible] and the [illegible] [illegible] treatment [illegible] [illegible]

Fractures [illegible]

[illegible] Film Library. Price: Apply [illegible]

[illegible]

Handle With Care [illegible]

[illegible]

[illegible]

Help Yourself Beat the Heat [illegible]

Prices Free loan (User pays transportation cost one way).

Illustrates proper food for hot weather, taking of salt tablets, what to do for heat stroke, etc.

Help Wanted 16 mm sound (31 minutes)

Distributor Johnson & Johnson. Prices: Free loan (User pays shipping charges).

For beginners in first aid. Shows techniques of first aid in first aid station. Incidents covering bleeding wounds, circulatory system, types of bleeding and methods of stopping bleeding. Artificial respiration, treatment of simple and compound fractures, splinting, transportation [illegible]

Knights in Khaki 16 mm sound [illegible] minutes)

Distributor Bell and Howell Film Library. Price: Rental $3.00 per day.

A boy Scout presents a film in which Lord Perkin relives his boyhood days. While taking a walk with [illegible] injured [illegible] and delivers result by two miles [illegible] [illegible] and [illegible] help [illegible] with the [illegible] of [illegible] and take [illegible] to the [illegible]

Mechanisms of Breathing [illegible] and [illegible] minutes)

Distributor [illegible] Film, the YMCA Motion Picture Bureau. Price: YMCA [illegible] Rental $[illegible]

[illegible]

Minutes That Count—Dress Open Wounds— [illegible]

Distributor [illegible] Price: Apply [illegible]

[illegible]

Minutes That Count—Stop Arterial Bleeding— [illegible]

[illegible]

Pole Top Resuscitation [illegible]

[illegible]

Roller Bandaging [illegible]

[illegible]

trained first aid workers.

Taping Technique—16 mm. silent—(45 minutes).
Distributor: Bike-Webb Manufacturing Co.
Prices: Free loan.
An advertising film for Bike-Webb adhesive tape, showing how parts of body are protected by taping before participation in games or practice to prevent injuries. Could be used by trainers and coaches in boys' athletic and first-aid classes to teach the techniques of taping. Suitable only for male groups of high school students.

Triangular Bandaging—Traction—Transportation 16 mm. silent, black and white or [illegible] (15 minutes)
Distributor: Dr. Jacob Sarnoff, Bell and Howell Film Libraries. Prices: Apply.
Doctor demonstrates how to apply a bandage to arm, chin, ear, eye, scalp, hand, shoulder and foot. Four tailed bandage is applied to the head for a fracture of the lower jaw. Application of the Thomas Splint with traction for the upper arm is demonstrated. Shows several methods of transporting the sick and injured.

Water Safety

Boy Scout Methods of Waterfront Safety 16 [illegible] sound (11 minutes)
[illegible]: Boy Scouts of America. Prices: Rental, 75c for 1 day, 4[illegible] preceding Jan. Purchase, $17.50.
First scenes illustrate in a comical manner how to be saved by a drowning person. A group of Boy Scouts then demonstrate methods of [illegible] in water victim by using [illegible] and tackle. Correct and incorrect methods of entering and leaving a rowboat and canoe are [illegible] proper way to follow in emptying and entering an [illegible] and rowboat. For swimming and life saving classes.

Every Swimmer A Life Saver 16 mm. silent [illegible] minutes)
[illegible]: Society for Visual Education, Inc. [illegible] $1.50 per day.
[illegible] and resuscitation. The [illegible] part of the [illegible] [illegible] and [illegible]

Eyes for Safety [illegible]

Heads Up [illegible]

Learn To Swim—16 and 35 mm. sound—(25 minutes)
Distributor: U. S. Department of Agriculture.
Prices: Free loan.
Prepared originally for use in CCC classes. Demonstrates and teaches swimming by confidence method, including the basic strokes and kicks. Emphasis is placed on learning the fundamentals in shallow water, then in deep water, and the necessity for practice. Photography is excellent and clear. Dialogue interesting and easy to follow. Encouraging film for novices and illuminating for the improvement of adept swimmers. Should appeal strongly to physical education classes.

Life Saving—16 and 35 mm. sound. (20 minutes)
Distributor: U. S. Department of Agriculture.
Prices: Free loan.
An excellent film for safety in swimming. Shows various procedures in rescue work and also Schafer Prone-pressure method of artificial respiration.

Matt Mann and His Swimming Techniques 16 mm. sound. (19 minutes)
Distributor: Coronet Productions. Prices: Purchase, $80.00.
Matt Mann, well-known swimming coach at the University of Michigan, acts as both instructor and narrator. Slow-motion photography makes swimming methods natural and easy to understand. In first scenes beginners are taught how to swim and dive. Land and water drills in correct arm and leg action coordinated with proper breathing are shown. The importance of timing and relaxation on the part of the swimmer is stressed. A good film for showing to swimming classes and for pre-vacation training.

Swim and Live 16 mm. [illegible] Length, 20 minutes.
Distributor: Local film distributors or State [illegible] Libraries; if unable to locate write Office of War Information, Washington, D. C. [illegible] nearest source.
[illegible] the comprehensive training in [illegible] the Army is now giving its men [illegible] for any emergency. Includes holding breath under water, floating either face down or on the back, various fundamental swimming strokes, how to avoid broken bones or other injuries when jumping from a ship, evacuating fully dressed, transporting wounded men through the water, artificial respiration, etc.

Swim or Sink 16 mm. sound. (10 minutes)
Distributor: Walter O. Gutlohn, Inc. Bell and Howell Film Libraries. Prices: (Gutlohn) Rental, $1.50 per day.
adapted to life saving, ways to approach a drowning person, parrys, grip releases, carries.

Lady Life Guards—16 mm. sound—(10 minutes)
Distributor: Nu-Art Films, Inc. Prices: Apply.
A presentation of the thorough training given girl life guards on duty at Manhattan Beach, N. Y. A rescue scene is shown in which a child is brought safely to shore and resuscitated.

Pathe, in which Johnny Weismuller teaches a group of youngsters the fundamentals of swimming the American crawl. Part of the picture is devoted to dry swimming practice on the side of an outdoor pool. Weismuller demonstrates the kick, the hand stroke and under water strokes. Might help increase interest in swimming and should be useful in physical education classes on any level.

Swimmers and Swimming 16 mm. silent (12 minutes)
Distributor: Kodascope Library Service. Prices: Rental, $1.00 per day.
A rather odd film showing mainly the execution of figure designs while floating on the surface of a tank. The first part deals with normal and slow motion shots of swimmers doing the crawl, breast stroke and trudgen. Questionable for school use in teaching classes how to swim.

Swimming Instruction 16 mm. sound. (15 minutes)
Distributor: Bell and Howell Film Libraries.
Prices: Rental, $1.00 per unit per day.
A series of three films produced by the U. S. Dept. of Agriculture in cooperation with the American Red Cross.

(1) **Swimming . . . The Beginner . . .**
How confidence is developed in the water, shows fundamental [illegible] kicking, breathing and floating.

(2) **Swimming . . . Getting Afloat . . .**
Teaches fundamentals of arm and leg stroke and their combination into beginner stroke. Emphasis on simple prone glide, kick and stroke; turns and the first test in deep water. Finning and sculling, the duty stroke, are also shown.

(3) **Swimming . . . Advanced Strokes . . .**
Demonstrates basic leg kicks and arm strokes. Combinations of the fundamental strokes into the crawl, trudgen, side stroke, breast stroke and back stroke are shown.

Oars and Paddles 16 mm. [illegible] sound. [illegible] (24 minutes)
Distributor: American Red Cross. Prices: Rental, $5.00 per week. Purchase, $51.75.
Demonstrates skills needed to prevent accident in boats and safe rescue procedures. Launching and getting under way, techniques in handling oars, complete rescue with overturned boat, boat rescue of swimmer in smooth water, but rescue from rough water, safe return, [illegible] and stern, changing [illegible] passengers.

HEALTH AND HYGIENE

The Beneficent Reprobate 16 mm. [illegible] 4 reels)
Distributor: YMCA Motion [illegible]. Price: Free loan.
This picture [illegible] effects of [illegible] directly [illegible]

history of alcohol, and a portrayal of its uses in science and industry. The effects of alcohol are shown in a prolonged series of tests given at Northwestern University, and a number of complicated charts are included.

Dinner At School 16 mm. sound. (9 minutes)
Distributor: British Information Services. Prices: 50c per day rental.
In wartime, dinners at school for children of working mothers are more than ever necessary. The film describes how this service has increased in England with half a million children having meals at schools and 200 new school canteens opening each month.

Drinking Health 16 mm. silent. (About 30 minutes)
Distributor: Films of Commerce. Prices: Apply.
This film describes New York water supply and how it is purified, the importance of water and the amount consumed daily, the giving of water to football players, factory workers and office workers, and the need for individual drinking cups and sanitary drinking.

Eating at Work 16 mm. sound. (13 minutes)
Distributor: British Information Services. Prices: Rental, 50c per day.
[illegible] wartime night shifts and hours, wives at work make it more and more difficult for workers to get adequate meals. Factory canteens properly managed by nutritionists aware of food requirements of working men and women are the obvious answer. This film shows how one such canteen is run and with what benefit to the workers.

Educated Feet 16 mm. [illegible] (1 reel)
Distributor: Central Washington College of Education. Price: Rental, $1.00.
An excellent film for teachers and parents showing method, techniques and results of corrective physical education. Discovers causes and preventative measures for [illegible] defects.

The Eyes and Their Care 16 mm. [illegible] and Length, 11 minutes. (1 reel)
Distributor: Erpi Classroom Films, Inc. and various state and local depositories. Prices: Purchase, Erpi, $60.00 per reel. Rental, write Erpi [illegible] nearest [illegible]
[illegible] with [illegible] [illegible] how [illegible] protection [illegible] through [illegible] the eyes [illegible] individual [illegible] and [illegible] the [illegible]

Five and Under [illegible]

VISUALIZING Safety Problems

★ An Outstanding example of the contribution being made by slidefilms to the cause of wartime industrial safety is the recently-produced *Safety Management for Foremen* series turned out for the National Safety Council, by Sarra, Inc., under the direction of Ray Ballard.

An important supplementary use of the *Safety Management for Foremen* series is in connection with the 96-hour foremanship training course offered by the Division of Labor Standards, U. S. Department of Labor. Approximately 100 schools and colleges offer this course. This series of foremanship films has met with wide use and enthusiastic acceptance from these schools. They also use several other films produced by the National Safety Council. Typical of this supplementary use is the report made by the Agricultural and Mechanical College of Houston, Texas.

The report stated that in addition to numerous classes for white foremen and supervisors, that classes were conducted for colored men, believed to be the first all colored class for safety training in the country. It is interesting to know that sometime after this class had received their certificates the Coast Guard held an examination for longshoremen on the Galveston docks, and the only ones who passed the examination were 19 of the colored men who had previously taken the training course.

Practical Benefits Cited

From San Francisco comes this direct evidence on the practical value of the *Foremen* series:

"I was so enthusiastic about 'Cause and Cure,' I had my entire department of eighteen members see this film in a body. It was my plan to supplement this special showing with a few remarks, but I assure you, I found this unnecessary.

"As to the rest of the subjects such as 'Right Dress,' these I arranged to have shown to a representative group incorporating: education, production, and management. In their opinions, which coincides with mine, 'Right Dress' is most complete and more comprehensive than 'The Eyes Have It.' *This well thought out film, in down to earth language,* deals with the self same problems facing the general industrial field; its completeness makes it adaptable even to the specialized field such as ours.

"Time being the element in the world today where supervisors are created over night, this illustrated and fascinating presentation of Safety Management for Foremen is our only way of keeping pace in our hour of need."—C. W. Dreyer, Moore Drydock Company, San Francisco.

Army Engineers Using It

The Safety Management for Foremen Series of films will be used extensively by the U. S. Army Corps of Engineers, reports Major Robert Alexander. Recently supervisors from all over the United States, Canada and Alaska were selected and sent to Chicago where they were given special instruction in conference methods of training with the use of this series of films. This class was conducted by Mr. Glen Griffin of the National Safety Council. These men will hold similar schools in their own districts and divisions and in the eight big Engineering Supply Depots. Foremen, superintendents, supervisors and many others will receive training.

A 16mm U. S. War Film Plan

★ RECOGNIZING THE URGENT NEED for restoration of adequate 16mm war film distribution facilities within the Office of War Information, representatives of eight national visual organizations, meeting in Chicago last month, have formed a 16mm War Film Committee to set standards and to act in a general advisory capacity on this important problem.

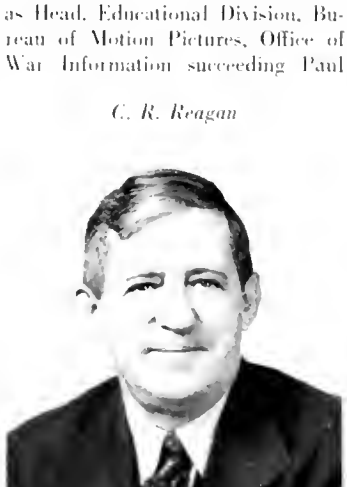
The following organizations, representing every organized group in the 16mm field, are represented on the committee: the Audio-Visual Aids Committee of the American Library Assn., the Dept. of Visual Instruction of the N.E.A., the National Assn. of Visual Education Dealers; the Educational Film Library Assn., National University Extension Assn., the Allied Non-Theatrical Film Assn., the National War Committee for Visual Education and the Visual Equipment Manufacturer's Association.

The new War Film Committee proposes the appointment of adequate personnel (now well begun) within the Bureau of Motion Pictures of the Office of War Information in order to *extend* the use for war informational purposes of the 25,000 16mm sound projectors now available in schools, churches, clubs, union halls and in war industries. The Committee also proposes appointment by the Office of War Information of a 16mm Advisory Committee to aid in establishing basic policy.

OWI Appoints C. R. Reagan

♦ C. R. Reagan has been selected as Head, Educational Division, Bureau of Motion Pictures, Office of War Information succeeding Paul Reed, who is now with the U. S. Office of Education.

C. R. Reagan



Reagan has had practical experience in the 16mm field for the past twenty years in the Southeast and Southwest. For ten years he operated small town 35mm theatres. One year ago he severed all active connections with his business and has been with the Office of War Information as their Field Adviser for the Southeast, Southwest and the West Coast.

Reagan is past president of the National Association of Visual Education Dealers. He is a former educator and is a nationally recognized Visual Education leader. As chairman of the Committee of Seventeen he is responsible, more than anyone else, for the present success of the plan of distribution of Office of War Information 16mm films. He is in thorough accord with the program of the recently organized 16mm War Film Committee.

Roshon Expands Services

♦ With the increasing demand for 16mm sound film entertainment throughout the country, the Russell C. Roshon Organization, distributors of non-theatrical motion pictures, has just opened branch exchanges in the Pacific Building in San Francisco, and the Little Building in Boston.

Three additional offices will be added to the chain by September first, in the Denver Theatre Building, Denver; the Pere Marquette Building, New Orleans; and the Keith Theatre Building in Cincinnati.

Other offices are located in Pittsburgh, Pa., New York, Philadelphia, Chicago, Atlanta, Minneapolis, St. Louis, Kansas City (Mo.), Memphis and Dallas.

Major 16mm sound films are now available to projector owners from coast to coast including such pictures as *The Howards of Virginia, Arizona, His Girl Friday, Golden Boy, Blondie, Ellery Queen,* and many other outstanding productions.

ATLAS NEEDS HELP

★ The Atlas Educational Film Company with studios in Oak Park, a suburb of Chicago, is looking for a man experienced in film editing and synchronizing. Atlas has extensive government contracts and this looks like a good berth for someone.

PLANT SHOWS

CONTINUED FROM PAGE 14

33.3 per cent asked for movies during lunch period every day. Only 3.5 per cent expressed no desire for such entertainment. Interesting, too, was the fact that war action pictures rated second only to musical shorts in the list of types preferred. 68.8 per cent asked that music be included in each program and 13.5 insisted on war action. Comedies and cartoons rated high and sport shorts outdistanced the lagging educational and war production films. Those interviewed were asked to list three types of pictures preferred as the usual program is made up of two or three shorts with a total running time of 20 minutes.

The breakdown of the survey into office and shop groups showed little difference of desire and the few in the executive class interviewed followed the same pattern. The chief difference was that executives, as a group, placed war action films at the top of the list, whereas shop workers, showing a preference for musical shorts, rated comedies a shade ahead of war action.

Western Electric's movie program has by no means reached the peak envisioned and wartime restrictions may postpone the perfect program for the duration. The need for maintained morale, however, dictates supreme efforts now. The showings are not professional—such performances are impossible in a hop, skip and jump program—but the workers have shown they want movies and they'll get them if industry, the government and Hollywood produce suitable subjects.

Non-Priority Screens

A new full line of projection screens designed to supply all civilian, educational and visual training needs, yet made of non-critical material, has been announced by Radiant Manufacturing Corp., Chicago.

(Above) The new Radiant Model W D portable non-metal screen.

BUSINESS SCREEN SELECTS KEY DISTRIBUTORS

★ To provide producers and distributors of visual materials and services with a limited quantity of current editions of BUSINESS SCREEN and special publications now being issued from time to time (such as the National Directory of Safety Films), arrangements have now been made with a selected list of exclusive outlets.

Through these outlets, the Editors of BUSINESS SCREEN hope to provide many new executives in industry and education now concerned with visual problems with these latest and most complete source publications directly through the facilities of those serving their business needs. Thus, the two-fold purpose of providing the industry's key service centers with excellent customer relations material and assuring the delivery of the publication to individuals most directly concerned is accomplished by the new plan. No effort is being spared to provide these outlets with the finest material available.

Companies interested in participating may address the Publisher, BUSINESS SCREEN MAGAZINE, 157 East Erie Street, Chicago 11, Illinois.

CURRENT LIMITATIONS ON PAPER MAKE IT IMPERATIVE THAT RESERVATION REQUESTS BE FORWARDED TO THE PUBLISHER AT YOUR EARLIEST CONVENIENCE. ONLY A LIMITED QUANTITY WILL BE PROVIDED TO EXCLUSIVE OUTLETS

Background for Post-War

(CONTINUED FROM PAGE 12)

nesses. An industry which, under our free enterprise system, has in peace time provided both companies and individuals with never ending opportunities to exercise their creative skills and their sales and administrative abilities.

In the post-war era this industry faces the greatest potential opportunity since Mat Brady photographed the Civil War. These post-war opportunities are either real or they are a mirage . . . by our influence, by our actions, and by our decisions, we can make it one or the other. Indeed, some of our blue skies for tomorrow are so plainly in sight that we can be positive in our predictions. The terrific expansion in the post-war era of photography in all of its branches is certain, because photography is playing such a vital part in the war effort, both on the home and on the battle front. Never before have the men of our armed forces and our civilians become so keenly conscious of the value and effectiveness of photography.

To Speed War Training

For example . . . the United States Office of Education obtained an appropriation from Congress before Pearl Harbor for the purpose of producing 13 films to teach machine shop work and shipbuilding skills.

These motion pictures . . . straight teaching films . . . were created to assist in speeding up the training of unskilled and apprentice workers in technical schools and throughout industry.

The importance of this particular motion picture effort—a pioneering one—will be long remembered. The fact that these films have proved to both teachers and industrialists that motion pictures properly conceived and properly used can add to the efficiency of teaching and training . . . this fact may have a very far-reaching effect in the furtherance and expansion of this application of photography throughout peace time America and perhaps throughout the world.

Many Government Users

The armed services, government departments, government affiliates, industries . . . each of them, all of them, separately and collectively . . . are producing and showing 16mm sound films.

And on top of all of this activity, teaching films, training films, propaganda films, morale building films . . . millions and millions of feet of 16mm straight entertainment films are being exhibited at home and abroad to our armed forces.

But the military commanders of our land, sea and air forces have repeatedly stated that entertainment films shown on 16mm projectors are without question the most valuable single morale building instrument available to our men in the service, in camps, and at land and sea battle stations.

. . . The job of perpetuating your way of life, your institutions and your American ideals is your job. It is a big job. In these times, it requires all of the skill and all of the daring that you have exercised in the development of your personal career and of your business. Only you, by your own efforts, can insure the blue skies of tomorrow.

ARMY TRAINING

(CONTINUED FROM PAGE 6)

At the outset of this war 50 percent of the officers were simply set against training films. They had no faith in the experiment of films as a speed up, mass training asset. The challenge of utilization, procedure and technique had to be formulated and the greatest problem the Army had was convincing its own officers that training films were more than just lackadaisical items on their program. Rainy days were not to be reserved for the showing of films regardless of their subject matter or whether they related to the current training schedule or problem.

Training Films Great Aid

"As a soldier I spent seventeen years in the Philippines and never saw a motion picture," said a regular army officer recently promoted major. "Today, I am convinced that training films are a great factor in making the modern soldier. We found out the hard way. They learn the intelligent way!"

Even before Pearl Harbor the Signal Corps had launched ambitious programs for new and revised training films, and war only intensified this production. Training films became a key part of the army training program, and S-3 officers waged a ceaseless battle to secure sufficient films to cover their schedules and have officers use them properly.

The Army produced one lengthy film "Methods of Instruction" which did more than volumes of basic field manuals and orders to instruct officers in the beneficial use of all types of visual training media.

Production problems, adequate distribution and comprehensive use

f training films plagued the ardent dvocates, but today these multi-arious problems have been met and he Army Pictorial Service, U. S. Signal Corps has a magnificent oper-ting system in the ten service com-nands of the Army Service Forces.

Half of Training Done

With nearly half of the training rogram for nine million soldiers ompleted in basic and fundamental rograms, army officials heartily gree that the use of training films as resulted in from 5% to 10% fficiency on indoctrination and asic training programs. They em-hatically state that the expenditure or films and about 7000 projectors nd other equipment has been thor-ughly justified. The use of training lms is an integral part of all train-ng schedules.

The special training manuals is-ued in specially prepared editions rom the Ordnance, Camouflage, Armored Forces schools and others ave prepared lists and definitely irect the use of selected film sub-ects found in Basic Field Manual M21-7 "List of Training Films, Film Strips, and Film Bulletins" January 1, 1943, together with sup-lements.

The modern soldier still gripes, ust as soldiers of other campaigns. They grumble about sitting through a "must" incentive or indoctrina-ion film and they grumble about watching training films, but amaz-ngly their comment indicates more han attentiveness, for tests have roved that soldiers do not forget he lessons taught visually.

No longer does the Army produce training films on the request from an arm of service on a negative basis. A requisition now entails exhaustive research for correct scenario, utilization and standard ization of subject material in unit or mass training procedures. Out-lines for training subjects now in clude basic nomenclature, classroom instruction with visual aids sug-gested or directed, field manual references and practical field appli-cation. A training film must meet standardized requirements as well as have a definite *time* and *place* on the training program for which it is needed.

Production Curve Down

Thus production has curved down-ward, but the quality of training films immensely improved. An ab-sorption point in quantity has for all practical purposes been achieved. Future films will emphasize the les-sons gained from experience and training in general will benefit.

The Army is reaching out into foreign fields, sending visual aid coordinators to China, England, Australia and our South American countries. Since the Latin Americas are a part of the United Nations, their armed services must be equally trained with those of their Allies. Thus the Army carries training films as a visual aid to the Latin Americas.

The occupational forces and the rehabilitation governments will use films extensively, both for continued training for army personnel and civilian reconstruction work. The Army was the hardest nut visual education had to crack, but high vulnerability has made it a great force in the employment of these valuable teaching aids.

Lt. Harold Fleck in Sicily

♦ Mrs. Lucile Fleck successfully carries on the business at home, while her hero husband Lt. Harold R. Fleck, calmly goes into action with his ship at Sicily. He was one of the first Americans to land on Italian shores. Lt. Fleck was presi-dent of the Vaporate Company, New York City, before the war.

DeVry Movie News Issued

♦ No. 1 of Volume XV of the DeVry "Movie News" is just off the press. Its twelve pages are packed with interesting pictures, comments and data pertinent to audio-visual education. Those interested in the role motion pictures are playing in the drive to victory, and the part motion pictures will play in the post-war era, will find interesting data in these pages. Address your request to DeVry Corporation, 1111 Armitage Avenue, Chicago, 14, Ill.

Visual Aids to Production

GE Produces New Arc Welding Subject

♦ General Electric has again scored with a new industrial color and sound training film *The Inside of Atomic-Hydrogen Arc Welding*. This new 16 mm. film available at the 12 GE Distributors and Schenectady, N. Y., is produced in two parts running 10 minutes for each part.

This new color film was produced by Raphael G. Wolff Studios, Hollywood, California, under the direction of the GE welding laboratories. It was produced because the previous six part *The Inside of Arc Welding* series proved so successful and it is patterned along this same idea.

Shows the Fundamentals

The new film describes and illustrates the fundamentals of atomic-hydrogen welding, how to regulate the current and hydrogen supply, adjustment of electrodes and the detection of right and wrong adjustments. The techniques for usages emphasizing current setting, speed of travel, size of arc and the contact of the arc with the work is shown in Part Two.

Highly Specialized Field

The field of atomic-hydrogen welding is highly specialized and is one in which women are extremely proficient. Today this type of welding is largely employed in defense and war production work where fine and expert welding is required.

The film is available to industrial companies or schools on a loan basis or prints can be purchased for each part from the nearest GE Distributor to your city.

NEW HIGH-SPEED CAMERA READY

ONE HUNDRED AND SIXTY times quicker than a wink—eight thousand winks a second—that's how fast a new movie camera developed by Bell Telephone Laboratories, and manufactured by Western Electric can photograph the split-second action of our high speed war machines.

Using 8 mm. and 16 mm. film sometimes at the rate of 70 miles an hour and appropriately called the Fastax, this new camera is driven by its motors at the terrific top speed of 8,000 frames a second—an exposure period of 3.5 millionths of a second making it an invaluable tool for the research engineer. This speed means that the Fastax can photograph action far too fast for the ordinary slow motion camera. It means that "movies" made with the Fastax and projected in slow motion can lay bare the innermost secrets of mechanical parts moving at lightning speed—that it can even "slow down" electricity itself. Thus the Fastax has revealed to engineers frailties in communications and other equipment never before beheld by the human eye.

Aided in Telephone Research

The first time the Fastax camera was used to make research films it revealed a heretofore undetected cause of false signals in telephone equipment. In an investigation of the action of signal relay devices used in the transmittal of telephone messages, the all-seeing lens reported that a rebounding of the movable part of the relay after initial contact sometimes caused this annoying malfunction.

Study Electric Currents

Bell Telephone Laboratories' scientists have made such diverse cinematic studies as the action of the vocal cords in producing speech and the explosive short circuiting of wires carrying heavy currents of electricity.

The Fastax camera is marked by its versatility—a film travel ranging from less than three to almost seventy miles an hour, adaptability to black and white and color photography, and the photography of self-luminous objects. The slower speeds have been invaluable in determining stress and impact conditions of new equipment designs under test; color, black and white and polarized light pictures having been taken of these tests. The middle speeds (1,500 to 4,000 frames per second) have been used to study automatic operations, to study the laboratory-controlled breakage of parts and the causes of noisy operation in machines.

Many Original Features

A number of features distinguish the Fastax from other types of high speed motion picture cameras. For example, it employs continuous film drive, as distinguished from the stop-expose-advance cycle of the professional and amateur slow motion cameras. Exposure of successive "frames" in the new camera is accomplished by a revolving prism acting as an optical compensator.

Today the ration point is king, the Swift & Company slide film entitled "How to Sell More Meat per Ration Point," emphasizes.

Hence the images travel in synchronism with the film past the film gate during the exposure period.

The object under study is illuminated by the continuous concentrated light of high intensity lamp filaments instead of the intermittently flashing gaseous discharge lamps as in the case of stroboscopic cameras. This basic principle enables the Fastax to photograph self-luminous objects such as fusing lamp filaments, or to make high speed analyses by polarized light. The wide choice of light sources permits the use of many film types including color film up to 1,000 frames per second.

Although the Fastax was originally designed as a tool for Bell Telephone Laboratories, other research organizations have now found it valuable in their work. Most of these involve secret war projects and cannot be described here.

EDITOR'S NOTE: *A pictorial feature on the new Fastax camera is scheduled for publication in an early issue of Business Screen.*

SWIFT FILM

◆ How to merchandise, advertise, display and sell more table-ready meats and thus increase volume and profit under point rationing is the theme of a color slide film just released by Swift & Company for dealer showings.

HOMEMAKERS NEED HELP

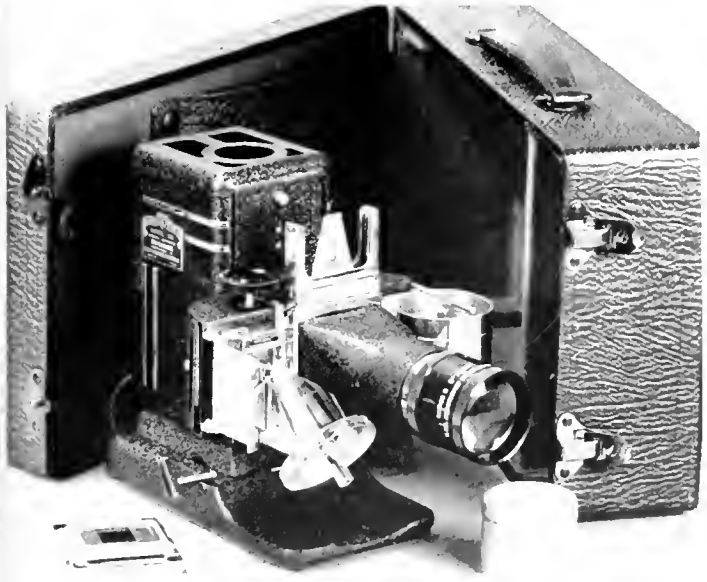
How to Sell More Meat per Ration Point is the title of the subject. Today the ration point is king, and homemakers need more help than ever before with the problem of providing healthful, nutritious, satisfying meals for their families, it points out. Homemakers also decide in the store what they are going to buy more than ever before and are more open-minded to helpful suggestions. This gives the retail dealer a chance to sell what he wants to sell.

EXPLAIN SEVEN PRINCIPLES

Table-ready meats have always been the most profitable item in the meat department, according to the film. Through effective merchandising, the dealer can increase his volume and his profit from these items.

Seven merchandising principles which have been used successfully in a series of store tests conducted in typical communities all over the country are explained and illustrated. Point merchandising is emphasized.

"A customer needs a lot of help from a dealer on point rationing," the film says. "The most effective way a dealer can give this help is through point merchandising."



NOW AVAILABLE TO WAR TRAINING SCHOOLS AND WAR INDUSTRIES *is the S.V.E. Model DD Tri-Purpose projector pictured above. A limited quantity of these combination slide and slidefilm projectors has been provided to equip essential training activities.*

OPTICS AT WAR: News Review

Gunnery Training Device Perfects Aerial Tactics

♦ Sighting and aiming devices are not new to military training, but a stimulated sighting and aiming device for aircraft gunners has long been sought by both army and navy training instructors in the American, British and Canadian Air Forces. The U. S. Navy has developed a visual training unit which is being manufactured by the Jam Handy Organization and uses an Ampro Corporation's Dual 16 mm. projector set. Development of the idea was directed by Lt. Commdr. D. L. Hubbard, USNR, Special Devices Section, Bureau of Aeronautics. It provides machine gun practice under simulated aerial battle conditions.

Answers Training Need

At a recent incentive rally at the Ampro Corporation a young veteran of several major air battles revealed the inception of a remarkable new method for improving the quality of U. S. aerial gunnery. He made a plea for the development of target shooting under battle conditions in a simulated form. The answer is found in this new Navy device.

Against the silver screen there is projected 16 mm. action pictures of actual enemy planes. The trainee takes his position at his gun and starts to blast away realistically at the oncoming enemy. A visual scoring device permits the instructor to observe the accuracy of the trainee's shooting. The trainee can observe in practice his accuracy, but when being tested by an instructor, he is denied scoring observation, and sees only the enemy aircraft at which he is firing.

An Industry Contribution

Details of this training device are restricted to military personnel. That it employs 16 mm. film and equipment affords another contribution of the 16 mm. industry to our military training program.

Add SVE Aircraft Kit

♦ The Aircraft Identification Kit, distributed by the Society for Visual Education, Inc., includes five additional plane silhouettes. Each silhouette shows three separate views of each type of aircraft. Added to the list are slides for Hawker Typhoon IB, DeHavilland Mosquito, Boeing Clipper "314" Lockheed-Vega Ventura and Lockheed Constellation.

TRAINING UNCLE SAM'S AERIAL GUNNERS *is speeded through the use of this new visual device pictured above which utilizes dual 16mm projectors to provide simulated battle conditions for gunnery practice.*

Visual Executive Notes Advent of "Opti-Onics"

♦ "Out of the greatly accelerated technical and research developments of this war period is coming a new science," said Mr. J. H. McNabb, President of Bell & Howell Company, in an interview here today. "This science of Opti-onics is not optics; it isn't electronics; but it is a combination of both, combined with precision mechanical design. Actually, in the physical world, we reach a point where ultra-high frequency radio waves take on many of the characteristics of light rays. We have learned that optical science can bring much to the development of electronics. Likewise, electronics enhances and supplements the work of optical science.

New Term: Opti-Onics

"It would be inaccurate to describe the work this company is doing in this overlapping region as either electronics or optics. Hence, the new term, Opti-onics.

"A good example of the necessity for combining certain portions of these two sciences into one is furnished in television. The electronics engineer can devise a system electronically which transmits and receives a visual image on the fluorescent surface of a cathode ray tube. But here the optical engineer must take over and devise an optical system which will enlarge and reproduce this image to a usable size and form. The work in the two fields must be co-ordinated. This co-ordination and combined work on the part of our research staff of engineers, to be truly descriptive, must be called Opti-onics."

Predicts New Devices

Mr. McNabb predicted unique but highly practical devices for entertainment and service for the post-war world to arise from the field of Opti-onics. "Today, Opti-onics is a weapon but tomorrow it will be a servant which will work, protect, educate, and entertain," said Mr. McNabb. "When the day comes on which we can make known and apply to general use the things we are now doing, in making equipment for our armed forces, we can make products which will open new markets and afford new fields of employment. I do not wish to seem over enthusiastic," said the executive, "but some of the things we have learned in Opti-onics are almost startling in their implications and in further development made possible."

Factory Shows Aid Output

★ WAR PLANTS are finding 16mm war films excellent incentive material for workers. Major U. S. war material producers such as the General Motors, the Chrysler Corporation, Western Electric (see page 14 of this issue) and hundreds of others are successfully using the incentive pictures available through the Public Relations Branch of the Army, the Incentive Division of the Navy, the Bureau of Motion Pictures, OWI. Typical of one plant's experiences in this field is the following report received by BUSINESS SCREEN:

To the Editor of Business Screen:

Concerning the effectiveness and results of the showing of factual war films in our plant, I can very briefly say that they have been most educational and exceptionally well received in our plant. They have proved to be a definite morale builder in our particular case because we are faced with the tremendous handicap of building war materials that are indirectly allied to the war effort. In other words we are not building such things as tanks, planes or guns and are principally a maintenance repair part manufacturer for the heavy steel industrial centers. It, therefore, has been exceptionally difficult to impress upon our employees the fact that we are definitely allied to the war program. Until we were able to secure and show continuously a long succession of war films that occasionally depicted the finished war materials into which our products were placed, it was practically impossible to convince our people that we were 100% on war work.

We have for over a year and a half now been showing regularly once a week to both the day force and the night force such incentive films as we have been able to receive and the result has been that our absenteeism has not increased but rather the trend has been to remain at a constant level that is considerably below four per cent. This percentage is considerably below the average for our community and is quite an accomplishment in view of the fact that we are working long hours and we definitely feel that one of the major contributing factors has been the showing of these films to our employees.

Very truly yours,

C. Watson Kerr,
Personnel Department,

Tool Steel Gear & Pinion Co.,
Cincinnati, Ohio.

MORE PROUDLY THEY WORK—*Delry Corporation's designers and craftsmen, as the result of talks by Seaman S. 2 c Basil Izzi, U.S.N.R. and Pvt. 1 c Robert Chapin, U.S.M.C. Delry's President, Wm. C. Delry, is introducing them—the seaman, a survivor of a convoy torpedoing, and a record 83 days on a life raft in the Atlantic—the Marine, a survivor of the YORKTOWN and Guadacanal. The "two-striper" is Lt. Melvin F. Lanphar, officer in charge, District Industrial Incentive Office, Navy Department. He joined seaman and "Leatherneck" in commending the Delry spirit as evidenced by the Army-Navy "E" awarded in April for excellence in the production of motion picture sound equipment.*

PERSONALITIES in the news

G. Harrison Echols

Echols New Agfa Manager

♦ Robert E. McConnell, president of General Aniline and Film Corporation, recently announced the appointment of G. Harrison Echols as general manager of the company's Agfa Ansco Division, in Binghamton, New York, to fill the vacancy caused by the resignation of Albert L. Marshall.

Mr. Echols became assistant general manager of the photographic manufacturing concern last March. He had previously been a member of the executive staff of the Freeport Sulphur Company, with headquarters in New York City.

Agfa Ansco's new general manager was born forty years ago on the University of Virginia campus where his father was a professor. He was graduated from that university in 1923 and became associated with General Motors Export Division, receiving an assignment in India.

Mr. McConnell named Dr. Leopold Eckler as production manager of the Binghamton Division. He has been with the firm since 1928.

G. A. Florez

Announce New Detroit Ad Agency

♦ Florez, Phillips and Clark, newly-announced Detroit advertising and marketing agency, will specialize in the technical and industrial fields, according to G. A. Florez, president of the newly-organized agency.

As a division of the Visual Training Corporation, nationally-known sales promotion and technical training organization, the agency will offer the facilities of an extensive staff of specialists in a wide range of technical fields.

The principals in the agency include G. A. Florez, president and founder of the Visual Training Corporation; C. S. Phillips, formerly with John Bean Company of Lansing, Michigan, and widely known throughout the automotive industry for his contributions in the engineering and service fields; and L. A. Clark, for 15 years vice-president of Holden, Graham and Clark, well-known Detroit industrial agency.

Florez, Phillips and Clark occupies quarters in the Visual Training Corporation building at 815 Bates Street, Detroit.

B & H Names Schreyer

♦ Carl Schreyer, formerly war purchasing expeditor for the Bell & Howell Company of Chicago, has recently been named General Purchasing Agent of that company.

Starting with the Bell & Howell Company eight years ago in the general sales office, Mr. Schreyer quickly worked up to several managerships. As head of the Personal Consumers' and Retail Dealers' departments, he covered all the southern and eastern areas in which Bell & Howell dealers were located, learning at first hand the retail problems and applying them to the production policy of the Company.

Carl Schreyer

Mr. Schreyer has spent considerable time studying purchasing methods and cost cutting, and brings his valuable experience to this demanding position. With the added difficulties of buying for war production, Mr. Schreyer will find his unusual ability called into full play.

Notes and Comment:

♦ Other personnel changes at Bell & Howell bring three key production personalities to new posts. Carl Henriksen has been advanced to Chief Production Methods Engineer; Harold J. Peterson now fills the post of Chief Tool Engineer and T. C. Carlsen has been named Superintendent of Parts Manufacturing at the Rockwell Plant in Chicago.

♦ A. E. Milford and Leroy G. Phelps have joined the staff of the Princeton Film Center at Princeton, New Jersey. Gates Ferguson is also a new member of the executive staff.

SEND IN YOUR PROBLEM

★ Although facilities for answering the multitude of request letters are taxed by unusual wartime demands, industrial and educational executives concerned with visual problems are urged to send them in. Address all inquiries to the Screen Service Bureau, BUSINESS SCREEN

The Fifth MIDWEST FORUM

• WARTIME SESSION AT UNIVERSITY OF CHICAGO •

P. B. Stinson talks it over with Bob Engel of the DeVry Corporation at the Midwest Forum war sessions last month.

M. R. Klein (left) visual exec. of the Cleveland Public Schools, chats with Ellsworth Dent, S.V.E.'s General Manager.

★ ALTHOUGH RESTRICTED by wartime conditions, the Fifth Annual session of the Midwestern Forum on Visual Teaching Aids, held at the University of Chicago last month, carried on a worthy tradition.

A considerable attendance of school administrators attending their 12th annual conference on the campus helped swell the otherwise sparse turnout. War plant training leaders were also in attendance, particularly at the session devoted to the "Contribution of Visual Aids to Industry and Education." Key speaker at this session was Floyde E. Brooker, Director, Visual Aids for War Training of the U. S. Office of Education. Abram Vandermeer, research assistant at the University presented a significant report on the "Economy of Time and Materials Through the Use of Sound Films in Training for War Production."

Other speakers were Wm. F. Kruse of Bell & Howell, Major Franklin Adreon, Jr. of the U. S. Marine Corps, Wesley Greene, Director of Distribution for the National Film Board of Canada.

(Above, l. to r.) Personalities at the Midwest Forum: W. E. Scranton, Adv. Mgr. of the Inspro Corporation; (center) Abram Vandermeer, University of Chicago; Frank Pratt, Cedar Rapids, Iowa, visual dealer; (below, left) B. Pearlman, Golde Mfg. Co., Chicago and (right) President M. H. Goldberg, head of the Golde Co.

Visual Dealers Attend:

♦ Approximately fifteen heads of visual dealer concerns were in attendance at the Forum and at a Regional Conference of the NAVED organization held in Chicago on that occasion. Major and Mrs. Lucille South, Frank Bangs, Bernard Cousino, Jasper Ewing, E. F. Burke, Richard F. O'Neil, Frank Pratt, Mrs. Roa Kraft Meuer, D. T. Davis, Garland B. Fletcher, W. P. Ramston, and Ray Swank were among the prominent dealer personalities glimpsed at the Chicago gatherings.

Exhibitors included practically all the major producers of visual equipment and supplies. The ingenious developments already made in the visual field for war and postwar use were already in evidence at many of the exhibits. A total of 19 companies showed their wares.

H. A. Spanuth, of Ideal Pictures, Chicago (left) greets an exhibit visitor at the Forum.

U. S. WAR TRAINING —cont'd—

(CONTINUED FROM PAGE 130)

on the various marine pipefitting subjects allotted, using sketches and miniature camera shots to illustrate each of the scenes. This thoroughly practical method of presentation served to clarify the intent of the producer, both for the Office of Education and for the committee of specialists serving as a board of review. And, of course, from a production standpoint, the visuals served to crystallize continuity, and to establish possible camera angles and lighting.

Experts on Committee

Preliminary drafts of the scripts completed, copies were submitted to the Office of Education for consideration and any corrections deemed necessary. Following this, the committee of experts was assembled through the efforts of Lee Ralston, Supervisor of Trade and Industrial Teacher Training in the California Department of Education. The committee represented the pick of Bay Area men engaged in marine pipefitting— men with a lifetime background of experience and teaching.

The four advisory committee members are Victor Baher, Bethlehem Steel Company; J. Kronschnable, Richmond Shipyard Number One; Frank L. Martin, Marine Shipbuilding Corporation; and B. V. Meyers, Moore Drydock Company.

These men gave unsparingly of their time to make certain that the factual data included in the films will be up to date and accurate. Photo & Sound was fortunate in having Mr. Judson, Mr. Ralston, and Mr. Marion Grosse present at the committee meeting. Mr. Grosse is widely known for his work with the California Department of Education in developing the series of unit courses of study on shipbuilding, now in use throughout the country.

Filmstrip is Visual Quiz

Photo & Sound's productions for the Office of Education are well on the way to completion, and filmstrip production is also under way. The latter have been developed along the lines of the visual quiz—each frame poses a question. The question may be answered in the motion picture. If it is not, it is expected that the instructor will supply the additional information needed. The visual quiz treatment not only can be used to arouse discussion, but also supplies a natural opportunity to present information that will not lend itself readily to motion picture treatment.

Script Also on Strip

To expedite committee consideration, the visuals from each script were presented in filmstrip form, projected while the script was read. That this did speed approval is beyond question, since it took in the neighborhood of three hours to get over five scripts—it couldn't be done, but it was! And the story board technique gets a large amount of the credit.

* * *

(This series of production reports will be a feature section next issue.)

PURINA COMPANY

PRESENTS

"Twenty FIGHTING MEN"

WE are proud to be of assistance to the Ralston Purina Company in this public-spirited contribution to America's preparation for victory in the battle of food production.

An understanding of group thinking—an understanding of group reaction—an understanding of the cast of mind of occupational groups and of their motives—all these are essential factors of assistance to any sponsor of incentive pictures.

Years of comprehensive experience with the real reactions of real people can pilot the way to definite results in this field.

E NAVY

the **JAM HANDY** *Organization*

DETROIT

DAYTON

CHICAGO
230 N. Michigan Boulevard
STAte 6758

LOS ANGELES
7046 Hollywood Boulevard
HEmpstead 5809

BUSINESS SCREEN

MAGAZINE

No. 3 VOL. 5-1943

a formula for results . .

. . . . sight, sound, sequence These are the elements of Sound Motion Pictures, that today are accomplishing miracles, in preparing military forces for victorious combat, in training inexperienced civilians for victorious war production and home defense—the fastest, most thorough training the world has ever known.

Tomorrow, look for these 3 S's to accomplish further miracles—miracles in broadening the scope of education, in speeding up training for the exciting, competitive transition to post-war problems.

Victor Cameras and Projectors are serving on the Home and Fighting Fronts the world over. Its factories are also producing important radar, airplane and technical parts to speed Victory. Its laboratories are testing new developments to reach new highs in perfection. Look to Victor —the active force in

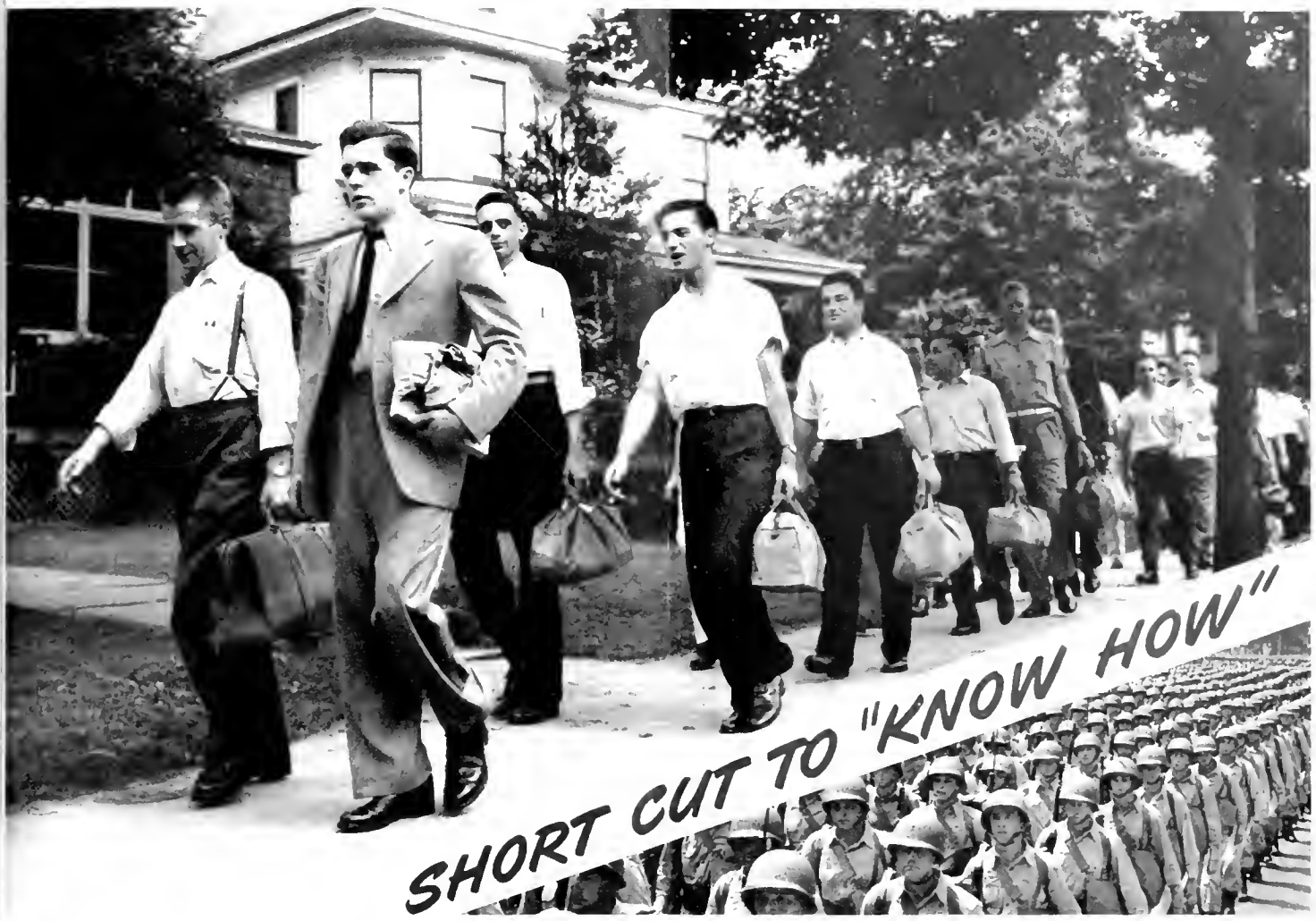
16mm Sound Motion Picture Equipment

VICTOR **Animatograph Corporation**

HOME OFFICE AND FACTORY: DAVENPORT, IOWA

242 W. 55th St., New York City • 188 W. Rondolph, Chicogo

Distributors Throughout the World



With time-saving, life-saving movies.... *outgrowth of* Kodak's *pioneer Teaching Films*.....the Army and Navy are giving millions the "know how" of war

HISTORICAL NOTE—Back in 1923, having perfected "safety" film—making classroom projection practical—Kodak made available 16-mm. movie cameras and projectors . . . and shortly afterwards pioneered a program of teaching films for schools.

PUT yourself in the boots of one of these young men. You've been accepted for the Army or Navy. What do you know about this war of 2,000-horsepower aircraft motors . . . Bazookas . . . submarine detectors?

Our Army and Navy Commands realize this lack of experience. They know that you may go up against battle-wise troops or ship crews or flyers.

They have done the worrying for you. They will turn you out a better man more competent in the use of your weapons, abler to take care of yourself than any "trainee" who ever went before you.

TRAINING FILMS are a great and growing part of their system. The Army and Navy have made thousands.

Don't get the idea that you're just "going to the movies," though. These movies are different. Each teaches you to do a part of your job in the Service *do it exactly right.*

Maybe it's how to dig a foxhole. Or inflate a rubber life raft. Or take down and reassemble a .50-calibre machine gun. Or bake a batch of bread . . .

In an Army and Navy made up largely of "specialists," thousands of films are not too many. (Kodak is a major supplier of film for these pictures—one big reason civilians are not getting all the film they want.)

You'll see battle, in these training movies. You'll hear it—to make your new life and work "second nature" under all conditions. *You'll be hardened . . . ready to "dish it out and take it" . . . up to 40% sooner because of Training Films.*

After this war is won, you—and millions like you who have learned so much, so easily, through training films—will want your children to learn the Arts of Peace this way.

Teaching through motion pictures and slide film—steadily growing in importance during the twenty years since Kodak made its first teaching films available—will really come into its own . . . Eastman Kodak Co., Rochester, N. Y.

Serving human progress through Photography

How To Save At Least Three Months

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

TRAINING A SALES FORCE and dealer organization to function at top efficiency is no small task—even in peace time.

Yet this is the task which many companies—yours, quite possibly, among them—must be ready to face when the signal comes for reconversion.

The course of least resistance is to wait until the surrender of the Axis Powers gives you the go-ahead.

But this will mean the loss of at least three months—and just as sure as shooting you'll be caught by your smart competitors flat-footed!

A better alternative—already adopted by a number of our clients—is to begin your planning NOW. By retaining people who know how to do the preliminary research . . . how to select the most useful training media for the purpose (whether motion pictures, slidefilms, manuals, or a combination of all three) . . . how to use these media to best advantage . . . how, in short, to build a completely integrated and continuing training program that will do the job.

Much of this work can be started now—without interfering with your war work in the slightest.

If you'd like to save months of needless delay and be ready to start when the signal flashes, write us today for suggestions as to a sound and practical procedure.

CARAVEL FILMS

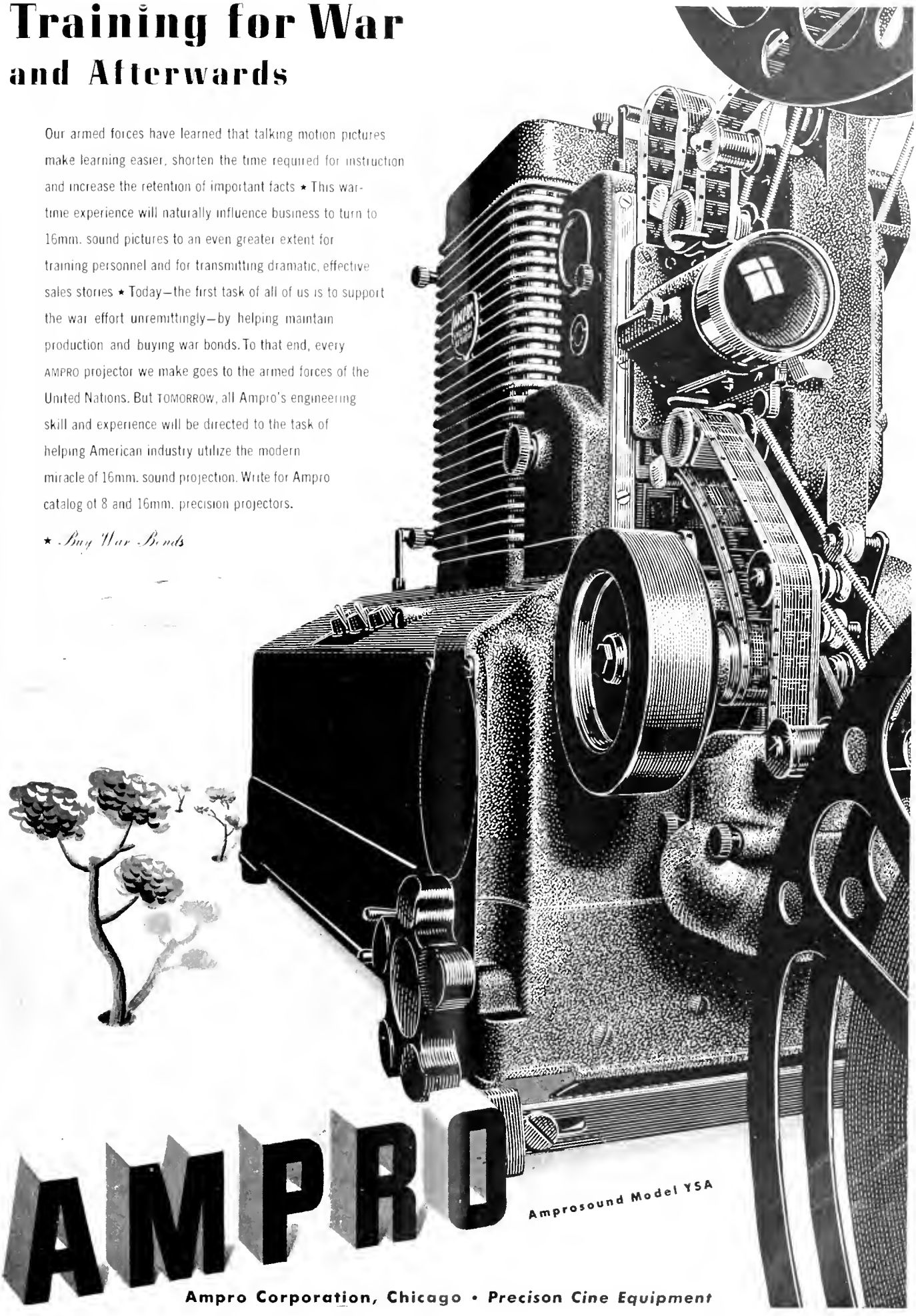
INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

Training for War
and Afterwards

Our armed forces have learned that talking motion pictures make learning easier, shorten the time required for instruction and increase the retention of important facts ★ This war-time experience will naturally influence business to turn to 16mm. sound pictures to an even greater extent for training personnel and for transmitting dramatic, effective sales stories ★ Today—the first task of all of us is to support the war effort unremittingly—by helping maintain production and buying war bonds. To that end, every AMPRO projector we make goes to the armed forces of the United Nations. But TOMORROW, all Ampro's engineering skill and experience will be directed to the task of helping American industry utilize the modern miracle of 16mm. sound projection. Write for Ampro catalog of 8 and 16mm. precision projectors.

★ *Buy War Bonds*



AMPRO

Amprosound Model YSA

Ampro Corporation, Chicago • *Precison Cine Equipment*

Camera EYE

★ Unceasing editorial effort in the discovery and refinement of original news and features about the visual medium we serve makes our job a pretty hectic one these days. Frequently, however, we are rewarded by the appearance of original quotations and condensations in other contemporary journals and in the advertisements of the industry.

One of these statements, widely borrowed (and mostly without credit to the copyrighted source) is the statement about the forty percent saving in learning time affected by visuals in the Army. That isn't exactly what the original statement said but it has been widely quoted thus and will probably soon be part of the folklore.

Confirming the effectiveness of the medium in war training, however, is an increasing amount of evidence offered by Army and Navy officials. One such episode is beautifully recounted in the advertisement of Agfa Ansco we are privileged to present on the inside back cover of this issue. A lighter moment but a convincing one is Lieutenant Julian Lesser's story of the Marine Corps sergeant formerly in charge of the film post at the New River base. The sergeant, now receiving officer training, was No. 1 man in every subject of his exams as a candidate for officer's school. Having seen every film in the library, he was letter perfect in practically every subject.

* * *

NEWS AND VIEWS OF IMPORTANCE: The perfection of the wire recorder by Marvin Camras of the Armour Research Foundation and its present production for Army and Navy use by General Electric should not pass unnoticed by the visual industry. This device permits the recording of sound on a small spool of magnetized wire, good for a hundred thousand playbacks. The possibilities of a reproducer utilizing the wire-recorded

(PLEASE TURN TO PAGE FORTY-TWO)

BUSINESS SCREEN

NUMBER THREE 1943 — VOLUME FIVE

Cover — The photograph is a production scene at the San Francisco studios of Photo & Sound now producing a series of visual aids units on Pipefitting for the United States Office of Education series on Shipbuilding Skills.

Contents

★

Issue Three Volume Five of Business Screen Magazine. Issued by Business Screen Magazines, Inc., 17 E. Erie St., Chicago 11, Illinois on November 1, 1943. O. H. Coello, Jr., Editor; E. T. Lindgren, Production Manager. Subscription $2.00 for eight numbers. Foreign & Canada $3.50 including duty. Entire Contents Copyrighted 1943 by Business Screen Magazines, Inc. No editorial material may be reproduced without the express permission of the publishers. Trademark Reg. U. S. Patent Office.

SPEED PRODUCTION!

INCREASE MORALE!

AROUSE FIGHTING SPIRIT IN YOUR PLANT!

Show your workers

"ITALY SURRENDERS!"

ALLIES MOVE IN!

Better than rallies, bands, parades, or speeches, this authentic picture of a great American victory shows the hell of the front line! It brings home the sober truth that victory is won not only through the heroism of our fighting men, but also through the sheer weight of more and better materiel!

Prove to your workers that this is no time to relax! Show them this on-the-spot record of the fall of Fascist Italy! Let them see American-made equipment—tanks, guns, planes, ships, landing barges—tons upon tons of materiel—helping to win a victory that otherwise would have been impossible! Your workers get a first-hand view of the fall of Il Duce's Empire! They ride with American bombing crews as they blast a path for invasion! They watch as Allied warships make rubble of Axis strongholds! And they join Yank landing parties as they gain a foothold on Fortress Europe! There is no better way to drive home the grim truth that production and more production is the only way to win this war! Get this film! Show it to your workers!

COMING!

THE GREATEST CASTLE FILM OF THE YEAR!

To be released mid-November

"NEWS PARADE OF THE YEAR" [1943]

All of the great events of the entire year in one film!

These and other Castle Films available at your PHOTO DEALER

CASTLE FILMS INC.

World's Largest Distributors of 8 mm and 16 mm Film

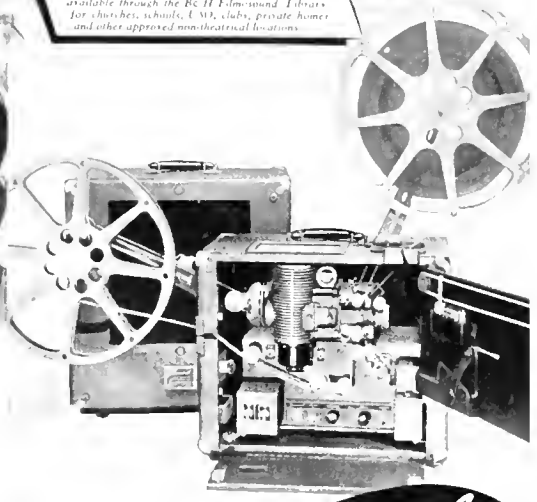
RCA BLDG. NEW YORK 20 | FIELD BLDG. CHICAGO 3 | RUSS BLDG. SAN FRANCISCO 4

LOW COST 16mm. Titled Version $8.75 — 16mm. Sound-On-Film $17.50

MOVIES help bring 'em back tomorrow ...and everyday!

Scene from "SABOTEUR," a Universal picture available through the B&H Filmosound Library for churches, schools, USO, clubs, private homes and other approved non-theatrical locations.

LUNCH HOUR MOVIES EVERYDAY



Yessir . . . the same movies that pull 'em into the box office for fun and entertainment can pull 'em into the plant . . . get 'em back on the job every day to fight the production battle.

Lunch hour movies are doing a standout job in many warplants . . . giving welcome relaxation to tensed-up workers . . . slashing absenteeism to shreds . . . keeping the schedule clicking along smoothly.

Filmosound Library has surefire ammunition for this home-front battle—from OWI films† like "Conquer by the Clock" to full length Hollywood features like "Saboteur," "Captain Caution," "There Goes My Heart," and "Riders of Death Valley," the last a 15-chapter serial, which can be run one chapter a day to keep the worker audience coming back daily.

Get your War Plant Theater started now. Send for the Filmosound Library Catalog and supplements—thousands of great films to choose from . . . to fit almost any worker problem you have.

†Only cost is 50c service charge, which is waived when rental subject with rate of $2 or more is ordered at same time.

RETURN OLD PROJECTOR LAMPS WHEN YOU ORDER NEW ONES

The Filmosound V···

The Filmosound V··· — is the result of B&H research which maintained high performance standards despite restrictions of critical materials. Such farsighted engineering will bring you even finer movie equipment after Victory.

BUY MORE WAR BONDS

Opti-onics* is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY

Bell and Howell

BELL & HOWELL COMPANY
1808 Larchmont Ave., Chicago 13, Ill.

Please send Filmosound Catalog and Supplements.

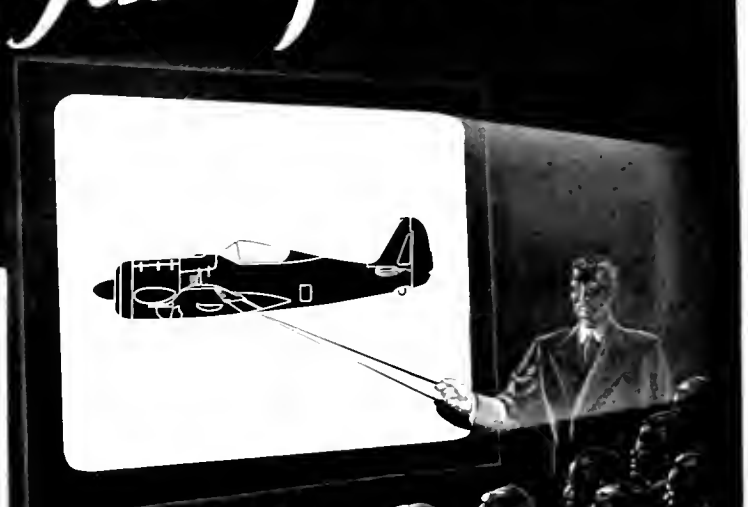
Name

Address

City State

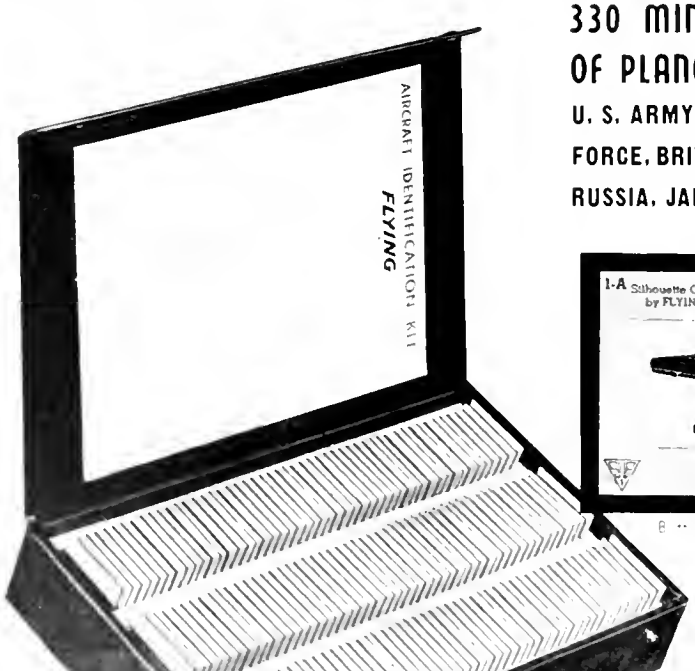
Here It Is! The Perfect Answer to a Vital War Need—

S.V.E. *Aircraft Identification Kit!*



Prepared by *FLYING* Magazine for Use in Group Instruction Wherever Teaching of Aircraft Identification Is a Vital Work.

This complete kit of 330 slides shows students how to recognize instantly the principal fighting planes of all major air powers. The Royal Air Force uses similar material for classes in identification. The slides in the S.V.E. Kit are authentically correct and up-to-date. They were made under the direction of aeronautical experts of *FLYING* magazine. There are six introductory slides, and three silhouettes of each plane—side view, bottom view, and front view. The slides are 2" x 2" and can be projected by any S.V.E. or other miniature slide projector.



330 MINIATURE SLIDES OF PLANES IN USE WITH U. S. ARMY & NAVY, ROYAL AIR FORCE, BRITISH FLEET AIR ARM, RUSSIA, JAPAN, AND GERMANY.

COVERS 110 DIFFERENT TYPES OF AIRCRAFT

With Three Views of Each

COST (WITH CASE) LESS THAN 11¢ PER SLIDE

The complete kit, including 330 slides in cardboard binders, indexed sturdy case, and Instructor's Manual is only **$35.00—less than 11¢ per slide.** The De Luxe Kit, with slides permanently mounted between glass in unbreakable S.V.E. Slide Binders, will be **$55.00.** Order today! If you desire additional information, write Department 10B for illustrated folder. You are under no obligation.

Prices subject to change without notice.

SOCIETY FOR VISUAL EDUCATION, INC.

100 EAST OHIO STREET • CHICAGO, ILLINOIS

Manufacturers • Producers • Distributors of Visual Aids

The "World Series" is playing at the Front!

"We are playing in the big leagues. You can't hit a home run by bunting, you have to step up there and take your cut at the ball."

--General Eisenhower

AMERICA'S fighting men are a long way from the sandlots and prairies where those instincts of courage and determination were first developed by America's favorite game. Out in the Pacific and the Mediterranean, up in Iceland and in the Aleutians, they're playing another kind of World Series . . . and to *win*. But behind the lines of the far flung war fronts, our fighting men of the Army, Navy, Marine Corps and Coast Guard will thrill to the Yankees and Cardinals in the 1943 Baseball Classic, "The World Series" through worldwide arrangements made by the American League of Professional Baseball Clubs, in cooperation with A. G. Spalding & Bros., Inc., and the Hillerich & Bradsby Co., makers of the famous Louisville Slugger bat.

The sound motion picture production of "The World Series" is a war effort contribution to the men in the service in which we of Chicago Film Studios are proud to assist.

Chicago Film Studios

CHICAGO FILM LABORATORY, INC.

MOTION PICTURES — SLIDE FILMS

STUDIO AND GENERAL OFFICE—18 WEST WALTON PLACE—CHICAGO, ILL.—WHITEHALL 6971

EYES

are the keyholes of the mind. The key that unlocks the barriers of ignorance or prejudice opens the intelligence to new, lasting impressions.

Visual Training . . . a master key to the mind . . . has saved lives, fostered skills, introduced new ideas, influenced opinion, developed understanding.

Visual Training is helping to win the War . . . it will help America to win the Peace in days to come.

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

PATTERN FOR AN ERA

A "NEW" MEDIUM of idea communication, actually half a century old, is taking its justified place beside the ancient art of printing and the modern science of radio as one of the most effective means of putting learning and understanding into the minds of men.

Motion pictures and slidefilms, sound and silent, and other forms of visual and auditory presentation have long ago proven their useful roles in industry and education. But it has taken the global scope and urgency of war training and the dissemination of wartime information to speed the emergence of these useful tools from the shadow of a glittering entertainment art.

ELEMENTS OF THE ERA NOW EMERGING

Into the cauldron of films for war has gone the skill and enthusiasm of men and women from the educational profession, the practical knowledge, facilities and experienced personnel of the producer and the talent and facilities of the visual equipment engineer, designer and builder.

We have closed a pre-war decade of halting progress in visual education which found American schools expending but a few cents per pupil for these proven and potent aids to instruction. We have ended an era in which this priceless medium for securing mass and individual understanding of products, services, management principles and operating methods was adopted by only the most progressive industries and practically neglected by the advertising agency.

TIME TO ESTABLISH SCOPE AND PROGRESS

Just as the facts of battle are being authenticated by eyewitness reports made on the scene of action, so the facts concerning the progress being made in these vast laboratories of the armed services and in the war training classes of our schools and industries needs to be documented and established for the future.

There are facts of weight and importance in the production of the 833 motion pictures and 550 filmstrips [ ] by the Army Pictorial Service. The 536 motion pictures and 1,588 filmstrips [ ] produced and purchased by the Training Film Section of the Bureau of Aeronautics for the Navy Department are equally important as a mandate to the awareness and understanding of this potent medium by education and industry.

Hundreds of filmstrips and motion pictures produced and used in the Coast Guard and the distribution and use of selected film subjects by the Marine Corps, add to the scope of the visual medium's wartime training contribution.

SAVING LIVES FIRST OBJECTIVE

The primary objective of these aids is the saving of fighting men's lives through the best possible means of instruction in the tricks and trade of complex modern mechanized warfare. Only practical experience competes with the screen as a medium of re-enacting battle action or mechanical processes. Printed instructional manuals [COVERS

NOW TOOLS OF WAR, VISUAL MEDIA WILL BE ESSENTIAL AFTER THE PEACE

MILLIONS SEE TRAINING FILMS IN THE ARMED FORCES

(CONTINUED FROM PRECEDING PAGE)

for the guidance of technical personnel, are now being supplanted by motion pictures and slidefilms. These deliver a clearer understanding of intricate mechanical features, their operation and repair far better than the printed page.

Procurement contracts of the armed forces now specify inclusion of such visual materials by the supplier; millions of feet of negative have been exposed for that purpose by industrial film producers for Ordnance, the Air Corps and other branches of the services.

This brief resume of film production and distribution outlets in the armed forces will serve as a "preview" of a more detailed blueprint in preparation for later publication:

* * *

ARMY PICTORIAL SERVICE: Produces and distributes all training films for the Army as the designated agency of the Signal Corps. Principal production centers at Astoria, Long Island; Wright Field, Dayton, Ohio; and in Hollywood. Colonel Kirke B. Lawton is Chief of the Army Pictorial Service. Films are now translated in Chinese, Spanish, Russian and other languages for extensive distribution to our Allied armies.

BUREAU OF AERONAUTICS, NAVY DEPARTMENT: The Training Film Section of the Bureau of Aeronautics produces all training motion pictures and filmstrips for the Navy, including the Bureau of Ships and Yards and Docks. Lt. Orville Goldner is executive officer in charge of training film production. Utilization of training aids, including films, is under the direction of Lt. Francis Noel, Bureau of Naval Personnel.

U. S. COAST GUARD: Training Film production (motion pictures and filmstrips) for Coast Guard training stations is under the direction of Lt. Commander Patrick Murphy.

U. S. MARINE CORPS: Lt. Col. G. McGuire Pierce is in charge of training film policies for the Marine Corps. Lt. Col. Franklin Adreon is in charge of production at Quantico, Virginia training film center.

The activities of Special Services, the Army Motion Picture Services, and the Incentive branches in the Army and Navy are so extensive and widely useful to be worthy of a special and general report in a subsequent issue.

* As of March 1943, published report
** As of October 1943, estimate

Visualized Learning Speeds Victory

Future fighters for the Army learn good picture methods

Navy films show battle action to speed training of crews

MOTION PICTURES & SLIDE FILMS INSTRUCT WAR PLANT WORKERS

★ AMERICAN INDUSTRY knew the value of visual education methods long before Pearl Harbor. Both service and sales personnel of the automotive, oil, rubber, agricultural implement, electrical, transportation, utility and general manufacturing industries were extensively trained by commercially produced motion pictures and slidefilms.

Emphasis upon selling and sales training changed to industrial and vocational instruction with the outbreak of European hostilities. The industrial film producer was ready with the "know-how," studio facilities and trained personnel to assume production of training films for the armed forces and war industry.

In summary review these are areas in which visual aids are proving useful to war industry:

* * *

EMPLOYEE INDOCTRINATION: Films are used to give new workers an immediate knowledge of plant operations, employee services, regulations, and other induction formalities.

TRAINING IN DEFINITE SKILLS: USOI subjects and special training films speed understanding of new workers in production line skills.

SUPERVISORY EDUCATION: The influx of new workers has brought a new problem of unskilled supervisors, recently raised from the ranks. Films help teach principles of good supervision, safety practices, etc.

TIME & MOTION STUDY: Motion picture analysis of individual job operations help speed war production by showing unnecessary actions.

EMPLOYEE MORALE: Battle reports from the war fronts, industry-produced "incentive" subjects help maintain good employee-management relations.

NUTRITION & HYGIENE EDUCATION: Pictures show workers how to eat properly to maintain good health; tips on personal and social hygiene.

SAFETY EDUCATION: Ranks highest in importance for saving production losses from avoidable job accidents through employee showings.

INSPECTION AND ANALYSIS: High speed and x-ray motion pictures help find metals faults, failures under stress, etc.

Many other uses such as maintenance and repair instruction can be added to the above. Motion pictures and slidefilms are doing their part *behind* the production lines—helping win by increasing output

Pictures Like These Aid War Plants

Tube bending in the Aircraft Work Series (USOE) instructs trainees.

G-E. color films show arc welding methods to aid war plant workers.

IN RURAL AMERICA AND CANADA FARM AUDIENCES SEE PROGRAMS

★ MILLIONS OF FARMERS through the winter months particularly, have enjoyed the promotional entertainments provided by agricultural implement makers. Today these farmer audiences, in their Grange halls, town meetings and school houses, see Department of Agriculture films, war reports and educational subjects provided by state and commercial sources.

There is a great need here for further instructional materials in definite farm skills. Today the farmer needs to know about equipment maintenance and repair and this need will be met by a new series of four Office of Education visual aids units on Farm Work.

USDA pictures (see Issue I, Volume 5 of BUSINESS SCREEN) show measures taken for insect control, soil conservation and similar topics of importance to the farmer. General educational subjects on war themes aid in better understanding by rural America of wartime responsibilities. *For Health and Happiness* and *The Battle Is In Our Hands*, recent USDA film productions, illustrate the general nature of this subject matter. 4,000 projector-equipped agents aid this effort.

The National Film Board of Canada has done extensive work in reaching remote and isolated rural audiences in the provinces. Traveling projectionists set up nightly showings in school houses and bring Canadian farmers into close relationship with the war effort.

* * *

A thousand U. S. county agents, equipped with 16mm. sound projectors, are the largest general distribution factor in the U. S. scene. Their activities, limited by the increasing demands of war duties, are adequately supplemented by specializing commercial distributors who bring their film showings to regularly scheduled audiences. Rural schools and agricultural colleges, where they are equipped with projection apparatus, are enthusiastic users of informational and educational film subjects.

There is a great need for really educational films on agricultural subjects such as animal husbandry, chemurgy, soil chemistry, dairying and similar subjects along the pattern of a university short course. When these are provided, U. S. agriculture will have the elements of a general visual education program.

GROUPS THROUGHOUT THE NATION LEARN WARTIME RESPONSIBILITIES

★ MEN AND WOMEN gather in clubs, lodges, union halls, Legion Posts, fraternal organizations and similar meeting places to make U. S. the most gregarious nation on earth. Millions of Americans can and are seeing motion pictures at such meeting places. Films are enthusiastically accepted as the best possible means of providing educational fare for discussion meetings and for providing recreation.

Clubs and labor unions, particularly, are using the film medium much more extensively for their own communications. Conventions, special campaigns and general membership reports are now circulated via the screen. In the post-war world, a hundred thousand projectors will be needed to meet the demands of organized adult groups for entertainment and educational purposes. With local organizations completely equipped, national headquarters may count upon adequate distribution of its own film messages and corresponding success in screen campaigns.

Today, thousands of men's and women's groups are seeing U. S. war films through local distributors of the Office of War Information, and the Coordinator of Inter-American Affairs. The registered totals of these audiences are millions larger than would have been possible a few years ago.

Credit for this effort goes to rural and urban film distributors, road-show operators and to film libraries who have blazed an important new trail in proving to America the existence of a non-theatrical audience which may eventually be greater than that attending the urban entertainment theatres.

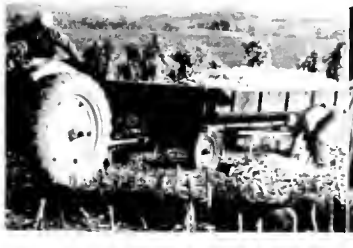
These, in brief, are the elements of the visual era ahead.

When Johnny Comes Marching Home

♦ Visual education appears destined to be one of the great post-war fields which will welcome him as a co-worker and participant. Training films served him in the armed forces they will serve him again when peace returns. To this end, all workers in the field of visuals pledge unceasing effort for the duration.

To Inspire and Inform the Farmer

Scene from "Farmer At War," recent OWI motion picture release



"Twenty Fighting Men" inspires farmers to increase food production

Inform and Instruct the Home Front

Wartime travel problems are shown in "Right of Way," recent OWI film

Films aid civilian pilot training at showings to local adult groups

Audiences Are Waiting

★ It is the *audience* not the *film* which this industry serves. The number and capacity of audiences seeing instructional or informational films is the real measure of the industry's future. Film, as Hollywood will yet discover, is only a raw material and belongs equally to all, whether for education, the sale of products and services or escapist entertainment.

Audiences must be classified and identified. The audience for educational pictures will not be found in the entertainment theatre.

Where are these audiences then? How many are they now and how large *can they be* in the future? The answers are as simple as they are tremendous in their potentialities. The audience in *the armed services* is the *total* of our forces in the Army, Navy, Marine Corps and Coast Guard and it is now being served. The audience *on the home front* is the *total* of the enrollments in the public and private schools of the nation; the *total* of the farm population that meets in any kind of group organization; and the *total* of urban groups meeting in clubs, lodges, community forums and other forms of urban group organization.

The total audience afforded by American industry is the present employment of workers and trainees, the potential industrial audience is the millions of persons who must be retrained as salesmen or in other lines of trade or returned to their peacetime jobs when they are discharged from the armed forces. All these audiences are potentials in film production and equipment manufacture.

We have world problems to con-sider for this nation is committed to worldwide action in war and peace. But let us now dedicate this visual industry to solving the problem of million-fold American audiences which are our true and immediate potential. Ninety-eight per-cent of that job remains to be done.

O.H.C.

A PRODUCER'S VIEWPOINT

Pictures After the War

By Pat Dowling

WELL, it took a war to really *sell* industrial motion pictures, just as it did many other ideas which were kicked around considerably in the past and easier times. By industrial pictures, of course, is meant the broad class of motion pictures for information, education and propaganda purposes.

The reason one can say it took a war to make America one hundred per cent conscious of this section of the motion picture industry is that we have recently beheld the spectacle of hundreds of private companies, government agencies and other organizations rushing frantically to find cameras, cameramen, writers, cutters, producers and projectors. And many of these new picture users were the same people who formerly, if not actually snooty toward motion pictures, were at least actively disinterested in efforts to sell them on the use of film.

Twenty-five Years Groundwork

Industrial motion pictures had made many strides in laying the groundwork during the twenty-five years prior to 1941. A little of everything was tried out from the "trip through the factory" films to the Hollywoodish boy-meets-girl story which ended with the bride up to her ears in somebody's soap flakes.

But it took the war to boil down much of this experience to the making of pictures which really do the audience some good as well as the sponsor.

When various government agencies and others leaped into the motion picture effort, there were two schools of thought, one which looked to the "Hollywood" way and one which followed the line of the classroom, the latter approach being nearer the customary manner of thought of the old-line industrial motion picture producers.

Resulting Confusion Natural

As a result, on the one hand professors were sought for to act as picture makers, and at the other extreme the major Hollywood producing companies were called upon to rush into the breach with pictures for training, information, morale and so forth.

Naturally a little confusion resulted at times because on the one hand the professors were not picture makers, and on the other the personnel of the major entertainment producing companies had been dealing chiefly with glamour, romance, comedy and other standard picture elements all wrapped up expensively and fancy to sell for seventy-five cents in a theatre.

Looking to "Hollywood" has always caused some confusion because frequently during the adolescent period of industrial and educational movies, when it was desired to present a high class moving picture for advertising or educational purposes, no clear line was drawn between the part of Hollywood which stands for entertainment and star attraction value and the part which has to do with the mechanics of making pictures—the planning, direction, camera and process work, recording, cutting and synchronizing and the many other technical operations calling for a variety of specialists all along the line.

Theatrical Approach Risky

In the past this whipping up of a little of both ingredients of Hollywood into industrial movies gave us pictures which were a little different from the early trip-through-the-factory type but which obviously could not attain the production and entertainment value of regular theatre pictures.

The moment one puts actors, dialogue, sets and other features of dramatized pictures into a business or educational picture he automatically lays himself open to audience comparison of this picture with the pictures which that same audience is accustomed to seeing in the show houses. And it is conservative to say that such feature pictures, coming in quantity from the standard producers, have an average of better than a half million dollars of expenditure behind them. Obviously the sponsor who hopes to produce his picture for even as much as a tenth of that sum of money has a couple of strikes against him before he comes up to the plate.

Educational Style Effective

But the movie which takes the other approach—that of the straight educational technique and which short-cuts the story and entertain-

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ORGANIZED VISUAL INDUSTRY TO MEET POST-WAR PROBLEMS

THE VISUAL INDUSTRY—producers of motion pictures and slide films now totally employed in wartime tasks of training and information and the manufacturers of the projectors, screens and accessories needed to carry out these essential war assignments appear to be slowly but surely accomplishing the heretofore impossible task of organization.

Identical trade associations in each of these fields have been set up and executive groups within each of these bodies are meeting frequently as their individual courses of action for war and postwar service are being determined.

MUCH RESEARCH IS NEEDED

While the spadework of actual organization detail is proceeding to swift and early conclusion in each of these major groups, recognition of the tremendous job of industry-wide research and public relations is a primary consideration.

For example, the National Association of Producers (for Education & Industry), which began its present program of industry action on June tenth of this year, is now engaged in setting up complete data on film distribution. Film titles used by the industry in the past ten years are also being catalogued. Meanwhile, the setting up of industry standards and of the machinery for their widespread adoption and recognition by film users is being carefully studied by this group.

MANUFACTURERS SET STANDARDS

In the field of visual equipment manufacture, similar standards of professional and technical ability are under consideration. Meeting in Chicago in mid-October, the executive heads of six leading manufacturing concerns indicated that this matter was high on the agenda of its activities program. Too frequently, the specialized skills and considerable experience required by these manufacturers of fine projection apparatus are neglected in consideration of price-before-quality by the unwary consumer.

That these movements are heartily endorsed by both dealer and consumer groups as well as educators concerned with the future development of the visual education movement was indicated to the Editors of BUSINESS SCREEN in frequent interviews granted this past month. The utmost cooperation of the industry's trade groups has been assured to the existing national dealer organization. Here the same effort toward recognition of basic differences and specialized experience is being sought by visual education dealers.

NATIONAL COORDINATION SOUGHT

The ultimate goal of all industry activity along these lines is widespread "public" recognition of the visual medium and its value in training and informational tasks. Vocational education, business and industrial training, promotion and public relations, the training of sales and distributive personnel and consumer education are among the tasks awaiting motion pictures and slidefilms after the war.

Vocational rehabilitation of service men, the return of women workers to the home, agricultural instruction, and general public understanding of social and economic problems are among the projects for which visual media will be called upon.

America's schools, returning to subjects neglected by the urgency of wartime tasks, are expected to bring a tremendous increase in existing visual equipment and films. This increased demand on the part of both education and industry puts a great measure of responsibility upon the basic suppliers of these mate-

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First Post-War Planning Films

★ Completion by mid-November of the first two sound slidefilms by the Committee for Economic Development marks the advent of this important postwar planning body into the field of visuals. A third program, on postwar applications of industrial design is also said to be in production by the committee.

The first CED program deals with the physical analysis of America's postwar economic problem: the number of men to be re-employed, goods and services required to replace war-suspended production of civilian items and similar topics. As the second half of this twofold presentation, CED presents a typical industrial group discussion of postwar planning by management.

SHOW TO 900 GROUPS

Nine hundred local CED committees in towns and cities throughout the nation are the prospective audiences for the visual programs. To these committees and their invited guests from the management of local industries and commercial groups CED is planning to send other visual presentations. Recognizing the basic need for projection equipment by these local audiences, trade groups in the visual industry are cooperating in the location of projectors and playback equipment needed for these showings.

EQUIPMENT LOANS NEEDED

Sound slidefilm equipment sponsors desiring to assist this vitally important postwar effort should communicate with Anthony Hyde, Director of Information, Committee for Economic Development, 285 Madison Avenue, New York City or with the headquarters of the Industry trade groups, at 157 East Erie, Chicago.

INDUSTRIAL DESIGN A POTENT FACTOR

★ The art and science of the industrial designer is destined to play an important role in the postwar plans of the visual industry. Mindful of the skills demonstrated by renowned industrial designers at the Chicago and New York World Fairs within the past decade, industry leaders predict that their services will be even more widely in demand during the next ten years.

NEW TECHNIQUES COMING

Not only design and perfection of mechanical processes of projection, but the employment of new techniques such as three-dimensional pictures, rear-screen displays are on the agenda of the designer. The designer and the optical engineer together will give the medium new fields of use heretofore undreamed of.

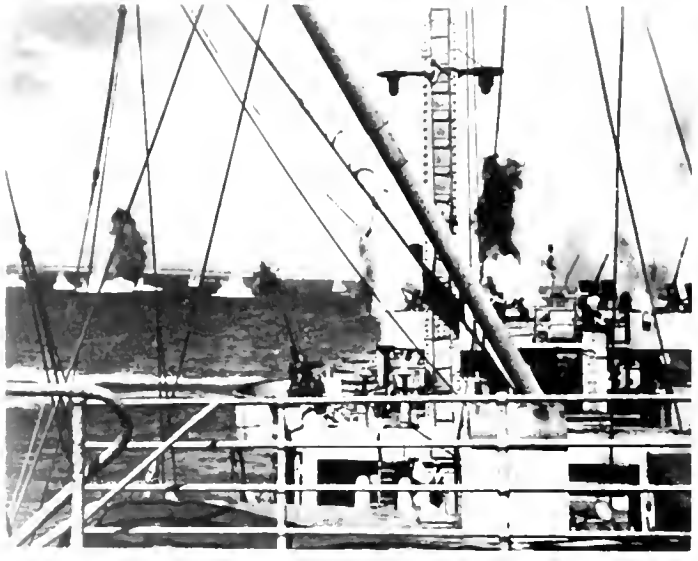
VISUALS ARE A TOOL

In the knowledge that motion pictures and filmstrips are *tools* of instruction and information, the designer will want to place them at the convenience of the user. No extensive central auditoriums for schools or plants are contemplated but convenient outlets for projection in each location where learners or workers may be most conveniently reached. A screen in every classroom is the ultimate goal to be achieved.

A MUST FOR EXHIBITS

At conventions and expositions, the film already has played many useful roles. Moving murals, adding color and dimension, aid ready understanding of exhibits. Small theatres, artfully designed, provide comfortable resting places in which the visitor may enjoy educational films while relaxing.

"Why We Fight" Series Popular in War Plants



LAUNCHED last year by the Army the "incentive program" which included plans for showing Army orientation films produced by Special Services to workers in war plants is said to be having an excellent morale effect. Workers frequently have declared—as have soldiers seeing them—that the films explain better than any other medium available to them the causes of the present conflict, the steps in the war's development, and gives them a background through which they can understand more readily the day-to-day progress in the fighting.

Produced under supervision and direction of Lt. Col. Frank Capra, the orientation films were planned as a series of seven, all under the general heading, "Why We Fight." Fifth of the series, *Battle of Russia*, produced by Lt. Col. Anatole Litvak and supervised by Lt. Col. Capra, has been released only recently, and is now on its way to showings in Army posts and encampments at home and abroad, and again to war workers.

Preceding films in the series, seen by a host of war workers, are *Prelude to War*, *The Nazis Strike*, *Divide and Conquer*, and *Battle of Britain*. All are outstanding examples of documentary narration.

★ Three new short subject motion pictures *December Seventh*, *the Life and Death of the Hornet*, and *The Navy Flies On* were released during September for exhibition restricted to war plants and shipyards, Rear Admiral C. H. Woodward, USN, Chief of the Industrial Incentive Division announced. These films illustrate the interdependency of the worker on the production line and of the men of the fleet on the firing line.

December Seventh was produced by Commander John Ford, USNR, and filmed by Lt. Gregory Toland, USNR. In two reels, the film relates the events that led up to the Jap "sneak attack" on Pearl Harbor, and portrays the havoc and destruction that descended on the great Pacific base. It then shows the miraculous speed with which workers salvaged and repaired the sunken warships.

The Life and Death of the Hornet, is the Division's complete film story of the famous "Shangri-La" from which Major Gen. Jimmie Doolittle's fliers took off to bomb Tokyo and which housed the famed Torpedo Squadron 8. The picture traces the history of the Hornet from the time she was launched, through her active life, to her fighting end.

The Navy Flies On, whose release is timed with the 30th anniversary of Naval Aviation, traces the dramatic and historical progress of the Navy's air arm, and the role it is playing today in smashing the axis. It was produced principally for showings in plants manufacturing Naval aircraft and component parts.

Other films already made available by the Division to war workers for plant showings through its national distribution service are: *Full Speed Ahead; This is Guadalcanal; Mary Smith, American; and Conquer by the Clock*. War plants that desire to exhibit these films are requested to write to the Industrial Incentive Division, U. S. Navy, Washington, D. C.

Current OWI War Films

★ Through the facilities of nearly two hundred conveniently located depositories, 16mm sound films on war subjects issued by the Bureau of Motion Pictures, Office of War Information are easily available for war plant showings and are widely used.

Latest subjects made available through these OWI facilities, as announced by C. R. Reagan, head of the Non-Theatrical Division, are briefly reviewed here:

BLACK MARKETING (11 *minutes*). A dramatization of an actual case taken from the files of the Office of Price Administration, typical of hundreds of other cases, this film shows just how the black market operates and how it is defeated by cooperation of the public with the OPA and local law-enforcement officials. The film contains an object lesson and a plea for public cooperation with the OPA and local law-enforcement officials to prevent violation of ceiling prices and rationing laws. Without the help of purchasers the black market cannot operate; if everyone will realize this and refuse to pay more than ceiling prices or to buy without giving up ration stamps, this sabotage of the nation's food supply can be stopped. Black Marketing was released by the Bureau of

(PLEASE TURN TO PAGE THIRTY-FOUR)

SPONSORED FILMS ARE NEEDED FOR U.S.

WAR CAMPAIGNS

THE HIGHLY USEFUL work now being accomplished by the advertising profession through organized campaigns on current war problems is not limited to the utilization of *printed* or spoken media.

The part which motion pictures and slide films can play in backing up the information and education programs outlined by the Office of War Information is clearly outlined by the campaigns described elsewhere in this section. Sponsored film production can play as important a role with *sight* and *sound* messages as magazine and newspaper advertising, radio and other media have in their respective fields.

AUDIENCES WIDELY AVAILABLE

Audiences for sponsored films are available through widespread non-theatrical channels. These channels reach many thousands of adult groups, including unions, influential women's clubs, parent-teacher organizations, lodges and Legion posts, luncheon clubs, churches, community forums and many other organized audiences who are able to *act* upon the messages contained in these film programs far better than can the average individual scanning similar copy appearing in printed media or presented on the radio.

Theatrical distribution has also been widely obtained for campaign subjects. One-minute movies produced with sponsored cooperation have been employed on Office of Price Administration, Treasury and other campaigns with notable success. The area of non-theatrical film production and distribution, however, is also worthy of considerable attention by American business.

INFLATION IS CRITICAL TOPIC

Two critical subjects on which public cooperation is urgently needed are in the fields of Inflation and Juvenile Delinquency. Strong measures are needed to accomplish a thorough understanding of cooperative action of the general public on these problems.

Audiences available for the showing of these subjects are not limited to group-owned projection equipment. Through the facilities of organized national distribution outlets and subsidiary projectionists located in every metropolitan center in the United States, arrangements can be made to present these pictures to these group audiences.

FILMS TELL COMPLETE STORY

Sponsored pictures possess unusual possibilities through the nature of the visual medium. Audiences seeing these subjects have the advantage of a *complete* understanding through the uninterrupted *sound and sight* exposition. The completeness of this understanding is further aided by audience discussions frequently held after the performance.

A national advertiser utilizing the visual medium thus aids these important government campaigns with great effectiveness. In using the visual medium, moreover, sponsors now obtain valuable experience in a new medium which promises to be a most essential part of the advertising and training functions of all American business. Since the current function of advertising is that of all-out effort on the essential problems of the home front during this war period, production of films geared to these OWI campaigns is a "must" for sponsors whose products and services are in any way related to the campaigns outlined.

OWI BUREAU OF CAMPAIGNS

Plans for the campaigns are developed by the Office of War Information's able and aggressive staff in the Bureau of Campaigns. Data is secured on critical problems from the various government agencies involved and a complete pattern of activity is prepared for the guidance of media and advertisers. To the War Advertising Council, 60 E. 42nd Street, New York City, all of advertising is indebted for the final presentation of these facts in graphic printed form.

These printed presentations may be secured from the Council on written request. On campaigns reviewed in the following pages data is given on the names of Council coordinators, campaign managers and other volunteers from industry and advertising who are assisting in this strategic effort.

SUFFICIENT TIME ALLOWED

Since production of sound motion pictures or slidefilms *does* require preparation time, advance information on prospective and current campaigns is a most important prerequisite. If pictures on these campaign themes can be produced by government agencies and by studios in the entertainment field, they can be produced by able and experienced industrial film makers as well. Many campaigns will prevail throughout the war period.

It will be understood that no expense to the government is involved in the production or distribution of these sponsored subjects. Providing, however, that the prerequisites of campaign accuracy and timeliness are met, it has been authoritatively indicated to the editors of BUSINESS

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WAR PRODUCTION DRIVE

Maintaining production of vital war supplies by coordination of employer-employee relations. Reducing absenteeism: increasing efficiency — these are objectives of the War Production Drive.

SUGGESTED FILM TIEUPS: Industrial firms with sizeable employment and branch plants may produce their own "incentive" films many have achieved success with indoctrination and morale subjects. Suppliers of general equipment can aid with syndicated pictures. Army, Navy and OWI films provide excellent supplementary fare.

"DON'T TRAVEL CAMPAIGN"

This is a bus and railway campaign to discourage unnecessary passenger travel. Railroads and coach lines have done a notable job of stimulating travel — the need today is for conservation of available passenger space.

SUGGESTED FILM TIEUPS: Travel films are a great audience attraction. They can be used effectively to stimulate pride in America's resources and to deliver straight-from-the-shoulder messages about traveling *after* the war. Additional sequences can show the facts about the contribution of railroads to the war effort.

FARM LABOR CAMPAIGN

Part-time farm labor is needed for the U. S. Crop Corps. Workers are to be mobilized in each area where they are needed by intensive campaigns. National effort is needed.

SUGGESTED FILM TIEUPS: Agricultural implement makers, canners and food producers can produce inspiring short subjects about the basic values of the farm. These serve the dual purpose of inspiring adult and school recruits to farm labor service and building the future of the agricultural field. Trailers are also needed.

FOOD FIGHTS FOR FREEDOM

Mobilization of civilian power depends on helping the average citizen understand facts about food supply and informing him about voluntary action needed to back the home front fight.

SUGGESTED FILM TIEUPS: Food distributors and producers have a joint responsibility here which educational films can solve. This is an opportunity to get real understanding on the part of the public of nutrition values of food products, dairy products, etc., with added emphasis on public cooperation in conservation and rationing.

Campaign Films

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SCREEN that permission to acquire the necessary raw film stock will be authorized by the War Production Board.

IMPORTANCE OF THESE CAMPAIGNS

In the words of Economic Stabilization Director Fred M. Vinson, "on the home front our deadliest and most insidious enemy is inflation." The Office of War Information program on Economic Stabilization ("To Keep Down the Cost of Living") is an example of cooperative effort behind these campaigns. The Office of Economic Stabilization, the Office of Price Administration, the Treasury Department, Federal Reserve Board, Department of Agriculture, War Labor Board and the War Food Administration all collaborated on and reviewed the data prepared in the Informational Program on this key subject.

Food Fights for Freedom might well be classified as second in importance to Inflation. This campaign is based on a four-point program for consumer cooperation — "Produce and Conserve, Share and Play Square." This is a *background* campaign to make more effective other specific food campaigns such as nutrition, rationing, black markets, Victory Gardens, farm production goals, etc. The informational program here has been reviewed and approved by the Lend-Lease Administration, War Department, Navy Department, and the Office of Foreign Relief and Rehabilitation Operations.

AUDIENCES FOR THESE FILMS

A recurrent theme in review of the War Campaigns is the matter of available audiences for proposed film productions. The motion picture audience for Inflation and Food subjects would include women's groups, clubs, lodges, church audiences, war plant workers, unions, and all similar consumers most directly affected by these problems.

Companies such as Westinghouse Electric, the National Live Stock and Meat Board, General Motors, Swift and Company, Hotpoint and others who have had their films distributed to just such audiences within the past few years can bear testimony to the availability and enthusiasm of adult groups. Thousands of projector-equipped schools add still further areas of potential audiences since both the school populations, pupils and teachers as well as parent-teacher organizations are available here.

MORE EFFECTIVE THAN THEATRES

War campaigns have been patriotically and effectively distributed through the War Activities Committee of the Motion Picture Industry and shown in many thousands of theatres throughout the land. These subjects are limited however to brief "shorts" on highly topical themes. During the weeks in which the War Loan campaigns are advertised on the theatre screens there is little time available for other general themes.

The theatrical audience, having *paid* for an hour or more of escape from the weight and worries of a wartime world has little patience for further war problems. Club and other non-theatrical audiences, however, come prepared for discussion and study of such problems, welcome the magic of the educational screen to aid them in a practical review of their patriotic objectives on the Home Front.

FEDERAL FUNDS ARE LIMITED

The major part of this campaign

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CADET NURSES

The shortage of nurses, both for the armed forces and for the maintenance of civilian health, has created an emergency. Funds have been provided for free training of student nurses. Girls and women must be inspired into this great service by appeals that interpret their thoughts with sincerity and emotion. This is a real opportunity for the film medium.

DELINQUENCY

Juvenile delinquency is becoming one of the nation's most critical problems. Youthful vandalism, attitudes caused by war, lack of parental supervision must be met by understanding of the problem by adults: by provisions for youthful education to new wartime responsibilities through boy's clubs, Scouts and other outlets.

WORKER HOUSING

Home owners who have unused space available should be encouraged to open their doors to war workers: remodeling of existing structures urged.

program was previously carried by the Bureau of Motion Pictures of the Office of War Information which produced and distributed such films as *Black Marketing, Keeping Fit*, etc. Some of these subjects were produced by Hollywood studios, others by the now-abolished Film Unit of the Bureau. These sources were discontinued for lack of budget, however, several months ago. Distribution of available material continues through a nationwide network of nearly two hundred non-theatrical film libraries. The need for subject matter has become even greater in the interim and these facilities provide considerable experience which will prove of value to the prospective sponsor.

Commercial Services Ready

Professional non-theatrical distribution of sponsored films has been most successfully carried out by organizations like Modern Talking Picture Service, Castle Films, Inc., and the Motion Pictures Bureau of the YMCA. In addition, hundreds of local distributors affiliated with these organizations have both equipment and the necessary experience needed to put on these film showings.

The cost of this service is nominal. Library service is most economical but is limited to the existing group or institution-owned projectors available. Club shows, including the hire of operator and equipment directed to provide such showings for selected audiences such as women's clubs, etc., not otherwise equipped with projection, can be bought on a mass-scale basis reaching millions of persons for ten, fifteen or twenty minutes or more at a cost of a few cents per person.

Who Can Produce Films?

One objection to the use of motion pictures as a vehicle of wartime institutional advertising has been the comparatively short life of the subject matter as opposed to the time required for preparation, production and distribution.

Companies with subsidiary plant organizations eliminate this objection because distribution is clearly available to their own considerable numbers of employees. Other companies, thinking of reaching the consumer, will obtain satisfactory answers from both the producer and the commercial distributor on the timeliness and long-time life of the subject matter produced.

Such films do not require elaborate sets and other costly prerequisites of general promotional and feature films. Largely produced with a March of Time or News Parade flavor, they can be readily assembled by the experienced industrial film producer. Creative personnel in these organizations has the experience and "know-how" with which to endow such films with ample audience appeal.

There is a job to be done by sponsors and producers in this current area of War Campaigns. It is worth intensive study and quick action by those who can serve the nation in this way.

ABSENTEEISM

Unjustified absence of the worker from his job is a serious threat to the war effort. Stimulating films on war topics and battle front reports have had a good effect on the worker.

ANTI-INFLATION

Again, this is one of the most critical problems facing America. Inflation can be avoided only by exacting and complete public and business cooperation as well as by government controls. Helping the public understand the evils of inflation and how it begins is an educational task that films can help to accomplish.

War Information Security

Latest of the campaigns to be announced is that of Security of War Information. This is part of a continuing program. Safeguarding war information of value to the enemy has always been important. Now that we are on the offensive, security of war information has become a particularly vital part of our fighting strategy. We must remind Americans to *think* before they talk.

A resume of other campaigns would include important mention of the Aid for Small Plants movement. Large and small plants must be brought closer together here is a challenge to the film medium to effect such understanding. Pictures can show plant equipment, capacity, location, etc. of the small plants; larger plants can show small companies how to produce component parts by means of training films.

And come January, there will be a Fourth War Loan Drive. The nation's need for funds to finance the war is continuous. Films can be safely produced on this subject and are worthy of the sponsor's wholehearted effort.

THE HOME FRONT PLEDGE

Better understanding by the consumer and retailer is needed for compliance with top legal prices and rationing. The public and business must aid Government.

SUGGESTED FILM TIEUPS: Similar to the Food for Freedom subjects, pictures sponsored by makers of consumer items can help hold the line by urging consumer cooperation as well as educating dealers on the importance of maintaining customer goodwill. A film on retail sales attitudes would be typically useful.

CONSERVATION CAMPAIGN

Fighting Waste means conserving coal, natural and manufactured gas, electricity, communication facilities and local transportation.

SUGGESTED FILM TIEUPS: In this area of picture production, the local and statewide utility concerns can aid by conservation suggestions. Coal and oil suppliers can show the home-owner how to get efficiency out of heating plants; films can show how to weatherproof homes, etc. Building material suppliers, lumber dealers can produce and show helpful home conservation and upkeep subjects aiding this vitally important campaign.

SAFETY IN WAR PLANTS

Conservation of manpower lost through industrial accidents is a critical problem. Training supervisors and workers in safety is the task.

SUGGESTED FILM TIEUPS: This is one of the few areas in which adequate visual aids are being provided for war industry. The National Committee for the Conservation of Manpower in War Industries, the National Safety Council and industrial film producers have actively cooperated in providing motion pictures and complete sound slidefilm programs, now widely available to war plants.

WOMAN POWER IN INDUSTRY

Women are needed in war work and as replacements for men in civilian occupations. Service jobs, agriculture and industry all need woman power to maintain the flow of production.

SUGGESTED FILM TIEUPS: Wherever audiences gather, women workers can be recruited by brief news films stating the problem of local industries. Training films in all types of occupations will enable these new workers to get the right start and to keep them on the job by becoming useful helpers on the production line. This is a problem for occupations affected as well as general industries.

The lighted screen shows trainees the technique of drawing

Light on Mathematics

CONTRIBUTIVE to the war training program, are three new Kit-sets of discussional type slidefilms, recently announced by The Jam Handy Organization. *Light On Mathematics*, *Air Age Physics*, and *Mechanical Drawing and Drafting*.

In addition to its adaptation as an aid for teaching the fundamentals of arithmetic, geometry, algebra and graphs in elementary and secondary grades in schools, the mathematics series also is designed as a "refresher" course for colleges, and subjects are prepared in such a way that they may be used as an aid to training in various skills and vocations in the war program.

MATHEMATICS REFRESHER COURSES

A large percentage of the courses in this war training program, especially in aviation, electronics and science, involve the need for a solid groundwork of mathematics and its practical application to these subjects. The purpose of the mathematics slidefilms is to provide a "refresher" course in this connection, and to aid the college instructor who, in spite of accredited high schools, entrance requirements, and examinations, often wonders just what his students remember from their secondary school courses. High on the list of such studies in which the college student comes inadequately prepared is math, which throws an extra burden on instructors of science, engineering and commercial subjects.

COVERS TWENTY-FOUR SUBJECTS

Light On Mathematics comprises a total of 24 slidefilm subjects, consisting of 1,087 individual pictures special photographs, drawings, diagrams, charts and pictorial exhibits. The use of pictorial analogy has been free and frequent, and fundamental processes are developed in terms of the theory of numbers, so

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Arc Welding in Color

LATEST IN THE GENERAL ELECTRIC 16MM FILM SERIES

A NEW ALL COLOR sound motion picture *The Inside of Atomic-Hydrogen Arc Welding* has been announced by the General Electric Company to help in the training of men and women welding operators using this process in war industries. The movie is in two parts and is available to public, private, and industrial welding schools, and other groups.

Produced by the Raphael G. Wolff studios, Hollywood, under the direction of the General Electric welding laboratories, the new film follows the very successful pattern of *The Inside of Arc Welding* films released by G. E. last year and of which more than 2300 reels are now in regular use.

FILM USES AMPLE ILLUSTRATIONS

Each of the two parts of the new film employs colorful charts, animation, demonstrations by expert operators, close-ups of the "singing" atomic-hydrogen arc in action, as well as examples of good and bad welding. The films are ten minutes in duration and can be used on sound-equipped 16-mm projectors only.

The result of research work in the early 1920's by General Electric's Dr. Irving Langmuir, the atomic-hydrogen arc welding process is being used widely in war production today to do jobs that could not be done as well by other welding processes. It differs from the ordinary arc-welding process in that the arc is maintained between two tungsten electrodes rather than between one electrode and the work. Because the location of the arc can be controlled and because the arc has no tendency to blow the molten metal out of the joint, extremely precise control of metal fusion is afforded. This is particularly valuable where high-strength joints must be produced.

SHOWS OPERATION OF PROCESS

The process employs a stream of hydrogen gas in which a change of molecular state enables the arc to heat the work at a high rate of speed. This breaking down of ordinary hydrogen into the atomic state gives the process its name. Hydrogen excludes oxygen and other gases which would combine with molten metal to form oxides and other impurities. The deposit is uniform, dense, and free from pinholes, providing a clean weld surface which is smooth and easy to finish.

Part one of the new film describes and illustrates the fundamentals of atomic-hydrogen welding. It shows how to regulate the welding current and the hydrogen supply; how to adjust the electrode holder and the tungsten electrodes; and how to recognize and correct improper adjustment.

PART TWO SHOWS TECHNIQUE

Part two shows proper technique for principal types of joints; how to control the molten pool; and how to recognize and correct improper welding conditions. Particular emphasis is given these four factors—current setting, speed of travel, size of arc, and the contact of the arc with the work.

The film may be obtained for single showings, or bought at print cost, by writing General Electric's Visual Instruction Section, Schenectady, N. Y., or the nearest G-E office or welding distributor.

♦ Other films on Arc Welding are available from G.E. distributors for loan or purchase. Inquire about the *Inside of Arc Welding* series.

Complete arc welding equipment is shown in full scene from "The Inside of Atomic Hydrogen Arc Welding"

Operator is shown adjusting arc gap in preparation for welding in a typical scene from the new G-E picture

The size and shape of the molten pool are the operator's guides to good welding. A corner joint is shown above.

Boeing Talks It Over

by Russell Mosser, Supervisor of Education, Boeing Airplane Co., and Larry Sherwood, Executive Director, The Calvin Company

THE BOEING AIRPLANE COMPANY of Wichita, Kansas, early in 1941 was confronted with the Herculean task of inducting thousands of people from the great midwestern agricultural regions into a new and strange environment. A great many of these people had never seen the inside of a large industrial plant. The problem was tremendous.

These new employees were confronted with such things as establishing citizenship, filling out application forms, being interviewed, photographed, finger-printed, undergoing physical examination, finally to be called into a lecture room to be acquainted with a myriad of rules, regulations and procedures concerning their new jobs.

Orientation is Real Problem

The initial steps of employment were largely routine, but perhaps the most important induction step was the actual orientation of this vast number of new employees into their new jobs. This orientation was conducted for a time by a lecturer who presented them with the many factors involved in their work and also attempted to impress them with the importance of their jobs. It was soon recognized that the lecture method was not satisfactory because of the many misunderstandings that arose, due largely to the lack of standardization of lecture material. The lecturer had a tendency to alter his presentation from day to day, injecting new ideas or forgetting others, depending upon his daily attitude. The matter of verbalisms and misstatements continued to arise, with the result that foremen and supervisors throughout the plant began to request an improvement in the induction technique. Finally, it arose to a "demand" for a clearer understanding on the part of new employees regarding procedures, rules and regulations. It was imperative, therefore, that the induction lecture material be analyzed and standardized in order to eliminate the factors of misunderstanding, incorrect interpretations, and verbalisms.

Decide on Sound Picture

After the various departments of the Boeing Personnel Division had submitted recommendations for correcting the problem it was decided that a visual aid in the form of a sound motion picture in full color should be developed. The project was assigned to the Education Department and a detailed plan for submission to top management was prepared. The general problems were included in an outline, submitted and approved by management.

The Education Department first surveyed the facilities available in the plant for production of such a picture. Immediately a number of problems presented themselves: the organization of the material for motion picture technique; the lack of sufficient motion picture equipment; the problem of how to handle photographically various aspects to be presented; and the matter of time involved for company personnel already busily engaged in regular duties. The recommendation was made that a professional organization engaged in production of industrial motion pictures be called in as consultant.

Select A Professional Producer

The Calvin Company of Kansas City, Missouri, was engaged to work with the Education Department of Boeing for the development of the project. It became the responsibility of the authors to determine the content of the film. This was accomplished by a series of meetings with representatives of the various departments of the Boeing Company. An analysis was made of their respective problems, following which the sequences and time allotments were made.

Contents of the Boeing Film

The theme and title of the picture, *Battles for Victory*, was chosen. The picture opens with the inspiring thought, "Some of the greatest battles for victory must be fought on American soil within the confines of her boundaries . . . That thousands and thousands of employees at Boeing must fight each hour, each day, their own *Battles for Victory* – fighting individually, fighting together, for that victory which must be ours."

The next sequence presents a review of the steps of employment which the new employee has just completed. The purpose of this sequence was to inject a personal element into the film, something with which they were already familiar. The film presents the rules and regulations concerning badges and identification cards for plant security, including the plant areas designated by the badges.

Picture Shows Typical Day

Next the picture takes the employees on a typical day, teaching them how to punch the time clock, acquainting them with interior plant traffic regulations, safety precautions, and how to secure first aid, types of clothing to be worn, when and how to use rest and lunch periods, and what to do at shift change. Following the typical day's activities they are shown the importance of plant protection and impressed with the many details of the traffic problem involved around a great plant.

The picture continues on the interesting theme that pay day finally arrives and there is an explanation of how to receive their pay checks. Then the pay check is analyzed as to deductions, portraying the many advantages provided the employee at Boeing, such as hospitalization, insurance, employees association,

FILMS AT WORK

CASE HISTORIES AND BRIEF REVIEWS OF THE LATEST INDUSTRIAL FILMS

Featured in This Issue:

- ★ *New Kit-Sets for Vocational Training*
- ★ *The Latest All-Color Arc Welding Film*
- ★ *Boeing's Program for Employee Induction*
- ★ *An Outstanding New Picture for Foremen*
- ★ *The OPA's Sound Slidefilm Productions*

Checking them in at the Boeing Wichita, Kansas, plant. From the new Boeing film "Battles for Victory."

Portable cafeterias and their attendants line up for last minute inspection before feeding hungry workers.

Medical and dental facilities of the most modern type are among the essentials of a modern war plant setup.

Rolling stock at the Boeing plant speeds up deliveries to the production line.

Films Serve War Industry

...ce of investing ten per ... their income in war bonds. ... job rating system at Boeing is ... analyzed through the medium of animation, showing them how they may raise their own pay through merit demonstrated on the job and various types of training available through the many educational training classes at Boeing. Then they are given an opportunity to meet their new boss, Mr. J. F. Schaefer, Vice President and General Manager of the Wichita Division, who presents a short and interesting talk telling them of the importance of their jobs at Boeing. Following Mr. Schaefer's talk in rapid sequence they are told of various items such as methods of making suggestions, publications, and the many recreational activities provided for their enjoyment.

The picture contains synchronous shots of the Boeing chorus and band which provide the background music for the entire production. It concludes with a montage of plant scenes and planes with the stirring theme, "And so within the walls of the great Boeing Plant you will find your chance to fight your BATTLE FOR VICTORY, to do your part in the preservation of the peace and tranquility that was America. America needs you, your ability, your training, and your devotion."

How the Film is Used

The complete utilization of the film is one of development. Soon after the picture was produced it was presented to the new employee immediately upon completion of his induction routine. This was followed by a general discussion concerning questions and problems which arose as a result of viewing the picture.

It was soon evident that the maximum benefit from the picture was not being received due to fatigue caused by the hiring procedure. The picture, therefore, was presented the next day, prior to the plant tour. This was a decided improvement since the employee was not tired and was in a more receptive mood. It also conditioned him for his first tour of the plant.

Results Are Most Gratifying

The results of the program, which has become a standard procedure, have been most gratifying to the management. Employee reaction has been most favorable.

Battles for Victory has accomplished more than its intended purpose. There have been many requests satisfied for showings to outside groups such as service clubs, chambers of commerce, schools, women's clubs, and community groups. The Employment Department discovered the film to be helpful in securing new personnel. Management has also used the film for showing to high officials visiting the plant. Other companies have used the film as a guide for their own productions.

New Industrial Films

♦ The Crane Company, Chicago, is the sponsor of a recently announced 30-minute sound motion picture for maintenance workers titled *Piping Pointers*. The picture provides inexperienced maintenance workers with a clearer understanding of how to handle valves, fittings and piping accessories.

♦ Bethlehem Steel Company is the sponsor of a new picture dealing with a vital problem of war production, that of plant protection. The new Bethlehem picture *If It Happened Here* was produced by Caravel Films, Inc.

Boeing punch presses are equipped with [illegible] like the one shown above. Safety is a problem of protection and of production

Recreation for women workers is as important a part of Boeing's employee program as the other elements. They all go hand in hand

This Film Helped Foremen Get Better Cooperation

by W. C. O'Sullivan

Director of Training, United Aircraft Corporation

IT'S NO NEWS to anyone today that poor supervision has become a major bottleneck in war production. Nowhere is this more acute than in the aircraft industry where all companies now employ more supervisors than they had workers in 1939. Bringing them up from the ranks in the shop at such a rate and under the pressure of stepping up production did not provide the normal seasoning period during which new foremen could readjust their thinking from a machine to an executive point of view.

Pratt & Whitney Aircraft is no exception and early in 1940 the need for supervisory training became apparent with the result that we launched our first Foreman's Training Course in the Fall of that year. Some of our best foremen were trained in this first program which consisted of a series of classes over a six months period. These men were given a complete picture of our organization and the functions of each of the staff service departments were thoroughly explained. They also were given an indoctrination course designed to give them a working knowledge of the reasoning which underlies company policy.

Problem of Human Relations

This gave our foremen a good background and a sound foundation which has been paying dividends but it still was not all that many foremen needed. There still remained the problem of driving home graphically those all-important but intangible principles of Human Relations. In spite of their knowledge of the organization, too many foremen were still thinking too much in terms of machines and materials and not enough in terms of handling men.

Early this year we came to the conclusion that a motion picture was needed to handle this important phase of foremen training. Only through this medium we felt could we fully dramatize the foreman's job in relation to his men and to the organization.

In developing the script, we determined to focus the picture on the following basic objectives which we hoped to get across to the foremen:

1. The importance and responsibility of the foreman's job
2. The vital importance of good Human Relations
3. That foremen are an integral part of Management
4. That the foremen can get the most out of the staff service departments (and thus make his own job easier) by realizing that they are there to help him and by making it his policy to cooperate with them at all times.

Informality is the Cue

The picture consists of an informal chat with a typical Pratt & Whitney Aircraft foreman named "Joe" who stops to chat with the audience as though they were another foreman. We catch him at the end of his shift and as he leans against his car and puffs on his pipe, he talks about his job which serves to narrate a series of about fifteen sequences. These episodes run through the subject of foremanship from properly introducing the new worker to his job to cooperation with foremen on other shifts. The stories that he tells are all based on actual shop experience which have been edited and adapted for brief, clear illustration of the points at issue, showing in most cases the wrong as well as the right way.

The result is a three and one-half reel picture called *It's Our Job* which started out determined to be free, honest and down to earth and which has wound up by not only proving its worth to Pratt & Whitney Aircraft supervision but is being widely sought after by other industrials who find it a basic presentation of the fundamentals of supervision.

Editor's Note: To the sound motion picture production *It's Our Job*, produced by Wilding Picture Productions for Pratt & Whitney Aircraft goes an editorial "orchid" for meritorious service. A pictorial review appears on the opposite page.

"I've heard it said that the men put foremen in the middle but I say it's the foreman who puts himself in the middle." Joe tells how he got involved by poor handling of a raise.

The foreman makes the mistake of telling Joe the request might be lost or held up without first checking up the matter of rating and production records.

"... You know what happens. Joe's boss checked up and found ... the man he was not ... I didn't have a leg to stand on ..."

Next pay day the worker comes back and says Joe promised he'd get his increase. Joe tries to explain, "I only put through a request. Management turned you down."

Who is Management? Why, out in the plant it's me, dammit! Right that minute I saw what I should have done when he first came to me.

The outcome of proper handling is that Joe asks the group leader to help Charlie raise his production lag to earn a raise. Charlie goes away determined to work out his own salvation.

Importance of carefully passing on information from one shift to the next is shown in a sequence where Joe Foreman leaves an ambiguous note which results in shutting down an important job.

From the Time Study sequence where Joe realizes that everyone watching the job sees it through different eyes. Left to right: Operator, Group Leader, Joe Foreman, Time Study Man.

"When you come through the gate," says Joe, "let the guard see your badge. Let the men see how you feel about it and they'll follow your example."

Here Joe introduces the new worker, right, to his group leader. Points out the importance of getting new man started off right.

Everyone can ... cast. For ... don't close ... can see that ...

... of Joe ... and Joe ... Joe ... group ...

FOR ONE MILLION FARMERS

by Jack Wade

Tractor Division, Allis-Chalmers Manufacturing Company

BACK IN 1935, the Tractor Division of the Allis-Chalmers Manufacturing Company announced a new and revolutionary machine, the All-Crop Harvester. This machine was destined to change the harvest habits of the nation in a few short years. Where the huge, heavy combines available at that time harvested wheat, oats, barley, rye, and sometimes flax and these only in the semi-arid territories this new machine harvested 100 different crops, and harvested them from California to Maine with no exceptions. To tell this story in a convincing way, the Sales Promotion department decided to try talking motion pictures showing not only all of these crops but all of the territories and conditions. The pictures were highly successful, and have continued to be a large factor in All-Crop Harvest sales to date.

USE EXTENDED TO SALES FIELD

The success of motion pictures in this field led to their use in promoting sales of tractors and implements. Soon a complete motion picture program featuring Tractor Division products was worked out, and with it a complete method of distribution and coverage using 100 16 mm. 20 watt projector and amplifier systems. This plan provided coverage for about one million farm families a year, and paid dividends from the start.

The use of straight advertising films to introduce some new product has been and is still a very fine method of putting across the sales in a hurry. It soon became evident to the producer, however, that farm audiences, while receptive, were just as keen if not more so than city moviegoers. It also became more and more evident that a complete show of advertising films became monotonous, regardless of how well they were made.

HUMAN INTEREST THEME STRONG

To keep up the interest, films of an educational nature were made which followed as closely as possible the actual working conditions on a wide variety of farms. These were enthusiastically received, and the comment, "I got something out of that show" became common. This led to an intensive study of the farmers' problems, his successes in one territory and his failure in another. Soil conservation was a headline subject at this time, and a series of films was produced showing soil conservation practices and results on farms from coast to coast and from Canada to the Gulf. These films were continued over a period of four years and were and are still popular.

The utilization of farm products in industry made a very fine subject for another two-reel film which has been in general circulation for three years, with no falling off in interest up to the present time.

ADVERTISING OUT FOR DURATION

With the advent of war, advertising films of all kinds were out, as we had nothing to sell that required advertising. Here was the real spot for educational films.

A two-reel film entitled *The Farm Front* told a comprehensive story of the farmers' part in the war effort, the story of increased production on

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USOE in Full Production

FIRST WAR TRAINING FILM UNITS NEARING COMPLETION

PRODUCTION of the one hundred forty visual aids units for the vocational instruction of war workers is now in full-scale operation at studios and war plant facilities and ship yards throughout the U. S. While details regarding allotment of contracts for an additional two hundred units were lacking, it was understood that the most thorough consideration of subject matter and facilities is now being given by Office of Education authorities. Each visual aids unit consists of a sound motion picture, a film strip and an accompanying instructor's manual.

A sizeable number of the current war training subjects are nearing completion and many will be ready for distribution within the next thirty days, particularly in the field of Aircraft Work, Marine Machinery Installation and in the field of Machine Shop Work.

National distributor of these subjects under government contract is Castle Films, Inc. Among the highly useful subjects now nearing completion are the units in the Farm Work series. These include a film on food preservation (community canning) and four subjects on equipment maintenance. While many actual titles must remain tentative until completion of actual production, BUSINESS SCREEN is privileged to present the list of subjects covered in the current production schedule. Further correction and additions to these titles will be presented in these columns next month together with a resume of completed productions ready for distribution and other interesting data on a program that is one of the outstanding events in this modern era of visual education.

NEXT MONTH

A pictorial review of production of Marine Machinery films by RCM Productions, Inc. for the U. S. Office of Education series.

★ A series of visual education units, on "Optical Craftsmanship," each consisting of a ten to fifteen-minute 16mm. sound motion picture, a 35mm. film strip and a sixteen-page manual, is now in actual production, under the joint auspices of the Navy and of the United States Office of Education.

Commander E. B. Oliver, of the Bureau of Ships, Navy Department, with several other officers, visited the new Bell & Howell optical plant in Chicago, to consult on the progress of the films being produced by the company, as part of this project. He saw the third of the series, *Fine Grinding*, under the cameras. General photography on two, *Finger Grinding* and *Pin-Bar Grinding*, has already been completed. Other units being made at the Bell & Howell plant include *Pitch Buttoning and Blocking*, *Polishing* and *Centering and Cementing*.

Navy and Office of Education personnel supervise optical training film production. L. to R., Lyle F. Stewart (USOE), Lt. Comdr. W. W. Williams, Prof. Neil F. Beardsley, Comdr. E. B. Oliver, Lt. H. E. Carr, Lt. C. C. Pierce, Lt. J. D. Cassidy and Wm. F. Kruse, writer and director of the series.

FOREMANSHIP TRAINING

A series of 20 visual aids units is being produced in this important area of war production supervision.

Tentative Titles	Series No.
The supervisor's responsibility	1
Introducing the new worker to his job	2
Instructing the new worker	3
Placing the right man on the job	4
Supervising workers on the job	5
Maintaining worker's interest	6
Giving directions	7
Maintaining a safe shop	8
The supervisor as a leader, I	9
The supervisor as a leader, II	10
Supervising women workers	11
Maintaining discipline	12
Lateness, loafing and absenteeism	13
Handling grievances	14
Using training films	15
Planning and laying out work	16
Maintaining good working conditions	17
Working with other supervisors	18
Keeping down waste	19
Maintaining quality standards	20

WAR TRAINING SUBJECTS IN PRODUCTION FOR THE U. S. OFFICE OF EDUCATION

AIRCRAFT WORK SERIES

TEMPLATES

	Series No.
Making a master contour template	1
Making a master developed layout—marking template*	2
Making a master developed layout—form block template*	3
Sawing template metal	4
Filing template metal	5

BLANKING

Blanking sheet metal on the squaring sheer	1
Blanking sheet metal with hand snips	2
Blanking and drilling on the swing arm router	3

FORMING

Forming with rubber on the hydraulic press	1
Forming on the leaf brake	3
Finish forming by hand	4

ASSEMBLING AND RIVETING

Assembling in a jig—fitting and lining up	1
Assembling in a jig—drilling and riveting	2
Drilling with portable drill motors	3
Dimpling and countersinking	4
Driving and bucking rivets	5
Removing defective rivets	6

TUBE BENDING

Tube bending by hand	1

CONTROL CABLES

Five tuck Navy splice	1
Swedging, soldering and stretching control cable	2

INSPECTION

Inspection of sheet metal parts	1
Inspection of minor assemblies	2
Aircraft plumbing and piping inspection	3
Inspection of threads	4
Hardness testing with the Rockwell machine	5

ENGINEERING

HEAT TREATMENT OF METALS

Heat treatment of steel: conditioning	1
Heat treatment of steel: through hardening	2
Heat treatment of steel: case and surface hardening	3

ADVANCED INSPECTION

X-Ray inspection methods	1
Ultra-precision measurement	2

ELECTRONICS

The electron tube: principles	1
The electron tube: applications in communication	2
The electron tube: application in industry	3
The cathode ray oscilloscope	4

THE SLIDE RULE

How to use the slide rule	1

FARM WORK

FOOD PRESERVATION

Community canning	1

EQUIPMENT MAINTENANCE

Reconditioning a mower, Part I	1
Reconditioning a mower, Part II	2
Reconditioning a two-bottom tractor plow	3
Reconditioning a grain drill	4

MACHINE SHOP WORK SERIES

PRECISION MEASUREMENT

	Series No.
Precision gage blocks	6
The bevel protractor	7

FUNDAMENTALS OF BLUEPRINT READING

Reference points and reference lines*	1
Dotted lines, dimension lines, and views*	2
Principal dimensions, reference surfaces and tolerances*	3
Sectional views and projections, finish marks*	4
Reading a drawing of a valve bonnet*	5

*Titles not set.

OPERATIONS ON THE ENGINE LATHE

Cutting an internal acme thread	8
Cutting an internal taper pipe thread	9
Boring to close tolerances	10
Turning work held on a fixture	11
Machining work requiring use of reference surfaces for accurate chucking	12
Turning work held on mandrel	13
Using a steady rest	14
Using a steady rest when boring	15
Using a follower rest	16
Using a boring bar between centers; work held on carriage	17

OPERATIONS ON THE PLANER

Planing a flat surface	1
Planing work mounted on the table	2
Machining a cast iron pedestal	3
Machining a taper gib	4
Cutting a bevel edge	5

OPERATIONS ON THE TURRET LATHE

Setting up a turret lathe for machining bar stock	1
Machining bar stock	2
Machining a cast iron casting	3
Machining a bronze casting	4

OPERATIONS ON THE VERTICAL MILLING MACHINE

Using a shell end mill	1
Cutting a dovetail taper slide	2
Cutting a round end keyway	3
Milling a helical groove	4
Milling a circular T slot	5

OPERATIONS ON THE CYLINDRICAL GRINDER (Center-Type Grinder)

The grinding wheel*	1
Rough grinding a plain pin*	2
Grinding a long slender shaft	3
Plunge cutting on a plain grinder	4
Grinding a taper	5

*Titles tentative.

OPERATIONS ON THE INTERNAL GRINDER

Grinding a straight hole	1
Grinding a deep hole	2
Grinding and facing a blind hole	3

CUTTER SHARPENING

Sharpening side milling cutters	1
Sharpening plain helical cutter	2
Sharpening a shell end mill	3
Sharpening form relieved cutters	4
Sharpening angular cutters	5

CYLINDRICAL GRINDING (CENTERLESS TYPE)

Thrufeed grinding a straight pin Part I	1
Thrufeed grinding a straight pin Part II	2
Infeed grinding shouldered work	3
Infeed grinding a shaft of two diameters	4
Endfeed grinding a tapered pin	5

OPTICAL GLASS

	Series No.
Rough grinding—finger method	1
Rough grinding—pin bar method	2
Pitch buttoning and blocking*	3
Medium and fine grinding*	4
Polishing optical glass shapes*	5
Centering, mounting, and final inspection*	6

SHIPBUILDING SKILLS

MARINE MACHINERY INSTALLATION

How to check and surface foundations	1
Aligning and installing auxiliary machinery	2
Filing and installing chocks	3
Laying out, drilling and tapping flanges on sea chest	4
Installing valves and sea strainer on sea chest	5
Installing stern tube, tail shaft and propeller, Part I (running preliminary line)	6
Installing stern tube, tail shaft and propeller, Part II (laying off bulkheads and setting rings)*	7

COPPERSMITHING

Bending copper pipe to wire template*	1
Brazing flanges using spelter*	2
Brazing flanges using silver solder*	3

PIPEFITTING

Measuring pipe, fittings, and tubing	1
Cutting and threading pipe by hand	2
Cutting and threading pipe on a power machine	3
How to make a cold bend on a hand-powered machine	4
Pipe insulation	5
Installation of vitreous fixtures	1
Installation of hangers	2
Installation of valves in engine room systems	5

MARINE ELECTRICITY

Laying out and installing kickpipes and stuffing tubes	1
Laying out and installing main wireway	2
Identifying and precutting cable	3
Pulling and installing cable and packing terminal tubes	4
Laying out telltale panel and fixtures	5
Wiring telltale panel	6
Installing and connecting telltale panel and range light	7
Welding standards*	8
Welding sequence*	9
Metallurgical welding standards*	10

*Tentative titles.

WELDING

Oxy-acetylene cutting to line—freehand	1
Oxy-acetylene cutting a bevel—freehand	2
Oxy-acetylene cutting shapes—freehand guided	3
Testing welds with the guided bend	4
Oxy-acetylene welding of light metal	5

*Titles tentative.

* * *

Editor's Note: The subjects listed are "in production". Many of the titles contained are tentative. First films in this list will probably be ready for distribution and sale on or about December first with additional titles becoming available from that date on.

Slidefilms for the Home Front Campaign were produced by the Office of Price Administration. Above, a scene in "Holding the Home Front Line"

OPA Uses Slidefilms

By William Wells

REGULATIONS by the ream. Ration books by the hundred million. Supplies and tempers both growing shorter. "Blame OPA" becoming the national sport. Meanwhile OPA keeps plugging along at its big job of keeping the American economy on a more or less even keel till the story of war subsides.

The wartime programs of the Office of Price Administration affect every man, woman and child in America. People have had to learn new ways to shop, and merchants have had to learn new ways to buy and sell under the controls the Government has set up to prevent inflation and secure a fair distribution of goods and foods made scarce by the war.

Slidefilms Are Essential

Because of the pressure of war emergencies many of these programs have burst on the public and the trade almost overnight with very little time to learn the new procedures necessary to make the programs work effectively. OPA has used every means at its command to spread information and get proper instructions into people's hands on time. In this gigantic task, it has found sound slidefilms such an important tool that their use has now become an integral part of the [illegible] for nearly all [illegible]

A series of OPA slidefilms were made [illegible] of the field [illegible]

prices, ration banking, processed foods rationing, meat and fats rationing, and tire inspection. The success of these films has been such that the program has now expanded to cover subjects for the instruction of War Price and Rationing Boards and for the general public.

Have Many Advantages

From a practical point of view, the use of slidefilms has proved to have many important advantages. One of the greatest of these has been the speed with which it was possible to produce and to distribute the finished films. Since in almost every case these films are tied directly to OPA regulations, they cannot be completed until the regulations are final. Because of the pressure of events there is very little time allowed between the day a regulation is completed and the date it becomes effective. In this brief period the bulk of the educational job must be done. The production time on these films usually one week has been one of the big features in making them such an effective means of spreading information.

With 35mm film rationed, the small amount of film used has also been an advantage. The low cost of production, prints and records is a real saving to the taxpayer and the wide availability of slidefilm projectors have also played a major part in making them a part of the OPA information program.

One of the most interesting features in OPA's use of films has been the system set up for borrowing projectors all over the United States. The OPA itself owns only one projector. Exhibition throughout the country in every one of the forty-eight states has been entirely on projectors borrowed from offices of many national firms which have agreed to lend them for this use. Credit for setting up this system, which has made possible the wide use of slidefilms by OPA, is due to William H. Widrig, formerly of the National Cash Register Co., now head of the food rationing field service of OPA.

Reach Public and Advertisers

The number of prints and pressings of a single slidefilm has varied from 150 to 300 depending on the size of the particular field staff which was to use it. In the case of the slidefilm, *Counter Attack*, which explained point rationing to retail grocers, 300 prints were used. They were shown at more than 3000 meetings in three weeks and the audiences totalled more than five hundred thousand people.

An effective use for slidefilms has also been worked out by the Campaigns Division of OPA which is responsible for keeping national advertisers informed about OPA programs and what they can do to help. Formerly this information was given to meetings of advertisers verbally. Now the same information is handled on slidefilms made especially to tell the story to advertisers. The films contain, in addition to background material, many sample advertisements and examples of what advertisers are already doing to help. After the films are shown, advertiser's handbooks are distributed. This method has been very effective in gaining the understanding and cooperation of national advertisers.

Assistance to Field Staff

Perhaps the most interesting sidelight on the use of slidefilms comes from the OPA field men who use them. Many of these men had never seen them before. Very few of them had ever had occasion to use them. They soon mastered the technique of showing them, however, and their reaction to slidefilms has been demonstrated in their enthusiastic requests for more.

Before OPA made slidefilms, and for some time after the first films had been produced, large printed, illustrated, easel presentations were made for the use of the field representatives. It is interesting to note that on a questionnaire answered by 43 of these men, 42 expressed a strong preference for the sound slidefilms as against the easel visual presentations. Their reasons for this are interesting. Some of them are:

"Gets story across without interruptions"

"Eliminates non-essential questions"

"Audience grasps more easily"

"Audience gets information direct from responsible men in Washington"

"Faster moving program"

"Less opportunity to make mistakes"

"Holds attention of audience"

This last point was stressed again and again and from the point of view of the field staff is one of the most important advantages slidefilms has given them. It is also interesting to note that when asked for suggestions concerning improvements or changes only two out of the forty-three stated that they would rather have 16mm sound moving pictures than slidefilms.

Explain the "Why" and "How"

In making the slidefilms, great care has been taken to make them interesting as well as instructional. Because people are more willing to learn *how* to do something after they understand *why* it is necessary to do it, the films have always begun with the "why" of the program in terms of the war and ended with its advantages to the war effort. This adds a dramatic and emotional value to the instructions and in many cases has won resounding applause from the audiences for whom the OPA rules were bound to be something of a headache.

Another interesting feature of the films which were made for the instruction of merchants was the fact that store scenes were not studio set-ups. They were shot in actual stores with merchants and their customers. Since this showed the OPA procedures being carried out under actual conditions, it enabled every member of the audience to visualize himself carrying out the same job in his own store. No attempt was made to obscure brand names of merchandise on sale. The stores were shot just the way the camera found them.

This location shooting had another unexpected advantage. Merchants confronted with the problem of carrying out the necessary procedures for the film, worked out the way they would do them in practice. This helped to remove any theoretical air from the instructions and presented them in a down-to-earth, workable way.

Each slidefilm has been planned

(PLEASE TURN TO PAGE THIRTY-SIX)

"The film knows no barrier of oceans or tongues—it is a universal language"

THE WORLD SCREEN

A BUSINESS SCREEN NEWS-LETTER ON THE LATEST UNITED NATIONS WAR FILMS

PIONEERS in the art of realistic film production, Britain's able documentarians have done a superb job of telling the human side of the war these past three years. Such superlative pictures as *Target for Tonight* and *Desert Victory* have told the thrilling story of battle action but it is in straightforward "home front" narratives such as *World of Plenty*, *Silent Village* and *Lift Your Head* that the people's side of war is brought most poignantly home.

Britain's films do not feature stellar casts of well-known screen names, they rely on men and women from real life who give these war subjects a quality of sincerity and realism which makes them most effective in cementing the understanding and goodwill of these United Nations.

AVAILABLE THROUGH MANY SOURCES

All kinds of adult audiences will find excellent program fare in the well-sectioned lists now available through convenient film depositories in many U. S. cities, through regional offices of the British Information Services in New York, Washington, Chicago, Los Angeles, and San Francisco as well as British Consulates in many other centers.

Programs on Home Front problems, Civilian Defense, War Plant Morale and War Information, the Farm Front as well as the latest action films from the war fronts are included in these extensive libraries.

"WORLD OF PLENTY" OUTSTANDING

The late Eric Knight (author of "This Above All") was the writer of *World of Plenty*. Called an important war film, it will be more important as a peace film. The internationalism of food is a critical problem—keeping surpluses of food from rotting in one section of the world while people starve in another.

The Silent Village is another kind of picture. A memorial to the heroic people of Lidice, the Czech village which was razed to the ground by the Nazis, this film is a dramatization by the people of a mining village in South Wales. These Welsh miners, whose peacetime life was similar to that of the people of Lidice, resolved to celebrate the heroism of these Czechs by acting out in their own village the story of the destruction of Lidice. So this film was made. It is a powerful tribute of the free people of one land to the heroic dead of another.

WAR ACTION A GENERAL THEME

The action of war is brought to the screen in vivid realistic films such as *Before the Raid*, *The Pilot Is Safe* and *Sky Giant*. In the first-named, a rebellion of Norwegian fishermen against their Nazi guardians is the theme. The film was made with the co-operation of the Norwegian government-in-exile and gives a vividly realistic impression of courageous resistance to Nazi intimidation.

The rescue of a fighter pilot from the chill waters of the North Sea is the background theme for *The Pilot Is Safe*. Swift rescue boats save most of the pilots and crews downed in actions over the coastal waters thus protecting the priceless reservoir of trained manpower that guards the English skies and attacks the enemy all along the Western aerial front.

FOR PROGRAMS OF ALL KINDS

British war films are listed for program possibilities: there are eleven United Nations films, ranging from *Diary of a Polish Airman* to *Tale of Two Cities* (London and Moscow); seven films on youth in the war; twenty films on farming and gardening; ten films on air raid protection; twelve films on health and medicine; six films on nutrition and rationing; and ten films on women in war work. These are typical listings from which pictures may be drawn for discussion groups, club meetings, mid-shift and lunch-hour showings in war plants and many other purposes.

All films are loaned on a service charge basis from the British depositories previously noted. The standard service charge on all 16mm prints is fifty cents for the first reel plus twenty-five cents for each additional reel in the same shipment for one day's use.

FOR HOME AND FARM FRONTS

Two general themes illustrate the human interest qualities of these subjects. For Home Front programs there are films like *Dover*, showing the change in the people of that town from the days of patient tenacity and courage in the early years of the war to present mood of a people on the offensive, and *Ordinary People*, a three-reel subject which reports the ways in which the ordinary people of England adjusted to the disruptions and dangers and tragedies of the Blitz. Four films, comprising The Farmer's Year include *Winter on the Farm*, *Spring on the Farm*, *Summer on the Farm* and *The Crown of the*

(PLEASE TURN TO PAGE 33)

The typical English housewife explains how rationing works in England in this scene from "World of Plenty" reviewed above.

The World Will Remember Lidice—

The scenes above from the gripping film story of "The Silent Village" will not soon be forgotten by audiences who see this re-enactment of the heroic story of the people of Lidice. A mining village in South Wales portrays the story of the Czech town like their own.

Cwmgiedd, the Welsh village is shown above and subsequent scenes show the meetings of miners protesting Nazi tyranny, the faces of people born to freedom who are to die in its defense and, finally, the adult males of the village facing the firing squads which obliterated this town for the shooting of Heydrich the Nazi Hangman.

AN EDITORIAL ANNOUNCEMENT OF FORTHCOMING FEATURES

★ With the official permission of the Navy Department, the complete text and illustrations of the Training Aids manual issued by the Bureau of Naval Personnel will be published in these pages. Watch for *More Learning in Less Time!*

* * *

★ The comprehensive Army Pictorial Service brochure on training film distribution and use *Get 'Em Into Action* has also been released for re-publication in this publication.

* * *

★ Pictorial reviews of the first complete U. S. Office of Education training films in the Aircraft Work Series will be presented in an early issue.

* * *

★ A guide to available industrial training films available for free loan is nearly completed. First to be released to Industrial Index subscribers, it will then be reprinted in the pages of BUSINESS SCREEN.

* * *

ALSO REVIEWS, INTERVIEWS AND CASE HISTORIES ON IMPORTANT FACTUAL FILMS

RADIO ON FILM

★ Films played a major role in a recent radio sales promotion at Washington's Hotel Statler, subsequently due for presentation in New York and 111 other cities. Called *Air Force and the Retailer*, and designed to help sell the retailing business on advertising, the 100-minute program required a year's preparation, at a cost of $125,000.

Divided into five parts, the first of a series of films follows a brief introduction by a master of ceremonies. In this, Sheldon Coons, New York agency man who helped build the presentation, is featured in an outline of retailing's history and development; thesis of the production is that lowering distribution cost is the only way to keep raising the nation's standard of living.

After a discussion of post-war distribution two practical safeguards for retailers, cited in this part of the program, are cutting service costs and building up volume—another film, titled *America Takes to the Air*, traces the background of radio, tells where it stands today, and points out why it has had so much acceptance by and impact on the nation.

Why Radio Works, another film production, follows this. Based chiefly on psychological studies made by Dr. Paul Lazarsfeld of Columbia University's Office of Radio Research, it delineates basic human attributes and characteristics.

Concluding the presentation in demonstrating the effectiveness of radio for use by retailing, retailers receive a specially prepared book, "Radio and Retailing—1943," which is complete with studies, charts, figures and other reminders of the data in the presentation.

The production was arranged by the Jam Handy Organization.

SVE Pre-Induction List

♦ The Pre-Induction Training Section of the War Department and the U. S. Office of Education have cooperated in reviewing, selecting and listing visual training aids for PIT courses. The various slidefilm and motion-picture producers and distributors are assisting in making this list available to all schools. In the meantime, the Society for Visual Education, Inc., has prepared a special list of the S.V.E. slidefilms, selected for PIT courses.

Copies of the printed folder, "Slidefilms for Pre-Induction Training", may be secured from the Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois.

WAR FILMS

(CONTINUED FROM PAGE 31)

Year. They are classics of their kind in relating the wartime work of British farmers.

Thumbnail sketches of other excellent film fare are given for the guidance of program builders, whether in industry, education, or for adult groups of all types:

Brief Reviews of Selected Subjects

THE PILOT IS SAFE

(1 reel; 9 miautes)

Depicts rescue of an R.A.F. Pilot after "ditching" in the sea.

MESSAGE FROM MALTA

(1 reel; 11 minutes)

The portrayal of undaunted courage and resistance of Malta under constant aerial blows from the enemy. This fortress has been the key point for defense and attack in the Mediterranean.

LIFT YOUR HEAD

(1 reel; 11 minutes)

The story of a small group of German and Austrian anti-Fascists who escaped to England after months spent in Nazi concentration camps. They are training for the day when they can strike back at their enemies.

SHOCK TROOPS

(1 reel; 11 minutes)

Shows detailed and grueling training of Britain's Commandos in preparation for daring raids on enemy outposts and bases.

SKY GIANT

(1 reel; 11 minutes)

Depicts production and flying of the Avro Lancaster bomber, a huge and potent weapon for night-attack. Includes scenes from an actual raid.

VIA PERSIA

(1 reel; 8 minutes)

This product of the Army Film Unit tells the story of the transportation of war materials through Iran to Russia. Makes extensive use of diagram maps.

EATING AT WORK

(1 reel; 13 minutes)

This industrial film shows how workers overcome hardships of rationing, overtime, night shifts, etc. with factory canteens managed by expert nutritionists.

NIGHT SHIFT

(1 reel; 10 minutes)

Gives an impression of a night shift in a war plant where most of the employees are women, and shows the fine job they are doing.

PICTURE CREDITS FOR ILLUSTRATIONS APPEARING IN THE CURRENT BUSINESS SCREEN

Cover: Photo & Sound, San Francisco; Pages 16, 17: (top) U. S. Army Signal Corps, Associated Screen News, Allis-Chalmers, U. S. Steel Corp. (Below) U. S. Army Signal Corps, U. S. Navy, Bray Studios, General Electric, OWI, Jam Handy, OWI and Jam Handy; Page 20: U. S. Navy, Castle, OWI; Page 24: Jam Handy, General Electric; Page 25: The Calvin Company; Page 27: Wilding Picture Productions & Pratt & Whitney; Page 28: Allis-Chalmers, Page 34: General Electric Company.

★ [illegible] action pictures [illegible] recreation in U. S. [illegible] includes the showing [illegible] entertainment shorts, [illegible] comedies and cartoons. These [illegible] welcome relief from the pri[illegible]ure of hard-hitting war re[illegible]rts provided by Army, Navy, War Production Drive headquarters, and Office of War Information sources.

Many national manufacturers with subsidiary plants have found it most effective to produce their own "incentive" subjects. These programs, localized to the plant conditions and personalities of the workers tie in nicely with outside programs.

General Electric Shows "2311"

♦ A new sound movie, *2311*, designed to spur the men and women in war plants to greater production in order to end the war as quickly as possible, has been released by General Electric. *2311* is being shown at local theaters in all cities where G-E plants are located, and it is available without charge for showings by service clubs, industrial concerns, fraternal groups, and other organizations.

REPRESENTS LATE WAR CASUALTIES

The name *2311* represents the number of American casualties incurred during the last 24 hours before the signing of the armistice at the close of World War I. The movie stresses the importance of a day or even an hour in producing the materials needed by our armed forces. How American workers can hasten the day of victory is told through the stories of representative G-E employees who are working harder and longer and foregoing vacations to meet the challenge of our armed forces. "Enough, and on time."

ACTION SCENES ARE VIVID

Vivid scenes of action on land, at sea, and in the air from World War I and from recent battles in which American boys have fought are accompanied by realistic sound and interesting narration. How the allies are being supported on the production front is shown in scenes of the manufacture of G-E products for war which have seen action on all fronts—turbosuperchargers, aircraft instruments, gunfire control apparatus, searchlights, propulsion and auxiliary equipment for ships, and a myriad of other essentials.

The film runs 11 minutes. It may be obtained in 16-mm or 35-mm size upon request to the Visual Instruction Section, General Electric Company, Schenectady, N. Y., or to any of the company's district offices.

PICTURES FOR WAR WORKERS

The new General Electric Company morale movie "2311" shows how American workers can hasten the day of Victory by their efforts on the war production lines.

(CONTINUED FROM PAGE TWENTY)

Motion Pictures, Office of War Information, in cooperation with the Office of Price Administration. This film should be seen by every adult American, to impress upon him the necessity for stamping out rationing violations. It will be especially suitable for women's groups and adult audiences, for all who buy food for the home today.

FARMER AT WAR (11 *minutes*). The farmers of America are faced with a serious labor and tool shortage at a time when the greatest output of farm products possible is needed. This is an account of how the farmers of Lancaster County, Pennsylvania, are managing, by working longer hours and cooperating with their neighbors, to meet this need.

IT'S EVERYBODY'S WAR (16 *minutes*). The effect of the war upon one American community. In the story of what the people of that town are doing to help win the war, there is an example of what everyone can do. Narrated by Henry Fonda. Produced by 20th Century-Fox.

MISSION ACCOMPLISHED (10 *minutes*). The story of the first all-American raid over occupied Europe. American crews, piloting their Flying Fortresses, attack the railroad yards at Rouen, and return safely to their base in England.

RIGHT-OF-WAY (7 *minutes*). Through the night a troop train, a freight train, and a truck rush to a convoy scheduled to sail early the next morning, to deliver the goods on time. An explanation of why the civilian public must be inconvenienced at times in its traveling so that materials of war will not arrive too late.

WINGS UP (22 *minutes*). The story of the twelve weeks of discipline, concentrated study, and hard work leading to graduation from the Officers' Candidate School of the U. S. Army Air Forces and the rank of second lieutenant. Narrated by Captain Clark Gable. Produced by the U. S. Army Air Forces.

OUR ENEMY — THE JAPANESE (20 *minutes*). Originally produced by March of Time as one of a series of three Navy training films, this picture will lead to a better and clearer understanding of the nature of our enemy. It is authentically and interestingly narrated by our former ambassador to Japan, Joseph C. Grew, and should prove of special interest and value to older students and adult study groups. A limited number of prints of this subject are available.

COAST GUARD SPARS (6 *minutes*). Those who see this picture will know much more about the women in the Coast Guard service and their contributions to the war. It will be of special interest to young women about to enlist for military service, and you should endeavor to book it for such groups. However, because it is a fast-moving informative picture, it will also be interesting to others.

NEW TECHNIQUE IN SOUND

Cows and trains that "talk" were added to the repertoire of radio months ago through the ingenuity of a California inventor and his inventive development of an accidentally discovered principle of sound reproduction.

Today, an organization known as Wright-Sonovox utilizes this new principle to translate the familiar sounds of moving trains, farm animals, whirling motors into spoken sentences. Hence, Elsie, the Borden cow says more than her customary "moo." Her "moo" through the magic of Sonovox becomes a potent piece of sales promotion that goes something like this:

What Else Would Elsie Say?

"Why don't you try a glass of nice, fresh Borden's milk three times daily? I'd appreciate it, moooo." In the same vein, a moving train's chugs and toots provide the signature for the familiar Bromo Seltzer broadcast. Auto horns, diving airplanes and purring motors have likewise "spoken" to the customers.

Interesting Idea for Films

The application of this principle to sound slidefilms and sound motion pictures offers interesting possibilities. Already successfully used by Walt Disney in a train sequence for *Dumbo*, the Sonovox method would add a human interest touch to a farm picture in which the various barnyard animals "talked it over" or a sequence might be turned out for an oil company in which a whining, dry motor complains about poor lubrication.

Words Added to True Sounds

In the Sonovox method, the true sounds of the object to be given the power of speech are recorded from life. A recording transmits these sounds into a small diaphram which is pressed close to the human larynx. As the larynx carries these recorded sounds, the narrator forms them into words spoken into another recording. That's a good layman's ear and eye-witness description—for the fine points and full details we suggest that interested sponsors or producers write to Wright-Sonovox, 180 North Michigan Avenue in Chicago. We're sure they will oblige.

(CONTINUED FROM PAGE NINETEEN)

rials. The advent of irresponsible and inexperienced concerns and individuals seeking to profit upon the interest and enthusiasm of those unfamiliar with the field might easily prove as disastrous as the early years of conversion from silent to sound films.

Hundreds of leading personalities in the visual industry are now concerning themselves with these nationwide organization activities. With the cooperative contributions of adequate resources and the experienced counsel of these foresighted leaders much can be accomplished on behalf of a sound and dependable medium. It is this visual medium on which the nation and indeed, the civilized world, must count heavily in the tremendous years of reconstruction just ahead.

Putting words and sentences into Elsie's mouth is the interesting assignment for this Sonovox vocalist in the scene below.

★ [illegible] two Royal Canadian [illegible] stations in Canada will [illegible] but without [illegible] instruments.

Motion picture film is serving yet another new wartime purpose. Band recordings on 16mm film are being [illegible] by thirty-two new sound tracks recently completed for the R.C.A.F.

These mobile units provide band music for route marches, ceremonial parades, drill ground training; they provide a public address system for similar purposes, as well as for station newscasts, lectures and sports events.

By this means, Air Force stations across Canada, without a band of their own, will have mechanized band music, played by the outstanding band of the R.C.A.F. Marches by the Central Band of the R.C.A.F. were recorded on film at Associated Screen Studios in Montreal and the reel of film that goes with each mobile unit provides up to 15 minutes of continuous music.

This music track on film is reproduced by a Filmosound projector, mounted in each truck. Speakers are mounted on the roof of the panel delivery truck which houses batteries, amplifiers and record turntable.

Actually, the new mechanized bands delivered to the Royal Canadian Air Force were not the first of such units developed. The first one was assembled for the Montreal Division of the Royal Canadian Naval Reserve. Development of this unit was the result of the interest and generosity of a former Navy man, Mr. Harold W. Soper, who sponsored the project in its experimental stages. He knew the value of stirring martial music, and knew that all Navy establishments could not be provided with bands.

With the assistance and cooperation of Capt. L. R. Brock, then Officer in Charge of Montreal Division, Mr. Soper experimented with a sound truck using twin record turntables. Unusual problems in tempo and field use were overcome in making practical this highly useful method of sound reproduction.

War Pictures on Loop Screen

Chicagoans saw war films on this huge 70-foot screen just off State Street during the recent 3rd War Loan Drive. Arrangements were made by H. A. Spanuth of Ideal Pictures, Chicago.

★ Demonstrating the ingenuity of visual workers, Chicago crowds saw the latest war films on a huge outdoor screen. U. S. Rubber Company was the sponsor and unique projection arrangements were under the direction of H. A. Spanuth, Ideal Pictures Corporation vice-president.

A total of over 200,000 Chicagoans saw the show which was given between 7:00 and 10 p.m. nightly for a period of two weeks. Special 35mm equipment was employed to overcome the brilliant State Street lighting. The Third War Loan Drive was the beneficiary of the war film performances made possible by Mr. Spanuth and his associates.

OPA SLIDEFILMS

(CONTINUED FROM PAGE THIRTY)

exactly as though it were a motion picture production, with careful visual continuity, music and sound effects. The films do not contain dialogue, which is awkward on slidefilm, but in almost every instance, they do contain several voices.

In addition to photographs the OPA has found the inclusion of charts, maps, diagrams and cartoons effective. One other feature has become a standard practice. Where important points are to be made, lettered titles are accompanied by commentary which reads the titles aloud while the audience is looking at them. This takes advantage of both eye and ear, and points made in this way are remembered by the audience.

These OPA sound slidefilms are a significant part of the growing trend toward visual education to which the war has given such impetus. They are another indication that, in the years ahead, slidefilms as well as motion pictures will be used in hundreds of fields which, up to now, have depended on the spoken and printed word.

Recent Sound Slidefilms

Supply Line—a 20 minute sound slidefilm explaining the new retail mark-up regulations to grocers

Holding the Home Front Line—a 20 minute sound slidefilm explaining the Home Front Pledge. This is OPA's first production designed exclusively for showing to the public.

Riding Together to Victory—an 11 minute cartoon sound slidefilm, appealing to the public, explaining the necessity for car sharing and how to form car-sharing clubs. It has a strong "selling" angle and depends entirely on a cartoon appeal to get its message over.

Fill 'em Up—a 15 minute cartoon sound slidefilm explaining the need for industry cooperation in the car sharing campaign. It has a strong plea for more intensive effort on the part of industry to promote, through advertising, the car sharing idea. The cartoons were made by the OPA Graphics Division.

New U.S.D.A. Films

★ Two new United States Department of Agriculture subjects, *For Health and Happiness*, a one-reel film on nutrition, and *The Battle Is In Our Hands*, two and one-half reels on the effects of war on a rural community, were recently announced for public distribution.

PERSONALITIES

G. Harrison Echols

★ Through one of life's occasional editorial miscues, these pages presented a brief biographical sketch of G. Harrison Echols, general manager of Agfa Ansco together with a halftone portrait which purported to be that of Mr. Echols. The biographical notes were absolutely correct but the picture was of Mr. William Balch, Agfa's capable and personable district sales manager located in New York.

We are therefore happy to present the many friends and clients of Agfa with the above guaranteed likeness of Mr. Echols. The dozens of letters of correction and amplification which this exchange has brought us are hereby acknowledged. One good error per issue helps keep our readers on the alert.

DeVry's New Sales Manager

♦ H. Bob Engel, popular among dealers, producers and users throughout the industry, is the newly appointed Sales Manager for the DeVry Corporation according to announcement by W. C. DeVry, President of the Chicago projector firm. To Bob, a good competitor and a hard fighter, the industry extends heartiest congratulations.

Joins Sarra, Inc.

♦ Joseph G. Betzer, until recently associated with the War Department, Training Film Production Laboratory, Wright Field, Dayton, Ohio, has joined the editorial staff of Sarra, Inc., The Photosound Division.

Bell & Howell Appoints Wilcox

♦ The Bell & Howell Company announces the appointment of a new General Superintendent for their Larchmont Avenue Plant in Chicago. He is Mr. J. G. Wilcox.

DeVRY GETS ARMY-NAVY "E" STAR

♦ To the Army-Navy "E for Excellence" pennant awarded DeVry Corporation, Chicago, in April of 1943 has been added a white star for continued service in the production of motion picture sound equipment. In extending the congratulations of the Navy Department Admiral C. C. Bloch, U.S.N. (Ret.) wrote:

DEPARTMENT OF THE NAVY
OFFICE OF THE UNDER SECRETARY
WASHINGTON

27 September 1943

Mr. W. C. DeVry, President
DeVry Corporation
1111 Armitage Avenue
Chicago, Illinois

Dear Mr. DeVry:

At the last meeting of the Navy Board for Production Awards the question was taken up whether your company would be granted a renewal of the Army-Navy "E" Award for an additional period of six months dating from September 5, 1943.

It is with great pleasure that I inform you that affirmative action was taken in the case of the Armitage Avenue and Wolcott Avenue Plants of the DeVry Corporation. Accordingly, there are being forwarded to you two new pennants with one star affixed to each, which you should receive in the near future. The Navy Department desires that no ceremony be held in connection with the star award.

The men and women of the Armitage Avenue and Wolcott Avenue Plants of the DeVry Corporation have achieved a signal honor by continuing their splendid production in such volume as to justify this renewal of their award. In the first instance it was difficult to win the Army-Navy "E" and by meriting a renewal, the management and employees have indicated their solid determination and ability to support our fighting forces by supplying the equipment which is necessary for ultimate victory.

The Navy Department extends to each and every man and woman of your company its hearty congratulations on their accomplishment and desires to express a fervent hope that future production will be even more outstanding.

Sincerely yours,

C. C. BLOCH
Admiral, USN (Ret.)
Chairman, Navy Board
for Production Awards

(CONTINUED FROM PAGE 24)

...date application ...algebra, trigonom-...

...Kit 1. *ARITHME-...Keys to Math* (46 pic-...*Addition and Subtraction* (6 pictures); *Multiplication and Division* (27 pictures); *Fractions, Decimals, and Percentages* (55 pictures); *Addition and Subtraction of Fractions* (13 pictures); *Multiplication and Division of Fractions* (21 pictures); *Square Root and Cube Root* (16 pictures); *Order of Operations* (37 pictures). *GEOMETRY: Addition and Subtraction in Geometry* (51 pictures); *Multiplication and Division in Geometry* (48 pictures); *Angular Measurement* (68 pictures); *Construction* (57 pictures); *Scales and Models* (30 pictures); *Vectors* (52 pictures); *Trigonometry* (35 pictures). *ALGEBRA: Positive and Negative Numbers* (18 pictures); *Ratio and Proportion* (10 pictures); *Exponents and Logarithms* (70 pictures); *Arithmetic of Algebra* (10 pictures); *Equations and Formulas* (53 pictures); *Problem Analysis* (37 pictures). *GRAPHS. Graph Uses* (19 pictures); *Plotting Graphs* (62 pictures); *Analytic Geometry* (36 pictures).

Generally speaking, the new series is intended:

(a) As new material for direct teaching

(b) For reviews

(c) For examinations and re-teaching, in regular math classes.

Mechanical Drawing Kit

★ The new Kit-set on mechanical drawing and draftsmanship totals 13 slidefilms of the discussional variety, designed to help instructors supply a broader view of basic principles upon which mechanical drawing is based, and to establish a practical understanding of the eventual results of the student's work.

Just now, the shortage of trained draftsmen is being felt in almost every phase of the war production program, as well as in the Armed Services, so that it becomes necessary to train deferred and exempt students as rapidly as possible. It is the purpose of this series to serve as an aid to the instructor in draftsmanship and more quickly convey the basic principles of the study, make clear simple techniques, tools and equipment prior to supervised drawing board instruction and textbook study.

Draftsmanship subjects totalling 1,112 individual pictures are as follows: *Measurements and Measuring Part I* (50 pictures); *Measurements and Measuring Part II* (61 pictures); *Scales and Models* (30 pictures); *Addition and Subtraction in Geometry* (51 pictures); *Multiplication and Division in Geometry* (48 pictures); *Angular Measurement* (68 pictures); *Constructions* (57 pictures); *"T" Squares and Triangles– Part I* (31 pictures); *"T" Squares and Triangles– Part II* (60 pictures); *Geometric Construction—Part I* (43 pictures); *Geometric Construction–Part II* (36 pictures); *Drawing an Anchor Plate* (25 pictures); *Layout Work Part I* (112 pictures); *Layout Work Part II* (133 pictures); *Slotted Anchor Plate* (60 pictures); *Layout Tools and Measuring Instruments* (96 pictures); *Plotting Graphs* (62 pictures); *Analytic Geometry* (36 pictures).

NEW AIDS FOR WAR CLASSES

The MICROMETER and the VERNIER CALIPER are both highly accurate measuring instruments. The common ones measure to a thousandth of an inch. Those measuring to a tenth of a thousandth of an inch are coming more and more into use. 77

Lighted pictures like these help make technical subjects understandable.

Lessons in Physics

Air Age Physics (mechanics), consisting of 15 discussional slidefilms, are designed to help the instructor establish a visual and mathematical relationship between fundamental principles and their practical application. The units of instruction contained in each film are complete within themselves so that the sequence of subjects can be arranged to suit any curriculum.

This picture method of developing principles and formulas will provide the instructor with opportunities which only an almost unlimited laboratory can provide.

Subjects are as follows: *Matter* (50 frames); *Units of Mensurement* (47 frames); *Force* (57 frames); *Force and Velocity as Vectors* (60 frames); *Uniform Motion* (48 frames); *Uniformly Accelerated Motion* (55 frames); *Newton's Laws of Motion* (58 frames); *Gravitation* (49 frames); *Rotary Motion* (86 frames); *Centrifugal Force* (60 frames); *Work* (51 frames); *Energy* (52 frames); *Power* (32 frames); *Friction* (53 frames); *Simple Machines* (84 frames).

Slide Projectors Available

★ The DeVry Corporation has available a limited number of the new "Filmatic" Triple-Purpose Slide Film Projectors. These projectors are available now for war training schools and institutions.

This new, easier-to-operate, fast focusing, triple-purpose "Filmatic" Slide Projector will simplify your projection problem. The flexibility of the new "Filmatic" permits you to utilize all three types of still projection material. (1) For 2x2 35mm. black and white or kodachrome slides. (2) For single frame 35mm. slide film. (3) For double frame 35mm. slide film.

For prompt delivery DeVry requests that schools and institutions submit orders with a priority rating. The automatic rating procedure under CMP regulation 5A may be used on orders for less than $100.00 worth of equipment. Orders must be accompanied by certification stating school has pre-induction training courses and signed by the Officer in Charge of the course. Address all inquiries and orders to DE VRY CORPORATION, 1111 Armitage Avenue, Chicago (14), Illinois.

On their way to overseas posts and stations where America's fighting men see G. I. Movies a shipment of Radiant 9' x 12' metal cover projection screens with Supreme tripods. These screens and tripods are used with the Ampro dual projectors for Special Service showings.

Farm Audiences

(CONTINUED FROM PAGE 28)

many lines and of the new crops that had to be grown to replace those which had formerly been imported. This film met with immediate acceptance everywhere, and is doing a good job of keeping the Allis-Chalmers Tractor products in the public eye, even though it contains no advertising whatsoever.

Another two-reel color film entitled *Tomorrow's Leaders*, pictured the work and play of the 4-H Clubs in Milwaukee county, showing their part in the Victory program and indicating the huge volume of the total 4-H effort for the nation. Here again, there was immediate acceptance and excellent cooperation from the USDA, county agents, vocational agriculture teachers, farm bureaus, etc.

As to the costs, the number of people employed, etc.: One man has written the scripts, edited the film and photographed a large part of it, in addition to taking from two to three thousand illustrative 8 x 10 stills per year for publicity and general catalog work. A helper did the balance of the work. Of course we were both busy and did not, at any time, keep strictly union hours. But our average of better than eight films a year has been maintained since 1935. Of course we buy some footage occasionally and have had excellent connections for doing so, but the plan, the story, and the main part of the filming are done on the job by a member of the department.

Handy Catalog

★ A new type of catalog-directory, listing and describing all Jam Handy visual aids for schools, colleges and industry is announced by The Jam Handy Organization, 2900 E. Grand Blvd., Detroit (11), Mich. The title of this directory is "Slidefilms and Motion Pictures, To Help Instructors".

It contains 80 pages of information on available motion pictures and slidefilms suited to aid in the training of skills and vocations, as well as for use in a wide variety of elementary, secondary, high school and college studies.

The purpose of this directory is to so classify, index, and cross index all in a way that the instructor, whether in industry or the school, may, by the mere flip of a page, locate suitable films for a given subject under study. This saves the time and labor of the instructor who otherwise would be compelled to spend much time and energy searching for suitable available visual aids on specific studies. Another novel feature is the inclusion of specimen scenes or sequences with each description of Kit-set or motion picture, enlarged directly from the film itself, enabling the instructor to "preview" material before ordering.

The directory also describes the three main types of projectors and their uses in teaching.

A copy of this directory-catalog will be sent to any school, college, educational institution, instructor or employer without charge.

Agfa Expansion

• Agfa Ansco recently announced War Production Board approval of the erection of a new $1,000,000 addition to its film plant in Binghamton, N. Y. Construction has already begun and schedules call for the new plant to be in production late next spring.

The addition, 25 x 450 feet, in three and four story sections, will house a new film coating unit which will materially increase coated production and enable the company to supply still larger quantities of film to the Army and Navy.

[illegible] into the busi- [illegible]ture and voice. [illegible] comparison. [illegible]nds it much as it [illegible]wsreel, and is interested or [illegible]ording to the value of the subject matter, the smoothness of the flow of the pictures and the effectiveness of the voices and music.

And so it will probably prove out in the long run that where there is a job of information to put over quickly the picture which follows this educational method will prevail in greatest quantity.

Armed Forces Prove Value

Everyone knows by now that the Armed Forces have done and are continuing to do a splendid job of training men by the use of moving pictures. But generally speaking, industry has been slower to grasp the medium as a means of training personnel. If for instance, the Army considers it worth while to provide many pictures and adequate places to show them and has every new soldier spending a great deal of his time immediately after induction just sitting down and looking at pictures, why would it not pay to do the same with every new employee of a war plant? It *is* being done to a considerable extent, but the job is only half being done in many plants and under makeshift conditions which nullify much of the value of the films presented.

The aim and the method need not apply only to war time. The war is only teaching the lesson of how quickly and effectively information can be passed along, and it is turning up many lessons in how to do and how not to do the job of education and propaganda on celluloid.

What is Peacetime Pattern?

What then is to be the pattern of motion pictures to carry over to peacetime work? Part of the effort will necessarily be to teach a new bunch of people how to do a still different job besides servicing a tank or running a drill press.

If manufacturers who are now making shells and guns are now planning the products which they hope to build, part of the advance planning will be the teaching of new personnel for the jobs which they will be doing, or teaching old personnel a different kind of a job. In this instance, some of the mechanical training films now being made for the war effort—which incidentally would have come in mighty handy if they had been made five years sooner—will be just as useful in a post-war manufacturing business because they deal with basic methods of working with machine tools and other factory equipment.

PRODUCTION AFTER THE WAR

Selling of Goods Needed

But part of the pictures will be to sell goods to a new group of people in new places. And here's where a change in the pattern of industrial pictures will come into favor.

The keynote of the new line of advertising pictures will be not "how good" but "how to". In other words we will find sales pictures which are designed to show the customer how to *use* a product and get his money's worth out of it more than we will find pictures which sing the praises even subtly, of the offered goods.

The picture with the educational slant which really gets down to telling the audience something of value to *him* will be the advertising picture which will pay dividends to its sponsor.

It is doubtful if the pattern for a toothpaste movie, for example, will include the honeyed words of the radio announcer describing the rare and mysterious ingredients of the product, but it is more likely that it will get down to brass tacks and show kids exactly how to brush their teeth.

It is likely that the automobile makers will put out pictures which will show people not so much the beautiful lines and upholstery of a car, but more about how to handle it and take proper care of it.

Operations Must Be Explained

It is likely that makers of machine tools will have pictures which show and explain thoroughly how operations are done on each machine, the safety features, adapting the machine to perform added functions and the like. They will be combing the factories for shop suggestions to incorporate into pictures, ideas for gadgets and special jigs and improved methods of use.

Travel agencies will present films which give lessons in how to order meals in Spanish and Portuguese rather than lean so heavily on presenting the pictures in advance of the places which the tourists are spending their money to see.

Aircraft companies will have pictures which show the mechanics and flight crews of their customer airliner how to operate and service and maintain the equipment.

Help for the Housewife

Food processors, who have done a little along this line, will go more extensively into legitimate and authentic helps for housewives.

Fabric and apparel makers will tell the buyers how to clean and launder the different kinds of material.

Farm equipment companies will again place more stress on subjects dealing with how to farm.

Makers of business equipment and supplies will perform a service which business colleges have failed to do, teach five million stenos the rudiments of good office practice in the little details which count.

Show 'Em How To Do It!

Manufacturers of cleaners will actually show how to apply the elbow grease.

Municipal governments will present a picture broken down into a visualization of where the tax dollars go.

Furniture and household goods manufacturers will have pictures on how to plan the arrangement of houses and rooms.

Trade associations will get "off the dime" and do more of a job where there is a crying need for certain types of pictures to represent their industry as a whole, and which are either too broad in scope or too costly for individual members to sponsor.

Job for Railroads

Railroads, and in fact all transportation companies, will do a better job of showing their shippers how to pack and handle goods.

Public utility companies will tell the consumer how to make most effective use of their water, electricity and gas.

Large sales organizations will go more heavily for pictures which show how the job is being done at the outposts where the goods are really being pushed. Instead of the president and the sales manager making glorious speeches about the product, probably Joe Doak out at branch Number 289 will be the star performer, telling how he actually rang the doorbell.

One can go right down the line of

industries and organizations, following the line of thought of pictures which will perform a real service to the observer. And one will be able to take almost any product or service and find some angle which will offer the basis of a good picture which will truly inform, educate, and in so doing, sell.

Give Them the Facts

Of course we will always have pure propaganda pictures. There is no need to be mealy mouthed and call them information, news reports or entertainment. But when we want to sell someone a package of thought in a picture, we will not have to dress it up with vague phrases which beat around the bush, accompanied by symbols in pictorial montages; but we can come right out straight from the shoulder and state our object, and then present the subject matter with the reasons, and let the audience be convinced or not on the merits of the case.

We may even be favored with the picture of a candidate for office, who will not have to be dressed up in plow shoes and a ten gallon hat, but who will just stand up and make an intelligible speech, stating exactly what he is for superimposed over a chart of how he voted for what, during his last term in office.

Planning is Needed Now

Why plan all this now? The reason is clear when we consider just how long it has taken to get into stride on the making of some of the desperately needed war training films which are just now coming into use.

Making a moving picture is like tooling up to do any other kind of production job. The actual movie you show is a finished print which costs only a few dollars and is turned out in quantities like automobiles or egg beaters.

But before that, the design and construction of the moving picture negative is like making the dies for the original automobile or egg beater. You chip a little off here, and add a little there, and then the engineers fight over it and test it, and finally you get the dies, and then get the tooling all set and make the product. And the design and tooling for post-war industrial movies is going to take some time.

So you figure out first who your customer is going to be and what you want to sell him, and plan it all out, and whittle and chip with the typewriter and camera and film, and finally come out with some pictures. Now is not too soon to begin writing the script.

A Word About the Author

♦ Pat Dowling is one of the industry's best known and most popular figures. An experienced producer of industrial and commercial films of many years' experience he was formerly associated with Dowling & Brownell, later executive head of Pat Dowling Pictures. Now in charge of film production for one of America's largest war plants, he expects to return to the field of general production after the war.

His thoughts, candidly expressed to you in the foregoing article, have the weight of practical experience and viewpoint behind them. It is the editorial obligation and aim of this publication to present such personal views, without regard to our own editorial policies, and in the interests of the medium.

OHC

Castle News Scoop

★ Of interest to industrials using war film programs is a special "News Parade" with the title, *Italy Surrenders!*, announced by Castle Films, Inc. Immediately on receipt of the first film from Sicily and Italy early in September, Castle writers and editors started work on the production, now available in 16mm sound and silent versions.

The picture contains on-the-spot scenes of the biggest event of the war. Aerial blows which softened up the enemy by disrupting rail lines and blasting air fields are dramatically portrayed. Invasion fleets of large and small vessels churn the waters of the Messina Straits. Montgomery's battle-tested veteran Eighth Army swarms into the Calabrian area. General Mark Clark's American Invasion forces swing into the occupation of the boot.

NOTES AND COMMENT

(CONTINUED FROM PAGE SIX)

sound may offer a lighter and more convenient playback for sound slidefilm equipment. It is unlikely that this device offers any improvement to the fidelity and convenience of sound-on-film for motion picture reproduction but it has possibilities for playback equipment replacing the present limitations in size and weight of record players.

FILMS SERVE OTHER MEDIA: *Food Industries*, McGraw-Hill publication, is the latest magazine to join the ranks of film sponsors. A film on food production made in the plants of Swift, Armour, General and Best Foods is being shown to business groups. Curtis, MacFadden, the *Chicago Tribune*, *Modern Plastics*, *Family Circle* and the Mutual Broadcasting System are other recent users of visual media for promotional purposes.

Television is the next great area of film production, especially for industrials. Business sponsors will have to carry the cost of programs and it's ten-to-one "commercials" will be on film.

A NATIONAL DIRECTORY OF VISUAL DEALERS

*With this issue, BUSINESS SCREEN presents the first installment of a new and nationwide listing of qualified visual education dealers. The majority of these organizations are members of the National Association of Visual Education Dealers. They are at your service for local projection needs, projector repair and maintenance, supplies and films. You may also obtain copies of this publication on request from any of the firms listed below and elsewhere on this page.

NORTHEASTERN STATES

CONNECTICUT
Hebert Studios, Inc., 53 Allyn St., Hartford 3, Conn.

MARYLAND
Kunz Motion Picture Service, 432 N. Calvert St., Baltimore, Md.

MASSACHUSETTS
Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE
A. H. Rice and Co., Hollis, N. H.

NEW YORK
Buchan Pictures, 79 Allen St., Buffalo, N. Y.
John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA
Kunz Motion Picture Service, 1319 Vine St., Philadelphia, Pa.

SOUTHERN STATES

GEORGIA
The Distributor's Group, Inc., 756 W. Peachtree St., N.W., Atlanta, Ga.

LOUISIANA
Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

NORTH CAROLINA
National Film Service, 14 Glenwood Ave., Raleigh, N. C.

VIRGINIA
National Film Service, 309 E. Main St., Richmond, Va.

MIDWESTERN STATES

IOWA
Pratt Sound Film Service, 805 Third Avenue, S.E., Cedar Rapids, Ia.

KANSAS-MISSOURI
Kansas City Sound Service Co., 926 McGee St., Kansas City, Mo.

KENTUCKY
D. T. Davis Co., 231 W. Short St., Lexington, Ky. (Also Louisville, Ky.)

MICHIGAN
Cosmopolitan Films, 3248 Gratiot Ave., Detroit 7, Mich.
W. D. Engleman Co., 701 W. Warren Ave., Detroit, Mich.

MINNESOTA
Film Preview, 1504 Hennepin Ave., Minneapolis, Minn.

OHIO
Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio
Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.
Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

SOUTHWESTERN STATES

OKLAHOMA
H. O. Davis, 522 N. Broadway, Oklahoma City, Okla.

TEXAS
Visual Education, Inc., Twelfth at Lamar, Austin, Texas.

PACIFIC COAST STATES

CALIFORNIA
Donald J. Clausonthue, 1829 N. Craig Ave., Altadena, Calif.
Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.
Photo & Sound, Inc., 153 Kearny St., San Francisco, Calif.
Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Calif.

WASHINGTON
Rarig Motion Picture Company, 5514 University Way, Seattle 5, Wash.

CANADA
Vancouver Motion Pictures, Ltd., Film Exchange Building, Vancouver, B. C., Canada.

HAWAII
Motion Picture Enterprises, 121 S. Beretania, Honolulu, T. H.

They learned to build a bridge by sitting in the dark

1. Soldiers build small trestle to be carried to its position at the bridge site.

U. S. SIGNAL CORPS PHOTOS

2. High trestle for bridge is too heavy for lifting, so a derrick is rigged.

3. Portion of completed bridge strong enough to support trucks, or light tanks.

THIS IS THE REMARKABLE story of thirty-six green men . . .

. . a bridge

. . and a 40-minute movie seen in the dark.

The thirty-six green men had had only three weeks of Army training, *none* of it in Engineering work. But they were shown a Signal Corps training film titled: "*How To Build A Timber Trestle Bridge.*"

They saw the movie *once*.

Then they were given a Sergeant who had never built a timber trestle bridge, and they were taken out into the country and told to build a bridge.

What happened?

Here's the answer in a direct quotation from their Engineer Major:

> "In three and a half hours they had completed a 45-foot timber trestle bridge which is as good as any I've ever seen. If that isn't an argument for training films, I'll eat one."

Well, that's the way the whole Army feels about the Signal Corps and its magnificent training pictures. Engineers . . . Infantry . . . Armored Divisions . . . Tank Destroyers . . . they all use moving pictures made by the U. S. Army Signal Corps.

The men who make the training films don't win many medals or often get cited for heroism. But their pictures are helping to make our men *better-informed* and *better-trained* — the *hardest-hitting* Army the United States has ever had!

Note to Camera Users:

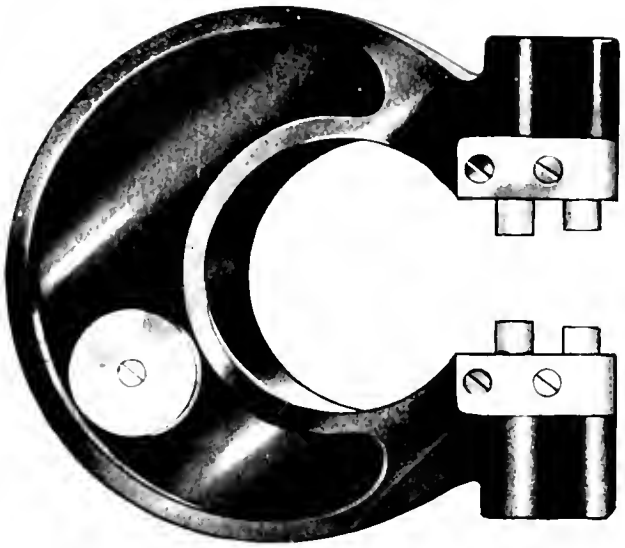
Agfa Ansco supplies a greater percentage of its film direct to the government than does any other photographic manufacturer.

In fact, almost three-quarters of our total production goes to the government and war industries.

So, if you find temporary shortages of your favorite Agfa Ansco Film, remember where it's going—and what it's doing. We're sure you'll understand.

Agfa Ansco, Binghamton, N. Y.

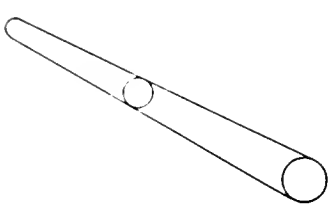
Agfa Ansco — Keep your eye on Ansco — first with the finest



GO ★★★ NO GO

GAUGED to the precise requirements of a training program, measured to the exact needs of instructors, a motion picture, slidefilm or other visualization will help get any schooling job done better, more quickly, and more economically.

But if it does not fit into an integrated plan of instruction, it is "no go".



No skill in photography alone can supply the necessary abilities— no histrionic talent or life in the theatre can qualify any man to make the right picture for such integration.

Only years of experience in practical training operations, in class, shop and meeting rooms can protect such visual aid production from the costliness of misfire or scrap.

ARMY NAVY

The **JAM HANDY** *Organization*

EDUCATIONAL SOUND PICTURES • SLIDEFILMS • VOCATIONAL TRAINING ASSISTANCE • VISUALIZATIONS

★ **NEW YORK** 1775 Broadway COLumbus 5-7144

★ **WASHINGTON, D.C.** Transportation Building District 0611

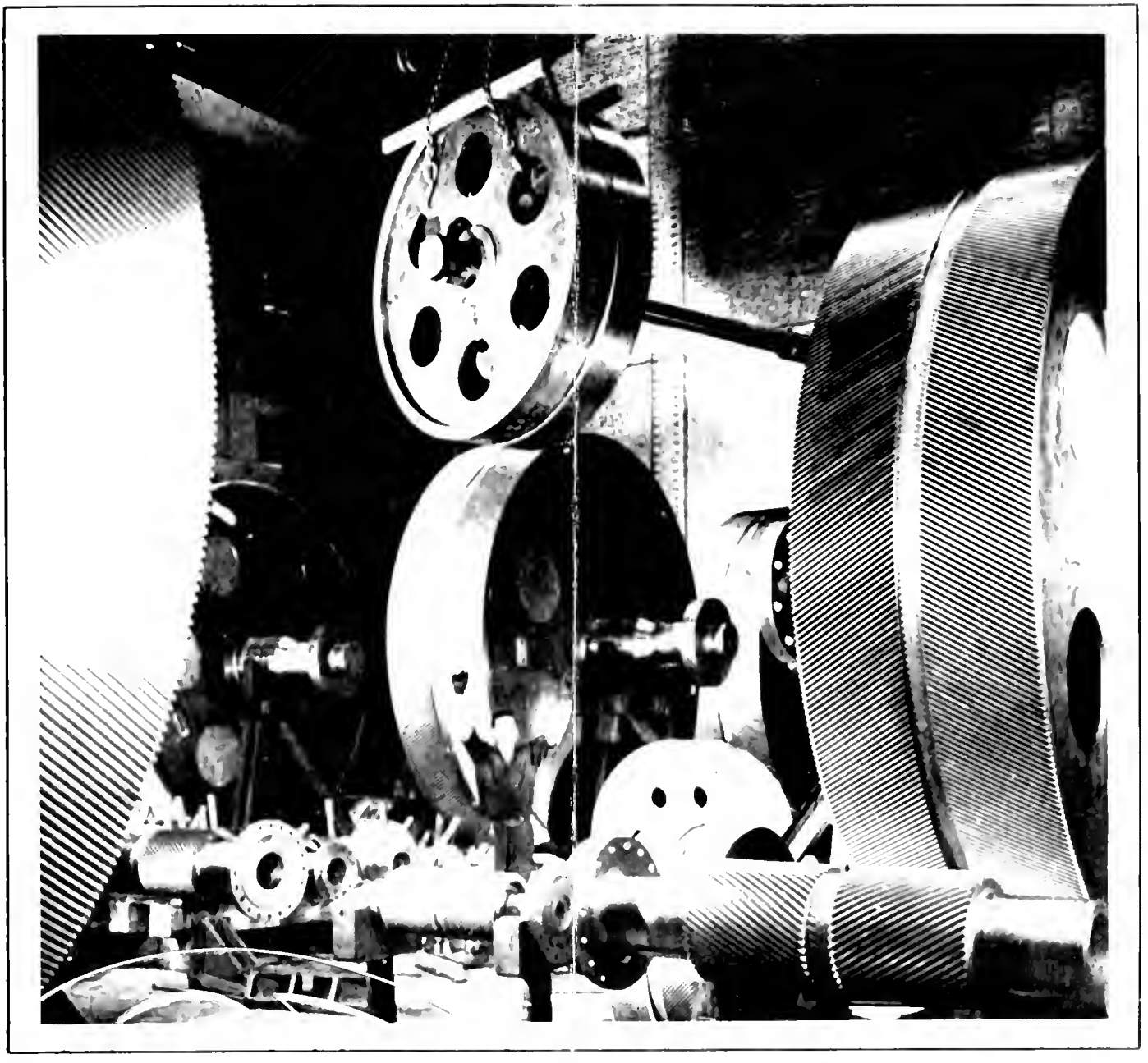
★ **DETROIT** 2900 East Grand Boulevard MAdison 2450

★ **DAYTON** 311 Talbott Building ADams 6289

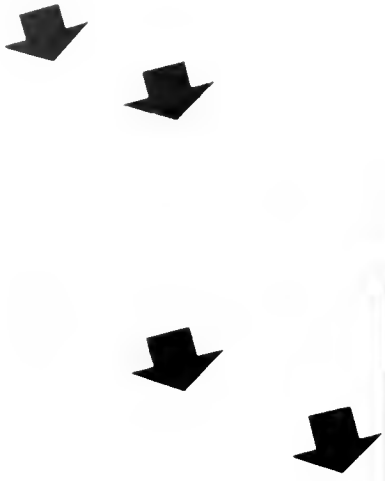
★ **CHICAGO** 230 N. Michigan Boulevard STAte 6758

★ **LOS ANGE** 7046 Hollywood Bou HEmpstead 58

M A G A Z I N E



No. 4 VOL. 5-1913



Lessons are Learned-

when training with

SIGHT, SOUND, SEQUENCE

Sight without Sound . . . both without Sequence . . . leaves impressions inadequate, leaves only shallow grooves in memory. But combine them and the maximum teaching power and activating force is unleashed at its greatest.

Our Nation's Victories on all Fronts testify to this better, faster way of training millions in our Military Forces—and millions more in our factories. Likewise, 16mm Sound Motion Pictures herald a new era of education, training and progress in post-war years.

16MM SOUND MOTION PICTURE EQUIPMENT

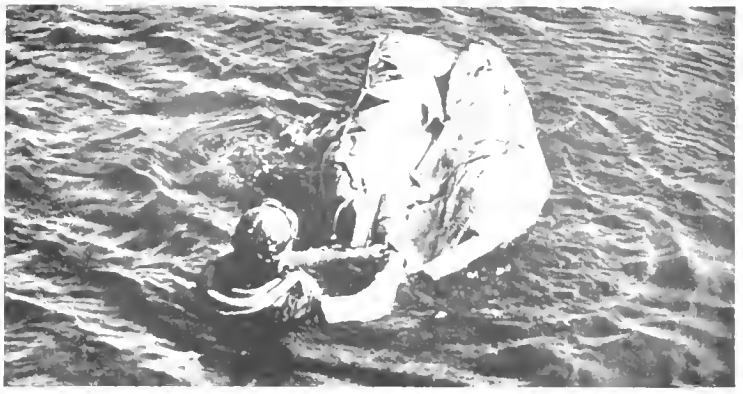
VICTOR

VICTOR ANIMATOGRAPH CORP. HOME OFFICE AND FACTORY: DAVENPORT, IOWA
242 W. 55th ST., NEW YORK CITY • 188 W. RANDOLPH, CHICAGO

Distributors Throughout the World

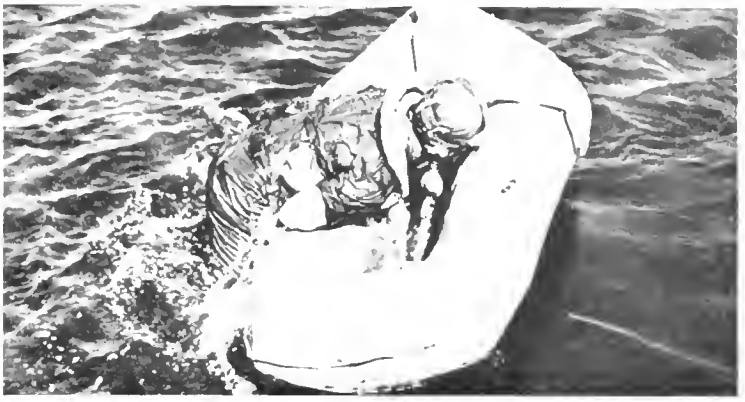
Live pilot or dead hero?

(THESE PHOTOGRAPHS MIGHT MAKE THE DIFFERENCE!)



1 **His plane** is a dead pigeon. And so is this flyer if he doesn't know the tricks of handling his rubber raft. Our aviators get plenty of instruction, but training pictures like these speed up the process. This shot, for instance, is a graphic reminder that, first of all, the valve on the bottle of CO_2 must be turned to inflate the raft.

2 **Clearly illustrated** in this photograph is the basic step in the special technique of getting aboard. Notice how the left arm is slipped under the seat to provide leverage for the difficult hoist out of the water.



3 **This is** the most critical part of the operation and requires great dexterity. Observe the position of the right elbow, and the legs hanging straight down. Every detail is important; this is the stage where real know how pays off.

Of course, flyers are taught the necessity of grasping the far side of the raft and throwing the body *rapidly* across it. But this picture *dramatizes* the point so a trainee will never forget it. Once in this position . . .

5 **The self-rescued pilot** is master of the Bouncing Betty and can ease himself into the seat. With the collapsible oars set in the flaps, he's ready to go places. There's nothing left to do but row—and pray!

TO GET THE PICTURES it wants and needs, the Navy has a corps of skilled, alert photographers.

Training pictures like those reproduced above teach valuable lessons quickly and easily.

They speed the transformation of raw recruits into efficient fighting men.

But producing training films is only one phase of the important task assigned to the Navy's photographers.

Battle Stations, Too

They sail with the battlewagons and fly with the fleet air arm. Their reconnaissance photos, taken at great risk, help in the planning of tactics.

They don't often get their names in the papers, these unsung Navy photographers. But their work is frequently behind the deeds of the men who do.

Ask the admirals—they know!

We're Sure You'll Understand

The record shows that Agfa Ansco supplies a greater percentage of its film to the Government than does any other photographic manufacturer.

And about three-quarters of all Agfa Ansco products made today go to the Armed Forces or war industries.

So, if you find temporary shortages of your favorite Ansco film, remember where it's going—and what it's doing. We're sure you'll understand.

How To Save At Least Three Months

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
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Hart Schaffner & Marx
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OR ANY OTHER CARAVEL CLIENT

TRAINING A SALES FORCE and dealer organization to function at top efficiency is no small task—even in peace time.

Yet this is the task which many companies—yours, quite possibly, among them—must be ready to face when the signal comes for reconversion.

The course of least resistance is to wait until the surrender of the Axis Powers gives you the go-ahead.

But this will mean the loss of at least three months—and just as sure as shooting you'll be caught by your smart competitors flat-footed!

A better alternative—already adopted by a number of our clients—is to begin your planning NOW. By retaining people who know how to do the preliminary research . . . how to select the most useful training media for the purpose (whether motion pictures, slidefilms, manuals, or a combination of all three) . . . how to use these media to best advantage . . . how, in short, to build a completely integrated and continuing training program that will do the job.

Much of this work can be started now—without interfering with your war work in the slightest.

If you'd like to save months of needless delay and be ready to start when the signal flashes, write us today for suggestions as to a sound and practical procedure.

CARAVEL FILMS

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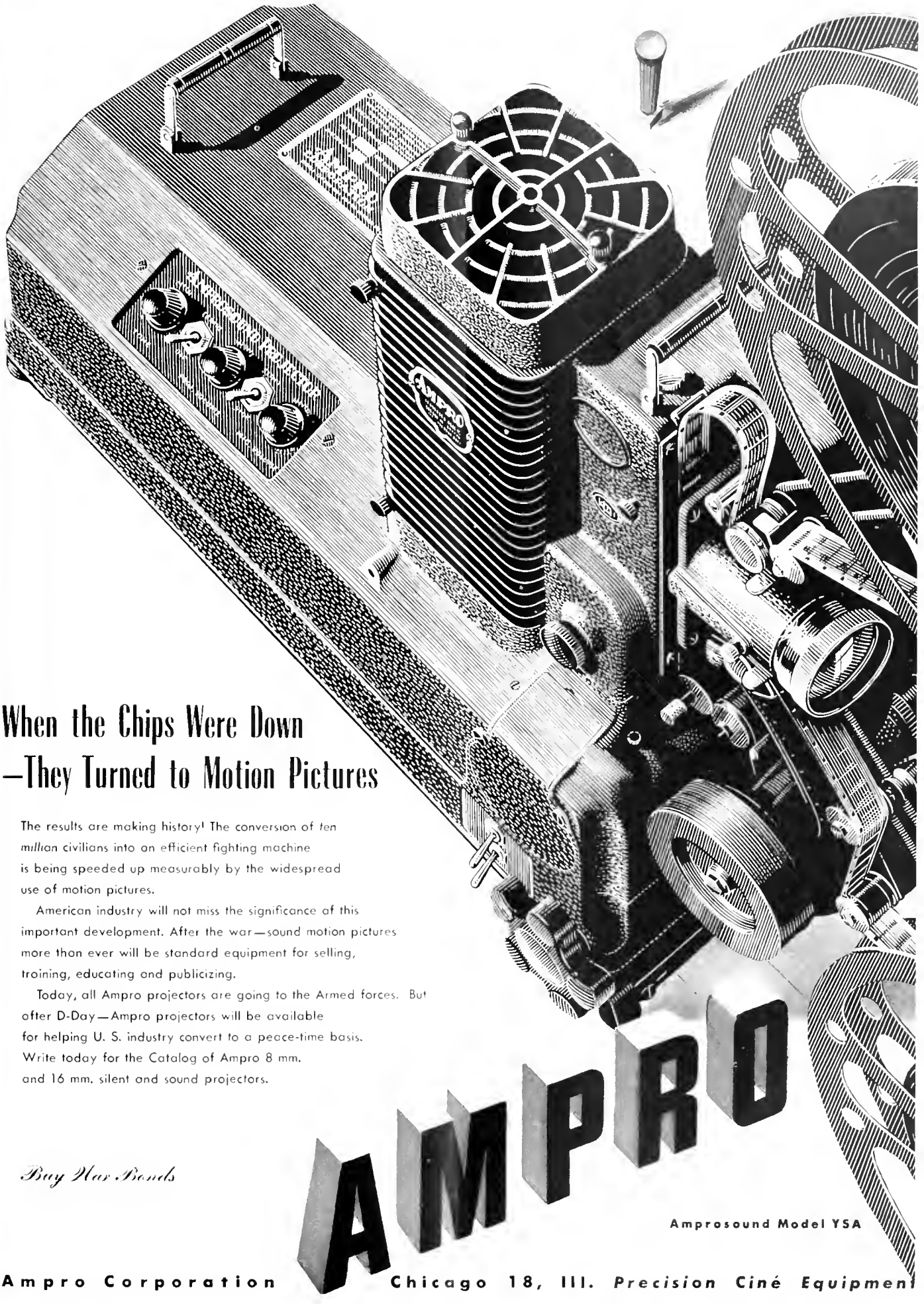


When the Chips Were Down —They Turned to Motion Pictures

The results are making history! The conversion of *ten million* civilians into an efficient fighting machine is being speeded up measurably by the widespread use of motion pictures.

American industry will not miss the significance of this important development. After the war—sound motion pictures more than ever will be standard equipment for selling, training, educating and publicizing.

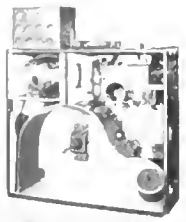
Today, all Ampro projectors are going to the Armed forces. But after D-Day—Ampro projectors will be available for helping U. S. industry convert to a peace-time basis. Write today for the Catalog of Ampro 8 mm. and 16 mm. silent and sound projectors.

Buy War Bonds

AMPRO

Amprosound Model YSA

Ampro Corporation **Chicago 18, Ill.** ***Precision Ciné Equipment***



WORLD'S FIRST PORTABLE PROJECTOR—BUILT BY H. A. DeVRY IN 1912.

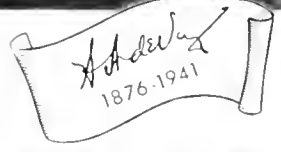
His IDEA Took Motion Pictures to the CROSSROADS and CLASSROOMS of the World

THE modern miracle of Visual Education — given full leash by the speed-up demands of War — had its beginnings in 1912 in a *"suitcase projector"* that was destined to take motion pictures out of the theater into the meeting places and classrooms of the world.

For three decades Dr. Herman A. DeVry — the man who conceived the IDEA of PROJECTOR PORTABILITY — made a succession of engineering contributions to the progress of Visual Education that won him a place with Thomas A. Edison and George Eastman on the Honor Roll of the Society of Motion Picture Engineers.

Today's mass production and fighter film-training programs were presaged by his 1914 pioneering of a school library of 86 motion pictures on major subjects of the school curriculum — complete with teacher study guides. In 1925 he established the *DeVry School of Visual Education*, which developed into the National Conference on Visual Education — the largest organized force in the visual field dedicated to the furthering and perfecting of "learn-by-seeing" techniques. Also in 1925 he founded *DeForest's Training, Inc.*, to teach Electronics with the aid of motion pictures.

Dr. DeVry would have been 67 years of age on November 26th. For the company that bears his name, 1943 is the 30th anniversary of its founding. Over its plants flies the coveted Army-Navy "E" with Star — designating continued excellence in the production of motion picture sound equipment — another "first" for DEVRY — another tribute to the vision, determination and integrity of its founder whose inherent modesty would disclaim the oft heard tribute, *"Father of Visual Education."*



DEVRY CORPORATION

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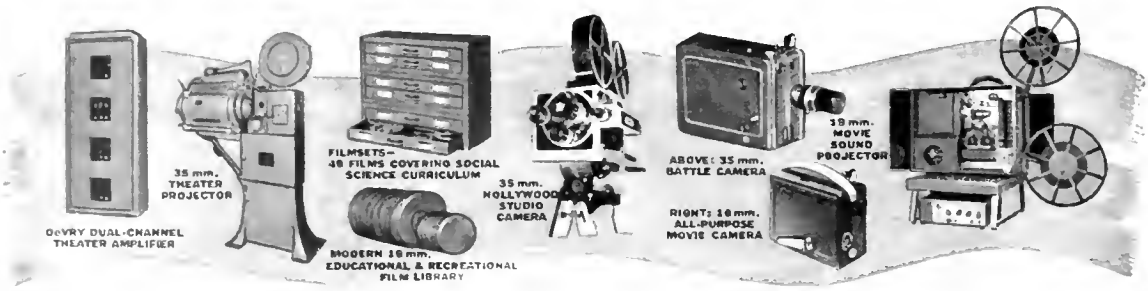

WORLD'S MOST COMPLETE LINE OF MOTION PICTURE SOUND EQUIPMENT

SHOW THIS MOVIE TO YOUR WORKERS NOW!

A Mighty New CASTLE Battle Film

"U.S. MARINES CAPTURE TARAWA"

AMAZING on-the-spot movie record of the storming of Jap-held Tarawa Island! Startling scenes and gripping closeups of the actual battle!

You see our heroic Marines dashing toward the Jap-held island! You see them facing terrible odds as they advance under withering fire to capture their objective!

Here is the living record of the bitterest battle in all Marine Corps history! A page of flaming heroism for Americans to cherish forever!

Own it now!

These and other Castle Films available at your PHOTO DEALER

CASTLE FILMS INC.

World's Largest Distributors of 8mm. and 16mm. Film

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OWN THIS FILM-SHOW IT REPEATEDLY AT

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16mm. Titled Version $8.75

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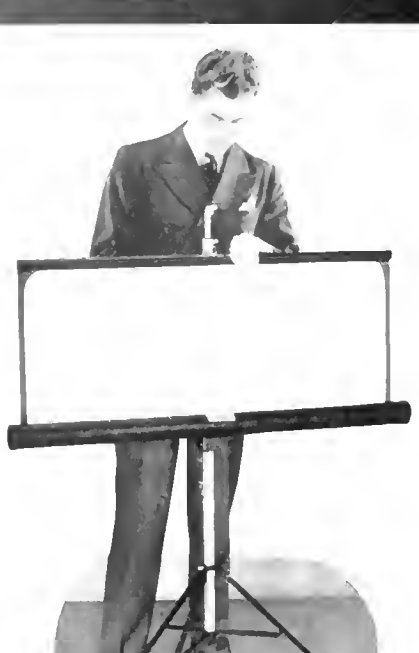
AGAIN AVAILABLE!

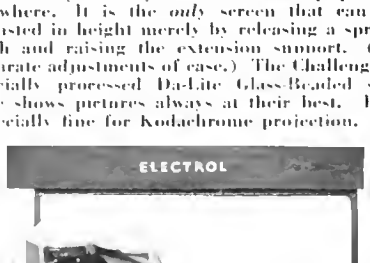


A LIMITED QUANTITY OF DA-LITE SCREENS CAN NOW BE SUPPLIED FOR

(Reg. U. S. Pat. Off.)

Pre-Induction Training, Vocational Training and Other Uses Approved by the W.P.B.

The Famous **CHALLENGER** can serve in many classrooms. It is light in weight, easy to carry and can be set up quickly anywhere. It is the *only* screen that can be adjusted in height merely by releasing a spring latch and raising the extension support. (No separate adjustments of case.) The Challenger's specially processed Da-Lite Glass-Beaded surface shows pictures always at their best. It is especially fine for Kodachrome projection.



The DA-LITE ELECTROL is operated entirely by electrical control. Because there is no tugging on the screen fabric when it is unrolled from the case and because the fabric is in its protective case when not in use, it lasts longer than is possible with any other type of screen mounting.

For the first time since August, 1942, *steel* can again be used in the manufacture of a limited quantity of screens *for certain civilian uses.* The current W.P.B. order L-267 supersedes order M-126 which previously had limited the use of steel in screens to *only* those which were made for the armed forces.

Those who need Da-Lite Screens should apply to W.P.B. for authority to purchase, using form 1319, which may be obtained from local W.P.B. offices, Da-Lite visual education dealers, or from us. Orders must be filled in the sequence in which they have been approved. Because the quantity of screens that we are permitted to make is limited, immediate action is necessary. All models and all sizes of Da-Lite Screens will be available in restricted quantities but made to the same high standard of quality for which Da-Lite Screens have always been famous.

Mail the coupon for Forms 1319

NO SUBSTITUTE MATERIALS
No Substitute for Experience!

DA-LITE SCREEN CO., INC.
Dept. 11H, 2723 No. Crawford Ave., Chicago 39, Ill.

Without obligation to us send . . . . sets of W.P.B. forms 1319

Name . . . . . .

School . . . . . .

Address . . . . . .

City . . . . . State . . . . . .

Quality Screens for 34 Years

How about a NEW kind of plant party THIS Christmas!

Scene from *Child of Bethlehem*, beautiful filming of the Original Christmas Story. Available from the Filmosound Library.

A *MOVIE* party . . . right in your own plant . . . keyed to the Spirit of Christmas with grand, *Christmas*-y films . . . from the B&H Filmosound Library.

Charles Dickens' immortal *Christmas Carol* brings flint-hearted old Scrooge and the three Christmas Ghosts to your holiday screen in the movie *Scrooge*.

Child of Bethlehem and *A Saviour Is Born* bring you the ageless story of the *First* Christmas.

And then for honest-to-goodness holiday hilarity your gang will love Irene Dunne in *Lady in a Jam* or Abbott & Costello who *Keep 'em Flying* or a dozen and one clever Christmas Cartoons like *Toytime, Christmas Night* and *Robinhood Rides Again*.

War films, too, are timely for year-end showing. *Battle for Tunisia, Victory in Sicily* and *News Parade of 1943* remind warworkers of the great task they've helped to do in 1943.

Try this modern, interesting kind of plant party *this* Christmas. It'll be a celebration that everybody in your organization will remember for years.

The Bell & Howell Filmosound Library has *all the films* ready and waiting. Reserve them *now* by sending the coupon below . . . and don't let the lack of a Filmosound Projector stop your plans. Your local schools likely have one you may borrow during the holiday vacation. Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

Scene from *Scrooge*, the film story of Charles Dickens' classic *A Christmas Carol*. Available from the Filmosound Library.

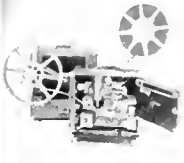
Another scene from *Scrooge*. Bob Cratchit comforts Tiny Tim. You'll meet all Dickens' famous characters in this great film.

A PROMISE TO EVERYONE WHO'S WAITING TO BUY POSTWAR FILM EQUIPMENT

The new Cameras and Projectors that will bear the B&H mark after Victory will *not* be hurriedly assembled from leftover parts. They'll be fitting companions to the famous Filmo products that you know. They'll be improved by an engineering staff that is discovering new things in the urgency of war production. You'll buy them and use them with the same pleasure and confidence you've always had in B&H equipment.

AN OPPORTUNITY FOR A GREAT PEACETIME FUTURE

We want expert engineers . . . experienced in electronic and mechanical design . . . to help us in the important and exciting task of exploring the broad peacetime horizons of OPTI-ONICS. It's a big job . . . for big men. If we're talking your language, write us your whole story and send your photo. We'll set up an interview. *Address:* Chairman, Opti-onics Development, Bell & Howell Company, 7100 McCormick Road, Chicago 45, Illinois.



THE FILMOSOUND V . . . — now produced exclusively for the armed forces, is a B&H engineering achievement which maintains high performance standards despite restrictions of critical materials.

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BUY MORE WAR BONDS

*Opti-onics is OPTIcs — electrONics — mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT — to work, protect, educate, and entertain.

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY

Bell and Howell

Bell & Howell Company
1808 Larchmont Ave., Chicago 13

That Christmas Movie Plant Party idea intrigues us. We'll want these films . . .

. . . .

on . . .
date

Also information on ( ) other features
( ) cartoon shorts
( ) short subjects
( ) war films

Firm

Address . . .

City State

Requested by

This year we'll take the usual greeting and merry-making time and devote it to the job at hand by expressing in effort and sacrifices our gratitude to the men and women who are out there in far away places doing the real fighting for us . . .

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

How would you like to lunch with *Betty Grable?*

MIDSHIFT MOVIES—for those war plants receiving approval for such showings from the major producers—are now bringing Hollywood's brightest stars to war workers while they eat. These showings of 16mm reprints of major studio features and shorts pay rich dividends in labor-management relations, are simple to screen and low in cost. It doesn't matter how large or how small the plant is. Our clients range from those with close to 50,000 workers to less than 500. The only essentials are a 16mm sound projector, a portable screen, and a workshop, cafeteria or auditorium in which to screen the movies you rent from us. And if you haven't a projector, we can help you get one.

STEP UP PRODUCTION and build morale with the help of Midshift Movies! The same pictures that thrill our fighting forces overseas can send your own workers back to their benches relaxed and smiling. And if absenteeism is a problem—independent surveys place Midshift Movies high on the list of cures. Here's how it works: In our laboratory we cut the feature pictures you pick out into serials—like the old-style Pearl White "keep 'em coming" thrillers—so that one feature lasts a whole week, running about twenty minutes each day. Some plants prefer shorts—sports, cartoons, comedies, science—instead of serialized features. As the largest 16mm film library in the world, we invite your inspection of our catalog of shorts and features, and the assistance of our branch office nearest you, in stepping up production through the help of the greatest morale-builder this war has yet produced: Hollywood!

FILMS
INCORPORATED

330 WEST 42ND ST. NEW YORK 18 • 64 EAST LAKE ST., CHICAGO 1, ILL. • 314 S.W. 9TH AVE., PORTLAND 5, ORE.
1709 W. 8TH ST., LOS ANGELES 14, CAL. • 6612 SNIDER PLAZA, DALLAS 5, TEXAS

PLACE A RULER ALONG THIS LINE—TEAR OFF AND MAIL

As the war progresses, labor-management problems keep changing. In some plants, the big headache is turnover. In others it is lack of skills. For most, it is a never-ending quest for a better answer, with the bottom of the barrel in plain view.

Into such a spot, Midshift Movies are jumping with amazingly successful results. And why not? Workers are people. People love movies, mainly because they offer escape, relaxation, complete change of pace. You can invite the tremendous morale-building ability of stars like these right into your plant, at a cost so reasonable you couldn't guess it unless you knew:

Jean Arthur	*Bob Hope*
Charles Boyer	*Myrna Loy*
Bing Crosby	*James Stewart*
Marlene Dietrich	*Loretta Young*
Betty Grable	*And many others*

We have a catalog we want you to see. No obligation, of course. Our conviction is that you will agree with us, once you see the catalog. Here are a few of the serialized features you can rent:

Captain Fury
The Ghost Breakers
Thirteen Hours by Air
Union Pacific
Wake Island
Wings of Darkness

But don't deride that until you get your copy of our catalog. Write for it—won't you?

☐ *We are interested in learning how other war plants are utilizing their lunch rooms or cafeterias for Midshift Movies.*

☐ *We do not have a projector. Send a projectionist's name.*

NAME OF COMPANY

YOUR POSITION

ADDRESS

Sight & Sound

★ THE MOOD OF THE HOUR is sobering, its keynotes realism and preparedness. The immediate crisis of the world struggle is just ahead and it will not be won without a price. The results of the years of preparation will not be measured in statistical tables but in the comparatives of courage, determination, faith and just plain guts.

Just where does this industry come into the pattern of battle? Its manufacturers have turned their talents of design and construction, their solid knowledge of electronics and optics to many useful results in training and combat equipment for the Army, Navy and their air forces. Gunnery and pilot trainers, telescopes, fire control equipment, bombsights, aimers, and projection equipment of all types have flowed from our production lines in record-breaking quantities. Ideas and results have won commendation from the armed forces. Army-Navy E awards in public ceremonies.

The industrial film producers, who bragged little but turned out the pictures by the mile, were responsible for physical production on a majority of training films for the Navy, for all in the U. S. Office of Education's current program and its first series, for a majority of the technical instruction subjects provided by war product makers to the Army and Navy for ordnance, airforce and other mechanized training.

This was the *physical* total. *Results* in training were something else but they were being studied closely as the year matured. *Getting them shown* right became as important a watchword as getting training films made. Not projectors but officer personnel with an apathy toward new ideas was the great bottleneck. It was that way in the war

(PLEASE TURN TO PAGE THIRTY-SEVEN)

BUSINESS SCREEN

NUMBER FOUR 1943 VOLUME FIVE

Cover—A war plant production scene at the General Electric Company, Schenectady, from a recent G. E. motion picture.

Contents

★

[illegible] Publication [illegible] Business Screen Magazine, Inc. [illegible] E. Erie St., Chicago [illegible] Publication Date [illegible] 1943. C. H. Revelle, Jr., Editor [illegible] Publication [illegible] Managing Editor [illegible] Business Manager. Subscription [illegible] for U. S. Possessions & Canada $5.00 [illegible] Foreign $6.00. Entered as Controlled Circulation [illegible] by Business Screen Magazine, Inc. [illegible] reproduction without the express [illegible] the publishers. Trademark Reg. U. S. Patent Office.

The most conveniently adjustable Projection Screen ever made!

. . . Only Radiant Can Offer You All These Important Features!

For quick convenient setting up and easy adjustment to exact size and position — Radiant Screens offer an exclusive combination of these features:

AUTOMATIC CLUTCH

A sure acting arrangement that permits instantaneous raising and lowering without the necessity of manipulating screws and bolts. So simple and easy to operate a child can use it.

TRIPOD RELEASE

For opening or closing tripod legs quickly. Legs lock into position without set screws or plungers. Light pressure on convenient lever closes legs instantaneously.

Auto-LOCK

For raising or lowering center extension rod instantly. No set screws, spring plungers or other hand operated devices.

CONVERTIBLE FROM SQUARE TO OBLONG

Radiant square-sized screens are convertible to oblong by merely raising screen to plainly marked position.

PLUS Other Radiant Features

Radiant Screens can be instantly raised or lowered to *any* desired position (not just 2 or 3 intermediate positions) without adjusting set screws or plungers. Radiant Screens have the famous "Hy-Flect" Glass Beaded Surface and extra strong square tubing. All metal parts fully protected against corrosion.

"The Army Uses Training Films" A Valuable Manual for all Film Users

The U. S. Army has permitted Radiant to publish a new manual on training with films. The material is based on actual training experience — and is humorously illustrated. Sent FREE to all who request it on business letterheads.

Can You Get Radiant Screens Now?

The answer is "yes". The complete Radiant line of metal screens is available in limited quantities to essential users who obtain WPB approval of their applications. Others may obtain their choice of the full line of Radiant Non-Metal Screens. For complete details write today for new Radiant Catalog — just off the press!

RADIANT

BETTER SCREENS FOR BETTER PROJECTION

The Radiant Mfg. Corp.,
1141 W. Superior St.,
Chicago 22, Illinois

Gentlemen: Please send me FREE copy of the new complete, illustrated Radiant Screen catalog.

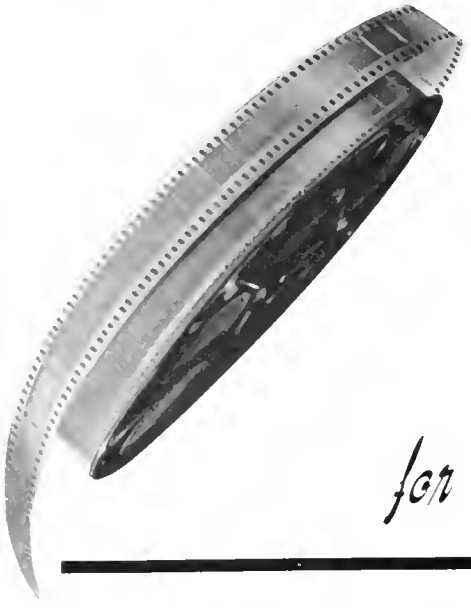
Name

Address

City Zone No. State

Vital Statistics

about S/m productions for 1943



MOTION PICTURES

for

57% — THE ARMED SERVICES

25% — GOVERNMENT AGENCIES

18% — WAR INDUSTRY

SLIDE FILMS

69% — THE ARMED SERVICES •

31% — WAR INDUSTRY •

MOTION PICTURES — SLIDE FILMS

S/m

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

ROADS AHEAD FOR VISUALS

TWO VAST LABORATORIES in which visual aids to war training and war information are now undergoing their most critical tests, now exist in the war industries and vocational schools of the U. S. and on the worldwide battlefronts and in the training centers of the armed forces.

Here the motion picture and slidefilm, as well as special devices embodying visual education principles, are meeting the real test of their worth in speeding the learning process and of their ability to bring real understanding of the complex issues and of the obligations of the individual in this war. The hour of trial is at hand.

THE ISSUE IS ONE OF LIFE OR DEATH

To most Americans accustomed to think of the film as a vehicle of romantic escape through its popular entertainment forms, the idea that it is in reality another and possibly, the greatest, medium of communication is at long last being realized through its extensive use in the war plant, the training school, the community center and in the training and indoctrination of millions in the armed forces of these United Nations.

It is upon the thousands of motion pictures and filmstrips produced for instruction that the nation must rely for a most important segment of the statement: *what our soldiers and sailors don't know CAN hurt them.* The audience at stake must be counted at the full total of our mobilized forces, soon to exceed 10,000,000 men.

From the first day of arrival at the reception center, through the various specialized courses of instruction given later, our fighting men and women see and hear visual lessons and receive, visually, indoctrination material.

SIX MILLION WAR WORKERS TRAINED

Since July 1, 1940, nearly 6,000,000 enrollments in all types of courses under the program of Vocational Training for War Production Workers conducted through State boards for vocational education and local public schools in cooperation with the U. S. Office of Education have been counted. According to Paul V. McNutt, chairman of the War Manpower Commission, the especially prepared motion pictures provided for the program through the Division of Visual Aids for War Training of the Office of Education, have cut as much as 25 to 30 per cent from the time required for teaching workers new skills.

THEY ARE MAKING EDUCATIONAL HISTORY

"These war training films, designed as a new type of teaching tool for instructors, are making educational history by teaching workers essential skills motion by motion," McNutt declared recently in a Washington address. Supplementing the work of vocational instructors and the vital prerequisites of actual physical learning and doing upon shop equipment, the pictures speed understanding of machine tools and complicated skills in which the unskilled men and women from all walks of life must be trained.

"Mass application of training films to fit these workers for wartime jobs is one of the secrets of the production miracle being accomplished in the United States," chairman McNutt asserted.

INDUSTRY SPEEDS INDOCTRINATION OF WORKERS

Another vastly important area in which visuals are proving their indispensable place in the war effort, is that of getting understanding and cooperation from new employees in these war plants. Films that show the entire plant organization and facilities, explain management's point of view, the various deductions required, health facilities, benefit plans and the hundred other small details which help fit the worker to the groove of the new job are now being widely and successfully used by such organizations as Armstrong Cork, Boeing, Thompson Products and others in the field of war production.

FILMS KNOW NO BARRIER OF LANGUAGE

The motion picture and filmstrip know no barrier of language. The visual pattern readily adapts itself to the translator. Better understanding between the United Nations has been greatly aided by battlefront reports such as *Desert Victory* and *Target for Tonight* and the epic reports of the Russian battles. It is just such a picture, *Welcome to Britain*, which is now being shown to all American soldiers arriving in Britain, of which it has been said

"Unless Allied propaganda planners call a halt to pictures like this, there is very great danger that Britons and Americans are going to wake up after this war with a certain warm understanding of each other."

The plans of our State Department with relation to the use of the motion picture for the educational reconstruction of the occupied lands in Europe will deserve serious and extensive consideration in the year ahead.

MAKE THESE ROADS SOLID AND LASTING

The paths of physical film production are well laid out for the year ahead. They will endure the tests of time and results only through constant educational effort on the part of those in charge. *There is serious need for such effort among industrial training personnel.* There remains no doubt as to results when these aids are properly applied but *there is little real and widespread knowledge as to simple principles of proper application of visual education.*

Achieving this will be a most important goal as a degree of adequacy is achieved in actual production. Not mere distribution alone but proper *utilization* of visuals is the *real* goal ahead.

A.V.A. REPORTS

★ The use of motion pictures in war training was [illegible] featured in several [illegible] attended conferences at the mid-December annual convention of the American Vocational Association held in Chicago. At the December 14 forum on "War Training Using Visual Aids" Lloyde E. Brooker, director of Visual Aids for War Training for the U. S. Office of Education, was a featured speaker.

Leigh M. Nason, Technical Specialist for this Division, was Chairman of the program which also included featured appearances by Eldon Robbins, of Michigan, Ernest B. Lace and L. Kerzman, educational chief for Illinois Tool Works, Chicago. A verbatim brief of Mr. Kerzman's interesting report follows:

A Precision Training Program Utilizing Visual Materials

by E. Kerzman

I IMAGINE our problems in setting up a training program for new employees were similar to others who were planning their programs, but I believe ours were more difficult because of the nature of our products and the methods we use in manufacturing.

Our products are precision metal cutting tools, rifling broaches, and precision measuring machines. Ours is not of a repetitive type of manufacturing, but more on a tool room basis or like a large job shop.

We examined and analyzed several training procedures but found that none really filled our requirements as we had to carefully match the training content with the specific jobs in our shop.

These jobs in the operating section were for tool inspectors, lathe and milling machine operators and precision grinders. In the grinding section alone we have seven different types of grinders on tool work (1. surface, 2. arbor, 3. blanchard, 4. cylindrical, 5. internal, 6. thread).

We set up our program in two sections. The first section is a training program for foremen and supervisory forces. With the influx of new workers with new production problems, and the need for maximum output, this training content pertained mostly to the problems of handling people (mostly green help). We also had J. I. T., F. R. I. and J. M. T. sessions.

Films and Models Used

In compiling the curriculum for the second section we included series of films (16mm sound) produced by the U. S. Office of Education. Having machines in the school room would have involved a lot of individual instruction so, as we wanted to keep the training period as streamlined as possible, we used the films instead. I also designed and made giant models of the protractor vernier and micrometer to further simplify instruction for the women students.

Our procedure was to show the film first, then study the text; show the film the second time, and then use the giant model; then actual tools, and then have a general class discussion.

Both of these programs immediately proved successful, and I believe the use of the slide films and the sound movies accelerated the instruction period considerably.

The training period lasted from 150 to 200 hours, 23 hours per week spent in the classroom, and 16 hours per week spent in the shop. Over 700 students went through the school, of which 190 were female.

Advantages and Limitations

In overhearing some opinions in using visual aids some are of the opinion that the "*movies*" appeal more to the emotional side than to the intellectual, but I am of the opinion that the trainees have an opportunity to see the actual performance and use of machines and tools and the operating techniques involved and are able to memorize and copy these actions when the opportunity presents itself.

♦ The Industrial Arts Section Meeting on Visual Aids was under the direction of Paul C. Nelson, Wisconsin vocational educator. Principles of the visual medium, sources, technics and the organization of visual instruction were developed during this session.

Desert Victory Now Available in 16mm

★ One of the great battle pictures of the war thus far, the epic *Desert Victory*, has just been released for 16mm showings to war plant audiences, adult group organizations and general non-theatrical use, according to announcement by the British Information Services. *Desert Victory* is the official film record of General Montgomery's advance from El Alamein to Tripoli, produced by soldier cameramen who fought and marched with the British Army on the thirteen hundred mile trek across the sands of the Western Desert.

Widely Acclaimed for Realism

Colonel David MacDonald, in charge of production, went into the front line with six officers and twenty-six cameramen. Four were killed, seven wounded and six were captured in resulting actions. 200,000 feet of film was secured together with a considerable quantity of film made by the German Army Film Unit, captured in the advance. This was cut and edited into a coherent 5,100-foot narrative.

In pictures like these, war workers and their families may grasp the realities and sacrifices of war made by the men and women "out there." The actors in *Desert Victory* are the common soldiers, the men of the infantry and the tanks for the most part, whose advance at El Alamein was a turning point of the war. Absolute factual detail is one of the finer points of the picture and one which makes it a wartime "imperative" for the film library record of World War II.

Covers the Whole Scene

The picture covers the battle from the point where General Auchinleck made his stand sixty miles west of Alexandria following Rommel's advance across Egypt. From then on the story is one of victorious advance by Montgomery against Rommel's panzers.

The highlight of the film is the battle of El Alamein, when the full weight of British armor, by that time amply supplemented by newly-arrived American equipment, was thrown against Rommel's lines. Cameramen moved forward under a thunderous bombardment to secure the outstanding actual battle scenes thus far recorded.

16mm prints are available through offices of the British Information Services in New York, Chicago, San Francisco, Hollywood, Washington, New Orleans or at any British consulate at print cost price or at daily rental cost only.

Scene from "Desert Victory" as an Australian [illegible] cadet [illegible] nearing the enemy.

A strong point is over-run. Trampled field telephone wires and a dead Nazi bear mute witness.

An irrepressible British Tommy gives the "V" sign to a couple of his German prisoners.

MEASURING FILM USEFULNESS

Effectiveness in War Plant Training Is Measured in Engine Lathe Study

BY DR. ABRAM VANDERMEER

as told to the Editor of Business Screen

THE USE OF motion pictures for industrial training has created unbounded enthusiasm in many quarters, not without warnings from others that dependence is to be placed only on proved facts. Some of these facts are provided by a scientifically controlled study of war training classes as recently completed by the senior author. A preliminary report of this work appeared in BUSINESS SCREEN, Issue 3-1943, page 37. This article will present some of the high spots of the methods, and the conclusions of the study.

The present study was confined to seeking the most accurate possible answers to a few narrowly-defined questions. Of these the primary one was whether "lathe operators whose instruction includes the carefully integrated use of motion pictures develop essential skills to the required level in a shorter time than those whose training does not include such visual aids." A secondary question was whether motion pictures help to develop at the same time a better fund of appropriate technical information in the trainee's mind. There was some investigation also into the value of certain tests for predicting a trainee's success in operating a lathe with speed and accuracy.

THESE FIGURES TALK

Of first importance in the results is an indication that students who had the benefit of integrated film use in their training saved from 19 to 53 per cent of their practice time on a variety of lathe jobs. To put it another way, depending on the type of job, untrained workers can be expected to average from 22 to 104 per cent higher output of acceptable product per working hour on the engine lathe at the outset if they are first prepared for the work by educationally sound[1] use of motion pictures.

HUMAN FACTORS IN RESEARCH

Engineers and others whose scientific training has been largely in the physical sciences do not always appreciate the extreme difficulty of getting significant results from the sort of experimenting whose subject matter is the human hand and mind, and their reaction to different experiences. Psychological experimentation is confronted at the start with the cold fact that in any group of persons, such as trainees for war jobs, no two individuals are exactly alike; nor can they be made alike. Difference between any two *individuals*, unavoidably present throughout any experiment, may be so great as to invalidate completely any intended measurements of differences in the effect of any two training processes.

To combat this tremendous difficulty, the experimenter must depend on the rigorous application of devices which are frequently not necessary at all when working with the natural sciences. He must depend largely on the principle that in large groups individual differences tend to "average out."

Therefore as a field for experimentation, he must find a place where a fairly large number of reasonably similar individuals are undergoing similar experiences. Secondly, he must have opportunity to examine each of these individuals separately, to determine in advance as closely as possible what differences among the individuals are most likely to impair the validity of his planned experiment, and must make due allowance for them.

The experiment will then consist of a thoroughgoing attempt to subject two similar groups to courses of experiences which are as nearly alike as possible, except that for one group (the "experimental" group) it includes the particular experience to be studied—in this case the viewing of motion pictures—while for the other group (the "control group") it does not.

Thus the general plan of the experiment was as follows: Seven classes of lathe trainees were divided into two groups. A wide variety of information, age, experience, education, and scores on various aptitude tests, was gathered on each individual to make sure that on the average both groups had equal ability and will to learn. The same three instructors put both groups through lathe training courses that were identical except that one group was taught with sound films while the other was not. Painstaking records were kept of the amount of time each student spent on each practice lathe job. Each lathe project was rated impartially as accepted or rejected. The main object of the experiment was to compare the average time required per acceptable product by "movie students" with that spent by those who did not view films.

WHY LATHE WORK?

Several reasons dictated the selection of engine lathe work for the experiment. It is an important line of work, the output of which can be definitely distinguished as either "good" or "bad", rather than somewhere inbetween. A piece is good if it passes inspection; meaning that at the points specified in the blueprint it measures what it is supposed to measure, within the prescribed limits of tolerance. It is not a particularly better piece if it measures even closer than required. If a piece has been cut smaller than the smallest measurement allowed, it is definitely worthless for its purpose, and if not small enough it is equally worthless until recut. A second reason for using lathe workers was that it was possible at the time to find available a number of trainees regularly entering and leaving this course large enough to permit using groups of sufficient size to insure the various individuals largely cancelling out each other's peculiarities. Finally, excellent motion picture films for this subject were readily available.

DOESN'T PROVE EVERYTHING

It is because experiments of this kind are so hard to plan and to conduct, with any approach to actual statistical validity in the results, that there has been so much depending, instead, upon mere opinions and "impressions" as to the value of motion pictures in job training work. While the investigator warns against drawing too broad inferences from the limited and precise conclusions arrived at, nevertheless it remains true that "one fact is worth a thousand theories." This study does provide scientific facts regarding the saving of time effected by one group in one area of industrial training.

OBJECTIVES OF THE COURSE

The experiment was conducted within the framework of a regular machine operator's training program. The course was given in the Morton High School (Cicero, Illinois) shops, for new employees of the Ametorp Naval Ordnance Plant. The training period was divided into six forty-hour weeks. Classes met eight hours per day from 10:30 P.M. to 7:00 A.M., Monday through Friday.

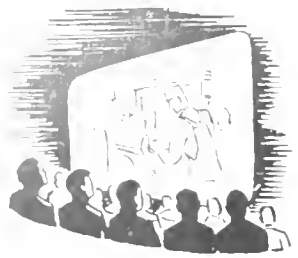
The general objectives of the course, as stated by the training director of the Ametorp Corporation, were as follows:

1. The development of specific skills in lathe operation.

2. The acquisition of basic informa-

(CONTINUED ON THE NEXT PAGE)

1 It must be emphasized that these results were not obtained by **merely showing motion pictures**. A very definite technique of film use based on accepted educational principles was an essential part of the experiment. This technique is described later in this article.



3. Relative to machine operation. 4. The development of skill in blueprint reading and shop mathematics, sufficient to carry on effectively in a factory situation. 5. The development of habits and attitudes conducive to safe and efficient machine operation.

The training program had two supervisors, Mr. W. B. Leonard, of the Amertorp Corporation, and Mr. Paul Roise, Director of Vocational Education for Morton High School. There was one instructor in charge of each of three machine shop classes. All three instructors were craftsmen. None had had previous training in the theory or methods of teaching. The instructors in the beginning and advanced shops had been teaching for approximately six months at the start of the experiment. The instructor in the intermediate shop had been teaching for only one month.

Shop Facilities

The trainees were sent to the training center in groups of approximately fourteen. Each group spent an equal amount of time under the guidance of each instructor; two weeks each in the beginner's shop, the intermediate shop, and the advanced shop. Up-grading experiences designed to help the students to progress toward the four general objectives were provided in each room. The lathe skills required became more difficult as the student progressed, and tolerance became smaller.

The shop equipment was adequate. While the lathes in the beginners' room were noticeably inferior to those in the intermediate and advanced rooms, this fact could not affect the relative standings of the groups since all groups used the same equipment. There were slight differences in quality of machines within rooms. This was compensated for by rotating the students' assignments to the lathes.

Experimental and Control

The groups used were seven consecutive classes from the ordnance plant taken "as they come", numbering about fourteen workers each, and in all probability typical of the thousands being hired for training all over the country. Trainees ranged in age from 18 to 55. About one-third had had four years of high school, mostly non-technical. One-fifth were women, most of whom were married. Many had husbands, sons or brothers in the armed services. Every trainee had had some work experience often clerical or "non-essential." Morale and desire to learn were high.

Of the seven classes, the experimental groups (to whom films were shown) included the second, third, sixth, and half of the seventh; the others formed the control groups. There was some loss in numbers from "dropping out." The scoring method did not of course, require exact equality of numbers between the two groups.

No competition was suggested between the groups, but members of the control group had the nature and importance of their own usefulness in the experiment explained and emphasized to them as frankly as did those in the experimental group. While each trainee kept his own time record, there was little opportunity for them to compare group averages.

The Training Film Used

Both groups completed the same six weeks' course, in the same shops, under the same instructors. The control group members viewed no films, but received the same general background information by the conventional lecture-demonstration method. Those in the experimental group had shorter demonstrations, and fewer, but in addition they were shown the appropriate motion picture films produced by the United States Office of Education and reviewed in detail in Business Screen, Victory Training Edition, Vol. 4, No. 1, and Vol. 4, No. 4.

The technique employed in teaching with the films is described in later paragraphs of this article. At this point it is important to consider the nature of the twelve projects which made up the course, and which film was used with each. The jobs are listed below in numerical order, as performed: Jobs 1-L, 2-L and 3-L in the beginners' room; 1-H, 4-H, 5-H, 6-H and 7-H in the intermediate room, and 1-V, 2a-V, 2b-V and 3-V in the advanced room. (Jobs numbered 2-H and 3-H had been dropped from the course as too repetitive.) To conserve metal, successive trials were carried out when possible by further cutting on a previously used piece.

Beginners' Shop

♦ Early in their training period, before they had had any opportunity to work on the lathe, the experimental groups were shown two Government films, *The Steel Rule* and *The Micrometer*. Both films employ animation and real-life shop scenes to depict the structure, forms, operation, and use of the precision measuring instruments indicated by their titles.

Job 1-L required straight turning a $4\frac{3}{4}$ inch length of a steel rod down to four successive diameters each .003 inch smaller than the last. In preparation for this work, the experimental group viewed the film *Rough Turning between Centers*, which runs 16 minutes. This film has commentary and pictures combining to demonstrate preparing the work for the machine, and making the necessary roughing and finishing cuts. Emphasis is given safety precautions in dress and work, the necessity for constant reference to the blueprint, the lubrication of the machine, the care of the centers, and the proper use of the various controls. Closeups show the manipulation of the index dials, for the job being done.

Job 2-L required turning a steel rod to two diameters, each smaller by .125 inch than the last. Four trials were required. The film used was *Turning Work to Two Diameters* which runs about 11 minutes and discusses in detail the sequence of operations followed when turning a gear blank with its shaft from a solid piece of round stock. Turning the piece to rough size, laying off for the gear blank, rough and finish turning the shaft, rough and finish facing, and facing to length are shown in detail. Rough and finish turning of fillets are demonstrated. Special emphasis is given to the precautions and procedures used when turning to close tolerances. The method of establishing a reference point is given, and the reasons behind the method are indicated.

Job 3-L required turning a steel rod to five diameters. Four trials were required. Successive sets of diameters decreased .003 inch. All necessary film help had been given in connection with Job 2-L.

Intermediate Shop

♦ Job 1-H also required turning to five diameters, each section being reduced to .003 inch, whereas tolerances in the beginners' shop had been .001 inch for diameters and 1/32 inch for length, however, in the intermediate shop they became .0005 inch for diameters and 1/64 inch for length. Four trials were required. No additional film help was given.

Job 4-H required the turning of various tapers by the method of offsetting the tailstock. Four trials were required but since the time for the first trial included straight turning on the shoulders, final comparisons were made on the basis of the last three trials only. The tapers required, in inches per foot, were .250, .300, .475 and .600. Diameters at the large end of the tapers decreased in steps of .003 inch. As preparation, the experimental groups viewed the eighteen-minute film, *Turning a Taper with the Tailstock Set Over*. The importance of tapered parts in industry is depicted in the introduction. The formula for determining the distance to set the tailstock over in order to obtain a given taper is thoroughly taught. Animation is used to show how this method produces a taper. Special emphasis is laid on the care required by the centers when turning tapers by offset tailstock. Three alternative methods for setting the tailstock over the desired amount are demonstrated.

Job 5-H required cutting three sizes of National Fine Threads, eleven, thirteen and sixteen to the inch respectively, on stock of diameter from $1\frac{1}{4}$ to $1\frac{1}{8}$ inches. Each thread was gaged by the fit of a special nut upon it. To demonstrate the skills required, a twelve-minute film, *Cutting an External National Fine Thread* was studied by the experimental groups. This film shows the characteristics of the American National Fine Thread, compares it

(Please Turn to Page 32)

A Word About the Author and This Study

♦ Months of patient and painstaking research in this hitherto uninvaded area of study lie behind this investigation. Personally interested in this effort, the Editor of Business Screen watched its entire development. It is the first of many such investigations yet needed and it is in that spirit that we are presenting this condensed review of its findings. Dr. Vandermeer is now an ensign in the U. S. Navy, stationed in Philadelphia. The second and final part appears next month.

ARMY MOTION PICTURES GIVE AMERICAN INDUSTRY

THE FACTS OF WAR

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

A MESSAGE TO WAR PLANT EXECUTIVES ABOUT THESE FILMS

"These Army films show the finished products on which the parts our workers are making are fitted. They show those products in action—devastating action against the enemy. They are not beautiful pictures made in studios. They are made from landing barges, from the front lines of jungle troops and from raiding bombers."

MAJOR GENERAL H. S. AURAND

★ Army war films are now characterized by stark realism. When equipment is blasted by enemy munitions our cameraman records the damage. When American fighting men are killed by enemy fire, the camera shows that inescapable fact of war too.

Official Army motion pictures are taken at risk of life by Signal Corps and Army Air Forces photographers on the many battle fronts of the world. Our cameramen do not always come back from their missions of recording for us the deeds of our soldiers.

The men and women doing such a fine job on the production front are entitled to such graphic reports of the actualities of the fighting front. This is a people's war and a people's Army.

These Army films show the finished products on which the parts our workers make are fitted. They show those products in action . . . devastating action against the enemy. They are not beautiful pictures made in studios. They are made from landing barges, from the front lines of jungle troops, and from raiding bombers.

Men are killed and materials on which you have worked *destroyed*. The waste of battle must be replaced in a hurry! Your part in the march to victory is depicted. They are pictures of the products of your hands and brains in use by your soldiers.

The role of the war worker . . . whether management or labor . . . in the prosecution of this war is tremendously important. A close interdependence exists between the Army and the many people upon whom it depends for the war materials it *must* have. The Under Secretary of War, Robert P. Patterson, has directed that the resources of our combat photographic crews shall be utilized to the fullest to bring back vivid camera reports to the war workers.

Of one of the Army films, Mr. Patterson says, "For the first time in its history, the War Department is making an official report on the Military situation directly to the war workers of America. . . ."

That is the theme and essence of all of the new army industrial motion pictures. We hope that every man and woman engaged in war production in this nation will have a chance to see them and see them regularly.

"1944 is the year of decision . . . there is no more waiting . . . we are ready for the test of our strength and spirit."

H. S. Aurand
Major General, U. S. Army
Commanding General, Sixth Service Command

SCENES LIKE THESE ARE TYPICAL OF ARMY PICTURES BRINGING THE WAR FRONTS TO OUR WAR PRODUCTION LINES

Workers in factories like these in U. S. war plants may now see official combat reports available from the Industrial Services Division, Bureau of Public Relations of the U. S. Army.

HOW TO SECURE ARMY PICTURES

EDITOR'S NOTE
These official Army films are available through Army sources via 300 distributors located in nearly every major production area in the U. S. Here is the way to obtain them for your plant showings.

ARMY FILMS FOR INDUSTRIAL AUDIENCES

★ Listed below are new War Department films released especially for showings to industrial war workers, in both 16mm and 35mm sound track prints. The films are provided in two categories in order to assist war plants or worker groups in assembling suitable programs. *1. Films of general interest*, which can be shown in any type of war plant regardless of the type of product they manufacture. *2. Films for specialized industries*, which are particularly appropriate for the war workers in industries for which their film content was designed.

ALL AMERICAN

Running Time 28 minutes 3 reels

• A vivid picture story of the Army Air forces in operation all over the world, taken by combat cameramen. Action shots show the All-American team of pursuit ships, bombers and transports on actual missions . . . meeting swarms of enemy fighters . . . smashing ships and shore installations with heavy bombing . . . transporting wounded men and vital materials . . . landing a division of paratroopers from the air. An absorbing presentation of the battle performance of American planes. Of especial interest is the personal report of a bomber crew to an Intelligence Officer, of its flight over Germany.

FILM COMMUNIQUE No. 1

Running Time 18 minutes 2 reels

• The first of the monthly film communiques to industrial war workers being released by the Industrial Services Division. This one consists of three parts: Little Detroit, a truck assembly plant in a theatre of operations (Africa); Landing supplies and evacuating the wounded by Air Transport Command in New Guinea; the attack on Rendova, establishment of a beachhead, landing of invasion troops and equipment, a Jap bombing attack which kills American troops and destroys a part of the material landed. (A combat film.)

FILM COMMUNIQUE No. 2

Running Time 20 minutes 3 reels

• A day with the A-36's, the new attack bomber adapted from the P-51 Mustang. Sit in the pilot's seat while ships dive through the clouds and bomb and strafe German pill-boxes. Seldom, if ever, will you be given this chance literally to be a bird's-eye witness of a modern air combat. A large section of FILM COMMUNIQUE No. 2 is captured German industrial film with eye-opening shots of the enemy's assembly lines with the original German sound track interspersed here and there with English interpretations. Every American war worker will be interested in this film.

★ The Industrial Services Division of the War Department Bureau of Public Relations has established a national distribution system of film exchanges in key cities throughout the country. The films listed in these pages, as well as many other motion pictures now in production, are especially designed for showing to war workers. The majority of these films demonstrate the relationship of the war worker to the fighting men in all corners of the globe.

War plants and labor groups desirous of showing these films should address their requests to the Industrial Services Division, Bureau of Public Relations, War Department, Washington, D. C.

Official distributors for the U. S. Army include such well known concerns as Castle Films, Inc., Modern Talking Picture Service, Inc. and Walter O. Gutlohn, Inc. Inquiry may be made to any of the local offices of these distributors as well as Industrial Services Officers located in command headquarters cities and war industry centers. Adult group audiences as well as those actually in war plants will also be given consideration on requests for these subjects, it has been disclosed.

These requests will then be forwarded to the local film distributor, who will contact your plant. Once you have made contact with this distributor all future arrangements for showing War Department films can be concluded directly between your plant and the distributor. All movies are in sound and are non-inflammable safety film.

A nominal charge of $1.00, for three reels or less in any one shipment, is allowed the distributor to cover cost of transportation, handling, insurance and maintenance. Plants or shipyards not having projection facilities may contract with the distributor for an experienced operator and 16mm projector on the following basis: continuous showings up to 11/2 hours, $17; up to four hours, $25; up to six hours, $30; up to eight hours, $35.

Film exchange centers have been established in some 300 cities; however, if a plant is more than 25 miles from one of these points, five cents per mile travel charge is allowed the distributor beyond this 25-mile radius. Requests for use of film should indicate whether projection equipment is needed and whether 16mm or 35mm film is desired.

The "*Why We Fight*" Series

Produced under the direction of Frank Capra

This series is in reality a pictorial record of the events leading up to and including World War II. These are the facts behind the war facts that will make your people realize by what a narrow margin they escaped the Nazi heel

PRELUDE TO WAR *(Running time 50 minutes—5 reels)*
A history of events leading up to World War II.

THE NAZIS STRIKE *(Running time 40 minutes—4 reels)*
The betrayal of the small countries—and the invasions.

DIVIDE AND CONQUER *(Running time 55 minutes—6 reels)*
The fifth column within and ruthless conquest at work.

BATTLE FOR BRITAIN *(Running time 50 minutes—5 reels)*
The indomitable spirit that defied the Nazi blitz.

BATTLE OF RUSSIA *(Available after Feb. 11, 1944)*
The fighting Red Army turns back the Nazi invaders.

SUGGESTIONS FOR SHOWING IN PLANTS AND MEETINGS

★ WITHOUT EXCEPTION, U. S. war plants will find it possible to bring the men and women on their production lines these hard-hitting, realistic official Army war films. Although practically every plant offers different operating conditions, difficulties in space and motion picture projection arrangements, the Editors of BUSINESS SCREEN have listed literally hundreds of ways in which alert, aggressive plant executives have licked these seeming obstacles.

If the plant is crowded, show these pictures at evening showings to which the entire family may be invited. Add music and very brief entertainment to such a program and you have the makings of a very satisfying and productive evening.

But first study *all available areas* in your plant—the cafeteria, meeting rooms, storage areas, locker rooms, recreation facilities, plant aisles and, weather permitting, outdoor areas, may all be utilized for war film performances. Here, briefly, are a few of the ways in which showings may be held:

SHOW THEM AT MEETINGS

• Safety meetings, employee or supervisory gatherings in conference rooms, meeting halls, etc. For very large gatherings use 35mm projection if necessary; otherwise standard 16mm sound projectors are ideal.

BEFORE & AFTER SHIFTS

• Run a projector in the locker room, cafeteria or recreation hall for showings scheduled to end just before shift begins. Films have proved useful in stimulating prompt arrival and help prepare workers for the importance of the war job.

RENT A THEATRE OR HALL

• Many companies have used outside facilities for showings. Ask nearby schools or theatres about available facilities.

LUNCH HOUR SHOWINGS

• Take a projector to the lunchrooms or put in plant aisles where employees may gather for voluntary showings. Make it brief.

PLANT LITTLE THEATRE

• Maintain a small newsreel theatre or cabinet type automatic projector in the plant on a continuous basis so employees can come in whenever they choose. A short program can be repeated every 20 minutes or so.

MOBILE UNITS ON TRUCKS

• Put sound projector and amplifier on a truck and tour the plant areas. Show off the truck or in available plant space.

SHADOW BOX PROJECTION

• Illuminated areas can be used with a shadow-box type screen which shuts off most outside light. Show films almost anywhere.

Make sure that all employees are informed about these showings. Use your advertising and promotional ingenuity in stimulating attendance and interest in these restricted and official war films. After they've seen them the first time, the films will speak for themselves!

ARMY FILMS FOR INDUSTRIAL AUDIENCES

WAR DEPARTMENT REPORT

Running Time 15 minutes 3 reels

• "For the first time in its history, the War Department is making an official report on the military situation directly to the war workers of America. This is not a pep talk. It is a report by your General Staff." These are the words that Robert P. Patterson, Under Secretary of War, uses to introduce WAR DEPARTMENT REPORT to the screen. The heretofore confidential material on which the film is based was first presented in a series of highly restricted War Department Conferences to members of Congress and leaders of industry, labor and the press.

These men were so impressed with the information presented that they urged the War Department to relax security and make the facts available to every war worker in the Nation from top executive to apprentice worker.

WAR ON WHEELS

Running Time 20 minutes 2 reels

• The story of the tank in action. See these giant behemoths battling each other. Actual fighting as seen from the inside of a tank. A battle of tanks is war on a huge scale. Steel against steel and men of steel against men of steel . . . men who have gone through grueling tests of desert heat—120 degrees outside the tank—a furnace inside. WAR ON WHEELS will certainly give you more than an eyeful of tank warfare.

BOMBERS OVER NORTH AFRICA

Running Time 19 minutes 2 reels

• Film shows preparation of the planes, briefing of the crews by intelligence officers before the raid, the bombing raid itself and intelligence interrogation of the crews on their return. (A combat film)

CHANNEL FORTIFICATIONS

Running time 6 minutes 1 reel

• The Nazis' *own film* of their fortifications along the English Channel. The film gives an absorbing picture of the lengths to which German preparations have gone and clearly indicates the problems of invasion.

LANDING IN SICILY

Running Time- 6 minutes 1 reel

• An exciting short film: the official film record of the opening attack on the not-so-soft "under-belly" of Europe. Photographed under fire for the most part, it shows the amphibious attack, the initial landings and the effects of Axis counterattacks on men and materiel.

(OVER)

ARMY FILMS FOR INDUSTRIAL AUDIENCES

BAPTISM OF FIRE

Running Time 17 minutes 1 reels

• Originally produced for showing at ports of embarkation to acquaint soldiers with realistic combat problems in an attack, this film is a vivid picturization of gruesome actualities of a battlefield, and the feelings of a soldier advancing into action for the first time. (A U. S. Army Training film now released for showings to our workers to acquaint them with life and death problems of the other half of our team.)

KILL OR BE KILLED

Running Time 10 minutes 1 reel

• Realistic and earthy, this Army training film should not be shown to industrial groups without a preliminary explanation, and not until such groups have been prepared for it by seeing other combat films. Produced as a training film to acquaint soldiers with the art of hand-to-hand physical combat, it is starkly realistic and carries a jolting impact similar to *Baptism of Fire* in character, but is different in content.

COMBAT REPORT

Running Time 10 minutes 1 reel

• What American hasn't had the urge and the desire to fly an Army bomber and drop a stick of high explosive bombs on a Nazi U-boat? Well, here's your opportunity, for COMBAT REPORT will take you out to sea on a successful quest for one of these monsters of the deep. There's certainly a thrill in blasting 'em to hell and gone. Though you cannot be the actual bombardier, you can play a most important part in each of these great ventures.

LIFELINE (Note: Available early in 1944)

Running Time 20 minutes 2 reels

• This film tells the story of two battles fought at the same time. A battle against the Japs and a battle against death. We see our men go ashore in an amphibious operation. The casualties are carried back over jungle trails to emergency operating tents. One end of the lifeline is in that tent—the other is held by the hands of the men and women giving blood, processing plasma, manufacturing drugs, pharmaceutical supplies, instruments, bandages, anaesthetics. The pull of this lifeline brings our men back to base hospitals, back to health, back to the America whose freedom they fight to preserve. Narration by Ralph Bellamy.

BATTLE OF MIDWAY

Running Time 10 minutes 1 reel

• A special, edited version of the color feature of the same name. Photographed in full color, by Commander Ford of the U. S. Navy, this film shows the destruction wrought at Midway by both sides. The commentator emphasized the importance of replacing the material lost at this historic spot. Filled with exciting action pictures of Japs dive-bombing American installations and enemy planes being sent up in smoke by American marksmanship.

ATTACK SIGNAL *(Electronics—but also suitable for some general uses.)*

Running Time 13 minutes 1 reel

• An American task force attacks a South Pacific Island. During landing operations a radio set, and its production, play a crucial part in the outcome of the assault. The film emphasizes the necessity for quality in production and shows how carelessness in a plant nearly caused the annihilation of a landing force.

MOVIES SPUR PLANT MORALE

Major headaches disturbing war plant executives are absenteeism and workers' decreasing interest in the war effort. Latest suggested cure — which is arousing increasing discussion and enthusiastic comment — is a daily program of movies in 16 mm size, fed to workers in the midshift as they eat their lunch.

Wide Choice Available

Such programs may consist of the usual entertainment and educational shorts, or of the incentive films put out by the Army and Navy. Newest and seemingly most successful wrinkle, however, is daily serialization of feature-length Hollywood productions. This serves a triple purpose: it provides undoubted continuity of interest; it stimulates workers, giving them needful emotional, mental relaxation; and it keeps them up with the world.

Welcomed By Workers

Swing shift workers especially find it hard to keep up regular entertainment habits — such as movie-going — and appreciate their favorite stars being screened for them by their bosses. Many new recruits to war work, particularly women, are unused to working in long monotonous shifts. These subjects help to break the day for them, give them something to look forward to the next day.

"Midshift Movies," as they are sometimes called, also pave the way for war bond rallies and other aids to the war effort, since their distributor recommends cooperation with local movie theaters whenever practicable.

Typical film company distributing "Midshift Movies" is Films Incorporated, with offices at 330 West 42nd Street, New York City, and branch offices in Chicago, Dallas, Los Angeles and Portland. The average feature-length film is ten reels. Each reel takes approximately ten minutes to run. By showing two reels per day, therefore, a film lasts five days, keeps workers on the alert all week.

Cost of Rentals Low

Cost of rental is low. Serialized feature-length movies, for example, rent for $25 a week. There is no fire hazard with 16mm film. The movies are simple for amateurs to operate. Sound is as clear as on the usual 35mm film (which is what you see in movie theaters). The movies may be shown in a company's cafeteria, workshop or auditorium, if the latter is big enough. Films Incorporated has contracts with major Hollywood studios, offers a wide variety of movies ranging from Westerns to typical Hollywood love stories.

Plants already using Midshift Movies include the Columbus Bolt Works (Columbus, Ohio); the Aluminum Co. of America (Pittsburgh, Pa.); the Willamette Hyster Co. (Portland, Oregon); the Stewart Die Casting Corp. (Chicago, Ill.); the Bridgeport Brass Co. (Bridgeport, Conn.) and, on the Pacific Coast, Douglas, Consolidated Vultee, and other major aircraft companies.

G. E. war workers in the Erie, Pa. plant enjoy a midshift movie. Approved by employees and management alike for their "lift" to morale and as a cure for absenteeism, these feature films and shorts are screened for each shift in the lunchroom, cafeteria or (as below) on the plant floor.

War plant workers like Marjorie Garland, Douglas Aircraft riveter (left) and Mary Salee of Bridgeport Brass (right) share the enthusiasm of fellow workers for movie showings.

What do the workers themselves say about these plant showings of motion pictures? A poll taken at the Western Electric Company's Hawthorne plant showed widespread enthusiasm for the idea. Other companies, notably Carnegie-Illinois Steel, Stewart Warner, Packard, Douglas, Bridgeport Brass and General Electric to name a few of the thousands now showing these films, have found their workers highly in favor of varied but regular film programs.

REALLY CHECK ABSENTEEISM

One of the industry's suppliers of visual equipment checked the use of the medium in its own plants (see page 28) and found a definite trend against absences on the days when films were shown. A distributor of entertaining shorts reports that workers ask for serialized mystery stories and short subjects.

Widely used throughout the U. S. are the inexpensive 16mm sound subjects produced by organizations like Castle Films. These include up-to-the-minute war reports on the battles of the Pacific, Russia, Africa and Sicily as well as human interest subjects and cartoons. (See REVIEW.)

BALANCE THE PROGRAMS

Too great a percentage of entertainment or too many battle pictures on a single program or in a single series of showings apparently reduces the effectiveness of the idea. Balanced programs, introducing entertainment material helps to relieve the tensions and strains of the production line while the use of official war films and news reports helps keep the worker impressed with the importance of the war production job at hand.

Projection facilities are now widely available everywhere in the U. S. Plants may also purchase 16mm motion picture projection equipment through special permission granted by the W.P.B. Form 1319 is used for this purpose.

All kinds of adverse plant conditions have been successfully overcome in showing these films. Expert counsel from local projectionists and from film distributors is always available without obligation. The shadow-box screen is one of most useful means of overcoming light conditions, the most general handicap.

Composite montage of scenes in the new Castle release News Parade of the Year now available for plant showings at economical cost.

News Parade of the Year Is Announced by Castle

★ Evidence that Army and Navy authorities recognize the importance of keeping the armed forces accurately informed on world events is shown by the orders for hundreds of prints of Castle Films' *News Parade of the Year* to be delivered in New York and San Francisco. These are main embarkation ports, of course, and it is plain that fighting men at sea and on distant foreign shores are going to see this home movie. It tells the soldier or sailor isolated from all theaters except his own what his buddies-in-arms have been doing.

Here, of course, in America, collectors again have demonstrated that their numbers have grown until it requires more than five million feet of 16mm film just to supply them with *News Parade*. It is believed that the widespread ownership of this film record of historic events may wield an influence on national thinking during the years that follow the end of the war. Certainly, it will be difficult to spread successfully the type of postwar propaganda which distorted facts and confused minds after the first European struggle.

Too many owners of 16mm projectors will have an unbiased record of what actually happened, from 1937 to the present time. No other war in history has been pictured in movies for civilian ownership. It is, therefore, reasonable to believe that this war will be far more accurately discussed by the coming generations.

REVIEWING THE 1943 NEWS PARADE

BATTLING THE U-BOATS! The combined Allied Navies still fight to clear the Atlantic of increasing Nazi wolf packs by crushing sea and air weapons. A U-Boat, unaware of the presence of a U. S. Coast Guard cutter, is trapped on the surface and destroyed. Every day our heroes in planes and ships send more undersea raiders to the bottom. TRAGEDY AT TOULON! The mighty French Fleet, not heeding the Allies' plea to escape before too late, is scuttled to prevent its falling into Hitler's hands. The seizure of the Normandie by the U. S.

"All the sea but destroys it" 1943! Almost by miracle the great ship floats again.

PACIFIC FORCES ADVANCE ON THE JAPS

MacARTHUR'S SMASHING OFFENSIVE! General MacArthur personally commands the terrific struggle as American airpower blasts the Japs in the South Pacific. Lead by the famous general, our forces continuously harass the enemy, driving them further back and back. . . . In North Burma, Gen. Joe Stilwell moves in his American-trained and equipped Chinese forces to hold the line until Burma can be retaken. He fights on and trains a growing army to avenge previous defeat by the Japs. ARGENTINA REVOLTS! The city of Buenos Aires roars with rioting as Army over-

throws government. An overwhelming majority of people seek closer hemispheric ties.

ALLIES INVADE THE FORTRESS OF EUROPE

ALLIES ON THE MARCH! President and Prime Minister meet at Casablanca to plan unconditional surrender for the Axis.—Tripoli falls, ending Mussolini's Empire—Montgomery's heroic army chases Rommel from Egypt as Allies take over control of North Africa. Sicily, a short leap from Tunisia, is the next objective to fall to the combined power of battle-tested Americans, British, Canadians and French. From there the American Fifth Army invades the Italian mainland, and fighting street by street, town by town, moves forward. Italy

surrenders, Salerno is won, the Allies surge on, capture Naples and march toward Rome.

BOMBS RAIN AS OUR AIRMEN RAID BERLIN

BOMBS OVER HITLERLAND! The ever increasing Allied air offensive rocks the Nazi homeland from border to border, reaching a terrifying peak such as the world has never known. The staggering weight of growing American air power hastens the day of victory. RUSSIA'S MIGHT ASTOUNDS THE WORLD! In a smashing offensive sustained for months at tremendous tempo, Red Armies sweep the Nazi invader from the Ukraine in the greatest defeat yet suffered by Germany. A staggering blow to Nazi hopes of Allied disunity

is contributed when Secretary of State Hull flies to Moscow, a historic prelude to Victory!

Films Speed the Ships

WEST COAST SHIPYARDS SCENE OF PRODUCTION

Filming a training subject on [illegible] at the Consolidated yards. The R. C. M. production staff and shipyard supervisor are glimpsed in reflection at the door of a ship at the outfitting wharfs of the Consolidated Steel Wilmington yards.

FROM VANCOUVER to San Diego, wherever the shipyards are turning out the bottoms on which our lifelines of the Pacific and the Atlantic are sustained, the motion picture and the slidefilm are coming into their own in training, safety and morale programs.

The largest of the visual production schedules now under way is that of the U. S. Office of Education where a second great series of films on *Shipbuilding Skills* is now nearing completion. The first series, which dealt with ship construction detail, was produced in East Coast yards by Caravel Films, Inc., and the Iam Handy Organization. The current films are in the areas of *Marine Machinery Installation, Coppersmithing, Pipefitting* and *Marine Electricity* and are being produced by R.C.M. Productions, Gene K. Walker, Photo & Sound, Inc., and Hugh Harman Productions, all West Coast organizations.

First Series All Ready

The series on *Marine Machinery Installation* as well as other subjects in *Pipefitting* are soon to be announced for sale through the official distributors, Castle Films, Inc. These include titles such as *How to Check and Surface Foundations, Aligning and Installing Auxiliary Machinery, Filing and Installing Chocks, Laying Out, Drilling and Tapping Flanges on Sea Chest, Installing Valves and Sea Strainer on Sea Chest* and other installation subjects.

The new films are part of visual aids units, each of these include a sound motion picture, silent filmstrip and an instructor's manual. There are approximately twenty-five such units in the field of Shipbuilding Skills on the current U. S. Office of Education production board.

Other Production Activity

The U.S.O.E. program serves to provide general educational materials for the yards. Specific and localized visual aids are also widely employed. Marinship at Sausolito, California and the Kaiser Company, Inc., at Portland, Oregon are typical examples of this specialized approach. Both use slidefilms extensively. Strip films are localized to the special situations and methods of the Kaiser yards under the direction of Maurice Bullard, supervisor of vocational training for the Company in the Portland area. Leonard Delano, commercial producer in this Northwest territory, is material supervisor and photographer.

By means of individual still pictures of step-by-step operations, Delano arranges complete sequences on special subjects. Material expediting, construction details, and operations by various craftsmen are thus presented to the training classes.

Bay Area Ideal Location

Photo & Sound, Inc., San Francisco and other Golden Gate producers have contributed many special films for the yards in that area. These cover subjects from *Blueprint Reading* to advanced construction and are supplied complete with utilization manuals.

Projection of the visual training aids is carried out by means of class groups, for the most part, although frequent mass gatherings of workers have seen war incentive pictures and special programs such as safety and health subjects. Supervisory subjects such as the Vocafilm series on *Supervisory Relations* are also widely employed for education work in that critical field.

Safety in Wartime

★ NEEDLESS WASTE of manpower and time through preventable accidents helps the enemy. To that end, safety education in wartime is a "must" in war industry and in the armed services as well.

Two recent sound slidefilms are helping the armed forces move the vital materiel of war with increased effectiveness. These are *The Know-How of Stevedoring* and *The Know-How of Handling Freight in Warehouses*. Both were produced for the U. S. Army in collaboration with Liberty Mutual Insurance Company.

Preventing Highway Accidents

A common cause of fatal accidents is careless walking along the open highways, particularly now that many service men are traveling from camp areas to nearby towns and cities. The San Diego (Cal.) Naval Training base is meeting this problem with a sound slidefilm *Death Walks the Highways*. Copies of this subject, which was produced with the cooperation of the San Diego Police Department, are on deposit at the national headquarters office of the National Safety Council in Chicago, available for loan without charge to local safety councils and to military and naval establishments interested in installing a program of this type.

Other New Safety Films

New sound slidefilms on fire prevention and on the safe operation of overhead cranes as well as sequel to *Nothing Upstairs*, a previous Safety Council subject, are now being announced for distribution.

R. C. M. production unit, with a group of California state educators, during the filming of marine machinery films for the U. S. Office of Education at the Consolidated yards.

Ben Hersh, president of R. C. M. Productions, confers with Franklin B. Judson, during production of Shipbuilding skills training series at Consolidated.

BASIC AERONAUTICAL RESEARCH in the laboratories of the National Advisory Committee for Aeronautics at Langley Field, Va., uses Ciné-Kodak to study airfoils and air currents—through "smokeflow movies" made in wind tunnels—and fuel combustion in aircraft engine cylinders. These movies, showing what the eye can't see, lead to design refinements—in aircraft and engines—which "pay out" when the guns begin to chatter or the bombs find their mark.

KEY TO SECRET WEAPONS  ... *a movie camera—*

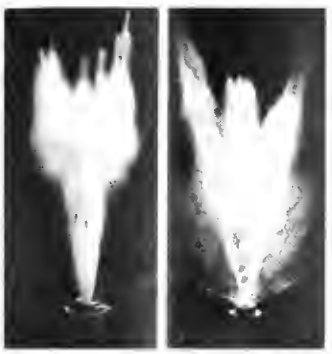
Ciné-Kodak *—which stretches split-seconds into minutes*

"WORKING BLIND" . . . trying to improve a plane or gun or projectile which moves so fast you can't see it . . . is necessarily a slow, fumbling business. In time of war, not good enough . . .

Fortunately, back in 1932, Kodak made available to our best engineering and scientific brains a new kind of eye . . . which could *see* what goes on at blinding speed in our mechanized, electrified world.

This eye was a movie camera for taking thousands of pictures *a second*—which could then be shown at normal movie speed of 16 pictures a second. It "magnified time." In the resulting movies, action which had actually occurred in a split-second was stretched into minutes.

Research scientists used these cameras to help develop faster airplanes, more powerful motors. And, with the approach of war, to find out why a machine gun "jammed"—and fix it; to "take the bugs out" of the recoil mechanisms of bigger guns; to pack a more effective "train of fire" into a contact bomb . . . examples are numbered in hundreds.



NOT "OLD FAITHFUL," but "stills" enlarged from movies made at 2500 pictures a second, showing the comparative efficiency of two designs in fuel injection jets. The superior distribution of fuel from the jet at the right—invisible without the movies—is the type of small improvement which helps our men write America's fighting record in the air.

Your 16-mm. home movie Ciné-Kodak was the "jumping-off place" in designing Eastman's super-speed movie camera, which takes 3,000 pictures a second—the film streaking through at over 50 miles an hour. The "shutter" is a spinning "prism"—speed 90,000 r.p.m.

At this incredible speed, this Ciné-Kodak makes good movies—with standard 16-mm. films, Kodachrome included, and has become a most effective military tool . . . Eastman Kodak Co., Rochester, N. Y.

REMEMBER MAJOR HENDERSON? . . . how Major Lofton Henderson, USMC, then has crippled bomber right down onto the Jap carrier's deck? And how his name was given to that bomb-scarred field on Guadalcanal? It is a stern example for us at home.

BUY MORE WAR BONDS.

Serving human progress through Photography

Above. Scene from picture **Passing the Know-How Along** (Jam Handy).

SLIDEFILMS AID PRODUCTION

BY LYNE S. METCALFE

THE PRIMARY OBJECTIVES of methods engineering studies in industry are, first, to increase the productivity of machine and operator, second, to determine the point and degree of fatigue both of which factors must be kept in proper balance if the fullest efficiency is to be attained. The elements of this science have been greatly complicated in war production because of the fact that the percentage of "green" help has risen so greatly, and the production program has increased demands in the way of speed which remained largely a secondary factor in peacetime production.

In approaching experiments and applications of modern methods engineering the objectives are:

a) Time study
b) Analysis of operations
c) Motion study

Time Lost at Outset

A very large percentage of war workers spend a far too large a percentage of their training time in learning *fundamentals*, in getting an understanding of the character and purpose of the equipment and machines they are destined to operate, and in this new field the slidefilm is rapidly taking an increasingly important place. While various types of special motion pictures have been widely and successfully used in methods engineering, only recently has the full value of the discussional type slidefilm been recognized.

Recent experiments have been revealing.

In the heavy machining field, for instance, equipment itself is usually scarce and seldom free for training or pre-training purposes, and likewise too heavy and immobile to utilize within a classroom. Yet, the primary steps in familiarizing operatives with their equipment and its purposes is that which shows them what the machine looks like, what it does, and the simple techniques of operation — in advance of actual shop demonstration and practice under supervision. It is in this field that selected slidefilms are doing a job.

Familiarity With Details

So, when the operative has once seen a slidefilm or series say on machining or benchwork, and later moves on to actual aisle practice he knows what the equipment is like, something of how it works. And when in time and motion study he is told to perform such actions as "bring up tool and engage feed," he knows what it is all about. He can more easily picture in his mind the loading of a piece, etc.

In other cases, where a machine is making a cut under power feed, he knows what to do with the resultant idle time because all that has been studied in advance by means of pictures.

Work With Time Studies

Slidefilms of the tooling, benchwork and machining type have been found to integrate very readily with time studies, analysis sheets and motion studies which are often made and used by the learners themselves. These studies have added greatly to the interest of learners in indus-

try because they interestingly analyze basic operations — something new and actually fascinating to the newcomer. This material usually is the basis of class discussions on the number, sequence and character of motions to perform a given cycle.

Use Films Early in Course

It is customary in using slidefilms for this type of training and analysis work to introduce the pictures early in the course in a quiet classroom where learners can concentrate and focus attention on the large illuminated images and make notes during and after general discussion. The discussional or reading type of slidefilm has been found superior for time and motion study work because of its greater flexibility and power to provoke and sustain discussion of vital steps and processes as well as parts and functions of machines and the formulas for their efficient use.

Generally speaking, in the machining field such a course starting with totally inexperienced help requires twenty weeks, sometimes less, sometimes more depending upon local conditions.

It will be recognized that the steps saved in the use of screen images tend to reduce the time it requires to fit the green worker for the bench or lathe is immense. The alternative, of course, would be the more tedious and expensive procedure of starting at scratch at the machine itself —a system seldom practicable in a multiple shift operation.

Visualize The Invisible

The available benchwork, tool, and machining slidefilms freely utilize the closeup type of scene to depict the machine's functions and parts and purposes for the beginner which is, perhaps, solving half of the problem of completely learning the techniques of actual operation. Pictures permit cross sections and reveal details often unseeable at the machine itself, and the learner grasps these fundamentals of construction and function at his or her ease in the quiet of the classroom.

Deal With Fundamentals

The slidefilms most commonly used for time, motion and analysis study work have been flexible enough to suit the particular situation in any plant because they deal with *fundamentals* and permit the leader or instructor to integrate the immediate local approaches of the job in his own words and in his own way.

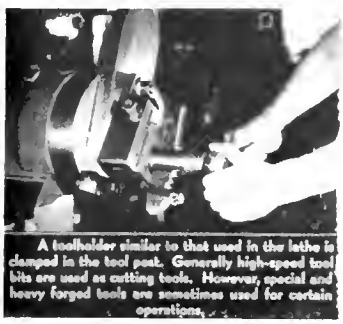
Two Kit-sets being widely used in this field are:

The Bench Work Kit-Set

This kit-set includes the following subjects: 1. *Tools;* 2. *Hand and Power Hack-Saws;* 3. *Drills and Drilling;* 4. *Reaming, Tapping and Threading;* 5. *Finishing Rough Castings;* 6. *Scraping;* 7. *Rivets and Riveting;* 8. *Layout Tools and Measuring Instruments;* 9. *Layout Work,* Part I; 10. *Layout Work,* Part II.

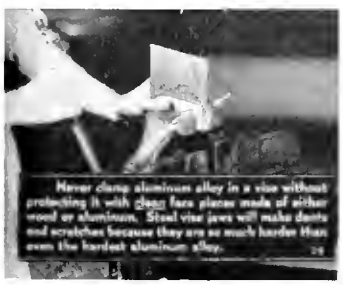
There is a total of 871 individual pictures in the benchwork series. 701 individual pictures are included in the 16 slide-films on machining, including the following phases:

1. *The Machinist;* 2. *Machine Tools;* 3. 4. *Machine Technique* (parts 1 and 2) and 5. 6. *Measuring and Measurements.* Parts 1 and 2. Slidefilms on the drill press, grinding machines, lathes, milling machine, shapers, planers and specialized machines are also included.



A toolholder similar to that used in the lathe is clamped in the tool post. Generally high-speed tool bits are used as cutting tools. However, special and heavy forged tools are sometimes used for certain operations.

Machines and machining films tie-in with analysis sheets.



Never clamp aluminum alloy in a vise without protecting it with glass face plates made of either wood or aluminum. Steel vise jaws will make dents and scratches because they are so much harder than even the hardest aluminum alloy.

Pictures like this help teach fundamentals more rapidly.

Some cutters are screwed directly onto attachments which are fastened to the nose of the spindle.

The learner unacquainted with the machine learns what it does and how it does it—more quickly by pictures.

Workers at the Lincolnwood plant of Bell & Howell turn out in full force to see movie serials at noon-hour showings

FILMS CUT ABSENTEEISM IN WAR PLANTS

THE EVER-POPULAR SERIAL thriller, so dear to our youth, has grown up and gone to war. Having brought people back to theatres for each succeeding week's chapter of breath-taking episodes serial films, together with other movie fare and war films, are now bringing workers back to war plant showings with astonishing regularity.

These war plant showings are doing a great job in plant recreation and employe morale programs. Pictures screened at recess showings, to early arrivals just before each shift goes on and at lunch hours, both relax and stimulate the workers and help immensely to prepare them for the work period ahead.

SERIALS MUST HAVE SOMETHING.

Serial episodes have been added to these plant programs and, according to Bell & Howell, manufacturers of motion picture equipment and optical devices, they out-show any other type of films used in their own plants. On the two days a week the serials are shown, the movie audience is double that which turns out for any other film and the factory theatre is crowded far beyond the door.

Titles like *Flash Gordon* and *Riders of Death Valley* share in popularity with half a hundred modern serial "thrillers" available from film library sources on a rental loan basis.

ACTUALLY REDUCE ABSENTEEISM

At the B & H plants, the serials are shown on Mondays and Tuesdays, usually the worst days of the week with regard to absenteeism. In fact, absenteeism over these two days has been reduced by fourteen per cent in comparison with a ten-week average before the serials were introduced.

Filmosound library facilities, the Bell & Howell film source widely used for educational and recreational programs, has a wide selection of subject matter especially selected and available to all other war plants. Library catalogs and special supplements list many serials and other suitable pictures, including official war films, from which programs may be selected at economical rental and handling costs. An exclusive feature of this film service is that all serials, since the outbreak of the war, are marked so that a chapter can be split over two days' showing, allowing not more than ten minutes of film for each break period.

U. S. Steel Plants See Official Army Pictures

♦ Through the courtesy of Gen. Henry S. Aurand, commanding the Sixth Service Command, previously-restricted War Department motion pictures now are being made available to the thousands of men and women employed in the Chicago district plants of United States Steel Corporation subsidiaries.

In Chicago, Gary, Joliet and Waukegan, the industrial relations departments of the subsidiary companies are undertaking systematic showing of the films so that the maximum of war workers in their respective plants and their families may have the opportunity to see the war pictured realistically. In some instances the films are being shown within the plants while in others the showings are being sponsored in the communities.

The Foremen's Club of Gary Works, Carnegie-Illinois Steel Corporation, is sponsoring the showing of the films to employees and their families of this largest steel plant in the world. The Foremen's Club maintains clubrooms in the Hotel Gary. New War Department films are to be made available for such showings as soon as they are released so that a regular schedule may be maintained.

"World Series" Available

♦ The official films of the 1943 baseball classic, *The World Series*, as produced by the American League of Professional Baseball Clubs in cooperation with sponsors, are now available for limited civilian distribution through the League's headquarters office, 310 S. Michigan Blvd., care of Lew Fonseca, Promotional Dept., Room 2120, Chicago, Ill.

SAFETY FOR WAR WORKERS

★ Figures reveal that each year in American Industry workers suffer 300,000 eye injuries, many of which incapacitate the operative, and result in a loss to employers of something like $200,000,000. Safety goggles are designed to give the worker protection from eye hazards, and they do, but too many workers wear their safety goggles over the forehead, or hang them on a convenient nail while at work.

The reason for this practice has been found to be not in the goggles themselves but in the fact that too often they are uncomfortable, and discomfort influences the worker to lay them aside at every opportunity. This situation is well known to every foreman, safety engineer and personnel manager in industries where eye hazards prevail, but many of them are not aware of the true causes.

Jam Handy, Detroit, has produced for The American Optical Company a 11 minute sound motion picture, the purpose of which is to show easy ways to select non-prescription safety goggles that fit, and then how to make sure that they fit the facial characteristics of the individual worker who wears them. The picture *Right on the Nose* has a screen time of 14 minutes, and 16 mm prints are loaned free to any employer interested. Copies for permanent use are supplied at $25 each.

The war and war production has greatly increased the use of safety goggles in factories and plants where eyes are exposed to flying chips, ultra violet and infra-red light rays, sand, dust and chemicals. But goggles are of no use when the wearer lays them aside. While discomfort is perhaps the main cause of this delinquency, poor vision as a result of improperly fitted goggles is also responsible. The film is directed to those responsible for eye protection in the plant including safety engineers, personnel people, nurses and foremen.

Amplified by a running commentary and snatches of dialog recorded on the film, closeups are used effectively to show the step-by-step process of properly fitting of the spectacle and eye-cup type goggles.

The picture is strictly an educational, containing no advertising whatsoever. Prints may be borrowed by addressing The American Optical Co., Southbridge, Mass.

S. V. E. Projectors Available

★ The entire line of S.V.E. Projectors is now available, under L-267, for purchase by essential civilians.

S.V.E. Tri-Purpose Projectors, Model DD-150 watt and AAA-300 watt, show both single and double frame slidefilms and 2″ x 2″ slides in either Kodachrome or black-and-white; these models are ideal for educational institutions. The Miniature Projector, Model AK, is widely used by lecturers and others using 2″ x 2″ Kodachrome slides.

Besides these models, S.V.E. also manufactures three Projector Models, Q, F and G, which project slidefilms exclusively and are especially adapted to industrial and commercial purposes. These slidefilm Projectors are 100-200 and 300 watt respectively and are used in all leading sound-slidefilm units.

Prospective purchasers of Projectors are required to file a WPB-1319 application, in triplicate, with the Photographic Division, Consumers Durable Goods, War Production Board, Washington, D. C. Further information may be secured from any S.V.E. dealer or from the Society for Visual Education, Inc., 100 East Ohio street, Chicago (11), Ill.

The "SRO" sign is needed when serials are shown to workers at the B & H Rockwell plant, 100% engaged in war production.

OWI WAR FILM GROUP MEETS

[illegible] of eight national [illegible] organizations comprising the newly created National Non-Theatrical Motion Picture Advisory and Policy Committee of the Office of War Information met in Washington on November 16, 1943. The Committee urged the full utilization of the existing mass media—print, radio, and motion pictures—to provide the public with complete and accurate information on war issues and war problems.

The Committee met with Stanton Griffis, Chief, Bureau of Motion Pictures of the Office of War Information, and C. R. Reagan, Head, Non-Theatrical Division, and with members of the Bureau Staff as well as representatives of other Federal Agencies.

Conclusions Are Given

The Committee, declaring its function to be to express broad and general policies believed to be in the interest of the most effective production and utilization of 16mm films in disseminating war information, reached the following conclusions:

1. While the limited number of 16mm war information films available from war agencies have contributed to a better understanding of war problems and issues, the schools, churches, lodges, men's and women's clubs, labor and industrial organizations, and other educational, civic and cultural groups owning over 25,000 sound projectors demand more factual films which treat in a more realistic fashion combat reports, war bonds and inflation, manpower and increased production, health, conservation, and salvage, food and nutrition, juvenile delinquency, and other vital war problems.

2. To achieve maximum effective distribution and utilization on a nation-wide basis, and avoid confusion, contradiction and duplication, all official government war films for the civilian home front should be channeled through the Office of War Information to all existing 16mm distributors on the same non-exclusive basis as used in the distribution and dissemination of official war information through 35mm films, press, and radio.

Intensified Use Urged

3. An intensified use of non-theatrical motion pictures and complete mobilization of all 16mm sound projectors in the nation for the war information program were recommended. Since records for the past sixteen months prove conclusively that those states which have set up statewide organizations including state and local war film coordinators have achieved best results, this Committee recommends that this procedure be extended to other states. The Office of War Information, the eight national associations represented here, and all distributors of war films should make every possible effort to inform the American public more fully of the availability of non-theatrical war films through the press, radio, house organs, and posters.

4. Public libraries and other civic leaders should encourage war film forums. Suggested plans and procedures on film forums should be widely distributed.

5. Since the U. S. Government is about to launch the Fourth War Loan Drive, it was resolved unanimously that the agencies represented contact directly and through their membership all distributors of 16mm films throughout the country, and urge each of them to cooperate to the fullest possible extent with local War Bond Committees in supplying them with films, projectors, and projectionists to increase payroll deductions and to sell more and more bonds. It is further resolved that a copy of this resolution be sent to Ted R. Gamble, National Director, War Finance Division, U. S. Treasury, and that sufficient copies of this resolution be supplied to the War Finance Committee of the U. S. Treasury to send to its 31 offices throughout the country.

6. The Committee further recommends that OWI provide distributors with appropriate trailers or news bulletins on urgent war issues to be attached to programs designed for general audiences.

7. It further recommends that the necessary number of prints of selected government war films remain with distributors for historical reference, and that lavender duplicating prints be made and stored in vaults for the purpose of making negatives and prints therefrom at any time in the years to come.

8. To provide for the most effective use of war films and to minimize any curtailment of distribution and utilization, this Committee recommends that the existing service charge be reexamined by the Office of War Information. Recommendations resulting from this survey are not to become effective before July 1, 1944.

Committee Members Named

The members of the Committee attending and the organizations which they represented are as follows: L. C. Larson, Chairman, Educational Film Library Association, Indiana University, Bloomington; W. K. Hedwig, Allied Non-Theatrical Film Association, New York City; Miss Mary U. Rothrock, Audio-Visual Aids Committee, American Library Association, Knoxville, Tennessee; J. M. Stackhouse, National Association of Visual Education Dealers, Richmond, Virginia; Bertram Willoughby, National War Committee for Visual Education Industry, Chicago; George B. Zehmer, National University Extension Association, University of Virginia, Charlottesville.

The above named persons including Mrs. Camilla Best, Department of Visual Instruction, National Education Association, New Orleans, and O. H. Coelln, Jr., Editor, Business Screen, Chicago, who were unable to attend, constitute the National Advisory and Policy Committee, composed of the heads of the eight national associations concerned with the distribution and use of 16mm motion pictures. Mrs. Best was represented by Miss Helen Hardt Seaton, American Council on Education, Washington, D. C. Miss Mildred Batchelder, American Library Association, Chicago, also attended.

A special luncheon program in honor of this Committee was arranged by the Washington War Visual Workers at their regular weekly luncheon on November 16th. Representatives of the various branches of the Federal government and the United Nations participated.

EQUIPMENT NEWS & COMMENT

DeVry Releases Its Patents To Meet Armed Forces Needs

In observance of the 30th anniversary of its founding, and the 67th birthday anniversary of the late Dr. Herman A. DeVry, its founder, DeVry Corporation, Chicago, announces the conclusion of arrangements whereby several of its patented projector mechanisms are released for manufacture for the Armed Forces.

To Meet War Demands

DeVry's president, W. C. DeVry, explains the corporation action in the fact that the U. S. Army, Navy and the British Admiralty need patented DeVry equipment in larger quantities and at a rate of production in excess of one company's capacity to produce. Rather than expand its own facilities at the expense of time, critical machinery and government funds, DeVry released its patents to subcontractors royalty-free for the duration. DeVry is currently celebrating the receipt of a white star for its Army-Navy "E" pennant, indicating continued excellence in producing motion picture sound equipment and electronic training devices.

Founded Thirty Years Ago

DeVry Corporation was founded 30 years ago—in 1913—by Mr. DeVry's father as an outgrowth of his development and manufacture of the world's first portable motion picture equipment—a 35mm "suitcase projector," which Dr. DeVry designed and built to take the entertainment and teaching benefits of motion pictures out of the theatre to the crossroads and classrooms of the world.

In addition to being responsible for many important developments in motion picture projector design and manufacture, Dr. DeVry was also a pioneer of visual education by means of motion pictures, which authorities agree are speeding troop training 40 per cent, and materially accelerating the schooling of production workers on new skills and techniques.

On S. M. P. E. Honor Roll

Dr. DeVry was born on November 27, 1867. He died in 1941—the fifth American and the first Chicagoan to be awarded a place, with Thomas A. Edison and George Eastman, on the international honor roll of the Society of Motion Picture Engineers.

New Eastern Headquarters for Victor in New York

♦ The new office quarters, projection salon, and service department of Victor Animatograph Corporation's New York City Branch is now located right in the "heart of Manhattan"—convenient to subways, surface lines, railroads and parking facilities.

Hundreds of new users of Victor motion picture equipment have so taxed the former facilities that these new and finer quarters were deemed necessary. The popularity of the Victor line among military, industrial, school and other types of users, especially during this war emergency, has brought many new requests to Victor for advice and guidance. To these hundreds of new users' needs Victor has responded with the finest facilities now available on the East Coast.

Facilities for Projection

Anyone in need of projection facilities while in New York City is cordially invited to make use of the new 16mm projection salon.

Mr. Horace O. Jones, the Eastern Manager for Victor, is already established in the new quarters and is completely equipped to give all types of assistance in connection with 16mm Motion Picture Equipment and visual and audio-visual communication. He invites your early inspection.

The new Victor telephone number in New York City is LOngacre 3-2265; 3-2266; 3-2267—the new address is McGraw-Hill Bldg., Suite 2715, 330 W. 42nd St.

An Essential War Film

♦ *Save Those Tools* is the title of a one-reel, black and white, sound motion picture now being distributed by the International Harvester Company, 180 North Michigan Avenue, Chicago, Illinois. The picture shows how this particular company's own tool salvage program was organized and its functioning methods, from salvage at individual plants to the central clearing house for the utilization of excess and obsolete tools. Emphasis is given to a low-temperature brazing process of repairing broken or damaged tools of various kinds, including reamers, drills, slitting saws, broaches, hobs, and milling cutters. Regrinding of tools to smaller sizes or reworking to different types is also treated.

Continued from Page 31

with other [illegible] and shows how to cut [illegible] a lathe. Also shown are how to set up for thread cutting, how to check the shape of the thread being cut with a gage, how to set the tool, and how to use the thread dial indicator. Slow motion is used to emphasize the skill required when releasing the threading mechanism and backing off the tool from the cut. The use of the thread pitch gage to check the pitch of the thread and the use of the thread micrometer to measure the diameter of the work are demonstrated. The film closes with a review of the important steps to be followed.

Jobs 6-H and 7-H required turning of tapers by methods other than that of Job 1-H: in Job 6-H a .600 Morse taper by the use of the taper attachment, with only one trial allowed, and in 7-H two tapers with the compound rest. One was an internal taper of 30 degrees, the other an external taper of 45 degrees. Both methods were covered in the film, *Cutting a Taper with the Compound Rest and with the Taper Attachment*. Use of the compound rest is demonstrated in turning a steep taper as on a bevel gear, and the use of the taper attachment for slight tapers is also shown. Animation is used with a detailed discussion, to teach the correct methods for setting the compound rest at a given angle. Animation, and views of the actual operations show the setting of the taper attachment for cutting a taper of 1½ inches per foot. The film includes full directions for setting the tool, and for the use of both roughing and finishing tools; the bevel protractor is used to measure a steep taper, and a taper ring gage is used to measure a slight taper.

Advanced Shop

♦ Job 1-V required truing, facing and centering with dial indicator and steady rest. This project was acceptable only if the work did not run more than .002 inch eccentric. Motion picture demonstration was furnished by a portion of the film, *Height Gages and Standard Indicators*. Less than half its eleven-minute length was required. Use of standard indicators was given for checking the accuracy of layout, the flatness of a surface, and the centering of work. It is emphasized that care is required to maintain the accuracy of these tools.

Jobs 2-V and 3-V required turning left and right-hand V threads, six to the inch with the usual tolerance of [illegible] inch. Diameters were measured by the three-wire method. Much useful material for this job was found to be available in the film, *Cutting an Acme Thread*, which runs seventeen minutes.

Job 3-V required drilling and boring straight holes in 1½ inch stock, with each diameter .050 inch larger than the preceding. Five trials were required. Acceptability was judged by plug gage; tolerance .0005 inch. The film used, *Drilling, Boring, and Reaming Work Held in a Chuck*, demonstrates in eleven minutes skills rather more complex than required for Job 3-V; since it deals with taper holes, as cut in solid gear blanks. It shows centering the stock, rough facing, drilling, taper boring and reaming. Also demonstrated are the selection of the proper drill, the various methods of centering the drill in the work, setting the taper attachment for boring a tapered hole, use of the taper reamer for finishing the hole to size, checking the size with taper plug gage, and precautions to be observed in using such gages.

A third film not considered as special preparation for any job was shown in the advanced shop; namely, *The Vernier Scale*. It is similar to *The Steel Rule and The Micrometer*. All films were shown only to the experimental groups; none to control groups.

MEASURING FILM USEFULNESS

Keeping the Time Records

Since the efficacy of the motion picture film as an aid in training was to be judged primarily by the improved speed of turning out acceptable products, correct timekeeping was a vital part of the research. In this the instructors cooperated diligently. On each trainee's blueprint of the required project were blanks for entering his starting and finishing time to the nearest five minutes, and blanks for noting any "time off" for tool sharpening, breakdown of lathes, interruptions for lectures, and the like. These time records were inspected as carefully as were the actual pieces of lathe work.

A second time record was kept as a partial check on the students' individual records. Each class had a group time sheet for every day. On it also, each trainee entered his beginning and ending time, and "time off" periods. One student in each group was placed in charge of this record sheet and helped the instructor see to it that time was faithfully recorded.

Equating of Groups

As has been indicated previously, the difference in speed obtained, between the experimental and control groups, was computed on the basis of each individual's average performance, and not on the total number of parts turned out by the whole group trained with motion pictures as compared to those trained without. There was no need, therefore, to have exactly the same number of trainees in the two groups, at any time, in order to preserve accuracy.

However, the experimenter was determined to leave no stone unturned to control every discoverable factor, however slight, which might form a source of difference between the output rates scored by the experimental group of trainees and the rate scored by the control group, except of course the source being studied—that one group viewed the motion pictures while the other did not.

With this in view, such familiar data as age, sex, and previous education and experience, was gathered from each individual at the outset. Going further, each individual was subjected to a number of recognized aptitude tests. The scores in these tests, as well as age and years of education, were correlated with the time scores made by each individual on the lathe work itself; that is, with an over-all score based on the average time required by each trainee to complete each trial of

each job, which passed inspection.

The Equating Factors

Only a very slight correlation was found between the trainees' performance on lathe work and their ages, or their previous education, or even some of the approved aptitude tests; that is, these factors appeared to have little influence on the marks they attained in the lathe-work training course. On the other hand, a correlation of approximately .20 was found with the Purdue Test for Machinists and Machine Operators, and of .35 with the Purdue Industrial Training Classification.

Motor Ability Test

The highest correlation of all, .41, was found with a test of "motor ability" designed by the experimenter himself, following an idea which he gained from Clark L. Hull (*Aptitude Testing*, 1928, page 63). This test made use of a device constructed for the purpose, and illustrated later in this study.

A mechanical pencil was held vertically by a steel rod bolted into the tool post on the compound rest of an engine lathe. A drawing board was bolted in position on the ways of the lathe. By turning the two wheels on the compound rest it was possible to make the pencil follow around a two inch circle tacked on the drawing board. The student was instructed to "make the pencil follow around the circle in the shortest possible time without getting any farther from the circle than necessary," and the manner of turning the wheels so that the pencil would follow the circle was demonstrated. Each trainee's success in the test was scored by means of a piece of ground glass bearing concentric circles. That these scores went so far to predict the relative proficiency which would be demonstrated by these individuals in their lathe work training, strongly suggests that some such test might form a highly valuable aptitude-testing device if developed to precision standards.

Only the three factors mentioned were employed in equating the groups for the output-speed comparisons, though others were used also in equating for informational gain—a secondary object of inquiry, also reported on below. Actually, however, initial differences between averages of the two groups were very slight in any factor.

Film Technique

Any evaluation of a motion picture or series of them is equally an evaluation of a method of film utilization. Consequently the technique of film use employed will be described in some detail.

The specific methods of utilization of films varied from time to time in response to the many changing factors that appear in dealing with human beings. It is probably safe to say that no two film showings were exactly the same. There were, however, a number of general principles of film use that were followed throughout the experiment.

Integrated Film Use

Ideally, film lessons should be timed to come at the point in the student's progress at which they will be most helpful. Consequently, an effort was made to show a film on any given lathe operation just before the trainees were ready to start practicing that operation. Conversely, the class was never kept waiting for a film lesson when the members were ready to start applying it.

Naturally, there was a tendency for the film lessons to be timed less well for the very fastest or the slowest workers. The average, of course, set the learning pace. However, this difficulty could not occur at the beginning of a training period, and the fact that the six-weeks course was divided into three intervals prevented any serious difficulty in timing film lessons to suit the needs of all students.

It is difficult to place too much emphasis upon proper timing of film lessons. It has been noted that there is a strong temptation in many industrial plants to follow the administratively convenient plan of lumping large units of film lessons together. All too often "visual education" is accomplished by gathering together two or three hours' worth of training films and showing them to all personnel regardless of what machines they are operating and how much experience they have had. In the present research no film showing lasted more than twenty-five minutes.

* * *

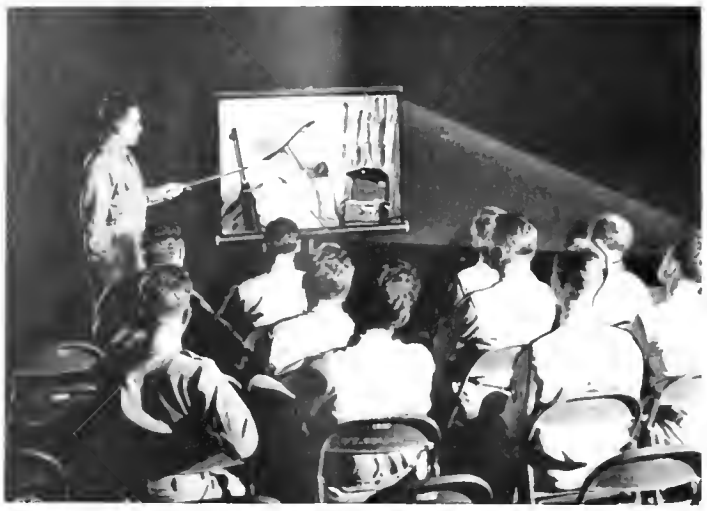
Editor's Note: Part Two, completing our review of this study will be presented in the next issue of Business Screen.

* * *

Films on Office Practice

♦ Eight 16mm sound motion pictures on *Office Practice* produced by the armed forces are available at footage costs from Castle Films, Inc., official distributor. Subjects include typing, shorthand, office machines and transcription.

THE ARMY MAKES FILMSTRIPS



Self-critics, the staffmen of the film strip section at Fort Monmouth look at one of their finished products. They are proud of the high caliber of their work and look carefully for further improvements. Lt. M. I. Warshow points the stick to call attention of the men to one part of the frame.

[illegible] known as [illegible] the visual [illegible] department of [illegible] at Fort Monmouth [illegible] they are the guys who [illegible] training film strips so that [illegible] becomes fun.

The film strip, which functions as a silent slide motion picture, is one of the army's most effective means of training men in technical and specialized duties. It is easy to learn from the film strip, which can be used practicably in the field and in the classroom. The film fits into a metal capsule which can be carried in a back pocket, and its projector folds into a case not much larger than a woman's handbag. A sheet, blanket or wall may be used as an improvised screen.

Shows 60 Frames

In projection, the film strip shows about sixty "frames." Each frame is designed to present a definite point for the soldier's benefit. Back of the film lies the work of numerous artists, photographers, writers and technical experts working together as a closely knit team.

After the subject to be portrayed on the film strip is selected, the artists go to work. They make layouts for each individual frame according to the specifications of the script, maintaining technical accuracy. After the layouts are approved by the supervising officer, Lt. Martin I. Warshow, they are turned over to the Signal Corps photographers, who shoot the pictures in the way the artists have conceived the ideas. All the camera work takes place in the vicinity of the post, but an impression of front line location is achieved. Live models, picked for their photogenic qualities, are used. They are enlisted men who understand the subject for which they are posing.

After the prints are made, they are turned back to the artists for retouching. In this work, they employ the air brush, an instrument requiring delicate skill. When the art work is finished, the product is more suitable for reproduction than the original photo. Often the artists change backgrounds in order to bring out more graphically the lessons represented on the original frames. They add cartoon figures and animature cutouts for humor and liveliness.

Checked for Accuracy

The [illegible] are checked against [illegible] complete technical correctness. They are then edited, cut or added to [illegible] Hollywood. Then the film goes to Washington for final War Department approval. Printed on 35mm films, the production is earmarked with a series number and is released for distribution to the branches of the service for which they have been made.

Many new techniques are being employed and perfected by the men of the film strip section. Especially interesting and effective is their usage of three-dimensional photography. Art work, in this technique, becomes a necessary part of the composition.

The personnel of the art studio might well give Walt Disney's staff a few pointers. Heading the soldier artists is Sgt. Carlos Richmond, who in civilian life was a successful commercial artist. Sgt. Karl Gutberlet, now doing layouts for the film strip section, was also well known in the commercial art field. Sgt. Wilbert Avery Slack, chief photographer, was a top-flight photographer and winner of many contests before joining the army.

Gremlins — good and bad — are portrayed by small cartoon figures cut out of cardboard. The good ones typify efficient soldiers and the bad ones show the sad effects of indifference and improper procedure. They serve to inject life into otherwise unappealing technical facts. Most of the gremlins are conceived and produced by Cpl. Frank Antoncich.

The work of the Signal Corps officers and men in the film strip section helps to increase the efficiency of specialized soldiers throughout the army. Their amusing and educational pictures may be flashed on the screen in classrooms or near the battlefields where fighting technicians pause to study the intricacies of a new piece of equipment.

The Old Army Game

♦ Visual Aids are constantly gaining greater recognition, but occasionally there is a miscue in it somewhere. Take the case reported by YANK, the Army Weekly. During a severe rainstorm one night recently at Camp Davis, N. C., the AAA School's Visual Aid Department got this phone call: "Something has happened to my windshield wiper and I can't see a thing due to the rain. What should I do to aid my vision?"

* * *

♦ A complete list of Motion and Time Study Films especially useful to war industry is available from the Industrial Engineering Film Library, the University of Iowa, Iowa City.

THREE-DIMENSION LEARNING

MILITARY navigation students are now being trained by a new technique which teaches them more quickly than ever before to steer by the stars. The new technique eliminates the need for training students to interpret depth in flat charts and diagrams by presenting life-like pictures of models of the heavens and the earth in three dimensions. Recently perfected by Professor John T. Rule, Chairman of the Section of Graphics at the Massachusetts Institute of Technology, the speedup technique is made possible by Polaroid three-dimensional pictures known as vectographs, it was revealed publicly this month for the first time.

REAL LIFE DIMENSION

Prepared as slides for projection by standard projectors on a classroom screen, the vectographs are so strikingly realistic that an instructor walking into the beam of a projected vectograph of the earth appears actually to be walking into the center of the earth. Students feel they are looking at precise wire models of the heavens with relative positions of the stars and the earth immediately apparent.

REPLACES OLDER METHODS

Before this new three-dimensional technique was introduced, instructors customarily attempted to teach students to read depth into chalk drawings on a flat blackboard. Many students, however, were unable to master this essential part of the training, and were unable to become navigators for this reason. With the new three-dimensional technique in use, it is no longer essential for a navigation student to possess the ability to read depth into a drawing on a flat blackboard because the depth element actually is present in the three-dimensional picture.

The technique of preparing three-dimensional projection slides of the heavens is similar to the geometry instruction technique developed by Professor Rule in 1931. At that time, he was one of the first college instructors in the country to utilize three-dimensional projected pictures for teaching geometry. According to Professor Rule, celestial navigation vectographs "teach students, easily, to see and think three-dimensionally. Everything else being equal, a student trained with celestial navigation vectographs is bound to learn more readily about navigation than one trained only with the aid of ordinary flat diagrams."

In the old days, a stereoscope was the only practical three-dimensional viewing device. Its complicated optical system permitted only one person at a time to view a picture in three dimensions. A three-dimensional vectograph, however, can be viewed even by a large group of people simultaneously. For example, a navigation instructor can now project a vectograph slide of the Zenith of Greenwich on a screen and know that those in the back row of the classroom can actually see its precise position in the universe.

INVENTION OF EDWIN LAND

The vectograph process is the invention of Edwin H. Land, President of Polaroid Corporation, and Joseph Mahler. A three-dimensional vectograph is a specially treated plastic sheet. On it, two pictures occupy the same space at the same time. Polarizing three-dimensional viewers unscramble the superimposed pictures to re-create the normal condition of effortless three-dimensional seeing.

M. I. T. Professor John T. Rule examines globe which serves as a photographic model for three-dimensional pictures which he uses in new technique to speed up the training of military navigation students. Already adopted to teach students more quickly than ever before to steer by the stars, the speedup technique is made possible by Polaroid three-dimensional pictures known as vectographs. An instructor walking into the beam of a three-dimensional vectograph of this globe projected on a screen appears actually to be walking into the center of the earth itself

NEWS OF THE ASSOCIATIONS

[illegible] follows [illegible] the film [illegible] *Production* [illegible] and slidefilms; *Production*, the manufacture of visual equipment and essential accessories; and *Distribution*, the sales and service outlets of the industry.

During 1943, the organization of these branches of the visual industry proceeded with satisfying initial results. The wartime problems of the film producer and the equipment manufacturer required a sharing of experience and a common understanding of wartime problems. The visual dealer, hard hit by wartime drains on stock and personnel, served the nation well in the distribution of government training and informational subjects, maintained and serviced existing equipment and benefited by special dispensation granted this essential medium by the War Production Board.

AN INTERDEPENDENT INDUSTRY

Film production depends on the quality and quantity of available projection equipment; the projector manufacturer sells to the company or school who possesses an adequate supply of films. The dealer's livelihood depends on the efforts of both of these basic suppliers and on his specialized experience in this wholly specialized field. In 1943 the real knowledge of this inter-dependence was a basic factor in organization.

Further realization that the visual medium and those who serve it are a world apart from the photographic industry which serves the amateur was not so clearly understood. The special WPB orders providing for sale of visual equipment to essential outlets such as war plants, training schools, institutions and government agencies was badly interpreted by the retail photographic field. The hope of something to sell after months of depleted stocks was encouraged by press misinterpretation to an unfortunate degree since not one-quarter of the retail photographic dealers had either the stock or the experience to serve these limited "essential" outlets. Although the potential sales field was fairly generous, equipment supply was actually very limited and, by right of experience and specialization, was the rightful province of the visual dealer specializing in such service.

Visual Equipment Companies Studying Industry Organization

♦ A special committee selected at the Visual Industry Forum held in Chicago last November is preparing a fairly comprehensive study of the aims and objectives of this branch of the visual field for presentation to another combined meeting of the industry, scheduled for January.

Companies active in this program include the experienced and specializing firms who provide by far the major part of the 16mm sound motion picture projectors, filmstrip equipment and projection screens for educational and industrial use.

Regional Meeting of Film Producers in Chicago Soon

♦ The National Association of Film Producers (for Education and Industry) now comprising nearly thirty companies specializing in this field, will hold a regional meeting of the midwestern membership in Chicago the third week in January.

A program of activities for the coming year has been prepared for review by this regional group and will be submitted simultaneously to other regional meetings of Eastern and Pacific Coast groups. A national meeting of the entire membership has been postponed in the interest of wartime travel restriction and because a great majority of the member companies and their executives are engaged in the most extensive war film production programs ever undertaken.

Visual Education Dealers Also Plan Chicago Meeting

♦ Officers and members of the National Association of Visual Education Dealers plan to meet in Chicago on or about January 10 at the Morrison Hotel, according to advices received from D. T. Davis, Secretary-Treasurer of NAVED.

NAVED is now represented in forty-one states, Hawaii and Canada through its membership of one hundred and fifty-seven voting, associate and advisory members. J. M. Stackhouse was recently reelected president and Merriman Holtz is vice-president. R. F. O'Neil, Bernard Cousino, Milton Hill, and Earl Carpenter, were reelected members of the Board of Directors.

Paul Brand, Washington, J. E. Foss, Pittsburgh, and Jasper Ewing, Baton Rouge are new members of the NAVED Board.

Agfa Ansco Changes Name to Ansco

★ America's oldest manufacturer of photographic materials has changed its name from Agfa Ansco to Ansco. This announcement was made jointly by George W. Burpee, President of General Aniline & Film Corp., the parent organization, and G. Harrison Echols, Ansco's General Manager. The change in the company's name became effective January 1.

The name change is the final step in a planned reorganization of the company which began when its ownership and management were assumed by the United States Government shortly after America entered the present war.

In recognition of the fact that the organization is not associated in any way with any other company whose products carry the name "Agfa", it was decided to revert to the name "Ansco", by which the company was known for many years.

Ansco was founded in New York City more than one hundred years ago by Edward Anthony. In 1902 the Anthony organization was combined with the photographic division of the famous Scovill Mfg. Co.

Sight & Sound

(CONTINUED FROM PAGE TWELVE)

industries, too, but training aids were on the way up in executive recognition there.

This was and remains 1943. The real fight is still ahead. We sparred successfully through the opening rounds of the war after a bad start through a sneak punch by the Jap. Now, in the war, as in the field of visuals, we are going to prove that we had real stuff inside.

It goes without saying that all of us realize that not only the test of battle but the hopes and ambitions of the great future of the visual medium lie just ahead in 1944. This is our year of challenge and opportunity. *Let us go forward to meet it.* OHC.

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers stand ready to provide products and services required for your film program—in industry or education. A majority of these companies also provide projection service for local and regional showings, equipment repair and maintenance, film rentals (industrial, educational and entertainment subjects) as well as the film productions of the armed forces and U. S. Government agencies, including the U. S. Office of Education. Your visual education specialist can help—whatever the visual problem!

NORTHEASTERN STATES

CONNECTICUT

Hebert Studios, Inc., 54 Allyn St., Hartford 3, Conn.

MARYLAND

Kunz Motion Picture Service, 432 N. Calvert St., Baltimore, Md.

Stark Films, 537 N. Howard St., Baltimore 1, Md.

MASSACHUSETTS

Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE

A. H. Rice and Co., Hollis, N. H.

NEW YORK

Buchan Pictures, 79 Allen St., Buffalo, N. Y.

King Cole's Sound Service, 203 E. 26th St., New York City.

John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA

Kunz Motion Picture Service, 1319 Vine St., Philadelphia, Pa.

SOUTHERN STATES

GEORGIA

The Distributor's Group, Inc., 756 W. Peachtree St., N.W., Atlanta, Ga.

LOUISIANA

Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

NORTH CAROLINA

National Film Service, 14 Glenwood Ave., Raleigh, N. C.

TENNESSEE

Frank L. Rouser, P. O. Box 2107, Knoxville 11, Tenn.

VIRGINIA

National Film Service, 309 E. Main St., Richmond, Va.

MIDWESTERN STATES

IOWA

Pratt Sound Film Service, [illegible] Third Avenue, S.E., Cedar Rapids, Ia.

KANSAS-MISSOURI

Kansas City Sound Service Co., 928 McGee St., Kansas City, Mo.

KENTUCKY

D. T. Davis Co., 231 W. Short St., Lexington, Ky. (Also Louisville, Ky.)

MICHIGAN

Cosmopolitan Films, [illegible]4a Grand Ave., Detroit 7, Mich.

W. D. Engleman Co., 771 W. Warren Ave., Detroit, Mich.

MINNESOTA

Film Preview, 1906 Hennepin Ave., Minneapolis, Minn.

OHIO

Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio.

Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.

Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

WISCONSIN

Photoart House, 844 N. Plankinton Ave., Milwaukee, Wisc.

SOUTHWESTERN STATES

OKLAHOMA

H. O. Davis, 522 N. Broadway, Oklahoma City, Okla.

TEXAS

Visual Education, Inc., Twelfth at Lamar, Austin, Texas.

PACIFIC COAST STATES

CALIFORNIA

Donald J. Clausonthue, 1629 N. Craig Ave., Altadena, Calif.

Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.

Photo & Sound, Inc., 153 Kearny St., San Francisco, Calif.

Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Calif.

OREGON

Moore's Motion Picture Service, 30[illegible] S. W. 9th Ave., Portland, Ore.

WASHINGTON

Rarig Motion Picture Company, 5514 University Way, Seattle 5, Wash.

CANADA

Vancouver Motion Pictures, Ltd., Film Exchange Building, Vancouver, B. C., Canada.

HAWAII

Motion Picture Enterprises, 121 S. Beretania, Honolulu, T. H.

CAMERA EYE

A PAGE OF EDITORIAL COMMENT AND REVIEW

Acquisition of Erpi Classroom Films Inc. from Western Electric Company by Encyclopaedia Britannica Inc., was announced December 3rd by William Benton, chairman of the board of Britannica, and vice-president of the University of Chicago, to which the 175-year old publishing organization was given last January by Sears Roebuck & Company. Included in the transfer are the negatives and prints of Erpi's complete production of over 200 educational subjects in sixteen fields of knowledge.

Executive Personnel Unchanged

The policy and personnel of Erpi Films, of which L. C. Shumaker is president and chief executive officer, will continue unchanged under Britannica's ownership, Mr. Benton said. Selling policies will remain as in the past, with sales of the classroom films being handled through the sales organization under the direction of H. C. Grubbs, vice-president.

"The management and personnel of Erpi Classroom Films are very happy to become identified with the Encyclopaedia Britannica and the University of Chicago, for we feel this association will enable us to make an even greater contribution to education than in the past," Mr. Shumaker said yesterday.

Britannica Facilities Noted

In announcing the acquisition of Erpi Films, Mr. Benton said: "Last January, when Sears Roebuck & Company made the gift of Encyclopaedia Britannica Inc., the University welcomed it not only because of the world-wide importance of the Encyclopaedia Britannica itself, but also because the Britannica organization offered facilities for extending the University's educational ventures in other fields.

"The purchase of Erpi Films is a natural and logical phase of this extension of Britannica as an educational organization allied to the University. The University recognized the importance of educational sound films in 1932 by entering into a contract with the Erpi Films, and approximately [illegible] films have since been made [illegible] with members [illegible] Hoyt, who [illegible] to use its resources and knowledge to develop an educational tool which expands the range of material available to the teacher as no other device can do."

In Accordance With Bell Policy

Sale of Erpi Films to Britannica is in accord with Bell System policy, C. C. Stoll, president of the Western Electric Company, of which Erpi Films has been a subsidiary, said yesterday.

"Erpi Classroom Films," he said, "was organized in 1929 for the purpose of developing the utility as a media in educational processes of the new form of communication, the sound motion picture, which had been perfected by the Bell Telephone Laboratories and successfully employed on a large scale by the entertainment industry.

"In the intervening years the Company has carried forward the development of techniques for making and using sound pictures as an aid to education and has accumulated a large library of films for classroom instruction which are now in wide use.

"The effectiveness of the new media having been successfully demonstrated, it now becomes possible for the Western Electric Company to carry out its original intention of transferring this activity to an institution closely identified with the educational field. This has been accomplished through the sale of Erpi Classroom Films to the Encyclopaedia Britannica, which, through its affiliation with the University of Chicago, will make possible the full development of the activity under ideal educational auspices."

New Directorate Named

The board of directors for Erpi Classroom Films Inc. will be the board of Encyclopaedia Britannica Inc. with the addition of Mr. Shumaker, who also will go on the board of Encyclopaedia Britannica Inc. The two boards will consist of Mr. Benton, chairman, E. H. Powell, president of Britannica, Robert M. Hutchins, Paul G. Hoffman, Henry Ford II, M. Lincoln Schuster, Mr. Shumaker, and John Stuart.

The Erpi Films' library, which is now extensively used in classrooms throughout the United States and in many foreign countries, embraces the fields of American history, animal life, art, astronomy, athletics, chemistry, child growth and development, geography, geology, human biology, music, physics, plant life, natural and social sciences, social studies, and teacher training.

Dowling Joins Tradefilms

♦ Pat Dowling, industrial film producer, has joined the staff of Tradefilms, Inc., the producing organization headed by Shirley C. Burden.

Dowling comes from Douglas Aircraft Company, where he was managing production of training and public relation sound films. He was formerly an independent producer in Hollywood for the last 15 years.

In Support of Learning

♦ How adequate schools, adequately equipped, and better paid teachers bring a dollar and cents return to community, state and nation, is the theme of a new sound motion picture, *Where Dollars Make Sense*. Production of this motion picture has been assigned to The Jam Handy Organization, Detroit, by its sponsors — the National School Service Institute.

Upon completion, prints or copies in 16 mm. will be made available for showings before special groups, including PTA, business men's and business women's clubs and organizations, tax-payers, and civic groups. The picture dramatizes the new and growing needs of schools to provide the kind of education the community must have to meet the new demands inevitable in the postwar world.

Marines Break Tradition

♦ Women Marines, being trained to release men Marines in most types of noncombatant jobs in the United States, are entering another field—that of sound picture projectionists.

The first woman Marine assigned to this new field, Private First Class Lavonne Laura Stoneback, 21, Madison, South Dakota, has reported for training at the Navy Yard, New York, New York.

Eventually, some 75 women will be trained as projectionists and will be assigned generally at Marine posts and stations. Upon completing the 8-week course at the New York school, Private First Class Stoneback will be assigned at Marine Corps Headquarters, Washington, D. C.

The training course includes the physics of sound and light, a study of generators, condensers, motors and transformers, the care, upkeep and adjustment of projectors, and an intensive study of sound track, synchronization, photo tubes, photo cell transformers, static characteristics, amplification factors, and the theory of the beam power tube.

Upon completion of this course, women Marines will be thoroughly equipped to operate and make minor repairs and adjustments on sound motion picture equipment, repair faulty sections of film, and clean and oil equipment. They will be rated as qualified operators of Navy motion picture equipment.

A Picture We Needed

♦ *Points for Pedalers*, a new sound motion picture designed to help more than 12,000,000 American cyclists to get greater pleasure and mileage from their bicycles, has just been produced and released by the Aetna Life Affiliated Companies of Hartford, Conn.

Approved by the Bicycle Institute of America, the picture shows the vital part that bicycles are playing in relieving wartime transportation problems but warns that unless bicycles are maintained and handled properly, accidents will occur.

Strict observance of traffic rules is just as important to cycling as it is to safe driving or walking, and *Points for Pedalers* shows specific safe-cycling pictures, including proper hand signals, control of bicycles in slow traffic and methods of crossing busy intersections. The film also stresses the importance of keeping bicycles in good mechanical condition and demonstrates a practical test of cycling ability.

Points for Pedalers, which runs approximately 11 minutes, may be borrowed without charge for showings to schools, PTA clubs, civilian defense and other groups.

The of the Mind

NATURE has endowed Man with two effective methods of acquiring knowledge: through the ear; and through the eye—the "periscope" of the mind.

Just as travel, the art of *seeing* things—and not merely *reading* or *hearing* about them—makes the most *lasting* mental impressions, so does the *visual* method of teaching register quickest on the human brain, and normally *lasts longest.*

It has been our province for twenty-five years to specialize in the *seeing* method: to create, produce and distribute those *pictured subjects* which teach and imprint lasting impressions upon the mind.

Through the years, working closely with America's foremost educators, we have built up the largest and most-varied collection of slides and filmstrips in the world. Virtually every subject needed for the expansion of *remembered knowledge* has been included.

So today, abreast of every advancement in the art of *visual education*, it is our privilege to offer to all teachers, civilian or military, the most comprehensive and complete line of Visual Aids ever assembled. Illustrated catalogs, departmentalized under headings for all classrooms, are available and will be sent free for the asking.

For quicker learning—use visual aids
For quicker victory—buy war bonds

Official U. S. Navy Photograph

SOCIETY FOR VISUAL EDUCATION, Inc.

100 EAST OHIO STREET • CHICAGO 11, ILLINOIS

To Each Other*

To each other, you and we have pledged our lives, our fortunes and our sacred honor for victory in the defense and preservation of our form of government. In this course and to this end, since the men and management of the United States Steel Corporation are making a contribution which underlies the efforts of other men and other management wherever metals are fabricated and fashioned.

Now the United States Steel Corporation has made another contribution to perfection in the field of alloys—this time in the alloy of mettles as well as metals.

Vividly concrete and specific but strongly inspirational and sentimental is the stimulating sound motion picture "To Each Other" being put before men of metal and other men of mettle throughout the nation.

We are proud to have been selected by the United States Steel Corporation for a part in this contribution on which we have worked under their command.

BUSINESS SCREEN

IN THIS ISSUE

Motion Pictures

Slidefilms

for Vocational

Training Aids

• • •

Incentive Films

News Review

★ ★ ★

No. 5

1944

When Post-War Competition Starts, How Quickly Can You Train a Sales Force?

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
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Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

APPROACHING VICTORY is a challenge to every company producing war materiel to step up output . . . shorten the war . . .

Meanwhile, it is also a challenge to managers of sales personnel and training to be ready with a top-flight training program.

The planning of such a program need not slacken your war-time effort in the least.

To the contrary, there are many things you can set in motion—just by saying the word—which will save you months of headaches and delays when the moment for conversion comes.

For example, there's research to be done, by an experienced producer of training films, to help determine basic needs . . . to establish a sequence of subjects to be covered . . . to devise the most effective treatment . . . to prepare preliminary outlines . . .

More than that, there are certain training films which presumably can be put in work RIGHT NOW—so that when war ends, you can swing into instant action.

Already some of the largest companies in America are organizing and preparing comprehensive sales-training programs against the Day of Victory. May we offer suggestions as to a sound and practical procedure?

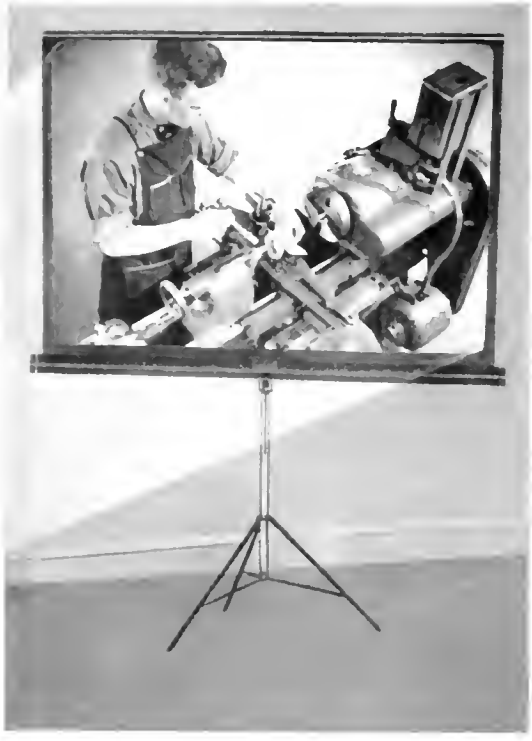
CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. Circle 7-6112

Show Vocational Training Films

on the famous DA-LITE CHALLENGER



Available in LIMITED QUANTITY

The Latest War Production Board order L-267 permits the manufacture of a limited quantity of Da-Lite screens to be sold only to certain users including war plants and institutions with Pre-Induction or Vocational Training courses. Application for authority to purchase should be made on W.P.B. form 1319. Form 1319 may be obtained from your local W.P.B. office, Da-Lite visual education dealer, or from us.

NO SUBSTITUTE MATERIALS

No Substitute for Experience!

THE *TIME-PROVED* TRIPOD SCREEN *that offers*

• Brighter Pictures

The Da-Lite Glass-Beaded surface on "America's most popular portable screen" sharpens details and brings out, with full brilliance, the true colors and tone values of the films. The beads are guaranteed not to shatter off. The fabric stays white and pliable.

• Greater Convenience

The Challenger with its exclusive patented features was the *first* screen with square tubing and is the *only* screen that can be adjusted in height *without requiring* separate adjustments of the case or fabric to keep the correct screen proportions. The user simply releases a *spring* latch and raises or lowers the extension support with *one* hand. The Challenger *locks positively at the desired height.* (No friction grip to slip.)

• Longer Service

The Challenger is durably built to stand many extra years of hard usage. All metal parts are of high-grade steel, *stamped* to shape for maximum strength (no castings to break). The Challenger has proved its greater durability over a period of 17 years in the service of thousands of schools, industrial plants, private owners and all branches of our Armed Forces.

Ask your Da-Lite visual education dealer for the famous *Challenger* Screen! 12 sizes from 30" x 40" to 70" x 94" inclusive. From $12.50 up. Prices slightly higher on the Pacific Coast. Write today for Da-Lite's 10 page Screen Catalog!

DA-LITE SCREEN COMPANY, INC.
Dept. 1B, 2723 No. Crawford Ave., Chicago 39, Ill.

Please send your 40 page FREE catalog on Da-Lite Screens, including the Challenger. Also send copies of W.P.B. form 1319.

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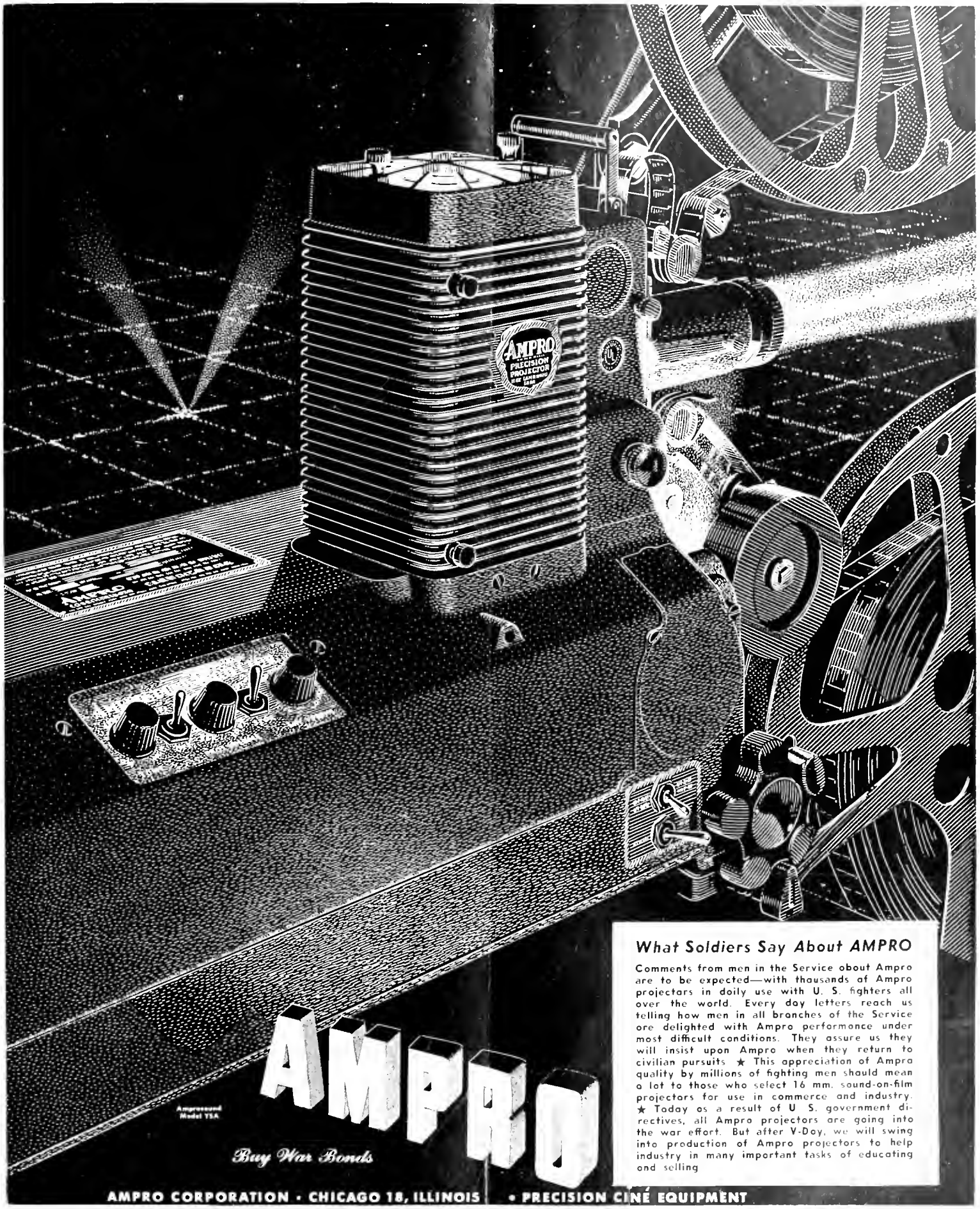
Quality Screens for 34 Years



What Soldiers Say About AMPRO

Comments from men in the Service about Ampro are to be expected—with thousands of Ampro projectors in daily use with U. S. fighters all over the world. Every day letters reach us telling how men in all branches of the Service are delighted with Ampro performance under most difficult conditions. They assure us they will insist upon Ampro when they return to civilian pursuits. ★ This appreciation of Ampro quality by millions of fighting men should mean a lot to those who select 16 mm. sound-on-film projectors for use in commerce and industry. ★ Today as a result of U. S. government directives, all Ampro projectors are going into the war effort. But after V-Day, we will swing into production of Ampro projectors to help industry in many important tasks of educating and selling

Ampresound Model 15A

AMPRO

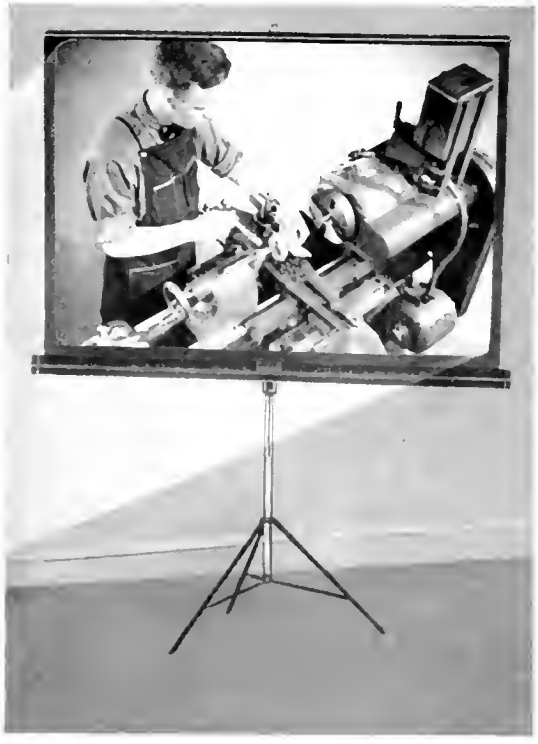
Buy War Bonds

AMPRO CORPORATION • CHICAGO 18, ILLINOIS • PRECISION CINÉ EQUIPMENT

Show Vocational Training Films

on the famous DA-LITE CHALLENGER

(Reg. U. S. Pat Off.



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THE *TIME-PROVED* TRIPOD SCREEN *that offers*

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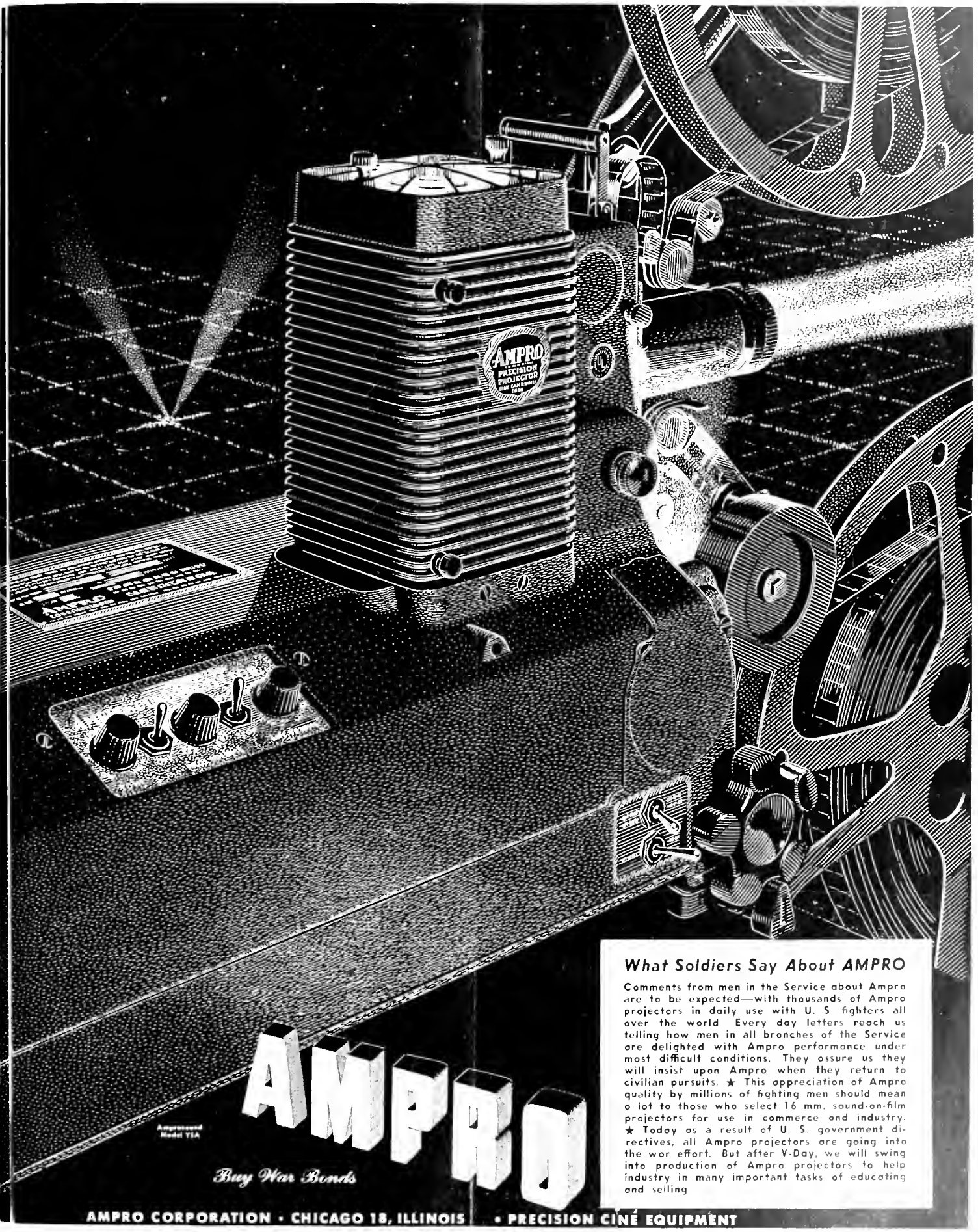

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AMPRO

Ampromatic Model 11A

Buy War Bonds

AMPRO CORPORATION • CHICAGO 18, ILLINOIS • PRECISION CINÉ EQUIPMENT

The Future of Visuals Depends . . .

WE ACKNOWLEDGE, with pleasure, the Discovery by our contemporaries of the popular prints, of the Visual Idea, i.e., the motion picture, filmstrip and other and lesser known visual aids as now applied en masse for the instruction and information of our armed forces and workers in our war industries.

What this publication was born to say and *said* five years ago that these visual media, properly applied, could do (and were then long ago doing)—they are now doing again on a grand scale to help the nation a few vitally important steps closer to Victory. These Visual powers of *more complete enlightenment, of concentrated attention, of longer retention, et al,* were adequately demonstrated by mass industries and by alert educators in the decade, pre-war. The hour of conflict and the present demonstration, on a million-fold scale, has sufficed to bring to Visuals, this long-deserved public attention.

The tools that were at hand have been neatly sharpened and widely applied to help America shape a great Army and Navy and Home Front.

But now let us utter a brief but fervent prayer that the romantic blarney in these publicity accolades will not be taken literally by any experienced hand on our visual production lines, in either producing studios or equipment manufacturing shops. In truth, there is need for plenty of adulation like this, in a *public* sense, to make the world of visuals go around. But the lasting marriage of the Visual Idea into either Education or Industry now urgently demands the solid fare of *proven facts, usable methods,* and *unconditional results.*

Take the case of the often-quoted "army colonel" in whose fortunate command there was a *40% saving in learning time* through the use of films. Millions have seen this statement stripped to these bare and glamorous essentials. We feel like a cross between Frankenstein and the daddy of Gypsy Rose Lee when we remember the original (and heavily qualified) statement which first appeared in these pages.

Generalizations like this are all too common. Although material and labor costs oblige the automobile industry to tell a waiting public that the postwar auto will cost a third more than its last predecessor, ill-advised enthusiasts already find the solution for widespread adoption of the visual medium in a cheap sound projector! A current issue of an *educational* contemporary offers Charles Boyer and Marlene Dietrich in the unforgettable *Garden of Allah,* now slightly second-hand, but apparently none the worse . . . for school use.

It is hardly worth noting that at least one so-called *educational* journal is primarily devoted to promoting classroom entre for such recently-publicized favorites as Trigger, the educated horse, the Messrs. Abbott & Costello and that brilliant epic of the Brothers Warner, *Mission to Moscow.*

The future of this medium will not be found in the castoffs of the amusement trade or the salvage dumps of the war effort. It will not be found in romantic generalization by lay enthusiasts or in "borax" models of cheap, short-lived, dimly-lit projectors.

The future of the Visual Idea depends on the existence of a specializing production industry, upon a more plentiful supply of educational films free of commercialism, upon industrial, scientific, technological and training films made by experienced craftsmen devoting their whole staffs and their whole interest to the advancement of the medium and their own skills.

But above all, the future of this medium depends on the out-spoken truth, plainly said and as easily understood, that it is a medium of *idea communication* of *itself. As such* it welcomes *honest research, independent* production facilities, *honest craftsmen* of the highest-quality equipment, and *slow, sure, and steady progress* into the future.

Because . . . this Visual Idea might then help mankind achieve that in which the printed word has failed . . . real understanding between all mankind . . . at home and abroad.

February 22, 1944 O.H.C.

[illegible] Five Volume Five of Busine... Screen Magazine, the National Magazine of Sight and Sound Aids to Education and Industry. Issued by Business Screen Magazines, Inc., 157 East Erie Street, Chicago, Illinois, on February 25, 1944. O. H. Coelln, Jr., Editor and Publisher, E. T. Lundgren, Production Director. Subscription $2.00 for eight consecutive numbers (one volume). Foreign and Canada, $3.50, including duty.

NOW READY FOR YOUR USE!

NEW U. S. OFFICE OF EDUCATION 16 MM. MOTION PICTURES

For increasing Worker Skills in Critical WAR JOBS!

IMMEDIATELY AVAILABLE!

MACHINE SHOP WORK

Order No.

179. The Slide Rule
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62. Using a Steady Rest
63. Using a Follower Rest
90. Sharpening a Side Milling Cutter
91. Sharpening a Plain Helical Cutter
92. Sharpening a Shell End Mill
93. Sharpening a Form Relieved Cutter
94. Sharpening an Angular Cutter

SHIPBUILDING SKILLS

95. How to Check and Surface Foundations
96. Aligning and Installing Auxiliary Machinery
97. Filing and Installing Chocks
98. Laying Out, Drilling, and Tapping Flanges on Sea Chest
99. Installing Valves and Strainer on Sea Chest
105. Measuring Pipe, Tubing and Fittings
106. Cutting and Threading Pipe by Hand
107. Cutting and Threading Pipe on a Power Machine
108. Making a Cold Bend on a Hand Powered Machine
109. Covering Hot and Cold Pipes

AIRCRAFT WORK

128. Sawing Template Metal
129. Filing Template Metal
130. Blanking Sheet Metal on the Squaring Shear
131. Blanking Sheet Metal with Hand Snips
135. Finish Forming by Hand
142. Tube Bending by Hand

FARM WORK

194. Reconditioning a Mower (Part 1—Cutter Bar)
196. Reconditioning a Two-Bottom Tractor Plow
197. Reconditioning a Grain Drill
198. Community Canning

Many other subjects of vital interest will be available soon! Send for full details TODAY—NOW!

THE FIRST of many new U. S. OFFICE OF EDUCATION training films are now ready for your use.

These new films cover occupations approved by the War Manpower Commission as those requiring FIRST attention. The subjects are so basic that they will prove valuable to practically any industry.

To increase the effectiveness of the new program, you now have available *tested* "show how" units consisting of a sound motion picture, an instructor's manual, and a silent film strip *for each subject covered.*

Partial list of films now available is shown at left. Many other subjects are now in production. They will be ready soon. To obtain full details on these—and forthcoming subjects—send the coupon below TODAY!

Put all films that you can use to work immediately!

CASTLE FILMS INC.

Distributor for

THE UNITED STATES OFFICE OF EDUCATION

CASTLE FILMS, INC.

RCA BLDG.	FIELD BLDG.	RUSS BLDG.
NEW YORK 20	CHICAGO 3	SAN FRANCISCO 4

Address nearest office

Please put us on your mailing list to receive complete information on U. S. OFFICE OF EDUCATION worker-training films.

*Company*_____

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*State*_____

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A NAME can be no better than the organization behind it.

The men and women behind the Wilding name operate on the basic policy of "how good can we make this picture?"—not "how many pictures can we produce?" Quality is never sacrificed for quantity.

We are proud of our personnel, their loyalty and pride in seeing to it that every client, large or small, is more than satisfied with the result of their combined efforts.

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

You CAN get a projector stand WITHOUT PRIORITY

B&H announces the new PORTA-STAND for unrestricted sale... and unrestricted convenience, too

How often have you had to search all over the office for the right table for your projector . . . how often have you had to use makeshifts that spoiled the smoothness of an important program?

Forget it. Now you can have a *good* projector stand . . . exactly the right height . . . rigid and sturdy enough for any B&H Projector . . . so convenient you'll scarcely believe its price — $24.50.

It's the new B&H PORTA-STAND. It looks like a smart piece of luggage when closed . . . and then it unfolds to a full 42-inch height . . . gives you a 12½ x 24½-inch platform *plus* a large extra shelf for reels and cans.

It's ideal, too, as a speaker's stand. Plenty of room for notes . . . water carafe and glass . . . microphone.

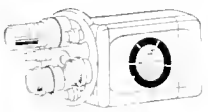
Ask your B&H dealer about the new Filmo PORTA-STAND now. You'll like it. Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907*.

SCATTERGOOD MOVIES IN FILMOSOUND LIBRARY

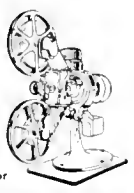
The famous *Scattergood* series has recently been added to Filmosound Library's thousands of titles. These heart-warming stories, starring Guy Kibbee, have been favorites since the first one appeared . . . and you may now order them to help keep the morale of your employees at its peak. The scene shown here is from *Scattergood Meets Broadway.*

Buy MORE War Bonds

Filmo Sportster
8mm. Camera



Filmo Auto Master
16mm. Camera



Filmo Master
16mm. Projector

They'll Be Back...

. . . and they *won't* be hurriedly thrown together from leftover parts to meet the pent-up buying "splurge." They'll be carefully designed . . . precisely built . . . rigidly tested . . . and many models will embody practical improvements we've discovered in working closely with the Armed Forces. They'll be worthy companions to the familiar Filmo models shown here.

*Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today, Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.

Opti-onics
BELL & HOWELL

*Trade-mark registered

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY *Bell & Howell*

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1808 Larchmont Ave., Chicago 13, Ill.

Please send me your Filmosound Library Catalogs.

Name.....

Address.....

City.....State.....

PHOTOGRAPHY'S "SECOND FRONT"

More than a hundred war products now made of material developed for a better Kodak Film

FILM BASE IS A PLASTIC—one of the earliest. To make a better film, Kodak long ago began producing from cotton linters a "miracle material": cellulose acetate.

In the form of TENITE—made by Tennessee Eastman Corporation, a Kodak subsidiary—this plastic is tough as a steer's horn and lighter than wood. It can be molded under heat or pressure, or "machined" like lumber or metal. It can be clear transparent, or in an unlimited range of colors.

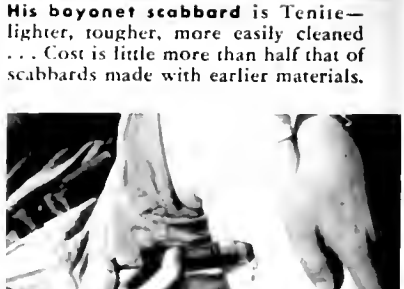
Tenite is molded into finished products at the fastest rate ever reached with plastics. It led to a minor "industrial revolution" before the war or wartime shortages were dreamed of . . .

Now it has more than a hundred war applications—not as a substitute, but as a superior material. As an extra advantage, it does supplant other "critical" materials.

A few war uses are illustrated . . . In a sense, they all started with photography—the ever-growing need for finer film . . . Eastman Kodak Company, Rochester, N. Y.

He controls the Jeep with a Tenite steering wheel—strong, tough, and able to stand all climates. Your own car probably has a Tenite steering wheel, instrument panel, accessories.

His bayonet scabbard is Tenite—lighter, tougher, more easily cleaned . . . Cost is little more than half that of scabbards made with earlier materials.



Snake-bite kit supplied our troops by the Army Medical Corps includes vacuum pump—molded of Tenite—for extracting snake venom.

REMEMBER TORPEDO SQUADRON 8? *. . . how, knowing exactly what the odds against them were, this heroic band of 30 Navy fliers drove unswervingly into the massed fire of the Japanese fleet off Midway? And only one man survived? A stern example to us at home.* **BUY MORE WAR BONDS.**

Doubles for brass – Before acceptance by the Army, this bugle—molded of Tenite—won the most critical ears by its tone and range.

Illustration reproduced from British Illustrated Weekly

Produced by twenty-six battle photographers and six officers under the command of Colonel MacDonald, "DESERT VICTORY" cost the lives of four cameramen. Seven were wounded. Six were captured. Sgt R. H. Morris, British Army Film and Photo Unit, seen at work with his 35mm. DEVRY camera, with which he "shot" his way with the Eighth Army from El Alamein to Italy. He comes from 10 South Drive, Ruislip, Middlesex.

LT. COL. DAVID MacDONALD
with a Model A 35mm. DEVRY Camera

DEVRY-FILMED* WAR EPIC HONORED BY NATIONAL BOARD OF REVIEW

Acclaimed by Motion Picture's top authority — *National Board of Review*—as the finest documentary film of 1943, "DESERT VICTORY" is now available in 16mm. sound-on-film for showing to many who may need to be reminded how big is our debt to our fighting sons and brothers—and how tirelessly and unselfishly we should work on the Production Front in an effort to repay that debt.

"DESERT VICTORY" is a British documentary film made under fire . . . dramatically recording the British Eighth Army's smashing victory at El Alamein . . . authentically capturing the full and terrible impact of modern warfare with tanks, planes, bombs and mines.

*Ninety-five percent of "DESERT VICTORY" was filmed with world-famous DEVRY Model A 35mm. cameras. Of this filming, the late William Stull, A.S.C., quoted Lt. Col. David MacDonald, Hon. A.S.C.—who directed the filming—in *American Cinematographer:* "For field service our cameras had to be light and rugged. I would estimate that about 95% of 'DESERT VICTORY' was ground through DEVRYS, whose performance and ability to stand up under gruelling desert punishment constantly surprised us."

DEVRY is proud to have served these intrepid heroes who marched, bled—and sometimes died—on that relentless 1,300 mile road across the desert to Tripoli, that the deeds of their comrades and the thundering inferno in which they were performed might be preserved *alive* for all time on unchallengeable film.

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16mm. Sound Film

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CAMERA EYE

A PAGE OF EDITORIAL COMMENT AND REVIEW

THIS IS THE SEASON of meetings, conferences, forums and the 1944 crop in the field of visuals has a strong under-current of a deep and growing interest in the national progress of the medium during wartime.

The consensus is that few new 16mm sound projectors will be available to any but essential wartime agencies, war industries and related outlets for another five or six months. With one exception, the nation's primary suppliers of such equipment are committed to the armed forces. Here their great responsibilities toward direct war production lie and no patriotic American will do other than echo the sentiment, *Victory First!*

Organized Planning Moves ON

★ Full realization of the responsibilities of those who provide most of the nation's training films and the bulk of its visual equipment is gradually resulting in organized action on behalf of the medium.

Such planning necessarily moves slowly in order to move surely. Competitive rivalries, decades old, are passing in light of the greater opportunities of the immediate future. With their passing is coming cooperative effort to insure this future era to provide to the potential user of visuals as comprehensive a picture as is possible of the great work now going on in the armed forces and our war industries not to mention the international use of the visual medium in China, Russia, and South America.

Such cooperative planning takes a lot of hard work and personal sacrifice. More than that, it takes a certain stubborn persistence in the face of the usual wartime problems of supply and shortages . . . and other things.

Retraining War Veterans

★ One of the most promising areas for vocational use of the film medium is that of rehabilitation of the thousands of veterans already returning from the fighting fronts and the millions who must be returned to civilian life when the victory is won. Here is a suggestion:

Swift retraining into useful pursuits is the challenge we face from these fighting Americans. Certainly the established pattern of the visual war program of the U. S. Office of Education will offer immediate possibilities in this important new vocational training area.

Important Visual Gatherings

★ On March 24th, the Los Angeles Schools will present the First Annual invitational Audio-Visual Education Conference of that progressive system under the sponsorship of Mrs. Gertrude Rounsavelle, President of the Los Angeles Board of Education and Dr. Vierling Kersey, Superintendent of Schools.

The exchange of ideas and facts concerning Audio-Visual Education, its present place in the curriculum, and the effect of the war on its future development are the announced objectives of the Los Angeles conference.

★ And on April 3rd and 4th, the First Northern Ohio Visual Aids Conference will be held in the ballroom of the Hotel Hollenden at Cleveland, Ohio. M. R. Klein, director of the Educational Museum of the Cleveland Public Schools, is program chairman of this important gathering. The Conference will present a series of practical demonstrations and illustrations for teaching with modern visual aids and an exhibit of equipment and supplies.

At both of these promising sessions, the wartime development of the visual medium will be a recurrent theme. To sponsors and guests: *every good wish for success!*

The Story of Radio

★ Members of the Radio Executives Club of New York recently saw the first public showing of a motion picture that tells the story of radio broadcasting from its beginning atop an East Pittsburgh, Pa., building to the present day of 60,000,000 receiving sets.

This premiere showing of the motion picture *On the Air—The Story of Radio Broadcasting*, with a cast of more than 100 persons, re-enacted many familiar scenes in the swift rise of the radio industry from the days of wireless telephony to a billion dollar enterprise reaching into virtually every home in the nation. Produced by Westinghouse Radio Stations, Inc., the film traces the 23-year history of broadcasting beginning with KDKA and leading up to the present. It will be distributed free to churches, schools, clubs and associations in all parts of the country.

Exploring the future possibilities of radio, the film depicts an era of startling new developments, some of which are already in the making. It predicts a rapid growth in the process of radio-photo transmission by which pictures, drawings and documents can be sent halfway around the globe on radio waves. The film also envisions a rapid expansion in the use of television and shortwave broadcasting.

Names Make Film News

★ Sixteen of the nation's prominent educators, editors and business leaders were elected members of the Board of Directors of Encyclopaedia Britannica Films Inc. at a meeting yesterday. The educational film company was formerly known as Ei Classroom Films which recently w purchased by Encyclopaedia Britannica.

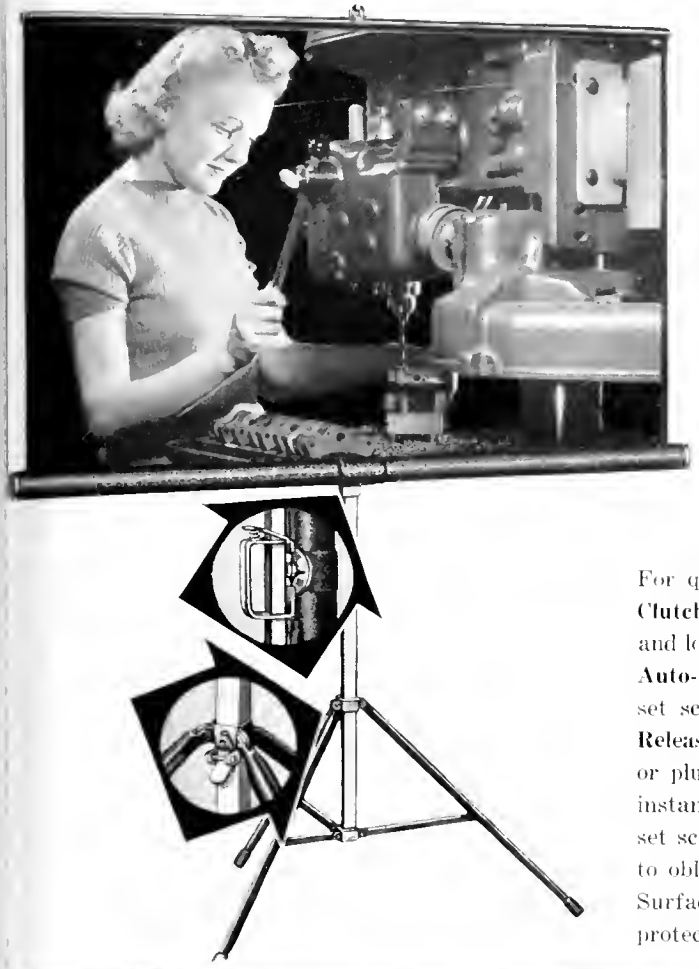
Eight of the directors alrea serve in a similar capacity wi Encyclopaedia Britannica. The ne chairman of the board of Encyc paedia Britannica Films Inc. William B. Benton, vice-preside U. of C., who also occupies th post on the Britannica board.

Also elected to the board is Ch ter Bowles, OPA Administrat Marshall Field, publisher, Walla K. Harrison, architect, Paul G. Ho man, pres. of Studebaker Cor Ernest Hopkins, pres. of Dartmou College, Robert M. Hutchins, pr University of Chicago, Henry Luce, Editor of Time and Life, H. Powell, pres. of Encyclopaed Britannica, Beardsley Ruml, tre urer of R. H. Macy Co., E. E. Sl maker, pres. of Encyclopaedia B tannica Films Inc., M. Linco Schuster, Simon & Schuster, Har Scherman, pres. of Book of t Month Club, John Stuart, Chairm of Quaker Oats Co. and Wayne Taylor, Under-Secretary of Co merce. John Grierson, head Canada's National Film Board, the latest director to be named.

The University of Chicago h long been interested in the develo ment of classroom films, declar President Robert M. Hutchins, w says the new board plans to exte the scope and value of Encycl paedia Britannica Films Inc. in t development of visual education.

Developments like these serve confirm visual's great postwar f ture.

Visual Selling is more effective



With Brilliant Radiant Screens

Motion pictures, slide films and other visual selling helps are much more efficient when projected on Radiant Screens with their remarkable Hy-Flect Glass Beaded Surface. Details show up more sharply. Black and white projections of motion pictures and slides are clearer, more contrasting. Colors stand out more vividly. Student interest and attention are definitely increased. The difference between Radiant Screens and makeshift screens is startling. Every user of visual aids should get the complete story.

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"The Army Uses Training Films" A Valuable Manual for all Film Users

The U. S. Army has permitted Radiant to publish a new manual on training with films. The material is based on actual training experience — and is humorously illustrated. Sent FREE to all who request it on business letterheads.

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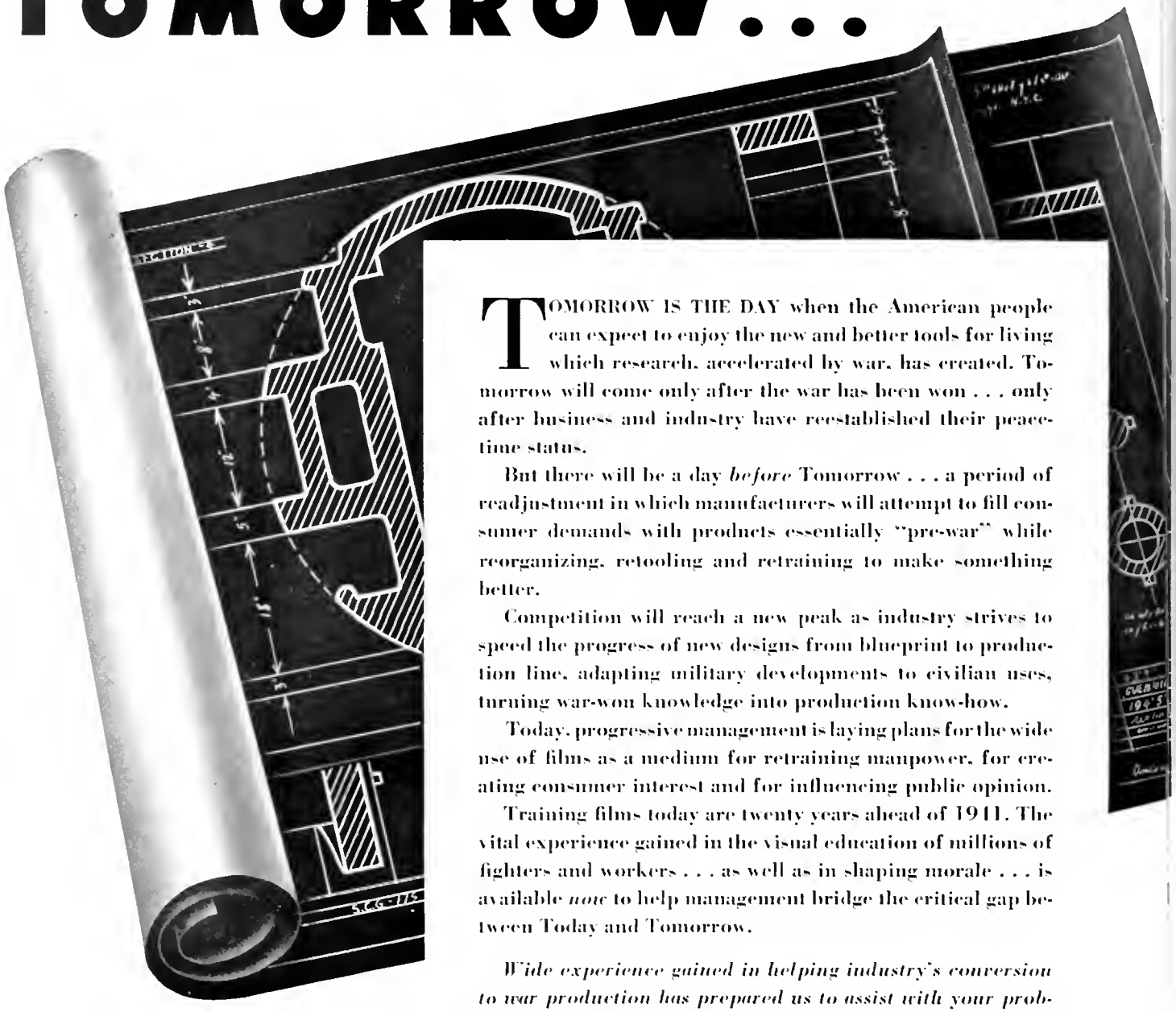
BETWEEN TODAY and TOMORROW...



TOMORROW IS THE DAY when the American people can expect to enjoy the new and better tools for living which research, accelerated by war, has created. Tomorrow will come only after the war has been won . . . only after business and industry have reestablished their peacetime status.

But there will be a day *before* Tomorrow . . . a period of readjustment in which manufacturers will attempt to fill consumer demands with products essentially "pre-war" while reorganizing, retooling and retraining to make something better.

Competition will reach a new peak as industry strives to speed the progress of new designs from blueprint to production line, adapting military developments to civilian uses, turning war-won knowledge into production know-how.

Today, progressive management is laying plans for the wide use of films as a medium for retraining manpower, for creating consumer interest and for influencing public opinion.

Training films today are twenty years ahead of 1941. The vital experience gained in the visual education of millions of fighters and workers . . . as well as in shaping morale . . . is available *now* to help management bridge the critical gap between Today and Tomorrow.

Wide experience gained in helping industry's conversion to war production has prepared us to assist with your problems of post-war reconversion. May we help you plan the solution of Tomorrow's problems Today?

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

PROJECTED TRAINING AIDS AND INCENTIVE FILMS LINK WORKER AND FIGHTING MAN

A LITTLE "KNOW-HOW" goes a long way at the front line repair depots of Cassino, Anzio and Kwajalein. Important gains nd losses in the battle of logistics are made in ie tank parks and on the emergency landing elds of our far-flung fighting fronts. Keeping lanes, tanks, trucks and jeeps on the road to ictory is the other half of the saga of war roduction that begins in our arsenals back ome—another chapter of films at war.

Bridging the Gap with "Know-How"

Bridging the gap of "know-how" between the anufacturer who turns out these mechanized eapons and the men who keep them in fighting im is one of the most significant contributions the motion picture, filmstrip and other project- l training aids.

These modern instructional tools, successfully plied in maintenance training programs for rage mechanics and filling station operators fore the war, have been adapted to the needs of the armed forces on a tremendous scale. Hundreds of visual subjects supplied to the armed forces by war products makers now provide a considerable portion of the training film libraries in the Army, Navy, Air Corps, Marine Corps and Coast Guard.

We Learned the Right Way Early

The need for these advanced educational materials became apparent in the first months of our pre-Pearl Harbor defense preparations. Burned out bearings and broken transmissions soon piled up valuable vehicles after workouts by unskilled selectees. Swift removal of this obstacle to our war effort was the immediate response of those who made the machines. Not only were hard-won peacetime reputations for dependable performance at stake but costly delays and real peril to the nation was indicated.

The earliest instance of this kind was International Harvester's pioneer contribution to the Army of ten complete reels of instructional motion pictures on the operation of the Trac-Tractor. Since that time, motion pictures, slidefilms and other types of projected aids have been supplied by airplane engine makers, ignition manufacturers, and hundreds of similiar suppliers. Several plane manufacturers have set up special production facilities for this purpose although most of these visual presentations are provided through the facilities of established industrial film companies throughout the nation.

Translated in Many Languages

Like other basic visual training materials produced by the Army and Navy, these mechanical, maintenance and operational aids are being translated in the languages of the United Nations. Russian, Chinese and Spanish are the tongues most generally applied but films have also been translated in Portuguese and Arabic.

This pattern of vocational instruction promises

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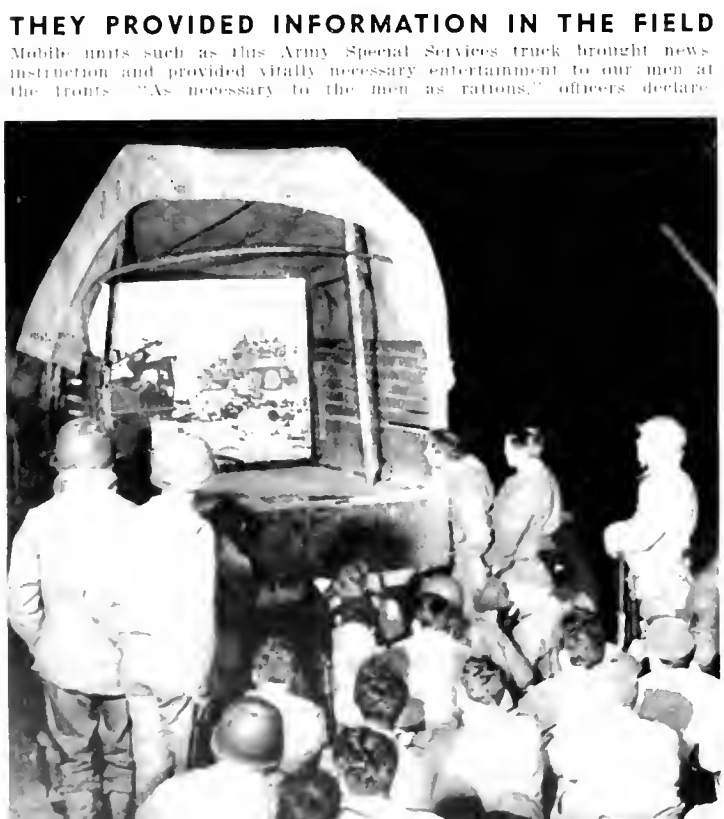
Fighting Men Learn & LIVE

VISUAL AIDS SPEEDED HIS BASIC TRAINING

In the Army, Navy, Coast Guard, Marine and Air Corps, thousands of motion pictures produced by the services and commercial companies provided basic instruction in complex skills of modern war.

THEY PROVIDED INFORMATION IN THE FIELD

Mobile units such as this Army Special Services truck brought news, instruction and provided vitally necessary entertainment to our men at the fronts. "As necessary to the men as rations," officers declare.



to be widely adopted for postwar market expansion where American-made foreign language versions of industrial instructional films will surely follow the flag and exports into many foreign lands.

Armed Forces Provide Films

This pattern of film utilization by the armed forces and war industry is a two-way street. Today, the Army and Navy are providing battle-front reports primarily intended to reach the men and women on the production lines back home.

In pictures like *War Department Report*, produced by the Army, and *December Seventh*, a Navy film, war workers are shown the weapons their hands have forged in use on the fighting fronts. To-date, millions of workers have seen these graphic, hard-hitting camera reports on the fire and fury of our battles in Europe, Africa and the South Pacific.

Two Areas of Application

There are two vastly different areas of film application employed here. Training and instructional films have their definite purpose and are widely employed in the armed forces and war industry. On the other hand, there are these inspiring and informative informational reels which show both worker and fighter *"Why We Fight"* and what we must do to win the victory.

The success of motion pictures and slidefilms in *training* these workers and fighters for their specialized war duties has been widely and authoritatively attested. Wide major studies in this area are either continuing or yet to be started, but recent testimony has been given by industrial training directors using such films as those provided by the U. S. Office of Education and by Army and Navy training personnel.

Training in skills through the application of visual methods can be measured. Though many values, such as the presentation of standardized information in an inward way, completeness, and unchanging clarity of presentation are self-evident, certain results such as improved output, quicker mastery of technical details, better quality work and less waste of material offer tangible evidence of better learning in less time.

Generalization Is Out

Generous percentages of increased learning are frequently attributed to visuals by these users. Experienced hands have learned to accept such endorsement as indicative of a new and widespread enthusiasm for these tools. But new research studies with control groups supply verification. Both government and industry can well afford to allocate the time and expense deserved for the most searching study of film values, prerequisites to achieving them and simple formulae for consistent results.

Motion pictures for most widely employed informational and

THEY WOULD RETRAIN HIM AFTER VICTORY . . .

Extensive plans for trade and general education through visuals are already in the making in the armed forces. The immense task of turning these millions into useful civilian pursuits is a great challenge to the field of vocational training aids.

♦ Rehabilitation of men in the armed forces already faces the nation as thousands of discharged veterans return to civilian life each month. Plans announced by Washington and by the Army for re-education of these veterans through continued use of motion pictures and slidefilms place new challenges for better and speedier training in occupations before the visual industry. "Screen from *UBC 4*, British film.

PICTURE CREDITS

doctrination purposes in the armed forces, as in war industry, show immediate results (or vice-versa) in group morale and attitudes. Such emotional factors are measurable in plants only in tangibles such as lower accident rates, increased production, better employee relations and less complaints about general conditions.

Pattern of the Future

This two-fold and parallel development of the visual medium in the armed forces and war industry is bound to have lasting effects on training operations and in the field of human relations after the war. Enlisted men and officer personnel exposed to these new media will seek to employ them in peacetime occupations. They will demand them of their school systems as well as in their own business and industrial pursuits. Many officers trained in the production and dissemination of projected training aids will help the visual industry meet the vast new challenges of the postwar world.

The language of the screen is international. Canada and Britain have had parallel developments in their fighting forces and on their home fronts. Some of the techniques and results achieved might well be emulated by our own government agencies. Chinese, Russian and Spanish are familiar tongues in the recording studios of American film producers, both in the armed services and also commercially.

Victory Is Our Business

In the title words of a recent inspirational industrial film, *Victory Is Our Business* now. The hour of Europe's liberation is at hand; the basic training of our fighting forces now faces the great test expressed in the armed forces visual production goal: *Got to be damned sure no boy's ghost will ever say, "If your training program had only done its job. . . ."*

Confident in the thoroughness of the program to date, training men are looking ahead to the equally great task of securing the peace in lands abroad and in the reconversion of men and industry at home.

Lessons learned in three years of intensive production of vocational subjects have been added to the experience of two prewar decades already amassed by established industrial film companies.

Against the hazards of flood-tide buying of postwar dealer and sales training films is already arising a sensible evaluation of the medium.

War Workers GET the Facts

VISUALS INSPIRE WORKERS TO WAR RECORDS

Workers and their employer in a Canadian war plant see battle film

THE SCREEN TAUGHT WAR SKILLS IN CLASSES

British War Plants Show Films

★ The significant recent Academy Award and other honors to the British-produced *Desert Victory* are indicative of the interest and widespread use which England has achieved with films. *Tunisian Victory*, sequel to this war epic, will soon be shown in American theatres as the first joint feature production of British and American army film units.

Out of the war plant circuits of Britain, meanwhile, comes interesting data about the successful and widespread employment of pictures for a variety of purposes.

These films have fulfilled a variety of purposes. Some were meant to be a tribute to the workers and an inspiration to other groups, like *Night Shift* which shows the girls in a government ordnance factory quietly going about their midnight jobs. ("It made me feel I wanted to be in a factory," said a woman official of the Ministry of Information when it was first shown.) Others were meant to inform the public and attract attention to special needs, as *Jane Brown Changes Her Job*, which told girls how they could get special government training for work in aircraft factories. Others were meant to help convince the industrial workers of the importance and worthiness of their jobs. An unforgettable film of this kind was *Builders*, in which a man at work on a factory construction site pauses, with a trowel in his hand, to argue the point with an unseen spokesman.

A whole series of films has been concerned with factory welfare and health measures. In *Welfare of the Workers*, Ernest Bevin himself speaks, to give final point to the message, about the importance of the workers' health. *Wartime Factory* makes this point even more thoroughly, indicating health as the key to efficiency.

Welfare Films Most Useful

One of the most striking films of this kind is *Eating at Work*, in which the whole business of organizing a factory cafeteria is shown and explained by a capable, businesslike manageress, who takes you behind the scenes and lets you see everything, from the cutting up of the vegetables to the meeting of the management-and-labor committee. The importance of factory canteens to the war effort is well known, and

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the crucial nature of the problem for America was spotlighted as long ago as 1942, in the N.Y.M.'s pamphlet, "Food, Work and War." This film does as much as a whole book to show how Britain tackled the problem.

Other films on industrial welfare are: *No Accidents*, on accident prevention; and *Men in Danger*, a film made some time ago by the famous documentary director, Cavalcanti, and now a classic of its kind.

Lately, there have been some more specialized developments in the form of instructional films for various types of workers. The farmers have been well catered for from the start, but the industrial worker comes right into the picture in a long, new film, *Boiler House Practice*, in which the man in the boiler-room is shown how to make the maximum use of his coal. (This film was recently shown with great success to three hundred American industrial engineers.)

THE WIDER MESSAGE SHOWN

Finally, two of the most important films currently being distributed by the British Information Services have special interest for all who are engaged in production. *World of Plenty*, a five-reel film, discusses the entire field of food production and distribution, both now and after the war, and emphasizes the need for planning on a world scale if the common man is to be assured the proper nutrition without which he cannot fully develop his inherited capacities. Lord Woolton, former Minister of Food, has said: "I believe it to be one of the most important factual films made since the beginning of the war, dealing as it does with a subject which directly concerns every one of us."

INDUSTRY'S SECRET WEAPON

By Paul A. McNutt, Administrator, Federal Security Agency

(In an address given Dec. 28, 1943 in Washington, D. C.)

A "SECRET" TRAINING weapon, which puts war industry workers on the production line in one-fourth to one-third less time, has been developed by the U. S. Office of Education of the Federal Security Agency in cooperation with the War Manpower Commission.

This shortcut to war production is a new type of training film. Educators tell us experience with these new films shows that they not only cut training time, but also substantially increase retention of what is taught.

Nearly 100 films to speed up the training of workers in the most critical manpower shortage areas have been completed and are in daily use in factories, schools, and by the Army and Navy. One hundred additional films are in production, and another three hundred are in the planning stage.

These war training films, designed as a new type of teaching "tool" for instructors, are making educational history by teaching workers essential skills motion by motion. I have been interested to learn, for example, that engine lathe training alone requires 17 films; and that there will eventually be more than 30 films on aircraft manufacturing skills.

Another distinguishing mark of this new training weapon is that production is handled on a self-liquidating basis. There are no free prints. More than 30,000 prints have been sold by the Government, one-third to industry, one-third to schools giving war training, and one-third to the Army and Navy. Until recently, the films were sold for the cost of film stock. Now, at the request of Congress, they are being sold at a rate expected to return to the Federal Government the full cost of production. Congress first appropriated $1,000,000 to the U. S. Office of Education for war training films. For this fiscal year, Congress increased the appropriation to $2,000,000.

These war training films are not Hollywood productions. They have been made locally by 23 different film producers in 8 states. All the producers are small businessmen. One concern has the contract for sales distribution, thus relieving the Government of that responsibility.

Every film is outlined by a technical expert and a visual aids expert. Production is supervised by a committee named by the director of vocational education for the state where the picture is made. This committee usually includes industrial experts, shop teachers and union workers, and, since it is a local group, its advice and guidance is readily accessible to safeguard the accuracy and effectiveness of the training film. To many industries and vocational schools, the Federal Government owes a debt of gratitude for generous help in creating the films.

America's new training weapon is also being released to our Allies. Canada and South Africa have each purchased over 1,000 prints. Twenty films were recently flown to Soviet Russia. Audiences for the war training films are already estimated to exceed 15,000,000.

Practically all the great war industries now use these films to speed up our war machine. We are stepping up manpower utilization. We are getting more and more production. Education, industry, and the groups of small businesses which produce the pictures have joined hands with the Federal Government to make possible this effective high-speed training.

Reports from the Field

♦ Here is what users say about these war training films: "Viewing the films, when closely followed by supervised application of the principles shown in the films, we find is an excellent way of accelerating and improving the training of unskilled workmen."—*John W. Coverse, director of training personnel, The Baldwin Locomotive Works.*

♦ "For the past year the Navy has been using, in increasing numbers, various training films produced by the U. S. Office of Education. This material has been found to be highly effective in 'stepping up' the speed of training Navy personnel."—*Randall Jacobs, rear admiral, U.S.N., Chief of Naval Personnel, U. S. Navy.*

♦ "All of the films in our possession have been of great value to us in training green help as machine operators and also in upgrading our employees to higher skills."—*J. L. Miller, training director, Vickers Incorporated, of Detroit, Michigan*

Visualized Selling for Postwar Business: Product exhibitions in the local dealer's salesroom will be enhanced by the use of modern visual materials (below) a pre-war Caterpillar exhibit

TRAINING AIDS FOR WAR INDUSTRY

• *A Resume of the U.S. Office of Education Program*

A saving of 25 to 35 percent in the time required to train millions of war industry workers has been made possible through the use of training films and related visual aids prepared by the U. S. Office of Education, Federal Security Agency. More than 30,000 prints of the first 18 training films have been sold and are now in use throughout the United States and in many of the United Nations.

Another 50 training films has recently been announced; 100 others are in production, and contracts will soon be approved for an additional 100. Audiences to whom these training films have been shown are estimated to be upwards of 15,000,000.

History of the Program

Acting on an authorization of Congress, vocational schools of the nation, on July 1, 1940, launched a program to train workers for defense industries. With the war situation growing more ominous, the U. S. Commissioner of Education, John W. Studebaker, saw the necessity of accelerating this defense training. Under Congressional authorization to purchase materials for visual education, some funds for defense training were then employed to prepare 18 training films. Eighteen films were available for use two weeks before Pearl Harbor. Ten of these were designed to speed up the training of shipbuilders.

Subjects Made as Needed

Subjects have been added as the War Manpower Commission reported critical needs for trained workers in the various war industry fields. The full list of areas for which 198 films are available or in production follows:

Machine shop skills	84
Shipbuilding skills	40
Aircraft manufacturing skills	25
Supervisory training	20
Engineering	10
Optical glass	6
Welding	5
Farm work	5
Forging	3

The twenty supervisory training films are being created to crack what the workers themselves have declared to be the most critical bottleneck of war production, namely, better foremanship. The ten engineering films deal with heat treatment of steel, inspection methods insuring accuracy down to millionths of an inch, and the use of electronic devices in inspection.

Film on Sheep Shearing

Four of the five farm work films deal with reconditioning farm equipment while the fifth is on food preservation. Another deals with sheep shearing.

Invitations to bid have been sent out and contracts are being awarded to cover approximately 300 additional visual aid units that will be financed from the $2,000,000 appropriation made available for this purpose by Congress for the current fiscal year.

Prices Cover Only Costs

The first war training films were made with an allocation by Commissioner Studebaker of $233,000 of the defense training funds appropriated by Congress. After viewing the first products, Congress voted $1,000,000 for an expanded program beginning July 1, 1942. Last spring, Congress increased the appropriation for the current fiscal year to $2,000,000. Under the terms of the first appropriation, films were sold to users at the cost of film stock plus the reel. In connection with the current appropriation, however, Congress asked that the prices to the user cover the cost of production as well as the cost of film stock.

How Production Starts

When a war industry skill has been placed on the critical list by the War Manpower Commission, the visual aids division begins to consider whether training films can help shorten the training time and thus assist to relieve the labor shortage. By terms of the appropriation, areas in which it is proposed that films be made must be referred to the War Manpower Commission. Sometimes the requests for films come from agencies such the Navy, U. S. Public Health Service, or other war agencies. Once an area has been approved for visual aids, planning begins, first of all, by making occupational and job analyses.

For example, a flow chart of the process of building a bomber has been prepared showing all the parts and all the skills required to make the specific parts, and to put the parts together. Once this has been done, the visual aids division staff, together with industry experts, select those jobs which are critical and in which films can help. These preliminary plans are then checked with the War Manpower Commission, other interested war agencies, and the major industries concerned. They are also checked with an Office of Education Advisory Committee.

Job Sheets Are Prepared

Visual aids experts then work with authorities in the field to prepare job sheets which become the outlines for the films. Contracts for production are then let by Procurement Division, U. S. Treasury Department. Once the bidder has been approved, two staff men are assigned to the picture: one, an expert in visual aids, and the other, a technician familiar with the particular skills. The contract requires that the motion-picture producer work with a local advisory committee to guide the actual making of the film.

These committees, nominated by the state vocational directors, are made up of representatives of industry, union members, and vocational teachers. They are the "cream of the craft." Any differences of opinion in regard to what is best practice in the particular industry are referred to the American Standards Association and may in turn be referred to a professional organization such as the American Society of Tool Engineers.

Distribution Is Nationwide

One company, Castle Films, Inc., has been awarded on bid, the contract for distributing films made by 23 producers. This company advertises the availability of films made and supplies the demand through various retail outlets. Castle Films, Inc., the company which holds the distribution contract, has more than 2,000 retail outlets located in all of the 48 states. These dealer outlets offer experienced counsel on projection problems as well as film previews.

Industry and Education Aid

Leading American manufacturers have cooperated generously in helping the Office of Education to create training films. They have permitted motion-picture producers to make the films in their plants and have

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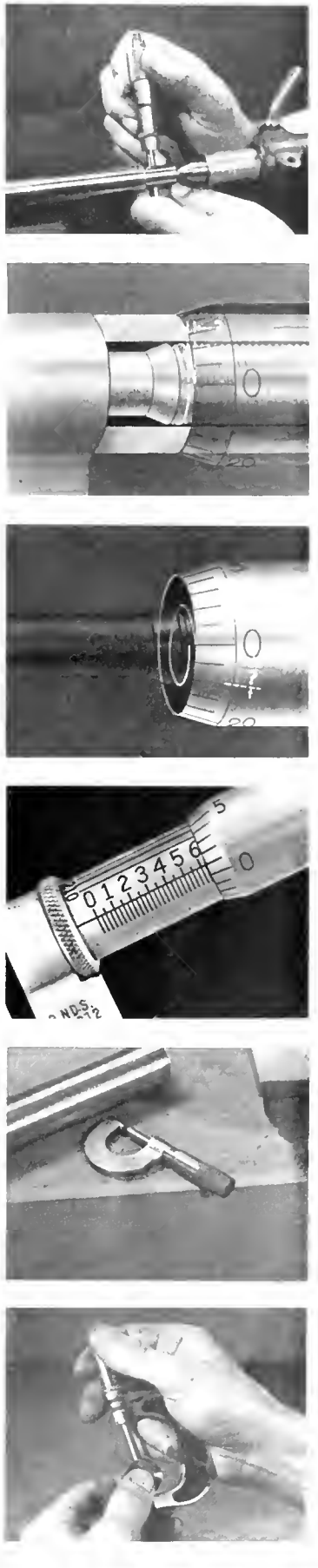


Projector and screen were set up right in the centre [illegible]

Canada's Workers Get to the Front

BUSY INDUSTRIAL CIRCUITS SHOW WAR FILMS TO MANY THOUSANDS

FIGHTERS ON CANADA'S HOME FRONT, turning out in enormous volume the equipment and materials for the Allied war-effort, are getting each month a dramatic, visual record of the job they are doing. Through the Industrial Circuits of Canada's National Film Board they are seeing regularly, motion pictures of their country at war, of the world at war. These men and women are learning the significance of their individual roles in relation to the total effort; they have become forcefully aware of how vital a link it is that connects the battlefronts with the home fronts.

Activity Is Year Old

The Industrial Circuits' activity is a comparatively new project. In Canada, it began only a year ago the anniversary, as a matter of fact, is this month. In plan, it was simple enough to show information and morale-building films to workers right in the factories. Last January the first projectionist set out on the round of plants which formed the initial Circuit. During the succeeding months, more projectionists were added until today there are forty operators bringing films to a monthly audience consisting of some quarter of a million Canadian workers in every Province in the Dominion. Munitions factories, shipyards, lumber camps, textile mills — in all, more than a thousand plants across Canada are today being serviced by Industrial Circuit film showings.

And in these plants, managements have commended the job these screenings are doing. Not only have the films had considerable effect on morale, but they are becoming an important factor in production. Excerpts such as these from letters received at Industrial Circuits headquarters in Ottawa, tell the story effectively:

Films Greatly Favored

"These films are shown during the Company's time," writes the Consumers Glove Company, Ltd., in Montreal, "and our employees look forward with keen anticipation to the screenings. We believe they have been a contributory factor in our increase in production."

From Galt, Ontario, Sheldon's Ltd., comments "We believe your films have brought to our workers the responsibility of their position and have demonstrated to them the importance of the part they are playing in the production of war materials."

The Canadian Summer Iron Works, Ltd., in Vancouver, British Columbia, says: "As our plant is practically wholly engaged in the manufacture of steering gear equipment for both naval and cargo ships, and the need for keeping up production is foremost in our minds, we are convinced that the showing of these films to our employees is having a most desirable effect in building up their general morale, creating a desire for them to do their utmost in their share of winning the war."

Want Frequent Showings

And from Waterloo, Ontario, comes a criticism. "The only complaint we have had from our employees" notes the Sunshine Waterloo Co., Ltd., "is the fact that they are not able to see a new set of films more frequently than once a month."

That's the general picture right across Canada. But Industrial Circuits' showings concern themselves with themes other than just war pictures. For example, a picture titled *No Accidents* presented on a recent program stressed the necessity for avoiding common plant accidents. *The Nose Has It*, made in England, dealt, in a humorous fashion, with preventing the spread of cold germs through sneezing. Accident prevention and health pictures can do effective work in keeping people fit and on the job.

Aids Worker Recruiting

With manpower shortage and the need for women in industry, the Industrial Circuits arranged numerous showings stressing the need for women to enter plants and factories in time of national emergency. A film such as *Women At War Workers*, produced by the National Film Board, placed correct emphasis on women's role in the war. During the Canadian Victory Loan Drives, the Industrial Circuits proved an important outlet for promoting the campaigns. K. V. Henderson, executive chairman of the National War Finance Committee, wrote, in this respect, to Gordon Adamson, Canadian Supervisor of the Circuits:

"We regard motion pictures as a powerful medium in providing an all-out war effort in Canada and have appreciated the rapid growth of the audience your Industrial Circuits are obtaining.

"We are therefore pleased at this time to present for distribution on these Circuits a film specially produced in the interest of the Fifth Victory Loan and trust that it will materially assist in the sale of Victory Bonds to industrial workers throughout Canada."

It did assist. The local branch of the War Finance Committee charged with organizing the Loan Drive in one Ontario region, for example, wrote later to endorse the film's effect. The letter points out that during the Fourth Victory Loan a particular firm, pledged to an objective of $1,200, was unable to reach that amount. This time, with only a few more employees, the firm was given an increased objective of $6,300. At the time the letter was written the plant had achieved 95% of its objective, and felt that by evening it would be well over the 100% mark. This took only one day. "I give credit for this outstanding success we feel," the letter concludes, "to chiefly due to your film." The picture was *Study Key to Victory*, produced by the National Film Board and presented on industrial circuits.

Routine Very Simple

The actual showing on these Circuits follows a simple routine. Once a firm has indicated its desire to have regular monthly screenings, the Industrial Circuits projectionist who will be servicing that plant, pays a early visit to the management; together they examine the floor space and decide upon a location where projection equipment might be set up for each showing. Space is rarely a problem for a 16-mm screening. Since the equipment is so compactly constructed, since its size and weight make it easily portable, showings can be held under almost any conditions. The operator sets up his projector, his loud speaker and screen, even while the men and women continue at their work. At the exact time scheduled, he is ready to begin. And the light from the projector, casting the image on the screen, throws into relief the machinery and benches over which it may have to pass, catches the outlines of people, testing against their machines, sitting on oil-drums, or leaning against shop equipment as they pause to watch the show.

Use Shadow Box Screen

Since the majority of programs are presented during the day, there has been the further question of too much light. Even this problem, less a problem than an inconvenience, has, in most cases, been adequately overcome, through the use of shadow boxes around the screens. As partial evidence, the Industrial Circuits points to plants fitted with tall windows that reach almost from floor to ceiling the whole length of the building where satisfactory

(PLEASE TURN TO PAGE THIRTY)

Company Films Reduce Employee Turnover

SOUND MOTION PICTURE FILMS are doing an effective personnel job for Armstrong Cork Company in helping to induct and assimilate unprecedented numbers of new employees which the Company needed for its extensive munitions operations.

Armstrong had been growing slowly and steadily through the years. Its labor turnover was small; the percentage of its employees wearing emblems denoting ten, twenty-five and even fifty years of service with the Company was high.

Background Increases Loyalty

Experience had proved to Armstrong that when the new employee got to know the Company he would want to stay with the Company. And in normal times he soon gained his knowledge in an informal sort of way, without any specific program for imparting it to him.

Then came the war, and this Company which was best known as a manufacturer of linoleum and other floor coverings, insulation, glass, molded plastic closures and a wide variety of other non-metal products, turned to the manufacture of metal aircraft parts and assemblies, shells, bombs, bomb racks, cartridge cases and shot, in addition to plastic gun turrets for airplanes, camouflage netting and coated Army duck.

Employment Is Doubled

New employees began to arrive by hundreds, and thousands. The number of employees in the Company's 16 domestic plants and offices rose from 9,607 at the beginning of 1941 to approximately 19,000 at the beginning of 1944, despite the loss of more than 3,300 employees to military service.

As the Company plunged into its munitions operations and launched an intensive campaign to recruit new workers, the management realized that some program was needed that would quickly give the new workers the "feel" of the Company, its history, character, policies and goals, and help to assimilate the new men and women into the organization in the shortest possible time.

Used Films for Years

To do this job the Company turned to sound motion pictures. Armstrong for years had used films in its sales training and product promotion activity, and the Company's Director of Advertising and Promotion, E. Cameron Hawley, was entirely familiar with the medium and the technique. The problem, therefore, was turned over to Mr. Hawley and in due course two films were born. *This Is Armstrong's* and *Welcome To Armstrong's*. Both were written and directed by Mr. Hawley, and produced at the West Coast Sound Studios, New York.

This Is Armstrong's is a feature-length film which details the early history of the Company, from its founding in Pittsburgh in 1860; its struggles and triumphs; and the development of the policies and principles which today govern the Company in all its far-flung operations in this country and abroad.

Accuracy Plus Real Interest

Much research went into the making of the film, and it emerged from production an historically correct, yet moving drama which the new employees who see it on their first day at work obviously find good entertainment.

For his cast Mr. Hawley chose well known, experienced Broadway actors, selecting them on the basis of their resemblance to the actual characters they were to portray.

Recognizing that new employees — many of whom arrive without any factory experience — are generally nervous and jittery, Mr. Hawley wanted the film not only to impart information and induce the beginning of an attitude of friendliness and loyalty to the Company, but he wanted it to be genuinely interesting and to have a calming effect. The action is in rather slow tempo, played to the accompaniment of a symphonic music composed especially for the picture.

The second film, *Welcome to Armstrong's*, which is considered

(FIRST TURN TO PAGE THREE)

(Right) Scenes from the motion picture "This is Armstrong's" which tells the Company's story to new employees. (Top) The founding of Armstrong took place in Pittsburgh during the first election of Lincoln to the presidency, (center) The start of production on machine cut corks, (below) Thomas Armstrong has just announced to assembled employees plans for expansion and an older employee is urging caution.

CAN OUR SCHOOLS TEACH

By Walter Adams

FERNANDEZ was no quiz kid. He was a shy little Mexican from one of the big sheep ranches of the Southwest. And when the Army picked him up at 18 and sent him up to Fort Riley, Kansas, for his basic training, he lay awake talking to his sheep and crying with homesickness. He couldn't write home. And when anyone sent him a letter, he couldn't read it either.

At Fort Riley they put Fernandez in the Special Training Troop with the other misfits—underprivileged coal miners, sheep herders, Brooklyn dead-enders—all among our nation's four million illiterates. After eight weeks Fernandez chipped in with nine other Mexicanos to subscribe to a daily newspaper. He signed the payroll and was so crazy with happiness that he took men by the arm and shouted in Spanish, "Look, look, I sign my name!" At the end of his 13 weeks of basic training, to which this schooling was just a sideline, he was following the news and writing letters home in English to his old boss.

Such go-devil teaching is common to the Army and Navy. It's doubly exciting because it perhaps presages changes in schoolteaching after the war.

Remember the two years, or was it four, you tossed off studying Latin? In the Army they teach you the bread-and-butter essentials of a language in eight to 12 hours, sometimes starting after you embark with an invasion fleet and teaching en route, so that when you land you get on with the natives and pick up military intelligence.

Japanese is one of the hardest of all languages, and we used to think you couldn't learn it in less than four years of continuous study. But the Navy school at Boulder, Colorado, sets you to chattering it in three months.

School Ma'am Stops Struggling. Suppose our schools take up the Army-Navy technique. You'll first find the class around a phonograph, learning as a child learns his own language—by listening to and imitating a native speaker, not a school ma'am struggling with her guess of how a native might sound if she ever heard one. In each student's hands is a guidebook, and as he speaks, he compares the written version with what he says, for a double mental impression.

After 15 to 20 minutes work with the records, the teacher takes over. She fires batteries of simple questions at the students. All questions, all answers, even from the first lesson, are in the foreign tongue. In eight to 15 hours of work you learn basic words and phrases and are thinking not in terms of translation but in the language itself. There is no talking in English about the language. No interest-killing drill on grammar. No puzzling with rules on irregular verbs and past participles. Only practice and repetition and learning a language by talking it.

Army specialists have worked out bread-and-butter courses in 40 languages. In one test of the system's worth three officers studied Turkish 12 hours, using only the records and guidebook, no instructor. These three men called in two officers who had been stationed in Turkey and knew the language and conversed freely with them, asked questions, got directions, made their wants known, even branched out into enlarging their vocabularies, all without a word of English.

But sometimes the method lets you down. When Sgt. Phil Stearn, *Stars and Stripes* photographer, raced up the Sicilian shore with the southern invasion force and met his first native he grandiloquently tossed off the Sicilian greeting, "Buon giorno." "Hi'ya, kid," shot back the grinning native. He'd pressed pants for 15 years in Brooklyn.

Even Cartoon Strips Teach. This language technique is one of those our armed forces adopted to teach faster than anyone had ever taught before. They're not in themselves new, many of them, but the intensity of application to teaching is. From movies, magazines, and advertising, from animated cartoons and comic strips, from top-flight educators and psychologists and even kindergarten sand tables, the armed forces adopted whirlwind techniques for impaling ideas in the human mind.

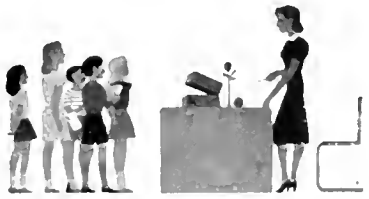
When industry developed a method that cut the time of broaching ack-ack gun barrels from three and one-half hours to 15 minutes, the Army applied methods that cut the time of turning soldiers into tank technicians from nine months to nine weeks. When industry developed a technique for casting airplane-engine cylinders with a third less critical material, the air forces rewrote their primary-school handbook to explain every maneuver with cartoons; now instructors save up to a week in primary with this handbook alone, because they no longer have to waste time trying to explain what the handbook's explanations mean.

Schools have shunned cartoon strips as low-brow and moronic; the Army makes them teach. Edison predicted 20 years ago that teaching films would supplant textbooks. But it was not the schools but the Navy that put into production more films involving a greater expenditure than any two Hollywood studios combined had ever been involved in.

With American schools, education is a $2,000,000,000-a-year job. Often it's just passing tests and playing safe and underpaying teachers and keeping within the budget and not letting the school board catch you drinking beer. With the armed forces it's crack teachers and psychologists and charts and diagrams and movies and filmstrips and sand tables and cut-away models and sweat and pressure and Simon Legree and some boy's life. It's the Army reiterating, "Got to be damn sure no boy's ghost will ever say, 'If your training program had only done its job.'"

It has educators aboil. Many of them, in uniform and out, helped work out the techniques. Says Sidney James French, now co-ordinator of the Naval Flight Preparatory School. "The extra work has shown me that prewar liberal-arts-college education was a leisurely way of killing four good years in a

THE G. I. WAY?



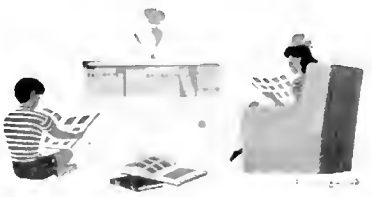
If the Army, using records, can start you talking a language in 12 hours, need schools take months?

young man's life." Says Dr. Samuel N. Stevens, president of Grinnell College, seat of one of the Army's specialized training programs, "We are discovering methods now that enable us to teach unusually bright boys in one month all the important mathematics they get in high school. The same is true of history and physics. As soon as we can we'll open our doors to any gifted student, and in one semester of college preparation we'll do as much for him as is normally done in four years of high school."

Of all teaching aids, movie film is most versatile. Psychologists say 90 percent of all our learning comes thru our eyes, five thru our ears, five thru other senses. Maybe that is why Blue Jackets now learn more about the complex subject of fire control from a 15-minute film than they previously absorbed from a two-hour lecture. And why one Army colonel finds that in his command, films have cut 40 percent from the 1917 training time. And why the Army has outlawed the classroom lecture as the poorest form of teaching.

It's tough on old Professor James, history 204, three credits, take a back seat and catch up on your sleep. It's tough, but there is evidence enough to hang him from the yardarm in any school.

If the Navy can teach as much with a 15-minute film as a 2-hour lecture, can't schools?



If Joe learns geography three times as fast as Mary, should he be held to Mary's speed?

When the Army finds one out of three 21-year-olds unfit, is our health program adequate?

Why Study the Film? Suppose you slip into one of tomorrow's classrooms where there is intensive use of films. The teacher, a cute little party who groups it right, has baited John into asserting, "There wouldn't have been any war if Churchill had been at Munich." And this has started a class argument, however unenlightened, about causes of the war. This drives home what must be clear before any film is shown—the reason for its study. Watching film without knowing what you're watching for is lazy and no good.

The film itself is used only about 10 minutes of each class. It is *no substitute for mental sweat*. No substitute for a teacher's integrity, tolerance, wisdom, and understanding. A teacher is great not merely for the information he imparts, but because of what he is, himself.

When the students know why they're studying the film, the teacher blacks out the windows with a pull of a switch and cuts the talking film in. And unfolding before them are the answers to their arguments, in a story that began not at Munich or Pearl Harbor but in Manchuria in 1931, or a lot further back. With a fast-paced interweaving of personalities, armies, riots, line lines, strikes, book burnings, balcony harangues, revolutions, intrigue, brutality, and assassination, you see human minds being cruelly twisted until they become a real and terrifying enemy. With animated maps you see the spreading plot for world conquest. It is not the twisted propaganda common to wartime, nor the incredibly phony historical movies out of Hollywood. It is as meticulously truthful as historians can make it. It is a great tragedy that breathes suspense and life into the cadaver of history teaching. *Turn to page 34*

"Can our schools teach the G. I. way?" asks Walter Adams in this challenging article. The schools answer, "Yes, if we have intense interest motivated by purposeful learning, and adequate instructional resources, teaching-aids equipment, psychological services, and teaching personnel." Certainly it is hoped that we shall witness a carry-over from war to peacetime education of these conditions for effective learning.

U. S. COMMISSIONER OF EDUCATION
John W. Studebaker

Training Aids for Industry

CONTINUED FROM PAGE NINETEEN

supplied experts and workers as needed. One company made available a $10,000 vertical boring mill and an expert demonstrator for a particular film. The New York Navy Yard loaned a milling machine for five weeks.

Some of the well-known vocational schools, such as the Bok Vocational School in Philadelphia; Dunwoody Technical Institute, Minneapolis; Bergard Vocational School, Buffalo; Delgado Trades School, New Orleans; San Francisco Vocational High School; Denby Vocational School, Detroit; Brooklyn Technical High School, and the Samuel Gompers Trade School in New York also provided facilities for the development of the films.

Purchases in Three Groups

Of the 30,000 films distributed thus far, one-third have been purchased by war industries, one-third by the schools, and one-third by the Army and Navy. The United Nations are also sharing these aids for war industry training. More than 500 prints have been obtained by South Africa and 1,200 by Canada. Recently, 20 prints were flown to Soviet Russia. Mexico, Cuba, Colombia, Venezuela, Brazil, India, New Zealand, and Australia are among the other nations which have purchased prints. Recently, French titles were added to a series of films designed to be used in Quebec Province, Canada.

New Unit Prices

Originally, the training films were offered to users at 2 cents per foot plus the reel. Since the new appropriation requires that the cost of production be amortized, a charge of $5.75 has been added to the price of each film subject. Even with this additional charge, the average cost of a training film subject is $22 which is very moderate in comparison with other educational film prices.

The cost of making the films runs between $6,000 and $10,000, depending on the subject. Contracts include accompanying slide film and a teachers' manual. The slide film contains key still pictures of the subject filmed. This additional aid enables the instructor to hold photographs on the screen so that they may be discussed with students.

They Get Real Results

Managers of war industries are loud in their praises of efficacy of these training films. Conservative estimates indicate that films save 25 to 35 percent of the time required to train workers for war industries. It is also estimated that retention of factual information gained is at least 35 percent above what students retain when trained with the usual textbooks and shop methods.

Films have been especially helpful in the case of training large numbers of workers heretofore unfamiliar with machine operations. They give confidence to workers new to industry.

For the first time films have been used to depict skills step by step. These training films are comparable to the chapters of a textbook. For each new learning problem, the student has a new film. Although education films have been made on subjects related to the curriculum, never previously have they been used to match the learning process step by step.

This enterprise also marks the first time that films have been used in a completely integrated visual aids program. Films are not relied on to carry the complete educational burden. They are accompanied by film strips and by a teachers' manual. All three make up a teaching unit for use by instructors.

Under Capable Direction

The War Training Visual Aids project is assigned to the U. S. Office of Education, Federal Security Agency. Dr. C. F. Klinefelter in charge under the general supervision of U. S. Commissioner of Education, John W. Studebaker. Director of the activities is Floyde E. Brooker who is assisted by a small staff of visual aid experts.

(Editor's Note: Complete synopses of all new subjects will appear in an early special edition of Business Screen.)

Marinship Uses Slidefilms

BY Bob Lawrence, Director of Visual Aids, Training Division

Sound slidefilms using cartoon techniques are the foundation of the visual aid program carried on by the Training Division at Marinship Corporation, San Francisco Bay Area shipyard.

The possibilities of visual aid in training thousands of erstwhile clerks, salesmen, and housewives as shipbuilders were early recognized by Marinship. However, a survey of available films, both slide and 16 mm., revealed that there were few with specific shipyard application.

Safety a Key Problem

Major problem in giving pre-production instruction to men and women who had never worked in heavy industry was selling the importance of safety in every day work. First attention was thus given to the preparation of safety films, and they continue to be the major item on the Visual Aid Section's program.

Objective of all safety films is to put across a simple, powerful message with local Marinship application, and with enough humor in the sequences and narration to emphasize safety points and avoid dullness and repetition.

Characters Tell Story

Chief method used is to superimpose cartoon characters over actual yard photographs. A familiar yard scene is chosen as background for each frame, and the cartoon characters supply the action and meaning. Interspersed are posed photographs to emphasize proper procedure.

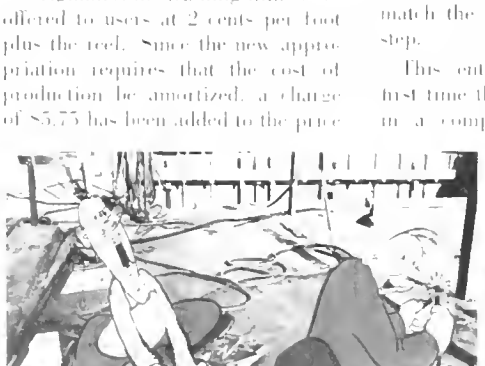
The production process of the slidefilms, which run from 50 to 100 frames in length, is neither difficult nor expensive. Development and printing of the film strip is the only outside expense.

Descriptive material for each frame is written by a trained cartoon writer and then recorded in the yard sound studio. Most of the recording is straight narration, but dramatic technique is used in some instances.

Films Used Constantly

To date, eight slidefilms and one 1200 foot color sound movie have been produced, and are in constant use in the Marinship training program. They are not only shown in induction classes of new workers but also play a prominent part in all upgrading and craft courses.

The yard Safety Division is high in its praise of the fine effect the films have had in maintaining Marinship's outstandingly low accident rate. They feel that constant showing of these films reminds workers of the need for continuous attention to safety principles.



Marinship uses slidefilms [illegible] observation slidefilm dwells on dangers of [illegible]

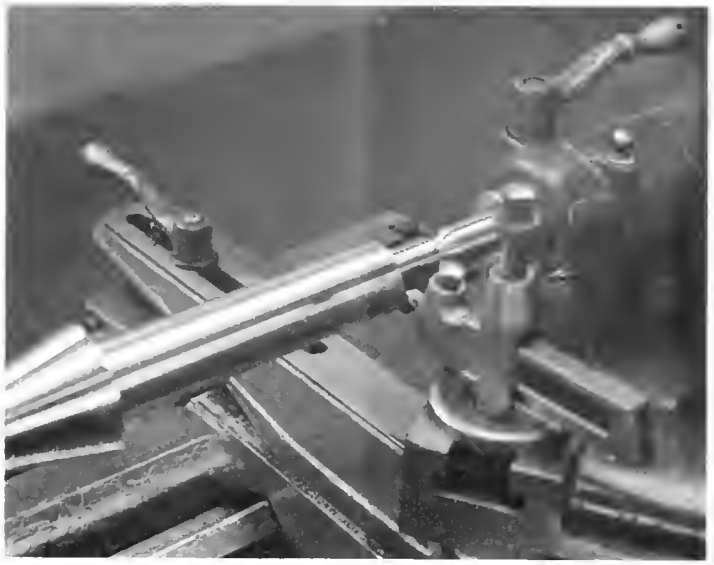
Perils of improper clothing are shown in this frame from a recent Marinship welding safety slidefilm

A Marinship slidefilm entitled "Welding Procedures" shows what happens when welding lines become worn

MEASURING FILM USEFULNESS

Part Two of the Study on the Use of Training Films in War Production

BY DR. ABRAM VANDERMEER
as told to the Editor of Business Screen



Films as used in this experiment thus formed an integral part of the training course. Usually the instructor demonstrated or described the next job to be done before the film was shown. After the film lesson the class was helped to make the connection between what was shown in the film and what was to be done in class. When the lathes used in the film were different from those available to the trainees, differences and similarities were pointed out.

Projects required of the students were similar to those turned out in the film demonstration, but were sufficiently different to encourage transfer of knowledge to the performance of new tasks. Where alternative methods were demonstrated in the films the relative merits of each were discussed, and the students were helped to select the one best suited to themselves and the equipment which they were learning to operate.

When students required individual help in turning out their projects, the instructors habitually referred to the films as well as to other previous teaching. In every conceivable way the film was made an integral part of the instruction; it was never by word or action relegated to the status of a frill or an easily-dispensed-with supplementary device.

Preparation for Film Use

Preceding each film lesson an attempt was made to motivate learning, to direct attention to important things to look for in the film, and to do any pre-teaching that might be considered essential to understanding the film.

These things were accomplished by pointing out the application of the skill to industry, by describing the job that the student was to do next, and by pointing out the various steps required in turning it out. The students were then shown the film for the first time without interruption.

Discussion Follows Film

When the film was over, the students filled out a self-testing exercise of short answer questions which was a part of a commercially prepared study guide.[1] A discussion followed during which the important parts of the film were reviewed, misconceptions were brought to light and corrected, and self-testing exercises were checked.

There followed a second showing of the film. During this showing the film was stopped when necessary to bring out certain important points. A brief summary followed the final showing. As has been stated, upon returning to their shop the trainees were given further help in making the transfer from the film to their own work.

Repetition Necessary

Repetition played an important part in the instruction of both "film" and "non-film" groups. In spite of feelings to the contrary held by some instructors, a single description of a process is usually not enough to produce satisfactory learning. Of course, repetition may be harmful if care is not taken to accomplish it through presenting the same idea in a variety of ways and from a number of different angles.

Concentrate the Attention

All film lessons were conducted in a classroom rather than in the individual shops. The classroom was kept well ventilated and at the proper temperature as far as it was possible to do so. Since all the training took place after 10:30 P.M. there was no difficulty in darkening the room adequately. An effort was made to have the projection equipment set up and the film threaded before the class arrived. The experimenter took charge of the mechanical details of film showing, so that the instructor could give his complete attention to his class.

Groups were kept small enough to allow free discussion and exchange of ideas. Only on rare occasions were classes combined. When they were, one instructor was given direct responsibility for conducting the lesson.

A spare projection lamp and a spare fuse were carried with the machine at all times, to avoid delays due to the failure of equipment. To minimize distraction the projector was placed well behind the audience. The speaker was placed on a chair directly in front of and below the screen. Every effort was made to avoid interruptions during the film showings.

Administrative Aspects

Two services of an administrative nature were supplied by the investigator in an effort to assure the maintenance of high standards of film teaching. The first was that of making films and projection equipment conveniently available for the training program.

Although two sets of machine-shop films had been technically available for some time before the beginning of the investigation, none of the instructors had ever used a motion picture in any of his classes. The reason for this non-use of films was that the administration had not made provisions that would facilitate such use. It was not due to any lack of ambition or conscientiousness on the part of the instructors, nor to any aversion to the use of films in training.

Under the circumstances, the only way films could be made conveniently available when and as often as was dictated by good teaching was for the investigator to provide such service. In order to use a given film on a given day, the following steps had to be carried out:

1. The investigator notified the administrative office, in advance, of the intention to use film and projection equipment.
2. The administrative office notified the person in charge of the films and equipment of the investigator's request for audio-visual equipment.
3. The person in charge of the equipment arranged to have it taken from its storage place and transported to the administrative office.
4. The investigator went to the administrative office, obtained the film and equipment, set it up in the projection room, ran the film, and returned film and equipment to the administrative office.
5. The person in charge of the equipment arranged for the return of film and equipment to its storage place.

Leadership in Utilization

The complicated procedure involved in securing films had effectively prevented their use in the training center in which the investigation was conducted. Consequently, the instructors had had neither training nor experience in the use of films. It was therefore necessary for the investigator to take responsibility for a second administrative function, that of supplying leadership in film utilization.

It has already been pointed out that the instructors were primarily craftsmen. It was frequently difficult for them to realize that the trainees, lacking their own rich background of experience and information, usually needed further explanation of what they had seen in the film, that this explanation had to be repeated in a variety of

(Continued on The Next Page)

[1] (The Visual Learning Guides referred to are Nos. 1-10 and 44-45 of a series published by the National Audio-Visual Council, Inc., of Chicago, 1942.)

(CONTINUED FROM PREVIOUS PAGE)

ways, and that the relationship between the whole film lesson and their own shop procedures had to be pointed out.

The Visual Learning Guides previously referred to played an important part in the utilization of films. The investigator was present at all film showings and helped to guide the progress of the film lesson. Conferences and discussions with the instructors encouraged the preparation for and follow-up of film lessons in the shops.

COMPARISON OF TIME SAVING

The primary results of the experiment have been set up in a table, which is an adaptation from more intricate tabulations in the original report. It is shown that in every case the film group required less time, on the average, to complete their jobs satisfactorily than did the non-film group. Members of the non-film group, on the average, required more than five and one-half hours to turn out an acceptable piece of work involving a right hand coarse thread. Members of the film group required less than four hours to complete the same job satisfactorily. In addition to saving 28 per cent on time, the film group spoiled less than half as much work as did the non-film group.

The author of this research study recognizes, in accordance with conservative statistical practice, the existence of some theoretical possibility that the advantages apparent in film use may be due to chance. He computes that the largest odds against the existence of an actual saving, on any of the jobs shown in the table occur in Job 2a-V, where there are only 2 chances in 100. For the other jobs, they are still smaller.

The average number of rejections is shown in the table, for its bearing upon any supposition that the savings in time might have been gained at the expense of accuracy. In only two of the twelve jobs did the film group have a greater average number of rejections than the non-film group.

These jobs, 1-L and 3-L, were both done in the beginners' room. One might expect only very small differences between the film and non-film groups at a time when they had been taught by different methods for so short a period as two weeks.

In turning out some projects the film group showed results which may surprise even motion picture enthusiasts. Thus, in Job 4-H, turning a taper with offset tailstock, half of the film group required, on the average, less than two hours per successful trial. Fewer than one-fifth of the non-film group completed their trials successfully in the same time. At the other end of the scale, while only one trainee in the film group required seven hours or more per successful trial, one-fourth of the non-film group required that long.

COMPARISON OF INFORMATIONAL GAIN DURING TRAINING COURSE

In addition to comparing film and non-film groups on the basis of speed attained in lathe work, comparisons were made of the two groups in terms of the information gained during their training course. The mean technical information gain of the film group as determined by entering and leaving scores on the Purdue Test for Machinists and Machine Operators was 38.136. The corresponding gain for the non-film group was 19.034. This difference is 6.61 times its standard error—a statistical indication of very considerable reliability in the finding. The fact is rather striking, that the average difference between pre-test and end-test score in the film group was more than twice that of the non-film group. It is consistent in trend, however, with the findings of Arnspiger, Rulon, and a number of other investigators.

WHAT VISUAL TEACHING DOES

Returning to the question of saving time, it appears from the table that the more difficult jobs and those requiring greater accuracy were the ones on which the greatest savings were effected by films. Since these jobs came toward the end of the course there are four possible interpretations of this part of the data.

1. Films are more useful in teaching the more complicated and more exacting operations.
2. Film teaching tends to accelerate learning in the initial stages, but groups not taught with films will tend to "catch up with" film groups after a time.
3. The effect of film teaching is cumulative.
4. Combinations of (1), (2) and (3).

Further research would be needed to show which of these hypotheses are correct.

USING THE TIME SAVED

Two questions have practical importance arising from the data showing that those taught with films learned their lathe skills in a shorter time than those not so taught. The first is, did the time spent in showing films cancel the time saved from practicing on the machines? The answer is definitely no. The film lessons did last from fifty to one hundred minutes, and therefore did prolong somewhat the instruction period that came before the trainee began actual work on the lathe. This was in spite of the fact that instructor demonstrations to the non-film groups usually had to be longer and more numerous than those given to the film groups. However, the fact that most of the jobs required two or more trials and that the comparisons are in terms of average time per successful *trial* suggests that the actual time saving due to films was greater than the differences between the calculated means would indicate. Thus the saving of approximately 42 minutes per trial on Job 1-L, which required four trials, amounts to a saving of 168 minutes, or more than twice the time usually used in the film lesson on that job.

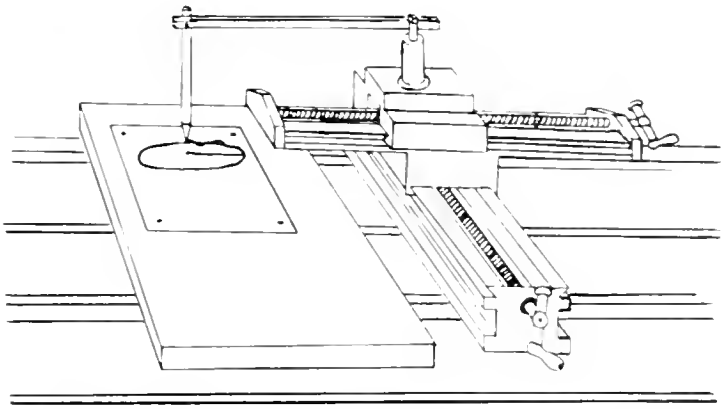
Furthermore, three of the seven lathe films demonstrated more than one job, so the time spent showing the film must be divided among these jobs. Finally, it should be obvious that even the straight substitution of film lessons for a part of the time on the machines would have the advantage of making it possible for more people to use the same machines.

A second question is, what did the film groups do with the time they saved? Several answers to this question were observed in conducting the experiment. Some students used their spare time to do supplemental exercises on the lathe. Some

made such useful shop equipment as plug gages, boring bars, and so on. Other students did extra work on blueprint reading and shop mathematics. A few assisted the instructors in record keeping, and in giving individual help to slower students. Several were put on production at the ordnance plant, during or before their last week of training. This latter plan seemed sensible in view of the need for skilled workers.

Sources of Saving

Why was the motion picture able to produce such marked results in the economy of time in learning lathe operations? A number of logical explanations will suggest themselves to anyone who has used films in teaching motor skills. In the first place, film demonstrations, although they cannot entirely supplant classroom demonstrations by the instructor, do have a number of distinct advantages over them. In a shop or classroom demonstration there are always those who, being on the outer fringe of the group, can see and hear little of what is going on. All trainees can see the film equally well. By manipulating lighting and the camera's position in relation to what is being shown, it is possible to make the film emphasize or play down various elements



MEASURING DEVICE CREATED BY AUTHOR FOR STUDY OF LATHE HAND REACTIONS IN MEASURING USEFULNESS OF TRAINING FILMS

of any demonstration. Furthermore, in a dark projection room by far the most dominant stimuli for attracting attention are the bright image on the screen and the clear voice of the commentator. In the classroom or shop there are almost always distractions to compete with the instructor for the group attention. Even the noise of the machine that is being demonstrated can be cut out in the film, but in real life it may drown out many of the instructor's explanatory remarks.

Can't Displace Instructor

Several techniques peculiar to the motion-picture medium give the film added advantages over the instructor in demonstrating shop skills. The film can show minute objects greatly enlarged, as, for example, the action of the finishing tool was demonstrated in one film. Motions may be speeded up or slowed down as they were in the film demonstrating the sequence of operations involved in threading. Non-essential and time-consuming elements can easily be omitted in the film presentation without disturbing the sequence and continuity demanded in the completion of the operation. Diagrams and animations can show machinery and processes that are difficult to demonstrate in the absence of such techniques.

There sometimes is a temptation for instructors, especially those with little experience or those who do not particularly like their work, to omit or slide over all or parts of demonstrations for all or parts of classes. The motion picture, on the other hand, usually represents the best organized and most complete presentation of a technique that can be developed. It never gets tired or bored; it is always ready to be used if it is administered and cared for properly. In the United States Office of Education films, the worker nearly always is shown just how the skills he is being asked to learn related to the war effort and to industry. He is made to feel that he soon will be helping to produce airplanes, jeeps, or tanks, and so on. It is difficult for the unaided instructor, especially if he is not particularly eloquent, to attach an equally strong emotional appeal to the work he is demonstrating.

Film — Instructor: A Team

It would be a serious error, the author concludes, to infer that the motion picture can ever take the place of the instructor. The film does have qualities within its scope

(Continued on The Next Page)

MEASURING FILM USEFULNESS (PART TWO)

of usefulness that the instructor alone cannot match, but to take the maximum advantages of these qualities in a total training situation requires the active participation of an ambitious and resourceful instructor. The film supplements, but can never supplant the instructor.

Use Films: Don't Buy Them

One strong impression arising from the investigation is that certain administrative provisions must be made if training films are to be used effectively. Primary among these is the provision of means by which films and projection equipment may be secured by instructors with a minimum of inconvenience. Equally important is seeing that instructors use the films according to acceptable educational principles.

As long as the investigator took the entire responsibility for getting the films, they were made an integral part of the training of the experimental groups, and the results speak for themselves. Before this time, films and projection equipment had lain idle during the time the classes were in session.

Much of the administrative red tape that prevented the use of films by making them difficult to secure might have been eliminated by giving instructors direct access to the films and equipment, rather than obliging them to clear through the administration. This would have entailed the slight difficulty of teaching the instructors to set up and run the equipment. Their running of the equipment for their own classes would have tended to divide their attention to the slight disadvantage of teaching effectiveness.

There are, however, disadvantages in giving instructors direct access to films and equipment. In the first place it would make it very difficult to fix responsibility for loss or damage to valuable equipment. Furthermore, it would still not provide the second basic need for efficient film use, *leadership in methods of film utilization*.

Use Them Properly

Leadership in the utilization of films is no less important as an administrative responsibility than making films available to instructors, for it is not likely that the film alone will have much of the desired effect unless it is used according to sound principles of teaching.

Leadership in film used would logically be expected to be a decreasing function of administration in situations where the teaching staff is stable. However, this research was carried on with instructors who were relatively untrained and inexperienced in teaching. Instructors who had never had much occasion to put themselves in the position of the learner, and therefore were in need of improvement in the art of making ideas clear, concrete, and simple to learn.

Overcoming Difficulties

Perhaps the best way to administer film teaching is to centralize responsibility for it under the leadership of a director or specialist for visual education. In situations where most of the training is done in a plant, a permanent projection room could be equipped and maintained. Groups of trainees or employees seeking upgrading instruction could be brought into the projection room at the optimum time for their learning. At the same time their instructors could be getting help in using films as they watched the visual education specialist handle the film showings.

In situations where training is conducted on an individual basis, the projection room could serve somewhat like a library. A trainee could go there to study a film much as he would go to a library to study a book. This would help make it possible for the trainee to learn at his own pace. While something of the group spirit might be sacrificed and something of the teacher's directing lost, much of the film study could be standardized, and the advantages in the efficient utilization of manpower would be tremendous.

Techniques for the Future

Such an individualized process of film utilization would likely be impossible with present projection equipment unless a projectionist were available at all times to run films. In the future, however, audio-visual equipment may be so simplified as to eliminate the need for extensive training of projectionists for classroom film showings.

Where training is conducted in scattered centers, the visual instruction specialist could, in cooperation with all instructors, make out a schedule for bringing the visual materials and equipment to the various centers. The fullest cooperation of instructors should be enlisted in making out the schedule, and the schedule should not be made out too far in advance. If either of these factors is neglected, poor timing of visual lessons is likely to result.

Films for Other Trades

To what extent may the findings of this study, on engine-lathe instruction, be applicable to the training of operators for other machines—milling machine, planer and shaper, and so on? And to what extent can the findings of a study of the use of films in the training of machine operators be applied to other trades entirely, such as shipbuilding, automotive and airplane construction and repair? Perhaps no answer should be ventured on the basis of this study except that such questions are of critical importance and worthy of research. However, there can be little doubt that so far as the learning tasks in other occupations are similar to those involved in lathe work films are likely to be effective.

THE CONCLUDING INSTALLMENT OF THIS 2 PART RESEARCH STUDY REVIEW

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showings are now being offered.

To plan the actual showings from month to month, the National Film Board works in joint-partnership with Industrial Circuits audiences. Following each showing, special report cards are filled out by managements of firms and returned to the Film Board in Ottawa. On these cards are written comments about the program presented, suggestions for future showings and remarks noting ways in which the general service might be improved. A second series of report cards comes from the workers direct, here too, with concrete comments and suggestions. Each projectionist also sends in a comprehensive report. At Industrial Circuits headquarters, the information contained on these cards and reports is carefully organized and tabulated. In selecting films for future programs, then, the desires of audiences, as indicated through the report system, are taken into consideration.

Other Countries Assist

In its effort to bring the best in film fare to its audiences, the Industrial Circuits draws upon the film resources of other countries as well as Canada. From Scotland came the picture *No Accidents* shown one month. From the United States Army industrial incentives activity came *The Arm Behind the Army* and *Attack Signal* used on respective monthly programs. *Soldiers Without Uniform* was made in Australia; *These Are the Men* was produced in England. All of these have been included on the Industrial Circuits. Before a final selection of a month's film program is made, many pictures from several countries may have been reviewed and rejected.

Management Also Pleased

The applause sounding across Canada for the Industrial Circuits comes not from audiences alone. Management has endorsed the project heartily, has made these showings an important feature of the monthly production program. Today, more than seventy per cent of Industrial Circuits screenings are held during working hours on company time.

The Hon. C. D. Howe, Canadian Minister of Munitions and Supply, wrote concerning the Industrial Circuits to Canadian Film Commissioner John Grierson. "I note with interest," the Minister's letter begins, "that the Industrial Film Circuits are winning larger audiences each month. I understand the programmes are meeting with approval of both management and labour in the plants in which they are shown."

"I trust," the letter concludes, "that your screenings will continue to attract increasing audiences."

WAR PLANT SHOWS

They are . . . in every Province across the Dominion industry is taking enthusiastic advantage of having films shown for men and women in production. The Industrial Circuits come free of charge; management is asked to supply nothing more than space and an audience. From then on, National Film Board projectionists do the rest.

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New Slidefilm Combats War Boom Spending

A DRAMATIC JOLT to the she[ep] memories of spendthrifts [of] made in the new Dartnell sour[ce] slidefilm production, *Dollars a[nd] Sense*. Produced for general sa[le], the film is now being distributed [to] all companies and organizatio[ns] which desire to take direct acti[on] against the war-boom spending th[at] is contributing to inflation and se[ri]ously undermining the post-w[ar] economy of the nation.

Dollars and Sense is the curre[nt] release in the HUMAN RELATIONS IN INDUSTRY films produced by T[he] Dartnell Corporation of Chicag[o], written and directed by George Ca[r]illon. The first film of this seri[es], *The Power of a Minute*, has be[en] adopted for regular use by mo[re] than a thousand companies, and [a] special version was made for t[he] Navy Department.

COMPANY FILMS

(CONTINUED FROM PAGE 21)

shorter than *This Is Armstrong*[s] explains the general welfare a[nd] personnel programs of the Co[m]pany. This film also serves to i[n]troduce to the new employees t[he] President of the Company, H. W[.] Prentis, Jr., and other top executive[s] who speak brief messages of we[l]come from the screen. The fil[m] then clearly explains the Company[']s method of Job Classification a[nd] how wage and salary scales are s[et]. The Income Security Progra[m], Group Insurance Plan, General R[e]tirement Plan and other program[s] of this nature. To do this, anima[ted] tion is used extensively. The entir[e] film is in color.

The two films, which are alway[s] shown together, have been put o[n] the screen in all of Armstrong['s] factory towns for employees an[d] their families and friends, and ar[e] shown daily to each new group o[f] employees starting work on tha[t] day. The Company considers th[e] showing of the films the major fea[-]ture of its extensive induction pro[-]gram.

EARNING HOW THEY WORK FROM THE TOP DOWN

residents Edward B. DeVry of DeForest's Training, Inc. (left) and m. C. DeVry of DeVry Corporation, Chicago, explain to WACs Vivian olloway T 5 and Iva Cale T 5 of Panama City, Florida, and Pvt. C. R. mon of Lorado, Texas, and Sgt. Walter Keeler of Yuma, Arizona, part a contingent of specialist troops enrolled at DeForest's Training for ecial work on electronic equipment built by DeVry Corporation, the nple yet still effectively operating mechanism of their father's "suitcase ojector" of 1913.

OPTICAL FILMS OPEN NEW TRAINING FIELD

In connection with the training ns on "Optical Craftsmanship" oduced by the Bell & Howell Com- ny for the United States Office of ucation, a whole series of obscure t important problems will be ought out into the light and an- ered by means of animation.

These animation sequences visual- ing vital facts beyond the reach the unaided eye, will cover such oblems as:

Why Newton's rings, measur- ing spaces of only a few one- millionths of an inch, reveal the actual curvature of lenses.

Why three successive grinding tools, differing in radius by only a few one-thousandths of an inch, are needed to secure the specified rough grinding.

Under the supervision of J. Stanley McIntosh, visual aids specialist for the United States Office of Education, and Wm. F. Kruse, in charge of film production for Bell & Howell, animation is resorted to wherever straight photography proves inadequate. In a field like that of precision optics there are many measurements and concepts that are beyond the range of the human eye, or, in fact, beyond customary measurement devices. In all such situations, beyond the facilities of ordinary visualization, animation plays an indispensable role.

Technical consultants and supervisors discuss animation drawings prepared at the famous Terrytoons Studios in New Rochelle, New York, by Paul Terry staff. Each of the six films on Optical Craftsmanship, produced by Bell & Howell for the U. S. Office of Education, will contain one or more animation sequences.
Reading left to right: C. A. Gilmour; Paul C. Foote; J. S. McIntosh, Visual Aids Specialist, U. S. Office of Education; Wm. F. Kruse, Producer; Erich Betstadt.

OUR SCHOOLS and THE FUTURE

BY Lyne S. Metcalfe

It is up to the schools of the community to prepare the youth of today for a new kind of world a world of design, of invention, of wonderful, new conveniences.

Students of today must face new problems of *living* and *earning* in an age of air-travel, television, electronics, plastics and lighter metals.

The capacity to *produce* and *consume* can only come in such an era through an educational system streamlined to develop it.

To meet these new obligations, our schools need better paid teachers and vitally necessary facilities and equipment, and the investment of tax-dollars in this direction brings a big return to community and Nation.

Dedicated to Youth

That is the gist of the theme of a new sound motion picture, *Pop Rings The Bell.* Dedicated to America's Future — The Youth of Today, produced by The Jam Handy Organization, Detroit for its sponsors, The National School Service Institute.

The picture will be shown nationwide through the cooperation of the 200 members of The Institute with educators and educational organizations and associations, as a means of bringing home to taxpayers everywhere the new needs of our schools resulting from technological developments in wartime, and the coming of the air-age.

The picture has a screen or running time of approximately 15 minutes, and 16 mm. prints will be made available by the members of the Institute for the convenience of schools everywhere.

The School's New Problems

Appeal is based upon the fact that most tax-payers, whose tax dollars sustain and develop the work of our schools, frequently fail to realize that teaching today is no longer a mere matter of text-book study and home work assignment; that technology, upon which the future relies, makes new demands for equipment and facilities for classroom, school workshop laboratory — and this, in turn, makes necessary better paid teachers to put these facilities to effectual use.

A simple motion picture story has been prepared to drive home these facts. The central figure or character is "Pop" Gregor, custodian of The Middleton School, an old timer in the town who knows everybody. Opening scenes show the principal's office — that of Mr. Forsythe — on the evening when a "back-to-school" gathering is in progress, and during which there is a meeting of Principal Forsythe with four typical local business men taxpayers. The taxpayers question the need for additional school taxes, and the Principal finds himself on the defensive. "Pop" is present at this meeting.

A scene from the new Jam Handy motion picture "Pop Rings the Bell"

Reasons are Presented

Dramatically and forcefully armed with the facts, Forsythe reveals to the taxpayers the *reasons* why the school —and all schools— need more funds to meet the new obligations. Cooking, domestic science, school shop and classroom scenes — global geography classes — are flashed on the screen to show how new facilities and equipment become ever more vitally necessary to enable the school to meet new obligations in line with the times.

Forsythe's presentation—against opposition in effect, represents a "pattern" for every educator.

"Pop" steps into this somewhat stormy scene to sustain Forsythe's defense, recalling to the hard-boiled business men just what the Middleton School has done for the community and every one in it—over the years.

Education an Investment

While this meeting is the climax sequence or episode in the film, there are colorful sidelights and some interesting characterizations. Stress is laid on the fact that every tax-dollar spent to improve education through improved and up-to-date teaching equipment and better pay for teachers, is an *investment* that brings a rich return to every one in the community.

Forsythe has the facts, and succeeds in convincing even the most hard-boiled of the group that the technological era into which the Nation is entering, especially the future of aviation, has wrought many changes in education which present new problems and add new burdens to the schools and that the obligations can be met only if adequate facilities are provided.

NEWS OF FILMS & EQUIPMENT

DeVry Films & Laboratories, a bsidiary of DeVry Corporation, s been named a depository for fice of War Information films, hich are now available. It is also nounced that the 16mm sound-on- m edition of the British war epic *sert Victory* is available through Vry Films & Laboratories. Ac- ding to Lt. Col. David MacDon- l, under whose direction *Desert ctory* was filmed, 95% of its foot- e was made with DeVry 35mm tion picture cameras.

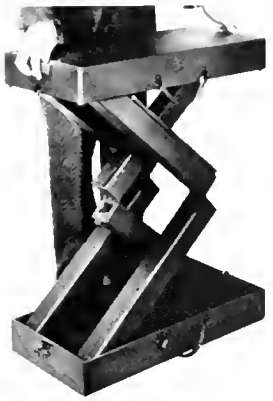
LL & HOWELL ANNOUNCES ORTA-STAND UNIT

Bell & Howell has added another oduct to its long list of precision- de equipment — the double-duty lmo Porta-Stand — available with- a priority.

Closed, the unit looks like a suit- se, is easily carried by means of its leather handle. Opened, it is a stand 42" high, with a platform 12¼" x 24¼" which accommodates any size projector — 8mm or 16mm, sound or silent, and boasts a convenient shelf for holding reels and cans during a show. Added to the movie fan's collection of equipment, the Porta-Stand puts an end to furniture rearranging and book stacking on chair or table for proper projection height. Furthermore, it serves admirably as a speaker's stand.

Constructed of rigid basswood-plywood finished in lustrous brown lacquer, with durable steel hardware used throughout, the Porta-Stand utilizes non-critical materials and, as stated above, is available without a priority.

VIEW OF NEW PORTA-STAND



Picture above shows the new B & H portable projection stand unit in closing position.

FILM DIRECTORY IS AVAILABLE

♦ The Visual Education department of Illinois Institute of Technology, 35th & Federal Streets in Chicago, has provided for the guidance of war industries and vocational schools, a comprehensive guidebook to available war training subjects.

Copies of the Visual Directory are available from this bureau at publication cost of one dollar per copy. Address your requests to address noted.

Can Our Schools Teach the G. I. Way?

CONTINUED FROM PAGE 231

Immediately after showing the film the teacher may give each pupil a quick 50 question multiple-choice or true-false quiz to make him think, and root vital points in mind. Certainly she rushes them aroused curiosity into a broader study, augmenting and relating each fact out of the past to another until they build into a breathless, headlong novel of mankind.

Fifteen years from now casualties in history books will be impersonal things. "Ten casualties at Kwajalein were light." But if the kids see those casualties coming up the gangways to hospital ships, some walking, some on litters and ominously quiet, they won't seem impersonal things, to be let thru the head as thru a sieve, and social studies won't either.

Top-notch Teachers. Here, then, is the basic teaching-film technique. With it you bring top notch talent to every classroom, skilled teachers and writers the local school budget can't touch, who can spend $12,000 preparing for 10 minutes of one class and months editing and photographing until each scene and each line contributes to the education.

Good films don't pile up words, as a lecturer may, to stumble around clouded thinking. Not long ago one film maker made a film to teach molecular theory. He retained a University of Chicago physicist to help. The physicist sent the animator a three-page description of the flow of electrons thru a condenser. The animator followed the flow up to the middle of page two, where it vanished in words. He called the physicist.

"It's simple," said the physicist, twirling his Phi Beta Kappa and Sigma Xi keys. He picked up his chalk and breezed right thru up to the middle of page two.

"I got that far too," chided the animator, and the professor got a little red and sat down with the description and started again, working very slowly, with the animator watching him, waiting. Finally the professor looked up. "You know," he sighed, "I've been teaching this wrong for twenty years."

With movies you can teach to the first grade biological subjects which otherwise must be held off until the tenth until the children have the vocabulary to understand. You can plunge to the bottom of the ocean to study sponges and shellfish. You can roll back the years to the era of Creole dominance in New Orleans and study a day of packet boats, the delta country, cotton and cane plantations, and slavery. With time lapse photographs you can study the astonishing miracle of plant growth as it unfolds before your eyes. With animated drawings you can move inside a running diesel engine, or move inside the body to study the functions of the phrenic nerve, the pharynx and larynx, or the battle between white corpuscles and disease. You can tour anything from the world to the alimentary canal, without a minute wasted tipping porters, hunting some one of the party who has chased off after a blonde or telling the doctor, shove over, Doc, so a fellow can see.

Don't compare teaching films with the stillborn reels of your day. And don't think of them as sugar coating. They don't teach geography by showing you old Charles Boyer, as the bald monk, chasing old Legs Dietrich across the sands of Arabia in gorgeous technicolor and little else. They're real. As the Army uses them they're full of slam bang action and tremendous explosions and the crunch of bone. They make war real.

When they showed the first aid films on one basic training class I sat in on, two husky men had to be carried out, and they went out in the approved way flashed on the screen only moments before. When film can make a subject so real, there won't be many men who even years afterward won't remember how to stanch an artery or give traction to a splint.

Visual-aid costs are hardly a matter of concern. Even with today's small circulation, school films cost only $40 a print, sound attached, and a print can be shown some twelve hundred times- less than four cents a showing. Rural or smalltown schools can pool their films to spread their range of subjects. Suitable projectors cost around $250. So schools can have them.

Don't Sleep. But don't think they're a cure-all. Don't think if you buy them you can turn over on the other side and go to sleep. For in the Army and Navy they are only one step in the basic technique of *teaching by doing*. This is an old and proved technique. You see it in school laboratories, internship for doctors, and journalism schools that farm their students out to newspapers. You see it in Antioch College, and Bennington, where students spend a fourth to half their school year out on the job, finding themselves and what they're in school for. You see it at Iowa State College, where students learn farm management by actually managing a good Iowa farm. But in the armed forces you see it really on the loose.

In the Army it's doing everything to reproduce the "big push" short of maiming and killing. It's whole platoons advancing across a no man's land under live machine-gun fire, with tanks charging and mines exploding and shells whimpering overhead. It's two hundred thousand troops of all kinds at the Desert Training Center, sweating it out at 120 degrees on a barren wasteland of salt lakes tipped by jagged mountains, maneuvering for days on end, digging land mines, sleeping in jolting trucks and sleeping not at all. It's contriving such torture chambers as the Link Trainer, which trains you to concentrate on staff work in a slit trench in the black of the night. Concentrate with sudden blasts of sand and rain and the sickish stench of gangrene in your face; with heavy shellfire rocking the ground; with telephones sticky with a red mucilaginous coating that slimes your hands and maps; with blinding flashes of light and the screams and thrashing of the wounded dinning in your brain.

You see it, and it makes you wonder if our schools might not be more ingenious and hell bent with it if they too had to make "damn sure no boy's ghost will ever say, 'If your training program had only done its job.'"

Bloodied Nose. Perhaps the answer to that is uncertain. But on another point there is no uncertainty. Armed force training has at least bloodied the nose of two practices no one has ever liked yet never did much about. One is the practice of limiting higher education to those who can buy it, not to those who can profit from it. The other is shoveling all children into pretty much the same mold regardless of their aptitudes and intellects.

Bert and George may both be average. Good, healthy, normal kids. But Bert may have three to four times as much natural aptitude along given lines as George. Yet our schools put them along together; and the tragedy is that they gear their teaching to George.

The Quiz Kids are samples of what can be done with bright kids with leaps of aptitude for certain things. Back of each, investigators hunting new program talent find, is some unusually interested grown up who encourages and stimulates the youngster. Back of mathematical whiz Richard Williams is a mechanical-engineering father who brings his engineering problems home and asks his sons to solve them. As a result, Dick was doing high-school math at seven; and twiddling his thumbs in school while the others studied the multiplication tables.

Even within an individual the most pronounced aptitude is sometimes three times as strong as the least pronounced. Many a potentially good machinist makes himself into a poor chemist, nagged by failure and the frustration that festers when a strong aptitude goes unused. And our schools have often helped make him what he is by giving him eight years of the wrong kind of education rather than eight hours of *competent* psychological guidance.

Developed New Tests. What the armed forces have done about this is develop a whole new series of tools

ın Our Schools each the G. I. Way?

ONTINUED FROM PAGE 34)

ɔre than two hundred comprehen-e tests—to determine what an indi-lual is most suited for. Developed em, and then applied them in a ss effort no one had ever tackled fore. They have screened eleven llion men something the way a fruit ower screens peaches; some are best drying, some for brandy, some for me canning, some for the specialty de, some for nothing at all. They eened out the youngsters best able profit from a technical education sent them to college, expenses d; for war demands technical men. ey screened out others and sent m to technicians' schools; others to cer-candidate schools; others, like nandez, the illiterate little Mexi-o, to special-training troops.

n the colleges, working with a select up not held back by dullards and fish swallowers attending college ause it's an economic privilege, the fessors are pouring it on. They've oped up the credit hours of work m the normal 16 and 18 to as high 6. In the tank technicians' school cut training time from nine ths to nine weeks—partially with hing techniques and partially by ting only the reasonably apt in beginning and then further group-the fast learning with fast learn-

he result of this may be profound. likely that one day there'll be sicians, psychologists, and physi-ists to diagnose your child's apti-s and capacities. Schools will not to make engineers out of artists. y'll stimulate the quick to learn speed them along. They'll not them back in a system geared to ping the funk-heads in school until 're 16.

rhaps colleges will be open to all who have the native ability to profit from them. In a message to Parliament last year Prime Minister Churchill said, "Nobody who can take advantage of higher education should be denied this chance. You cannot conduct a modern community except with an adequate supply of persons upon whose education, whether humanitarian, technical, or scientific, much time and money have been spent."

Is It Education? Now one can argue that drawing parallels between Army and school teaching is no good. The armed forces are *training* men, not *educating* them. Heaven save us from that. Already the University of California offers courses in elementary and intermediate ice-skating. In the end you have nothing but sleek, well-tubbed animals with money in their pockets and nothing in their heads. Instead, schools must teach students to think. Strengthen their wits. Discipline their minds.

Naturally. But making a subject hard to master by vacuous teaching gives it no superior disciplinary value. The old theory of formal discipline held that study of geometry developed the "reasoning powers"; Latin the ability to roll them in the aisles with English; laboratory science the "powers to observe." But now we know this is mostly myth. Only when the student is brought to understand the subject, only when he sees its relationships to other things, only, in short, when the teaching is tops, does the transfer take place. And not very strongly even then.

One thing is certain. Either we help improve education this way or we find another way. The old education isn't enough. We're befuddled, beset with strikes and race riots, with economics we can't understand, with zoot-suiters and empty-headed girls squealing in ecstasy at the sight and sound of Frank Sinatra. We're bedeviled with science and technology that can build us a promised land or blow us right back into savagery. All the world is becoming one village street from Edinburgh to Chungking, and we're faced with new world problems that are astronomical, deep-rooted in historical tensions, full of cross-currents and whirlpools and hate. And what do we know of them? We know that Holland is a place of pretty tulip bulbs and dikes and windmills, a place where a little boy saves the country by sticking his finger in a hole in the dike; a place where the queen tries and tries and just has baby girls.

Knowing that little never was enough. Remember all those little kids who went off to school just a few years ago, chirping happy little songs, chin up and eyes bright, trusting us? Hardly before they grew up we sent them off again—this time to crawl on their bellies under barbed wire and hug the ground thru nights violent with butchery and pain; this time to leave behind them in blackened wheat fields and bloody mountains a twisted trail of burned out tanks and broken guns and boys who wanted so much to see the rich farm lands of home once again.

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers stand ready to provide products and services required for your film program—in industry or education. A majority of these companies also provide projection service for local and regional showings, equipment repair and maintenance, film rentals (industrial, educational and entertainment subjects) as well as the film productions of the armed forces and U. S. Government agencies, including the U. S. Office of Education. Your visual education specialist can help—whatever the visual problem!

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Qualified visual dealers may be listed in this National Directory on application: Address inquiries to BUSINESS SCREEN, 157 E. Erie, Chicago

THE VOICE AND THE TRAINING FILM

By RAYMOND W. TYSON
Assistant Professor of Speech, Pennsylvania State College

THE DEVELOPMENT within recent years of the training and educational sound film as an aluable teaching and learning has been as rapid as it has n encouraging. Today few edu-ors will deny that the motion ture has earned a distinct place any educational program, that it a contribution to offer which kes it an indispensable part of educational system worthy of name progressive. The wide-ead use of training films for the ed services, and the instructional inspirational documentaries duced for and by the various ernment agencies has further ac-ted the value of the screen as educational force.

LIMITLESS POSSIBILITIES CITED

medium which was approached w some hesitancy and skepticism too many years ago, is now ognized as possessing limitless sibilities. And it requires no at amount of vision to predict the use of audio-visual aids as educational agency is as nothing ay compared to the position ch they will hold after the war. ut the only limitation placed on mera is the imagination of the using it.

owever, despite the technical rovements on equipment and in io production methods, many ent training films reveal certain lects which indicate the necessity a more critical supervision of ils on the part of those respon-ible for production. The slighting ny one phase in a medium as ely-knit as a sound picture will rally impair the merit of the fin-l product. It is the purpose of article to discuss just one aspect, item which is far too often ected (and with damaging con-equence): the voice of the nar-tor or commentator.

POOR DELIVERY DAMAGING

hy greater care has not been rcised—in too many instances—ne selection of the voice for a ra ing film is extremely difficult o derstand. It may be a moot oi whether a good narrator ever ctually enhanced the quality of a oi picture: but unfortunately, on excellent films have been irre-ably damaged in effectiveness, o r as the general public is con-ed, by the poor delivery of the ar tion.

Considering the varied use and ic distribution for which the ve ge educational sound picture is designed, it would appear that a great deal more discrimination could be evidenced in the selection of the proper voice. The informational value of too many good films—good from the standpoint of subject matter, writing, photography and direction—has been weakened by using a voice either unacceptable in quality or one not suited to the content of the picture.

NARRATOR'S ROLE IS VITAL

The role of narrator is important, and this position of importance increases with certain types of pictures. He is not, however, the dominant factor in the production scheme of things. In the great majority of audio-visual aids the voice should be analogous to that of scene designer in the theatre. The scene designer is a supplementary agent in a theatrical production. He gives color and atmosphere; he aids in establishing mood and in developing the illusion of reality. His function is purely that of a cooperative agent. When the curtain goes up on a dramatic production and the audience expresses audible satisfaction or contempt with the setting, the designer has failed in his artistic obligation. A good stage setting is one which is such an integral part of the performance that it does not call attention to itself; it does not intrude during the performance.

Much the same can be said of the proper voice for a sound film: it does not call attention to itself: it does not intrude. The right type of voice for a film should be so intimately associated with the visual content that it is not noticed.

Since subject matter is the all-important thing, the visual element should carry the burden of exposition. The voice should never get between the screen and the audience. When that occurs, when an audience begins to take cognizance of the narrator, either because of inferior vocal quality or reading ability, or because of an over-dramatic emphasis, the audio factor has infringed upon the province of the visual. The basic purpose of the narrator is to contribute a greater degree of coherence to the visual content, to high light the informational matter on the screen. Any vocal characteristic or delivery mannerism which weakens this purpose has no place in film narration.

WATCH THESE FAULTS

It is obviously impossible to stress any especial style of delivery. The character of the film will determine that, or certainly should. And it is just as obvious that such speech irregularities as the following have absolutely no place in the speaking equipment of commentators: voices of high pitch or with a trace of nasality, excessive sibilance, voices characterized by faulty breathing habits, slovenly articulation in which certain sounds are mutilated or omitted, or in which sound substitutions occur, voices characterized by a too precise enunciation which sounds as if the utterance might be an effort, traces of dialect which indicate particular localities, errors of pronunciation, lack of inflectional variety which results in a monotone, and poor reading which results too often in misplaced emphasis or over emphasis.

To be sure the above defects are not common characteristics heard in the voices of professional narrators or commentators. But that such

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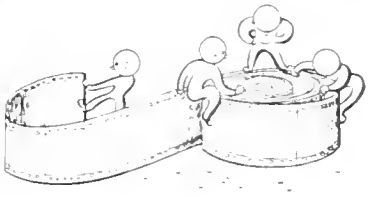

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speech deficiencies are heard among professionals is a matter which defies explanation. One does not have to have an over-sensitive ear to catch them. And in the efforts of many amateur narrators such incongruities are far more common than they should be. Among professionals certain vocal mannerisms and styles of delivery are frequently heard which are decided irritations to the general public and which therefore assume all the proportions of a distraction.

Other Common Errors

One is the high-pressure selling approach. It goes without saying that there is no place in educational sound pictures, or any other kind for that matter, for the tired voice or the voice that manifests apathy or indifference. But on the other hand, one may well question the advisability of having a narrator adopt the animation of the radio announcer delivering a commercial. It is true that the voice can lend to the pace of a production. But a firm, conversational type of speaking is usually sufficient for all explanatory purposes.

It is not the job of the narrator to sell the picture. If it is a good picture and supplies a definite need, it will sell; if it is a poor production there is certainly nothing the voice can do about it except perhaps to make it worse.

Shun the Heavy Drama

Most commentators should be very wary of emotional and dramatic readings. Certain kinds of documentaries permit a much greater latitude in this respect than the straight training or educational film; but the handling of such an assignment should be marked by considerable discrimination. The motion picture critic for TIME in his review of the Army's film, *Prelude to War*, expressed an opinion which is anything but uncommon among audiences when he wrote: "Among the film's serious faults are the commentators' voices—too often as soapy and unctuous as the average in such assignments."

Any type of diction which bears the stamp of affectation to the average American ear has a very questionable place in film narration. On this score, Southern British speech, or the American brand of it, can be fatal to the success of many pictures. Stage diction falls into this same category. The dialects of New England and the South, although representative of the best in American English, should be used sparingly for the audio end of educational pictures. These dialects are not spoken by the majority of Americans.

THE VOICE & TRAINING FILMS

Say It in Good Americanese

What is known as General American speech is, by and large, the safest kind of diction for the voice to possess. General American speech is spoken by over ninety million persons in this country and Canada, and it is the prevailing type of speech now desired by the radio networks. Any brand of speech which strikes the general ear as being something of a deviation from the norm has a doubtful place for screen narration regardless of how competent the writing may be.

Rate of speaking is a factor which calls for special consideration. The narrator can be of great help in contributing to the pace of a film. But the rate must not be too rapid. A rapid rate of delivery can place a strain on an audience in their efforts to assimilate the information. This is particularly true with the film in which the narrator is supplementing the instructional aspects of the screen.

Take a Tip From the Army

This writer has talked to scores of service men who at one time or another were given large dosages of training films. Their common criticism is that too often the rate of speech delivery was too fast to enable them to absorb the informational merits of those pictures which needed the informative assistance of the narrator. It is recognized, of course, that in many cases the commentator has no choice in this matter. He must submit to the demands of the other factors of production. But the director should see to it that the script is more carefully edited for delivery purposes.

Too much attention cannot be given to the choice of voice and to the delivery of narration for educational sound pictures. More and more are the movies going to serve as visual textbooks to aid in the training of technicians for the construction period and to assist the people of all lands to take advantage of the scientific advances which are being made in this modern world.

We Know What We Like

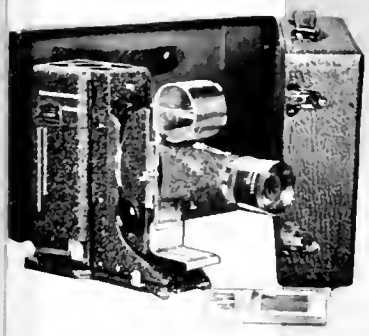
The American people as a whole are speech conscious to an amazing degree. American audiences, after about twenty years of radio listening and going to the movies, have developed a keen appreciation of what constitutes good speech and acceptable diction. This is true even among those persons whose own speech lacks the basic attributes of standard speech quality. American audiences are the most critical in the world, and it is a safe prediction that they will continue to demand the best, be it of a theatrical or non-theatrical nature. The educational sound film is too important an adjunct of modern education to permit the slighting of any one factor of production.

New S.V.E. Slidefilm

• A new 33-frame slidefilm on the proper techniques for using the S.V.E. Slide Binder has been announced by the Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois. It will be furnished free to those in charge of visual instruction departments or courses, and to others who are using the binders regularly.

The slidefilm presents the few common tools required for using this simple and safe binder—scissors, brushes, water container, blotter and soft cloth. It next shows the proper steps in removing Kodachromes from their mounts for binding. This is followed by instructions for the proper cutting apart of double-frame prints for binding.

The next sequence follows each step of the process of binding, to achieve the desired protection of the film from dust and moisture. The same procedure is followed for either double- or single-frame slide mounting in the regular binder, except for the addition of the single-frame mask. This is also the procedure used to bind films of bantam size in the special bantam binders.



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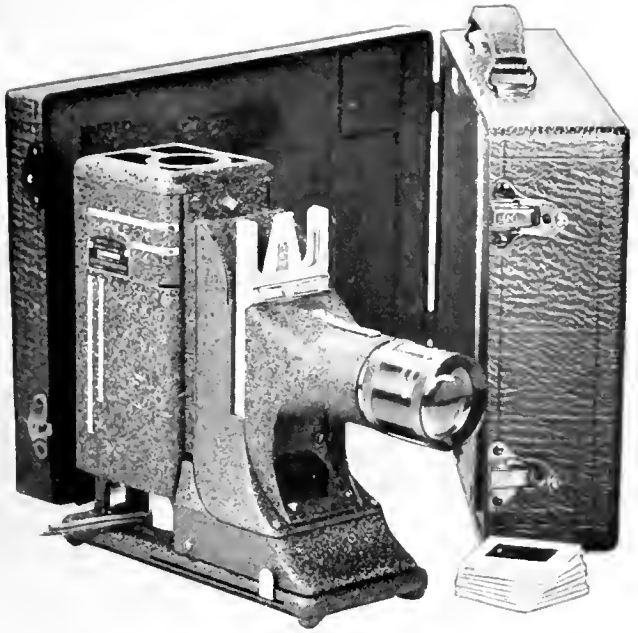

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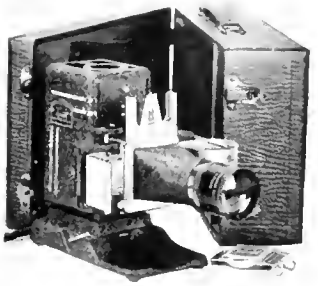

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Details regarding the procedure for purchasing this equipment will be furnished promptly on request.

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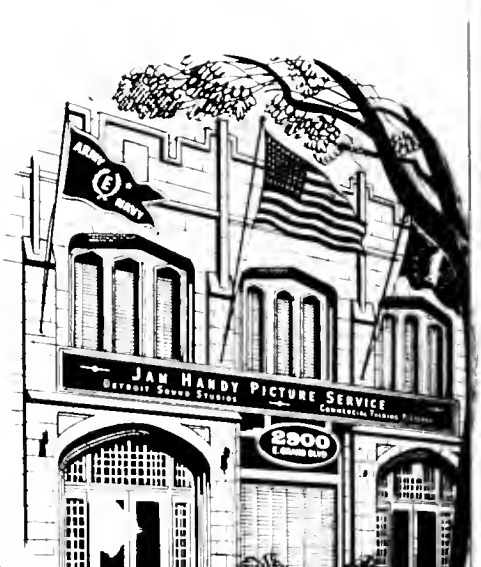

Motion Pictures and Slide Films

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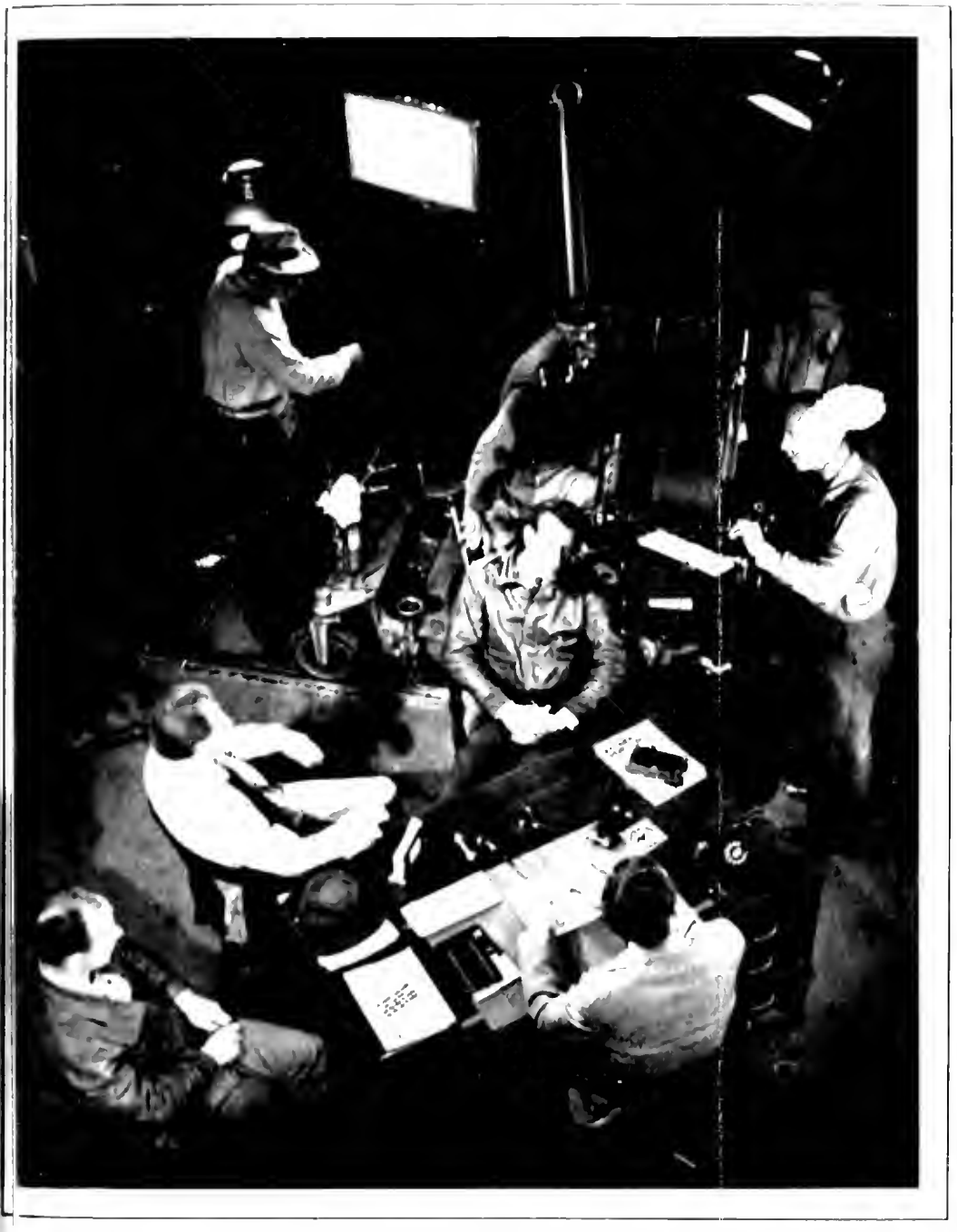
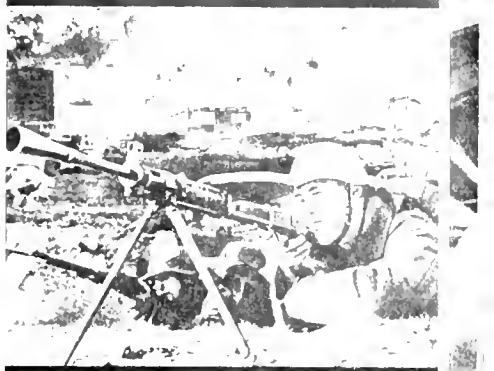


Visualizing Tools of Safety

No. 6 1944 • THE NATIONAL MAGAZINE OF VISUAL AIDS TO INDUSTRY & EDUCATION

Safe Use of Hand Tools



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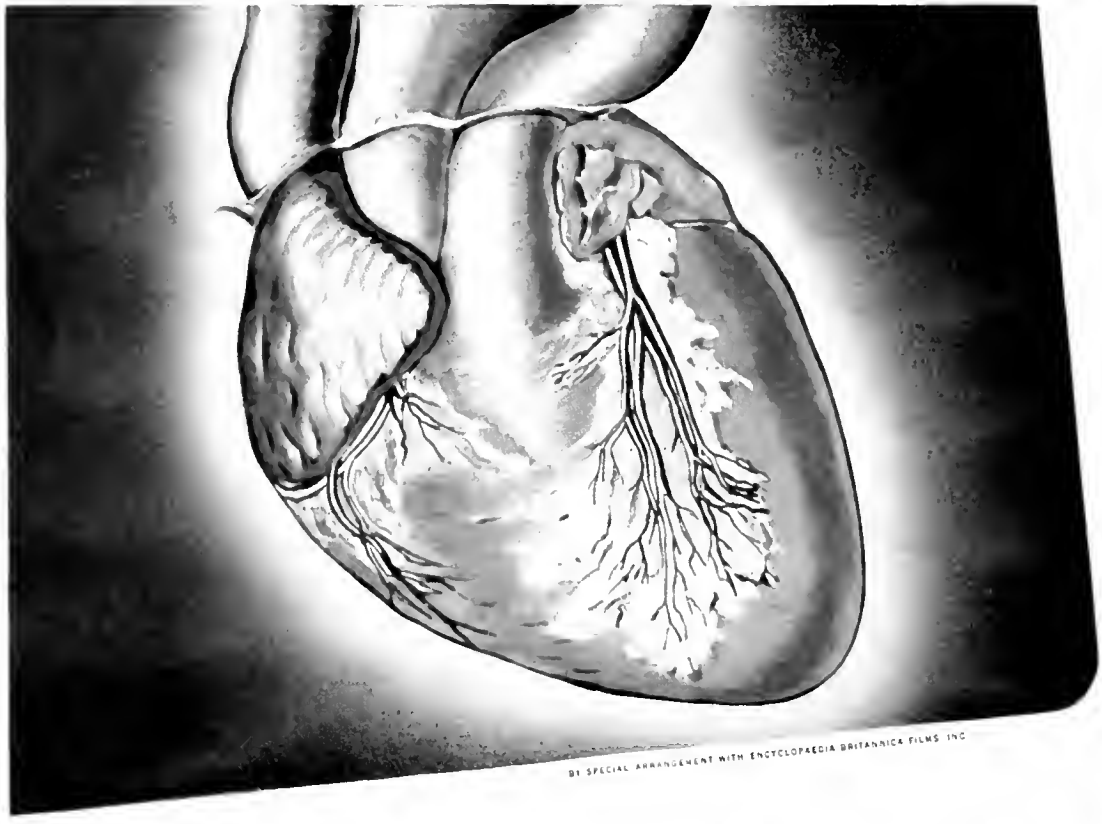

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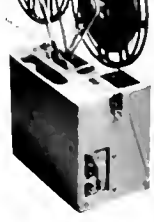
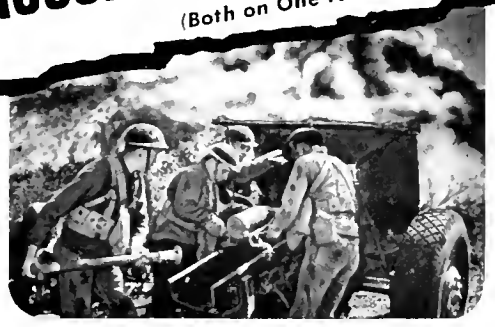


INSPIRE YOUR WORKERS TO GREATER EFFORTS WITH THESE TWO NEW CASTLE 8mm 16mm BATTLE FILMS

1 FIGHT FOR ROME! AND RUSSIA'S *Mighty* OFFENSIVE!

(Both on One Film)



and with the "Fighting Fifth" at Anzio! Watch stone and mor- ır belch skyward as terrific Allied barrages blast Cassino . . . See lazing ground and air action . . . earth-shaking artillery duels ıd devastating bombing attacks . . . A movie that will galvanize our workers into redoubled efforts!

See gigantic hammer-blows send Hitler's hordes reeling into the Balkans! Witness fearless fighters charging through shellfire . . . liquidating a Nazi tank crew . . . hurling destruction with massed rocket guns! Inspirational! Thrilling!

2 YANKS *Smash* TRUK! JAP "PEARL HARBOR" BLASTED!

Sail with dare-devil cameramen on ships of a mighty task force! Fly from a Flattop with an avenging armada of American airmen and see 200 Jap planes blasted from the skies . . . on your own screen! Watch enemy cruisers, destroyers, transports burst into flames as they are destroyed! Bomb into wreckage the great naval bastion of Truk. Your workers will thrill to this smashing American victory every time you show this epic movie!

FREE! Castle Films' De Luxe Catalog describing 98 home movies you can own!

CASTLE FILMS INC.

30 ROCKEFELLER PLAZA NEW YORK 20 | FIELD BLDG. CHICAGO 3 | RUSS BLDG. SAN FRANCISCO 4

'ORLD'S LARGEST DISTRIBUTOR of 8mm — 16mm MOVIES

LOW COST!

8mm. 180 feet	$5.50
16mm. 360 feet	8.75
16mm. Sound 350 feet	17.50

Our business continues to grow each year on the solid foundation of sound analytical and creative service, quality of product and fair dealing.

As your post-war advertising, merchandising and training plans crystallize they will undoubtedly encompass the use of sound motion pictures. We will greatly appreciate your investigation of our organization, our product and particularly the degree of satisfaction of the clients we serve.

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

Keep Up the Fight!

FOR EDUCATION

FOR INDUSTRY

FOR OUR ARMED FORCES

MOTION PICTURES ARE SERVING ON EVERY FRONT

Today our armed forces are depending more than ever on motion pictures to help train men and women for the complex tasks of modern warfare.

A rapidly expanding library of silent and sound 16 mm. films is also in constant use for homes, industry and education—with new films being added daily.

Motion pictures are thus helping to speed the day when Ampro Projectors—now going 100% into the war effort—can be again used to bring to industry a new sales and training aid. Write for the latest Ampro catalog of 8 mm. silent and 16 mm. sound and silent projectors.

Buy War Bonds

AMPRO

AMPRO CORPORATION • CHICAGO 18, ILL. • PRECISION CINE EQUIPMENT

No Ripping of Fabric from Roller!

With the Challenger, it is impossible to tear the fabric from the roller in setting up the screen or adjusting the height. When the screen fabric reaches the fully open position, the extension support locks automatically into place.

No Stooping! No Guessing!

To raise the Challenger to desired height separate adjustments of case or picture area are not necessary. The exclusive inner-lifting device of the Challenger raises the case, roller and fully opened screen as one unit and thus eliminates stooping and guessing about correct screen proportions.

The DA-LITE CHALLENGER

is the Only Screen that Gives You These Important SAFETY FEATURES

THE exclusive slotted square tubing and smooth-operating inner-locking device in the Challenger Screen make this portable the easiest of all to set up and to adjust in height. It is a physical impossibility to rip the screen fabric from the roller on raising the Challenger to desired height. Lifting the Challenger doesn't pull the fabric further from the case and thus necessitate moving up the case separately. All that is necessary is to release the spring latch and raise the extension support. The complete unit (case and screen) is thereby raised to the desired height where it locks automatically. Positive and foolproof!

Only the Da-Lite Challenger offers these important *safety features* . . . The Challenger is one of many styles in the Da-Lite line of projection screens famous for quality for 31 years.

DA-LITE

Reg. U.S. Pat. Off.

DA-LITE SCREEN COMPANY, Inc.

Dept. 6-BS, 2723 No. Crawford Avenue, Chicago 39, Illinois

Quality Screens for 34 Years

NO SUBSTITUTE MATERIALS • • • NO SUBSTITUTE FOR EXPERIENCE

How To Save At Least Three Months

PROOF

If you want proof that Caravel Plans get results, check with

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American Can Company
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OR ANY OTHER CARAVEL CLIENT

TRAINING A SALES FORCE and dealer organization to function at top efficiency is no small task—even in peace time.

Yet this is the task which many companies—yours, quite possibly, among them—must be ready to face when the signal comes for reconversion.

The course of least resistance is to wait until the surrender of the Axis Powers gives you the go-ahead.

But this will mean the loss of at least three months—and just as sure as shooting you'll be caught by your smart competitors flat-footed!

A better alternative—already adopted by a number of our clients—is to begin your planning NOW. By retaining people who know how to do the preliminary research . . . how to select the most useful training media for the purpose (whether motion pictures, slidefilms, manuals, or a combination of all three) . . . how to use these media to best advantage . . . how, in short, to build a completely integrated and continuing training program that will do the job.

Much of this work can be started now—without interfering with your war work in the slightest.

If you'd like to save months of needless delay and be ready to start when the signal flashes, write us today for suggestions as to a sound and practical procedure.

CARAVEL FILMS

INCORPORATED

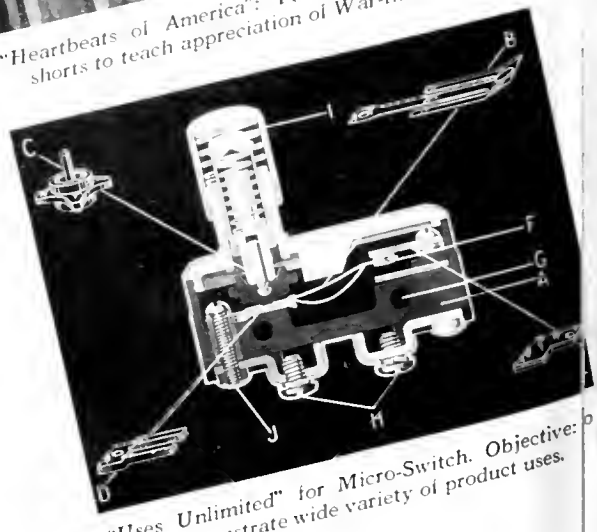
New York • 730 Fifth Avenue • Tel. Circle 7-6112

ASK TO STUDY THESE 4 WAR EFFORT TECHNIQUES

for John Deere: War-time care of Farm Tractors.

U. S. Office of Education: 46 motion picture and slidefilm units. (Cut training time up to 30%).

"Heartbeats of America": Theatrically distributed shorts to teach appreciation of War-time living.



"Uses Unlimited" for Micro-Switch. Objective: demonstrate wide variety of product uses.

SEE HOW NEW METHODS CAN INCREASE THE EFFECTIVENESS OF YOUR MOTION PICTURE PROGRAM, POST-WAR.....

Since 1942 almost all of our time, creative efforts, facilities and technical knowledge have been earnestly devoted to producing direct and associated War Effort motion pictures and slidefilms . . . for the Armed Services, for training industrial workers, for farm machinery conservation, for a better explanation of democratic life and its war-time problems.

The wide variety of subjects plus the need to get results have sharpened up our "know-how"; lead us to explore new ways to produce more effective pictures.

This added knowledge is at your service now. We suggest you contact us for further assistance in *your* motion picture or slidefilm program.

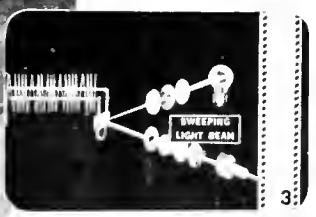
RAY-BELL FILMS, INC.

2269 FORD PARKWAY, ST. PAUL 1, MINNESOTA

Maybe you've only *Scratched the Surface!*

Scene from *Sky Raiders*. A Universal feature now available from the Filmosound Library for showing at approved non-theatrical locations.

1 →
Nearly every job at B&H takes a certain amount of technical skill. Even the most complex operations are taught faster, more efficiently, with movies.



3

4

5

6

Maybe you're not getting all you could out of your Filmosound Projector. Maybe you haven't yet discovered *all* the ways movies can help you do a better job.

May we tell you how we at Bell & Howell have put movies to work for us?

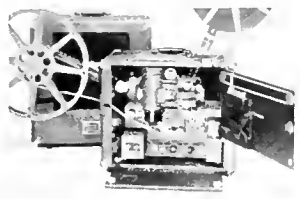
FILMOSOUND LIBRARY CAN HELP YOU

Thousands of excellent films—on almost any subject—are ready to help you get *more and better* results out of your use of B&H equipment. Send for the Filmosound Library Catalog.

Opti-onics
BELL & HOWELL

*Trade-mark Registered

*Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.



Filmosound V ···—
is a B&H engineering triumph which maintains high performance standards despite restriction of critical materials. They're produced today *only* for the armed services and for other essential purposes according to prevailing government directives.

2 We've had dramatic proof that recreation steps up the efficiency of our workers. Lunchtime movies are part of every B&H working day. The good old blood and thunder serials are especially enjoyed . . . and we happily hit on them as a way to cut absenteeism.

3 We tell customers the story of our products with movies. *How Motion Pictures Move and Talk* is a popular, easily understood explanation of the theory of the movies.

4 We help our customers take better care of their movie equipment by showing them our new film, *The Use and Care of the Filmosound.*

5 Movies have been helping us hire the right sort of people for many exacting jobs. *Help Il in the War Faster* is a complete success as an employee recruiter.

6 We record all the grand good times our people have together. Golf tournaments and picnics . . . swimming parties, luncheons, dances . . . are all safely tucked away on film, for everybody to enjoy again and again.

There are other ways . . . many of them. And in the process of fitting movies to your problems, you'll find these ways. The important thing is simply not to be satisfied with your present uses of movies. Their possibilities are almost limitless. Keep exploring them.

Bell & Howell Company, Chicago; New York; Hollywood, Washington, D. C.; London. *Established 1907.*

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1808 Larchmont Ave., Chicago 13
Please send Filmosound Library Catalog and new Filmosound V···— Circular
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Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY *Bell & Howell*

CAMERA EYE

LATE NEWS BRIEFS FROM THE FIELD

★ AS THIS MONTH'S ANSWER to careless talk by our contemporaries and other uninformed laymen, we are proud to present an original feature: the *Visual Industry News Letter*, which appears on page 21. These are *facts* by the men who *make* them. This is the *solid* ground of truth.

★ For other *facts*, see the recent authoritative comment by the War Department's Robert Patterson and by Secretary of the Navy, Frank Knox, both of whom are quoted on the *permanence* of a large segment of our Army and Navy post war. And add the *facts* about the immense post war educational job in Europe and other occupied lands to your thinking about the need for the visual medium and present visual equipment. There has been careless talk, hazardous to the economic well-being of thousands of skilled workmen in this industry about huge amounts of so-called war surpluses. The simple truth is there are *none* yet, may not be for years and in the meantime many, many thousands of projectors are badly needed by schools and industries who must wait only a little while longer until the important work of fully equipping our armed forces is completed.

★ In the first of two public appearances this month, the Editor of BUSINESS SCREEN appeared in April at the War Production Conference at the Stevens Hotel. Speaking on a program highlighted by the appearance of DeVry's dynamic young president, W. C. DeVry, we took note of the significant interest in the visual medium displayed by the several hundred Midwestern business leaders in attendance. Later in the month we appeared before the members of the Chicago Engineers Club, again speaking of the war and post war contributions of the visual medium to industry. These appearances will continue.

★ To the Ampro Corporation this month went the signal honor of providing the American Red Cross with one hundred and sixty 16mm arc projectors for use in veterans' hospitals. These 80 dual units will provide hours of priceless entertainment to our heroes from the fighting fronts with the same performance quality offered in deluxe theatres. — OHC

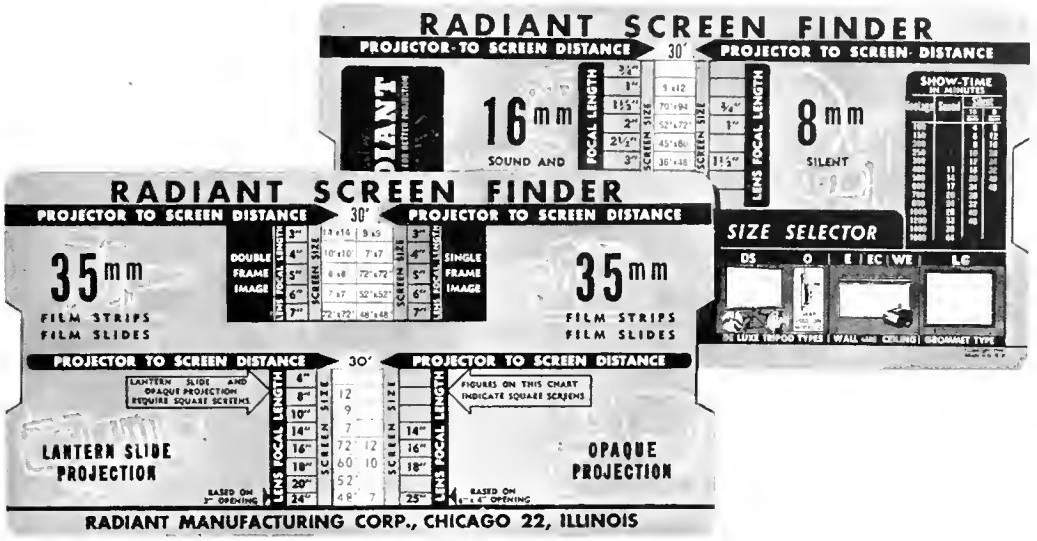
This Month's Cover

The camera study, Visualizing Factory Safety, *is by Harry Lange of Sarra, Inc., Chicago, photographed on the set of "For Safety's Sake," latest Sarra safety production. In the column at right are items of current editorial interest appearing in this edition of* BUSINESS SCREEN.

* * *

Issue Six, Volume Five of Business Screen, The National Magazine of Visual Aids to Industry and Education. Issued by Business Screen Magazines, Inc., 157 East Erie Street, Chicago 11, Illinois, on April 29, 1944. O. H. Coelln, Jr., Editor; E. T. Lundgren, Production Director. Subscription $2.00 for 6 consecutive numbers (one complete volume). Foreign and Canada $3.50, including duty. Entire Contents Copyright 1944 by Business Screen Magazines, Inc. No editorial material may be reproduced without the express permission of the publishers. Special permission will be granted to educational and trade journals on written request. Trademark Reg. U. S. Patent Office.

for Perfect Projection...



use this remarkable new

RADIANT Screen Finder

Here's a practical new SLIDE RULE that every user of motion pictures, slide films, slides or opaque projectors urgently needs. Enables user to combine proper equipment and obtain maximum effectiveness from all types of projected visual aids. Shows at a glance:

1. **The proper screen size** for each distance between screen and projector with a given lens.
2. **The proper screen model to select.**
3. **The proper distance between screen and projector** to obtain any desired size of picture.
4. **The proper lens to use** to obtain perfect results for each distance.

Visual authorities who have seen this Radiant Screen Finder are enthusiastic about its ability. Easy to read—simple to operate. Answers all "movie" questions on one side—all "still" questions on the other side. Durable and compact—fits into the vest pocket. Available from your visual equipment supplier. If he cannot supply you—send us his name and only 50¢ to cover actual cost, including handling and mailing—and a Screen Finder will be mailed to you direct.

IMMEDIATE DELIVERY ON RADIANT METAL SCREENS

Here's good news! Institutions, Industrial Concerns, War Industries, National Organizations may now again obtain RADIANT Metal Screens—without red tape. You can get immediate delivery under your M. R. O. Rating. W. P. B. FORMS ARE NO LONGER NECESSARY. ORDER TODAY!

RADIANT

BETTER SCREENS FOR BETTER PROJECTION

SEND FOR 1944 SCREEN CATALOG

Mail coupon for latest Radiant Screen Catalog. Gives full details, prices and specifications of screens for every purpose: tripod, ceiling, wall, wall and ceiling, and table models from 30" x 40" to 20' x 20'.

The Radiant Mfg. Corp.,
1175 W. Superior Street, Chicago, Ill.
Gentlemen:
☐ I enclose ____ for ____ Screen Finders (50¢ ea.)
☐ Please send me latest Radiant Catalog.
Name_____
Address_____
City _____ State_____

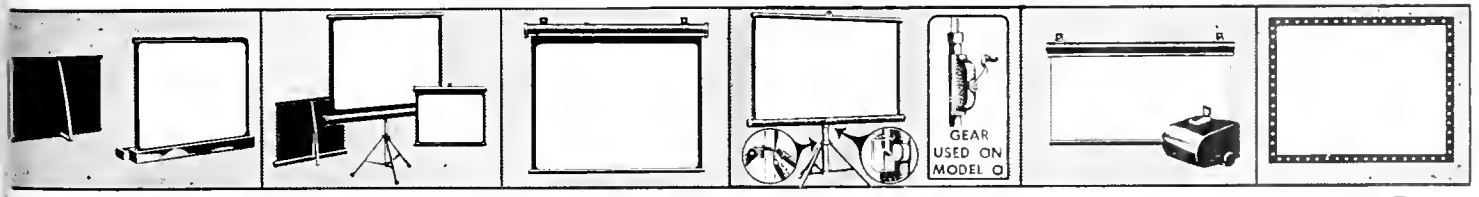
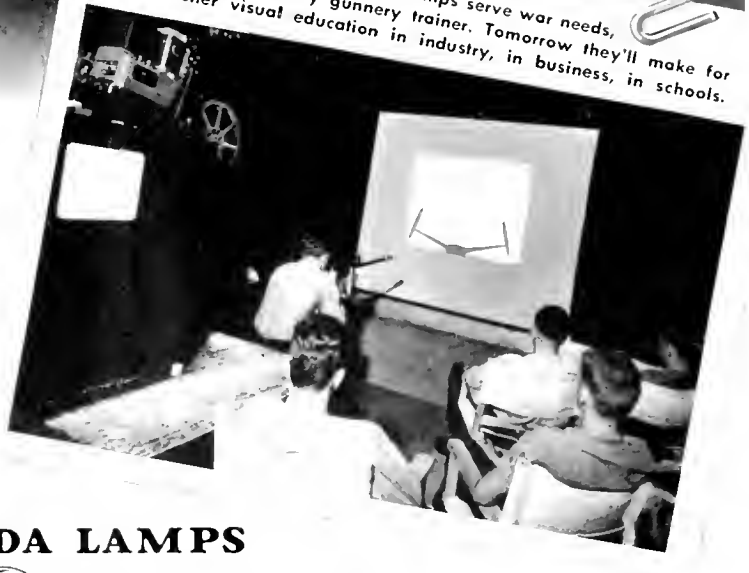


Table and Box Type | 3-Way Tripod Type | Wall Type | De Luxe Tripod Type | Wall and Ceiling Type | Grommet Type

TODAY, G-E projection lamps serve war needs, as in this Navy gunnery trainer. Tomorrow they'll make for better visual education in industry, in business, in schools.



In war, in peace, you can depend upan G-E quality

1. Designed for specific optical needs and for maximum performance.
2. Differentially coiled filaments for uniform brightness (on most popular sizes).
3. Built for extreme precision.
4. Rigidly inspected for correct source dimensions and accurate position.

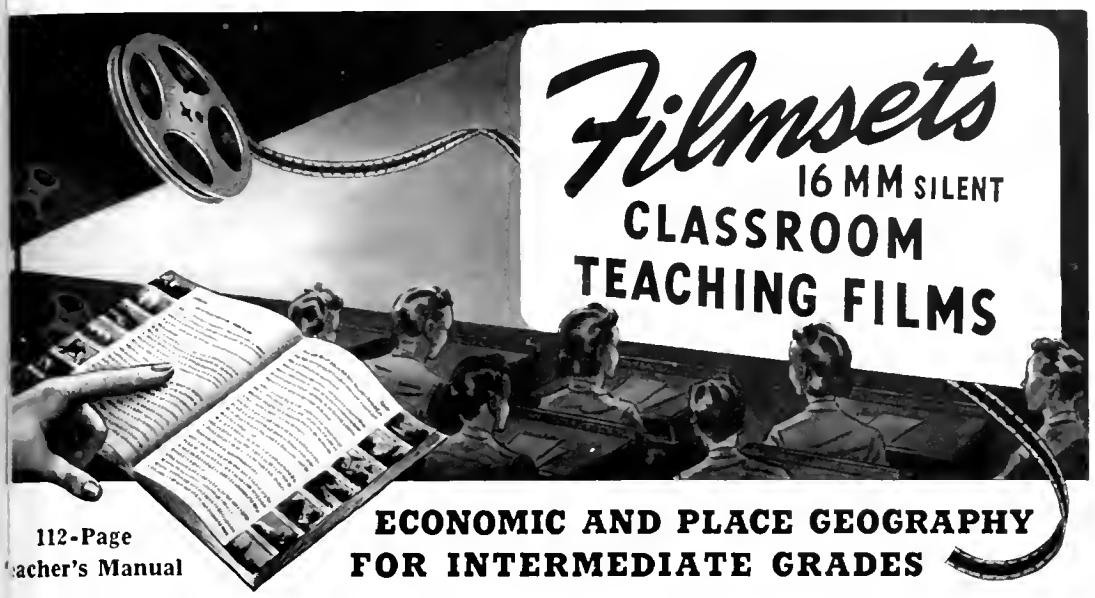
G-E MAZDA LAMPS

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

Hear the General Electric radio programs — The G-E All-Girl Orchestra, Sundays 10 p. m. EWT, NBC. The World Today news, every weekday 6:45 p. m. EWT, CBS.

TOMORROW'S TEACHING AIDS ARE AVAILABLE TO TODAY'S CLASSROOMS



112-Page Teacher's Manual

ECONOMIC AND PLACE GEOGRAPHY FOR INTERMEDIATE GRADES

FILMSETS value and utility are increased many-fold by the 112-page Teachers Manual with its 672 carefully selected illustrations from the films. Each 2-page spread in this manual is a lesson outline—a quick, convenient supplement to introduction and review of Textbook lesson subjects. Manual does not dictate how lessons are to be taught as that is the task of the teacher. To FILMSETS purchasers is available an attractive metal self-humidifying cabinet, each drawer built to house and preserve 12 films

FILMSETS 22 economic subjects follow: Old Fashioned Farm . . A City Home . . Wheat . . Bread . . Milk . . Fish . . Meat Animals . . Fruit . . Truck and Poultry Farm . . Coffee . . Sugar . . Tea—Rice—Coconuts . . Rubber . . Growing Fibers . . Textiles . . Leather . . Lumber . . Clay and Stone . . Peat and Coal . . Iron and Steel . . Petroleum . . Watersheds . . Water Power . . Transportation and Cities . . Steel Production.

FILMSETS 26 regional subjects follow: Alps . . Canada . . Alaska and Eskimos . . Atlantic Coast . . Mississippi Basin . . Rocky Mountains . . Pacific Coast . . Mexico and Central America . . West Indies and Panama . . Andes and Pampas . . Amazon . . British Isles . . Lowlands of Europe . . Mountains of Europe . . Plains of Europe . . Russia . . Mediterranean Basin . . North Africa . . Central Asia . . Desert . . South of the Himalayas . . North of the Himalayas . . China . . Japan . . Pacific Islands . . Australia.

The leaders of tomorrow's postwar world are in today's classrooms. The success of their leadership depends upon the knowledge they get today—on what they know about the world's Geography—upon what they know about the world's peoples, their habits of thought, and the source of their livelihood.

Today's biggest problem is to create a better international understanding insofar as America is concerned.

FILMSETS makes available to today's classrooms the teaching aid of tomorrow—in 200-ft., 16mm. silent Motion Picture Films covering 22 subjects in Economic (food, shelter, clothing), and 26 subjects in Regional Geography. FILMSETS are the only Classroom Teaching Films planned, photographed and captioned to help teach Geography and Social Studies to particular age groups—with meticulous attention to accuracy and authenticity of subject matter—and without padded sequences for photographic effect.

FILMSETS took five years to produce, at a cost of $100,000 for production and current revisions. They are immediately available at $12.00 per reel—*in any quantity desired.* Thus FILMSETS makes available to the one-room country school—or to the educational group—the finest of supplemental teaching equipment—at a cost within the most limited budget. FILMSETS, INC., 1956 N. Seminary Ave., Chicago 14, Illinois.

FILMSETS is affiliated with DeVRY Corporation for 31 Years an Outstanding Name in the Field of Visual Education

Boost MORALE with DeVRY FILMS

Write for DeVRY's NEW 1944-45 FILM BOOK! Get data on late additions of Hollywood Entertainment Films, Selected Shorts and Educational Films. 25% off on 10 educational subject bookings—25% off on five feature bookings in one year. DeVRY CORPORATION, 1111 Armitage Ave., Chicago 14, Illinois.

★ ★ ★ ★ ★ ★

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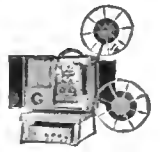
Star awarded for continued excellence in the production of motion picture sound equipment.

DeVRY
New York • CHICAGO • Hollywood



DeVRY 16 mm Sound-on-Film Projector

DeVRY 16 MM SOUND-ON-FILM PROJECTORS ARE PRECISION ELECTRONIC INSTRUMENTS

MOVIE NEWS DeVRY

MAKE DeVRY YOUR FILM CENTER

FOR ENTERTAINMENT AND EDUCATIONAL FILMS write for DeVRY's New 1944-45 Film Book—FREE! . . . Also for DeVRY's FREE FILM SOURCE DIRECTORY. This SOURCE DIRECTORY catalogs more than 1,000 top-flight films that are available for showing without cost. Send 50 cents in currency or stamps to get a copy of DeVRY's FREE FILM SOURCE DIRECTORY postpaid.

CONSIDER THESE NEW TITLES for your Entertainment and Instructional programming:

HELP WANTED—(1 reel 16mm. sound)—A first-aid instructional film sponsored by Johnson & Johnson, world-famed manufacturers of first aid products. Forty minutes of absorbing and interesting action on a subject that is of particular importance today. Service Fee—$1.00. Cat. No. L-189.

ADVANCE TYPING SHORT CUTS—(4 reels 16mm. sound)—A champion typist demonstrates the best technique in typing good letters. Many short cuts are suggested. Demonstrations include proper use of tabulation stops—erasures—labeling—filling-in omitted letters—and similar topics. Rental—$3.00.

WANT WIDER DISTRIBUTION FOR COMPANY FILMS?

DeVRY is helping such concerns as Johnson & Johnson, South Bend Lathe Works, Poultry & Egg National Board, New York Central Railroad, Allis-Chalmers Mfg. Co., and International Harvester Company, to widen distribution of their institutional and training films.

DeVRY helps you reach with your company films School, College, University, Church, Civic, Agricultural, and other influential organization groups.

If you have a motion picture film of your own (sound or silent), let DeVRY catalog, distribute and service it. Write for particulars DeVRY FILMS & LABORATORIES, 1111 Armitage Ave., Chicago 14, Illinois.

A TREE IN A TEST TUBE—(1 reel 16mm. color and sound)—Stan Laurel and Oliver Hardy show the many uses of wood products. The film depicts wood products being developed in the internationally known Forest Products Laboratory, Madison, Wisconsin. Cat. No. 359. Rental—$2.00.

NATURE'S DEFENSE PACKAGE—(16mm. sound and color)—The story of the United States' annual two-billion-dollar egg business. All phases of production and distribution told interestingly in sound and color. Modern poultry farms and their latest methods of incubation, recording, testing, and packing eggs for market. Thirty minutes' running time. Cat. No. L-204. Rental—$3.00.

DESERT VICTORY—(16mm. sound)—Sixty minutes of absorbing interest in this British documentary film made under fire—DeVRY 35mm. Motion Picture Camera during 95% of the filming. A dramatic record of the British Eighth Army's epic march from El Alemein to Tripoli. Cat. No. L-205. Rental $2.50 per day. Outright purchase price, $66.50.

★ ★ ★ ★ ★ ★ ★

TWO THOUSAND YEARS AGO...

MARCUS TULLIUS CICERO said:

"Not only is there an art in knowing a thing . . . but also a certain art in teaching it."

IN TWENTY CENTURIES, teaching methods have changed in pace with the development of new civilizations. Yet Cicero's words ring as true today as when they were first heard in Rome's forum.

The "art in teaching" of which Cicero spoke has evolved through the years from the pedestrian discourses of ancient philosophers to the scientific educational processes of today.

Modern teaching methods call upon the sciences and the arts for assistance in full measure. Modern teaching methods make wide use of *visual training aids*, which are the twentieth century's greatest contribution to man's enlightenment and the fostering of his skills.

Visual training media, amply proven in wartime usage, will be of great assistance in meeting the reconversion problems of business and industry. May we, as qualified producers of motion pictures and slide films, have an opportunity to point out how our products can best serve you?

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

Scene from ABCA, recent British war film showing informational programs for fighting men

A Great and Immediate Challenge to the Visual Industry:

RETRAINING WAR VETERANS

THE REPORT by one steel company that it has already re-employed 90,000 men discharged from the armed services, highlights a problem of immense proportions facing the nation. All American industry will confirm Henry Ford's recent promise of job priorities to discharged veterans. The problem is to get these men retrained to maximum production efficiency in the shortest possible time.

It is this problem and opportunity—to which personnel and training executives must now turn.

FILMS ALREADY IN USE

In a recent 16mm sound motion picture release, the Caterpillar Tractor Company has "previued" this great area of retraining and rehabilitation in which the visual media, particularly motion pictures and slidefilms, can prove of the greatest benefit. In the picture, *Winning Against Odds*, Caterpillar takes up the training and placement of wounded and disabled men.

Similar pictures, stating the problem in this and other terms, are needed to bring about the sympathetic understanding and cooperation of supervisory personnel throughout industry. This is not only a job of skill training, it is equally a task of good employee relations. The cooperation of the entire plant must be insured while the gradual re-employment of veterans is taking place.

WHERE DOES THE JOB BEGIN?

The armed forces have already indicated that the job of postwar preparation begins behind the lines of our far-flung fighting fronts. Plans already in the making by the Army Pictorial Service and the Army Institute include the *visual* education preparation of service personnel at rest areas overseas.

Can industry aid in this pre-discharge preparation? Perhaps it can, even though there is little precedent. Industrial training material has been most valuable in the war products training of personnel in the maintenance and use of mechanized weapons; industry may well provide *vocational* background pictures on peacetime products provided they are properly edited and contain no advertising.

USOE TRAINING SERIES IDEAL

Foresight and thoroughness in the planning of the 1944 visual production program of the United States Office of Education has made these projected films near-perfect examples for use in retraining and re-employment as well as meeting present critical war training needs. That critical shortages still exist in many war production areas while the quotas of available discharges from the armed services are rising is fortunate. When the full tide of war production has been reached, however, we must be prepared for veteran re-employment and retraining in an era of temporary production shutdowns and re-tooling for peace.

Motion pictures and slidefilms must then serve in the two areas of indoctrination and training previously indicated. As pictures have served such companies as Thompson Products of Cleveland, Sperry of Brooklyn, Armstrong Cork of Lancaster and other well-known corporations who are now continually using films to speed the understanding of new employees during the indoctrination period—so these visual media will be useful to tide the war veteran over the strains and stresses of battle and into the world of industry which he has re-entered.

Industrial executives concerned with this problem should see the recent sound slidefilm programs of the Committee for Economic Development. Although subject matter has no direct bearing on the actual retraining or rehabilitation of veterans, the management point-of-view in planning and preparation is well stated in *Target for Peace*, the first C.E.D. program.

OTHER RECENT FILM EXAMPLES

The technique of film use for employee indoctrination and industrial morale purposes is best illustrated in such recent sound motion pictures as *All Out for Victory*, a two-reel subject produced for Firestone by Wilding Picture Productions, and in *Women of Steel*, *Combat Team* and *Strength Unseen* by this same producer. In films produced to meet today's critical production line problems, both the sponsor and producer are setting high standards for the transition period and the era of post-war.

SKILLS IN MANY FIELDS TAUGHT

Not only specific skills on machine tools and in heavy industries may be taught with the aid of films; occupations such as maintenance and repair which serve as the basis for new dealerships will be profitably taught in vocational schools through available visual materials. The fields of refrigeration, farm equipment, aeroplane and automotive maintenance, radio and general electrical repair may be re-entered by veterans better qualified by understanding of latest developments visualized on the screen.

America has pledged a job for every returning service man. Keeping that pledge not only implies the *best possible job*; it entails the responsibility of helping our veterans live up to it. *Knowing* the job will help him keep it and visuals will help provide the "know-how"—faster and better. The armed forces have proven that through the use of visual education our fighting men learned better and remembered longer *the arts of war*. Visuals will emphasize this useful role as they help teach our returning veterans *the arts of peace*.

AMERICA WILL KEEP THE PLEDGE—AND VISUALS WILL HELP US RETRAIN OUR VETERANS FASTER AND BETTER

In Canada too, war workers are regularly seeing the latest in war films. These women workers are watching the hard-hitting dramatic films of the Industrial Circuits, a service of the National Film Board. On the screen they follow the equipment they have helped make into action.

War Workers Get Battle Reports

OFFICERS of the Industrial Services Division of the Army working through established leaders in 16mm film distribution of the visual industry, are creating new miracles in getting their hard hitting visual reports of Army and Navy battle action to the workers on the nation's war production lines.

From factual statistical reports supplied by these experienced distributors, Army film showings have risen from a monthly total of 75,000 workers in June of a year ago to nearly *two and one-half million* per month as of February, 1944. In that month there were 20,499 showings throughout the United States.

These Canadian war workers are the other but not always the better half of the production line audience served by the Industrial Circuits of the National Film Board. Thousands of Canadian war workers regularly attend monthly plant showings thus provided.

LARGE AND SMALL PLANT SHOWS

From the largest national war material producers in Detroit and Chicago to the smallest groups in critical mining and similar key production centers, there has been nationwide industrial acceptance of these Army films. Audiences as large as 10,000 workers have been accommodated in a single series of performances (Glenn Martin workers at Baltimore); 30,000 employees of another plant saw these films in a single week.

The purpose of these films is clear-cut. They are intended solely to keep the American war worker informed of the technique and progress of the war — to make him feel what he really is — a vital part of the big show. This is accomplished by providing unvarnished truths of combat and production in a film series topping anything shown in commercial theatres.

From the principal contractors whose experienced staffs keep close check on vital statistics for the Army and Navy to the local distributors who carry out the actual showing and distribution of each new subject, getting these films to the war plants has been an All American job.

BRIEF REVIEWS OF NEW FILMS

The pictures themselves set the pace for audience interest. Here, in brief are thumbnail reviews of the latest Army releases:

ITEM COMMUNIQUE No. 5: 20 minutes of the real thing, including an 11-minute section on *Bloody Tarawa*. Hand to hand fighting and flame throwers — you'll see a bullet actually knock off a soldier's helmet.

THE CAST OF THE TREMENDOUS TRUTH: Remember that huge air raid on a ball bearing plant in Germany? This film shows the selection of the target, planning of the attack, an actual bombing, its exciting detective-story form sequence emphasizing the vital part played by every piece of American and enemy material. *(20 minutes.)*

EARTH MOVERS: Miracles of engineering performed in front of your eyes. One sequence shows American engineers literally throwing a bridge over a 150 foot hole blown in a road shelf. *(11 minutes.)*

AIR FORCES REPORT (a War Department special release): This is the sequel to *War Department Report* that will be previewed in late May or June. It's General Henry Arnold's report on the activities of the Army Air Corps all over the world. *Watch for announcement!*

For information concerning any of these films contact the Industrial Services Officer at Command headquarters of the area in which you are located.

SINCE the first of this year, Castle Films has released five special *News Parades*, getting prints into circulation through 16mm film distributors on each subject before the event has lost its headline importance. By the fastest work possible in an organization geared to deadlines dictated by the demand of a public hungry for these films, this producer has been providing timely war releases that have met with warm approval by projector owners, by plant personnel directors and even by the Army and Navy.

War plant workers are regularly seeing these battle-action films today in which many of the machines and tools of war they build play a vital part in combat action seen on the screen.

U. S. Marines Capture Tarawa was ready before the first of January. Late in February *Salute to the Navy* was announced and it featured a task force raid on the Marshall Islands which later proved to be preparation for the invasion. *Yanks Invade the Marshall Islands* followed fast on the heels of the Navy film and before the story had ceased to be a newspaper topic. *Fight for Rome!* and *Russia's Smashing Offensive!* are both pictured in a Castle War subject released early in April. Some of the most thrilling battle-action photography features this special *News Parade* but its chief interest to audiences is the fact that it covers two campaigns of the winter which are certain to have an important bearing upon things to come in the European theater.

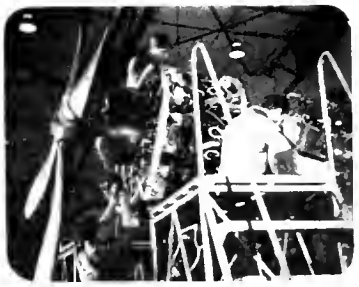
In the Italian campaign, fighting on the Anzio beachhead is seen with some of the terrific bombing and shelling suffered by the American and British forces in the critical early period of the landing below Rome. On the Gustav Line in the vicinity of Cassino, some of the all-out bombing show put on by the American air forces is seen, with ground action in the most difficult terrain encountered by the Allies.

The Russian front has never produced more astounding front-line photography than has been selected for the second half of this Castle subject which depicts the onward rush of the Red Armies in hurling the Nazis out of Russia. Cameramen have braved terrific shellfire to get in close to actual firing line action, often so near the explosion of heavy howitzer shells as to have their cameras shaken by concussion.

The latest film of timely interest to be released is a complete motion picture record of the sensational smashing of Truk, the Jap "Pearl Harbor" which took place shortly after the capture of the Marshall Islands. In this 16 mm sound movie, *Yanks Smash Truk*, the entire action is photographed from the air and provides some of the most exciting scenes of fighting and bombing ever screened.

INCENTIVE FILMS: LATEST NEWS-PARADES

RIGHT: SCENES FROM WAR PLANT NEWS SUBJECTS: (Top) "Fight for Rome," scene from latest Castle News-Parade release of that title; (below) "U. S. Marines Capture Tarawa"; (third from top) from the U. S. Army film "The Case of the Tremendous Trifle" and (bottom right) scene from "Yanks Invade Marshall Islands." All scenes below are from the latest U. S. Army incentives subject "Film Communique No. 5," now available from nationwide official Army-Navy distributors for plant showing.



FAST MOTION ANALYSIS AS AN AID TO ORGANIZED INVENTION

A BUSINESS SCREEN SPECIAL FEATURE IN A SERIES ON VISUAL CONTRIBUTIONS TO VICTORY

By Captain E. M. Watson

Air Corps, Armoment Laboratory, Wright Field, Dayton, Ohio

DURING a war, fear of the consequences, if it should be lost, causes the greatest possible efforts to be put forth in the attempt to win it. Just as mechanical devices are used to increase production in peace time, they are likewise employed in times of war to make the efforts of the soldiers more effective. Of these mechanical devices, many operate too fast for their performance to be observed by the unaided eye. In some instances in the development of these devices or in their adaptation to new uses, the various aids for analyzing fast motion can be utilized to advantage in determining any appreciable variation from the desired performance. In the past it was necessary to do this work entirely by trial and error, examining as evidence after operation scarred, worn, misplaced, deformed or broken parts. When conditions permit the use of these analysis aids, usually less time is used in discovering the deviation from the wanted operation than would be used otherwise.

Procedure Shown in Table

The procedure for this accomplishment is shown in Table 1. With the following comments conforming to the sequence of items shown in this table:

1. In getting any device ready for a test it is necessary to consider what is to be found out about it, the complete equipment to be used in the test, and the preparation (such as cutting windows, etc.) needed to put the device into the proper condition for running the test in mind. Listed in "taking of test data" are various devices which may be used.

If performance in a single area, showing motion in two dimensions, and to some extent in a third, as a function of time is desired, pictorial equipment may be used. This includes means for stopping motion for visual examination, such as by a stroboscope or by a shutter, as well as by photographically recording the image for later leisure examination. The advantage of this lies in the fact that there is no change in the performance due to loading of the parts by the recording instruments. The various devices that may be used for this are described in the paper "Aids for Pictorially Analyzing High Speed Action." (BUSINESS SCREEN, No. 3.)

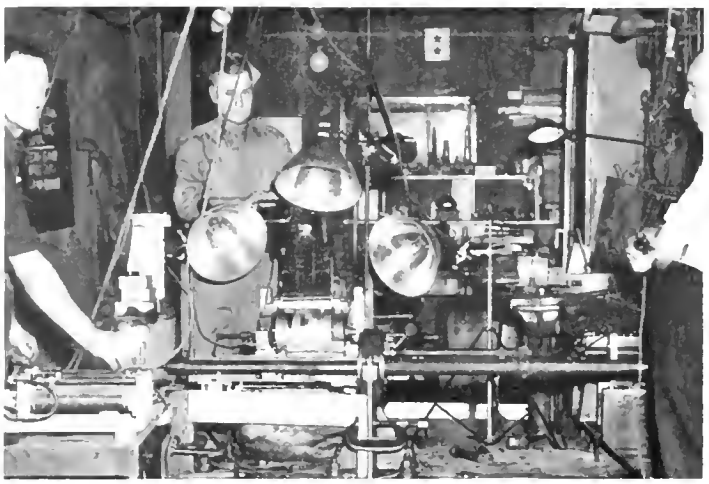


Figure 1. High speed camera and accessories set up for photographing the operation of an ammunition feeder for a 20 mm aircraft cannon. A drum for the use of waxed paper may be seen directly behind the lower end of the vise handle.

If a record of motions in several directions and from different locations is desired, an oscillograph and companion equipment may be used (Fig. 2). For relatively large motions covering whole or ordinary fractions of inches, the electrical values to be recorded by the oscillograph may be produced by the use of equipment employing a travel gauge or a slide wire resistance. For smaller motions, in the range of thousandths of inches, equipment employing a strain gauge or a piezo-electric pickup may be used. These devices may be constructed so as to read very small changes in dimensions; and when mounted on various parts that are to be stressed, they are sufficiently sensitive to permit in most cases the determination of instantaneous stresses from the record of the resultant strain. Each individual application of these gauges must be calibrated on the part used. Also in some instances a photo electric cell may be employed to advantage in a pickup. Through the use of the oscillograph, electrical conditions present in the device under test may also be recorded simultaneously with the motion.

Also Record on Paper

When the motions are in one direction and in a limited area, direct recording on paper may be employed. This can be done either with a pencil or a pen on ordinary paper, or with a stylus on waxed paper or paper otherwise coated to show the path of the stylus (Fig. 1).

Under the heading of "Special Devices" comes such apparatus as may have to be constructed specially to do the particular job in question. If there is considerable testing of a certain type to be done, these special devices may facilitate much saving of time. However, since to some extent tests may be conducted with more than one of the devices listed, it is preferable, if possible, to use what is at hand, rather than to

Figure 2. Film on which recording is made being placed on camera attached to oscillograph. These with the amplifiers, power units, etc. mounted on the wall are part of a travel and strain gauge setup.

Figure 3. Cardboards to which description and enlargements from individual motion picture frames are attached and which are joined by tape hinges. The action of locking of the 20 mm aircraft cannon may be studied picture by picture.

Figure 4. The special projector for examination of motion picture film. Horizontal and vertical scales with movable transparent rules permit measurements of positions of the subject to be made.

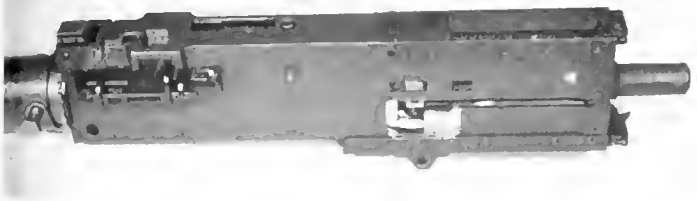


Figure 6. 50 caliber gun with window cut in side, for viewing operation.

Figure 7. Other side of same gun opposite, showing viewing window

construct special devices.

Under the heading of "Preparation of Data" the processing of the results varies with the purpose for which these results are to be used. Motion picture film which has been examined for performance of the subject as soon as ready may be made into reels with normal speed preface shots and titles for later showing to people who may be interested in the particular subjects involved. The individual frames of the movie may be copied and enlarged on paper (Fig 3). These enlargements, when mounted five to a page, with typed description of what happened adjacent, may be made into a stack with tape hinges so folded that two pages at a time may be brought into view, or, if a longer sequence of action is to be examined, as much as is required may be completely unfolded with all the views being in the proper relation as in the original motion picture film. In some instances it is desirable to plot performance curves showing position of the various parts being studied as a function of time. This may be done either by projecting the film as individual pictures on the screen and measuring the positions of parts (Fig. 1), or by measuring the silver prints made for the stack as described above.

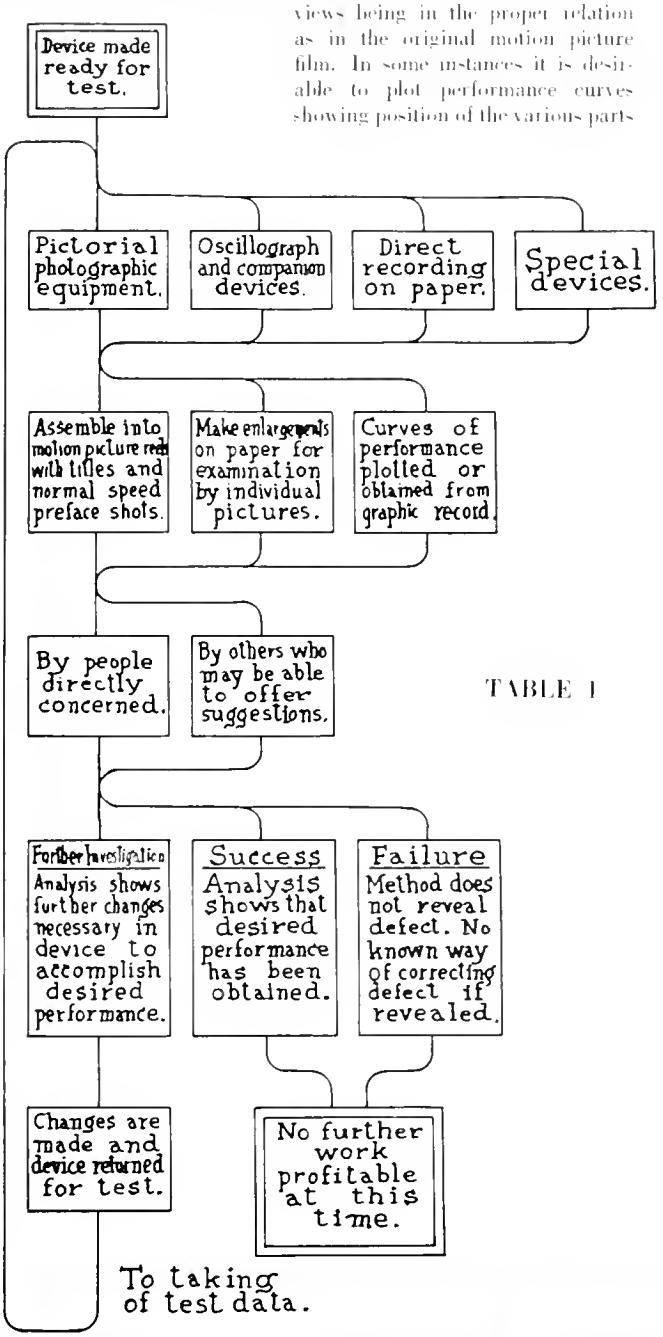


TABLE 1

Formula for Energy Estimate

By the use of the physics formulas, $F = MA$ and $E = \frac{1}{2}gMV^2$, it is sometimes possible to estimate the energy in the various moving parts and the forces incident to the transfer of energy to and from them. Sometimes it is found that several unknowns which cannot be evaluated are involved. For example, a force may be pushing an object which is being impeded by friction. Any acceleration or deceleration of the object is the result of the difference between the rates at which energy is being added and subtracted. The friction involved is often difficult to evaluate, because the coefficients of friction and pressures normal to the travel of the object are not easily determined. This is particularly true when explosions are involved during the operation of apparatus when there are very violent shock waves in the materials themselves causing almost incredible conditions to be revealed.

Simplified for All Uses

With reference "Examination of Test Data," the people who are only occasionally in a position to make use of this data are often only slightly familiar with the methods by which it was obtained, and to have the data in as nearly as possible the form with which they are familiar will considerably expedite the progress that can be made in this kind of activity.

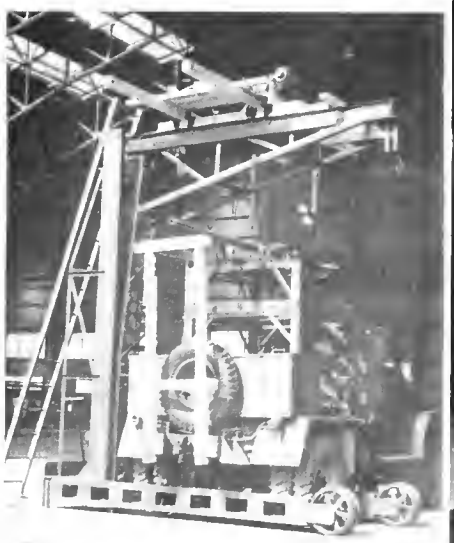
When trials are made of a device in the development stage, there are usually a number of details involved in the setup which are of interest only to the men who have asked for the test to be run, and there would be little value in any general showing. There is some advantage, however, in building up a library in which different kinds of devices are shown, in order that when there is a situation needing attention, there will be available a record of a similar situation which can be reviewed in order to form an estimate of what can be accomplished in the current situation.

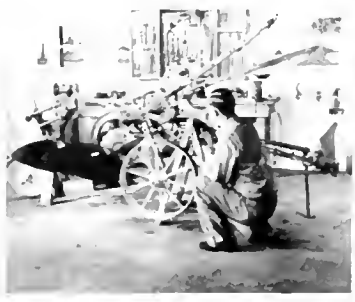
Most of the progress in mechanical devices has been by the trial and error method and, although these devices may operate fairly satisfactorily, it may not be known just what does take place or how much margin there is before unsatisfactory operation will result. It may be found that a device in question does work satisfactorily for the original purpose but does not work satisfactorily when it becomes a part of a new combination.

It is when the first construction of a device which a designer has originated is complete and is being given its initial trials that these methods of analyzing fast motions are of most value to a project. The designer has proposed certain operations when the apparatus was laid down on the drafting board, but he may not have chosen the best way to attain these, since there may not have been sufficient experience on the subject to permit the best decision to be made. When the completed device is given its initial trials, certain variations from the

(CONTINUED ON PAGE 30)

Figure 5. 37 mm gun mounted on turret truck for test firing. The elevator on which the camera is placed is adjustable in height for various picture sizes.





Scene from "Reconditioning a Two-Bottom Tractor Plow"—Farm Work.

A scene from "Reconditioning a Mower" new USOE film (Calvin).

Visual Aids to Farm Work

• A U. S. OFFICE OF EDUCATION SERIES •

As significant as the well-known *Micrometer* film and other machine shop films, and the shipbuilding and aircraft visual aids units, is the Farm Work series, produced by the Division of Visual Aids for War Training, U. S. Office of Education.

The Farm Work series, now consisting of five available film units, is planned to cover a total of fifteen subjects for use by adult farm groups and for classes in vocational agriculture throughout the United States—learning tools on the home front.

Underlying the completion of each sound motion picture, each filmstrip, and each instruction manual, which together, make up a visual aids unit in this series, is a fascinating story of research, and of the cooperation of national authorities in the selections of ideas, methods and materials which build the skeleton for the final film unit.

Experienced Advisory Staffs

The production of each visual aids unit, without exception, represents the thinking of experienced and skilled individuals who are actually *doing* the job. Advisors for any production may often differ in point of view and practice, according to the section of the country from which they come, or may even be competitors in a product, or service, or commodity, but an agreement on common purposes, correct principles, and approved practices is arrived at for development in a training film unit.

Each subject is unique in one way or another with respect to production, and a sample story is one on the *Sheep Shearing* film, produced in January 1944 in order to be ready to aid in the harvest of an 880,000,000 wool crop this spring.

Shortage of Sheep Shearers

Faced with a scarcity of high-rollers (expert sheep shearers to you) and with a critical manpower shortage, especially in areas where sheep growing has been recently encouraged as a new crop, agricultural authorities came to the Division of Visual Aids for War Training with a request to produce a training film on sheep shearing.

By the first week in January a rough draft script was completed, reviewed, and edited for shooting. Sheep from the Chicago Stock Yards, in a specially built pen, were made to feel at home on the sixth floor of a metropolitan manufacturing plant. The producer's camera equipment and lights, packed in a shock-proof trailer, were hauled up within a few yards of the proposed sheep-shearing area.

In five days the motion picture and filmstrip scripts were shot, and by the middle of the month, the rough edited motion picture was thoroughly, but inconveniently, reviewed in a crowded hotel room, the pictures being projected upon a pillow slip pinned on the wall.

The film, re-edited to corrections, was ready for sounding in another three days. This narrative recording was done in the producer's studio on a cool January heat-conservated morning. After debates, compromises, trials and corrections in the final script, the film was sounded.

Filmstrip pictures for the instruction manual were reviewed and discussed. For two days, copy for the manual was organized and put into first draft form. In addition to U. S. Office of Education staff members, this work was done with the aid of a sheep shearer, a film director, a scenario writer, and with the advice of an experienced sheep grower and owner, familiar with small flock and range sheep growers.

Critical Supply Problems

The film unit was ready for quantity production by the middle of February, but extreme war emergencies made inroads on its further progress. A shortage of raw film stock was declared, holding up production of prints from the negative. Requests for prints of the film began to pour in. Not until April 1st, could prints be distributed in quantity, it is hoped not too late for use in helping to harvest the 1944 wool crop.

A new production in the Farm Work series entitled *Horseshoeing*, is now being rushed to completion to meet the demands of farmers west of the 100th meridian, and to supply vocational schools and the military services with a much needed training tool.

The treatment of the subjects, *Sheep Shearing* and *Horseshoeing*, like all of the U. S. Office of Education film units, is that of a clear, straightforward, step-by-step presentation of operations to teach a skill.

Subjects Now Available

Visual aids units now available from Castle Films in the Farm Work series are:

Sheep Shearing.

Community Canning (shows and explains the processes involved in preparing and canning nonacid vegetables in a community cannery).

Reconditioning a Mower (shows how to check and repair the cutter bar mechanism of the mower).

Reconditioning a Two-Bottom Tractor Plow (shows how a tractor plow should be examined and repaired at the end of each plowing season).

Reconditioning a Grain Drill (shows how the parts of the grain drill which are commonly subject to most wear are checked and repaired).

Visual aids units now in production by the Calvin Company are:

Reconditioning a Mower: Part II.

Reconditioning a Cultivator.

Care of a Tractor.

General Farm Maintenance.

Home Canning of Tomatoes.

Canning Meats in the Home with a Pressure Cooker.

Handling Livestock.

Horseshoeing.

Painting (2).

"MORE LEARNING IN LESS TIME"

A Word of Introduction

Wartime training requires preparing men for duty better and faster than ever before. To help do this job the Navy has turned, on a basis of proved experience, to audio-visual aids. More Learning In Less Time is the basic United States Navy manual on the educational use of these instructional tools. Publication of this manual meets, in part, the demand for help in using these aids to train large numbers of men better and faster in Naval schools, operational bases, and aboard ship.

Recommended procedures, outlined in the manual, grew out of the comprehensive and intensive field experiences of the Navy's staff of audio-visual utilization officers. Actual preparation, as well as authorship, of this manual has been the work of many officers assigned to the Training Division of the Bureau of Naval Personnel. Copies have been made available to each Naval instructor thru the audio-visual utilization training officers attached to the staff of the Directors of Training of each Naval District or Operational Training Command. These officers are assisting instructors in making the best use of the manual as they employ instructional tools in training programs.

The Navy Department regrets that copies of the manual are not available to the general public from government sources. However, reprinting permission has been granted Business Screen and copies are now available for the user of training aids in our schools and industries.

Lieutenant-Commander Francis W. Noel, USNR.
Officer in Charge, Utilization and Evaluation Unit,
Training Aids Section, Training Division,
Bureau of Naval Personnel.

Editorial Acknowledgment

The Editors of Business Screen *are indebted to the Navy Department for permission to reprint this excellent review of Training Aids and their use. To member firms of the Visual Industry—the Ampro Corporation, DeLuxe Screen Company, DeVry Corporation, the Jam Handy Organization, Radiant Manufacturing Corporation, RCA Victor Division of the Radio Corporation of America, the Society for Visual Education and the Victor Animatograph Corporation goes the gratitude of the many additional thousands of educational and industrial executives who will receive gratis postpaid copies of this book, made possible by these firms.*

Visual Executive *News Letter*

AUTHORITATIVE WARTIME CORRESPONDENCE AND COMMENT BY KEY EXECUTIVES ON VISUAL EQUIPMENT AND PRODUCTION PROBLEMS

IMPROVEMENT OF PRODUCT IS FIRST

We have frequently been asked bout prices on sound motion pic- re equipment in the post war eriod, but at the moment it is diffi- lt for us to offer a reliable esti- ate. We might state, however, that spite the fact that our production projectors for the Armed Forces

William C. DeVry, President
The DeVry Corporation

ceeds any previous record, we vertheless find that certain basic sts cannot be materially reduced volume production.

In addition to these factors, there constant demands for engineer- and new developments to im- ove clearness of picture and qual- of sound in both the 16 mm and mm projectors. These obvious oblems, combined with higher bor rates in the post war period, d us to believe there will be no ntastic reduction in prices.

We will say, however, that con- ners will receive a superior ma- ne for approximately the same ount of money that they paid for ipment in the pre-war era.

QUALITY IS BASIC GOAL FOR POST-WAR

It is unfortunate that the pseudo- entific articles in Sunday news- per supplements—not to mention the flights of fantasy of advertising copy writers—are fast leading the American public to the conclusion that *every* post war product will do more and cost less because of mir- acles brought about by "electron- ics."

It is undeniably true that elec- tronic principles have been applied more broadly than heretofore, both in finished products and in manu- facturing processes, as a result of our war effort. For the most part, however, these principles are not new. Rather, there has been an ex- tension of old ideas into new fields but the process is more accurately described as refinement rather than revolution.

A rumor has recently been circu- lated, for example, concerning post war sound projectors to be built by Bell & Howell and to be sold for $100 to $150. Such rumors, obvi- ously, are without foundation since the basic elements of a sound motion picture projector—a complete silent projector supplemented by sound reproducing apparatus—will still be required regardless of electronic or

J. Harold Booth, Vice-President
Bell & Howell Company

mechanical developments. And while it is probable that there may be some reduction in raw material costs this reduction will unquestionably be offset by higher labor rates. It is therefore safe to predict that sound projectors of the future, if they are to provide the performance of the machines of today, will prob- ably be more costly than pre-war models. Any attempt to cut corners will necessarily result in a machine which will be less endurable and which will be incapable of repro- ducing sound motion pictures with the fidelity to which we have become accustomed.

There will unquestionably be progress in the manufacture of sound projectors—but this progress will be in the direction of lighter weight, quieter operation, simpli- fied controls, more brilliant screen images, and new realism of sound reproduction. To cast aside these objectives in an effort to produce cheaper equipment would, in the final analysis, be detrimental to the interests of manufacturers and con- sumers alike.

PROJECTOR USERS WILL REAP BENEFITS

—Predicts O. V. Swisher, *Sound & Picture Division*, RCA

★ Commercial users of sixteen mil- limeter projector equipment may look forward to reaping the benefits of many outstanding improvements and refinements which have been brought about by the war-time needs of our armed services in their train- ing and morale programs. Vastly improved quality of sound repro- duction, greater ruggedness and all- around improved performance are among the improvements which peace-time users may expect.

No reliable estimates can be made at this time about the probable cost of this improved sixteen millimeter equipment in the post war period. Post-war prices will obviously have to take account of increased labor and material costs and any other factors that may exist at that time.

WAR KNOW-HOW KEY TO THE FUTURE

★ Let us hope that the American public and dealers are not being misled by over-zealous articles in trade papers and other publications about the "miracle" sound projec- tor for post war.

These rumors, stating that a mir- acle sound projector can be made and sold for $100.00, obviously are the result of wishful thinking.

When all the problems involved for building such a sound projector are considered, this dream projector is not likely to materialize. Basic- ally a sound projector consists of a precision film moving mechanism, a high grade amplifier and speaker unit. All of these are costly to manufacture and precision is essen- tial in reproducing high quality sound.

To reduce cost would be to re- duce precision or to substitute in- ferior materials. It is also neces- sary to point out that manufactur- ing sound equipment requires highly

Harry Monson, Vice-President
The Ampro Corporation

skilled labor and it is not likely that present labor and wage standards will be reduced materially after the war. It would seem, therefore, that to try and produce a sound projector at a cost suggested by the post war dreamers would only result in an inferior unit below the standards already set in the industry.

Since Pearl Harbor, our facilities and efforts have been devoted to the manufacture of instruments of war. While the exacting requirements of these new highly intricate products have taxed our experience and tech- nical knowledge, this experience and

(CONTINUED ON THE NEXT PAGE)

Visual Executive *News Letter*

A BUSINESS SCREEN SYMPOSIUM ON POSTWAR EQUIPMENT TRENDS

(CONTINUED FROM PREVIOUS PAGE)

the "know-how" thus gained is bound to enable us to build a better projector in the post war period.

We can assure both dealers and consumers that Ampro projectors will be designed to suit the post war tastes of the greatest number of consumers in price ranges that will move the greatest volume.

PRICE CHANGE IS NOT ANTICIPATED

★ Any attempt to predict post war equipment models or prices would seem to be extremely hazardous at this time. First of all, none of us

Ellsworth C. Dent, Gen'l Mgr. Society for Visual Education, Inc.

know whether "post war" will begin in six months or sixty months, even though we all wish the whole mess could be brought to a successful conclusion tomorrow. The duration and the necessary adjustments to follow will affect directly all production and distribution plans.

During the past two years, approximately 95% of the production facilities of the Society for Visual Education have been devoted to the materials and equipment required for war and related training. The production of regular and special training equipment has included new developments and procedures which will have a definite bearing on future plans. All desirable improvements will be given careful consideration. These will enable S.V.E. to continue its policy of providing the most suitable equipment in any given price range, for both general and special uses.

The very favorable results achieved through the use of slide-films and 2"x2" slides for war training have created a heavy demand for similar instructional materials for use among schools, churches, industry and other organizations with training problems. It is believed this demand will be increased by greater emphasis upon effective training aids to solve some problems of post war adjustment. As in the past, S.V.E. will expect to provide the various types of projectors and accessories required for these uses and for use by individuals. This will likely involve the usual models and equipment to accommodate new developments in projected training aids.

Important changes in prices, in either direction, are not anticipated except as general economic changes may bring them about. If the cost of labor and materials increase slightly, it may be possible to avoid price increases through improved production efficiency. If there are major changes in production costs – upward or downward – it is only logical that these changes will be reflected in prices to the consumer. The interdependence of all manufacturing, distribution and service leaves no alternative.

NO SUBSTITUTE FOR PERFECTION

★ This question of post war projectors – their form and their price, is a most difficult one to discuss now with any degree of accuracy. It is certain that the many unfounded rumors of very low-price projectors will remain nothing more than rumors. At least that is as we see it now.

Labor rates are much higher than they were in early 1942, and material costs have advanced somewhat. That is also true of many of the units that are purchased in finished form for combining into our final assembly.

Requirements haven't changed. There can be no sacrifice of picture quality or perfection of sound reproduction. Precision workmanship and proper selection of materials are still requisites. We can expect no lowering of cost, therefore, of material or labor.

Great additional volume, as compared to pre-war times, would help in reducing costs, thereby affecting list prices. Distribution costs have been high, too, but perhaps a more ready acceptance by the purchaser,

S. G. Rose, Vice-President Victor Animatograph Corp.

creating fewer sales calls before sales are made, would also help in reducing prices. Elimination of some of the "gadgets" – still pictures, reverse, motor-driven rewind, and even two speeds, would tend to further economies.

Considering all factors together I cannot see any great reduction in price– perhaps some, and depending upon developments over a period of several months, perhaps a year or two after. That is all we can tell you now about the post war sound projector.

New Spencer Lens Officers

★ At a meeting of the Directors of the Spencer Lens Company, Buffalo, N. Y., Scientific Instrument Division of the American Optical Company, on Friday afternoon, March 24, the following officers were elected: H. wood Fox, President; Harold Rhynedance, Vice-President in charge of Sales; Walter G. Bu- ley, Vice-President in charge f Manufacturing and Chairman of t Board; Bryant Glenny, Treasur and Ass't. Secretary; E. E. Willia Ass't. Treasurer; Charles W. B- ton, Secretary.

William A. Kerr has been a- pointed General Sales Manager a will be responsible for the adm- istration of the Sales Division unc Mr. H. D. Rhynedance, Vice-Pre- dent in charge of Sales.

Ball Joins du Pont

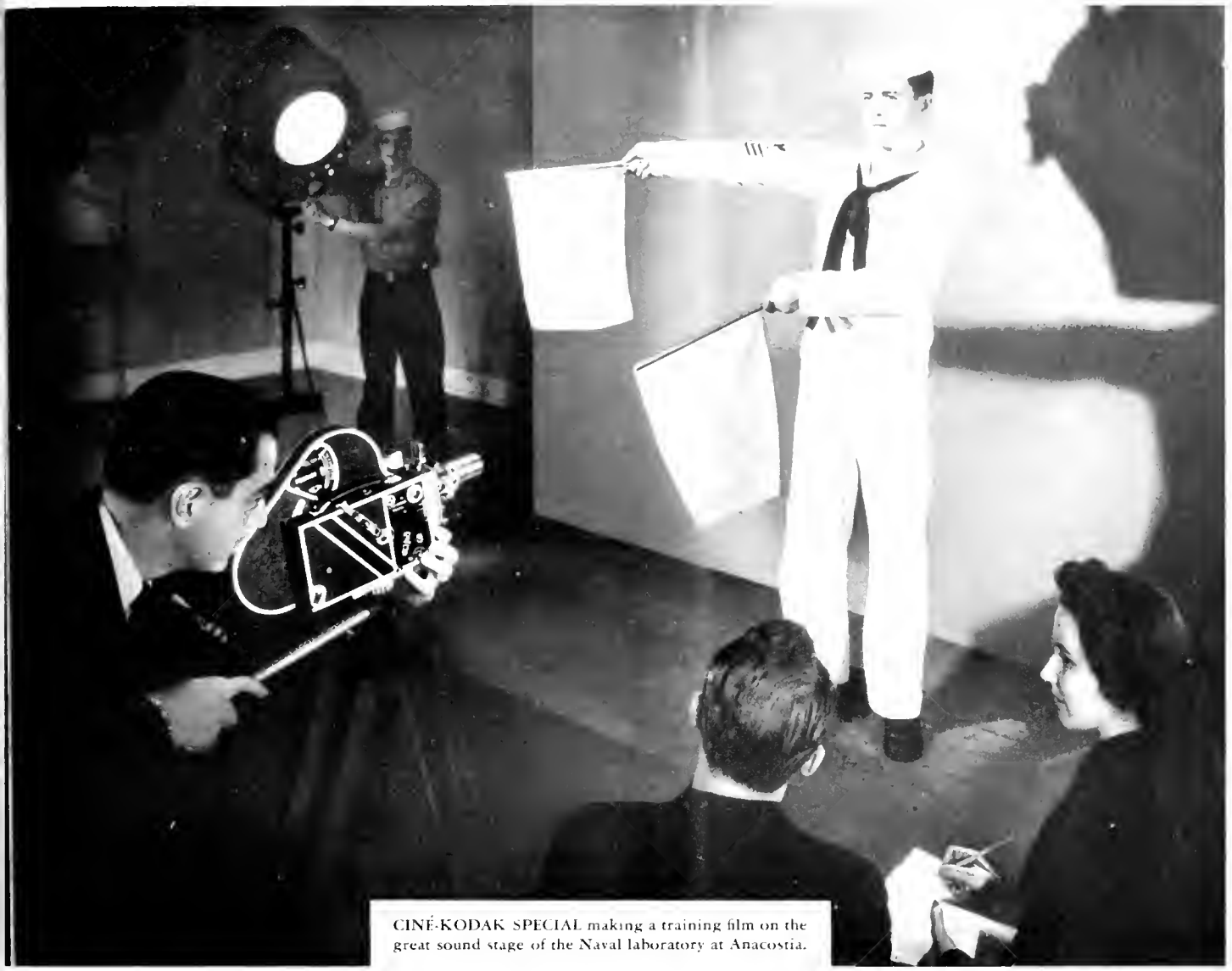
♦ The Photo Products Departme E. I. du Pont de Nemours & Co pany, announces the association J. V. BALL as consultant.

A pioneer in the field of col photography, Mr. Ball of rece years has been consulting engine for McGraw Colorgraph Compa and Walt Disney Productions, bo of Burbank, California. Until 19- he was vice president and technic director of Technicolor Motion P- ture Corporation.

Mr. Ball, who holds a number patents and is a frequent contribut of articles on photographic process to technical journals, will contin his residence on the West Coast.

Westinghouse Names Ebersole Manager

♦ Appointment of RUSSELL E. EBE SOLE as lamp sales manager of th Westinghouse Lamp Division, h been announced by Ralph C. Stua manager. In his new position, M Ebersole will have charge of all di trict sales activities of the Lam Division and will make his hea quarters at the Bloomfield plant.



CINÉ-KODAK SPECIAL making a training film on the great sound stage of the Naval laboratory at Anacostia.

Official U. S. Navy Photograph

A great war camera—the "SPECIAL," leader of all Ciné-Kodaks

IF you are an advanced amateur, you have long known Ciné-Kodak Special as the movie camera that "has everything." Its combination of great qualities makes it far and away the finest instrument for advanced 16-mm. movie-making ever produced.

If you are a doctor, physicist, biologist—you are familiar with the Special's remarkable adaptability in recording and demonstrating all kinds of scientific work.

And now—as a great war camera—Ciné-Kodak Special is again demonstrating its tremendous versatility.

Hundreds of these Specials are in Army, Navy, and Air Force hands today, contributing to the most complete war record ever attempted. The Special's adaptability to the toughest and most varied conditions gives it a very great range of war uses—from filming action on Navy ships, and with our Army at the front, to making educational and instruction films in the great Naval laboratory at Anacostia, as shown in the picture above.

* * *

Your own Ciné-Kodak is a blood brother of this great war camera. Take care of it. Use it, these days of limited film, to make movies of the home front, for your soldier or sailor to see on his return. . . . Eastman Kodak Company, Rochester, N. Y.

Ciné-Kodak

EASTMAN'S FINER HOME MOVIE CAMERA

Allis-Chalmers' Visual Program

Last year, the Jam Handy Organization produced for The Allis-Chalmers Mfg. Company, a sound motion picture titled, *The Magic of Steam.* This picture revealed the construction and operation of the modern steam turbine, and has had wide use in industry and education.

A sequel to this production has just been completed for the same sponsor by Jam Handy, *Inside a Surface Condenser.* Either picture may be used separately or the two may be used together, providing a show of about 10 minutes. Both pictures are of the strictly informational-educational type, containing no advertising. They are loaned free to any group or organization interested, or 16 mm prints may be purchased outright for permanent use.

Techniques used include interesting laboratory shots coupled with animated drawing sequences which give the student an understanding of fundamental principles and functions of modern power equipment. In contributing this condenser picture to the war training program, Allis-Chalmers has recognized the fact that, because power plants today lean heavily on surface condensers for the new high efficiencies, engineers, students, men of Government, industry and the Armed Services can profit by a more detailed understanding of the surface condenser.

Principles of condensation are pictured by means of closeup laboratory shots — "a warm vapor plus a cool surface equals condensation" — which introduces animated treatment showing a cutaway of a condenser chamber as the steam condenses on the surface of the tube. Another sequence shows the construction of the condenser by assembling a typical unit, while animated treatment also shows a simple power plant cycle showing how and where the surface condenser fits in and how it increases efficiency.

For the loan of prints of either or both of these films, address The Allis-Chalmers Mfg. Co., Milwaukee.

University of Chicago Acquires Eastman Classroom Films

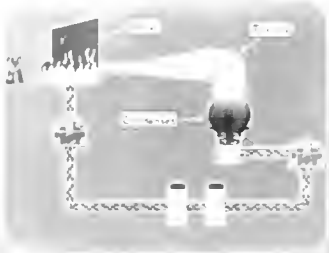
★ President Robert M. Hutchins of the University of Chicago has announced the University's acceptance as a gift of the Eastman Classroom Films, with its vast library of silent educational movies, from the Eastman Kodak Company.

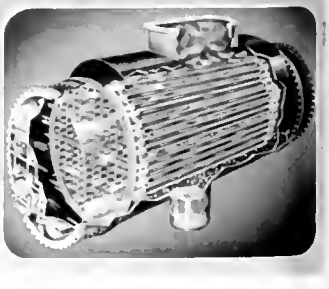
The acquisition comprises some 300 reels of film for exclusive classroom use and represents an investment of more than a million dollars, Mr. Hutchins said.

The new library will be combined with the 200-reel sound film collection of Erpi Classroom Films, which was acquired recently by the University from the Western Electric Company. Like the Erpi set, the Eastman films will be distributed by Encyclopaedia Britannica Films, Inc., subsidiary of Encyclopaedia Britannica, Inc. Britannica was given to the University in January, 1943, by its owner, Sears Roebuck & Company.

Editor's Note: A feature article on the new Chicago film program is in preparation for an early issue.

(Below) Scenes from Allis-Chalmers' "Inside a Surface Condenser"





HERE'S THE END OF YOUR TAKE-UP TROUBLES

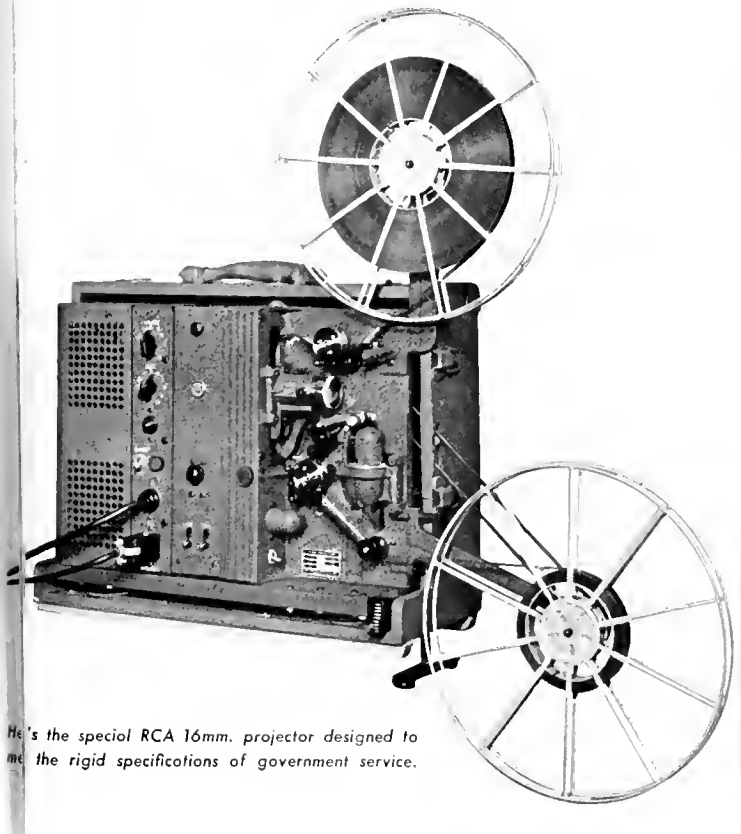
It's the New RCA Even-Tension Take-up

Close-up of the even-tension RCA friction-drive shows its simplicity and compactness

THIS is a preview of the kind of improvements you can expect in RCA post-war 16mm. sound projectors. The new RCA friction-drive take-up, which is proving highly satisfactory in wartime equipment, will be just one of the many reasons you'll want RCA projectors when they again become available for civilian purchase.

The new take-up is so smooth in action — so dependable — so trouble-free — that it stands far ahead of the field. Its smooth performance means:

No jerks or tugs — *No pulled splices*
No broken belts — *No film damage*
No film piled up on the floor



He's the special RCA 16mm. projector designed to me the rigid specifications of government service.

HOW IT WORKS: This new RCA take-up is belt-driven. The friction-drive consists of two concentric cylinders — the outer cylinder driving the inner one through friction on a layer of felt. As the film winds on the take-up reel, the increasing weight causes proportionately increasing pressure on the felt. Thus even tension is maintained automatically. There are no springs or gadgets to get out of adjustment.

OTHER FEATURES: The new RCA projectors will include other important advances in projector design, too, such as the RCA removable gate which makes for easy cleaning; single-point lubrication; built-in amplifier; single-side operation; low mechanical noise; improved rotary-stabilizer for high-stability sound; efficient ventilation, which eliminates hot-spots at the top of the projector.

AVAILABILITY: Military demands mean that these new projectors are not now available for civilian use. But when you buy for post-war needs, be sure you see the new RCA projectors first. RADIO CORPORATION OF AMERICA, *Sound and Picture Section, Camden, New Jersey.*

RCA 16MM. PROJECTORS

RCA

BUY WAR BONDS

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

LEADS THE WAY . . *In Radio . . Television . . Tubes . . Phonographs . . Records . . Electronics*

NEWS of the Visual Industry

• APPOINTMENTS • AWARDS • EVENTS OF NOTE •

Chester C. Cooley

• Mr. J. C. Heck, President of DaLite Screen Company, Inc., Chicago, announces the election of CHESTER C. COOLEY as Vice-President in charge of sales and advertising.

Mr. Cooley has been with the DaLite Screen Company for 13 years. He has had broad experience in both the production and sales departments and is thoroughly familiar not only with his company's products, but also with the needs of DaLite customers. Mr. Cooley is widely known among wholesale and retail distributors of photographic, theatre and visual education equipment.

DeVry Gets Army-Navy Star

★ To a pioneer in the manufacture of motion picture sound equipment in a city which harbored the beginnings of the motion picture industry has just been awarded a signal honor.

DeVry Corporation, 1111 Armitage Ave., pioneer manufacturers of motion picture sound equipment has been notified of its receipt of the second white star for its Army-Navy "E" Flag denoting continued production excellence for the war effort on the part of its personnel.

Writes C. C. Bloch, Admiral USN (Retd.) Chairman Navy Board for Production Awards, to DeVry President William C. DeVry under date of March 30, from Washington:

"It is a pleasure to inform you that the Navy Board for Production Awards has granted the Armitage and Wolcott Avenue Plants of the DeVry Corporation a second renewal of the Army-Navy 'E' Award for meritorious service on the production front.

"The men and women of your plants have continued to maintain the high standards they set for themselves when they were originally awarded the Army-Navy 'E.' They may well be proud of their achievement.

"There are being forwarded to you two new pennants with two stars affixed to each which should be received in the near future.

"The additional white star, which the renewal adds to your Army-Navy 'E' flags, is the symbol of appreciation from our Armed Forces for your continued untiring effort and support so necessary for victory."

DeVry is the only concern in the United States to be thus honored for the manufacture of motion picture sound equipment and secret electronic training devices incorporating motion picture projection principles developed by DeVry's founder, the late Dr. Herman A. DeVry, inventive genius in the motion picture industry and a pioneer in the field of visual education by means of movies.

du Pont Film Academy Winner

★ Research which resulted in improved motion picture films with reduced inherent noise won an award for E. I. du Pont de Nemours & Company, from the Academy of Motion Picture Arts and Sciences, for scientific achievement in 1943, it is announced by the company.

An accompanying citation said the award was presented in recognition of "significant improvements in the quality of sound and picture as heard and seen in the theater."

"Inherent film noise has been substantially reduced" by the development and "a more pleasing and faithful reproduction of the original sound and an enhancement of the quality and entertainment value of the finished picture" have been made possible, the citation said.

New Filmosound "V"

• Like so many other new, improved products, the Filmosound V . . . is available at this time on to the armed forces and for oth essential purposes according to pr vailing government directives. Th compact, sturdy, precision-buil easy to operate product of Bell Howell engineering achievement being used today to project t sound movies that bring a smile a tired soldier's eyes; to proje lifesaving training films on mov screens in every theater of war, every branch of service.

But there will be an end to th war, too, and then the Filmosour V . . . will be available for civili use. Priority will be a word out the history books, and *everyone* w be able to preview this latest Filmosounds in the salesrooms the local B & H dealer.

Until that day, however, we ca dream, and dreaming can be bas on the reality of the new B & Filmosound V . . . as described i the latest edition of the Filmosoun folder. This folder, which is avai able upon request from Bell Howell Company, 1801 Larchmo Avenue, Chicago 13, describes t features of the Filmosound V . . . so that every potential owner ma have a clear picture of what th Filmosound of tomorrow has offer.

Heads New York Office

• The appointment of HAROL ACKERMAN as head of the recentl opened New York office of Visua Training Corporation, Detroit, wa announced by Genaro A. Flore President of the Company.

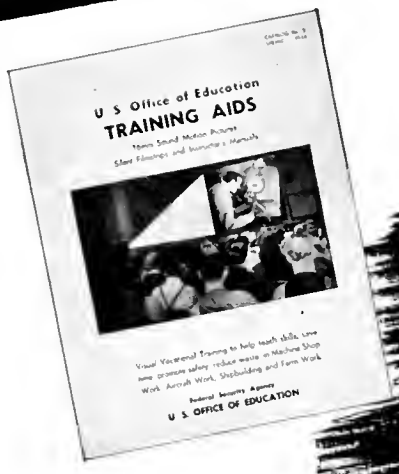
Mr. Ackerman, who is a graduat electrical engineer with practical ex perience in the field of trainin media, will service the technical ac counts in the East for which Visua Training Corporation is preparin AN Manuals and other training ma terials, including slidefilms and mo tion pictures.

Harold Ackerman

FREE! NEW CATALOG

describing all 95 available

U. S. Office of Education



TRAINING FILMS!

VISUAL AIDS FOR VICTORY!

ere is a new and complete catalog of value to ery industry . . . every training school in the nited States! It describes every one of the films w available . . . both those released last year d NEW ones released this year. It gives data, ices . . . tells you about the new film strip and structor's manual available with *each* film!

WIDE RANGE OF SUBJECTS!
Machine Shop . . . Aircraft Work . . . Shipbuilding . . . Farm Work

hen you go through the new free catalog you will cover that you have available films on precision asurement, engine lathe, milling machine, vertical ring mill, radial drill, sensitive drill, vertical drill, ich work, shaper, single point cutting tools, 25 films shipbuilding—from surfacing foundations to install- pipe; films on aircraft work that range from sawing plate metal to tube bending; films on repairing m machinery, canning, sheep shearing.

While films are arbitrarily listed under different ssifications—all industries having machine shops will find machine shop films valuable. The aircraft industry and the machine shop industries will find many of the shipbuilding films applicable to their own businesses. Shipbuilders will find that they can use many allied films. And manufacturers of farm machinery, wool buyers, and canners will find the agricultural subjects of value. All the films are part of an integrated program to help you increase efficiency and production.

PHENOMENAL RESULTS!

U. S. OFFICE OF EDUCATION films were used last year —are being used now—by *every key manufacturing plant . . . every major training schoool . . . in the United States.* Users have discovered that the films help to cut time, cut waste, and increase efficiency of production. They can help you speed victory now . . . AND . . . build towards higher efficiencies in the postwar world!

ACT NOW! To appreciate fully what this program of visual education can mean to you, send for the free catalog without delay. When you receive it, study its pages carefully. See how you can use the films effectively . . . today, and in the future!

CASTLE FILMS INC.

Distributor for
THE UNITED STATES OFFICE OF EDUCATION

SEND COUPON TODAY NOW!

SAVE TIME, AND INCREASE EFFICIENCY WITH "THE SLIDE RULE," NO. 179!
(The "C" and "D" Scales)

Last year, "THE MICROMETER" helped to teach thousands of workers how to use this all-important precision tool. "THE SLIDE RULE" is a companion film of equal basic importance. It helps to teach through seeing . . . through hearing. Simply. Quickly. Clearly. Animated diagrams help to give the worker a quicker understanding. Use this visual aid now for Victory! Price:

16 mm. Sound Motion Picture	**$30.67**
Coordinated Film Strip	**1.00**
Complete Visual Unit	**31.67**

CASTLE FILMS, INC.

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Please send the FREE catalog describing all U. S. OFFICE OF EDUCATION TRAINING FILMS.

Name _____

City _____ *State* _____

Organization _____ BS-7

A VIVID, fast-moving motion picture that dramatically points up safe methods of handling portable power tools is *For Safety's Sake*, produced by Sarra, Inc. in Hollywood, and now available for use by war plants and training schools. (*Announcement on page two.*)

This is the story of Joe Worker, representative of 50,000,000 other "Joe Workers" in the war effort today, who is a good, hard, experienced worker but who is inclined every once in a while to take "just one chance" on the job.

Joe's chance was not grounding an electric drill—a chance that could have cost his life but sent him, bandaged and wiser, into the office of his company's safety director to report his accident instead.

The safety director, Charles Adams, is explaining some points of safe tool operation to a couple of new workers and invites Joe to sit in on the discussion and add some pointers of his own.

Some of the other safety points covered:

DRILLS: Clamp firmly in vise while drilling.

GRINDERS: Grip it firmly.
Keep moving wheel away from body.
Protect eyes.
Use proper type of grinder wheel for each type of job.
Correct manner of mounting grinder wheel.
Hazards in using cracked grinder wheels.

SAWS: Automatic guards usually are installed, but keep hands away from line of cut.
Don't force saw into work.
Cautions in safe handling of saw blade.
Explanation of trigger-type switch (as on most power tools).
Don't hold work in hand.

ALL ELECTRICAL TOOLS: Grounding the tool, with clamps and with three-wire cord.
Proper handling of electrical tools.
Care of electric cords.
Proper methods of carrying tools.
Repair of tools by proper factory departments.

ALSO: Ten Commandments in Safe Handling of Portable Power Tools from National Safety Council. Closing explanation of ten top points of safe handling.

The production staff included these well known personalities: *Technical Advisor:* Glen Griffin, safety engineer of National Safety Council; *Writer:* Joe Betzer; *Photography* by Frederick Gately; *Producer:* Ray Ballard; Associate Producer, Harry Lange.

Screen Aids to PRODUCTION

Birmingham war workers see regular 16mm film showings

★ In the Birmingham, Alabama, plant of Chicago Bridge and Iron Company the latest serials are being shown on 16 mm film at the noon hour and between shifts on Mondays and the day after pay-day, to the hundreds of employees of the company. Since the introduction of the serials in the regular entertainment program of news and morale releases, absenteeism has shown a marked decline on the days which were formerly the worst. Apparently war workers do not want to miss the stratagem by which "Pauline" extricates herself from her peril.

The Victor Animatophone, 16 mm sound projector, which provides the rest-period entertainment is also used extensively in the company's training program for new employees.

Gutlohn Announces Release of "Norway Replies" Feature

♦ *Norway Replies*, which had its world premiere the end of February, is now available in 16 mm sound film from Walter O. Gutlohn, Inc., New York City and its branch libraries throughout the country.

This timely, dramatic feature film tells the thrilling story of a young Norwegian who escapes from Norway following a Commando raid. The picture shows the training he receives in England before he wins his wings and returns to wreak vengeance on the Nazis. Thrilling word pictures of Norway's brave fight are drawn by three of America's leading radio announcers—Eric Thorgerson, Alois Havrilla and Bert Granet—who do the commentary.

The story is told against a background of authentic information and shows Norway's merchant marine carrying on a vital job in helping to win the war and the other major activities of Norway in the fight against Fascism.

Such outstanding world personalities as President Roosevelt, King Haakon VII, Premier Johan Nygaardsvold and Crown Prince Olaf are pictured in the film which was produced under the supervision of the Royal Norwegian Information Service. *Norway Replies* is available for rental and sale. Six reels.

Get Recruits in Canada

♦ News of what's happening in the War and Canada's share in the fighting is being brought to isolated sections of the North Woods and the Arctic regions by a travelling Victor 16 mm Sound Motion Picture outfit of the Canadian National Film Board. Operated and transported by three members of the Canadian Armed Forces, this mobile unit is effectively aiding the recruiting efforts in regions which could not otherwise be reached with visual propaganda. The recruiting films use French or English sound tracks depending on the language of their audience.

NEWS-REEL

hoto & Sound Expands

Increased demands for the pro-ction of war training films in the y Area has made it necessary for hoto & Sound, Inc., of San Fran-sco, to expand its facilities and ove to larger quarters. The entire lm Production Division is now lo-ted at 606 Montgomery Street, here there are stages for two crews work simultaneously, complete t and animation facilities, spacious iting rooms, and editorial and fice space.

ehymer in Visual Training

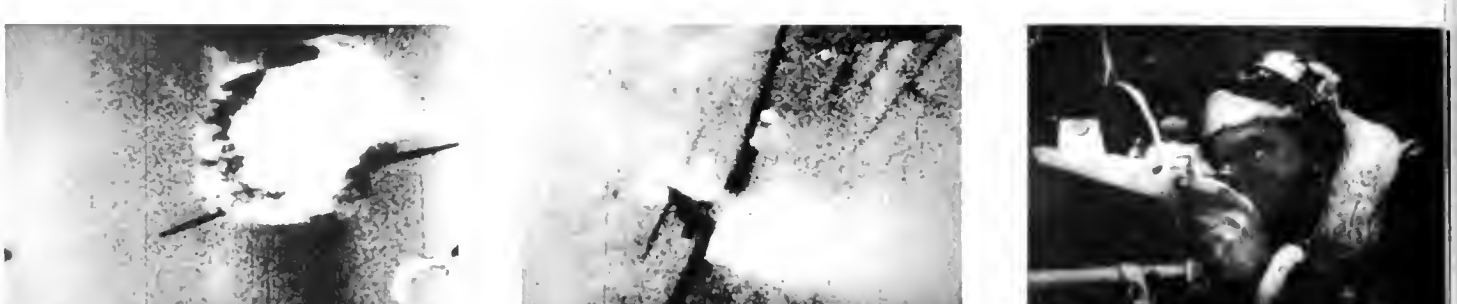
The addition of CHARLES E. EHYMER to the staff of Visual raining Corporation was an-unced by Genaro A. Florez, Pres-ent of the Company.

METAL SCREENS AVAILABLE

♦ Under a new War Production Board regulation, just released, industrial plants and factories are again able to show the many available newsreels, war-training and entertaining films. While formerly it was necessary to file a special form 1319 with W.P.B., this has been eliminated.

Your M.R.O. Rating is all that's necessary to purchase Radiant's new streamlined line of 1944 screens. They are available for *immediate delivery* in a variety of six models (DeLuxe Portable Tripod Type, Wall Type, Ceiling Type) in sizes from 30"x40" up to 20'x20' to fill all requirements.

New illustrated descriptive price list has just been released. Write to Radiant Manufacturing Corporation, 1140-46 West Superior Street, Chicago 22, Illinois.



In these exclusive BUSINESS SCREEN film blow-ups from the official Eighth Air Force motion picture "Target Germany," the action of high speed Bell Howell automatic gun cameras shows the actual disintegration of Nazi planes under fire of our gunners. (Official U. S. Army photos)

(CONTINUED FROM PAGE 19)

desired performance may be found: at this time there is more improvement to be made than there will ever be at any other time, as later some of the discrepancies will have been eliminated by whatever means there is available. Since mechanical development has preceded by considerable time the development of methods of fast motion analysis; so many things which have not been analyzed are already in use that there appears to be more opportunities for work on existing devices, particularly with regard to new applications, than for pioneer work at the time of origination of new devices. It is most essential that all attention be given to possible improved designs before decisions on specifications for quantity production of a device are arrived at. Information that is acquired later might have been of use if it had been known before the decision for quantity production was made; but once that has been made, the benefits to be derived from any improvements that could be put in may be more than offset by the disadvantages involved in trying to incorporate them into already finished production. In the war period, when time is at a premium, it is necessary to make decisions quickly and compromise any possible future improvement with the advantage of having what is now on hand available in quantity at an earlier date. It is imperative that what is done in the field of fast motion analysis be completely accomplished in the minimum time while it can still be used.

ALSO STUDY STANDARD EQUIPMENT

As contrasted with the difficulties encountered in current development, there is value to be obtained through the studying by many people, of regular operating of standard equipment. Since the standard equipment may be used as component parts in many different assemblies, general knowledge of what happens during its regular functioning may facilitate the origination of better methods of employment of such equipment by those who are to use it as units in their designs of larger assemblies.

FAST MOTION ANALYSIS AS AN AID TO ORGANIZED INVENTION

There is now a question of how a fast motion analysis activity may be fitted into an already existing organization. Much depends on finding personnel who may be interested in, and adapted to, doing the kind of work needed. It is noted tha with the limited experience up t the present, no conclusive answe can be given to this, but it is b lieved that, in general, the purchas of a high speed motion picture can era for placing in the photographi department of an establishment not the best way to go about thi Instead of making the fast motio analysis activity an appendix to a existing activity of still and ordinar speed motion pictures, the point v view should be more that of a de velopment project, since conside able original thought and pionee construction is involved in devisin and reducing to practical method the means for best obtaining th different kinds of data needed. Rea sons for not just simply adding thi activity to the work of the photo graphic section are mentioned mor fully in the following paragraph.

WHEN SPECIAL APPARATUS NEEDED

In order to record adequatel extremely fast motions and to inter pret the data therefrom, it may b necessary to construct special ap paratus and to use complicated proc esses which are as involved as de termining the interface distances o crystals from the photographic rec ord made on an X-Ray diffractio camera or the weights of molecule from the photographic record mad on a mass spectrograph. Photog raphy may not even be necessary for making records of certain kind of performances, and of course i does not enter into the interpreta tion, which may be found to require a longer time than performing the experiment. It appears that the bes arrangement for carrying on such an activity is to have it done by people experienced in developmenta engineering, so that the evidence when revealed, will be quickly evalu ated with regard to the project and so that adjustment of subsequent procedure may be made with a view to further development of the tech nique employed.

Furthermore, there are other fac-

rs to be considered with regard to ie introduction of a high speed hotographic activity. The actual nount of use expected to be given the photographic device employed this activity can be gathered from ie curves of Fig. 8. At first, the

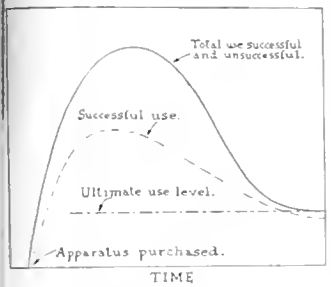


FIGURE EIGHT

ovelty of the device and the fact at some applications may be long-anding will provoke a high level use: this is represented by the avy line. Then it will be used any times where useful results will t be obtained; this is represented the space between the solid and otted lines. Finally, the ultimate e of the camera, after the novelty is worn off, and the longstanding pplications have been tried will ttle down to the level of the dot-id-dash line. Thus, in starting a gh speed photographic activity, ie must not expect the device used maintain the high level of its itial employment.

CONDITIONS ARE NOTED

Returning again to (Table 1) ere is portrayed opposite "Results" e condition where further changes the device are necessary to get e desired performance. As may seen, this is the conclusion to be awn after the data has been taken, epared, and analyzed. The next ep is to try to make the changes cessary in the device to accom-ish the desired action. It is not ways easy to decide just what to in every instance, because some-nes inventive ability is not ade-iate for the occasion. But it is cessary to do whatever seems to the most likely to accomplish iat is needed. When these changes ve been made, the device is again ady for more data to be taken and r the test cycle to be followed rough again. It may be necessary do this several times before ar-ving at a conclusion of success or ilure. If the changes accomplish e desired results, then it can be id that the job is complete as far the present requirements are con-rned and success has been at-ned. On the other hand, it may found that what is desired has t been accomplished, and it ap-pears for the present there is little prospect of its being done. In order to make the most progress in the development of apparatus, things to be done should include not only the obvious items but also those where the method of doing them can only be found by many trials or may not even be possible until some subsequent development or invention provides the methods or material needed. More briefly, this means that not only the easy but the difficult things should be tried. Failure to get results by fast motion analysis may come from a number of things such as the fact that: (1) methods used in analysis are not suitable for the kind of investigation at hand; (2) conditions believed to be present are found to be non-existent, and the discrepancy is due to some other cause; (3) conditions are found to exist for which no remedy can be immediately devised.

SIZE IS A FACTOR

High speed pictures are best when the undesired motions looked for are fairly large and take up more than five per cent of the diameter of the picture area. There is considerable leeway, as there is a wide choice of picture area. In general, this method of analysis is best for reciprocating motions, where motions of parts are irregular and do not follow any well defined path, or where articles are grasped, transported and released.

With reference to the analysis of fast motions, we find not only a problem in the technique of obtaining data but also a problem in the psychology of the minds of the people who are to use it. The latter perhaps is the more important, because it involves individuals as separate units, whereas technique once developed is usually universally applicable. People vary in their background of experience and reaction to ideas. Getting various people together in a discussion might bring out some ideas which would never be thought of by these people individually.

ALL SHOULD USE DATA

The data itself should be used in such a way that not only the individuals who are primarily interested have opportunity to study what took place, in order to utilize their abilities for the purpose of making improvements, but that others who might possibly contribute ideas for the successful completion of the problem could also review this data. Under conditions of this kind it is very difficult to draw

(CONTINUED ON PAGE THIRTY-THREE)

Two Important Film Forums

• CONFERENCES AT LOS ANGELES AND CLEVELAND •

THE FIRST ANNUAL Audio-Visual Education conference, sponsored by Dr. Vierling Kersey, Superintendent of the Los Angeles City Schools, and Mrs. Gertrude Rounsavelle, President of the Board of Education of the City of Los Angeles, was held on March 24, 1944, at the Audio-Visual Education Section. Because of limited facilities, invitations were sent to a restricted number of people who are vitally interested in the audio-visual education program.

Following registration, approximately 175 conferees gathered for the General Session. Dr. Raymond E. Pollich, Assistant Superintendent of the Los Angeles City Schools, and General Chairman of the Conference, introduced Mrs. Rounsavelle, who in turn welcomed the group.

KERSEY PRESENTS BROAD VIEW

Superintendent Kersey was introduced; he presented many current teaching problems and the potentialities of the audio-visual program. He gave an overall point of view of the schools, mentioning that we are not going to have a new education after the war, because of the war, during the war, in order to win the war. We are not going to have a changed economic structure or a changed social order to the point of newness of economic system, but the advances that are going to be made will be in the nature of constructive changes.

Continuing, he said in effect that the armed forces have taught us how to be successful in the war effort — that we can learn more, that we can learn it better, and that we can learn it faster, and that there need be no extraordinary cost in order to learn that way. Study has been made on why there has been this eminent success in getting more learning in shorter time with deeper meanings. It seems to center around the consolidation of several attentions to the job in hand: the consolidation of the five factors of hearing, seeing, feeling, sensing, and thinking. By consolidation of these factors we have the best, the most effective, and the most rapid learning.

FIVE SECTION MEETINGS

From the General Sessions, the conferees dishursed into five groups to attend section meetings simultaneously held in various rooms. The topics and the respective chairmen were as follows:

How Teaching Is Improved By the Use of Audio-Visual Tools Dr. Charles J. Lalk, Assistant to the Superintendent, San Diego City Schools; *Basic Equipment Necessary for an Adequate Audio-Visual Program*—Dr. B. F. Enyeart, Superintendent, Burbank City Schools; *Standards in the Selection of Radio Program Material for Classroom Use*—Dr. W. K. Cobb, Superintendent of County Schools, Ventura; *Audio-Visual Materials for Today and Tomorrow*—Dr. Raymond E. Pollich, Assistant Superintendent, Los Angeles City Schools; *The Contribution of Sponsored and Commercial Materials to the Audio-Visual Program*—Mr. Bruce A. Findlay, Head Supervisor, Audio-Visual Education Section, Los Angeles City Schools.

The afternoon General Session was called to order by Chairman Raymond E. Pollich.

CLEVELAND was host to the First Northern Ohio Visual Aids Conference, April 3rd and 4th at the Hotel Hollenden. Five sessions were held in all, two on Monday and three on Tuesday.

While primarily the conference attracted educators, such as teachers, principals, and school superintendents, the programs were so broad in scope that many war plant personnel and training department representatives were in attendance.

The 16 mm film has taken its place beside books on the shelves of the modern public library and is a vital tool in the adult educational programs of such institutions, according to R. Russell Munn, Director of Adult Education of the Cleveland Public Library. Films a the adult program at the librar

Cleveland's Mayor Praises Visua

MAYOR OF CLEVELAND SPEAKS

In the first evening meeting the conference, Mayor Frank Lausche of Cleveland said that ed cation was of prime importance winning the home front portion the war, and that visual aids, co tributing to the excellence of dem cratic education were of direct i portance to the winning of this wa

Superintendent of the Clevelar schools, Charles H. Lake, urged be ter relation of visual aids to curri ular content, improved classroo techniques in using them, and r duction in film costs.

According to B. V. Aughinbaugl Supervisor of the Ohio Slide an Film Exchange in Columbus, th sense of sight is of such overwhelm ing importance in education that part of its future may well be de pendent on the progress made i direct use of visual aids in learning

Lieut. Carl A. Heintz of the Nint Naval District Coast Guard, subst tuting for Commander Patrick Mut phy, U.S.C.G. Chief of the Trainin Aids Section, Washington, D. C who was unable to appear, said th use of films by the Coast Guar over the last two years had speede up training processes and increase absorption of knowledge tremen dously.

KEYNOTE ADDRESS BY HODGE

A highlight of the conference was a luncheon meeting in whic Thomas Hodge, Film Officer of th British Information Services, Chi cago, made a plea for a greate exchange of honest films among th United Nations. Such films will giv a keener appreciation of each na tion's problems and lead inevitably to greater tolerance. American films showing the activities of nationality groups left a deep impression i England, according to Mr. Hodge.

IOTION ANALYSIS

ONTINUED FROM PAGE 31

e line where diminishing returns useful suggestions make attention m others not primarily interested the problem unprofitable.

In general, data may be divided o the two classes of special modiations during the steps of apparus development and regular operons of standard apparatus. In the e of apparatus development, perps only a few people known to ve worked on similar problems uld profitably take working time review the data. It must be recnized that with respect to the rking time available, a choice of nding this time reviewing data al advising others materially hanaps one's own activity. In the e of regular operation of standard paratus, it is of greater importe that people who are involved the improvement and adaptation this apparatus to specific jobs uld study its operation. This erest may be not only in the ablishment where the pictures are en but at many other establishnts where design work is done, ere the devices are manufactured, where they are fitted as coment units in the assembly of ger pieces of apparatus in which will have their ultimate use. condition to be avoided is the urbing of the peace of mind of se in charge of projects being died by others who may attempt to improve their standing at the expense of those in charge of the projects. In showing pictures to others, there should never be the thought that the necessity for taking the pictures indicated inability of the people for whom they were taken to solve their problem without aid. There should be no appearance of change in the responsibility as to who decides what should be done in the program of trying various modifications thought profitable: All suggestions and interpretations of things seen should clear through the people who are directly responsible for carrying out the program of improvement.

Conditions here are different from those usually encountered. Ordinarily the person in charge knows what is to be done by reason of having previous experience in less responsible positions and can direct the work accordingly. Where inventive work is done, the person looking after it can only try to encourage excursions of the minds of those in his group into fields which are entirely strange to him. A person's efficiency in routine jobs may not be greatly affected when he is annoyed by conditions about him, but creative work is inestimably handicapped when the minds of the people involved are disturbed.

High speed motion pictures have a unique application in training film. For the most part in training film normal speed motion pictures are used to show the latest and most advanced procedure, in order that the trainees may repeat this procedure when practicing with the actual pieces of equipment previously viewed. Under these conditions there is sufficient time for mental reactions to take place as the trainee adjusts his procedure, using actual equipment, in an effort to follow the approved procedure previously demonstrated.

Action which may require several seconds to show, but which takes place in a fraction of a second, happens too fast for anyone to make a decision while it is under way. The showing of such fast action may give the viewer a better knowledge of performance of devices he must use, thus increasing his confidence, but unless several situations are shown illustrating the effect of proper and improper preparation before the fast action is caused to take place, there will be little training value derived. In some instances normal speed views of proper and improper preparation followed by fast action pictures showing the results therefrom will have training value.

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers stand ready to provide products and services required for your film program—in industry or education. A majority of these companies also provide projection service for local and regional showings, equipment repair and maintenance films.

EASTERN STATES

CONNECTICUT

Hebert Studios, Inc., 53 Allyn St., Hartford 3, Conn.

DISTRICT OF COLUMBIA

The Jam Handy Organization, Inc., Transport'tn. Bldg., Washington, D. C.

MARYLAND

Kunz Motion Picture Service, 432 N. Calvert St., Baltimore 2, Md

Stark Films, 537 N. Howard St., Baltimore 1, Md.

MASSACHUSETTS

Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE

A. H. Rice and Co., Hollis, N. H.

NEW YORK

Buchan Pictures, 79 Allen St., Buffalo, N. Y.

Bertram Willoughby Pictures, Inc., Suite 600, 1600 Broadway, New York City.

The Jam Handy Organization, Inc., 1775 Broadway, New York City.

King Cole's Sound Service, 203 E. 26th St., New York City.

John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA

Kunz Motion Picture Service, 1319 Vine St., Philadelphia 7, Pa.

SOUTHERN STATES

FLORIDA

Ideal Southern Pictures Co., 9536 N. E. Second Ave. Miami, Fla

GEORGIA

The Distributor's Group, Inc., 756 W. Peachtree St., N.W., Atlanta, Ga.

Stevens-Ideal Pictures, 89 Cone St., N. W., Atlanta, Ga.

KENTUCKY

D. T. Davis Co., 231 W. Short St., Lexington, Ky. (Also Louisville, Ky.)

LOUISIANA

Ideal Southern Pictures Co., 336 Barrone St., New Orleans, La.

Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

TENNESSEE

Ideal Pictures Corp., 18 S. 3rd St., Memphis, Tenn

Frank L. Rouser Co., Inc., P. O. Box 2107, Knoxville 11, Tenn.

VIRGINIA

Ideal Pictures, 210 E. Franklin St., Richmond, Va

MIDWESTERN STATES

ILLINOIS

Ideal Pictures Corp., 28 E. 8th St., Chicago, Ill.

The Jam Handy Organization, Inc., 230 N. Michigan Ave., Chicago, Ill.

KANSAS-MISSOURI

Central Visual Education Service, Broadview Hotel Bldg., Wichita, Kas.

Ideal Pictures Corp., Attn: W. P. Humston, Room 1—Lobby Floor, Reliance Bldg., 926 McGee St., Kansas City 6, Mo.

MICHIGAN

W. D. Engleman Co., 701 W. Warren Ave., Detroit, Mich.

The Jam Handy Organization, Inc., 2821 E. Grand Blvd., Detroit 11, Mich.

MINNESOTA

Film Preview, 1504 Hennepin Ave., Minneapolis, Minn.

OHIO

Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio.

The Jam Handy Organization, Inc., 310 Talbott Building, Dayton, Ohio.

Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.

Martin Sound Systems, 610 State Ave., N. E., Massillon, Ohio.

Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

WISCONSIN

Photoart House, 844 N. Plankinton Ave., Milwaukee, Wisc.

WESTERN STATES

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Donald J. Clausonthue, 1829 N. Craig Ave., Altadena, Calif.

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The Jam Handy Organization, Inc., 7046 Hollywood Blvd., Los Angeles, Calif.

Screen Adettes, Inc., 1709 W. 8th St., Los Angeles 14, Calif.

Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.

Screen Adettes, Inc., Sixty-Eight Post Bldg., 68 Post St., San Francisco 4, Calif

Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Los Angeles Co., Calif.

COLORADO

Ideal Pictures Corp., 1739 Oneida St., Denver, Colo.

OREGON

Ideal Pictures Corp., 915 S. W. 10th Ave., Portland, Oregon.

Moore's Motion Picture Service, 306-310 S. W. Ninth Ave., Portland 5, Ore.

Screen Adettes, Inc., 314 S. W. Ninth Ave., Portland 5, Ore.

TEXAS

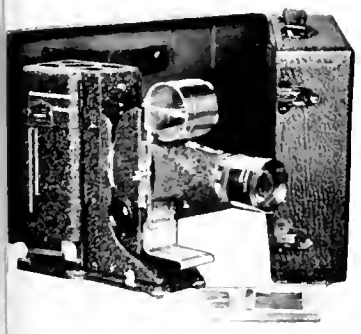
National-Ideal Pictures, 2024 Main St., Dallas, Texas.

Visual Education, Inc., Twelfth at Lamar, Austin, Texas. Also, 216 Gulf States Bldg., Dallas 1, Texas.

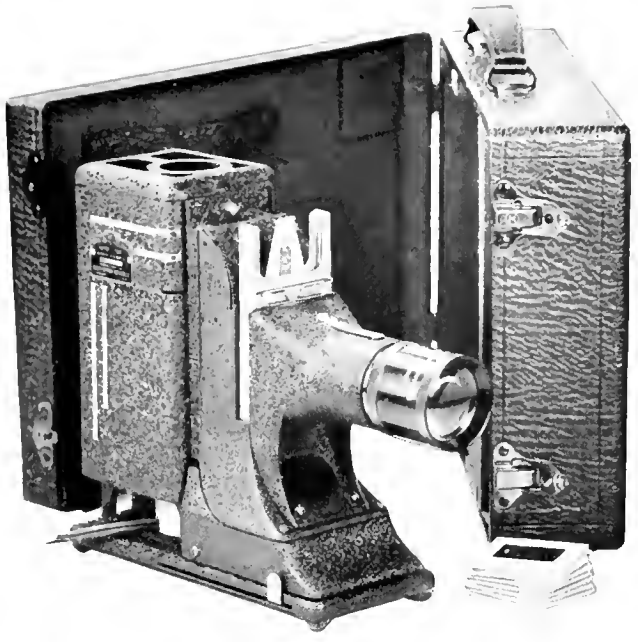
HAWAII

Motion Picture Enterprises, 121 S. Beretania Honolulu, T. H.

Qualified visual dealers may be listed in this National Directory on application: Address inquiries to BUSINESS SCREEN, 157 E. Erie, Chicago



300 WATT MODEL AAA, TRI-PURPOSE. Shows 2" x 2" slides, single and double frame slidefilms in groups of all sizes.



300 WATT MODEL AK MINIATURE PROJECTOR
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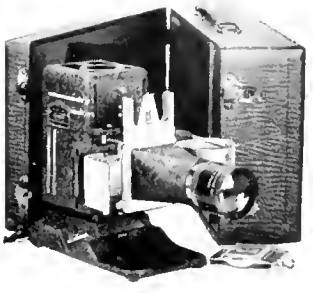

150 WATT MODEL DD, also TRI-PURPOSE for audiences of average size.

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NOW AVAILABLE

These projectors for slides and slidefilms are playing a vital role in the swift training of war workers and our fighting forces. Recent releases by the War Production Board make some S.V.E. Projectors available for essential civilian uses. These S.V.E. Projector Models include the Tri-Purpose AAA and DD; the AK Miniature for 2" x 2" slides; and Models Q, F and G, which project slidefilms only and are useful for industrial and commercial purposes.

Details regarding the procedure for purchasing this equipment will be furnished promptly on request.

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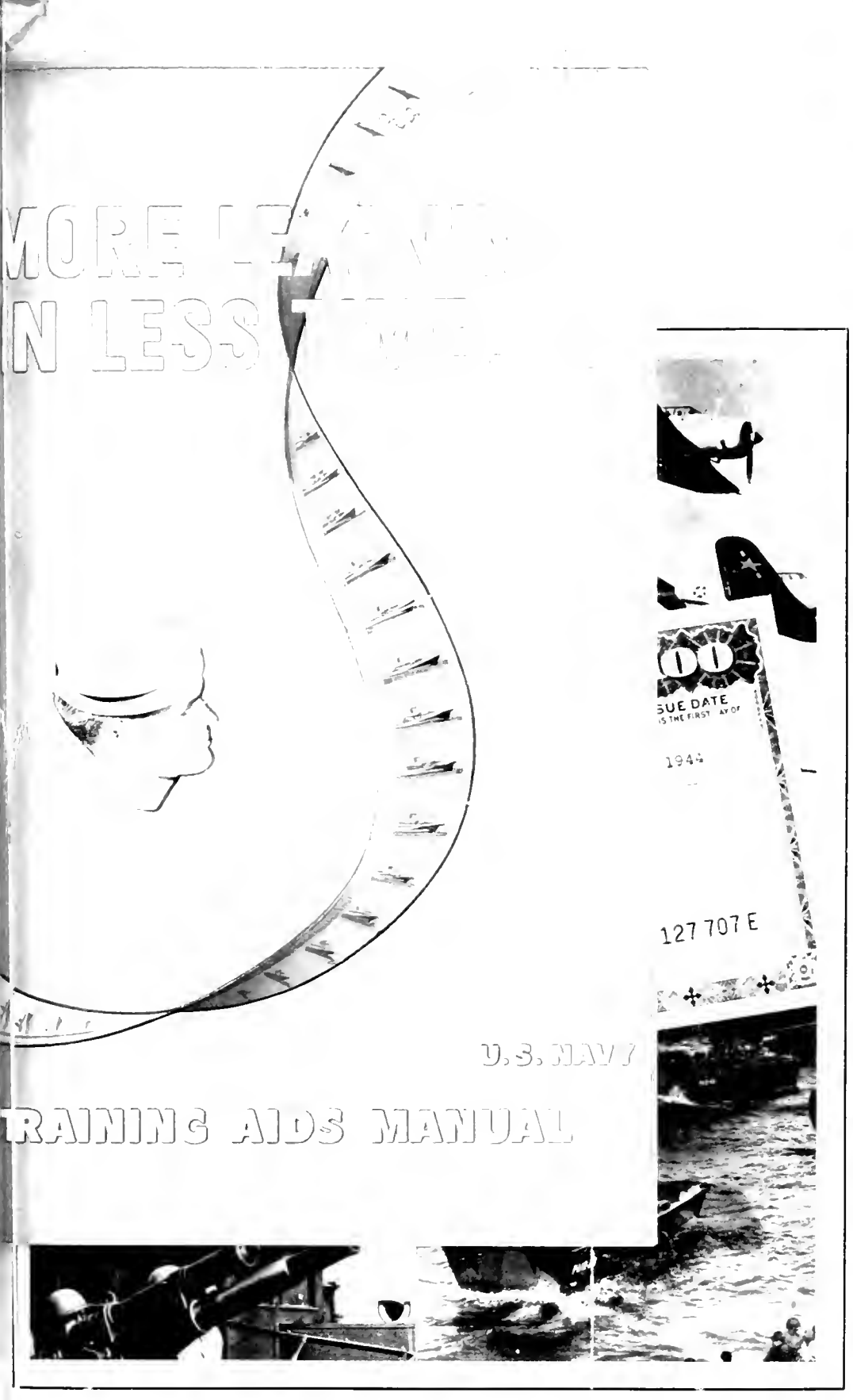

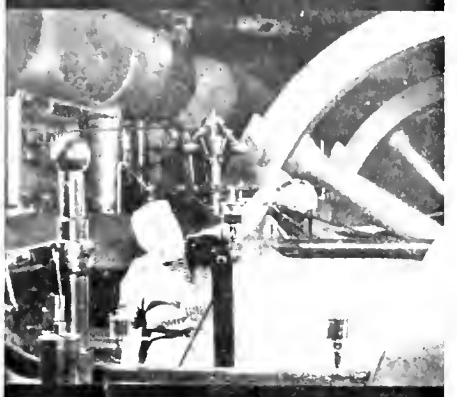

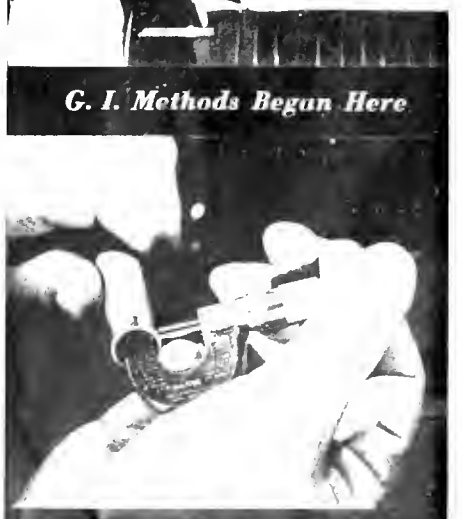

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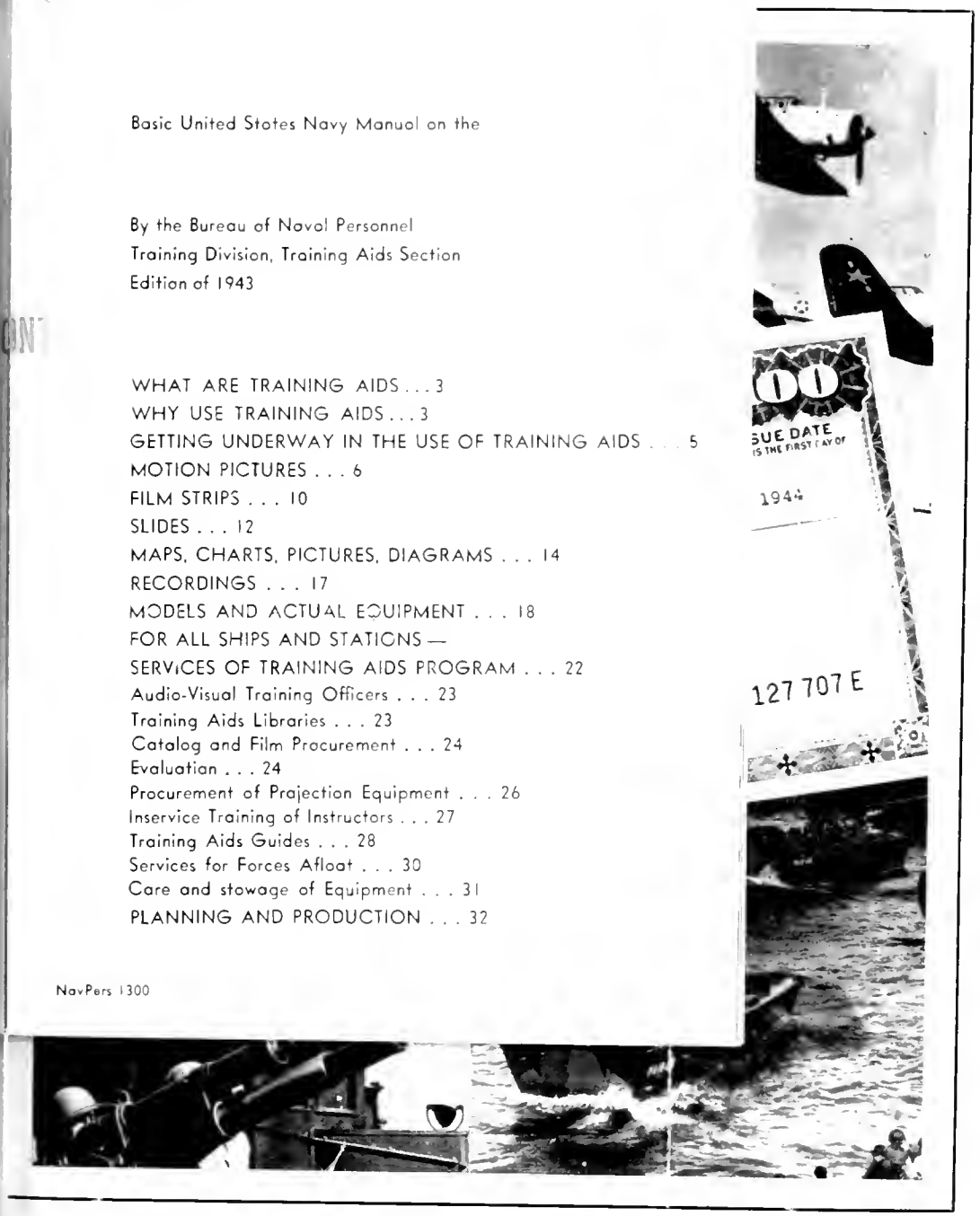
UNITED STATES NAVY DEPARTMENT
BUREAU OF NAVAL PERSONNEL

Basic United States Navy Manual on the

By the Bureau of Naval Personnel
Training Division, Training Aids Section
Edition of 1943

NavPers 1300



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WHAT ARE TRAINING AIDS?

MOTION PICTURES

Most training films are
sound pictures, 16mm. in size.

FILM STRIPS AND SLIDES

Film strips are
rolls of still pictures, 35mm. in size, projected in succession with matched sound on records, or with the text in titles on the film.

Slides are
made in standard size of 2" x 2" and $3\frac{1}{4}$" x 4".

CHARTS AND PICTURES

Many types and sizes of diagrams, maps, cards and photographs are available from many sources.

MODELS AND ACTUAL EQUIPMENT

Three-dimensional objects such as full scale equipment, models with movable parts, cutaway models, and solid models are among the most valuable training aids.

RECORDINGS

Navy recordings are usually on 16-inch discs which run at 33 1/3 revolutions per minute.

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WHY USE TRAINING AIDS?

LS

Tests show that students learn up to 35 percent more in a given time.

RE

Tests show that facts learned are remembered up to 55 percent longer.

IN

Training aids command attention and cause students to want to learn.

M

They help to get similar results from different schools which teach the same subjects.

S

They give trainees confidence in their ability to do the job.

S.

Training aids make it possible to meet Navy standards in less time.

3

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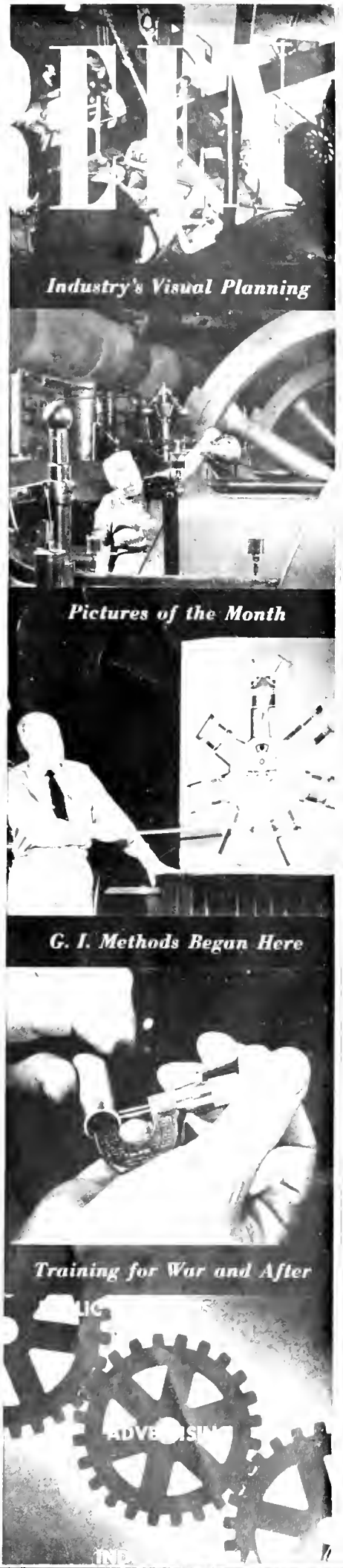

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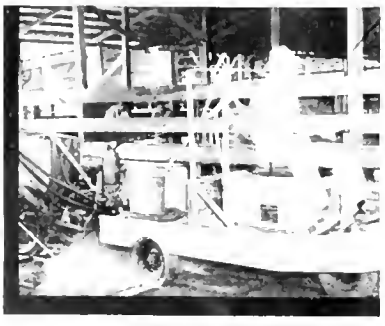

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These general rules should be followed to insure the effective use of any type of training aid.

The instructor should see the film, hear the recording, or examine the model, and consult the accompanying study guide. Full knowledge of the training aid will enable the instructor to use it in the right place, at the right time, and in the right way.

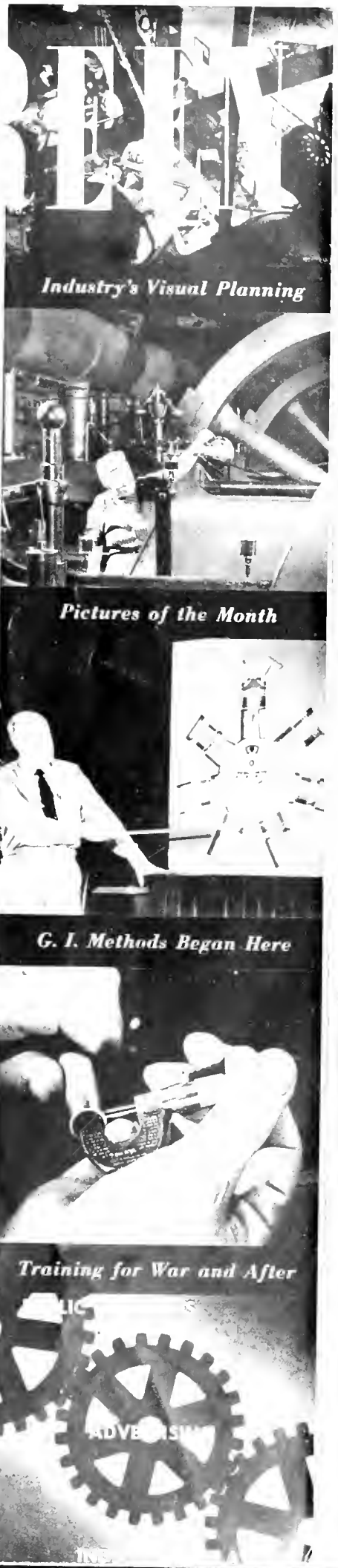
The instructor should obtain the proper equipment and material, arrange the classroom before the class meets, and check on the operation of the equipment. The assistance of a trained projectionist, or someone to handle the equipment, or to help conduct the demonstration, will save time.

The instructor should inform the men as to the purpose of the training aid, what it will do, why it is presented at this time, what they will learn from seeing or hearing it, and how they should be able to apply the information gained.

The training aid should be used by the instructor in the classroom as a definite and important part of his instruction for that period.

The instructor should make a summary statement, invite comment and questions, conduct a discussion, give a test, or provide for actual practice and use of the information gained.

All equipment and other material should be returned to storage as soon as it has served its purpose in the classroom. Other instructors will need it soon.



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MOTION PICTURES

VALUE PROVED BY NAVY EXPERIENCE. The Navy has always be alert to adopt new training ideas when their worth has been proved by practic experience. Beyond all doubt, Navy experience has demonstrated the valu of motion pictures in the training program.

It has been found that the proper use of motion picture training film strengthens and shortens training, both with forces afloat and in classroom ashore. As a result, the Navy has developed an extensive program of motio picture production distribution and utilization to serve its varied training need

SPECIAL ADVANTAGES OF TRAINING FILMS. Training films ca bring many experiences to the men in Navy classrooms. Here they may see th officer of the deck performing his duties aboard ship, the internal operatio of the range keeper, or hundreds of other aspects of Navy duties and operation

In countless subjects, the film re-enacts movement; analyzes functions; add natural sound to the action or object; appeals to the emotions; and portray life-like situations. These characteristics of the motion picture enable ever man to have a front seat in Navy experience.

ROLE OF THE INSTRUCTOR. No motion picture, however useful, can d the job alone. The instructor will always be the central figure in any training program. Good results in training come basically from clear thinking, care ful preparation, and personal leadership by the instructor. His ability to mak

A front seat in Navy experience for every man through the planned use of Training Films

6

ance of Buda products on all fronts, it is our esteemed privilege to contribute.

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oper use of training aids will also produce better results. A training film any other aid, will help most when the instructor studies it thoroughly and orks it into his plan of teaching.

LM TYPES AND USES. Training films are usually sound pictures of mm. width. All 16mm. films are noninflammable. They are usually pro- ted with portable equipment. Training films are generally used in the class om or with small groups.

In contrast, films for entertainment purposes are usually made on inflam- ible stock in 35mm. width. This size, standard for theatres, calls for the rical projection equipment. These films are for use with large audiences and not generally suitable for training.

Some training films are designed to develop morale or to provide general ormation on a subject of importance to the Navy. These films may be used th groups larger than a class. The group should understand why the film is ing shown and what they should get from it. In some cases, concluding or nmarizing remarks may be appropriate.

The great majority of training films, however, are intended to teach certain ts or skills. They are usually short, simple and direct. Such films are not entertainment, even though they do have a high degree of interest. They uld always be used in the way Navy experience has found to be best.

W TO USE TRAINING FILMS. *Preview the film.* Become familiar with before deciding to use it in class. Titles are often misleading as to content. *Select the film to fit the course.* Films must be selected in terms of the pur- ses of the lesson and the extent to which they will contribute more than er methods or aids which might be used. As a rule, the film shown in any e class period should not be more than twenty minutes in length.

Study the Training Aids Guide. These guides are available on certain films e guide gives a brief review of the main points to look for, a test on the film ntent, and suggests follow-up activities.

1 motion picture vividly brings battle front experiences to Navy men in the classroom

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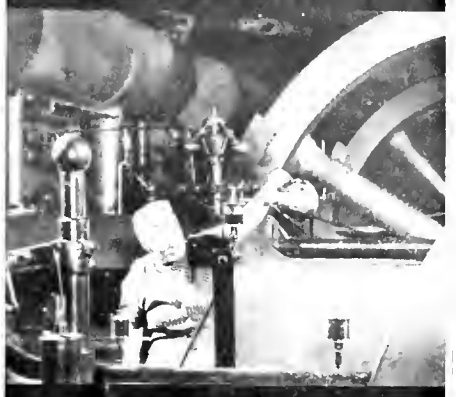
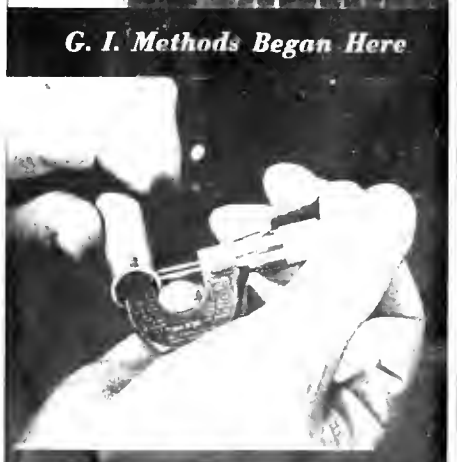
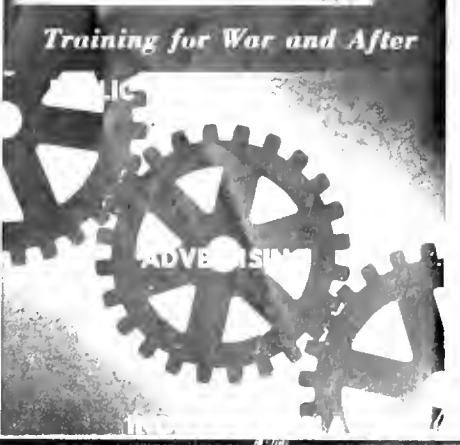






Plan Introductory Remarks. Based on the previ of the selected film, decide how to inform the cla (1) what the film will show; (2) why it is bei shown; (3) what they are expected to get out of

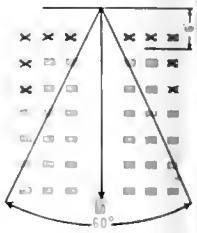
Obtain necessary equipment and assistants. A projection equipment should be set up and tested b fore the arrival of the class. Arrange for a proje tionist if needed.

Prepare the classroom. The room should be ac quately darkened, well ventilated, and comfortab

Prepare the class to see the film. Make the introductory remarks previous prepared. It is good practice to tell the class that they will be questioned tested on the film and will be expected to apply their understanding of it.

Project the film. Members of the class should be helped to regard traini films as a specific aid to better learning. The instructor should give the sa attention to the film as is expected of the class. He should not leave the roo even if he has already seen the film. The projectionist is not the assistant i structor.

Promote class discussion. The class should be encouraged to ask questio and discuss points not clearly understood. Plan activities so the class can practice what has been learned as soon as possible after film use.



Reshow the film if necessary. Show the film again if further emphasis is needed on points not clear, or if greater skill is to be developed. If some students fail to grasp the essential points, a special showing for them is recommended.

Check on the learning. Hold the students responsible for the content of the film. This may be done by a test of actual practice, or by various types of tests. The test should deal with important rather than incidental points covere by the film.

Return equipment and film to stowage. The instructor is responsible for t care of equipment and film and for its return to proper stowage.

DESIRABLE ROOM CONDITIONS. Good ventilation is more importa than total darkness. It is better to have a little light in the room than to hav the class uncomfortable or asleep. Use a fan if one is needed.

Avoid using the front corner seats and those closer than 6 feet from th screen. Pictures become distorted and dim outside the 60 degree angle.

Darken the room so the projected picture is clearl visible. Any light from windows should not shine i men's eyes or on the screen.

EQUIPMENT RECOMMENDATIONS. Screen supplied by the Navy are recommended, but any fla white surface can be used. A good screen can b made on a flat surface by giving it at least thre coats of FLAT WHITE paint. It should not b glossy. Aluminum paint is not satisfactory.

The bottom of the screen should be at the ey

vel of the seated class. For classroom use a small bright image is better than large, dim one.

A portable projector stand about four feet high is recommended. If this not ailable, any rigid support will do.

The 16mm. sound projector is standard equipment for Navy training films lent projectors will ruin sound films. For auditorium use, special speakers, mps and lenses may be necessary.

ECHNICAL TIPS ON PROJECTION. The directions on the projector ould be followed. Each make is different. Determine whether the current is C. or D.C., and also the voltage and number of cycles. If the wrong current is ed, blown fuses, faulty operation, or a damaged projector may result.

In getting ready to operate the projector, locate the machine so that a satisctory image is obtained. Be sure the film has been rewound correctly. Then read the film carefully, making sure the film gate is clean. Next, "frame" e picture on the screen and adjust the lens to a sharp focus.

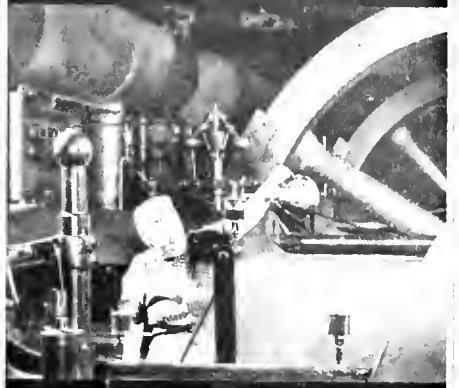
Check to see if the sound system is working. Place the speaker off the floor at the screen. Experience will determine the best location. Rethread the film the title will appear when the machine is started. Be sure to have spare ojector and exciter lamps at hand.

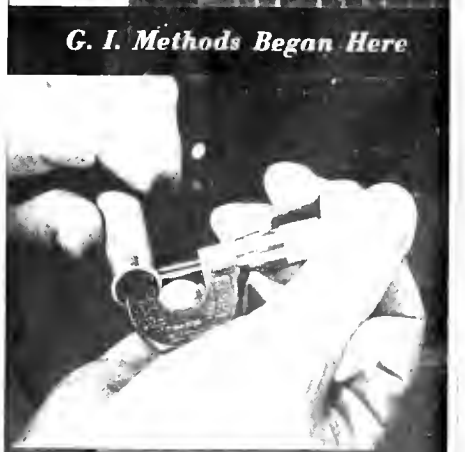
The best projection goes unnoticed. Poor projection is marked by distracns and interruptions. These disturbances can be prevented by following the ocedure described below.

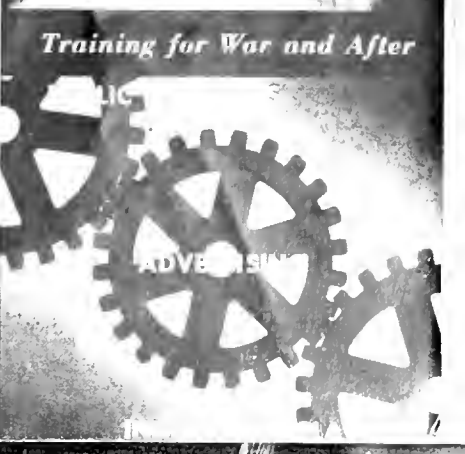
Warm up the amplifier several minutes before the projector begins to run. at the picture before turning up the volume, then adjust the volume. Too ich volume causes distraction. Use the tone control to make the sound clear. Watch and listen to the projector while it runs. When the picture ends, turn wn the volume before stopping the projector. Be sure to stop the projector soon as the last picture has appeared. Remove the film from the projector er the class is dismissed.

Proper care and servicing are also necessary for good projection. When the achine is no longer needed, replace the cords and empty reels in the case. en return the projector, screen, and film to proper stowage promptly. Remember to have projectors serviced regularly by competent servicemen.

A careful instructor makes the purpose and objective of the film crystal clear to his class.







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FILM STRIPS

TYPES OF FILM STRIPS. The film strip is simply a roll of still pictu arranged in sequence. It is 35mm. in width. There are two types of film str sound and silent.

Sound film strips are accompanied by a recording which explains the p tures on the strip. In contrast, the silent film strip has titles and printed planations on the film.

ADVANTAGES OF FILM STRIPS. Film strips are designed to present s jects where it is not necessary to show motion. They are often used to pres a series of ideas or events without action. They can show close-up or mic scopic views, and also a detailed explanation of an operation or piece equipment.

Both types of film strips have certain advantages. The sound film strip less flexible in use but insures a more uniform presentation. It also provi an approved description and gives standard definitions. The silent film str allows the instructor more freedom in use, permits group discussion and allo detailed explanation at any time.

USING SOUND FILM STRIPS. The instructor should preview all sou film strips. He should note the points emphasized in the recording and cons the study guide, if one is available for the film.

Only a brief introduction is needed with the sound film strip. The record w carry its own story. The voice of the narrator and the picture are the center attention. Consequently, the instructor should seat himself with the class a give the same attention as is expected of the students.

The recorded lecture has been carefully prepared by experts on the subje Everything which it presents is regarded as important. The instructor shou plan to use this assistance to the fullest extent.

One method is to provide for a discussion break when the record is turn Another is to rerun the film without the record. This will allow the instruct to discuss the important points.

If time permits, the film and record should be run together another tim This is important when the purpose is to teach a uniform method of operati It also helps to insure a common understanding of the ideas presented.

USING SILENT FILM STRIPS. The silent film strip, too, should be se by the instructor before using it with the class. At this time he should list t

nts he wants to emphasize. He should also consult the study guide.

n using the silent film strip, the instructor will usually stand near the screen. Iplanation or discussion can then take place while the film is being shown. Vhere necessary, the film can be stopped to allow for questions or discussion. Using a pointer, the instructor can direct attention to specific things.

Silent film strips should be "paced" slowly to allow ample time for all to rd. The class room can be arranged to use the film strip and the blackboard the same time. When this is done, the room lighting should be turned up to ow for more detailed explanation on the blackboard. Many film strips con- a large number of facts and require detailed explanation, especially when d without sound.

EPARING THE EQUIPMENT. The following suggestions are intended supplement the manufacturer's instructions for the equipment being used. The steps in getting the projector ready are the same for both sound and ent film strips. First, place the machine in line with the screen so as to secure image of the size desired. Then check the electrical connections. Be sure also t the lens and pressure plates are clean.

Place the film strip in the projector. Then turn on the projector light, and ve the film to the first frame. Check for focus, and adjust the framing by ving the hand knob. When focus and framing are satisfactory, turn off the jector light.

f a sound film strip is to be used, the record player must also be made ready. Fst, detach the speaker and place near the screen. Set the player at the correct ed, usually 33 1-3 revolutions per minute. Start the record on the outside o nside as directed on the record label. For each showing use a new needle. Vow turn on the switch to warm up the tubes. Check volume by playing part o he record. Set the tone control so that the voice is clear and distinct. Then s the "slow-fast" lever for normal pitch. Finally, turn off the switches and ge the arm on its support.

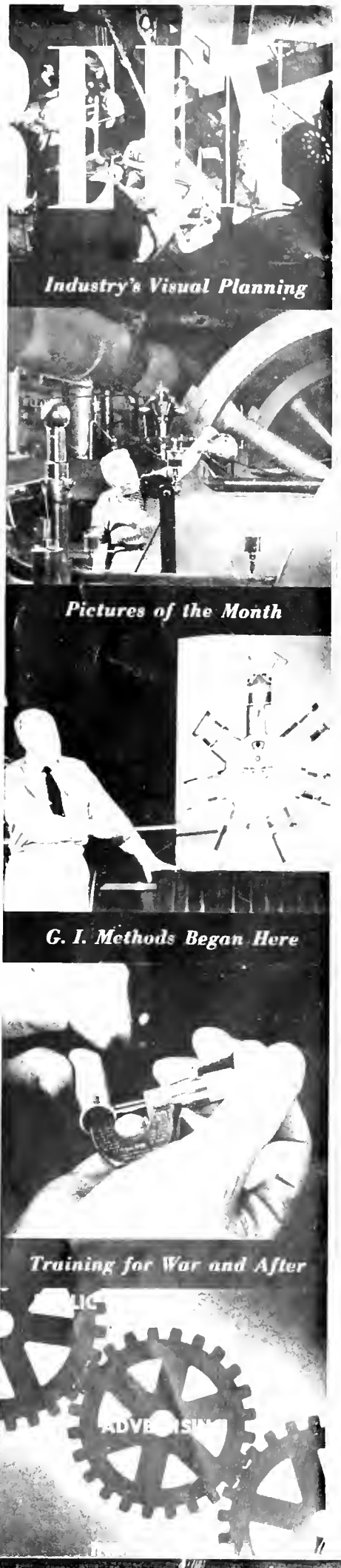
he above steps in preparing the equipment should be completed before class.

ERATING THE EQUIPMENT. For sound film strips the following nts must be observed in operating the machine.

First, warm up the tubes and start the motor. Turn on the projector light S the playing arm at the correct starting point. Then advance the film strip as th gong or bell sounds.

f a silent film strip is being used, it is only necessary to turn on the projector lit and advance the film strip as signaled by the instructor. Any method of sig- n ing that is used must not distract attention from the picture.

Fi strips and records are available on many subjects important to navy training



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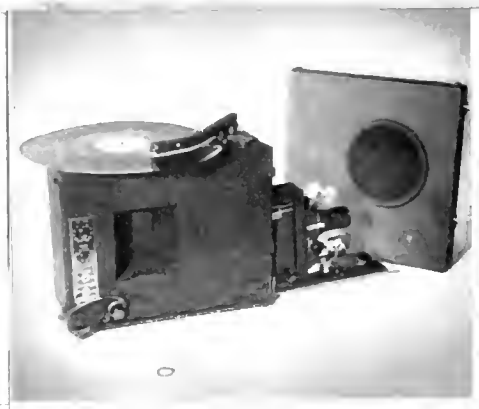


Sound slide film equipment combines a projector and a record playing device.

Glass slides for daylight blackboard projection make drawings instantly ready for use

SIZE OF SLIDES. Slides come in two general sizes, either 2" x 2" or 3¼" x 4". The 2" x 2" slide is usually a film mounted in cardboard or glass. The 3¼" x 4" slides are always mounted in glass.

HOW SLIDES ARE MADE. For the most part, slides are made by local training activities to meet special needs.

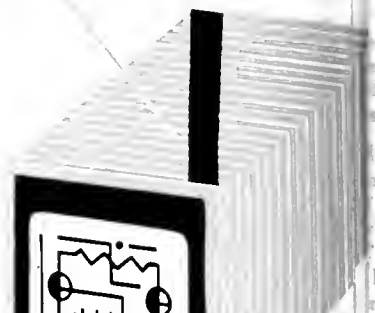
Slides can be made by typing through carbon or cellophane; by drawing with crayon or India ink on etched glass, or by contact printing from photographic negatives. They can also be made in the 2" x 2" size from 35mm. kodachrome or black and white film.

ADVANTAGES OF SLIDES. Flexibility in use is the chief advantage of slides. They may be shown singly or in a variable sequence. They can show colors in pictures or diagrams, and can be made quickly to meet the changing needs of the curriculum.

HOW TO USE SLIDES. Slides may be shown by themselves or in connection with a film, a film strip, or other training aid. To be effective, however, slides must be selected to fit the purpose of the lesson.

The instructor should prepare an outline of what he will say and do when each slide is shown. A small number of slides carefully used is better than a larger number used without sufficient explanation. Slides are an aid, not a replacement for the lesson.

All slides should be numbered and marked. A convenient method is to mark a set of slides with a colored (cellulose) tape run diag-



Inexpensive 2" x 2" slides may be made quickly to meet purely local needs. Any camera that uses 35mm. film will do this.

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Planned explanation and discussion of the text add interest to the silent film strips.

Silent film strip projectors are light, easily set up, and cast a bright and clear image

onally across the edges and cut to fit the edge of each slide. The sequence can be determined by looking at the color mark on the edge.

If individual slides are to be shown in irregular sequence, the operator should be given a list of the numbers and the order of the showing.

The $3\frac{1}{4}$ x 4 glass slides may be projected in a light room

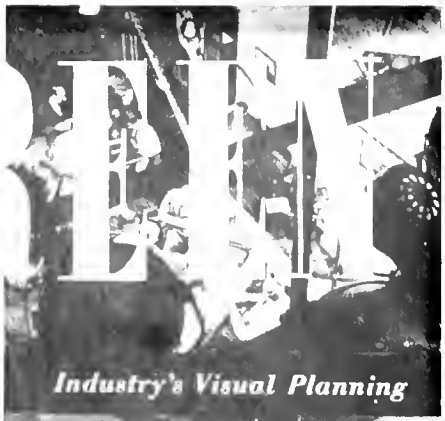
The instructor must be sure to leave a slide image on the screen long enough to allow time for questions and discussion. The use of a pointer will help to focus attention upon selected parts of the picture and enable the instructor to direct the learning more efficiently.

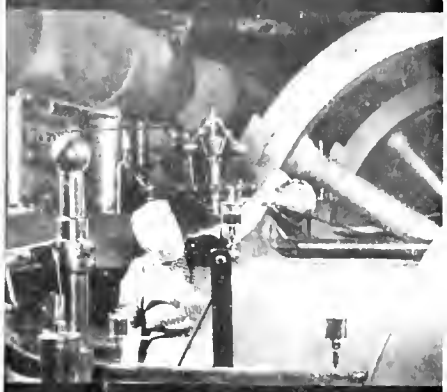
SUGGESTIONS FOR PROJECTING SLIDES. Projectors of three general types are commonly used. They are (1) the film strip projector with a 2" x 2" slide adapter; (2) the slide projector in two standard sizes, 2" x 2" or $3\frac{1}{4}$" x 1"; and (3) the slide projector size $3\frac{1}{4}$" x 1" with an adapter for 2" x 2" slides.

In using a slide projector, the instructions of the manufacturer should be carefully followed. An instruction sheet is furnished with each machine. This should be mounted on cardboard and kept with the projector.

Slides should not be left too long in the projector. Seven to ten minutes is the limit for glass-mounted slides, and two to three minutes for cardboard mounts. Color film should not remain in the projector as long as black and white, since strong light fades the color.

It is important that slides be stowed carefully in a place neither too hot nor too cold. Glass-mounted slides must *always* be protected from breakage.





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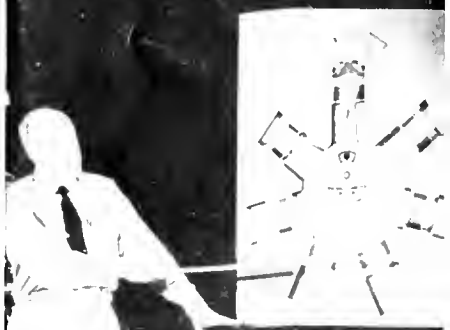

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Efficient use of these aids requires careful preparation by the instructor of the lecture or explanation which will accompany the aids. Experience has proved the value of the following points:

1. Do not bluff to hide your lack of knowledge. If you do not know, say so frankly, and find out.
2. Avoid the use of profanity.
3. Never use ridicule or sarcasm.
4. Never talk down to a class. Respect them and talk up to them.
5. Do not lose patience because a man is slow to get your meaning.
6. Use every opportunity to make the class understand the battle importance of what they have learned.

SUGGESTIONS FOR USING THE BLACKBOARD. Many of the suggestions presented above also apply to the use of the blackboard as a teaching tool. However, a number of additional points should also be kept in mind.

Drawing of large and complicated subjects should be made before the class meets. The chalk should be trimmed square for even lines, colored chalk should be used for emphasis. The use of a straight edge and compass will give better geometric figures. All drawings should be on a large scale, and all captions should be printed large.

Opaque projectors require dark rooms.

The instructor should stand at one side of the drawing, preferably the right if he is right-handed, so it can be seen by the entire class. A pointer should be used with drawings. The instructor should keep a clear relationship between parts.

SUGGESTIONS FOR MOUNTING PICTORIAL AIDS. Small pictures to be handled by the class should be mounted on cardboard, with at least a one inch margin. All captions and text should be placed below the picture.

Poster-size maps, charts, and diagrams should be mounted on linen or wall board. When mounting on a display screen or a bulletin board, tacks or nails should be placed alongside and not through the picture. Pictures should always be arranged in sequence before the class meets, and monotonous display should be avoided when arranging an exhibition of pictures.

USING THE OPAQUE PROJECTOR. Here, too, the pictures should be arranged in sequence before the class meets. The operator should be carefully instructed as to his duties.

Pictures from texts can be projected.

If a beaded screen can be used, better projection will be obtained. The room should be darkened completely and the image should be kept comparatively small for brilliance. Pictures should not be kept in the projector too long.

The instructor should stand beside the screen with a pointer.

RECORDINGS

VALUE OF RECORDINGS. Learning in many subjects takes place best through the auditory sense. Sometimes it is desirable only to *hear* what is to be learned. Seeing is not always necessary.

In such situations the recording is a valuable training aid. It helps to convey information, to develop auditory skills, and to inspire action.

Recordings are used to teach radio code, standard commands, bugle calls, certain communications subjects and foreign languages. They are valuable to inform and inspire men through eye-witness accounts of actual combat.

GETTING READY TO USE RECORDINGS. Like other training aids the instructor must first become familiar with the recording. He should hear it first to make sure that it fits his purpose. This will also enable him to plan his introductory remarks and to decide upon follow-up activities. When available, training aids guides should be consulted.

Before the class arrives, correct speed, tone and volume should be checked. The loud speaker should be placed to face the listeners. The record player and the operator should be off to one side of the room.

CLASSROOM USE. When the class meets, the instructor should explain contents of the record and the reasons for its use. He should ask the class to find the answers to certain definite questions and listen for specific points.

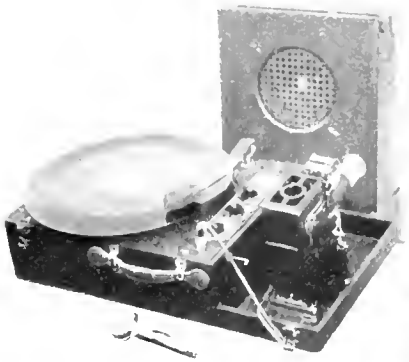
The recording should then be played through. The instructor may replay the entire recording or such portions as necessary.

Both the class and instructor should listen quietly and attentively. If possible, room and outside noises should be eliminated. Neither students nor instructor should move about.

At the end of the playing period, the instructor should review and summarize the main points. The class should then answer questions previously suggested by the instructor, or take the test included in the Study Guide.

During the discussion, new questions should be clarified. And always, the content of the recording should be related to other class activities.

Navy recordings offer much valuable training material



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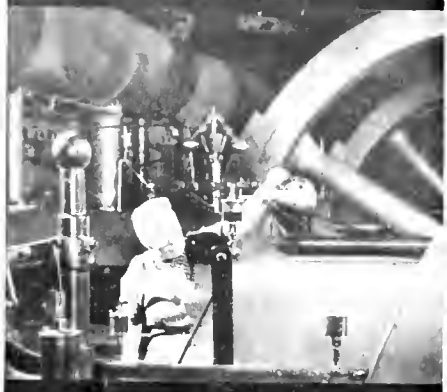

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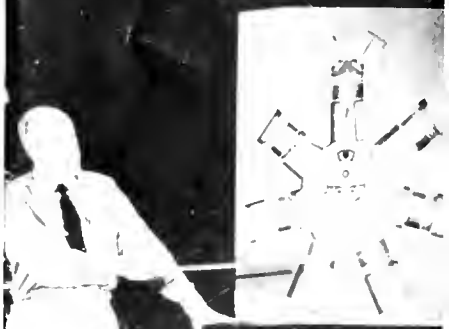

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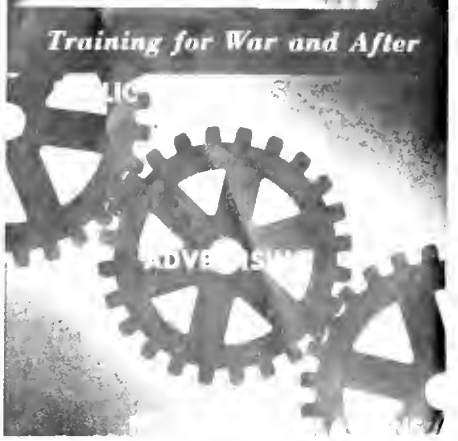

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MODELS AND ACTUAL EQUIPMENT

VALUE OF MODELS, AND ACTUAL EQUIPMENT. Every Navy instructor should take advantage of every opportunity to use actual equipment. It is one of the most powerful aids at his command. Even obsolete materials may be used when properly evaluated in relationship to modern equipment.

Models have many of the advantages of actual equipment and some additional ones, such as ease of demonstration and movement. The outstanding characteristic of models is the three-dimensional quality. They may also be enlargements or reductions of actual size.

TYPES OF MODELS. Models are generally classed in three groups. First there are solid models which are used chiefly for external features and recognition; next, there are cross-section models to reveal internal structure; finally there are working models to demonstrate function or processes. All three types invite student participation and result in increased class interest.

PLOT YOUR COURSE. In planning to use models and actual equipment the instructor should consider these questions:

1. Does this aid illustrate the point?
2. Is it the most appropriate aid to use?
3. Does it fit the lesson?
4. Is it accurate and up to date?
5. Is the instructor thoroughly familiar with it?

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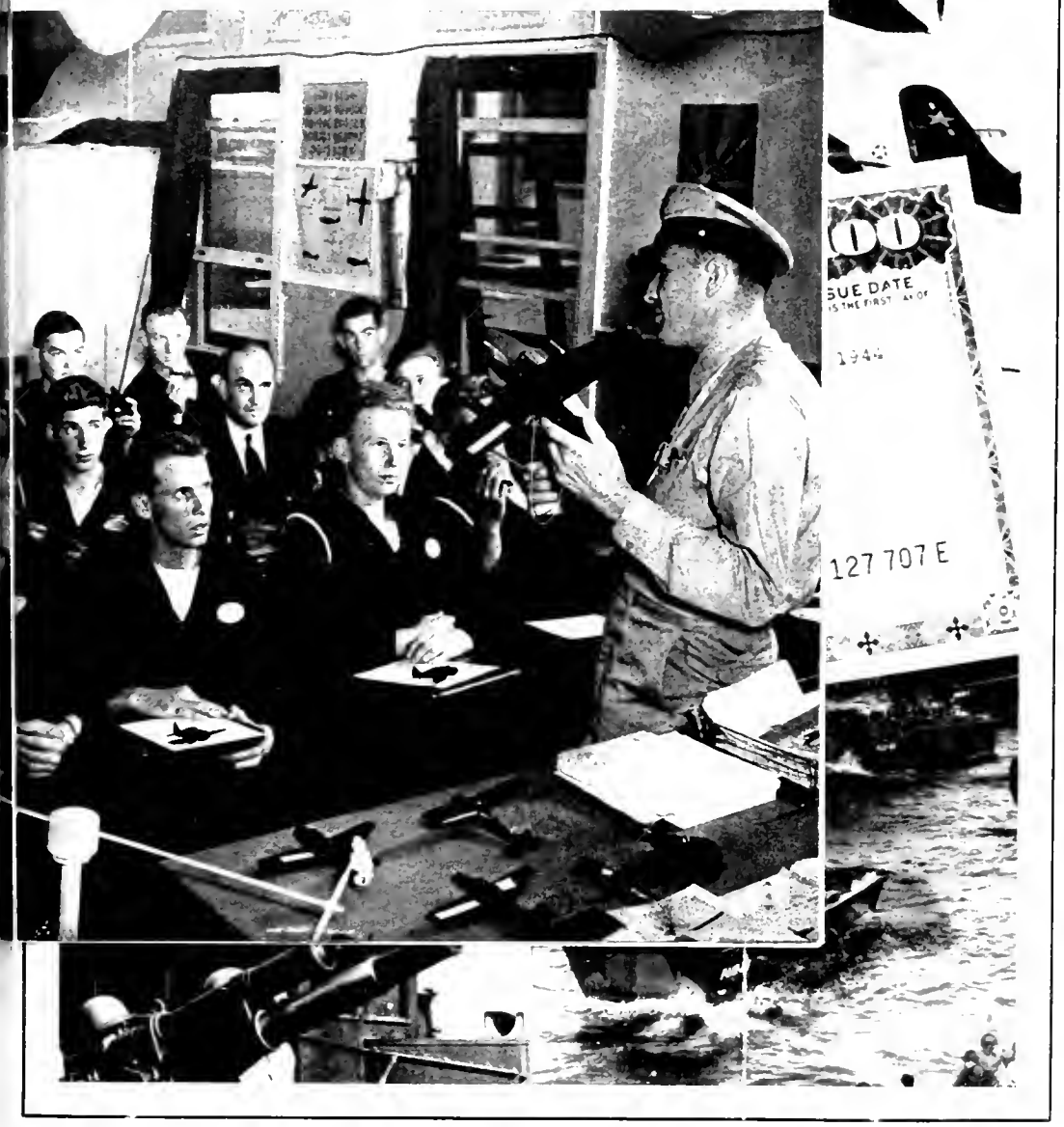
VISIBILITY UNLIMITED. When demonstrating a model or equipment the instructor should make sure that everyone can see it clearly. If the object is small, increase its visibility. This can be done by providing a contrasting background or by illuminating with spotlight or desk lamp.

Visibility can also be increased by placing the object at the instructor's eye level if the class is seated. If the class is standing the instructor should stand on a platform or table.

NOW HEAR THIS. The demonstration must be conducted so that all men can hear what the instructor has to say about the model or equipment. The instructor should talk out to the class, not down to the model or equipment.

He should check at the beginning of the demonstration to be sure that every man can hear every word. The class must also be taught to speak up in discussion so that all members can hear.

When using very small scale models instructor should be sure that every man can see them



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DON'T FIRE A SALVO. Increased interest and better results can be achieve by demonstrating the materials one by one. The entire demonstration shou be completed before permitting the class to handle and manipulate any of th models or equipment.

KEEP FORMATION. Each part should be related to the whole operatio when demonstrating complicated equipment. The demonstration should be r peated until the class has a clear understanding of it.

Photographs and diagrams will help to show how each part relates to a other and to the whole. They will also show how the model or equipment used in actual operation.

Cut-away models allow students to see and understand the inner mechanism of equipment.

MOPPING UP. By leading a discussion at the end of the demonstration the instructor will help to clinch the outstanding points and to clear up any misconceptions. He can check up by giving a short oral quiz, a written test, or an examination by actual practice.

All models and equipment should be returned to the proper place and person.

Experience with actual equipment aids in developing skills needed in all Navy training

Combining drawings, charts and models clarifies mechanical relationships for students

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CATALOG AND FILM PROCUREMENT

The Bureau of Aeronautics publishes a catalog of training films approved for Navy use. A cumulative supplement to the catalog is published periodically. Confidential films are listed in a separate confidential catalog.

Catalogs are distributed to Naval Training Schools, Training Aids Libraries, and activities requesting them. Symbols and serial numbers are assigned to each training motion picture film and film strip listed in the catalog.

Allowance lists of films are also issued for the guidance of various types of training activities, and the procedure indicated therein, with respect to films for permanent custody, should be followed.

When films are requested for permanent custody, by training activities other than Aeronautics, the official correspondence should be made in triplicate to the Chief of the Bureau of Aeronautics, via the Chief of Naval Personnel. The symbol and serial number of the film, the correct title, and the correct address to which the films are to be sent must be given.

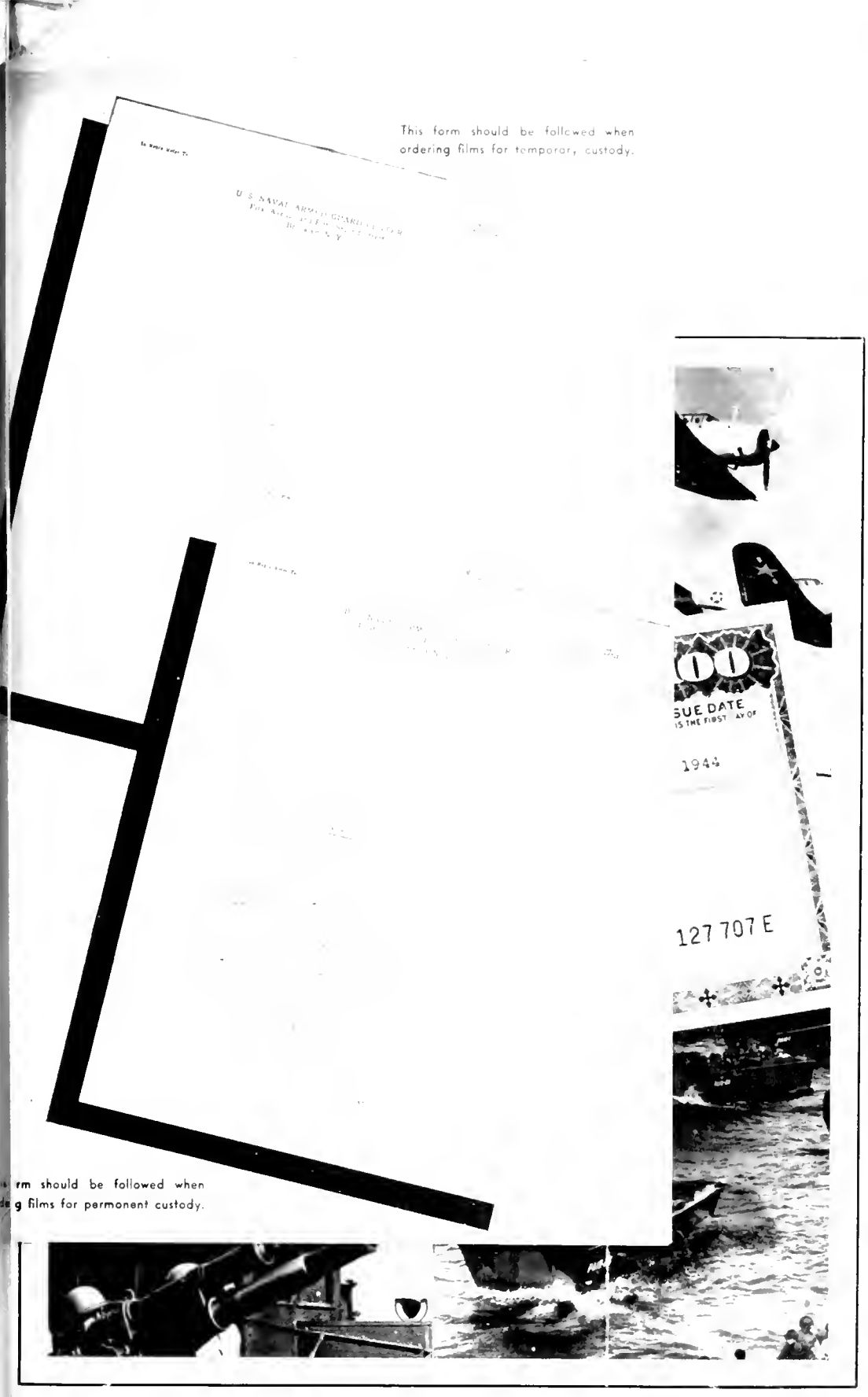
Official requests will be made in this manner until such time as the commandant of the naval district directs that requests be routed to the district headquarters.

All naval aviation activities, including Marine Corps and Coast Guard aviation and operating units may obtain prints of training films by directing an official request to the Chief of the Bureau of Aeronautics, Washington, D. C. Functional Training Units should order via their training command; Operating Units via Air Force Administrative Commands; and other activities, directly to the Chief of the Bureau of Aeronautics.

Correspondence procedure for ordering films will be found in the catalog in greater detail and should be followed. The district Audio-Visual Training Officer will assist activities in selecting films from the catalog and in making requests.

As training aids are distributed, careful appraisal is made of their educational value and technical accuracy. All new aids, are studied by a Joint Board of Review in the Bureau of Naval Personnel, assisted by specialists in the technical fields involved. When curricula are revised, the Board recommends the aids which it considers should be included in each unit. Curriculum outlines are then distributed to the appropriate schools. When these outlines are issued, they supersede previous allowance lists of films.

The instructor will also appraise the aid as he uses it in terms of his own teaching situation. He is urged to keep a running record of his evaluations by which he may improve his use of the aid. His accumulated class experiences will help his Training Officer and especially the Audio-Visual Training Officer in his district to assist other instructors, as their suggestions will in turn assist him. Finally, the Audio-Visual Training Officer will forward fresh ideas and criticisms from the field to the Bureau of Naval Personnel for wider distribution.



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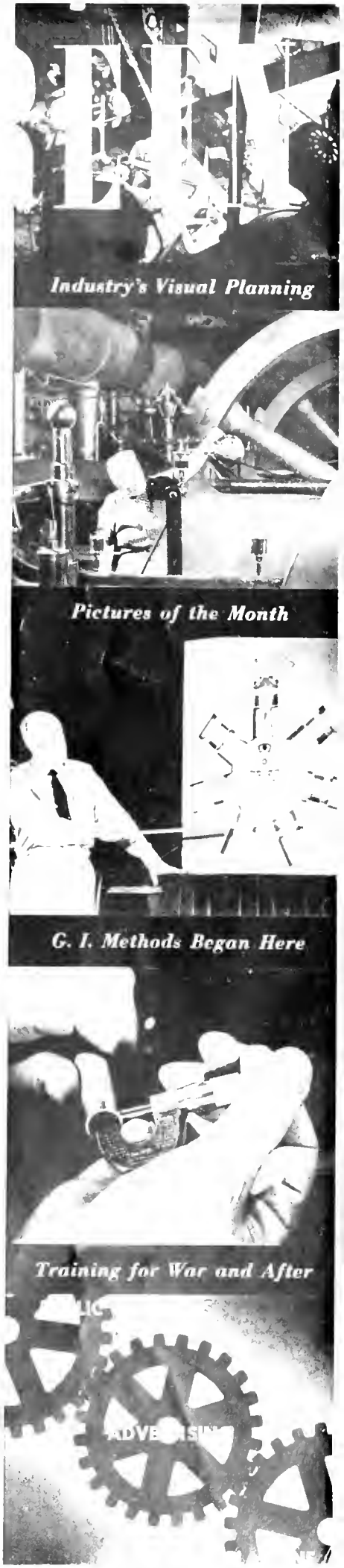

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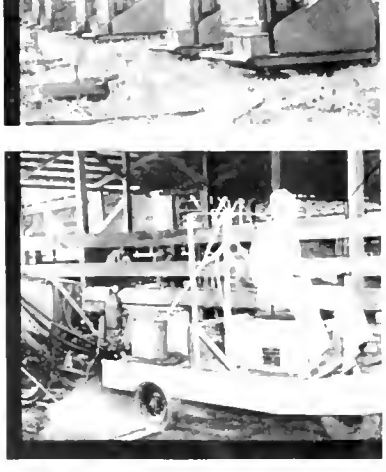


PROCUREMENT OF PROJECTION EQUIPMENT

Projection equipment can be procured by directing an official request fro
the commanding officer of the training activity to the proper source:

Requests for 35mm. sound strip, 16mm. sound film, lantern slide, ar
opaque projectors should be directed to the Chief of the Bureau of Ships via t
Chief of Naval Personnel.

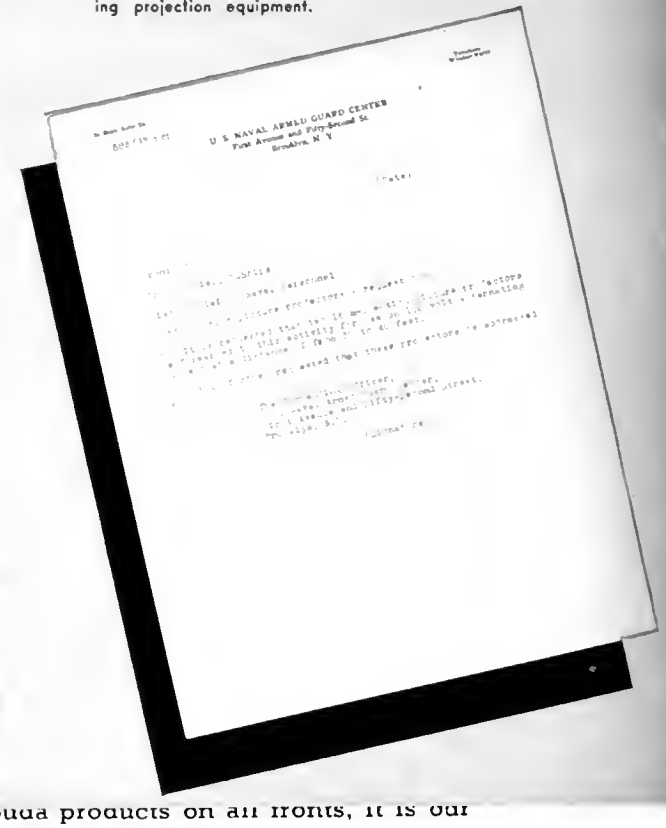
Requests for screens should be directed to the Supply Officer in Comman
Navy Supply Depot, Mechanicsburg, Pennsylvania, or Oakland, Californi

Information regarding the procurement of spare parts for projection equi
ment may be obtained from the Training Aids Libraries.

Combat activities such as air and forces afloat are given priority in deliver
over shore based training activities in the pattern of delivery.

Emergency needs can frequently be met through the Training Aids Librari
which are supplied with both 16 mm. motion picture and 35mm. strip fil
projectors. This equipment is often loaned to training activities until suc
time as permanent projection equipment is delivered. Training aids librari
and stock pools are being established as rapidly as facilities permit to aid
the delivery of needed equipment.

Use this form when requesting projection equipment.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Instructors should meet when opportunity offers to discuss mutual problems

Helping instructors on the job to learn how to use audio-visual aids is an important part of the training aids program of the Navy. This is being accomplished in a number of ways. Audio-Visual Training Officers hold group conferences for instructors in the various naval districts and training activities. More frequently, Audio-Visual Training Officers will work individually with training officers and instructors in the various training activities of the district.

Of particular value to instructors is the *TraDix Letter*, a monthly publication issued by the Training Division, Bureau of Naval Personnel, for the purpose of improving naval training. The *TraDix Letter* describes developments in training aids, and presents a number of articles each month on the training methods employed by various naval training activities.

Requests for assistance in the training of instructors in the use of audio-visual aids should be directed to the Commandant of the District (Attention: District Training Officer), or to the Commanding Officer of the training activity. These requests may be forwarded to the Training Division, Bureau of Naval Personnel, when desired.

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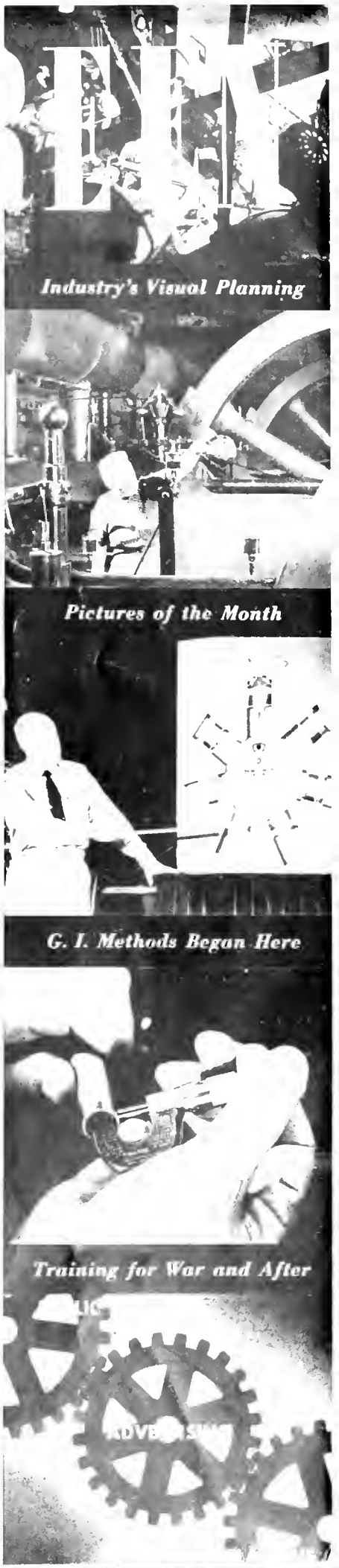

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TRAINING AIDS GUIDE

Prepared by

BUREAU OF NAVAL PERSONNEL
TRAINING DIVISION
TRAINING AIDS SECTION

NAVY DEPT. ★ WASHINGTON, D. C.

Swimming Through Burning Oil and Through Surf

TITLE OF FILM

Size and type	16 mm. sd.
Catalog No.	MG 2967
Running time	10 min.
Photography	b and w

NAVPERS 1300

Purpose The purpose of this film is to show how to jump from a ship into burning oil, how to swim through the burning oil to safety, and how to swim through dangerous surf to shore.

Content This film is divided into two parts: (1) Swimming Through Burning Oil and (2) Swimming Through Surf. It points out that one can swim safely through burning oil and through surf although special tactics are required.

A sailor demonstrates that ordinary rules cannot be followed. Before jumping from the ship he removes his life-jacket and shoes so he may sink rapidly and maneuver himself away from the flames. His clothes are left on for protection from the burning oil. He jumps feet first while holding his nose, and protecting his face with his arms.

As he rises to the surface the sailor beats away the flames with a circular thrashing motion. He then turns his back to the wind, breathes, ducks, and swims under the water and into the wind. He remains under water only for as many counts as he knows his safe limit to be. Coming to the surface again, he rises as high as possible to get a breath of clear air, remembering to thrash his arms.

Seeing several of his shipmates, he joins them because together they can keep a larger space cleared. They will also be more easily spotted by a rescue ship. When in the clear, he continues to swim to windward and away from the flames, taking no chances.

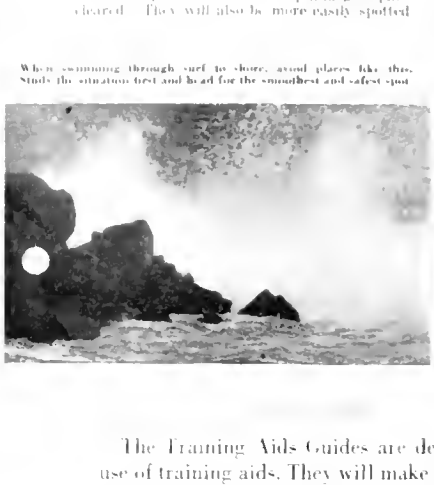
When the distance to be covered is too great to attempt without a life-jacket, it is emphasized that the same principles apply when using a life-jacket. The main points in the first part of the film are reviewed as (1) thrash the surface, (2) breathe with your back to the wind, (3) swim into the wind.

In part 2, another sailor equipped with life-suit is seen swimming through a rough surf near shore. He removes his life-suit, allowing water to enter it to make removal easy. A life-jacket keeps him up as the suit is removed.

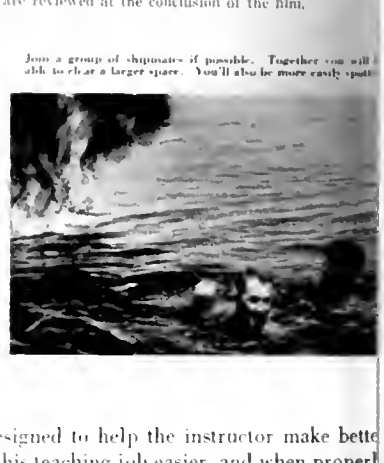
After a brief rest and a study of the situation confronting him, the swimmer selects the smoothest part of the shore, surveys the waves and tries to avoid the large ones. The life-jacket too is now removed to permit underwater swimming.

The swimmer then pulls for shore, vigorously when the swells are underneath, and resting between swells. When the waves threaten to break over him, he turns and faces them, ducks two or three feet under the surface and lets their full force pass over him. The film advises against attempts to ride the breakers. When the beach is felt underneath, the survivor lets the small waves help him in. The main points are reviewed at the conclusion of the film.

When swimming through surf to shore, avoid places like this. Study the situation first and head for the smoothest and safest spot.



Join a group of shipmates if possible. Together you will be able to clear a larger space. You'll also be more easily spotted.



The Training Aids Guides are designed to help the instructor make better use of training aids. They will make his teaching job easier, and when properly used, will greatly increase the value of the aid.

In these guides the *Purpose* of the film is outlined in one simple concise statement. The *Content* briefly describes the action and dialogue contained in the training aid. Major concepts to be emphasized are grouped under *Points to Look For*.

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An objective *Test* consisting of 20 multiple choice and true false questions is included to serve two purposes: (1) to show the student the extent of his knowledge of the subject, and (2) to show gain in knowledge by using it both as a pretest and a retest.

In general the test is designed as a teaching device. It is recommended that the test be mimeographed. If it is given orally, the instructor should read each question twice, speak slowly and distinctly, and avoid influencing the answer by voice inflection.

The guide also includes suggested *Follow-up Activities* which could supplement the film by providing additional experiences, clarifying ideas that are not fully understood, and "clinching" the concepts by approaching them from as many angles as possible.

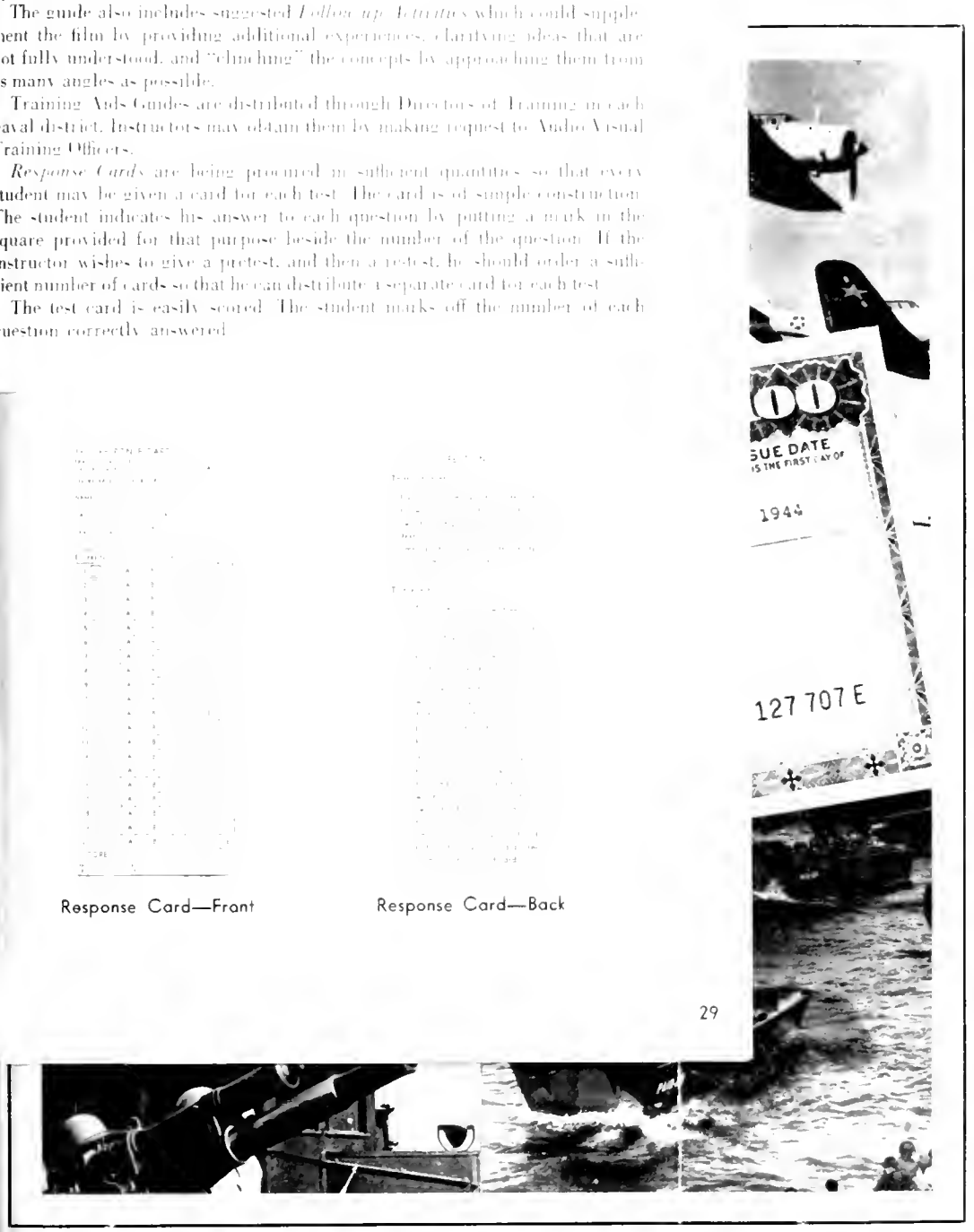
Training Aids Guides are distributed through Directors of Training in each naval district. Instructors may obtain them by making request to Audio Visual Training Officers.

Response Cards are being procured in sufficient quantities so that every student may be given a card for each test. The card is of simple construction. The student indicates his answer to each question by putting a mark in the square provided for that purpose beside the number of the question. If the instructor wishes to give a pretest, and then a retest, he should order a sufficient number of cards so that he can distribute a separate card for each test.

The test card is easily scored. The student marks off the number of each question correctly answered.

Response Card—Front

Response Card—Back



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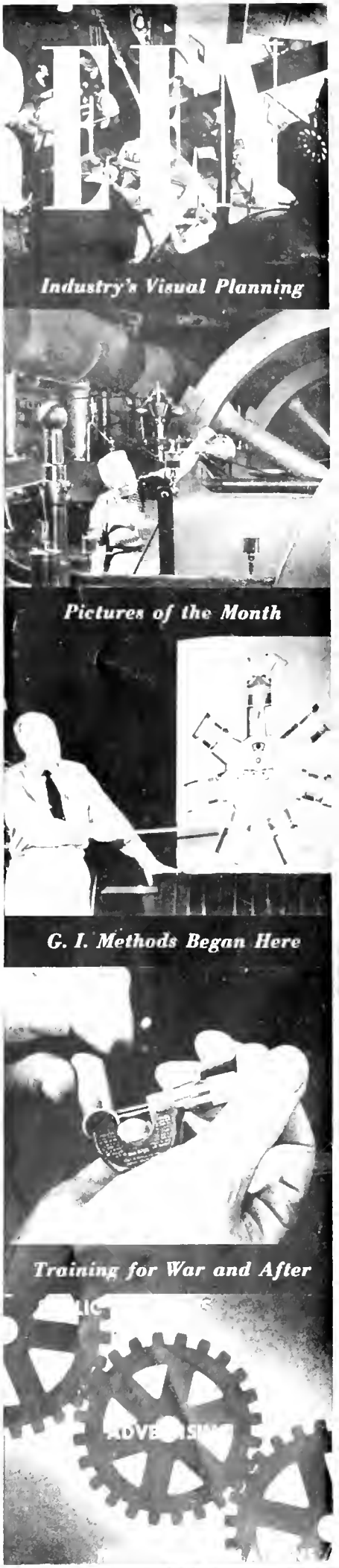

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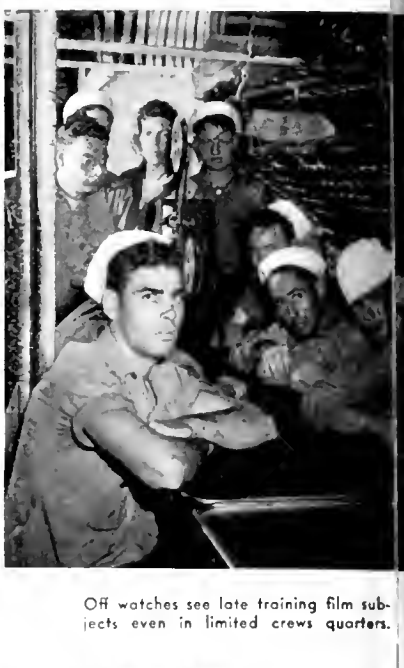
Officers in the wardroom preview training aids to set up an instructional program.



Off watches see late training film subjects even in limited crews quarters.

AFLOAT

All of the services and equipment of the Training Aids program are available to the Forces Afloat. Despite limitations of space and time many training officers afloat are using audio-visual materials successfully.

In most naval districts an Audio-Visual Training Officer has been designated to serve the Forces Afloat. It is common practice for him to visit a ship shortly after arrival to learn how to best serve its training needs.

This officer will be able to offer the following assistance:

Furnish film, film strips, and other aids for use on board ship.

Suggest suitable training aids to meet problems of instruction aboard ship.

Arrange for film previews.

Arrange motion picture and film strip showings at locations and at times convenient to the ship's personnel.

Provide information on securing equipment and aids for permanent assignment to the ship.

Suggest sources for the adjustment and repair of all audio-visual equipment.

In addition, the Audio-Visual Training Officer is prepared to help ships' officers plan a program of training which will continue beyond the time when the ship is in port.

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Training aids should receive reasonable care and adequate stowage in order to give their best service. Where any considerable number are in use, they should be put in charge of a qualified enlisted man. They should be free from dust at all times.

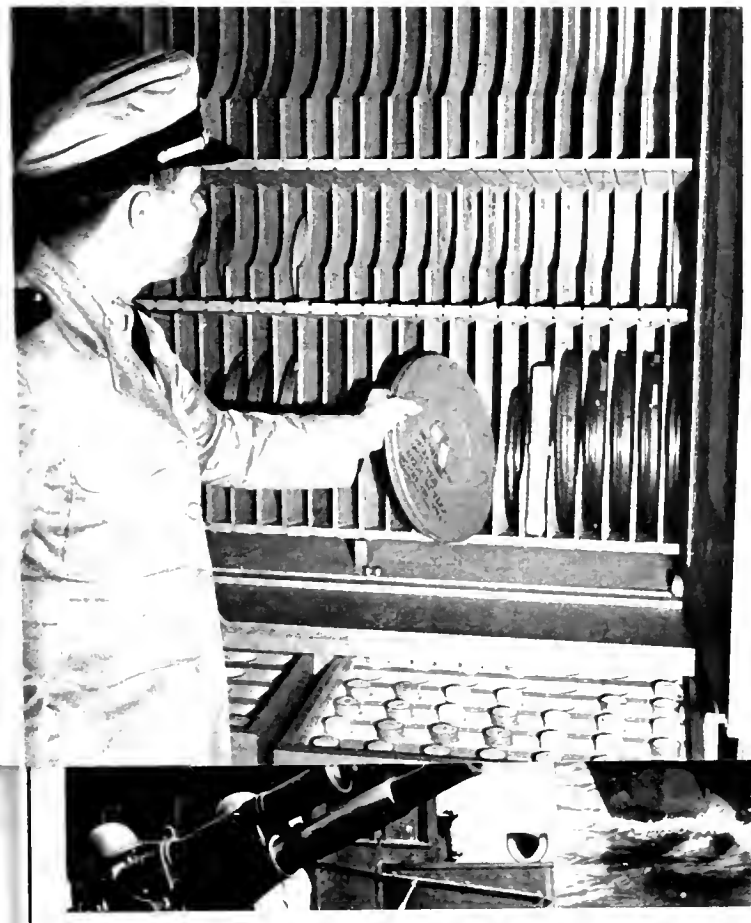
Projectors contain service manuals which give instructions for maintenance. Follow the directions for oiling, using no more and no less than specified. If a breakdown occurs, if a general overhaul is necessary, or if the services of an experienced technician are required, the equipment may be sent to the district Training Aids Library in exchange for a similar item on temporary loan.

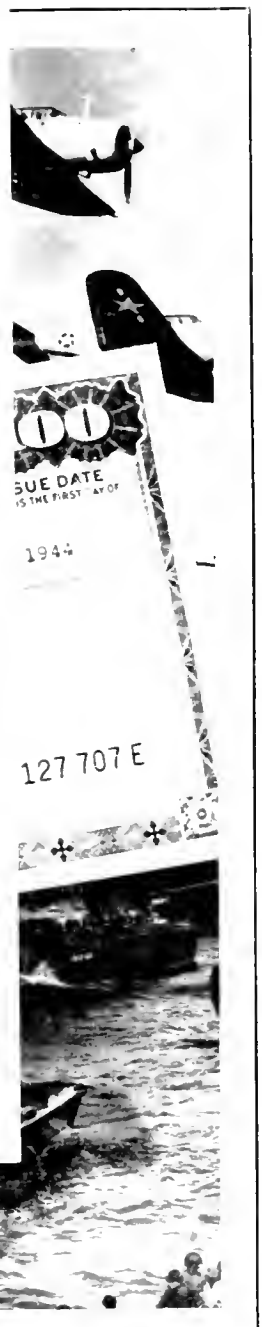
Activities to which training aids are assigned for permanent custody should provide ample space for proper stowage. The stowage space should be well ventilated, and its temperature kept close to 70°. It should be fitted with shelves, racks or stands for the stowage of films, and large shallow drawers for charts and other flat material.

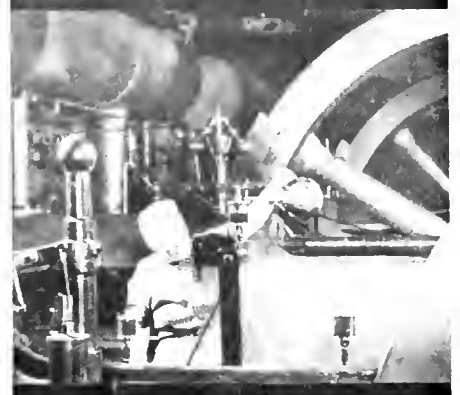
There should also be available some form of index system on which records may be kept.

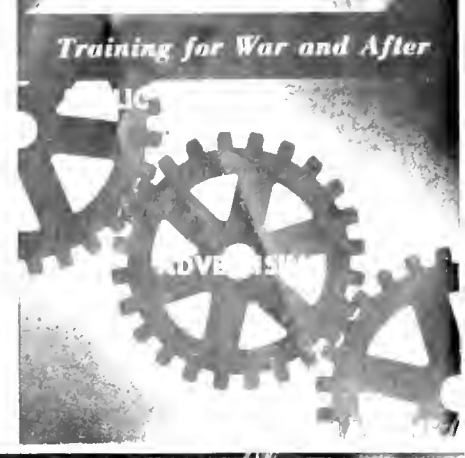
Metal cabinets or racks, though more convenient, are not essential for 16mm. film, since such film does not constitute a fire hazard. Stowage of confidential or secret materials must follow the prescriptions of Articles 75[1]g and 76 in Navy Regulations.

Activities should provide for orderly and secure stowage of training aids materials









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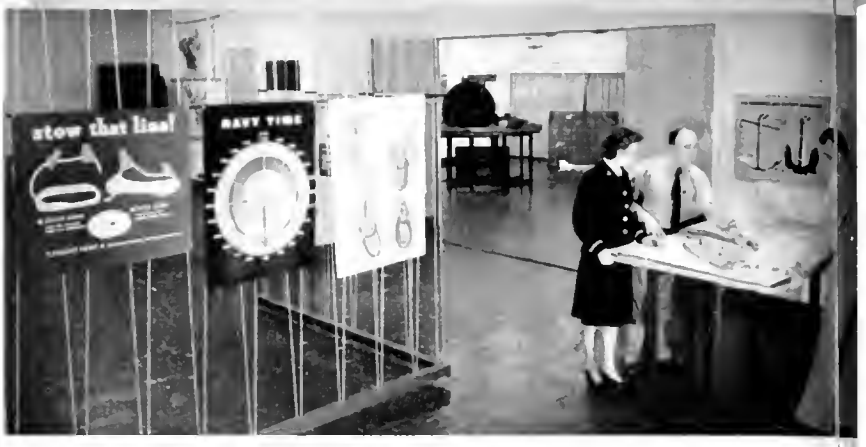

The Training Division of the Bureau of Naval Personnel is responsible for the development of new training aids.

A recent adjunct of this Division is the U. S. Naval Training Aids Development Center in New York City. While this activity is physically in the Third Naval District it is an integrally functioning part of the Bureau of Naval Personnel. Correspondence from personnel interested in training should be addressed via official channels to the Bureau of Naval Personnel and not to the center.

The Training Aids Development Center contains (1) a reference file of training aids collected from various sources; (2) facilities for conference for specific purposes; (3) drafting, design, and shop facilities for the development of pilot models and graphic materials.

These facilities are employed in the systematic development of training aids for various purposes. The function of the Center is to synchronize as constructively as possible knowledge of subject, graphic and presentational techniques, and effective educational use.

Training aids under development will normally be automatically distributed to training activities which can appropriately utilize them. If such an activity finds that it has been omitted on initial distribution it may request from the Bureau of Naval Personnel such aids as it considers it can effectively use.

It is not intended to distribute a catalog of aids developed at the center to each training activity, but it is intended that the Training Aids Libraries shall have this information available.

Information about the developments at the Center will appear from time to time in the TraDiv LETTER.

It will be the responsibility of the Audio-Visual Officers to keep the activities in their areas informed of the developments at the Center.

Constructive suggestions for the origination, development or improvement of training aids will be welcomed by the Bureau of Naval Personnel. Copies, photos, or samples of all training aids created locally should be forwarded to the TADC, in order that local ideas may be developed into effective aids for use of the Naval Training Program as a whole.

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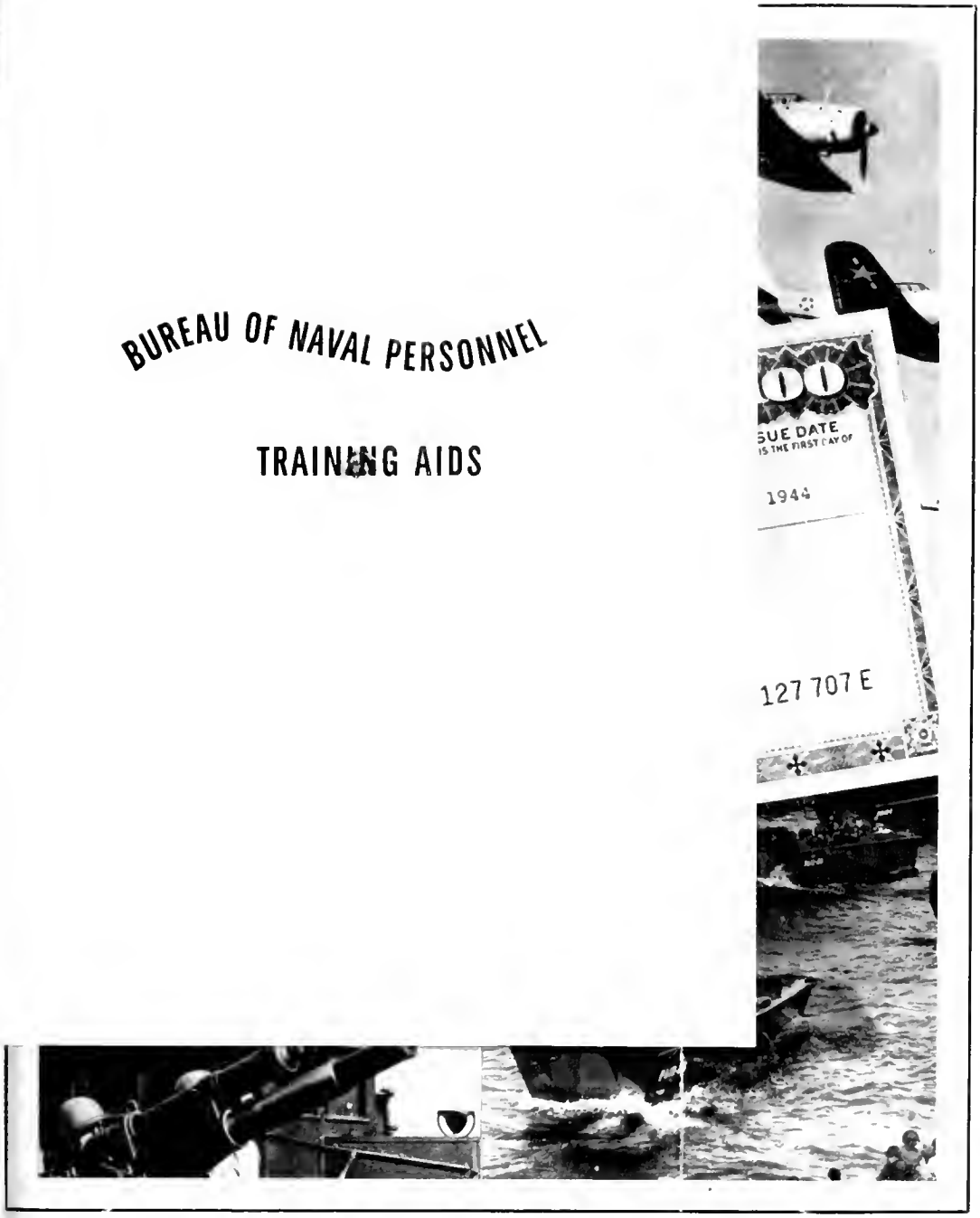
TRAINING AIDS



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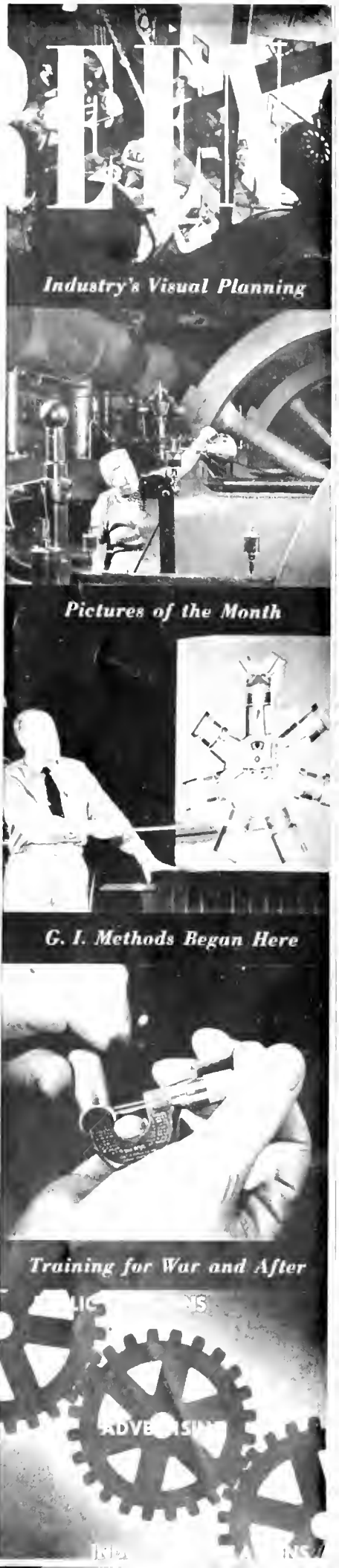

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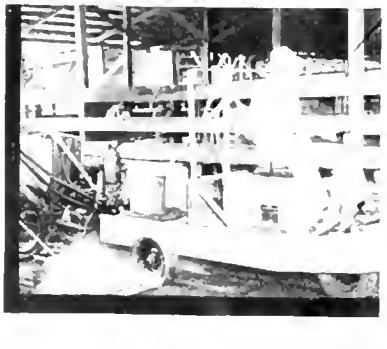

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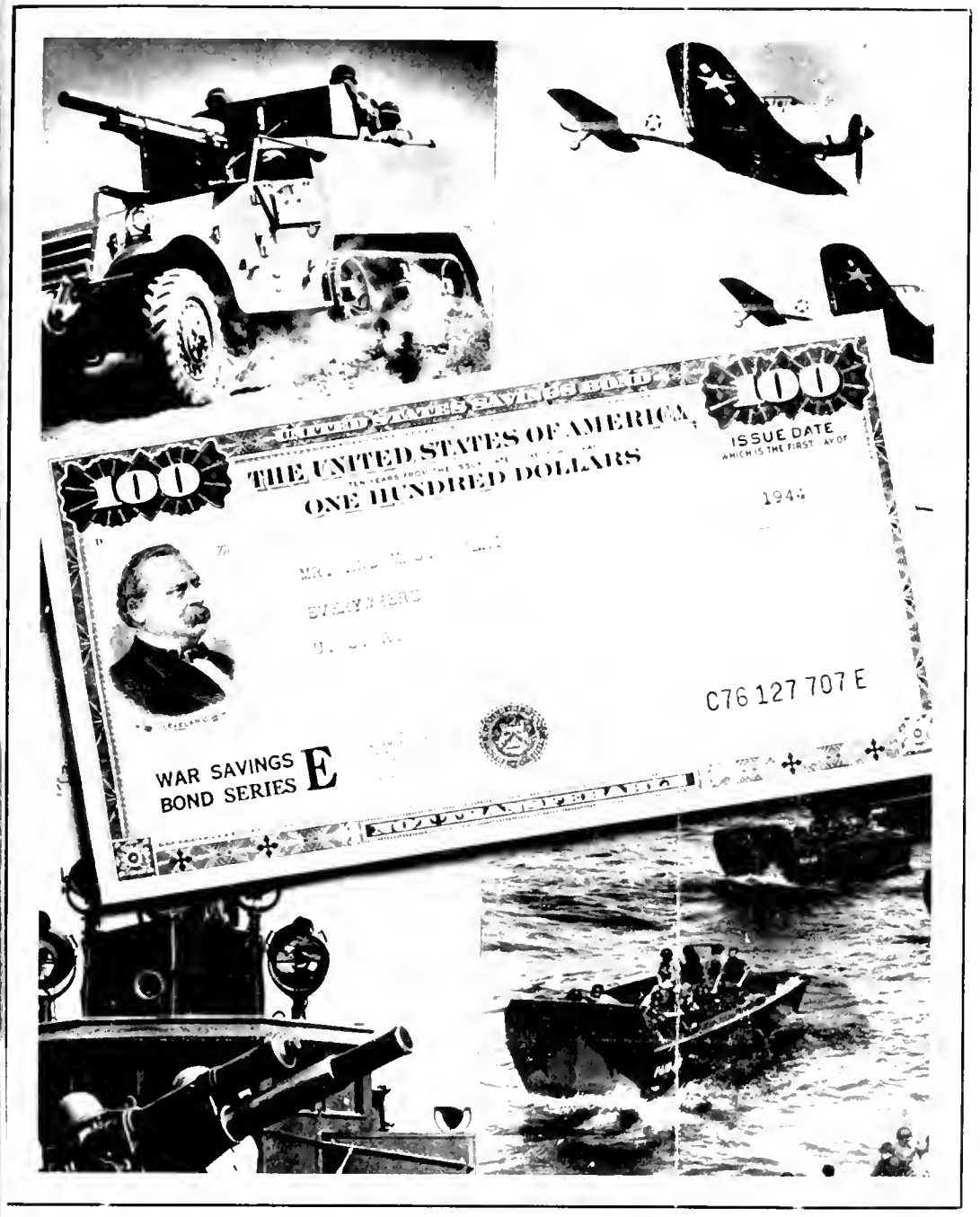

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While films are arbitrarily listed under different classifications—all industries having machine shops will find machine shop films valuable. The aircraft industry and the machine shop industries will find many of the shipbuilding films applicable to their own businesses. Shipbuilders will find that they can use many allied films. And manufacturers of farm machinery, wool buyers, and canners will find the agricultural subjects of value. All the films are part of an integrated program to help you increase efficiency and production.

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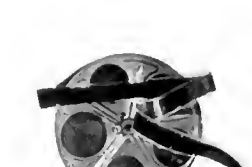

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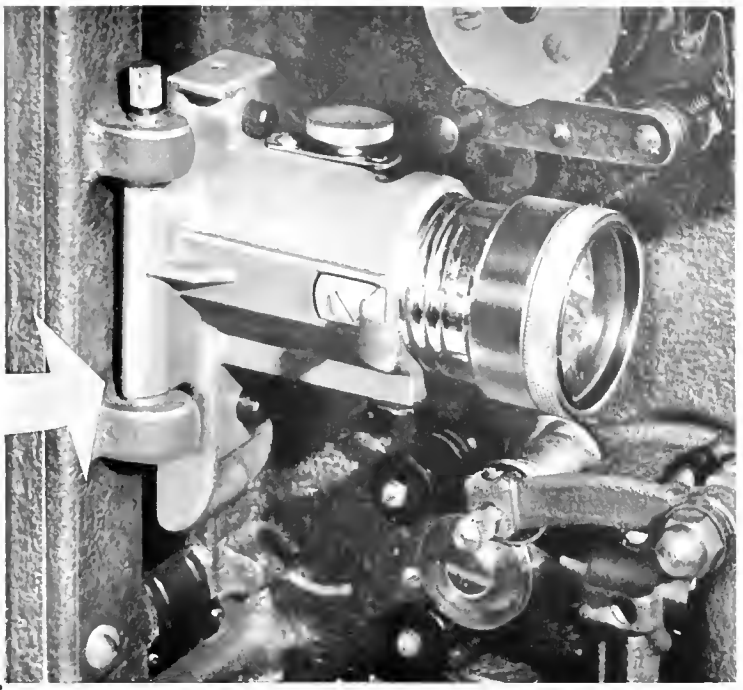
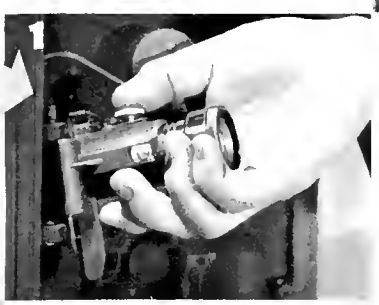


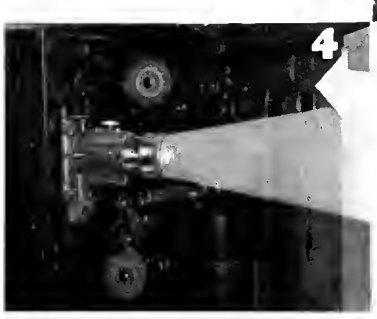
Dust and dirt at the projector aperture obscure the screen image and cause increased film wear. The completely removable RCA gate makes instant cleaning possible. Note the four easy steps shown below.



Just lift the gate and slip it out for cleaning. When you replace the gate the pilot pin construction assures correct alignment and the initial focus has not been disturbed.

With the gate in your hand it is easy to quickly clean the film pressure shoes. Dust on the gate can mar the projected picture.

Just a wipe and the aperture plate is cleaned. A clean aperture means longer film life. A dirty aperture may cause wear.



The gate and aperture cleaned in a few seconds and you are ready to go with clear, brilliant projection. The gate is sturdy and strong, with positive optical alignment.

Other Features: The new RCA 16MM. sound projector will include other important advances in projector design, such as even-tension take-up; aspheric condenser, for efficient use of light; amplifier with inverse feedback, for true sound; centralized controls; rewind without changing reels; one-point oiling; standard tubes and lamps; rotary stabilizer to keep sound on pitch; aerodynamic cooling to prevent hot spots; lower film loop adjustable while in operation; theatrical framing; large slow-speed sprockets to increase film life.

Availability: Because of military demands these new RCA projectors are not available now for civilian use. But plan to see the new RCA projector before you purchase post-war equipment. RADIO CORPORATION OF AMERICA, Sound and Picture Section, Camden, New Jersey.

RCA 16MM. SOUND PROJECTORS

BACK THE ATTACK — BUY MORE THAN BEFORE

RCA VICTOR DIVISION • CAMDEN, N. J.

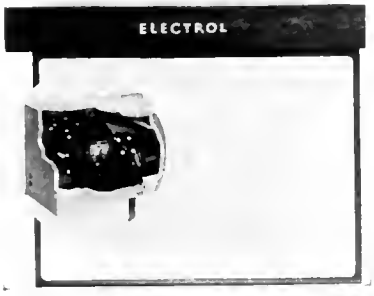
LEADS THE WAY. . *In Radio . . Television . . Tubes . . Phonographs . . Records . . Electronics*

"WHICH SCREEN MOUNTING Should We Buy?"

Ask Your DA-LITE DEALER!

DA-LITE ELECTROL

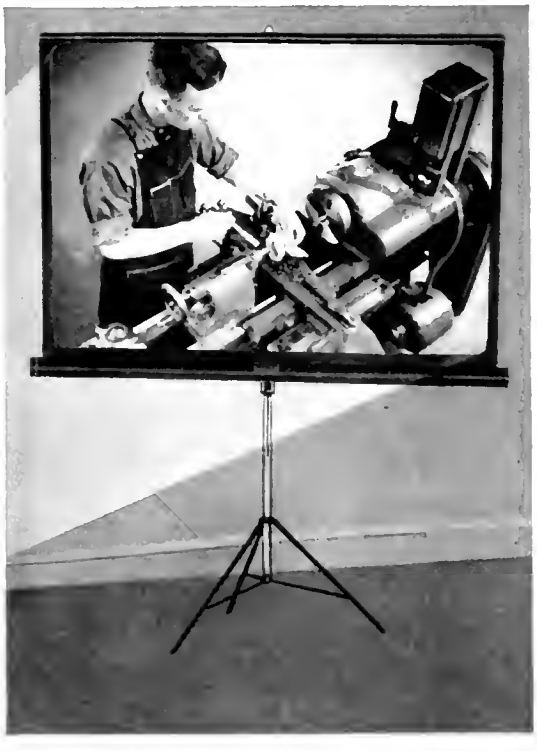
For large classrooms and auditoriums, combines long life with utmost convenience. It is raised and lowered by means of an electrical control switch placed at the most convenient location.
There is no strain on the fabric and no danger from accidental flip-ups, as the screen is rolled or rerolled electrically at constant speed.



He is an authority on good projection. He can help you quickly choose the right Da-Lite screen surface, style of mounting, and size for any projection requirement. He recommends Da-Lite Screens because they have proved their superiority over a period of 34 years. Advanced in design and continually improved, they are today more than ever the *preferred* screens of buyers who want the best picture quality, greatest convenience and longest service.

Da-Lite Screens are made in many styles and sizes. The 30" x 40" size of the Challenger and small sizes of other models, retailing for $10.00 or less, can now be supplied without requiring priorities. Larger sizes of screens in metal mountings can be furnished upon receipt of regular MRO priorities for war-essential uses.

Write for the Da-Lite catalog and name of the nearest authorized Da-Lite dealer!



THE DA-LITE CHALLENGER Inside the plant or out on the road, the Challenger is the first choice of all who want utmost convenience and portability. Compact, light in weight and easily set up. It is the only screen that can be adjusted in height without separate adjustments of the case or fabric. Its exclusive inner-lifting device raises the case, roller and fully opened screen as one unit.

QUALITY SCREENS FOR 34 YEARS

DA-LITE MODEL B

Because of its low price and high quality this spring-operated roller-type screen is the most popular wall type screen for classroom and auditorium use. Metal case protects screen from dust when not in use. 12 sizes from 30" x 40" to 84" x 84" inclusive.

DA-LITE

DA-LITE SCREEN COMPANY, INC.

2723 NORTH CRAWFORD AVENUE . . . CHICAGO, ILLINOIS

When Post-War Competition Starts, How Quickly Can You Train a Sales Force?

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
Bethlehem Steel Company
Black & Decker Manufacturing Company
The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
Cluett, Peabody & Company, Inc.
Dictaphone Corporation
E. I. duPont de Nemours
Eberhard Faber Pencil Co.
Ethyl Gasoline Corp.
Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
Jenkins Bros.
Johns-Manville Corporation
Kenwood Mills
Mohawk Carpet Mills, Inc.
National Biscuit Company
National Lead Company
Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

APPROACHING VICTORY is a challenge to every company producing war materiél to step up output . . . shorten the war . . .

Meanwhile, it is also a challenge to managers of sales personnel and training to be ready with a top-flight training program.

The planning of such a program need not slacken your war-time effort in the least.

To the contrary, there are many things you can set in motion—just by saying the word—which will save you months of headaches and delays when the moment for conversion comes.

For example, there's research to be done, by an experienced producer of training films, to help determine basic needs . . . to establish a sequence of subjects to be covered . . . to devise the most effective treatment . . . to prepare preliminary outlines . . .

More than that, there are certain training films which presumably can be put in work RIGHT NOW—so that when war ends, you can swing into instant action.

Already some of the largest companies in America are organizing and preparing comprehensive sales-training programs against the Day of Victory. May we offer suggestions as to a sound and practical procedure?

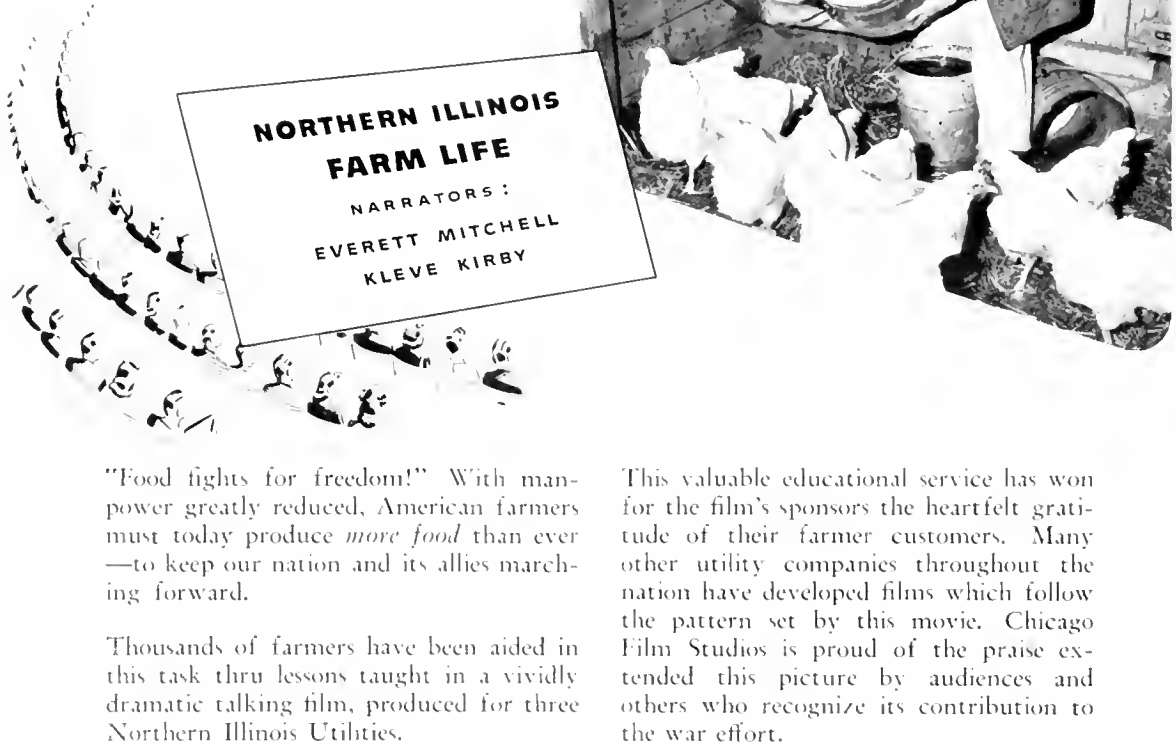
CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. CIrcle 7-6112

Wartime farming shortcuts taught by Three Northern Illinois Utilities with

Sound Films



"Food fights for freedom!" With manpower greatly reduced, American farmers must today produce *more food* than ever —to keep our nation and its allies marching forward.

Thousands of farmers have been aided in this task thru lessons taught in a vividly dramatic talking film, produced for three Northern Illinois Utilities.

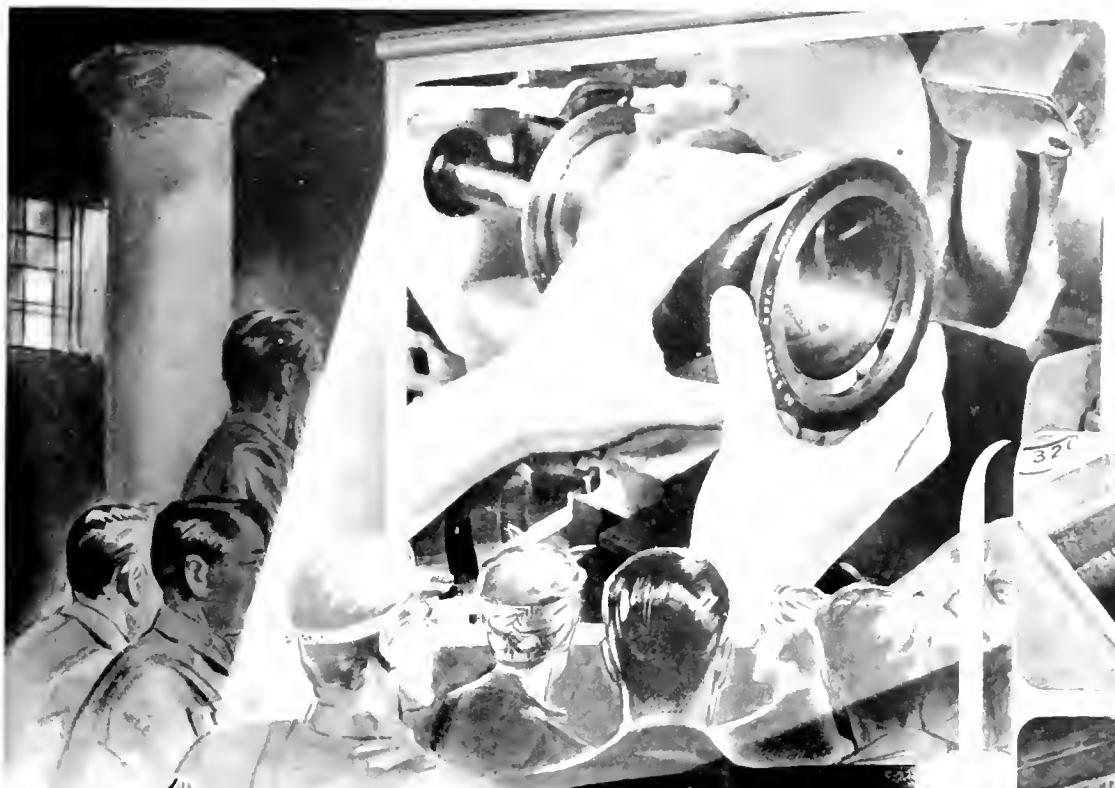
This valuable educational service has won for the film's sponsors the heartfelt gratitude of their farmer customers. Many other utility companies throughout the nation have developed films which follow the pattern set by this movie. Chicago Film Studios is proud of the praise extended this picture by audiences and others who recognize its contribution to the war effort.

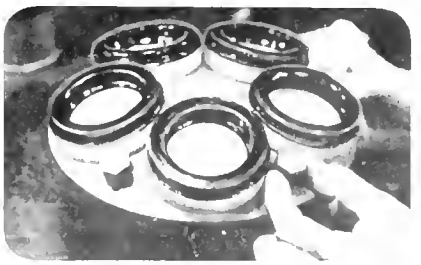
Chicago Film Studios

CHICAGO FILM LABORATORY, INC.

MOTION PICTURES — SLIDE FILMS

STUDIO AND GENERAL OFFICE—18 WEST WALTON PLACE—CHICAGO, ILL.—WHITEHALL 6971





Is YOUR training problem any tougher than THIS?

The Filmosound V . . . is a triumph of B&H engineering which, despite restrictions of critical materials, designed a sound projector which maintains the traditionally high B&H performance standard. They're produced today *only* for our armed forces and for other essential purposes according to prevailing government directives.

Polishing bombsight lenses is a high-precision operation. Under ordinary conditions it takes plenty of *skilled* man hours. But our airforces ruled out "ordinary conditions" with orders for thousands of lenses . . . more than all the available skilled optical workers could have turned out in years.

The war couldn't wait while new people gained the necessary skill through years of experience. They had to be trained and trained *fast*.

To do that unprecedented teaching task we made motion pictures which illustrate the delicate operations that produce flawless lenses. And today, hundreds of workers in B&H lens plants owe their skill to knowledge gained in an intensive course of instruction employing visual aids.

Whether your job training problems are simpler or more exacting than the one we licked, you'll find, as we did, that movies are the key to faster, more efficient, more effective training for every worker.

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

YOU CAN DO IT, TOO

Here are scenes from the B&H movie which proves beyond doubt that ultra-handicraft skills *can* be developed with motion pictures.

Most of the people who learned the art of lens making with the help of this film had no unusual manual skill before . . . yet today they are accomplished, efficient craftsmen.

The film is available through the B&H Filmosound Library and the U. S. Office of Education.

BUY . . . and hold . . . WAR BONDS

BELL & HOWELL COMPANY
1908 Larchmont Ave., Chicago 13

Please send complete Filmosound Library Catalog and new Filmosound IV- Circular

Name

Address

City State

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*Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable today. Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.

Opti-onics BELL & HOWELL

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Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY **Bell & Howell**

CAMERA EYE

THE FUTURE OF VISUALS NEEDS:

To the Editor of Business Screen:

Sir:

♦ Your editorial, "The Future of Visuals Depends . . . ", deserves a permanent place on the desk of every non-theatrical film producer. It belongs on the cover of every writer's dictionary. It belongs on the wall of every cutting room, on every cameraman's magazines, in every salesman's portfolio.

And "The Future of Visuals Depends . . . " might well become a permanent department of your magazine because the future of Visuals depends, after all, on the men who produce them. The more opinions we in the industry can exchange on that vital subject, the greater that future will be.

One such opinion follows:

We, the people who make industrial and educational films, have worked our way into a position of tremendous social responsibility.

We're in the same position as that of the young fellow who has paced the floor all night and is suddenly informed that he's a father. He has a new and terrible responsibility. He knew all along that it was going to happen, but now that it has, he's excited and hopeful but also a little numbed and bewildered; he doesn't know what to do next.

We're going to make or break our industry within the next five years. If we make it, there is hope for a brave new world; if we break it, we will earn the eternal damnation of the human race.

Yes, it's as important as that.

If you're smiling, the rest of this is for you.

Ours is the most powerful medium ever devised for the exchange of ideas. We always knew that, but now everyone else knows it too. That's going to make pictures easier to sell. Maybe we'll make a lot more money; but if that's all we do, we will fail ignominiously.

We will fail as radio has failed. We will produce "soap opera" pictures, profitable to us and to our clients, but disgraceful to both.

But how are we going to avoid these pitfalls?

First, each producer must be made to realize his individual responsibility to the industry and to society. He has to be sold the idea that the future of Visuals depends on *him*. Then he has to sell it to his writers, his directors, his cameramen, and his laboratory technicians.

Hack writing, for example, is no longer good enough. The nut and bolt jobs thrown together without thought, or intelligence, or appeal must not reach the screen. Nut and bolt jobs there will be, but every one of them should be given to the writers, directors, and cameramen as a challenge to their originality and ingenuity, not as an in-between assignment to hold the place together until something better comes along.

And imitating Hollywood won't do it either. Ours is a separate and distinct medium. We have done well in developing our own technique of presentation, but we all know that we've just scratched the surface.

The great majority of us, I think, will take our new responsibilities seriously; but what are we going to do about the few opportunists, who are ready and anxious to cash in on the prestige the rest of us have fought to develop?

They'll be out selling pictures too. They are now, as a matter of fact; and every bad picture they produce is undermining our position.

Somehow we must set up standards and enforce them. The opportunist producer with his cheap help, cheap methods, and worthless product can spoil our whole barrel of apples.

The sincere and honest men in this industry far outweigh the other kind. They've made beginnings at getting together for the common good. If their organization can win the confidence of its members, set up production standards and enforce them, we will have provided ourselves with insurance against the great evil of the irresponsible producer.

Public acceptance and public confidence have been a long time in coming. We've earned them all right, but let's not forget that they are fragile and delicate things. If we try to cash in on our victories without regard for our responsibilities, or if we let anyone else do it, we're done, brothers.

Assuming that we can get over these obvious hurdles, what's ahead?

The world is faced with problems—lasting peace, race relations, international economics, religious intolerance, rehabilitation of returning soldiers, labor and management feuds—the list is endless. Everyone of these problems is serious and threatening, but they will all succumb to the same simple solution—*education*. Not higher education, but lower education.

If that brave new world is ever going to emerge, it will do so because of the education of masses of people on a gigantic and super-efficient scale.

That's where we come in.

The future of Visuals depends upon our ability and willingness to handle this tremendous assignment.

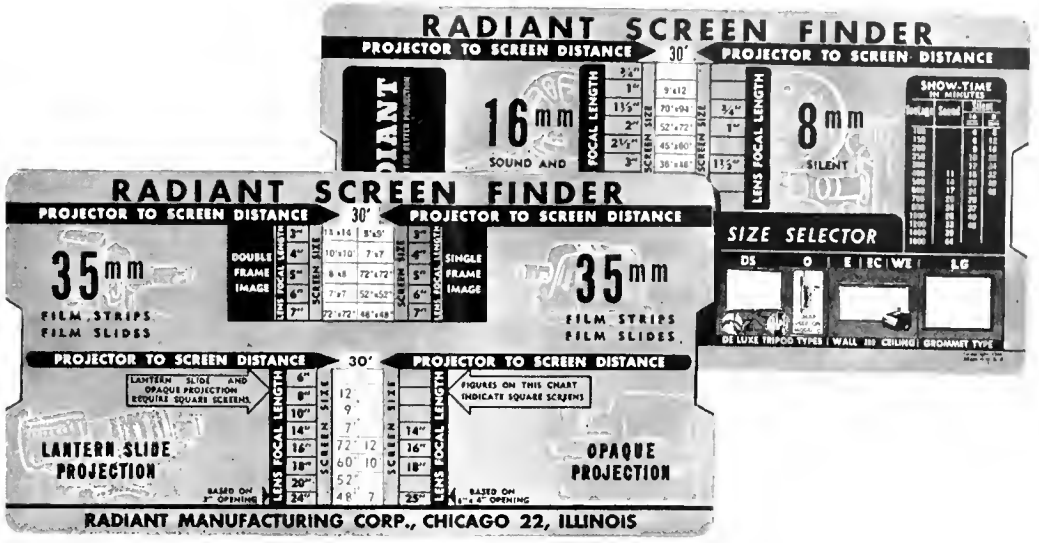
And put this into your thinking and into your conversation—the future of the human race may depend on it, too.

FRANK SIEDEL,
Escar Motion Picture Service

Issue Seven — BUSINESS SCREEN MAGAZINE — Volume Five

Published as a service to users of Business Screen, the National Magazine of Visual Aids to Industry and Education by Business Screen Magazines, Inc., 157 East Erie Street, Chicago 11, Illinois on June 25, 1944. O. H. Cocks, Jr., Editor; E. T. Lundgren, Production Director; Felice Mendenhall, Eve Erickson, Editorial Assistants; 8349 Members in Service: Lt. Robert Seymour, Jr., Pvt. H. L. Mitchell. Subscription: $3.00 for eight consecutive numbers (one complete volume), Foreign and Canada $3.50, including duty.

RADIANT Screen Finder



one of the most helpful devices ever made available to users of visual aids!

Thousands of users of motion pictures, slide films, slides or opaque projectors have ordered this practical device The unanimous verdict is: "It's splendid! Why didn't someone think of it sooner?" Enables user to combine proper equipment and obtain maximum effectiveness from all types of projected visual aids. Shows at a glance:

1. **The proper screen size** for each distance between screen and projector with a given lens.
2. **The proper screen model to select.**
3. **The proper distance between screen and projector** to obtain any desired size of picture.
4. **The proper lens to use** to obtain perfect results for each distance.

RADIANT

BETTER SCREENS FOR BETTER PROJECTION

Visual authorities who have seen this Radiant Screen Finder are enthusiastic about its ability. Easy to read—simple to operate. Answers all "movie" questions on one side—all "still" questions on the other side. Durable and compact—fits into the vest pocket. Available from your visual equipment supplier. If he cannot supply you—send us his name and only 50¢ to cover actual cost, including handling and mailing—and a Screen Finder will be mailed to you direct.

IMMEDIATE DELIVERY ON RADIANT METAL SCREENS

Here's good news! Institutions, Industrial Concerns, War Industries, National Organizations may now again obtain RADIANT Metal Screens—without red tape. You can get immediate delivery under your M. R. O. Rating. W. P. B. FORMS ARE NO LONGER NECESSARY. ORDER TODAY!

SEND FOR 1944 SCREEN CATALOG

Mail coupon for latest Radiant Screen Catalog. Gives full details, prices and specifications of screens for every purpose: tripod, ceiling, wall, wall and ceiling, and table models from 30" x 40" to 20' x 20'.

The Radiant Mfg. Corp.,
1175 W. Superior Street, Chicago, Ill.
Gentlemen:
☐ I enclose ____ for ____ Screen Finders (50¢ ea.)
☐ Please send me latest Radiant Catalog.
Name ____
Address ____
City ____ State ____

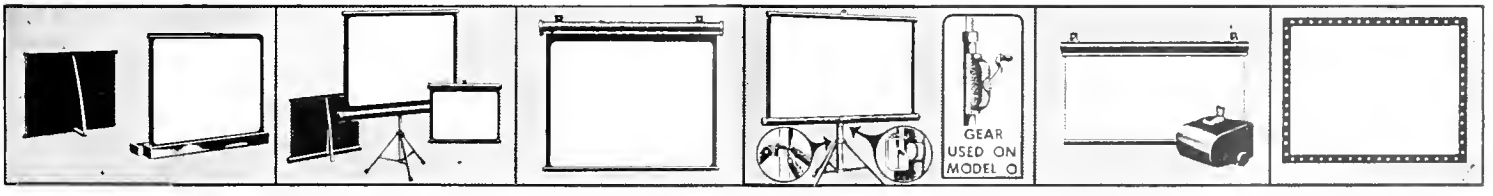
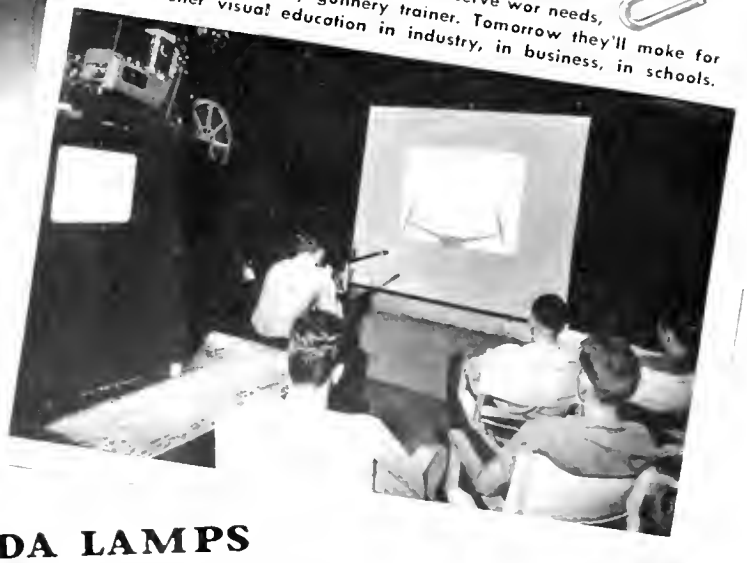


Table and Box Type | 3-Way Tripod Type | Wall Type | De Luxe Tripod Type | Wall and Ceiling Type | Grommet Type

TODAY, G-E projection lamps serve war needs, as in this Navy gunnery trainer. Tomorrow they'll make for better visual education in industry, in business, in schools.



In war, in peace, you can depend upon G-E quality

1. Designed for specific optical needs and for maximum performance.
2. Differentially coiled filaments for uniform brightness (on most popular sizes).
3. Built for extreme precision.
4. Rigidly inspected for correct source dimensions and accurate position.

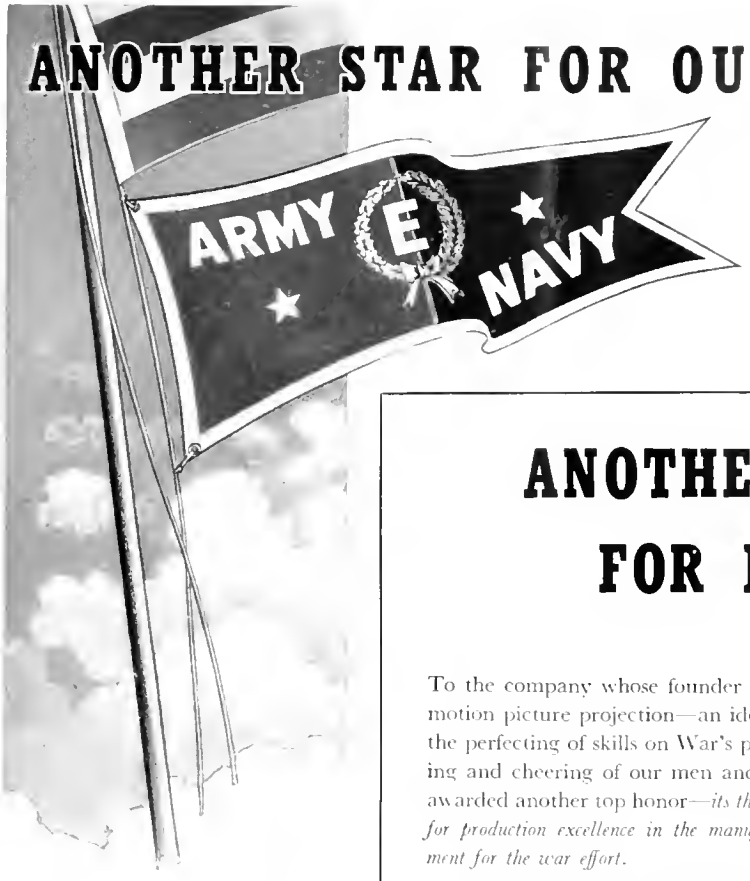
G-E MAZDA LAMPS

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

Hear the General Electric radio programs — The G-E All-Girl Orchestra, Sunday 2 p. m. EWT, NBC. The World Today news, every weekday 6:45 p. m. EWT, CBS.

ANOTHER STAR FOR OUR "E" FLAG

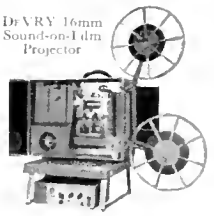


ANOTHER FIRST FOR DeVRY

To the company whose founder gave the world the idea of *portable* motion picture projection—an idea that has contributed so much to the perfecting of skills on War's production fronts—and to the training and cheering of our men and women on the fighting fronts—is awarded another top honor—*its third consecutive Army-Navy "E" pennant for production excellence in the manufacture of motion picture sound equipment for the war effort.*

DeVRY is the only manufacturer of motion picture sound equipment to fly the Army-Navy "E" pennant with *two* stars—the only manufacturer of motion picture sound equipment to have received the coveted Army-Navy "E" Flag for the *third* consecutive time. This means that DeVry workers are continuing to produce the *quantity* and *quality* of equipment needed by our armed forces—*on schedule*. It means that DeVRY has produced *quantity* and *quality on schedule* for 18 consecutive months.

To DeVRY workers, whose tireless efforts made this third "E" for-production-excellence award possible, it is reassuring that each shipment of cameras, projectors, and electronic gunnery trainers built by them helps to hasten the dawn of a NEW and SECURE Tomorrow!



DeVRY 16mm Sound-on-Film Projector

Out of the laboratory of wartime necessity—and the relentless proving ground of war under every possible condition of climate, temperature, and shock—is emerging a NEW, postwar DeVRY—a DeVRY worth waiting for, whether it be 8mm., 16mm., or 35mm. Camera or Projector—or any other product in *"the World's Most Complete Line of Motion Picture Equipment."* On V-Day, DeVRY will be ready with finer, sturdier, lighter, and reasonably priced motion picture equipment and associated electronic products—designed, engineered, and built to warborn perfection. DeVRY Corp., 1111 Armitage Ave., Chicago 14, Ill.

DeVRY

New York • CHICAGO • Hollywood

WORLD'S MOST COMPLETE LINE OF MOTION PICTURE SOUND EQUIPMENT

WHEN THE STORY CAN BE TOLD

. . . a lot of people are going to be amazed at the part films have played in our war effort

RIGHT NOW there isn't even time to gather the facts. We're all too busy making training films for the armed forces . . . helping industry win the battle of production . . . helping to prepare for the coming crisis of reconversion.

BESIDES... the enemy may be listening! Much of the film production of the past three years has taken place behind the curtain of military secrecy . . . with the sign "KEEP OUT" posted on studio doors.

SOMEDAY the story can be told . . . and what a story it will be! About the two prints of a training film that were rushed clear around the world by planes flying in opposite directions to insure reaching their destination . . . about the attack that was held up until a training film arrived to solve a vital technical problem . . . about the months saved in preparing men for survival under fire . . . about the lives saved by lessons learned from motion pictures and slide films.

PART of the story can be told NOW

. . . Would you like to hear it?

We can tell you something about how motion pictures and slide films have been employed by Industry and Business in wartime . . . how they will be used to bolster morale, retrain manpower, create good will and improve public relations during the period of cutbacks and reconversion.

ARE YOU INTERESTED? A letter to us will line our organization up behind yours in the fight to win the war and safeguard tomorrow's peace.

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

Industry might well look upon the development of the visual medium as a matter of national necessity. The production of training films to satisfy the needs of entire groups of firms is as much an economic opportunity as the creation of individual company subjects. We face many national problems. These, too, may be speeded toward solution by proper use of visual media.

A Mandate to the Visual Industry

PLAINLY, this industry, the *visual* industry, has a mandate from the American people. While all industry faces the critical era of continued production for war to ensure the peace, it prepares for the vast problems of demobilization and for years of economic reorganization in which markets and production based on those markets alone can provide for the nation's economic well-being.

But this industry, the makers of motion pictures and slidefilms which have become a potent force in education and information throughout the world and the manufacturers of projectors, screens and component visual equipment and raw film, has a dual responsibility.

These Are Our Two Tasks

While we prepare to ensure the prosperity of each concern and thus to provide the jobs and the revenue which result, we must, on the other hand, *establish, define* and *publicize* the visual medium which remains a comparative unknown *as a medium* in the *schools and in industry.*

Do you challenge that statement? Last month, in the pages of respected educational journals of the nation, there were not more than a few lines about this powerful tool for education. In the past year, no more than a dozen articles accurately interpreting the visual medium and its potentialities appeared in any publications excepting those specializing in the industry's affairs.

Vast markets are at stake. Of the nation's 255,000 schools, *not more than ten percent are equipped for motion pictures;* little more than this number exist in the 161,000 manufacturing establishments of the U. S. Of the hundreds of thousands of dealer salesrooms from whence the customer of tomorrow must get factual knowledge of new products and new materials, only a comparative few are actively equipped with projection and the know-how to use one of the most valuable educational aids business has ever known.

Where are the rules on which the user may base acceptance of this tool? What are its proven advantages? No generally recognized code of procedure to insure satisfactory results is accredited to this medium. Where are the leaders whose opinions and findings must help guide the tremendous numbers of potential inexperienced users who will soon look to the medium?

Are These Our Failures?

There are able men in charge of well organized visual departments in the armed forces, in the U. S. Office of Education, in the Department of Agriculture, in state university and state library posts; experienced specialists head activities of this kind in public school systems, in large industries and on the staffs of specializing film producers and manufacturers. Why have they failed to evolve a national program which clearly recognizes the layman's need for simple guidance, easily understood rules and limitations, reputable advice about both *good* and *bad* films and procedures?

Look At The Results

While this confusion persisted, it was possible for one uninformed manufacturer to advertise in educational journals that the "trend was to 35mm" and that, in at least one school system, the number of these costly equipments exceeded the number of 16mm projectors. "Amusement films" according to this advertiser, "exceeded educational films in showing."

Able and respected manufacturers of visual equipment whose market opportunities solely rested *in this field* upon facts that education and business would require in accepting the medium have thus far failed, with few exceptions, to endow the research needed to get those facts. Yet where else could such endowment come?

And with this acceptance of responsibilities to insure the future of the medium and of its resulting mar-

THE NATION NEEDS THIS MEDIUM BUT IT WANTS FACTS AND ORDER

We publish this for the record. The editorial policy of this publication is founded on our firm belief in the existence of the visual medium *as a medium unto itself*, a means of idea communication as distinct as that of the newspaper and the radio—and more powerful than either.

This policy logically declares the existence of a *specializing visual industry*, the members of which are companies either wholly or principally dedicated to the service of this medium. These are the *specializing producers* of educational and industrial films; the *recognized pioneer manufacturers* of projectors, screens and component equipment and supplies and those *national and regional distributors* of these products *who are primarily devoted to the service of the medium.*

The need for this medium *by the people* was never greater. Our "national passion for disunity" must be met, postwar, by education and information—clearcut, realistic and above all, undominated and honest. Our great need for retraining of veterans to the arts of peace may hold the key to the nation's economic well-being. This industry is about to enter a world of opportunity and service.

That preparation for the future implies research, cooperation and skillful public relations. It implies the discovery of able leaders and the definition by these leaders of the rules of order to which the user may turn for a satisfactory experience. Such preparation must be *endorsed* but it must also be the *living interest* of these specializing companies. We cannot learn too soon the responsibilities which go with these worldwide markets. And of a certainty, these responsibilities cannot be shifted to any group or individual.

Both producers and manufacturers have made headway in this upstream fight for recognition of their specialized role. Now the plans and programs of the National Association of Film Producers and of the Visual Equipment Manufacturers Council must be brought to swift maturity. The future is not around the corner, it is already here.

Meanwhile, look to your own houses. Where organized effort exists, as in the ranks of specializing dealers and the nontheatrical distributors, be sure that your ranks do not include those to whose very existence you are opposed. *Specialization* is your greatest asset. Uphold it, or it will be destroyed in the flood of opportunism, amateurism and profit-seeking which certainly lie ahead when these vast markets in education and industry are re-opened. O. H. C.

MANDATE to the INDUSTRY:

WHAT ABOUT THAT DAY AFTER THE GREAT DAY when our boys come marching home? "America's Secret Weapon" sound slidefilm program No. Three of the Committee for Economic Development poses this and related questions. These programs are available through your local and regional CED headquarters for industry use.

(CONTINUED FROM PREVIOUS PAGE)

kets, there is a clearly evident need for more definition among existing organized groups within the field.

Logical Channels of Action

The field is well divided in its business activities. *Production* of training and informational films is largely a specializing activity: fifty recognized production companies have produced the bulk of commercially-produced training films for the Navy, for the U. S. Office of Education and the war industries.

The *manufacture* of projectors and screens especially designed to serve the armed forces, schools and industries was largely accomplished by companies specializing in this field before the war. They had the tools, the know-how and the equipment to produce the bulk of such equipment now in use by the Army, Navy, Air Corps, Marine Corps, Coast Guard, Red Cross, and other primary war users.

Distribution of war training films and war industry subjects as well as the bulk of the government's 16mm informational subjects was similarly the work of established specialists.

In no sense were those who served this field converting their experience in the field of amateur photographic products nor was the bulk of original production the result of experience gained in the making of amusement films. Those who guided these programs in government and the armed forces came from similar positions in the field of education and industry. Altogether the war effort of this industry was a visual industry program, constructed by *specialists*, produced by *specialists* and shown on projection equipment and screens built by firms *specializing* in these products.

This Is Our Foundation

This is the definition of the visual industry. It is a business of *specialists* now destined to prepare for the great challenge of mass adoption of the medium by America's schools and industries. It stands well outside the confusing shadows of the amateur photographic field and it looms far above the glitter and mere financial prominence of the entertainment business.

It would have to stand there to win recognition of its own identity. The user in education and industry would have to know the *singular properties and power* of the medium in order to make a clear decision.

And the user's needs were great and they were vital. The nation was entering the era of demobilization and reorganization. Workers had to be retrained, veterans returning to the production lines and the sales floors had to relearn the arts of peace. Our national passion for disunity and strife, for differences between capital and labor, had to be met with reason and information. The medium for accomplishing those tremendous tasks had to be free and undominated. *Men and women need to dedicate their whole lives to absolute concentration upon its problems and their solution.*

Film was no longer a raw material principally produced for the nation's amusement. Its production for information and education for war has often exceeded the staggering totals of entertainment consumption in the past. Maintaining those war-expanded production lines for raw film, lamps and accessories was good economics for these manufacturers. Recognizing that, perhaps they, too, would lend a hand in bringing about the order and definition on which those future markets now so completely depend.

The challenge to be met was certainly great enough. A complex world, torn by years of war, awaited the return to a lasting peace that would depend on real understanding. Problems of rehabilitation both in America and abroad and of post-war employment were no less important than the re-establishment of a peacetime industrial economy.

Housing and the manufacture of thousands of war-postponed consumer articles would soon loom on the horizon. Lacking real knowledge of new products and war-born materials and processes, the consumer would either hesitate or buy foolishly. The reaction of the consumer to such events would penalize all industry.

Education would learn from the returning veteran and from its leaders who directed educational methods for the armed forces, of new attitudes toward formal instruction. It would reject the regimentation so essential to mass training but it might well study the thoroughness and success attained in many areas of military schooling.

But above all, the need to reach the people remained paramount. For disunity and internal strife might well lose the peace for which so many had given so much in life and time. Visuals would help.

Mobility in Transfer of Skills is Essential

♦ Training workers in new skills in the shortest space of time is the most critical problem facing the country: returning veterans will have to be taught industrial and agricultural skills quickly. This is the opportunity for which visual training must be prepared now.

Wallace Takes 28 Pictures to China

♦ Part of the precious, limited cargo carried by air transport to China by Vice-President Henry A. Wallace were 14 reels of medical films and 14 reels on agriculture and engineering. All films carried Chinese sound tracks. These subjects went to film libraries newly developed by that country.

Let Us Develop These Markets

♦ The problems of the entire visual industry can be resolved in terms of unsold markets. Many of these markets remain unopened to the manufacturer of projectors and other visual equipment because these potential users have not yet entered the field of picture production.

Selling *pictures*, either custom-made to the individual requirements of each company or of each school system, or "ready-made" in syndicated form for general sale to industry or school groups, is not alone a *producer's* problem. Joint survey of the opportunities for the visual medium by a combined board of strategy including representatives of the *user* field, of the professional producer, and of the equipment manufacturer and distributor is a clearly indicated need.

What Are These Markets?

The greatest of these markets for pictures and projectors plainly lies in the individual manufacturing establishments of the U. S., of which there are 161,000, and in the schools, where there are more than 250,000 individual school buildings. The potential for equipment in the classrooms or in the shops within these establishments is tremendous.

But these are not the only markets. There are 30,000 organized clubs, lodges and other fraternal and associational groups in the U. S. alone. To these should certainly be added the additional thousands of union halls and meeting rooms where the use of visual training and information is fast developing.

In the field of rural America, there remain 2,000 unequipped county agents plus thousands of farm bureaus, grange halls, agricultural schools and implement dealer salesrooms. The dealer's salesroom is one of the most natural locations for film showings which combine perfect salesmanship with complete demonstration of the products offered. The more complicated the products offered, the more useful the visual medium can be to the local

dealer. The automotive oil and rubber industries were early pioneers in this use of the medium.

An ideal example of a market opportunity that is today largely undeveloped on this mass scale is that of the U. S. Office of Education visual aids program. Excellent sales results have been achieved by the national distributor and by local visual education dealers during the first year or two of this program. More than 30,000 prints were sold to industries, schools and the armed forces up to the early months of 1944.

How Do We Begin?

Today this program enters a new phase. Fifty original films have been supplemented by hundreds of additional titles. A limited sphere of mechanical vocational skills has been enlarged to include such topics as *Supervision, Fundamentals of Electricity, Welding, Electronics, Basic Nursing Procedures, Aircraft Maintenance, Woodworking, Foundry Operations* and subjects of similar *general* interest.

A practical plan for nationwide promotion of this program would entail planned cooperation between all visual equipment makers, the producers and the nationwide network of specializing dealers. On the manufacturer's part, promotion of these subjects through his national advertising in industrial and educational trade journals, cooperative preparation of promotional literature and publicity and sponsorship of a traveling portable exhibit to include mounted photographs, charts and other pictorial material plus review prints would bring information about these films to the many thousands of potential users who should be hearing *more* about them.

Combined Effort Is the Key

Local dealers need this kind of syndicated promotional help. The manufacturer and the producer who made these subjects (and who should be credited with that contribution in publicity and exhibitions) can do more to increase the dealer's prosperity and prominence by providing *practical helps* than can possibly be accomplished by mere financial donations.

This was not the only opportunity, though it was a most important and apparent one. Still uninformed about the great work accomplished by the use of visual training aids in the armed forces are the majority of school board members and influential citizens in towns and cities where visual education is still largely undeveloped or where the local budgets have remained too low to be really effective.

How about providing a similar exhibition, well designed with an eye to good showmanship, for nationwide tour this fall season to the cities where such conditions exist? There are plenty of fine illustrations, mounted charts, diagrams, and other exhibit materials which would attract good audiences on behalf of the local visual education director and the local dealer.

These were *ideas:* practical methods of improving the public's knowledge of a medium important to its own future. They would work better when the solid substance of numerous research projects was also put on the scales.

News of the Visual Industry

♦ To the University of Chicago, which recently acquired the 200-reel soundfilm collection of Erpi Classroom Films from Western Electric Company, has gone the entire library of Eastman Classroom Films, numbering some 300 reels of silent subjects exclusively for classroom use and representing an investment of more than $1,000,000. The gift of Eastman Kodak Company, the new library, like the Erpi subjects, will be distributed by Encyclopaedia Brittanica Films, Inc., subsidiary of Encyclopaedia Brittanica, Inc., which was given to the university in January, 1943, by Sears, Roebuck & Co. of Chicago.

♦ Pictures go into politics with the plan just originated by Business Films, of Washington, D. C., for shooting one-minute election shorts of Senators and Representatives for local screenings in their constituent district theaters.

First to go before the cameras in this unique election year plan, will be Jennings Randolph (D., W. Va.), Chairman of the important House District Committee.

A number of prints will be furnished each candidate, enabling him to obtain simultaneous screenings in a number of different District houses. Cost of the shorts will be $300 for five prints.

"Good standards make possible a lasting industry prosperity—but their very existence depends on a prosperous industry. That is the first aim of good organization."

TRENDS: EDUCATIONAL

★*The shortage of agricultural teachers:* During the past 2 years, 4,638 employed teachers of vocational agriculture comprising 34.9 percent of the total, have left this field. Over half of these withdrew to enter the armed services, the rest for varying reasons. Because of these withdrawals and the inadequate supply of replacements, 1,241 departments of vocational agriculture closed during the year 1942-3. 1,500 of the departments of agriculture which continued in operation were staffed with teachers not up to pre-war qualification standards. Possibly not more than 100 new teachers of vocational agriculture will be prepared in agricultural colleges during the current year.

These are official words: the findings of the Federal Advisory Board for Vocational Education. They are a mandate for swiftest possible development of visual training aids for this vast field on which America's lifelines depend. Not alone emergency films on the maintenance and repair of farm equipment but basic instructional pictures on animal husbandry, crop control, soil chemistry and other elements of a complete training film "short course" should be available in every agricultural county seat in the U. S. The complete plan for such a library, including its full curriculum, has been developed by the Editors of BUSINESS SCREEN for submission to farm implement makers, feed and fertilizer concerns, and other commercial as well as educational and governmental agencies concerned with U. S. agriculture.

★*The inadequacy of the printed text-book:* Author Philip Wylie, writing in the SATURDAY REVIEW OF LITERATURE attacks "The Illiteracy of Education." Declaring a good textbook to be priceless, Wylie asserted that the world is overwhelmed with bad ones . . . "it is a mammoth racket—books molded with prejudice, darkened by omission, and bearded with bibliography." But, concludes Mr. Wylie, "the hopeful side of the picture is to be found neither in the trade nor in the academy but, oddly enough, in the Army. Here the efficacy of teaching factual subjects by the motion picture and screen animation has so formidably proven itself that a lucky knell is sounding over the monthings of a ten thousand of physicists, historians, chemists, economists, sociologists, geographers, geologists and the rest."

★*The U. S. Office of Education: end of a cycle:* Three generous Congressional appropriations have provided U. S. vocational education with the most complete library of visual training aids ever contemplated. On the latest trip to Congress for a modest budget to round out this great film curriculum, the Division of Visual Aids for War Training request was denied by the House Committee. Funds to administer the uncompleted portions of this program are, however, certain to be granted with two hundred or more subjects of the five hundred titles still in varying stages of production. It was enough: there remains the all-important obligation of the entire visual industry to see that what was *made* well was *used* widely and well. In this obligation toward the future of all visual training, manufacturers of projectors, the producers and the local film distributor and dealer share a common responsibility.

★*Where did G. I. methods originate?* (see cover). Readers of this magazine, who read the article "Can Our Schools Teach the G. I. Way?" have rightly asked, how does the author get that way? With tongue in cheek, we waited until U. S. education awakened to the fact that its own best young blood and its best ideas were the real makers and the making of the "G. I. Way." Some of the influences, moreover, were those of auto industry training experts who brought Detroit's superlative service instruction and sales training procedures with all of their charts, lec-

(OVER)

TRENDS: EDUCATIONAL

tures, animations, motion and still visualizations into the ordnance depots, air bases, and Navy schools. These good basic ingredients, seasoned with the originality and inventiveness that is our American heritage and multiplied a multi-million fold—and there you have a good publicity-getter, the "G. I. Way."

★*The entertainment film producer: tomorrow's great teacher?* The authoritative Forest Davis articles in the SATURDAY EVENING POST which gave America its first comprehensive story of the Teheran conference contained this neat summary of why the twain of education and entertainment might better not meet: "The President's choice of a messenger, former Ambassador Joseph E. Davies, evoked some criticism because of the coincident appearance of the historically inaccurate and fulsome motion picture *Mission to Moscow*."

The American Council on Education might well use its generous grant of $25,000 annually from the entertainment film makers for a detailed and searching investigation of why fact does not require the embellishment of fancy to ensure the future of American education: what earthly good can come of setting up a curriculum-study of the areas in which pictures are needed when the production of those pictures will probably never be undertaken by that industry? We quote: "It should be very clear that the art and industry of the motion picture which serves the theatre has no direct ambition to take up education as a career." We quote: "The art which is summed up in the word "Hollywood" has been evolved, earned and learned for its own purposes—entertainment, not in behalf of other enterprises."

The check for twenty-five grand is what Broadway calls, "that old ace-in-the-hole."

★*Who would produce the educational film post-war?* Hollywood didn't know but it wasn't taking any chances, you never could tell when there might turn out to be a market for the stuff. Somebody said it was clearly the domain of the so-called documentary film producer. The trouble was, first you had to catch a documentarian. After that, you had to scratch him to find whether he bled a light pink, a bright red or was one of those disguised blue-bloods. Besides, come postwar, he might turn out to be as rabidly pro-business and downright profit-minded as the Hollywood brethren.

Seriously enough, the decision would be made by the customer: the schools would judge whether a factual film delivered the facts, clearly and presentably and at a reasonable cost. Perhaps they wouldn't even mind not having a full-scale symphonic background, Technicolor animals and a Great Big Name if the producer did a nice clean job of explaining the principal of osmosis.

★*Then there's that old question of budget:* About a tenth of a cent per pupil is the budget allotment for visual training aids in our more progressive school systems. That turns out to be a few million dollars annually with which to buy projectors, screens and to rent or buy the necessary films. About all you could accomplish on the hundred dollar budgets given by some systems was the rental of some worn out entertainment spectacles to which the entire school was invited on behalf of "visual education."

If the budget were raised to only one cent per pupil, however, a *ten-fold expansion* in visual education would result in economically profitable, specialized production for a waiting field of school clients. It would result in mass production of fine quality gadget free sound projectors at the lower costs possible only through mass selling. There wasn't anything about visual education that a little budget-raising couldn't fix. Trouble was, nobody did anything about it. Now maybe somebody would. *O. H. C.*

Army Films for Workers

IN MARCH, over five and one half million American workers saw U. S. Army war film reports through the facilities of the Industrial Services Division, Motion Picture Branch and the network of local U. S. film distributors who served it. With film critical and distribution primarily intended for war plants, this total was gratifying but it was exceeded in April and May appeared to hold the consistent gains registered since the opening of this campaign last year.

Plans were in the making for widening the distributor outlets to include many able services not yet employed. The films were good, tailored to the worker's own specifications for combat action direct from the fighting fronts. *Communiques* and two official *Reports* were issued, in addition to appeals to specific industries in pictures like *Cotton at War*. There was little desire to increase already critical film shortages by including such familiar outlets as schools, though from this area the pressure was most notable in recent months.

Colonel Ralph Gow, head of Industrial Services in the War Department, had an able film chief, Major Monroe Greenthal and a capable corps of experienced assistants in the locally situated Industrial Service Officers in each of the Command areas. Three national distribution organizatnons were principal contractors during this period. Through the facilities of Castle Films, Modern Talking Picture Service and Walter O. Gutlohn and nationwide outlets such as Ideal Pictures, U. S. war workers were getting to see how their weapons are turning many an important trick in the far flung battle areas of this global war.

Coordination of the Army program with the work of the domestic branch of the Office of War Information was discussed in recent weeks. It seemed worthwhile to coordinate such facilities where the general civilian audience was affected. Through such enlargement more U. S. civilians who do not go to theatres might be served.

Selected New Army Incentive Films

WHAT MAKES A BATTLE—The answer to what wins a battle is shown in combat footage of the Marshall Islands' invasion. Scenes of this masterpiece of amphibious strategy start with the initial pounding of the Islands by our battlewagons and dive bombers and carries on through to the final "mopping-up." Combat cameramen follow our men and tanks through the grim process of "mopping-up" snipers and pillboxes. As the sequence ends, men and machinery go about the job of converting what was a Jap fortress into an American base. *Running time:* 20 minutes. Available for war plant shows after June 1.

FILM COMMUNIQUE NO. 8

★ A vast amount of Air Forces footage is shown in this film, and some of the most exciting low-level bombing sequences are contained in it. There is a scene in this film that no one will forget. It is a closeup of the faces of a group of Marines who have just been informed that they are to be relieved after twenty-three days and nights of ceaseless jungle fighting. *Running time:* 20 minutes. Available for showings after July 1.

HOW GOOD IS A GUN

★ No one can understand firepower by reading about it—you've got to see it. This film shows how good American guns really are. Shots taken at the Ordnance Proving Grounds and on the actual fighting front illustrate the tearing speed of a Garand rifle's calibre-30 bullet. Also shown are the effect of such weapons as the bazooka, mortar, howitzer and long-range heavy artillery. It is an exciting testimony to the fine quality of weapons our boys are fighting with in this global war. *Running time:* 20 minutes. Available to war workers after July 15.

COTTON AT WAR

★ This is a War Department special feature which will be distributed to industries connected with the cotton textile market. An interesting dialogue between a top-sergeant and a green recruit shows what would happen if we were without cotton. It points out that practically every piece of equipment involved in the war has cotton in it. What the lack of it would cause is then illustrated. *Running time:* 15 minutes. Available for war plant showings after July 1.

How to Obtain These Subjects. War plant executives should contact the Industrial Services Officer at Command Headquarters: First Service Command, Boston, Mass.; Second Service Command, New York City; Third Service Command, Philadelphia; Fourth Service Command, Atlanta; Fifth Service Command, Columbus, Ohio; Sixth Service Command, Chicago; Seventh Service Command, Omaha; Eighth Service Command, Dallas, Texas; Ninth Service Command, Portland, Ore.

PICTURES of the Month

INDUSTRY MEETS WAR PROBLEMS WITH VISUALS

PRODUCTION RECORD of the month was set by Castle Films in bringing 16mm. sound prints of the *Invasion of Fortress Europe* and the *Fall of Rome* to war industries and U. S. audiences everywhere through this distributor's nationwide network of dealers. Footage was edited, prints made and delivered two weeks after D-Day! British Information Services are also providing a 16mm. sound version on the invasion, its title: *D-Day*.

Industry's own records of production went into many new company films during the period: In pictures like *The Strength Unseen* (International Harvester), *Flight Log* (Shell), *All Out for Victory* (Firestone), *Combat Team* (Chance Vought), and *When Johnny Comes Marching Home* (Socony-Vacuum), industry's war job and its realistic postwar attitude toward the good results of worker-management cooperation was accurately portrayed.

PICTURES SERVE PUBLIC, TOO

Insurance companies like Metropolitan Life and the Aetna Life Affiliated Companies made other noteworthy contributions in pictures available to the general public: Aetna's three films on gardening and canning *How to Plan a Victory Vegetable Garden*, *Summer Care of the Victory Garden* and the timely, *Preserving the Victory Garden Crop* showed what films might do in the public service. Related subjects still current in this field were *You Can, Too* (Ball Brothers via Castle Distributors) and *Canning the Victory Crop* (last year's production for Good Housekeeping Magazine.

"Northern Illinois Farm Life" produced for the Public Service Company of Northern Illinois by Chicago Film Studios shows how farmers can overcome wartime handicaps through inventiveness. In this scene the farmer is using a home made seed innoculator. The film is being widely requested by other utility companies.

Among industries, the rubber companies were well represented: titles like *Synthetic Rubber* (Goodyear) *The Alaska Highway* (Goodyear) and *Rubber Goes to War* (U. S. Rubber) were either new or currently active in the field of distribution. Timken's *Keep 'Em Rolling*, National Dairy's *Secret Weapon*, a film on nutrition, and *Women of Steel*, the Republic Steel subject on women at work in this war industry were also being widely shown during the month.

♦ *Proving Ground*, a full-length industrial production, had a recent press premiere in New York City under sponsorship of its sponsors, the Celanese Celluloid Corporation. Packed with ideas for postwar planners, the film depicted the part being played by lumarith, a Celanese plastic, in packaging war materials. Several scenes showed actual application of packaging innovations developed by the industry in wartime, innovations which have withstood the difficulties of global war.

Demonstration of the possibilities of carrying over many of these developments to peacetime use was the production's primary purpose. Among such developments were a simple operation for hermetically sealing packages, new lumarith containers of many sizes and shapes, lumarith foil used as a protective wrapper, and cellulose acetate drinking straws.

♦ An addition to the growing number of motion pictures in the field of health education is *Eyes for Tomorrow*, a two-reel film, produced by the Emerson Yorke Studio for the National Society for the Prevention of Blindness, 1790 Broadway, New York City. Alois Havrilla is the commentator for the picture.

Eyes for Tomorrow stresses good general health as a prerequisite for good eyesight. It also deals with the importance of prenatal care as a means of reducing the amount of blindness caused by syphilis and gonorrhea; the conservation of vision among school children; the use of sight-saving classes for children with seriously defective vision; the necessity for regular eye examinations; methods of treating glaucoma and trachoma; and the eye hazards of industry.

The film, in 16 and 35 mm., will be distributed in the United States by the National Society for the Prevention of Blindness.

SYMBOLIC OF "WOMEN OF STEEL" from the Republic Steel Company picture of that name are the welder (Lee Dunning); tractor operator (Edith Stoner) and woman labor foreman (Mrs. Elizabeth Varkonyi). This war informational subject by Wilding has received wide attention.

New and Current OWI War Subjects

CARE OF CHILDREN OF WORKING MOTHERS — *(20 minutes)*. Shows working mothers what a child care center is and how it operates. *Sponsor:* Office of Civilian Defense.

FOOD AND MAGIC — *(10 minutes)*. Food is the weapon in our hands on the home front. It is necessary to produce more, conserve, share, play square and place the war effort first. *Sponsor:* U. S. Dept. of Agriculture.

IS YOUR TRIP NECESSARY?—*(3 minutes)*. This is a *Don't Travel Trailer* to be attached to appropriate programs. It is a message to the American public to avoid unnecessary travel. *Sponsor:* Office of Defense Transportation.

POLAND FOREVER—*(22 minutes)*. History of Poland from the 15th Century to the present; outlines events leading up to Poland's invasion and shows how the youth of Poland are fighting for its freedom. *Sponsor:* Polish Information Center.

PRICES UNLIMITED — *(10 minutes)*. This film shows what would happen if rationing and price controls were lifted. *Sponsor:* Office of Price Administration.

ALL OUT FOR VICTORY—*(22 minutes)*. Shows the conversion of peace time industries to war industries and stresses the fact that it takes both the sweat of workers and the blood of soldiers to win the war. *Sponsor:* Firestone Tire & Rubber Company.

CHALLENGE TO DEMOCRACY—*(11 minutes)*. A report on the evacuation of the Japs from the West Coast and the manner in which resulting problems were met. *Sponsor:* War Relocation Authority.

CORSICA—*(10 minutes)*. French and Allies landing in Corsica. Shows a people at war. Intimate glimpses of the habits and customs of the native people. *Sponsor:* Free French Press.

IT'S YOUR WAR TOO—*(11 minutes)*. One of the most outstanding films on women in uniform. General Marshall pays a short effective tribute to the WAC's for their outstanding work and points to the need for more women to join the ranks. *Sponsor:* War Department

THE NEGRO SOLDIER—*(45 minutes)*. Contribution of the Negro in all of the wars of the Republic from the War of Independence through the present war. *Sponsor:* War Department.

Fifth War Loan Specials

REPORTS FROM THE AAF—*(9 minutes)*. The RAF and the 8th Air Force on a bombing flight over France and Germany. The 5th Air Force report from New Guinea. Shows the remarkable AAF maintenance and repair installation in Port Moresby, New Guinea. *Sponsors:* Treasury-War Department.

REPORT FROM THE BEACHHEAD—*(10 minutes)*. Shows the established beachhead at Anzio. Portrays the hardships endured by our men and stresses the fact that no matter how costly, no deal will be made with the Axis powers until Victory is ours. *Sponsors:* Treasury-War Department.

WHAT MAKES A BATTLE—*(14 minutes)*. A masterpiece of strategy was the Battle of the Marshall Islands when forces of land, sea and air had to be coordinated to effect success. *Sponsors:* Treasury-War Department.

WAR BOND TRAILER—*(3 minutes)*. An urgent message for the Fifth War Loan Drive. Will be attached to all subjects booked and left on through the Drive which ends on July 12. *Sponsors:* Treasury-War Department.

How to Get These Films

All of the OWI subjects listed above are available in 16mm. sound-on-film through nationwide distribution facilities. Many of these depositories are listed on Page 42 of this issue; see your visual dealer in your own community for free loan of any subjects listed (handling charge of 50c per title only).

Earlier subjects are also still available. These provide excellent fare for adult and youth audiences, open air events and other seasonal affairs.

Training for War and AFTER

U. S. OFFICE OF EDUCATION PROGRAM PROVIDES NEW SUBJECT AREAS IN NURSING, ENGINEERING, MAINTENANCE

ALTHOUGH the scarcity of materials for war production has been relieved, the industrial manpower situation has grown more critical. In these words, Lt. General Brehon B. Somervell, commander of the Army Service Forces, sums up the nation's wartime production problem as our fighting forces enter the critical phases of the European invasion and the first penetration of Japan's inner circle of defenses at Saipan.

According to General Somervell, the railroads are short 100,000 men; the lumber, mining, heavy casting and forging, and electrical apparatus industries face equally critical shortages in manpower.

Foundry Manpower is Critical

A July sixth conference at Milwaukee will be devoted to a discussion of the "desperately critical" foundry manpower shortage, now regarded as the No. 1 bottleneck in the entire war work program. This was the real picture of war production at an hour when victory appeared to be nearing our grasp. Delays in training, absenteeism and failure to exhaust every possible source of manpower might easily prolong the course of the war, according to high military authorities.

Against this background of urgent need, the Division of Visual Aids for War Training of the U. S. Office of Education has been regularly producing the motion pictures, filmstrips and instructor's manuals which serve to speed the course of vocational war training. As an indication of the timeliness of this program, a series of ten films on *Foundry Practice* are being completed. These include five titles on *Bench Molding Operations* and five additional subjects on *Floor Molding Operations*. The complete series is expected to be ready for sale within forty-five days.

Summary of Production

Also nearing completion or recently completed in the studios of contracting producers were films on *Aircraft Work*, *Machine Shop Work*, *Shipbuilding Skills*, *Supervision*, *Welding*, *Farm Work*, and *Advanced Engineering*. These supplement nearly 100 other subjects previously produced in the field of *Machine Shop Work*, *Shipbuilding Skills* and *Aircraft Work*. Altogether there will be nearly 500 different titles available by the end of 1944. Included in these will be important additional series on *Optical Craftsmanship* (now completing), *Basic Nursing Procedures*, *Wood Patternmaking*, *Plastics*, *Automotive Maintenance*, and *Engineering*.

To quote Dr. C. F. Klinefelter, Assistant to the Commissioner of the U. S. Office of Education, "subjects for these films come from training needs. These needs are closely examined to determine their motion picture possibilities and to ascertain whether training aids are not already available (either motion pictures or other aids). The subject areas are then approved by the Chairman of the War Manpower Commission and the subjects themselves by a committee of training experts in the Office of Education.

"Production of the films is done by educational motion picture companies. Each film is supervised by a technical specialist and a visual specialist of the Office of Education, and by a local committee of technical and training experts in the locality in which the picture is produced."

Expert Counsel Sought

As this statement indicates, actual production of these training subjects is contracted for among the nation's most experienced industrial and educational film companies. All of these qualified studios whose facilities are not already committed to training programs for the armed forces have been employed in the production of these training aids. A total of twenty-nine producing companies, located in all sections of the country, shared this task.

But the work of production and planning is not restricted. The largest and the smallest concerns in the subject areas to be covered are consulted for suggestions and advice. Vocational instructors, training experts and specialists in each of these fields help prepare the basic contents of each film. (See illustration in these pages.) Advisory committees include representatives of vocational schools, industry and labor. National associations contribute their basic knowledge where they exist in the subject field. The needs of the armed forces are consulted where films apply to training problems they have encountered, as in the case of the series on *Optical Craftsmanship*.

Through this cooperative effort and the employment of the most experienced production facilities, production by the U. S. Office of Education has maintained a high level of quality, accuracy and general usefulness. To quote Dr. Klinefelter: "this is the first time that the Office of Education has produced films in integrated series, graduated in difficulty, and intended to form basic curricular material designed to gear into organized courses of instruction. It is also the first time that integrated visual units have been developed with motion picture, filmstrip, and instructor's manual, planned and produced to meet today's training needs.

"Visual training needs are not merely a wartime expediency. The National Industrial Conference Board reports that 62 percent of the companies covered in a recent survey were using them; further, 85 percent of the executives of these firms stated that they intended to continue the use of visual aids after the war."

Industrial training directors who have used these aids in their shop schools have reported excellent results. Not only do these motion pictures actually improve the quality of the finished work done by trainees but they stimulate the whole learning process. The *emotional* re-

EXPERT COUNSEL GUIDES USOE PRODUCTION in this recent meeting in Cleveland of an advisory committee studying the visualization of operations on the Horizontal Boring and Milling Machine. From left to right: R. H. Villwock, sales service engineer for the Lucas Machine Tool Company, Cleveland; M. H. Yoder, instructor in advanced machine shop practice, West Technical High School, Cleveland; William Pelich, Manager of the Operator Service Bureau, Warner-Swasey Company, Cleveland; Rowland E. Cukr, head of the machine shop department, East Technical High School, Cleveland; Frank Seidel, of the producer's staff, Escar Motion Picture Service, Cleveland; Eldon Robbins, visual aids specialist, U. S. Office of Education; Charles Dunkel, head of the machine shop department, Collinwood High School, Cleveland, and Edward Christiansen, technical specialist, U. S. Office of Education.

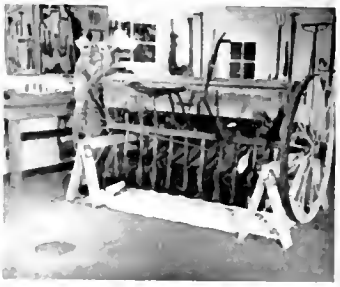
U. S. OFFICE OF EDUCATION
VISUAL AIDS UNIT

Instructor's Manual

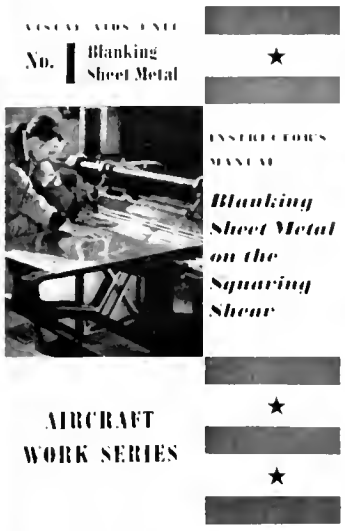
EQUIPMENT MAINTENANCE No. 4

RECONDITIONING A GRAIN DRILL

FARM WORK SERIES

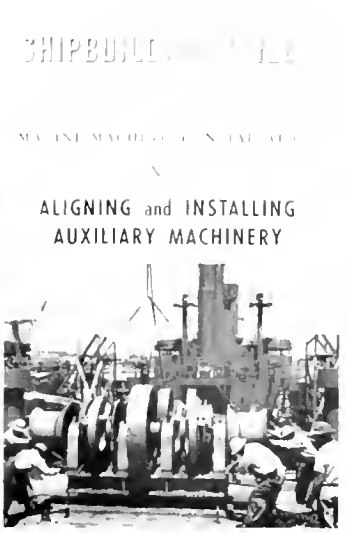


Farm equipment maintenance and repair is the subject of the "Farm Work Series" which also includes units on "Community Canning," "Handling Livestock," and "Horseshoeing." Both motion pictures and filmstrips were produced.

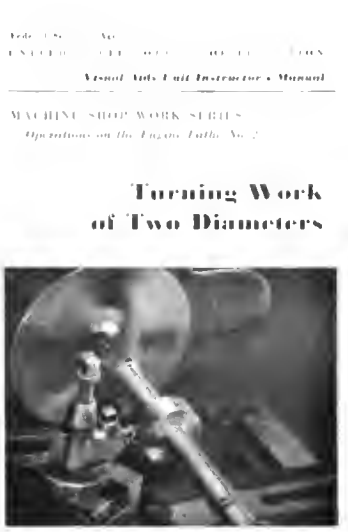


The aircraft work series will include approximately forty-three titles on the fabrication, assembly and inspection of aircraft. The first manual produced in this series is shown above. These manuals help instructors to get the most out of the motion pictures and filmstrips.

Instructor's manuals like these are being produced for U. S. Office of Education training subjects. In these manuals helpful suggestions on the use the integrated motion picture and the filmstrip are provided to the user as well as a complete review of the contents.



Shipbuilding skills titles produced by the U. S. Office of Education include 43 pictures on Shipfitting, Marine Machinery Installation, Coppersmithing, Pipefitting, Insulation, Marine Electricity and Welding. Many of these are now available for use.



Machine shop work, one of the most basic areas of war instruction, includes films on almost every known type of modern machine tool in general use. Lathes, Milling Machines, Grinders, Saws and other equipment are included in the 130 Machine Shop Work titles.

sult achieved by providing the trainees with a complete knowledge of the job and its operations is as important as the actual teaching of the skills involved.

Research Studies Confirm

In a detailed study of the use of these visual training aids in an actual war training school Dr. Abram Vandermeer of the University of Chicago confirmed these results. (See BUSINESS SCREEN, Issues Four and Five, 1944.)

Proper use in the training classroom is an important pre-requisite, however. Projection equipment must be available at the right time and use of the motion picture and the filmstrip as integrated units of instruction is essential to good results.

Post-War Use Apparent

Planning of production and choice of subject matter has been most fortunate in this program. These subjects will have a lifetime value, for the most part, for the basic operations on the engine lathe, milling machine and other machine tools will probably change very little in the next generation. Foundry practice, woodworking, basic electricity and similar subjects may help to prepare many future classes of workers in the nation's vocational classrooms.

With the coming of veterans' rehabilitation problems, the use of these visual aids will have even more value. While financial support and educational subsidy is provided for the returning soldier, nothing is more important than that he return to full productive capacity in the shortest space of time. Whether his choice is a small private business such as an appliance shop or a job in a factory, there will be need for swift and thorough retraining to the arts of peace.

VISUAL AIDS CHIEF AND PRODUCTION AIDS CONSULT: Floyde E. Brooker, head of the Division of Visual Aids for War Training, U. S. Office of Education (standing) reviews an important production point with the Division's West Coast supervisor, Frank Judson (second left) in the San Francisco production studios of Photo & Sound, Inc. William Betts, P&S production chief, is seated extreme right.

WHERE THESE FILMS MAY BE PURCHASED

♦ National distribution of the U. S. Office of Education visual aids units is handled by Castle Films, Inc., through regional offices in New York, Chicago and San Francisco and through the local facilities of specializing visual education dealers. Films cost approximately $17.35 for a one-reel sound motion picture, $1.00 for the coordinated filmstrip, with the instructor's manual furnished free of charge.

See your local visual aids dealer or write to the national distributor for the address of a dealer in the city nearest you.

Late News Briefs

♦ Charles R. Crakes, for the past 20 years director and advisory administrator of visual education for the public school system of Moline, Illinois, and at present affiliated with the DeVry Corporation, Chicago, as educational consultant, will conduct a course on "Visual Teaching Aids in the Classroom" at Northwestern University's School of Education, at Evanston, Illinois commencing June 26th.

Mr. Crakes' experience includes two years as public school superintendent, 10 years as high school, and five years as junior high school principal; also eight years of practical teaching. He holds B. A. and M. A. degrees from Northwestern.

16mm. Projector Standards

♦ Specifications that will help manufacturers to turn out a tough and easily portable 16 mm. sound motion picture projector for the Armed Forces have been completed through the coordinated efforts of representatives of industry, the Armed Forces, and the War Production Board, working through the American Standards Association. These specifications, it is expected, will be used as the basis for joint Army-Navy specifications. It is by far the most important job completed so far by the War Committee on Photography and Cinematography of the American Standards Association, which has been working since January on special standardization problems of photographic and motion picture equipment and supplies at the request of the Armed Forces.

Notes on a Postwar Responsibility

The Agency Looks at Movies

by George Gladden*

FOR NEARLY SIX YEARS, the J. Walter Thompson Company motion picture department has supervised the making of motion pictures for its clients. The pictures have ranged from minute movies for theaters to multi-reel features for the so-called school and club circuits. At the time of writing, production schedules are heavy with two reelers of an institutional-public relations flavor. For example, in production or recently released are *Flight Log*, the story of 100-octane gasoline, produced for the Shell Oil Company in cooperation with the Army Air Forces, and used as a morale builder and for technical training; *California Wine*, an institutional film for the California Wine Institute; a film on immunization, titled *Passport to Health*, prepared for Sharp and Dohme in cooperation with the United States Public Health Service; three documentary films for Reynolds Metals Company and a product presentation film, *Metal Bellows*, for the Fulton Syphon Company, a Reynolds subsidiary; and a two and a half reel film for Ford Motor Company which contains a key sequence on bomber construction at Willow Run.

They're All Movie Critics

The client who sponsors a film for the club circuit, for the Army or Navy, for schools, for war plant employees, these days, faces a critical audience. Probably everybody in the house has been to his corner movie palace within the last week seen at least eight reels of Hollywood's glossiest entertainment.

Joe Doakes knows what a good movie looks like, and he is pretty capable of making comparisons. He may make charitable remarks about the sloppily written, carelessly booked two-reelers, urging him to buy B-Brand lipstick. But that does not mean he will buy.

Insurance for the Client

Thompson's purpose in motion picture work is to make sure our clients get top notch pictures, by preparing suitable screen plays and by keeping an expert eye on production after the script is turned over to a producer. And, of even greater importance, the agency also plans a picture's distribution, and sees to it that the picture accomplishes its full purpose by reaching the right audience.

It is well known that too many sponsored films—well conceived, photographed, and scored—have been allowed to disintegrate in cans on a filing room shelf, without being seen. Getting an audience—the right audience for a particular picture—is a specialized job, ordinarily handled by a specialized group of persons.

Distribution After Analysis

To bridge the hazardous gap between production and distribution, the agency film department helps plan the nature and size of audiences at the same time objectives and treatment are being discussed. Frequently, in making its detailed distribution recommendations, the department cues the location and concentration of showings with market studies made by the agency.

And occasionally, after analyzing a client's problems, the agency picture department recommends against the use of films—feeling that other media can do the job more effectively or more quickly or more economically.

What Makes a Picture?

What makes a good picture? From its long time study of the application of films to business, Thompson lists three main ingredients: *Well balanced stories, good casting*, and *careful direction and production*. Actually, the issue of whether a movie is to be dull or interesting is decided even before the first page of script treatment rolls from the typewriter. Crux comes during the preliminary conferences, deciding what the picture is to be about, what it will contain, and who is to see it.

This simple statement of plan governs the entire life story of the movie. From it the director may even decide how to key his action, how to select his camera angles, how to place his lights. From it the audiences for the picture are preselected, and the picture tailored to their tastes.

Integrated With Program

Since the agency is intimately acquainted with the client's needs and problems, it is in a singularly good spot to integrate his films with other advertising, merchandising, and public relations—and also to save him time in consultation and research. Planning conference for a Thompson movie includes client men, members of the motion picture department, and account representatives. Our more-than-bowing acquaintance with clients' problems gives the agency a head start on picture planning over the average outside producer. During production, it also serves as a valuable check and control on whether the script in celluloid is the same as the one the client approved on paper.

Not a Production Unit

While Thompson's motion picture department is not a production unit (studio and production staff would add unwarranted burdens to clients' budgets in times of lean production), its members are production wise, having had previous experience in film production both in New York and in Hollywood. Supervision includes casting, direction, editing, approval of release prints—making sure in every case that the client is getting the kind of picture planned at the beginning, and for a reasonable price.

War has given great impetus to the use of motion pictures—as a morale builder in theaters and camps, as a method of instruction, as a means of telling Mr. and Mrs. America the story of business.

The Screen's a Natural

In influencing the public, the screen is of course an advertising man's natural. "Moving them through their emotions" is a time-honored (and well-founded) technique of advertising. Because of its theatrical impact, the screen does this more directly and with more power than any other medium.

The fact that movies are a theatrical medium (even when shown in clubrooms) demands showmanship in their making and distributing.

At first glance, it is hard to see the dramatic possibilities in many an industrial topic. But drama need not consist of horse-opera thrills. It means planning material carefully, relating scene to scene to accumulate interest and leave the audience with a definite impression.

A Boom for Quality

Just around the corner, film men say, there is a boom due on commercial, documentary, and educational films.

The word "boom" means competition for audiences.

Nickelodeon days, when a movie could get by on the mere fact that it moved, are over. So is the era of unplanned, helter-skelter "run-arounds."

Only the best movies—those that give the audience a show—can do the job the business screen will be expected to do in the post war world.

* * *

ARE THESE THE INGREDIENTS OF SUCCESSFUL PRODUCTION? In these scenes on the set of "For Safety's Sake" Sarra-produced safety motion picture are typified (1) the best in technical facilities; (2) able technical direction and professional skill and (3) expert advice on technical content of the film.

EDITOR'S NOTE

*Mr. Gladden, executive of the Motion Picture Department of the J. Walter Thompson Company, sets forth some thoughts well worth the thoughtful consideration of agency men and sponsors generally. The agency faces a real challenge in understanding and rightly using this most complete of all media of idea communication.

Motion Pictures for Employee Relations

Curtiss-Wright Tells the Company's Story In Pictures

VITAL role each employee of the Curtiss-Wright Corporation, Airplane Division, plays in the production of cargo and combat aircraft is vividly interpreted in *Production Soldiers*, sound film produced by Curtiss-Wright.

Prepared for the Curtiss-Wright Airplane Division by Wilding Picture Productions Inc., the sound motion picture, sequences of which were filmed in the five Curtiss-Wright Airplane Division plants at Buffalo, Kenmore, N. Y., Columbus, O., St. Louis, Mo., and Louisville, Ky., and completed in Hollywood, is a unique portrayal of the importance of each individual worker and the job Curtiss-Wright men and women who build the wings for victory are doing.

First screened in March of this year, *Production Soldiers* is shown to all new employees of the Curtiss-Wright Airplane Division. Personnel Departments at each of the five plants have prints of the picture.

Purpose of the motion picture is to acquaint new employees with the Curtiss-Wright Corporation as a whole and specifically the Airplane Division; its importance in the history and future of aviation; its policies as affecting employees, and the rules and regulations relating to employment with the company; to give the employee a better understanding of the reasons behind the rules; to give the new employee a preview of factory life, and to inspire each employee to make his job his personal battlefront.

Historical Events Introduced

The motion picture, definitely inspirational, introduces new employees to the highlights of the history of Curtiss-Wright through dialogue and the use of early stills and motion pictures of such historical events as the world's first successful airplane flight of the Wright Brothers at Kitty Hawk, N. C., on Dec. 17, 1903; the first successful flight from Albany to New York on May 29, 1910 by Glenn H. Curtiss in his "Albany Flyer"; Eugene B. Ely's flight to the U.S.S. Pennsylvania in a Curtiss plane on Jan. 18, 1911, the first shipboard landing and the forerunner of the present aircraft carrier; the Curtiss JN-4's, or Jennys, the planes in which practically the entire U.S. Air Service was trained in the first World War; the Curtiss Carrier Pigeon, first airplane designed exclusively for mail carrier service; and the flight of the Curtiss-Navy NC-4 in 1919, first plane to fly the Atlantic Ocean.

The famed Curtiss P-40 fighter planes in action in World War II; the Flying Tigers, who flew to glory in Curtiss P-40's against the Japs in China; the Curtiss C-46 Commando, largest twin-engined transport plane now in production, and other scenes are presented to acquaint new employees with the significant record and present-day achievement of the Curtiss-Wright Airplane Division.

Employees Appear in Film

The film, featuring Curtiss-Wright Airplane Division employees and a cast of professional actors in the principal roles, centers around the typically-American and typically Curtiss-Wright Madison family, which gives it continuity throughout. Dad Sam Madison, son Jim and daughter Ann are all Curtiss-Wright employees "proud of the airplanes we build". Cousin Marg, characterizing the trials and tribulations of workers during their first day on the job at Curtiss-Wright, lends most of the comedy touch to the picture, while Ann and Steve Brogan, her boy friend who wears the uniform of the Army Air Force, provide the love interest.

Accompanied by the theme song of the Curtiss-Wright war production drive, "Back Up Our Battleskies", the picture unfolds as the Madisons tell their story of their jobs at Curtiss-Wright. Selected shots of plant operations are presented, adding further interest for new employees.

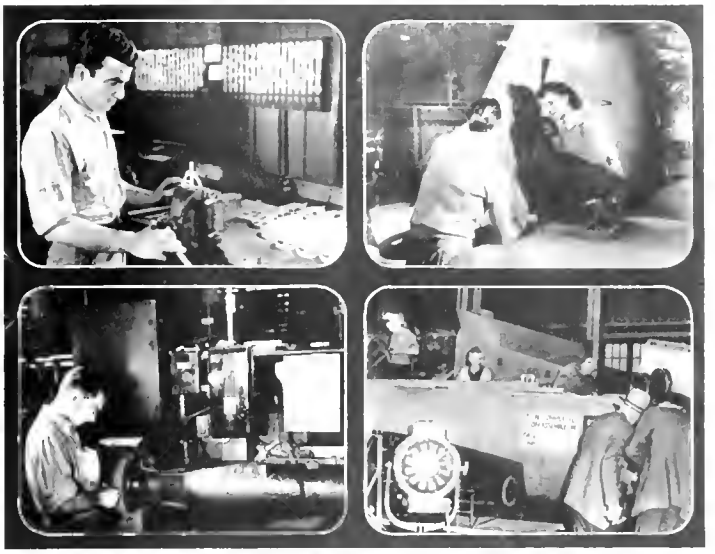
Company's Policies Interpreted

Interestingly woven into the motion picture is the interpretation of company policies and all rules and regulations with which new employees should be familiarized. During the course of the picture, the importance of the ride-sharing plan and the economical use of tires and gasoline, the plant hospital and first aid rooms, and safety are emphasized. Careful workmanship (quality and safe operation go hand in hand, it is significantly pointed out), is stressed, as are the use of inter-departmental passes and clock cards, reasons for maintaining perfect attendance records, purpose of overtime passes, the necessity of purchasing War Bonds, regulations concerning badges, rules on smoking, the plant protection set-up and its functions, personnel counsellors and the help they offer, and the various recreation programs.

New employees are introduced by the film to the staff of the Curtiss-Wright Research Laboratory at work on important improvements in aircraft and materials, the altitude chamber and the wind tunnel where aeronautical tests are conducted.

All of these features of the indoctrination film are presented to the new employees through the dialogue of the Madisons and their Curtiss-Wright coworkers, and through the use of flashbacks which illustrate all the important points discussed by the characters.

The picture closes with thrilling shots of the speedy, powerful Curtiss SB2C Navy Helldiver, and its counterpart for the Army Air Forces, the A-25 Helldiver taking off and landing, and diving through white clouds. It brings into focus the type of dependable aircraft produced by teamwork at the five Curtiss-Wright Airplane Division plants.



SCENES FROM "PRODUCTION SOLDIERS" above show (1) careful workmanship as an important precept at Curtiss-Wright; (2) Close inspection is stressed on all work; (3) (below) plant safety is given emphasis (wearing goggles here) and (4) teamwork gets production results.

ONE OF THE YEAR'S MOST USEFUL SOUND SLIDEFILMS: The Pullman Company's latest sound slidefilm on safety for porters "Heavenly Express" opens an entirely new area of instruction among these thousands of service workers on America's railroads. Production for Harry Guilbert, Safety Director of Pullman, was by Chicago Film Studios.

TWENTY LESSONS

A Declaration of Principles and Implications Pertinent to American Education Based on the Navy Training Aids Program

1 *The first and probably the most significant implication* is that after the war American education can look with confidence to its own ranks for personnel qualified to assume leadership in a sound post-war development of the audio-visual movement in the United States.

2 *Audio-visual instruction is one of the most tangible methods* of education in existence. When the public is made aware of the instructional possibilities of this type of program, evidence indicates that the administrators will receive enthusiastic support.

3 *Specialized direction and leadership must be provided* for the successful administration of an audio-visual program. Haphazard coordination and inept leadership result in inefficiency. This is no more to be tolerated in education than it would be in industry. Only through qualified centralized administrative direction can an effective audio-visual program continuously meet the requirements of the post-war period.

4 *Wartime experiences have emphasized the need* (a) to analyze curricular objectives in terms of specific behavior changes; (b) to select and use training materials specifically designed to meet those objectives; and (c) to produce and distribute training materials in terms of the uses to which they are to be put. These three principles are basic in any sound audio-visual program.

5 *Regardless of the quality of a given training aid*, its utilization by the instructor is the essential determining factor in its effectiveness. Good utilization is effected only when instructors have a continuous part in the selection, utilization, and evaluation of the aids.

6 *Evaluation is an effective technique* in the attainment of utilization. The quality of the training aids used by the instructors, their skill in employing them, and the behavior resulting from that use should be constantly appraised and evaluated.

7 *Pre-war educational research and experience* in the audio-visual field have proven valid for the war period. Equally, wartime experience should certainly offer guidance to educators now and in the future.

The results of the research conducted by the military services will probably be made available for widespread application to American education. These findings cannot be ignored.

8 *The Navy has insisted that training aids prove their value* every step of the way from planning and production through utilization. Navy evaluation studies are being undertaken constantly to assure that the best possible training aids are developed and used effectively. The implication is that educators should make every teaching aid justify its use in terms of improved pupil behavior and that no materials or practices have a right to exist merely because "they have always been there."

9 *War experience has shown that training aids have many applications* ranging from factual memory to the recognition of the outline of a plane when flashed on the screen for one-hundredth of one second. They can be used for inspirational purposes, for facilitating the development of skills, for orientation to new situations, and for presenting information on the working of machinery. In fact, their limitations seem to be restricted only by the imagination and competency of those using them. According to the findings and experience of the Armed Forces, there should be a tremendous expansion in the use of these aids in the schools of the world.

10 *Room conditions and mechanical operations necessary to the use* of the training aid must be handled so smoothly that they become relegated to unobtrusiveness. In the past, an undue amount of emphasis has been placed upon the mechanics of training aids, particularly the operation of projectors and other equipment. Regardless of difficulties encountered in the solution of mechanical problems, educational personnel should not lose sight of the main objectives in using aids, that is, to improve instruction. Actually solving mechanical problems is much simpler than having the aids used properly in terms of good instructional techniques.

11 *Navy sources of training aids are established* so that wherever training takes place they are easily procured. One of the utilization officer's duties is to make sure that training aids are available to each activity, from the smallest training unit to the largest battleship, in the right quantity and at the right time.

12 *Training aids can help effectively to equalize educational opportunity* and overcome educational deficiencies. For example, certain films and transcriptions can be understood and assimilated as readily by the poor readers as well as by the good readers.

13 *The Navy early recognized a major problem* resulting from the movement's close association with the theatrical motion picture field. Producers have commendably developed a type of entertainment designed to give audiences maximum enjoyment and provide an environment calculated to produce the utmost relaxation. Amusement—not education—is the goal. A passive audience reaction is the result. The direct antithesis is necessary when employing films for educational purposes—a dynamic audience reaction is the goal. The film must be used so as to inspire the student—to make him want to do something about what he has seen—to think, to feel, to learn, to know more about it, to discuss it, to write about it, to apply what he has learned from it. Theatrical techniques are inadequate for accomplishing these ends. An understanding and use of good instructional practices which are especially applicable to training aids is necessary.

Experience indicates that administrators and teachers alike tend to confuse their thinking regarding these differences. As a result, gross errors in use occur. For example, several films of widely varying subject matter are used during the same period; films are used to fill up a period; or educational films are shown in the school auditorium before highly diverse groups with little or no regard for educational objectives.

14 *A tremendous teacher education job lies ahead* in the field of training aids. Teacher training institutions must provide teachers and administrators who are adequately trained in this field. Institutions of higher learning are making plans at present for the post-war training of audio-visual aid teachers. There are three phases on which increased emphasis should be placed: First, the pre-service training of classroom teachers in the effective use of training aids needs rethinking in the light of wartime training experiences. More widespread provisions must be made for the education of pre-service teachers in the effective selection, utilization, and evaluation of training aids. Second, teacher-training institutions also must furnish leadership for public school in-service training of teachers in this field. Third, the training of administrative specialists for directing audio-visual programs in public school systems and institutions of higher learning needs to be undertaken.

15 *Institutions of higher learning must make increasing use* of training aids. A great variety of training aids suitable for college level are being made available. College and university instructors cannot be expected to explore the field without assistance from specially trained individuals. This means that each college or university faculty should include a specialist who can assist faculty members in the selection, utilization, and evaluation of training aids.

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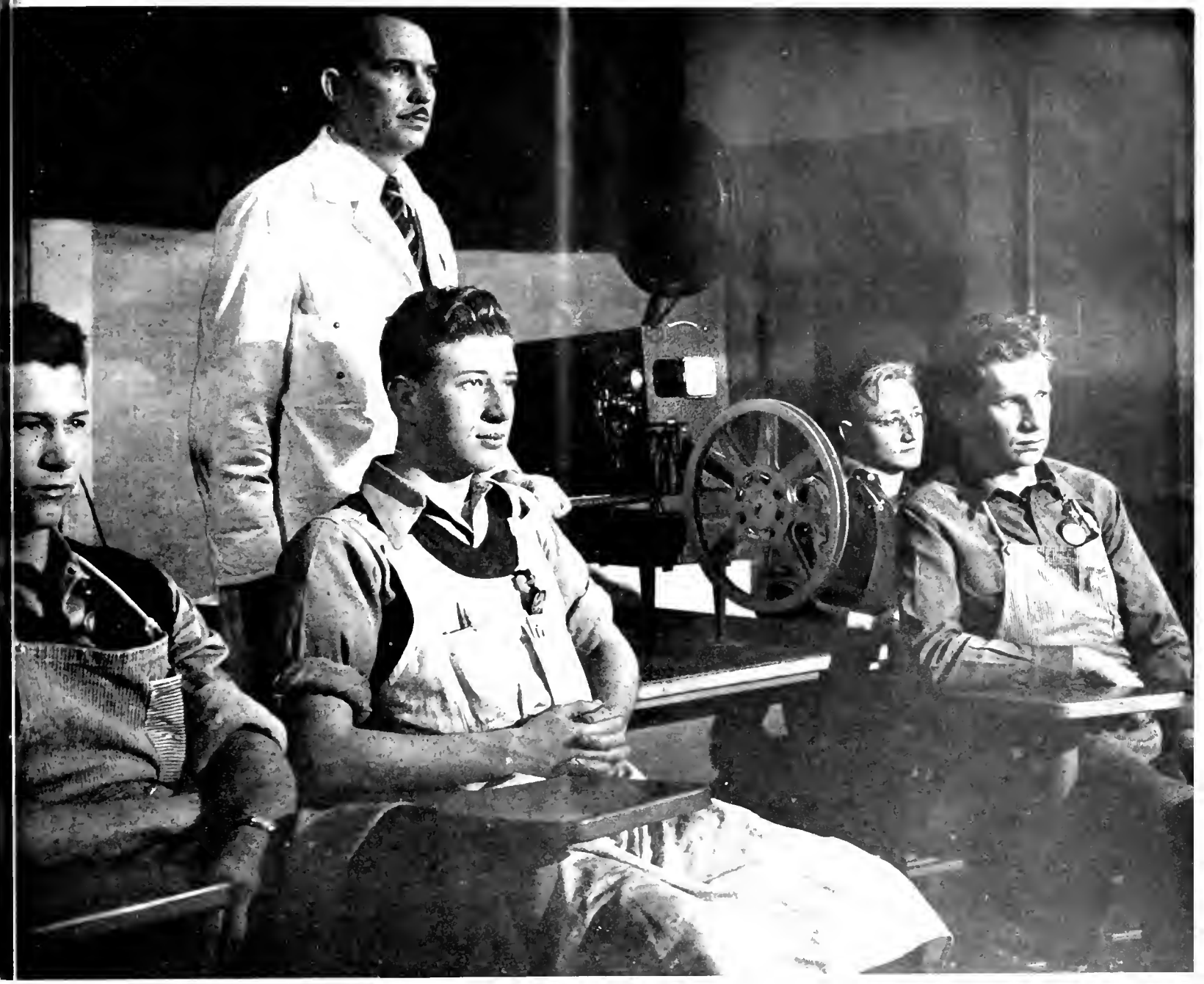

The Editor of Business Screen calls this the most [illegible] study [illegible] ever seen. [illegible] Sperry [illegible]

SPERRY TRAINS FOR PRECISION

PRECISION instruments cannot be turned out by green help. Nor can the technicians who maintain them keep them in good working order without the proper training.

The Sperry Gyroscope Company of Brooklyn, N. Y., together with many others at the outbreak of the war, found itself faced with a shortage of skilled machine operators and bench hands. The Armed Services did not have enough trained technicians to service their instruments of war, including the world-famed Sperry aircraft, marine and gunfire control mechanisms. That much is already known to the world . . . and the world also knows by now that the production front in the United States has met the crisis successfully. What is not known generally is the story behind the effort.

39,629 Trained by Sperry

In the past two years Sperry has trained 6500 learners and trainees together with 33,129 technicians for the Armed Forces. A large percentage of the credit for the success of the Sperry training programs can be attributed to the film industry.

Sperry training directors have placed a good deal of stress on the use of films. Producers of all types of films have been called upon to aid in the prosecution of this vast training effort. Such names as the United States Office of Education, Jam Handy, Caravel, Audio and Brat stand out among the producers whose products are used successfully by Sperry. Many contemporary manufacturers can be proud of training films used by Sperry, who in turn, have produced films of great value to sub-contractors and other manufacturers.

Local distributors keep Sperry well up-to-date on new films. When a new release is sent to the company, a committee representative of the subject covered by the film is called together to review it. If the film has permanent value, it is pur-

PHOTOGRAPHIC ILLUSTRATION BY VICTOR

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chased for the Sperry film library. If it has only occasional uses, it is rented when needed.

Film Shown New Employees

The first film that a new Sperry employee sees is one which Sperry produced called *You Are Sperry*. As indicated by the title, this film tells the new employee what will be expected of him, what he can expect of the company, and what other employees are doing to make Sperry a major factor in this war. It also tells him about the history of the company, its policies, its products and physical layout. He is introduced, via the screen, to the top executives, who welcome him with short messages.

If he is beginning as a learner in a factory occupation, he goes through an average of two to three weeks of intensive training, much of which is accomplished with films. Some of the more outstanding films used in this phase are *The Micrometer*, *The Steel Rule*, *Verniers*, *Fixed Gages*, *Behind the Shop Drawing*, *Turning Work of Two Diameters, and Milling*, all products of the USOE. Some successful films by independent producers are *The Use and Abuse of Twist Drills* by the Cleveland Twist Drill Co.; *Chips* by Warner-Swasey; *How to Machine Aluminum* by the Aluminum Co. of America; and *First Principles of Grinding* by the Carborundum Co.

Pictures Aid Up-Grading

Periodically, men of supervisory and instructor calibre are chosen from among the employees to participate in supervisory training courses. This system has been responsible for the development of numbers of much-needed foremen and instructors. Some films found useful here are *How to Get Ready to Instruct*; *Tips for Teachers*; *How to Instruct*; and *Power of the Minute*, all Jam Handy and other commercial productions. In the near future Sperry expects to add to this series a set of eight films now being produced at the big Sperry plant at Lake Success, Long Island. These films, initiated at the request of Sperry and other large manufacturers, will deal with human relations and will be used as a means of teaching old and new foremen alike how to supervise an employee and maintain production thru good employer relations.

In the past, precision manufacturers have found that rust is a common enemy of all metal parts. In order to combat this metal menace, Sperry recently produced in its own plants a slide film in technicolor on how to prevent rust. This film has proven to be invaluable in helping to keep Sperry products, many of which contain over 250 multiple-piece sub-assemblies, completely rust-free.

Sperry training films are kept in convenient, well designed metal storage cabinets such as the Nenmade model shown above; they are readily accessible to training men and other Sperry executives who make frequent use of the company's extensive film library.

Also Train Office Workers

The office force, always an important part of any organization, comes in for its share of film-training, too. USOE and pre-induction films such as *Know Your Typewriter*; *Advanced Typing*; *Short-cuts*; *Machine Transcription*; have been used here with good results. A security film called *Safeguarding and Proper Handling of Classified Material* which was produced by the Signal Corps has assisted in the highly efficient handling of confidential material.

In order to foster a better understanding of Sperry products much use is made of a film called *Romance of the Gyro*. This picture tells the story of the gyro as only a visual medium can. When it is over, even the most non-machine-minded secretary understands what makes Sperry products tick.

Strip Films Also Favored

Strip films are favored by the instructors at the Sperry Service schools, where men of the Armed Forces are trained to keep Sperry instruments in good order under even the most trying battle conditions. This is because strip films can be stopped at any desired point in order to answer questions or put particular stress on any phase of the training.

Another virtue of strip films is that they can be revised so easily. In this day of constantly-changing methods, this is more important than it seems at first glance. A movie film would be rendered worthless by any change in the structure of the product which might come through while the film is being made. A strip film can easily be revised to fit the change.

How Training Aids Originate

Most of the visual media used by the Service Schools are produced by what Sperry calls the "using service," i.e. the Army or Navy, depending on the instrument. If a need arises for a film, the company prepares or helps to prepare the script and submits it to the using service, where it is reviewed. If the request is found justified, which is usually the case, the service either gives Sperry a contract for the production of the film, or else the service itself does the production.

Most of the subjects filmed in this manner are done right in the Sperry school. The most recent films done this way are those on a computing Aircraft Gunsight, produced in co-operation with the Army Air Force. Others which have been outstanding are those on the A-5 Automatic Pilot, the Bombsight, and Gyro-Rotor propulsion.

Men See Each Picture Twice

Moving picture films are also used at the Service schools. They are found particularly valuable for motivation at the beginning and for review at the close of the course. It is noteworthy that every film is shown at least twice to each man. He sees it immediately before coming into direct contact with the subject and at least once more after he has gone through the manual training phase. This idea of supplementing the regular oral and text method with films has been found useful in helping the instructor to get his lessons across.

The Air Raid and Fire Prevention organizations at Sperry owe part of their efficiency to the fact that their training was materially assisted by the use of films. Most of these films were government produced and dealt with such subjects as *First Aid*; and *How to Fight Fire Bombs*.

The morale films supplied by the Army and Navy have found much favor at Sperry. They are shown once a week to each shift. A conservative estimate of the number of people who witness these weekly showings would be at least two thousand, all of whom go back to work with renewed vigor and a strengthened will-to-win.

Value Deemed Inestimable

It would be impossible to estimate the total number of people who have witnessed film showings at Sperry. By the same token, it is impossible to estimate the value of the contribution which films have made in aiding Sperry to train the men and women who have done such a remarkable job on the Sperry production line and with Sperry instruments at the front.

This much can be said: From here in, Sperry and films will go hand in hand in helping to win the final peace and in helping to build the free world of tomorrow.

* * *

EDITOR'S NOTE: This comprehensive report on Sperry training film procedure is one of a series of case histories on major U. S. war industries. Another follows in our next issue. Watch for it.

Industry Groups Meet in Active Sessions

THE TWO-DAY CONFERENCE on the use of 16mm. films in war and postwar service, conducted by the Allied Non-Theatrical Film Association in New York on April 28-29, marked a new high in the history of the organization, and in war-time trade meetings generally. The organization now enrolls over 90 of the leading film sources, distributors, equipment manufacturers, and service and publicity agencies. Each of these chief branches of the industry have an equal "say" in formulating and executing policies. Under the by-laws, industry, film sources and libraries are each represented on the Board of Directors. The new board consists of Horace Jones (Pres.), Samuel Goldstein (Vice Pres.), E. E. "Jack" Carter (2nd Vice Pres.), Wm. F. Kruse (Sec'y), Geo. H. Cole (Treas.) and Stanley C. Atkinson, Tom Brandon, Harry Kapit and Clem Williams, directors, with past-presidents Bertram Willoughby and William K. Hedwig, ex-officio.

The first session was taken up with officers' reports and nominations, the second with a series of three papers: "Library Problems" (Russell C. Roshon), "Equipment and Accessory Routine" (Richard F. O'Neil), and "Postwar Problems" (Wm. F. Kruse). It was unanimously decided that the latter address be published in full, serially, in forthcoming issues of the ANFA Bulletin. The third session was an open forum on "The 16mm. Industry in the War," with a lively discussion led by C. R. Reagan (OWI) and L. C. Larson (University of Indiana).

The fourth session was strictly business, and was devoted chiefly to the discussion and adoption of resolutions. The heroism and devotion of industry members in the armed forces, and the effective, win-the-war activities of the retiring officers of ANFA were lauded. The resolution on the armed forces stated that "we pledge our utmost effort in every field that their sacrifices shall bring forth a better world," and a pledge to "these fighters to (1) every possible preference upon their return to civilian life."

Discussion centered upon such resolutions as: (1) That films be "truly and objectively described as to contents, quality and audience suitability, bearing due regard for the *highest* standards that must necessarily be applied in (the non-theatrical) field."

(2) That improved services will ultimately be assured film consumers only when "competition is based on superior services, rather than on price cuts and other short concessions."

(3) That published catalog prices should represent actual charges, without subterfuge.

(4) That discounts should be extended only to bona fide channels of distribution.

(5) That all efforts to subject film rental services to sales taxes be opposed, where such taxes do not apply to other services involving no change in ownership of the item taxed.

(6) That adequate supplies of 16mm. raw stock be allocated to enable the industry to continue its war services, out of the portion set aside for civilian use, and that the film needs of all governmental agencies involved in the war effort be met from film stocks reserved for war purposes.

(7) That educational institutions engaged in pre-induction training and vocational education "receive preference ratings of AA-1 or AA-2.

George E. Brannan — A Tribute

★ Word reached the industry during May of the death in action of George E. Brannan, formerly of the executive staff of Ideal Pictures Corporation, Chicago, who was mortally wounded in the Burma theatre of action while en route by plane to front line duty as an American field service ambulance driver.

We knew George personally and of his efforts to join the armed forces which were denied for physical reasons. He prevailed, was accepted for this heroic service and in the end gave his life for his country. It serves to reveal the nature of the enemy to learn that he was fatally wounded in an attack on an unarmed, unescorted mercy plane by three Jap Zeros. This brief word of tribute is spoken so that his many friends and associates in the industry may know of his sacrifice. —*O. H. C.*

WAR FILM STORAGE

PROPER HANDLING OF ESSENTIAL FILMS

WAR INDUSTRIES and vocational schools, latest adherents to the visual training movement within recent years, have purchased thousands of prints of U. S. Office of Education motion pictures and filmstrips. Altogether more than 30,000 prints of these films have been sold, for the most part to these sources.

Five 16mm. sound motion picture prints, averaging about 800 feet each in length, comprise the average series on a single subject. Titles are available in the fields of Machine Shop Work, Aircraft Work, Shipbuilding Skills, Farm Work, Advanced Engineering, and other critical areas of war necessity (see pages 20-21) and altogether there are to be 500 separate titles available.

PROPER CARE IS NEEDED

How are these films kept in your plant or school? In too many instances they are laid about on open tables, carelessly put into regular filing cabinets and too often damaged or lost among other articles in the school shop. Worth on the average of twenty dollars per title, such careless handling indicates economic waste and an actual loss to the training program.

The moment of classroom use demands the presence of a perfect, undamaged and properly humidified print ready to give an acceptable screen presentation to the trainees. Let us take a leaf from the case histories of several industrial users and at least two great educational libraries for some pointers on proper care and handling of these war training subjects:

PROVIDE PROPER FACILITIES

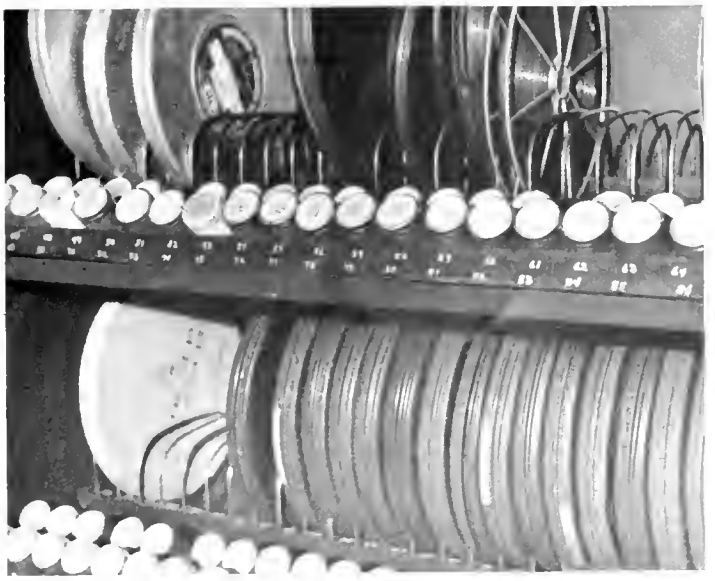
The first prerequisite is to provide well-designed storage cabinets. These are available to all war industries and schools today under present priority limitations. One cabinet in use provides storage for 17 reels of either 300', 1200' or 1600' size. Since a majority of the USOE subjects are mounted on 300', this size is a minimum. The cabinet in question lists for $42.50, contains interchangeable index card and holder for each reel.

Another type of cabinet in use in training departments accommodates fifty of these larger size reels, either with or without storage cans, and also provides a utility drawer in which to store related filmstrips. These cabinets are all provided with double interlocking doors of heavy gauge steel, are complete with handles and key locks. The MM-55 type cabinet described above lists at $120.00 complete.

The minimum requirements of

(CONTINUED ON THE NEXT PAGE)

Typical war training film racks in use are these in the Michigan State Vocational film library at Lansing, Michigan where the use of war training films has become a professional standard for the nation.



CONTINUED FROM PREVIOUS PAGE

The training film library would also include an editing table or shelf on which a set of 16mm rewinders and a good 16mm splicer are mounted. The complete cost of such a layout need not exceed $50.00, including the necessary film cement and brushes with which to make occasional repairs.

Other Useful Facilities

On such a basis, the complete small film department may be outfitted for less than one hundred dollars, for concerns and schools having twenty or more titles in use, additional storage facilities may be figured. Savings resulting from the proper handling of prints plus the security of well-preserved films on hand when needed, makes such an investment well worth the consideration of the film user. In saving training time through protection against losses through mislaid, damaged, dried out, dusty or dirty film, such facilities are a wartime essential.

Lack of humidity affects the cellulose base of films most adversely. When prints become dried out, they get brittle and break easily with the slightest strain in projection and handling. All storage facilities should therefore be properly humidified and even then the use of the Renovator or of the Vaporate process is recommended at intervals.

In this scene in the Bureau of Visual Instruction, Extension Division of the University of Iowa is shown the excellent facilities provided for rewinding, checking and cleaning of films before returning them to the film vault. Only films in the best of condition are sent to schools and other users. The two girls at the right are editing new film. Clifford F. Rittenmeyer, Bureau technician, is operating the machine used for cleaning films in rear of picture. (Neumade "Renovator".) The Bureau uses the latest equipment for the care and maintenance of films.

Keeping film prints clean by occasional wiping with film liquid and by regular cleaning of the projector aperture will also save costs as well as insure better screen performance at each showing. But the best way to make sure that prints stay free of dust and dirt is to store them properly in dust-free cabinets which are properly humidified.

These are the experiences of industrial and educational libraries throughout the country; they will apply equally well to the smallest training film corner in the school or shop. Write this publication for the latest catalogs and other useful data on the film department, its organization and maintenance.

U. S. Steel Audiences

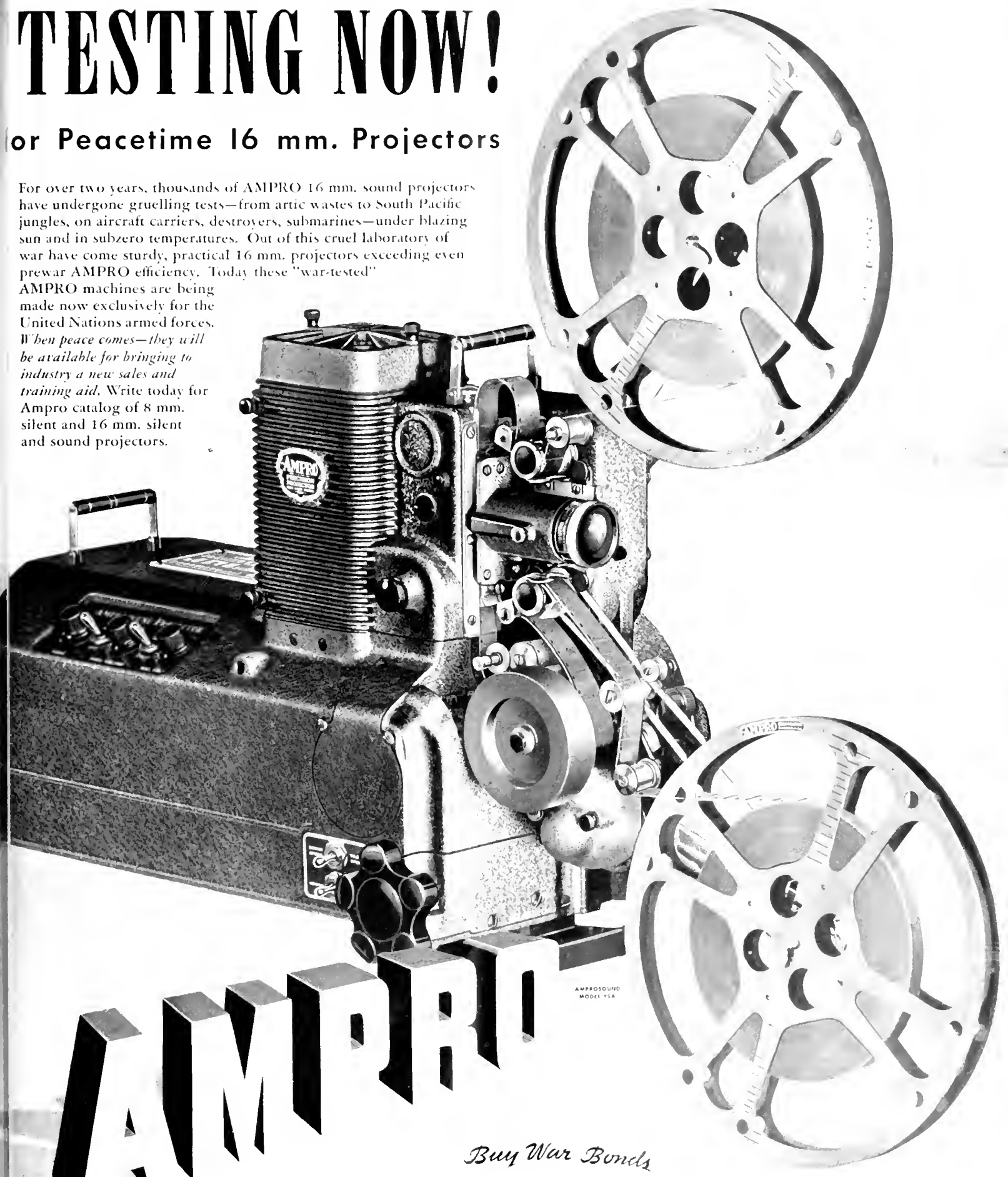
♦ United States Steel Corporation motion pictures in addition to many other war time uses, are helping sell war bonds a report discloses.

These films, which depict the important part steel is playing in helping win the war, have been seen by over three million persons so far this year. They have been shown at many war bond rallies in addition to being used extensively for training purposes by war workers, students, training classes for Army ordnance inspectors and numerous other groups engaged in war-time programs. Since Pearl Harbor U. S. Steel films have been shown over 11,000 times to more than 850,000.

TESTING NOW!

or Peacetime 16 mm. Projectors

For over two years, thousands of AMPRO 16 mm. sound projectors have undergone gruelling tests—from artic wastes to South Pacific jungles, on aircraft carriers, destroyers, submarines—under blazing sun and in subzero temperatures. Out of this cruel laboratory of war have come sturdy, practical 16 mm. projectors exceeding even prewar AMPRO efficiency. Today these "war-tested" AMPRO machines are being made now exclusively for the United Nations armed forces. *When peace comes—they will be available for bringing to industry a new sales and training aid.* Write today for Ampro catalog of 8 mm. silent and 16 mm. silent and sound projectors.



AMPRO

Buy War Bonds

AMPRO CORPORATION • CHICAGO 18, ILL. • PRECISION CINE EQUIPMENT

♦ For reaching new heights in hospitality to service men, Mr. and Mrs. C. L. Venard of Peoria, Illinois, distributors of Victor Animatograph Corporation 16 mm. Equipment and producers of rural education films, have been awarded "the orchid" and a coast-to-coast radio salute as "good neighbors" by the national radio program "Breakfast at Sardi's."

The Venards live near Camp Ellis and Peoria is the resort of

One of the industry's pioneer producers and distributors, C. L. Venard of Peoria, Ill., is decorated with the orchid they received on a national broadcast program.

thousands of soldiers every week end. So the Venards converted their home into a free "hotel" and every service man as their guest. Last Christmas week-end they served 57 extra meals. Moreover, the Venards recognize that the finest gift these boys can send their families is a picture and every one of the soldier-guests is photographed by Mr. Venard, himself a veteran of World War I. Mrs. Venard then sends the print to the boy's mother, along with a personal letter telling about his visit and her boy's health and well-being.

This hospitable couple sets no limit on their welcome; many of the boys come again and again and those who have left the camp are still corresponding from all over the world.

H. R. Lissack Directs Britannica Distribution

♦ H. R. LISSACK, educational editor of Britannica Junior since July, 1941, has been appointed director of distribution for Encyclopedia Britannica Classroom Films (formerly Erpi Classroom Films), E. H. Powell, president, has announced.

Mr. Lissack's training and his broad and practical experience in the field of education should be a valuable asset in presenting a program of visual education to the educational institutions of the country.

Mr. Lissack carried out a number of research projects and he has handled much of the revision of Britannica Junior under the general supervision of Mr. Walter Yust, Editor of Encyclopedia Britannica.

PERSONALITIES IN THE NEWS

★ ★ ★

(Right) Mr. Chester A. Lindstrom, the new chief of the Motion Picture Service, U. S. Department of Agriculture. A popular figure and outstanding leader in the visual field, his appointment is commended by the entire industry

♦ Appointment of Chester A. Lindstrom as chief of its Motion Picture Service is announced by the Department of Agriculture. Mr. Lindstrom, who has been associate chief of the Service, succeeds Raymond Evans, who retired recently.

The Motion Picture Service, a part of the Department's Office of Information, produces and distributes motion pictures based upon the results of agricultural research and the wartime agricultural programs.

Mr. Lindstrom, a native of Manchester, N. H., has been in motion picture work in the Department for more than 30 years. He began his motion picture career in connection with a travelogue made by Burton Holmes in the Philippines in 1912. He entered the service of the Department in 1913, serving successively in the Forest Service, where he assisted in the introduction of motion pictures to aid in forestry education, the Office of Exhibits, and the Office of Motion Pictures. The new chief of the Motion Picture Service has been active in the field of visual education. He was one of four Department representatives sent to organize and conduct agricultural exhibitions in connection with educational projects in Army camps in France after the armistice of the last war. In 1934 he was appointed delegate on the part of the United States to the International Congress of Educational and Instructional Cinematography in Rome. During the same year, he made a survey of educational motion picture work in various European countries and negotiated exchange agreements with several European governments.

Long a member of the Department of Visual Instruction of the National Education Association, he has held various committee posts in that organization, and was one of a committee of three to revise its constitution and by-laws in 1939. He has contributed liberally to publications in the visual aids field, and has written, directed, and produced some fifty motion pictures in addition to supervising scores of others.

Roshon Organization Expands

♦ In line with its policy of expansion and improvement of service to its clients, The Russell C. Roshon Organization, World's largest 16 mm sound motion picture distributors, has moved its executive offices to Suite 2200, RKO Building, Radio City, New York 1201, where, in large and commodious quarters all executive departments have been consolidated.

The New York Exchange has also been moved to the same floor as the executive offices and the Pittsburgh office has increased its space and facilities for serving 16 mm motion picture users in Western Pennsylvania, Ohio and West Virginia.

The Charlotte, North Carolina office, recently opened, is now operating full force in its quarters in the Liberty Life Building.

Joins Business Films

♦ ROBERT B. HUNT, former Warners and Universal writer, and more recently with the Signal Corps and OWI, has joined Business Films, owned by Marshall L. Faber, in Washington, D. C. Mr. Hunt will write educational and commercial films, as well as training films for the armed services.

"For Safety's Sake"

A COMPLETE NEW SOUND MOTION PICTURE ON SAFE HANDLING OF PORTABLE POWER TOOLS

Every war plant and training school should own a print of this comprehensive new two-reel sound motion picture covering all phases of safe operation of portable hand tools. Produced in dramatic, hard-hitting action with full professional cast and the finest in technical supervision, production technique and authentic safety counsel by Sarra, Inc. in cooperation with the National Safety Council.

Here Are Some Key Sequences From This Fast Moving Instructional Film:

SAWS—Necessity of guards. Prevention of "forcing" in work. Cautions in handling of saw blade. Explanation of trigger-type switch. Importance of firmly clamping work.

GRINDERS — Importance of firm gripping of tool. Necessity of keeping wheel away from body. Proper type of grinder wheel for each job. Correct manner of mounting grinder wheel. Hazards of cracked wheels.

DRILLS—Importance of wearing goggles. Use of protective sleeve on bit. "Whipping" and its prevention. Importance of firm clamping of work.

ALL TOOLS—Safeguarding of eyes and body. Necessity of grounding tool, with clamps and with 3-wire cord. Proper handling of electrical tools. Care of electric cords. Proper methods of carrying tools. Repair of tools by proper departments.

PLUS THE "TEN COMMANDMENTS OF SAFETY" IN USE OF PORTABLE TOOLS!

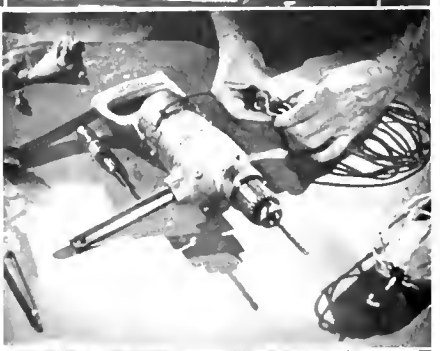
GLENN GRIFFIN, Safety Engineer for the National Safety Council was technical advisor in the preparation and production of "For Safety's Sake".

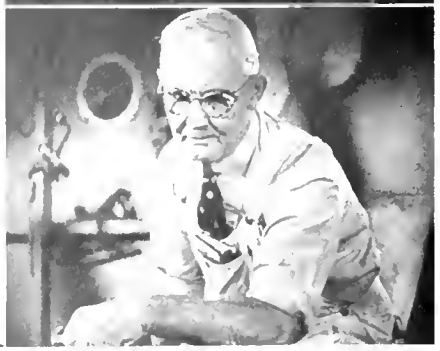
PRODUCED WITH THE COOPERATION OF THE NATIONAL SAFETY COUNCIL

Meeting industry's demand for a qualified safety instruction course in a vital subject, this quality production is available in either 16mm or 35mm sound-on-film prints. It is designed to hold employee interest from first to last.

LESS THAN THE COST OF ONE ACCIDENT

ORDER NOW at only **$52.50** for the complete 16mm sound film





Available in 16mm or 35mm Sound-on-Film Prints

produced by

SARRA, INC.

16 East Ontario Street • Chicago
18 East Fiftieth Street • New York City

HERE IS OUR ORDER:

To: Sarra, Inc.
16 E. Ontario St.
Chicago 11, Illinois

☐ Check enclosed
☐ Bill company

Send us _____ prints of "For Safety's Sake:"

Company: _____

Person Ordering: _____

Address: _____

City _____ Zone _____ State _____

TWENTY LESSONS

(CONTINUED FROM PAGE TWENTY-FOUR)

16 *In the future, schools must provide rooms* in which students may use films and other training aids as a part of their study program, just as they now use the school library and laboratory. There is ample Navy experience to show that students as individuals and in small groups voluntarily use training aids to review what they have learned and to clarify what they have not learned well.

17 *Training aids as instructional tools find their optimum value* in the classroom. There is great need for classroom sound motion picture projectors and playback machines that are at once inexpensive, light weight, and simple to operate. With the intensive and extensive use of educational sound motion pictures, the time may not be far distant when such equipment will be as much a part of every classroom as the teacher's desk or the blackboard.

18 *Naval experience clearly indicates the need for a very close liaison between production and utilization,* between the producing companies and the educators. It is only through their close cooperation that training aids that really work can ever be developed and used extensively.

19 *Extensive research dealing with the observing and listening processes of learning must be undertaken.* Much needs to be known concerning the physical and psychological factors involved. The studies should be as extensive and intensive as have been the studies dealing with reading.

20 *Motion pictures tend to monopolize a training aids program.* While they are perhaps the most important single aid, no successful training aids program can be built upon their use alone. The other aids, including filmstrips, models, posters, pictures, recordings, and the radio are important. For some situations they are better than motion pictures.

Lieutenant Commander Francis W. Noel, USNR., Officer-in-Charge
Utilization and Evaluation Section
Training Aids Division
Training Activity — Bureau of Naval Personnel

A BUSINESS SCREEN digest from an article by Lieut. Commander Noel in the April SCHOOL EXECUTIVE, considered by us so pertinent to the visual movement that it constitutes a good part of a fundamental plan for future development.

Castle Films Offers Army and Navy Training Subjects

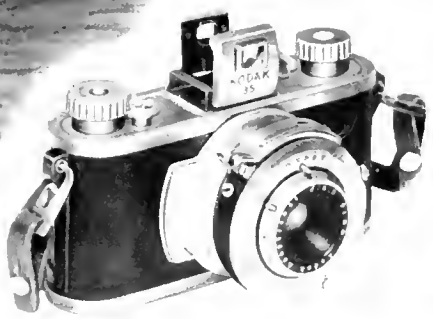
♦ In addition to the many new subjects in the U. S. Office of Education training film program which are being distributed by Castle Films, over one hundred U. S. Army and Navy training films and filmstrips are now listed by Castle for sale to war plants, schools, and other institutions.

The Army and Navy subjects deal with a great variety of interesting studies, ranging from aerodynamics to vacuum tubes . . . from navigation to photography.

A catalog has been published by Castle which lists and describes all U. S. Army and Navy motion pictures and filmstrips, in addition to the new catalog recently announced which lists and describes all U. S. Office of Education training films and filmstrips now available.

Write to the nearest Castle office, at 30 Rockefeller Center, New York City; in the Field Building, Chicago, or in the Russ Building, San Francisco, for your copy of these complete training film catalogs.

Official photograph, U.S. Signal Corps



Kodak 35

your "Civilian Miniature" *is with the Army... Navy... Air Forces... Marines...* in Uniform

WHEN production of cameras for you stopped short, Kodak 35—owned by numbers of America's miniature camera enthusiasts—won a preferred rating. Production of the 35 "in uniform" sped ahead, on Government order.

The reason being that the Army . . . Navy . . . Air Forces . . . and Marines . . . needed a camera which does precisely what you, in civilian life, want your camera to do.

From trim black and silver finish into non-reflecting black and olive drab—that was the only change in the 35.

Kodak 35, making pictures in either black-and-white or Kodachrome, offers more "picture capacity" than the average person usually needs. Yet it's simple to operate—not too much of a handful for a man who's excited . . . under fire. And it is dependable—can take some banging around, and still get the pictures.

Kodak 35 is the heart of the Photographic Field Kit designed and made by Kodak for the U.S. Signal Corps, which is responsible for Army photography in ground operations. A complete photographic laboratory in a "suitcase."

If you are not one of those who own this smart little Miniature, you can look forward to that as an "after the war" experience.

EASTMAN KODAK COMPANY
ROCHESTER, N.Y.

REMEMBER LIEUTENANT ALEXANDER R. NININGER JR.—first man awarded the Congressional Medal of Honor this war—how on Bataan, he was three times wounded, he fought his way into the enemy positions again and again, wiped out whole groups using 3 hand grenades? . . . how after the battle they found him dead . . . surrounded by dead Japs . . . A stern example for the rest of us. BUY MORE WAR BONDS.

Serving human progress through photography

ON THE PRODUCTION LINE!

New Industrial-Educational Films Recently Released

"From the Ground Up" shows war workers' living problems.

♦ It isn't often that a group of architects and builders get the opportunity to build a whole city *From The Ground Up* houses, stores, schools, business buildings, fire stations, everything. Nor is it often that a film producer gets the opportunity to record such a dramatic enterprise. But that's what happened shortly after Pearl Harbor when the West was faced with a staggering housing problem.

Housing conditions for war workers at Vallejo, California, were appalling. Families were forced to live in miserable trailer camps, or worse, in tumble-down shacks of the squatter variety in the midst of oozing mud. Sanitary conditions were practically non-existent. Comfort was unknown except for the few hours that could be spent in already overcrowded parks.

That was the picture when a new city was planned and the site selected several miles beyond Vallejo. Six hundred acres of bare pasture land was turned over to the architects and builders. On this six hundred acres was to be developed a community of three thousand homes to house eleven thousand people. Here was an opportunity to experiment in community design and building methods that would be invaluable in planning the post war housing that is certain to come with peace. The foresighted architects and builders recognized an opportunity and grasped it before it was too late. They called for a motion picture production that would record the problems as they were and show how each was met.

From The Ground Up, one of Photo & Sound's latest 16 mm. Kodachrome productions, is the result of nearly two years of shooting. First, the cramped and miserable living conditions of the war workers were recorded. Then the land, empty as far as the eye could see, and the first bulldozer moving in. The streets that followed, and their design for safety. The utility lines. The foundations of the city itself, and the houses that rose from those foundations. The landscaping for beauty. The color for variety. The modern schools of functional design that would put to shame the more ostentatious school buildings in almost any older community. The fire stations within easy access of any part of the community. All these requirements of a city were anticipated and planned for. No haphazard development was allowed. And all these things the film records truthfully and dramatically to become, like its subject, a powerful experiment pointing the way to the housing of tomorrow.

Atlas Produces New Dental Subject "Student Flyer"

♦ Hoping to arouse interest in the nation-wide High School Victory Corps Physical Fitness Dental Program, the American Dental Association's public relations committee and Bureau of Public Relations have cooperated with the Victory Corps Dental Committee of the Council on Dental Health to present *The Student Flyer*, in 16 mm. black-and-white, with sound.

The production tells of a high school boy aviation enthusiast who fails in his flight training and, upon advice of the kindly instructor, goes for a thorough physical checkup. Discovering below-par visual acuity, the physician advises a dental examination, and during the scenes in the dental office a skillful oral hygiene message is presented. Infection checked and vision restored to normal, the youngster passes his CAA examination with flying colors.

Approved by a number of leading dentists, physicians and educators, the production is full of action and human interest, and is educational from an aeronautical as well as a dental standpoint. Production was made possible by a grant from the educational department of the Weco Products Co.

Named Production Manager

♦ Walter Klinger, business manager of Metro-Goldwyn-Mayer's Short Subject Department for the past ten years, has resigned to join The Princeton Film Center. Klinger assumes Production Manager's duties in new affiliation.

Auto-Lite Holds Premiere

♦ Before a specially-invited audience of 652 Southern California distributors, wholesalers and dealers in Auto-Lite products, The Electric Auto-Lite Company this week held a world premiere of its new Technicolor film, *The Right Spark Plug in the Right Place*.

The film, which features a unique animated character, "Johnny Plug-Chek," was presented at the Walt Disney Studios in Burbank, California.

Purposes of New Film

According to Frank Nealon, who conceived the idea for the picture and supervised its production, the film is designed to provide comprehensive and graphic instruction in the installation, care and maintenance of spark plugs, and will be made available to the Armed Forces prior to its regular trade release.

Although the picture is sponsored by The Electric Auto-Lite Company, the manufacturer's advertising is negligible. "Our purpose in producing and distributing this film is wholly instructive and educational," stated Nealon, "because anything that helps the user get greater service, greater mileage and decreased gas consumption through improved spark plug efficiency aids the war."

Representatives at Premiere

In attendance at the premiere of the film were a number of Auto-Lite executives from Toledo, including Nealon, J. V. Shank, manager of the parts and service division, and H. D. Bissell, advertising manager; Barry Cool, manager of The Electric Equipment Company.

RCA Produces Subject on Music in War Industry

♦ The first film to portray the uses and accomplishments of industrial music, has been produced for the Radio Corporation of America, by William J. Ganz. Appropriately titled *Manpower, Music and Morale*, the movie pictures the important part which scientifically programmed music has come to play in war plants throughout the country. Filmed in the Botany Worsted Mills, Passaic, N. J., where an RCA plant broadcasting system is in operation, the one-reeler centers its attention on groups of workers in various departments where there are varying noise levels to portray the beneficial effects of music, particularly in repetitive types of work. In these scenes, the film catches the rhythm of workers whistling, humming and singing at their jobs.

The film also gives a clear picture of the many uses of an internal broadcasting system in an industrial plant. Through instantaneous relaying of messages, the film shows how emergencies are handled, truck traffic is controlled, stoppages are averted, and industrial accidents are minimized. Other uses depicted include the broadcasting of important news reports and management announcements, paging, employee announcements, and lunchtime entertainment.

16mm. prints of *Manpower, Music, and Morale*, which was prepared by William J. Ganz Company, New York, will be available to interested industrial organizations through the Sound Picture Division of RCA Victor, Camden, N. J. The film's running time is 13 minutes.

Zurich's Safety Slidefilms

♦ For some time the Industrial Welfare Department of the Zurich Insurance Companies has been releasing a monthly sound slidefilm on a health subject and normally running about 10 minutes, as part of its safety zone health education program.

Departing from the usual theme, however, *To Live Longer*, a current release, is devoted entirely to public health activities, describing some of the functions of federal, state and municipal health departments, and informing the public how to cooperate with medical and dental science through public health agencies to live longer and better lives.

Use of prints is made possible through addressing the Industrial Welfare Department, Zurich Insurance Company, 135 South LaSalle Street, Chicago.

OFFICE WORKERS ALSO SEE OFFICIAL WAR FILMS

In Canada and the United States, where extensive distribution of the official war film reports of the armed services and government agencies is maintained, office workers as well as industrial help, are seeing this front-line film. (National Film Board photo).

♦ Pictures produced by our armed services as well as the official productions of the National Film Board are regularly shown to Canadian office personnel as well as to workers in the shops through the facilities of Canada's extensive industrial film circuits operated by the Board.

Through this medium, all workers are reminded that the production line, whether in office or shop, stands just behind the fighting line. Making sure that the home front delivers is their war assignment.

FORMICA FILM

♦ *The Formica Story*, a 15-minute sound film in color, chronicles the history of the laminated plastics industry. Produced for The Formica Insulation Company, Cincinnati, pioneer manufacturers of laminated plastics and internationally known in the industry, the film required over six months to produce. The film tells in colorful, interestingly informative detail how laminates are made and used and what useful qualities they possess to adapt them to future applications.

D. J. O'Conor, co-founder and president of The Formica Company, describes the film as "conceived and intended as Formica's contribution to the laminated plastics industry's program to obtain a fuller awareness of the service offered by one of man's most ingenious materials."

Preceding the visualized postwar new applications of laminated plastics, the film presents the factual background of the industry and the product's history. This turns back to research in chemical laboratories nearly a half-century ago, the late Dr. Leo H. Baekeland's distinction of presenting to the world the first thermo-setting molding plastics in 1907 and subsequent developments. Then follows a rapidly moving story in picture and narrative describing how Formica is made.

Scenes depicting the resistance of this plastic material Formica to various difficult conditions—heat, cold, moisture, high frequency currents, corrosion, stress and strain—are shown graphically with an interest-compelling attention. Movie shots of test apparatus used in testing the properties of the material whet the interest of the engineer prone to a "show me" attitude.

Facts about Formica—a vital material for aviation, electronics, industrial equipment and architecture—are illustrated with adequate precision for the technician and sufficient "romance" to maintain interest of the layman.

Highly technical skills of film photography were utilized in making the picture. In one scene the camera action was slowed 100 times normal gait to show how seven inches of impregnated material compress into a four-inch sheet of laminated plastic under pressures as high as 3000 pounds per square inch and temperatures frequently as high as 350 degrees Fahrenheit.

By quick kaleidoscopic views covering the aviation, automotive, radio broadcasting, industrial power, X-ray and construction fields, *The Formica Story* summarizes that "the last chapter can't be written—probably never will be written—in the story of Formica".

The film, because of current rationing of prints, is available now for meetings of engineers, executives, employee organizations and educational institutions. Later, it is planned to provide wider outlets for the picture.

The filmed story directed by Charles De Laska, written by Ralph Schoolman and narrated by Edward Herlihy and Stanford Lewis was produced for Formica by Films of Industry, New York.

DEVRY HOST TO BRITISH WAR FILM EXECUTIVES

When Mr. J. L. Beddington, C.B.E., Director of the Film Division of the British Ministry of Information, visited Chicago recently he was feted at two luncheons given by members of the visual industry. At one affair, E. B. DeVry, Secretary-Treasurer of the DeVry Corporation, was the host. In the picture above, taken at Chicago's Variety Club headquarters in the Blackstone Hotel, are (left to right) Thomas Hodge, Film Officer of the British Information Services, Chicago; Thomas Baird, director of U. S. distribution for the British Information Services; E. B. DeVry, host for the occasion; Mr. Beddington, guest of honor; and Dr. E. I. Deer, western representative of the Motion Picture Producers and Distributors of America. The gathering was attended by representatives of the theatrical industry, see elsewhere in this issue for a report of the visual industry's luncheon.

X-Ray Photography Aids Ordnance Production

♦ Photography is assuming an increasingly important role in the production of explosives by the Ordnance Department, Army Service Forces.

Until recently, for example, it was impossible to obtain X-ray photographs of big 155-mm. high explosive shells. The steel casing of each shell varies from one to three inches and contains a solid mass of TNT which varies in thickness from two to five inches.

A unique million-volt X-ray machine was designed to meet this unusual problem. Today it is possible for a number of shells on a revolving belt or line to be X-ray photographed at the same time. The slightest crack in the shell or the smallest cavity in the load is instantly detected. These defects, if undiscovered, might destroy both the gun and crew.

The old hand-method of examining sample high explosive shells was slow and difficult. Ordnance officers estimate that the new X-ray machine will permit the examination of from three to five thousand shells a day and will pay for itself in a year in the saving of labor and material.

The camera is also used to register such vital data as the size, intensity and location of powder flashes, or the progressive ignition of explosive charges. Ordnance technicians use such information to improve artillery projectiles, propellants, flares, rockets, and photoflash bombs.

During shell tests, the camera records fragmentation bursts which indicate the effectiveness of the projectile.

Ordnance chemists investigating powder structures require spectrographic and microphotographic film records. They photograph the color of signal rockets, flame temperatures, sizes of particles, and the varying hues assumed by powder under all conditions encountered on the battlefronts.

Army Training Film Notes

★ Training films and film bulletins produced and distributed by the War Department are now being shown approximately 200,000 times a month in the United States to soldier audiences, estimated at 23,000,000, according to a recent survey made by the Army Pictorial Service, Office of the Chief Signal Officer. These figures do not include overseas showings, which are estimated at approximately 100,000 per month.

Domestic distribution of training films and allied visual aids is accomplished through a system of 260 field libraries, operated by the Signal Corps at all major camps, posts and stations in the nine Service Commands and the Military District of Washington.

Under a decentralized system, the field libraries are supervised and supplied with films and equipment by a Central Library at the Service Command headquarters, which in turn draws films and equipment from the Library Distribution Division, Signal Corps Photographic Center, at Astoria, Long Island, and the Holabird, Maryland, Signal Depot.

Each film in the field libraries is periodically checked against the supply of prints and, on the basis of findings, unused prints are recalled and redistributed within Service Commands and to overseas theaters.

The Signal Corps Photographic Center at Astoria is making scores upon scores of training films for every branch of the Army Ground Forces and Army Service Forces. Similar films for the Army Air Forces are made at the Training Film Production Laboratory at Wright Field, Dayton, Ohio.

Among the basic training films that every soldier sees are those expounding the Articles of War, military courtesy and customs of the service, first aid, sex hygiene, and the safeguarding of military information. There are fundamental films also showing the proper formations of military drill and cleaning and care of the rifle. Beyond these, the Signal Corps has produced hundreds of specialized films devoted specifically to the instruction of troops in a particular arm or service.

Increased interest on the part of officer personnel is a notable trend in the Army's widespread use of the visual medium.

Briefs About Visual Matters:

♦ The New York State War Council has taken over the administration of the Film Division in that state. The Film Division was formerly a part of the State Office of War Training. Its film library, which is one of the largest of its kind, contains more than 1,500 prints of 250 different titles.

♦ Enrollments in summer sessions on visual aids are holding up well, despite war employment conditions. Increased interest on the part of educational people as a result of the war is credited.

♦ Safety education remains one of the big areas for visual education methods. Latest contribution to this cause is *For Safety's Sake*, new 16 mm. sound motion picture on safe use of hand tools just produced by Sarra, Inc., Chicago.

A SERVICE TO OUR READERS

Copies of These U. S. Office of Education Training Film Manuals are Available:

(SENT AT COST OF 6c EACH: USE THIS FORM AS ORDER)

AIRCRAFT WORK SERIES

- ☐ Blanking Sheet Metal on the Squaring Shear
- ☐ Blanking Sheet Metal with Hand Snips
- ☐ Sawing Template Metal
- ☐ Filing Template Metal
- ☐ Finish Forming by Hand
- ☐ Tube Bending by Hand
- ☐ Assembling in a Jig (Fitting and Lining Up)
- ☐ Assembling in a Jig (Drilling and Riveting)
- ☐ Drilling with Portable Drill Motors
- ☐ Dimpling and Countersinking
- ☐ Driving and Bucking Rivets
- ☐ Removing Defective Rivets
- ☐ Making a Master Contour Template

MACHINE SHOP WORK SERIES

Operations on the Engine Lathe Subjects

- ☐ Cutting an Internal Acme Thread
- ☐ Turning Work Held on a Mandrel
- ☐ Using a Steady Rest
- ☐ Using a Follower Rest
- ☐ Turning Work of Two Diameters
- ☐ Cutting a Taper with the Compound Rest and with a Taper Attachment
- ☐ Drilling, Boring and Reaming Work Held in Chuck
- ☐ Cutting an External National Fine Thread
- ☐ Turning a Taper with the Tailstock Set Over

Precision Measurement Subjects

- ☐ The Steel Rule
- ☐ The Micrometer
- ☐ Fixed Gages
- ☐ Height Gages and Test Indicators

Single Point Cutting Tools Subjects

- ☐ Fundamentals of Side Cutting Tools
- ☐ Fundamentals of End Cutting Tools

Bench Work Subjects

- ☐ Scraping Flat Surfaces
- ☐ Fitting and Scraping Small Bearings
- ☐ Reaming with Straight Hand Reamers
- ☐ Centering Small Stock
- ☐ Laying Out Small Castings
- ☐ Fundamentals of Filing
- ☐ Cutting Threads with Taps and Dies

Drill Press—Sensitive Drill Subjects

- ☐ Drilling a Hole in a Pin

Drill Press—Vertical Drill Subjects

- ☐ Locating Holes, Drilling and Tapping in Cast Iron
- ☐ Countersinking, Counterboring and Spotfacing

Drill Press—Radial Drill Subjects

- ☐ Drilling to a Layout and Spotfacing Cast Iron
- ☐ Drilling and Tapping Cast Steel

Operations on the Shaper Subjects

- ☐ Cutting a Keyway on End of a Finished Shaft
- ☐ Machining a Cast Iron Rectangular Block
- ☐ Machining a Tool Steel V Block

SHIPBUILDING SKILLS SERIES

Marine Machinery Installation Subjects

- ☐ How to Check and Surface Foundations
- ☐ Aligning and Installing Auxiliary Mechinery
- ☐ Filing and Installing Chocks
- ☐ Laying Out, Drilling and Tapping Flanges on Sea Chest
- ☐ Installing Valves and Strainer on Sea Chest
- ☐ Laying Out and Installing Stern Tube, Tail Shaft and Propeller (Part I—Running a Temporary Line)
- ☐ Laying Out and Installing Stern Tube, Tail Shaft and Propeller (Part II—Laying Off Bulkheads)

Coppersmithing Subjects

- ☐ Bending Copper Tubing to a Wire Template
- ☐ Brazing Flanges with Spelter
- ☐ Brazing Flanges with Silver Solder

Pipefitting Subjects

- ☐ Measuring Pipe, Tubing and Fittings
- ☐ Cutting and Threading Pipe by Hand
- ☐ Cutting and Threading Pipe on a Power Machine
- ☐ Making a Cold Bend on a Hand Powered Machine
- ☐ Covering Hot and Cold Pipes

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JULY EVENTS

SIXTH MIDWESTERN FORUM COMING JULY 21 AND 22

♦ The Sixth Annual Midwestern Forum on Visual Teaching Aids, held in cooperation with the Zones III and IV of the Department of Visual Instruction of the National Education Association will be held at the University of Chicago on July 21 and 22. The first annual meeting of the Educational Film Library Association will be held during the same period, July 20 and 21.

The evening session on Friday, July 21, will open on the theme: "What Can Schools Learn from Wartime Uses of Visual Aids?" Chairman of this panel is William F. Kruse, Manager, Films Division of Bell & Howell. The Saturday morning session will center on the theme: "The Unique Contribution of Visual Aids in Developing Intergroup Understandings." Joseph B. Dickman, Director of Science and Visual Instruction of the Chicago Public Schools is the Chairman.

The Saturday afternoon session will be devoted to the subject: "Visual Aids in the Postwar Period" under the chairmanship of Prof. Stephen M. Corey, Educational Advisor to Encyclopedia Britannica Films and Professor of Educational Psychology at the University of Chicago.

The Executive Committee in charge of Midwestern Forum is headed by William C. Reavis, Professor of Education at the University of Chicago. Joseph L. Dickman is Secretary and Harry O. Gillett, Principal of the University Elementary School at the University of Chicago, is the Treasurer. Harry E. Erickson, sales manager of 16 mm. equipment for the RCA Victor Division of RCA at Chicago, is in charge of exhibits.

J. C. Beddington, CBE, who heads official British war film production, was the guest of the visual industry at a luncheon given in his honor in Chicago recently.

Educational Film Library Association Meets in July

♦ EFLA will hold its first annual meeting of members and visitors in cooperation with the Sixth Midwestern Forum, July 20-22.

MEN of the VISUAL INDUSTRY

♦ Paul Thornton recently was named director of the Educational Department of RCA Victor Division, with headquarters in Camden, N. J. Mr. Thornton joined the Educational Department in 1940, and had served as assistant director for two years prior to his latest promotion.

Prior to 1940 he taught for 12 years in elementary schools, high schools and colleges in the Midwest and South. He also served for some time in a supervisory post with the State Education Department in Louisiana.

The department which Mr. Thornton directs was established in 1911 as a service for schools. It now assists teachers and school administrators in the selection and utilization of records, phonographs, radios, sound systems, movie projectors and other equipment which RCA makes available for schools.

An important wartime service is that of providing radio and other technical information for pre-induction training programs. Recently Mr. Thornton prepared and released a new 16 mm. sound film entitled, *Radio at War*.

MR. PAUL THORNTON

MR. O. V. SWISHER

♦ O. V. Swisher, manager of RCA Victor's 16-millimeter Commercial Department, has been with RCA Photophone since 1928. Between 1929 and 1935 he served successively in the Chicago office as District Manager of the RCA installation and service department, Division Manager of the same department, and district sales engineer. He was transferred to Camden in 1938 as Commercial Engineer of the RCA Commercial Sound department, then was advanced to his present position two years ago.

Prior to joining RCA, he was in electrical and radio sales and service in West Virginia.

During World War I he served with the U. S. Army Signal Corps. He was with the A.E.F. in France at the Army Signal School, Langres, and the Second Aviation Instruction Center, Tours.

A native of Grafton, W. Va., Swisher was educated in public schools of Fairmont, W. Va., and studied radio at Dodge Institute, Valparaiso, Indiana.

NEXT MONTH: *Other personalities will be introduced in these pages.*

THEY SERVE AMERICA A REPORT ON HAWAII

Pictures for Pacific outposts: the first truck load of 16 mm. projectors arrives for the Hawaiian branch of OMPS. (Left) Edwin J. Young of Motion Picture Enterprises, (Right) Capt. A. C. Hilliger, Special Service officer organizing the branch.

♦ ALL OVER the vast battle area of the South Pacific from Midway to Guadalcanal, in Australia, New Guinea and on islands that are scarcely a dot on the map, America's fighting forces are getting a taste and touch of home through the motion pictures supplied by the Overseas Motion Picture Services exchange based at Hawaii. How that exchange developed and what it is doing today provides an excellent view of the work which the O.M.P.S. is doing for the servicemen all over the world's battlefronts.

ARMY RECOGNIZES NEED

In the days immediately following Pearl Harbor the 16 mm. motion picture field was very limited. The few projectors were mostly in the educational field; films were not plentiful and entertainment subjects were scarce.

The need for this form of entertainment for our forces was recognized by the Army and in May, 1942 the Hawaiian branch of the O.M.P.S. was inaugurated with Captain Arthur C. Hilliger as Special Service Officer, a very active and progressive officer who could foresee the future demands and requirements for 16 mm. equipment and films by the services, both as an entertainment and a training medium. Here was an opportunity and a need for service and cooperation which was soon answered.

APPEALS BRING RESULTS

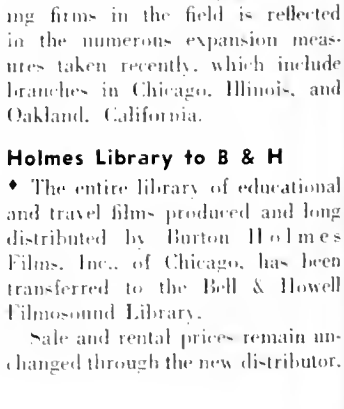
Motion Picture Enterprises, distributors and representatives of Victor Animatograph Corporation enthusiastically responded to Captain Hilliger's appeal and urgent messages and pleas to the mainland soon brought results in the way of equipment, films and accessories. Edwin J. Young, owner of Motion Picture Enterprises set up a greatly enlarged repair and service department, a library which now contains hundreds of subjects, and a good accessory department to fill the needs for the hundreds of Victor projectors scattered throughout the area. He cooperated with Captain Hilliger in the training of G. I. projectionists and operators who were assigned to the many scattered units of the Pacific.

Future movie operators for Pacific bases: Captain A. C. Hilliger, Army Special Service officer in charge of the Hawaiian exchange of OMPS, teaches a group of G. I.'s the technique of motion picture projection at the special service studio set up by Motion Picture Enterprises.

Today the Hawaiian Exchange of the O.M.P.S., under the direction of Captain Donald V. LeGoullon is doing a fine job in maintaining the high morale among the men of the South Pacific Area, with a film library consisting of about 450 features. Major Orton H. Hicks of New York Headquarters, O.M.P.S. recently commented "There is every indication that one of the most smoothly functioning operations of all the 17 exchanges (as of Sept. 1943) is that of the Hawaiian O.M.P.S. Exchange".

MAINTAIN HIGH MORALE OF MEN

The achievements of the 16 mm. motion pictures in the area were well described by Lt. Gen. Robert C. Richardson, Jr., Commanding Officer of the Central Pacific Area, when he declared "there is probably no form of entertainment which has such universal appeal as motion pictures. No matter where our soldiers happen to be, no matter what hardships they are called upon to endure, motion pictures take them out of disagreeable environment and provide relaxation from the most arduous duty. They are one of the greatest factors in maintaining high morale of the armed forces."



Mr. Young talks it over with one of the Army's OMPS staff as films and equipment are readied for distribution to South Pacific bases and outposts.

Gutlohn Opens Dallas Branch

♦ Walter O. Gutlohn, Inc., New York, distributors of 16 mm. Sound Films, announce the opening of an additional branch office located at 3021/2 South Harwood Street, Dallas 1, Texas.

The development of this organization into one of the largest distributing firms in the field is reflected in the numerous expansion measures taken recently, which include branches in Chicago, Illinois, and Oakland, California.

Holmes Library to B & H

♦ The entire library of educational and travel films produced and long distributed by Burton Holmes Films, Inc., of Chicago, has been transferred to the Bell & Howell Filmosound Library.

Sale and rental prices remain unchanged through the new distributor.

NEWS of VISUAL EQUIPMENT

♦ A new "Screen Finder" to meet a long-felt need among all users of motion pictures, slide films, slides and opaque projectors has just been released by the Radiant Manufacturing Company of Chicago. This convenient slide pocket scale enables any user to obtain perfect projection results by answering important questions quickly and accurately. It shows at a glance:

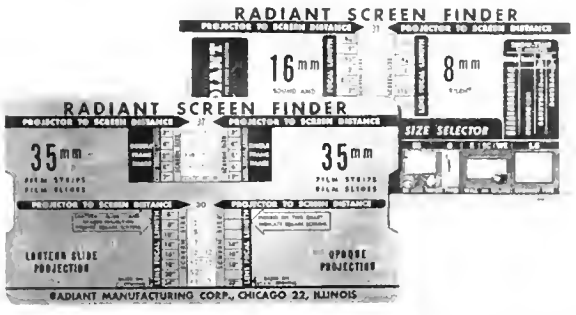
1. The proper screen size for each distance between screen and projector with a given lens.
2. The proper screen model to select.
3. The proper distance between screen and projector to obtain any desired size of picture.
4. The proper lens to use to obtain perfect results for each distance.
5. Correct show time for 8 mm. and 16 mm. silent and 16 mm. sound films.

The Radiant Screen Finder is easy to read, durable and compact. It answers all "movie" questions on one side—and all "still" questions on the other. The list price of this unique device is only 50c—but it is furnished without charge to all photographic and educational dealers and their personnel upon request on dealer's letterhead.

♦ Keen was the interest, and close the competition for War Bond Awards in DeVry Corporation's 1944 Motion Picture Camera & Projector Design Competition. Winners include several members of the armed forces, three Canadians, and an occupational variety typical of the universality of the growing interest in motion pictures as a hobby.

"Details of the prize winning designs and mechanical suggestions," explains DeVry President William C. DeVry, "must await V-Day and the resumption of civilian motion picture camera and projector manufacture. It can be said, however, that the designs, ideas and suggestions submitted indicate keen interest in and definite opinions regarding postwar's motion picture equipment, particularly in the amateur field."

Designs submitted by the winning participants included 16 mm. cameras and 16 mm. sound and silent motion picture projectors. The contest served the twofold purpose of providing the users' own ideas about his postwar camera and projector as well as suggesting potential improvements in the equipment to improve its quality and endurance as well as its performance.



Here it is: the new Radiant Screen Finder, one of the newest innovations developed for the assistance of film users in industry, education and government by this Chicago manufacturer.

National Directory of Safety Films

♦ A limited number of copies of the complete National Directory of Safety Films recently issued by the Editors of Business Screen, are still available to film users in industry and education.

These copies are available, as a wartime service, at printing and mailing cost of 15c. Address: *Safety Directory, Business Screen, 157 E. Erie, Chicago.*

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers, specializing in products and services for the use of projected training and informational aids in industry, education and government, are at your service. A majority of firms listed can provide official War Films, U. S. Office of Education training subjects, and other visual aids as well as screens, projectors (to eligible purchasers) and accessories. Projection service facilities, including operator and equipment, may also be arranged through a majority of the firms listed. For specific information concerning locations not listed please address the Reader Service Bureau, Business Screen Magazine, 157 E. Erie, Chicago, Illinois.

SEE THESE CONVENIENT REGIONAL SOURCES FOR EQUIPMENT, FILMS AND SERVICE

EASTERN STATES

CONNECTICUT

Hebert Studios, Inc., 53 Allyn St., Hartford 3, Conn.

DISTRICT OF COLUMBIA

The Jam Handy Organization, Inc., Transportation Bldg., Washington, D. C.

MARYLAND

Kunz Motion Picture Service, 432 N. Calvert St., Baltimore 2, Md.

Stark Films, 537 N. Howard St., Baltimore 1, Md.

MASSACHUSETTS

Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE

A. H. Rice and Co., Hollis, N. H.

NEW JERSEY

Audio-Film Libraries, 41 Washington St., Bloomfield, N. J.

NEW YORK

Buchan Pictures, 79 Allen St., Buffalo, N. Y.

Bertram Willoughby Pictures, Inc., Suite 600, 1600 Broadway, New York City.

The Jam Handy Organization, Inc., 1775 Broadway, New York City.

King Cole's Sound Service, 203 E. 26th St., New York City.

John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA

Kunz Motion Picture Service, 1319 Vine St., Philadelphia 7, Pa.

SOUTHERN STATES

FLORIDA

Ideal Southern Pictures Co., 9536 N. E. Second Ave., Miami, Fla.

GEORGIA

The Distributor's Group, Inc., 756 W. Peachtree St., N. W., Atlanta, Ga.

Reagan Visual Education Company, 131 Marietta St., Atlanta 3, Ga.

Stevens-Ideal Pictures, 89 Cone St., N. W., Atlanta, Ga.

KENTUCKY

D. T. Davis Co., 231 W. Short St., Lexington, Ky. (Also Louisville, Ky.)

LOUISIANA

Stanley Projection Company, 211½ Murray St., Alexandria, La.

Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

Feltus B. Stirling, 2005 Ferndale Ave., Baton Rouge 15, La.

Ideal Southern Pictures Co., 336 Barrone St., New Orleans, La.

TENNESSEE

Ideal Pictures Corp., 18 S. 3rd St., Memphis, Tenn.

Frank L. Rouser Co., Inc., P. O. Box 2107, Knoxville 11, Tenn.

VIRGINIA

Ideal Pictures, 210 E. Franklin St., Richmond, Va.

MIDWESTERN STATES

ILLINOIS

Ideal Pictures Corp., 28 E. 8th St., Chicago, Ill.

The Jam Handy Organization, Inc., 230 N. Michigan Ave., Chicago, Ill.

Garland B. Fletcher Studios, 218 W. Main St., Urbana, Illinois.

IOWA

Pratt Sound Film Service, 805 Third Ave., S. E., Cedar Rapids, Ia.

KANSAS-MISSOURI

Central Visual Education Service, Broadview Hotel Bldg., Wichita, Kas.

Kansas City Sound Service Co., Room 1, Lobby floor, 926 McGee St., Kansas City 6, Mo. (Ideal Pictures)

MICHIGAN

W. D. Engleman Co., 701 W. Warren Ave., Detroit, Mich.

The Jam Handy Organization, Inc., 2821 E. Grand Blvd., Detroit 11, Mich.

Capital Film Service, 217 W. Grand River, East Lansing, Mich.

This Directory Is Restricted to Specializing Visual Dealers

*For the convenience of Business Screen readers, listings in this National Directory are restricted to qualified visual dealers and branches of national organizations. Qualified dealers should apply for application form. (See address above.)

Your Inquiry Is Invited

MINNESOTA

Film Preview, 1504 Hennepin Ave., Minneapolis, Minn.

OHIO

Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio.

The Jam Handy Organization, Inc., 310 Talbott Building, Dayton, Ohio.

Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.

Martin Sound Systems, 610 State Ave., N. E., Massillon, Ohio.

Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

WISCONSIN

Photoart House, 844 N. Plankinton Ave., Milwaukee, Wisc.

WESTERN STATES

CALIFORNIA

Donald J. Clausonthue, 1829 N. Craig Ave., Altadena, Calif.

Ideal Pictures Corp., 2408 W. 7th St., Los Angeles, Calif.

The Jam Handy Organization, Inc., 7046 Hollywood Blvd., Los Angeles, Calif.

Screen Adettes, Inc., 1709 W. 8th St., Los Angeles 14, Calif.

Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.

Screen Adettes, Inc., Sixty-Eight Post Bldg., 68 Post St., San Francisco 4, Calif.

Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Los Angeles Co., Calif.

COLORADO

Ideal Pictures Corp., 1739 Oneida St., Denver, Colo.

OREGON

Ideal Pictures Corp., 915 S. W. 10th Ave., Portland, Oregon.

Moore's Motion Picture Service, 306-310 S. W. Ninth Ave., Portland 5, Ore.

Screen Adettes, Inc., 314 S. W. Ninth Ave., Portland 5, Ore.

TEXAS

National-Ideal Pictures, 2024 Main St., Dallas, Texas.

Visual Education, Inc., Twelfth at Lamar, Austin, Texas. Also, 216 Gulf States Bldg., Dallas 1, Texas.

HAWAII

Motion Picture Enterprises, 121 S. Beretania Honolulu, T. H.

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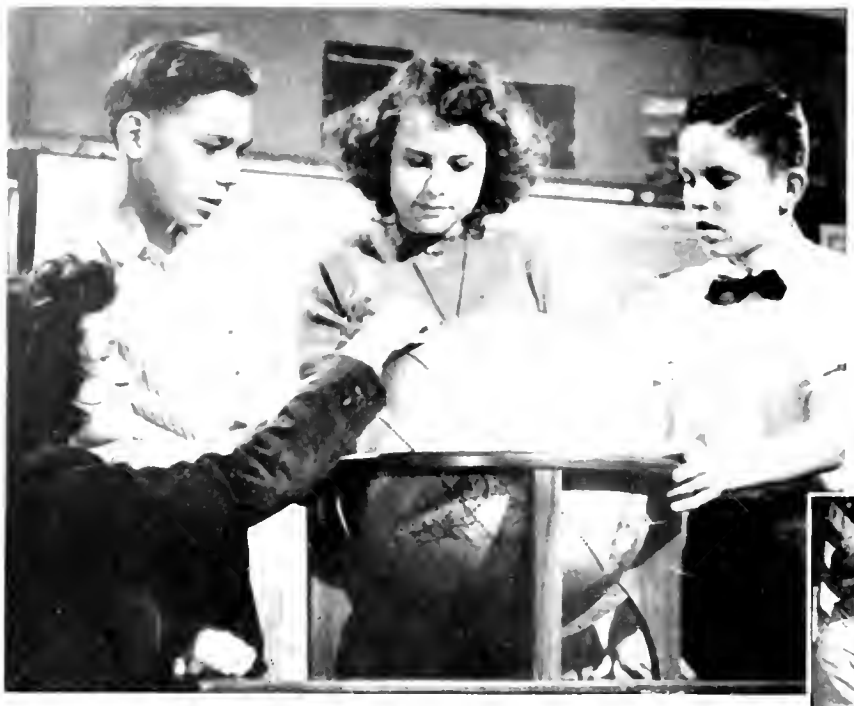

Scenes from "Pop Rings the Bell" the two-reel sound motion picture produced for the members of the National School Service Institute.

The future begins where "Pop Rings the Bell"

The vision of the National School Service Institute lies ahead—where the hearts of all those who love children are set. In America's schools the thinking patterns for America's future are to be determined.

Alert to the possibilities for young minds rightly trained to think, the NSSI has provided a sound motion picture which is contributing to this vision on a practical operating basis. It has been our privilege to assist in this effort of the NSSI which is making communities throughout the nation conscious of all that is at stake.

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WASHINGTON 6, D. C. — Transportation Building — District 0611
DETROIT 11 — 2900 East Grand Boulevard — MAdison 2450
DAYTON 2 — 310 Talbot Building — ADams 6289
CHICAGO 1 — 230 N. Michigan Boulevard — STAte 6758
LOS ANGELES 28 — 7046 Hollywood Boulevard — HEmpstead 5809

Are We Prepared For Their Return?

PAGE 13

Reynolds "Recital of Faith"

Visual Training for Veterans

Television: A Producer Challenge

Industry's Postwar Films

No. 8 1944 • THE NATIONAL MAGAZINE OF VISUAL AIDS TO INDUSTRY & EDUCATION

VITAL CARGO TO PROTECT VITAL LIVES

A crowded troop train, bound for embarkation port, waits in a great midwest terminal . . . for the arrival of Victor 16mm Animatophones. Today, Sound Motion Picture Equipment, portraying invasion problems, is as vital to the armed forces as tanks and planes. Thousands of Victor Animatophones are in use by the Armed Forces all over the World.

This faster, better training method has done much to transform our soldiers into efficient, fighting men — able to protect themselves — learning tactics, topography and the use of new weapons, through the Sight, Sound and Sequence of Motion Pictures. A peacetime world will benefit from Victor's wartime achievements.

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E. I. duPont de Nemours
Eberhard Faber Pencil Co.
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Godfrey L. Cabot, Inc.
The B. F. Goodrich Company
Hart Schaffner & Marx
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Johns-Manville Corporation
Kenwood Mills
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Pepsi-Cola Co.
Socony-Vacuum Oil Company, Inc.
Swift & Company
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OR ANY OTHER CARAVEL CLIENT

TO BUSINESS MEN: If, as you so fervently declare, the American Way of Life is worth *defending,* then by all that's holy it is worth *explaining* . . .

—For what it is: not merely the most practical way of providing the people of a great nation with the things they need for safe and comfortable living *but the most effective way of insuring "Freedom of Speech, Freedom of Religion, Freedom from Want, Freedom from Fear."*

—Worth *explaining,* we say, to the millions of young people, now in secondary schools and colleges, who will shortly need a stout-hearted faith in the American system of free enterprise in order to preserve it and direct it into proper patterns.

* * *

Granted the premise, where is the logical place to start?

Why, in the SCHOOLS and COLLEGES, of course—and to this end the motion picture screens *in many thousands of classrooms and assembly halls* are all set up to convey the message of American business to the future rulers of America.

Two warnings: (1) Your motion picture must be educational, free from self-exploitation; (2) It should be made by a producer experienced in school distribution.

If your company qualifies, we can readily show you how you can take a vital and profitable part in "Advertising's Most Important Job." Write today for full particulars.

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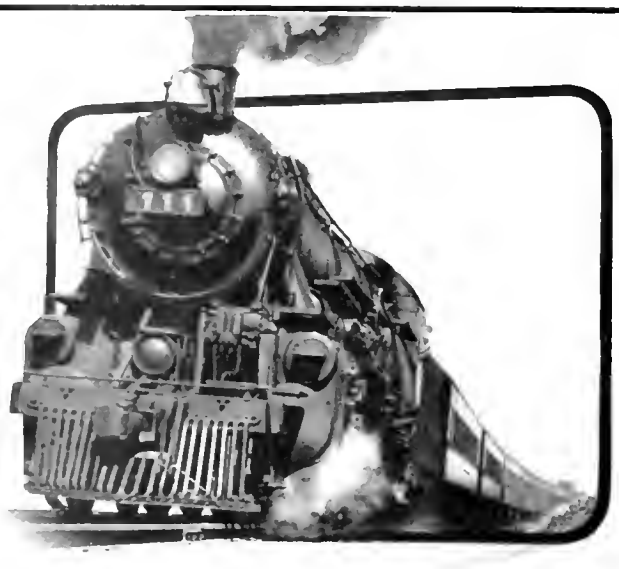


DA-LITE

Reg. U. S. Pat. Off.

STEREO-SILVER SCREENS

for THREE-Dimensional Projected Pictures

Where it is desirable to illustrate the natural perspective of objects as they appear to normal vision, THREE-Dimensional projected pictures offer unmatched advantages. They show spacial relationships of objects as no other method can.

Simplified methods for polarizing light, by which essential picture image separation is obtained, have developed this marvelous, comparatively new projection tool to a point where its use will soon be widespread. The Armed Forces are utilizing it most effectively in training programs on many subjects, as well as in actual combat work against the enemy.

THREE-Dimensional projection, creating amazing realism and fascinating interest, has numerous valuable applications awaiting it in industry and in all educational fields employing visual teaching aids.

Because the illusion of *depth* depends on polarization of light (which separates the picture images for the right and left eye), THREE-Dimensional pictures require a special screen that does not depolarize the light while reflecting it.

Collaborating closely with the foremost manufacturers of THREE-Dimensional projection equipment and slides—(including The Polaroid Corporation, Society for Visual Education, Inc. and the THREE-Dimension Company)—Da-Lite Screen Company has pioneered in developing suitable screens for THREE-Dimensional projection.

The Da-Lite *STEREO-SILVER* Screen has a specially processed surface designed to reflect without depolarizing, provides good illumination, yet is adaptable to various mountings to meet all installation needs.

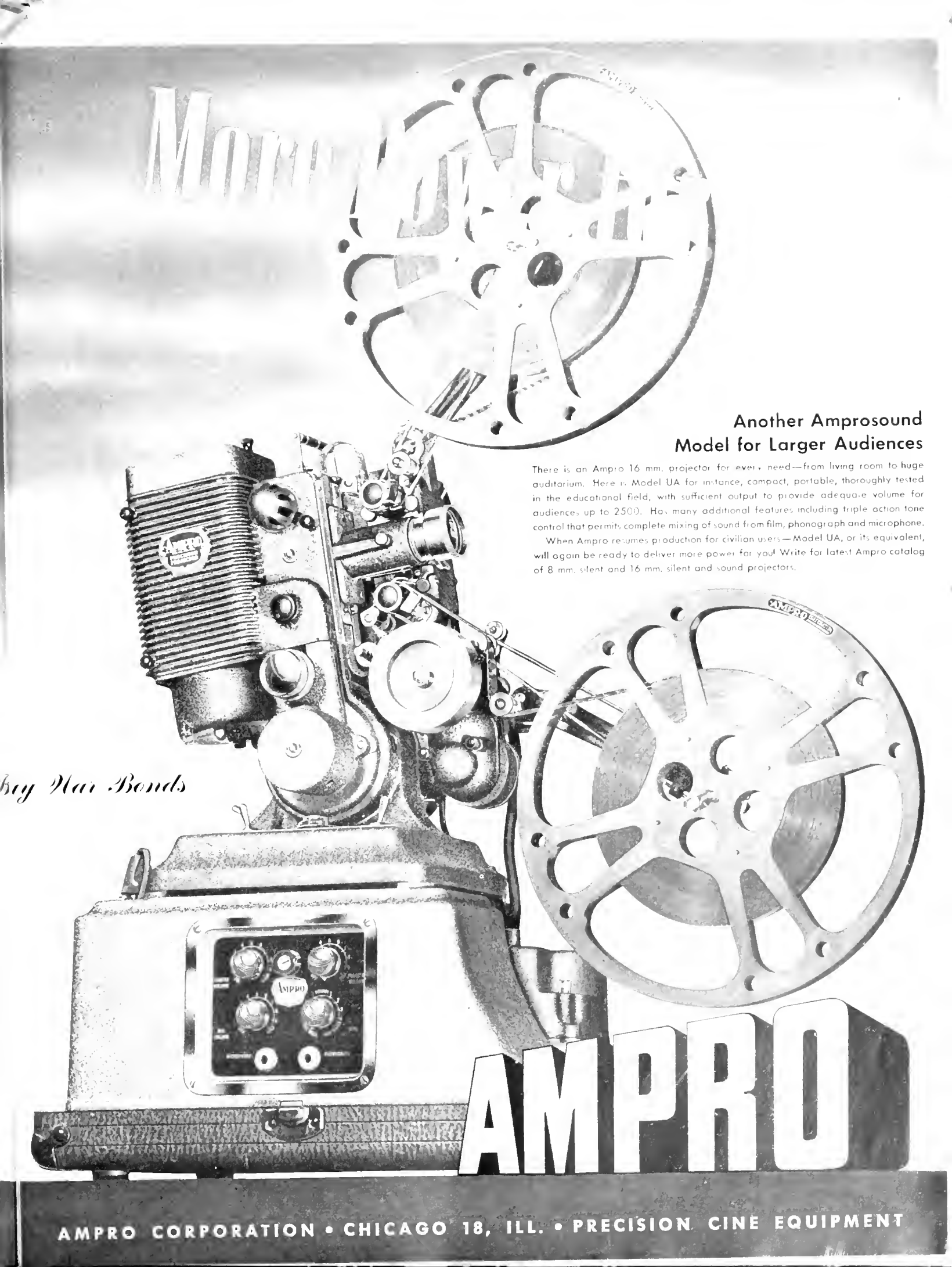
TRIPOD mounts, WALL and CEILING models, as well as FRAME-TYPE mounts, can be obtained.

Ask your Visual Education Dealer for details or write us.

DA-LITE SCREEN COMPANY, INC.

Dept. 9BS, 2723-27 North Crawford Avenue, Chicago 39, Illinois

BUY EXTRA WAR BONDS . . . NOW . . . BUY MORE THAN BEFORE!



Another Amprosound Model for Larger Audiences

There is an Ampro 16 mm. projector for every need—from living room to huge auditorium. Here is Model UA for instance, compact, portable, thoroughly tested in the educational field, with sufficient output to provide adequate volume for audiences up to 2500. Has many additional features including triple action tone control that permits complete mixing of sound from film, phonograph and microphone.

When Ampro resumes production for civilian users—Model UA, or its equivalent, will again be ready to deliver more power for you! Write for latest Ampro catalog of 8 mm. silent and 16 mm. silent and sound projectors.

AMPRO CORPORATION • CHICAGO 18, ILL. • PRECISION CINE EQUIPMENT

LATE NEWS of the Industry

Ampro Joins General Precision

★ GENERAL PRECISION EQUIPMENT CORPORATION has acquired control of Ampro Corporation of Chicago, one of the well known manufacturers of motion picture projectors for 16 mm. and 8 mm. film. Earle G. Hines, president of General Precision Equipment Corporation, in making the announcement stated that the acquisition was for cash, that no new stock of General Precision Equipment will be issued in connection therewith and that the present management of Ampro will continue in charge of operations.

Some of the subsidiaries of General Precision Equipment Corporation have long been the leading manufacturers of standard 35 mm. motion picture equipment for theatres but have not made 16 mm. or 8 mm. film equipment. In October, 1943, General Precision Equipment Corporation acquired all of the stock of Motion Picture Engineering Corporation of Chicago which company specializes in projection equipment for industrial and commercial uses.

"With the acquisition of Ampro Corporation, the motion picture activities of General Precision will now include apparatus covering not only the professional 35 mm. field, but also the requirements of 16 mm. and 8 mm. equipment for use by educators, industry and the amateur or 'home movie' enthusiasts," Mr. Hines said. "Thus the products will cover the complete range of equipment for motion picture projection. Other related equipment such as 16 mm. and 8 mm. cameras will be added when war activities cease and such development programs can be undertaken."

"During the war period the use of 16 mm. motion picture film and projection equipment has been tremendously expanded since all branches of the armed services have used it for training programs, for extension teaching and for entertainment. The value of motion picture instruction films has long been recognized by some of the leading schools of the country. The successful use by the armed forces on a great and varied scale has shown educators and industrial concerns as never before, the rapidity with which information can be imparted to groups of students by this method. Undoubtedly use of visual aids to educational programs will, when peace comes, be greatly stimulated by this experience."

Notes on this Issue:

♦ The article on Television (see page 181) is by H. C. GIBSON, general manager of Springer Pictures, New York City. As an experienced member of the industrial film production fraternity, he expresses one viewpoint on the television era just ahead.

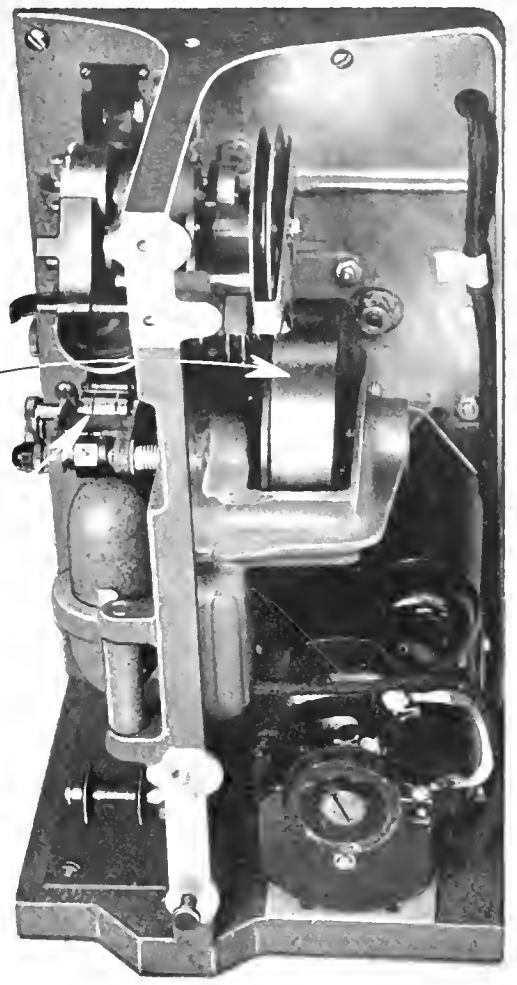
♦ Add to the Roll of Honor on Page 7A of the special section in this issue, the name of MALCOLM P. EWING, Lt. j.g. USNR, son of JASPER EWING of Baton Rouge, La.

♦ *Coming Events:* Sharp focus on industrial postwar use of the visual medium will be the feature of the next BUSINESS SCREEN. Special articles and source lists of sales and service training films, case histories of successful efforts in this field and other pertinent data will be included. Also in the making is another special section on the U. S. Office of Education program, bringing this story up to date.

Issue Eight BUSINESS SCREEN MAGAZINE Volume Five

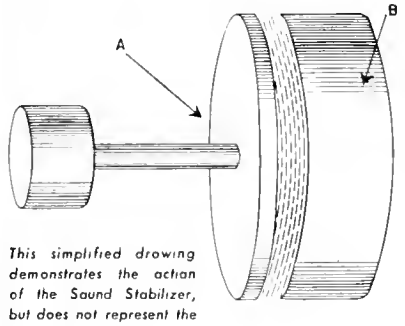
Issue Eight, Volume Five of Business Screen, the National Magazine of Visual Aids to Industry and Education. Issued by Business Screen Magazines, Inc., 157 East Erie Street, Chicago 11, Illinois on August 20, 1944. O. H. Coelln, Jr., Editor; E. T. Lundgren, Production Director; Felice Mendenhall, Eve Erickson, Editorial Assistants. Staff Members in Service: Lt. Robert Seymour, Jr., Pvt. H. L. Mitchell. Subscription: $2.00 for eight consecutive numbers (one complete volume). Foreign and Canada $3.50, including duty.

You Get Unvarying Pitch WITH THE RCA Sound Stabilizer



Because it maintains uniform film speed for sound take-off

Slight variations of film speed at the point the sound track is scanned can cause noticeable changes in pitch. The RCA Sound Stabilizer is an oil-driven flywheel that gently smooths out film speed variations for sound scanning. This action makes it possible for the RCA projector to maintain sound reproduction at the exact pitch at which it was originally recorded.



This simplified drawing demonstrates the action of the Sound Stabilizer, but does not represent the actual construction.

HOW IT WORKS (see drawing): The film rotates the very light drum and housing (a). Through the cushion of oil (actually sealed in the housing) the flywheel (b) is driven. Thus—flywheel filtering with the smoothness of fluid drive.

OTHER FEATURES: The new RCA 16 mm. sound projector will include other important advances in projector design, such as even-tension take-up; completely removable gate; aspheric condenser, for efficient use of light; amplifier with inverse feedback, for true sound; centralized controls; rewind without changing reels; one point oiling; standard tubes and lamps; aerodynamic cooling to prevent hot spots; lower film loop adjustable while in operation; theatrical framing; large slow speed sprockets to increase film life.

AVAILABILITY: Because of military demands these new RCA projectors are not available for civilian use. But plan to see the new RCA projector before you purchase post-war equipment. RADIO CORPORATION OF AMERICA, Sound Equipment Section, Camden, New Jersey.

RCA 16MM. PROJECTORS

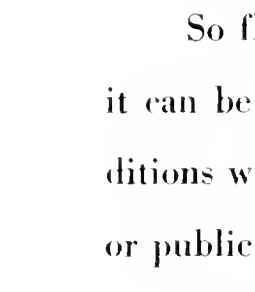
RCA

BUY MORE WAR BONDS

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

LEADS THE WAY.. *In Radio . . Television . . Tubes . . Phonographs . . Records . . Electronics*



Never has planning for the future been more difficult than in this constantly changing world.

So flexible is the sound motion picture medium that it can be readily adapted to new problems and new conditions whether they involve manufacture. training, selling or public relations.

We invite an examination of our product, and not just ONE picture but MANY. If our pictures indicate a continuity of thinking and a lively appreciation of these constantly varying conditions. then perhaps we should be your motion picture counsel.

Creators and Producers of Sound Motion Pictures for Commercial. Educational and Television Application.

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

WILLING hands are not enough

Working in your plant *today* . . . are men and women who are *eager* to do a better, finer job to help win the war faster . . . who *want* more responsibility . . . who would be *more* valuable to you . . . if only they had the *skill.*

You have skilled jobs you'd give them . . . if *only* they had the *skill.*

You can *give* them that skill . . . now . . . not in years . . . but in a few short *weeks.*

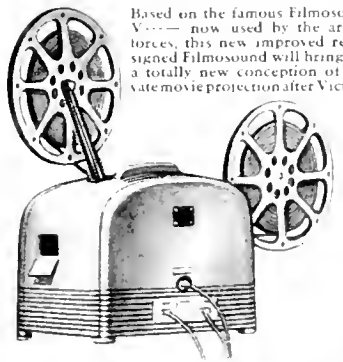
Motion pictures have the *power* to build into your willing, *un*skilled people, the skills they need . . . the skills *you want.* And build them *fast!*

We, at Bell & Howell, have *proved* it. We've made expert specialists in optical work out of people who'd *never* worked with their hands before . . . and today they're turning out thousands of flawless optical devices for war use.

Aircraft plants, radio and radar makers, ship builders, engine manufacturers . . . industries that *need* skilled hands . . . are *teaching* those skills to thousands . . . teaching them *fast* . . . completely . . . unforgettably . . . with *movies.*

And movies are waiting to do the same important work for you.

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*



Based on the famous Filmosound Y—— now used by the armed forces, this new improved re-designed Filmosound will bring you a totally new conception of private movie projection after Victory.

Opti-onics
BELL & HOWELL
* Trade-mark registered

*Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today, Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.

WE'VE PROVED IT!

Illustrated are scenes from the B&H-produced series of sound films on optical craftsmanship, which prove beyond doubt that even the highest precision skills *can* be developed with motion pictures.

Most of the people who learned the art of lens making with the *visual* aid of this film had no unusual manual skill before . . . yet today they are accomplished craftsmen.

The film *Optical Craftsmanship* is part of the war training program of the U. S. Office of Education, and is distributed through the B&H Filmosound Library.

Buy TWICE the Bonds . . .
Bring Victory TWICE as fast

BELL & HOWELL COMPANY
1808 Larchmont Ave., Chicago 13
Please send Filmosound Library Catalog of . . . training films . . . morale and recreational films and new Filmosound Y—— Circular
Firm
Address
City State
Requested by

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY *Bell & Howell*

G-E PROJECTION LAMPS... *Engineered for Greater Screen Brightness*

TODAY, G-E projection lamps are helping our armed forces and workers learn faster and better by seeing. Tomorrow they'll make far better training in business and schools.

In war, in peace, you can depend upon G-E quality

1. Designed for specific optical needs and for maximum performance.
2. Differentially coiled filaments for uniform brightness (on most popular sizes).
3. Built for extreme precision.
4. Rigidly inspected for correct source dimensions and accurate position.

G-E MAZDA LAMPS

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

Hear the General Electric radio programs — The G-E All-Girl Orchestra', Sundays 10 p. m. EWT, NBC. The World Today news, every weekday 6:45 p. m. EWT, CBS.

SELL MASS AUDIENCES SIGHT AND SOUND WITH DeVRY MOBILE UNITS

DeVRY *theatres-on-wheels* contain either a 16 mm. or 35 mm. motion picture sound projector, sound screen, powerful amplifier and loud-speaker, microphone, phonograph, radio—and radio mixing panel for all public address facilities. Self-contained power plant provides electrical energy required to operate the entire equipment efficiently. TO RIGHT is Mobile Unit No. 1, with rear-vision-projection mirror that throws image to screen mounted on truck top. Can be used effectively in half light or deep shadow. BELOW is interior of standard Mobile Unit No. 2 with which detached portable screen is used. Projector and auxiliary sound equipment can be used elsewhere than with unit.

ABOVE is shown heavy-duty Mobile Motion Picture Sound and Broadcasting Unit No. 3 as built by DeVRY for the Russian Army—an ideal unit for cross-country tours, in that sleeping and toilet accommodations are provided for two

Get there FIRST and tell the WHOLE STORY of YOUR POSTWAR WARES through this PROVEN MEDIUM

Postwar sales planning begins *NOW* for the tremendous task of re-establishing markets, consumer re-education, and nation-wide merchandising. Educating customers to want and use—and training service personnel to maintain—postwar products becomes a major problem for Industry.

Think ahead of the field—plan now to put your postwar sales story before selected *mass audiences* at rural and urban centers with Sight and Sound. Present your *entire* product and service story in the compelling, understandable language of the Screen.

For your postwar market-winning and field-training jobs, DeVRY provides a tireless, unfailing salesman-instructor in DeVRY Mobile Motion Picture and Sound Amplifying Trucks, adaptable to your special needs in types as shown. These mobile units make possible the screen appearance of your products at 10, 20, or 30 showings a day; make it possible to reach the smallest communities and rural crossroads with a complete and convincing demonstration of your products.

Include DeVRY *"theatres-on-wheels"* in your postwar plans to win and hold new markets through the proven force of Sight and Sound —America's secret weapon in the training and informing of our armed forces and our war industries.

While DeVRY plants and facilities are now devoted 100% to the war effort, NOW is not too soon for you to be filing with your postwar plans data such as this in regard to DeVRY equipment. DeVRY CORPORATION, 1111 Armitage Ave., Chicago 14, Illinois.

Back the Boys with Your War Bonds!

DeVRY
16mm. Sound-on-Film Projector

ARMY E NAVY

STARS awarded for continued excellence in the production of motion picture sound equipment.

DeVRY
New York • CHICAGO • Hollywood

AN OUTSTANDING NAME IN THE CINEMATIC WORLD

DeVRY CORPORATION, 1111 Armitage Ave.
Chicago 14, Illinois

Gentlemen: We are interested in utilizing DeVRY'S *theatres-on-wheels* to expedite our postwar sales, service and consumer educational plans. Free and without obligation, send full particulars on the items checked below:

- ☐ DeVRY Theatre-on-Wheels Unit No. 1
- ☐ DeVRY Theatre-on-Wheels Unit No. 2
- ☐ DeVRY Theatre-on-Wheels Unit No. 3
- ☐ DeVRY 16 mm. Portable Sound Motion Picture Projectors

Name ... Title ...
Company ...
Address ...
City ... State
☐ Check here if you now use motion pictures

HIS FAITH MOVED MOUNTAINS ..GAVE AMERICA MORE PLANES

A MAN pledged all he had for his faith—and moved mountains. Mountains of complacency, apathy, ignorance—then mountains of rock and earth others had undervalued. His faith forged a sharper sword and a stronger shield for America's hour of need.

The Congressional Record tells how, long before Pearl Harbor, he dispelled our illusion of plenty of aluminum for a mighty air fleet—showed the folly of depending on foreign bauxite ores. Then, as Senator Truman said, "He risked his private business and mortgaged it to make aluminum for the benefit of the country as a whole when the country desperately needed it."

Bauxite deposits were opened in Arkansas. In five months there arose on Alabama cornfields a square mile of the world's only plants that receive raw bauxite at one end, deliver at the other *aluminum shapes ready for assembly into planes.*

The dramatic story of R. S. Reynolds and the Reynolds Metals Company is told in the intensely interesting motion picture, "A Recital of Faith." It's a story of aluminum production by new methods—of aluminum in planes, autos, railway cars, construction, industriol processing—of aluminum foil for the safe packaging of the service man's foods and medical supplies. The film answers the question, "What does the future hold for aluminum?"

See "A RECITAL OF FAITH"

The story of an industry dedicated to Victory

Showing in many movie theatres—and available for engineering groups, technical societies, clubs (Rotary, Lions, Kiwanis, Sales Executive, etc.), purchasing agents, foreman training and other groups.

MOTION PICTURES — SLIDE FILMS

Sm

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK

"When pent-up demand has been met, in the first two or three years after the war, mass selling should be developed to keep the nation's enlarged industrial machine operating at full capacity. In addition to selling people individually, we must find ways to sell them in groups. This calls for showmanship as well as salesmanship."

Richard Grant

Are We Prepared for Their Return?

SWIFT RETRAINING OF VETERANS TO SKILLS OF PEACE IS THE NEED

OVER A MILLION men and women have thus far received honorable discharges from the armed forces. The swift progress made by our invading armies in the European theatre and the Pacific brings ever closer the day when other millions of service men and women will return to civilian life.

While Washington plans the methods and means of demobilizing these vast forces, industry and education have a joint responsibility in making possible their swift conversion to useful and gainful peacetime work. No government work project job but a chance to get ahead and to make up for lost time is every veteran's ambition.

INDUSTRY CAN PLAN NOW

The answer to this plea is one for every industry to answer for itself. The visual industry has a two-fold answer: it can provide the training aids which will assist all other industries in retraining and, secondly, it can provide by plans and policies *within this industry* for the greatest possible opportunities for returning veterans who have experience, ability and an interest in the audio-visual medium.

In the Army Pictorial Service, in the Bureau of Aeronautics of the Navy, in the Training Aids Section of the Bureau of Ships of the Navy, in the Coast Guard and the Marine Corps and in such special activities as the Industrial Services branches of the Army and Navy and the far-flung Army Motion Picture Service, thousands of men and women have received special training in the art and skills of the nontheatrical motion picture, slidefilm and other training and informational aids.

PLANNING FOR ALL INDUSTRY

Convalescent training programs are already under way in the armed forces. Taking a cue from the successful use of training aids in the initial training program, the Army is already making good use of visual aids in preparing these men for civilian life. Industry, too, can take a page from its own experience and prepare special subjects for indoctrination, skill training and general employee relations.

For the problem is not alone one of teaching a specific skill. Present employees as well as veterans must be prepared to work together. Industrial relations face a great test in this issue. Good common sense will rule, but the initial problems of seniority, physical and psychological differences and similar issues will require real skill in supervisory relations. Good films can help.

Many veterans will prefer to launch new businesses. Service outlets will offer the greatest field for such personal enterprise and national organizations encouraging this needed development can make excellent use of visual materials for training and informing new dealers, maintenance and service personnel.

SCHOOL TRAINING IS PROVIDED

Training of veterans in job training courses in industry and in institutions of higher learning has already been started by the Veterans' Administration. According to a recent report from the office of Maj. General Frank T. Hines, head of the Veterans' Administration, there were 2,383 men enrolled in such courses as of recent weeks.

While this number represents a very small minority of the million or more thus far discharged, it is expected to increase rapidly now that the GI Bill of Rights has been passed. Of these 2,383 veterans, 770 were "earning while they learn" and receiving training by accredited employers. The other 1,613 were enrolled in schools, colleges and universities in all parts of the country.

New skills and experience gained in the armed services will be useful assets to the expanding visual industry in postwar years just ahead.

A VISUAL INDUSTRY PROGRAM

Producers of industrial and educational films as well as manufacturers of visual equipment and their principal distributors can make plans now for the rehiring and hiring of discharged veterans. Although postwar plans may require new help immediately, all companies should try to hold a job with a veteran even at some sacrifice of time. Veterans should be absorbed into the production staffs of existing companies rather than "free lancing" wherever possible. The need for industrial experience, for sufficient facilities and operating capital and a sufficient staff are essential prerequisites of the production business and its stable future.

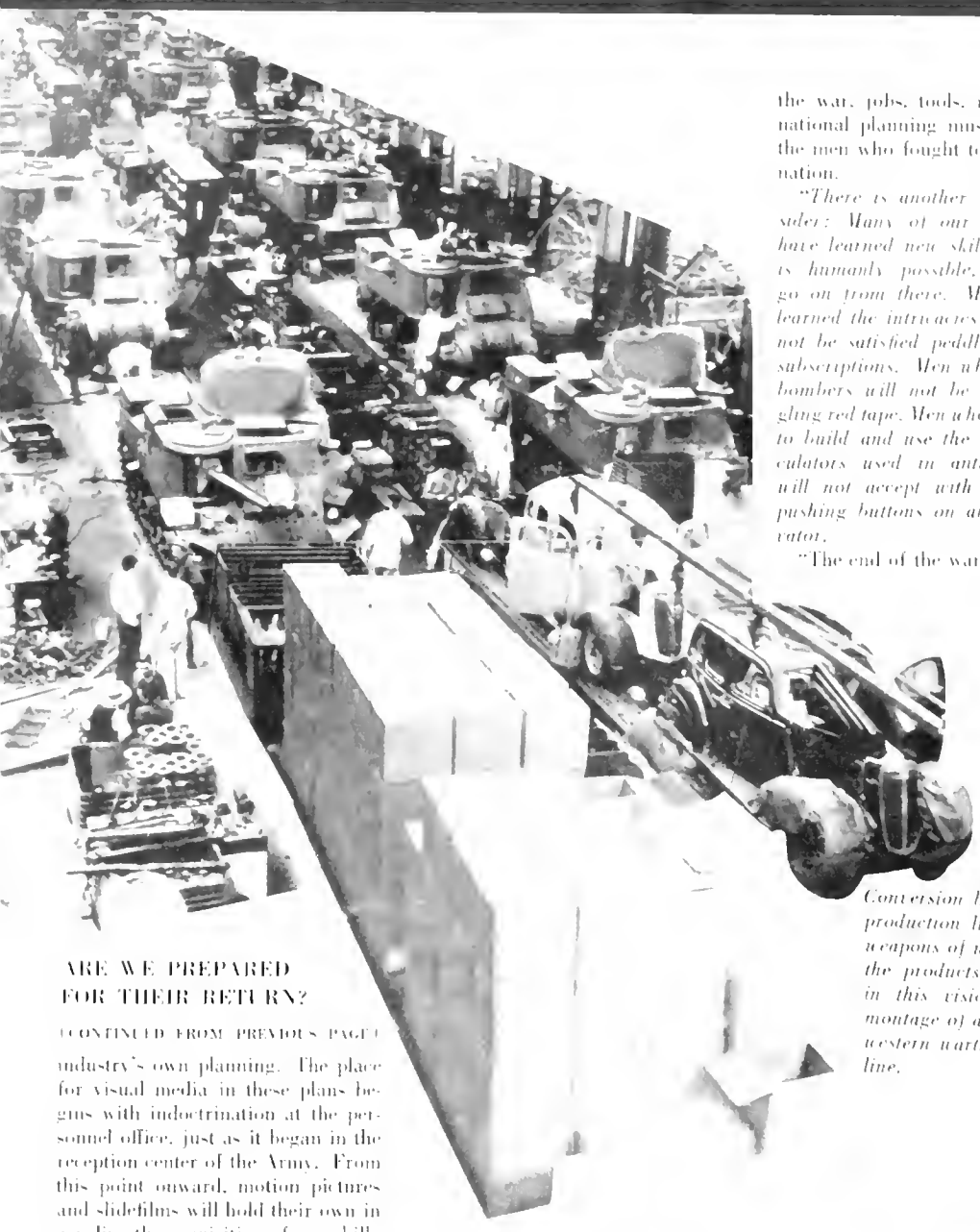
REGISTER VETERANS FOR JOBS

Classification of returning veterans can begin immediately. Existing associations in the visual industry should undertake to register production, equipment maintenance and utilization personnel now in the armed forces and to establish a placement bureau for their assistance. Many of these men will go back to schools but many who have learned the potential value of the medium will seek a place where newly learned skills can be directly and creatively useful. Let us encourage this and set up needed facilities at once.

The U. S. Chamber of Commerce 11-point program for American business significantly urges business men to "work for private and public policies which will give returning service men and women fullest opportunity for re-employment." This is second only to the devotion of industrial facilities wherever needed to first *win the war*.

Then retraining of workers enters

(PLEASE TURN TO NEXT PAGE)



Conversion begins on the production line when the weapons of war change to the products of peace as in this visionary photo-montage of a typical Mid-western wartime assembly line.

ARE WE PREPARED FOR THEIR RETURN?

(CONTINUED FROM PREVIOUS PAGE)

industry's own planning. The place for visual media in these plans begins with indoctrination at the personnel office, just as it began in the reception center of the Army. From this point onward, motion pictures and slidefilms will hold their own in speeding the acquisition of new skills and better understanding by the returning veteran. Industry will do well to make a thorough survey of its own retraining problem in light of films' potential contribution in the postwar months ahead.

DR. PARRAN GIVES VIEWPOINT

• Dr. Thomas E. Parran, Surgeon-General, U. S. Public Health Service, has stated the case for the wounded and disabled veterans now returning to civilian life. In a recent broadcast, Dr. Parran declared:

"We have a special responsibility to these men we love who come back with permanent handicaps. Our doctors have preserved their lives. It is for us to see that they live in liberty and the pursuit of happiness. Each of us must receive our returned soldier with pride, neither repelled by, nor oversolicitous as to his injury. Most of his anxiety about it will stem from worry about its effect upon us and upon his chances for livelihood. We must convince him, and prove it by our actions, that he has the capacity to be useful and happy.

"From what I have seen in our Army, Navy and Public Health Service Hospitals, very few handicapped men want to become the permanent wards of the Government and spend the rest of their days in idleness. They have worked hard. They have stood on their feet and slugged it out with the enemy. They have endured more than they dreamed it was possible to endure. They will ask of us and they will have every right to ask useful work which they are mentally and physically able to do.

"Industry, however, needs to retool its thinking before retooling its machinery for postwar production. In the past, men have been ruled by the needs of the machine. After the war, jobs, tools, machines and national planning must be fitted to the men who fought to preserve the nation.

"*There is another thing to consider: Many of our fighting men have learned new skills. So far as is humanly possible, they should go on from there. Men who have learned the intricacies of radar will not be satisfied peddling magazine subscriptions. Men who have flown bombers will not be happy untangling red tape. Men who have learned to build and use the lightning calculators used in anti-aircraft fire will not accept with grace a job pushing buttons on an electric elevator.*

"The end of the war may be near or far away. The world that follows the war will be what we choose to make it, beginning now. Certainly it will be different. We must adapt a rich and vigorous part of that changed world for the participation of those men who have returned and will in increasing numbers return from the battlefronts, broken, perhaps, of body but high of heart."

Hercules' Plastic Film

• An all-color 16-mm sound motion picture showing the behind-the-scene story of the manufacture of plastics, one of America's newest and most colorful industries, is now available for exhibition to fraternal and business organizations, according to an announcement by Hercules Powder Company's Cellulose Products Department. Titled *Careers for Cellulose*, the forty-minute 16-mm picture was edited to appeal to the general public as well as technical men.

Starting in the cotton fields of the South, the film covers the Hercules chemical plants where cotton is transformed into cellulose and other bases for plastics, lacquers, film, rayon, and many other articles. From the chemical plants the film follows the cellulose materials to Hercules testing laboratories. The rest of the film shows actual manufacture of plastics and demonstrates the possibilities of cellulose materials in industry as well as many applications in newer plastic developments.

Prints of *Careers for Cellulose* are available without cost for exhibition. The exhibitor, however, must provide the 16-mm sound projector and the operator.

Producing Supervisory Relations subjects at Mode-Art studios for the U. S. Office of Education; such films will prove most useful in retraining veterans for postwar jobs.

CATERPILLAR TRACTOR FINDS NEW USES FOR FILMS

ONE OF THE PIONEER users of industrial movies is Caterpillar Tractor Co. of Peoria, Illinois. Even before the first World War it was using motion pictures to show customers the many jobs being done by its tractors around the world.

All stages of development of motion pictures from silent films through natural color have been used by this large industrial organization to sell a product which cannot readily be made in sample size.

CONTINUED DURING WAR

With the advent of war, the company's tractors, motor graders and engines have been available only in limited numbers to civilian customers. However, it continues to use sound films to inform both its own employees, its dealers and other interested people about the company and its products.

Four movies have been produced by the company to do other than promote the sale of its prime products. The subjects of the films are unrelated to earth moving, logging or farming which is the usual story in the tractor industry. Motion pictures are the best medium to tell these stories clearly and completely to many people in many places.

FILM ON WORKER REHABILITATION

For example, *Winning Against Odds* is a motion picture which tells of human rehabilitation in the factory. It was produced in cooperation with the Medical Department in order to show what is being done by employees who are physically handicapped. With new employees at a premium and with the available supply of physically fit people rapidly being exhausted by the Armed forces, handicapped people, who had been bypassed in the general scheme of things, were placed on jobs that best fitted their abilities and they are *Winning Against Odds*.

The above film became very popular with other industrial organizations faced with the same or similar employment problems. It has become a basis for many plans for tapping an over-looked source of vital man power and an answer to some of the problems created by the return of disabled war veterans.

AID SALVAGE CAMPAIGNS

War Against Waste a film produced with the cooperation of the plant reclamation and service departments was designed to do three things.

1. To show company personnel the "war against waste" in the factory—which made them waste conscious and invited new ideas in this crusade against a modern factory parasite.

2. To aid in the local salvage campaign by showing luncheon clubs and service organizations the hidden values of supposedly worthless materials.

3. To show the company dealers how to keep civilian tractors, motor graders, and engines running with a minimum of new parts by reclaiming and rebuilding used materials. Dealers also use the film to sell their service facilities to customers who must keep their machines in good running order even though the Armed Services have first call on a large portion of new parts leaving less available for civilian and semi-military use.

SHOW FACTORY PROCESSES

Making Aluminum Air-Cooled Cylinder Heads is a picture of the processes in the "Caterpillar" Aluminum Foundry for Casting Aluminum Air-Cooled Cylinder Heads. Ninety-seven per cent of the employees in this foundry were women. The motion picture was produced in cooperation with the W.P.B. to show the many foundry jobs which can be handled competently by women.

The picture begins with the gathering of sand samples from a newly arrived car and follows thru step by step, inspection by inspection, until the intricate radial engine cylinder heads are packed in their individual boxes for shipment. This film was made available to other foundries as a means of spreading information on new techniques quickly, thus speeding war production. It was used in manpower or rather womanpower recruiting drives and on several occasions in place of technical paper in regional meetings of scientific organizations. It is currently being used to supplement a paper entitled "Wartime Calls on Women to Make Aluminum Air-Cooled Cylinder Heads," an exchange contribution between the American Foundrymen's Association and the Institute of British Foundrymen.

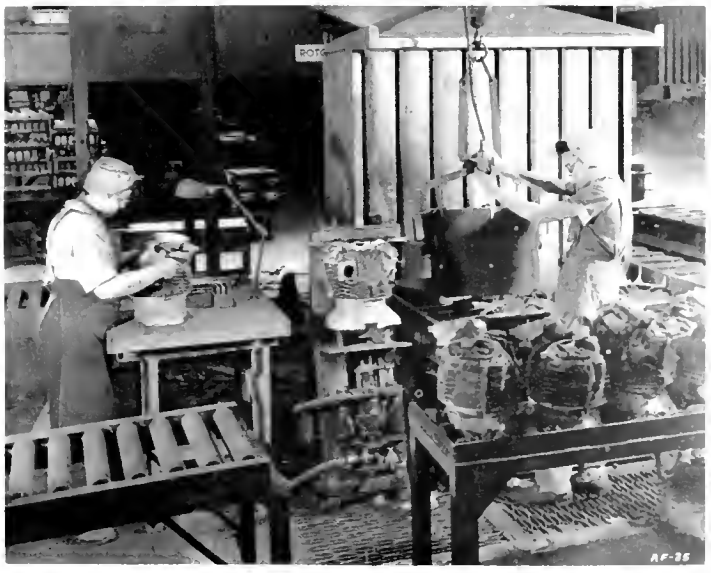
"Winning Against Odds" this sight is in his finger tips.

WAR REPORT ALSO MADE

Our Fighters is a large and broad selection of motion pictures taken by the Signal Corps of the U. S. Army showing "Caterpillar" products at work in North Africa, Sicily, Italy, the Aleutians and in the South Pacific, as well as other equipment and methods used by soldiers in the grim business of war. The pictures were edited and arranged to prove that American Soldiers in World War II are better trained and have

(PLEASE TURN TO PAGE 23)

Caterpillar films show how women do a man-sized job on the production line: scene from "Making Aluminum Air-Cooled Cylinder Heads."



One arm is as good as two on this nut tightening job. A scene from the Caterpillar film "Winning Against Odds" shows role of disabled worker.

REVIEWING THE LATEST INDUSTRIAL FILMS

Industry's Transition Story

POSTWAR MARKETS must await industry's retooling and retraining of present workers and veterans to peacetime skills but the reestablishing of jobber and dealer outlets and the training of salesmen can and has already begun among America's major business organizations.

Sales and service training are getting most attention from business planners now studying the most widespread use of the visual medium ever attempted in company training programs. For the installation and maintenance of mechanical equipment depends on the schooling of whole new classes of service men, many of them veterans.

Meanwhile industry continues to use the visual medium for the ever-present critical fields of safety education, employee induction (see page 29), public and dealer relations and skill training. Currently producing are Western Electric, General Motors, Texas Company, Owens-Illinois Glass, all of whom have well-developed sound motion picture programs in work. A documentary picture for the famous Sister Kenny, infantile paralysis healer, (by Ray-Bell Films) was high on the production list of the period as a potentially noteworthy contribution to the field.

Nearing completion of a good half of its production program with the second half already well under way was the U. S. Office of Education. Most interesting of the new series becoming available shortly were 20 sound films on Supervisory Relations.

New Reynolds Film Tells War Production Story

♦ *A Recital of Faith*, produced by Sound Masters, Inc., for the Reynolds Metals Company of Louisville, may be destined to take high rank among the films that tell of industrial contributions to the war effort. It is the story of the almost unbelievable expansion of a company whose leader risked everything he owned to back his faith in America.

The opening scenes, dealing with a time eighteen months before Pearl Harbor, are dramatic keynotes of the entire film. Mr. Reynolds alarmed by the sensational increase in Germany's production of aluminum and magnesium sets out to dispel the illusion that plenty of aluminum is available for the building of an American air fleet. He warns that America's annual aluminum production must be advanced from 370,000,000 to 900,000,000 pounds and must not depend on uncertain supplies of foreign bauxite. Then, mortgaging his private business to the limit, he undertakes the production of enormous stocks of aluminum from native American bauxite.

Cover Plant Operations

Deposits of bauxite are opened in Arkansas. Plants covering a square mile are built at Listerhill, Alabama, in the amazingly short time of five months — the only assembly of plants in the world where raw bauxite is fed at one end and rolled aluminum shapes are delivered at the other. The four-mile trip the movie takes through these plants is very informative.

Views of operations at other plants in Louisville and Richmond are equally interesting. The Louisville plants are the only ones in the world where aluminum plane parts are prefabricated, saving much time and shipping space and greatly speeding plane production.

Shows Postwar Products

The latter part of the film gives a preview of the important part aluminum will play in the world of tomorrow. It will be used much more generally in the fields of transportation by air, land and sea —in construction — in the home. Beautiful, durable aluminum furniture is on its way. Aluminum foil will come into greater use for the protection and attractive packaging of food, drug and other products. Research programs now underway point to the use of aluminum for many more purposes. Such are the predictions of the film.

Written and directed for Sound Masters by Owen Murphy, *A Recital of Faith* is a picture that will hold its audience every minute — and leave an appreciation of the story of Reynolds Metals in this modern era.

A Recital of Faith, in two reels, has already been booked by theatres in various sections of the country. It is also available in 16 mm. sound print size for showing before technical societies, engineering groups, purchasing agents, clubs (Rotary, Lions, Kiwanis, Sales Executives, etc.), foreman training groups, parent-teacher associations and church and social clubs.

G. E. Lamp Division Shows Flash Photography Film

♦ Release of a new educational 16 mm. sound motion picture featuring the technical aspects of flash photography was announced recently by the Photolamp Division of General Electric Company at Nela Park, Cleveland.

The three-reel, half-hour subject available in both 16 mm. and 35 mm. prints was intended for use by photographic schools of all branches of the military services. It is also designed to educate countless professional and amateur photographers on how better flash pictures may be taken. Loucks and Norling Studios of New York was the producer.

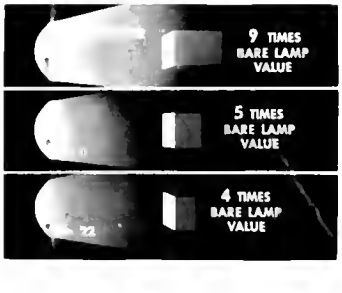
Split-second action of modern high-speed camera shutters and brief flashes from photoflash bulbs have been slowed down to an easily

(PLEASE TURN TO PAGE 27)

★ ★ ★

(Left, top to bottom) Scenes from the new Reynolds Metal film "Recital of Faith" showing aluminum production, from mines to finished products.

G. E. Lamp's new motion picture on flash photograph is replete with excellent technical animation sequences.



Calship's induction film tells the new worker about the yard's employee counselors, who are trained to assist individuals to solve problems interfering with their work.

War Reports for the Production Line

THAT U. S. WORKERS appreciate the timely showing of combat film reports brought to war plants by the Army and Navy direct from the fighting fronts is proven by the ever-increasing records of audience attendance. From seven to eight million workers and their families are seeing these pictures each month through distribution facilities provided by visual specialists in local areas, operating under the basic contracts awarded Castle Films, Modern Talking Picture Service and Walter O. Gutlohn.

Ideal Pictures, with headquarters in Chicago, has been one of the most outstanding distributors in this key arsenal of democracy. Both Army and Navy subjects are distributed. These include the new Navy Industrial Incentive subjects: *Return to Guam*, a 16-minute film, and *Invasion — Nazi Version*, a thrilling 18-minute report on the invasion as seen by Nazi cameras.

Some recent suggestions for showing these films are furnished by the Army's Industrial Services staff:

♦ *Use High School Auditoriums for Showings of War Department Films*—During the summer months, many high schools and colleges were closed. Various plants have found it expedient to contact local Chambers of Commerce and Boards of Education for the use of the school auditoriums, which have excellent projection equipment. In the event adequate projection facilities are lacking, a 16 mm. projector can be placed in the aisle of the auditorium, and 16 mm. non-inflammable film used for the showing of War Department pictures. This is a very satisfactory means of providing audiences with ideal projection and comfort. It also provides an opportunity for the war worker to bring his family to the showings after his working day is over. The war worker can use his plant identification badge as his admission to the auditorium.

♦ *Use Shadow Boxes for the Plant Proper*— In the summertime, plants often favor outdoor screenings of War Department films. They show the films during the daytime, not having available time or facilities for night-time showings. Shadow boxes for outdoor showings may be very easily constructed within the plant itself. If you are interested in such a device, please write to Motion Picture Branch, Industrial Services Division, War Department Bureau of Public Relations, Room 1315, 1501 Broadway, New York 18, New York, for full details of this fall and late summer method of screening.

♦ *One War Plant Contributes 50 Percent* of showing time — a war plant has written in that they have a special policy for their weekly showings of War Department pictures. The showings are a half-hour in length. They begin at 4:45 P. M., 15 minutes before closing time, and extend through 5:15 P. M., 15 minutes after closing time. This added suggestion of when to show motion pictures is passed on to war plant executives for consideration.

Scene from "Brief for Invasion" showing a phase in the initial landing in Northern France.

ARMY AND NAVY INCENTIVE FILMS

FILM COMMUNIQUE No. 9—This current *Film Communique* contains some highly interesting Air Forces footage, a special cartoon feature of "Private Snafu," and a sequence of combat material from the Burmese fighting front. This last section of *Film Communique No. 9* shows audiences typical scenes of American and Chinese soldiers fighting side by side in the wild, mountainous regions of Burma. Shots of General Stillwell and his soldiers leave a vivid impression of the type of enemy and terrain these men face in their task of defeating the Jap. This *Communique* is now available for all industrial and union showings. *Running time: 20 minutes.*

HOW GOOD IS A GUN—Recommended as a picture that will give the war worker an understanding of the word "firepower," this film shows how good American guns really are. By tracing the effects of weapons ranging from the small carbine to field artillery pieces, a dramatic story of the purpose and devastating result of each of these weapons is dramatically shown. Now available for showings. *Running time: 20 minutes.*

FILM COMMUNIQUE No. 10—The latest of the War Department monthly *Film Communiques*, *Film Communique No. 10*, became available to war plants after August 1. *Film Communique No. 10* has three main sequences, all of them containing combat footage. It starts with scenes taken of artillery activity in Italy. In their drive past Rome, our troops play the now famous game of BINGO. In this campaign, BINGO is played to the tune of long-range artillery and howitzers. The withering pattern of artillery laid down by these guns is a fine tribute to the amount of material being sent to our fighting men by American war workers. The second sequence deals with Air Forces action over Europe. Titled, "Forty-five Minutes for Lunch," this sequence shows the activities of one of our B-26 Marauder bombers on one day's operation. In the morning, the aerial cameraman flies with this B-26 to help destroy a Nazi fighter strip in France. After the field is completely demolished, the plane heads home for a quick repair job, and a 45-minute lunch period for its crew. Then, off again, this time to "recondition" another Nazi airfield in occupied Holland. That's what these B-26 Marauders teams specialize in—Nazi airfields, hangars, runways, supply dumps and rocket installations. It's an exciting sequence of a day with the Ninth Air Force over enemy territory. The final sequence of *Film Communique No. 10* takes the war worker to the South Pacific. In Bougainville, American soldiers avenge the atrocities of Nanking by smashing the infamous Jap Sixth Division, which perpetrated most of the Nanking crimes. This final section of *Film Communique No. 10* shows them getting their just deserts with cold steel and flying missiles. *Running time: 20 minutes.*

THE HIDDEN ARMY — This motion picture was mentioned in the previous issue of BUSINESS SCREEN. It is a subject that pays tribute to the achievement of American women in industry. The plot involves Adolph Hitler's memoirs after Armistice Day of World War II. It shows that one of his main miscalculations had been the patriotic response the women of America gave to the war effort. *The Hidden Army* became available for war plant showings after August 15. *Running time: 15 minutes.*

The advance inland begins: Another scene from "Brief for Invasion" recent U. S. Army industrial release.

WHAT ABOUT G. I. EDUCATION?

by E. P. Peterson, Acting Dean

The College of Education, University of Iowa

DEAN PETERSON [illegible] has suggested that [illegible] the schools [illegible] their immediate [illegible] be forthcoming [illegible] Education [illegible] Policies Conference at the National Education Association "The Education of G. I. America's Youth" and the U. S. Navy Manual on Audio-Visual Aids, "More Learning in Less Time," recently reprinted by offset permission and made available for distribution by the Visual Industry.

IN THE GIGANTIC TASK of mobilizing the human and material resources of the nation to wage total and global war, all basic institutions and agencies of a society are subjected to the most rigorous scrutiny and extreme criticism. The initial results are inevitably the disclosure of weaknesses and failures. These must be corrected with efficiency and dispatch if the institution is going to make a maximum contribution to winning the war. Areas in which institutions have operated with reasonable effectiveness are overlooked or at least are not called to the public's attention.

Education has not escaped and should not expect to escape this process. The dramatic results achieved by educational programs in the Armed Forces and in War Production Training have set off a barrage of criticism directed at the schools. Fantastic claims are made for the miraculous effectiveness of G.I. Education and the schools are urged to snap out of their slumber and hop on the G.I. Training Bandwagon. Put on the defensive, educational leaders react emotionally, become resistive and complain about the absence of public understanding and support.

There is now emerging a disposition by all parties to face and evaluate the facts and to study the resulting implications for post-war education. This can have only one result—tremendous improvement and strengthening of post-war education. In facing the facts squarely and rationally, the following points are important.

1. *Never in our history has the crucial importance of education had more dramatic recognition.* More money has been spent on it, more books published, more physical plants built and utilized, more instructional aids developed and more people involved as teachers and learners than ever before.

The entire nation has been at school in OCD, OWI, OPA, WPB, WMC as well as in the more formal training programs of War Production and military service.

2. *These programs have been organized for the most part by professional educators who for the first time have had a chance to put their ideas to work, unhampered by the limitations of budget, personnel, tradition, inertia and clumsy mechanisms of organization and administration.*

3. *In any educational activity, the most important, as well as the most difficult part of the job is to define the objectives.* Peacetime objectives tend to be generalized, fuzzy and blurred. Wartime objectives are definite, sharp, specific, concrete. There is a target and a bull's-eye and everyone concerned knows when the missile hits home, or if it misses, by how much and why. Every phase of the educational activity can be streamlined and organized with efficiency. Argument about content and method is reduced to a minimum.

4. *War-time motivation is intense, direct, functional.* Values are immediate, not deferred. Life is at stake—the life of the individual, the life of the nation, the life of civilization. If you perform an assignment correctly, quickly, at the right moment, in the right spot, you may live. If not, you may die. No more powerful incentives exist. Learning becomes dynamic, efficient, rapid.

5. *Appropriate learning procedures are recognized and applied, not invented or improvised.* Learning by doing, job analysis, proper mind-set, functional organization of subject-matter, direct relationship between goals, methods and instruments of measurement, short units of learning, standards of performance, reward for effort and achievement, self-instruction, individual responsibility and initiative for learning and doing—all these and more are harnessed up and put to work.

6. *Teaching aids have been dusted off the shelf of incidental, casual, and often careless utilization and assigned their proper role in the learning process.* Learning is less abstract and more concrete, less verbal and more visual. Effective learning has demanded and has received the help it needs from motion pictures both sound and silent, film strips, slides, transcriptions, animated drawings and charts, cartoons, posters, models, maps, diagrams, cross-sections, graphs, illustrations, photographs, enlargements.

7. *Genuine cooperation and coordination has been achieved between industrial, governmental and educational leadership in the production, distribution and utilization of teaching aids.* The most competent personnel was commandeered, whether civilian or military, in schools or in industry, and given unlimited resources in money, plant and materials with outstanding results. The U. S. Office of Education Visual Production Program was made possible by the availability of all the resources of twenty-two of the nation's leading commercial producers of motion pictures. The list of consultants on the Machine Tool series or the Farm Work series constitutes a "Who's Who" in each field.

The conservation and effective employment of this experience is a major challenge to educators. Part of the program can be incorporated in post-war education with little or no change. This is particularly true of the War Production Training Materials in industry and agriculture. We have had glimpses of the rest of the program. When it can be reviewed and appraised in detail, we shall find that more can be utilized. What is important, however, is that we proceed with courage, vision and persistence to the application of the techniques learned in war to the problems of peacetime education. Only as educators realize the significance of teaching aids in post-war education, can or will they proceed to unlock the doors of adequate financial support, continued utilization of war-trained personnel, and effective cooperation with the industry.

THE ROLE OF WARTIME FILMS

by C. R. Reagan, Head, Nontheatrical Division
Bureau of Motion Pictures, Office of War Information

WHEN WORLD WAR II came all Americans had to "go to school" again to learn how to fight and win a war on the farm, in the home, in the factory, and around the world.

Almost overnight we turned to visual aids to train, inform, and inspire both civilians and men and women in uniform. You in visual education who operate 16 mm. film libraries pledged to your Government your best efforts to get war information to the public through films. You mobilized our 25,000 or more 16 mm. sound projectors to bring war messages and combat films to men's and women's clubs, labor groups, war plants, schools, etc.

From OWI alone 30,000 prints of 98 war film subjects have been distributed in all 48 states through 270 films distributors to an audience now totaling 7,500,000 monthly. War issues and problems are studied on the home front through the use of 16 mm. films from various government agencies by at least 25,000,000 persons every month, and the use of fact films continues to increase and spread to new groups.

Besides the OWI war informational film service, Inter-American productions help us learn to know and love our good neighbors to the South. Army and Navy incentive films personalize the war for war plant workers. OWI Overseas shorts take the spirit of American democracy to our allies and to neutrals. Millions of citizens are now being trained in a hurry for war production with U. S. Office of Education and other vocational films. Soldiers, sailors, and marines are learning with films and other visual aids how to fight and why we fight.

As John Grierson well says: "There you have the screen before you. Behind it are millions of people all over the world, ready to learn from it, take in-spiration from it, and back their inspiration with action. It is the easiest thing in the world to organize these audiences, for you will be meeting a natural demand. It is perhaps not the easiest thing in the world to translate the stubborn and sometimes grim problems of our industrial civilization into the terms of interest and inspiration; but for the past fifteen years we have been progressively learning to do it and we have been teaching a whole host of young film makers to be interested in nothing else."

Yes, the masses are on the march in America, as everywhere, and demand a fuller, richer life and the opportunity to create, to build, to possess, to enjoy, and, best of all, to share. This tough, new America now being reborn will eradicate forever our 3,000,000 adult illiterates, our indifference to racial problems, our threat to democracy of over 5,000,000 men of military age not physically fit for military service, and our isolationism which made World War II possible.

All of this means the greatest educational program—for youth and adults—the world has ever seen. Of course, we shall use the greatest device yet developed for educaing a people—the motion picture. We who make, distribute, and use those visual aids will be major factors in shaping a better world.

★ ★ ★

A WORD ABOUT C. R. REAGAN: *One of the visual industry's pioneer specialists in the field, a favorite son in his home state of Texas and a staunch fighter in the cause of this medium, "C. R." has devoted these war years to the service of his country. We pause for a moment of tribute to a great and good friend.*

The Editor of BUSINESS SCREEN

EDUCATIONAL SPECIFICATIONS FOR POSTWAR VISUAL EDUCATION

The Difficulties to Be Overcome

by R. C. Lyons

Coordinator of Visual Education Santa Barbara, California

THERE IS PLENTY of evidence to indicate that the proper use of films is one of our most potent and efficient educational procedures. The purpose of this article is to point out some of the difficulties encountered by film users, with some suggestions for improvements. Many schools use no films and in those that do the use is rather limited in most cases. Listed below are some of the most common reasons for the limited motion picture program, reasons advanced by teachers:

1. "*The proper films are not available when needed.*" The teacher is faced with the choice of using the film at the wrong time or not using it at all. Most certainly the sequence of a course should not have to be altered to fit film schedules which at best are not always reliable. It seems reasonable to suggest that each school system should have its own copies of the most essential films.

2. "*I am an English teacher and I would like to use films but most of the ones I could use are too long and rent for too much money.*" It is true that 5, 6 and 7 reel films are not so suitable for classroom use as are the shorter ones. Surely some of the classic literature could be filmed in abbreviated form. A one reel film showing a chapter of a book or even an important episode would be highly desirable.

3. "*I am forced to make alternate lesson plans for fear that the film will not arrive.*" Failure of a film to arrive on schedule is not a frequent occurrence but it happens often enough to be a menace to lesson plans. All users of films should realize that carelessness on their part in the matter of prompt film return results in deprivation for someone else. No one should ask to use a film unless he intends to return it according to schedule.

4. "*Too many students have seen the film before.*" Usually this is the result of the use of films in the wrong place, largely because of the meagre number of films furnished to a school. With more films and with increased knowledge of their proper use this problem will solve itself. However, let it be admitted that a good film may be seen to advantage several times.

5. "*There is too much danger of film damage.*" Those in charge of film distribution know that each film goes out with a fervent prayer for its return in undamaged condition. Practically all film damage is due to carelessness or ignorance. It is easy to thread a film properly but so long as it is possible to thread wrongly films will be damaged. This being a well known fact, it is the duty of the manufacturer to build

(CONTINUED ON THE NEXT PAGE)

projectors so that they cannot be threaded in a manner that will damage the film. A bold warning should be built into the projector at any danger point which cannot be eliminated. The film gate should open far enough to expose the surfaces for thorough cleaning. Rewinds should operate only when rewinding. School projectors with 750 or 1000 watt lights should have no provisions for reversing or for stopping on the film. Silent projectors should have sprocket teeth and film advancing claw on the right side only so that sound films will not be damaged if run by mistake on a silent projector. Reels should have square holes on one side only to prevent reversing the film and thereby damaging the sound track.

6. "*Projectors are too expensive.*" With increased market the cost should not be prohibitive. For classroom use why not have a smaller speaker, something like a midget radio? Such a speaker would furnish sufficient volume for a classroom and would not "carry" to adjoining rooms as much as does the usual type. Of course the fidelity would be impaired but this would not matter except for music films and these are in the minority. The volume would not be great enough for an auditorium but the classroom projector should not be considered as an auditorium instrument. The cost of the projector could be lowered by the elimination of tone control, microphone wiring and reversing arrangements.

7. "*The room is not dark enough.*" It isn't always possible to darken the rooms properly. Experiments have shown that it is quite feasible to project thru a translucent screen, using a short focus lens and a prism to reverse the image. With a 500 or 750 watt projector such an arrangement gives a fairly satisfactory screen image with roller shades down or Venetian blinds closed. Some schools have special rooms set apart for projection but it is better if possible to maintain the usual classroom situation.

8. "*Setting up the projector causes too much commotion and wastes the time of the class.*" It is easy to recommend that the projector be set up before class time but what about the class that occupied the room during the preceding period? How many projectors would be needed? For economical use of equipment and films it is often necessary to move them from room to room between periods. To minimize time wastage the projector and speaker could be built in one unit. Each projector should be equipped with a dolly to permit wheeling in in operating condition. The writer favors the use of hand rewinds if rewinding must be done in the room, thus cutting down part of the incidental disturbance.

9. "*My school rented some films for me and when they arrived the projector broke down, resulting in a total loss of the rental money. I haven't tried to use films since.*" Some people are easily discouraged. With the sturdy projectors now being used breakdowns are infrequent but like all fast moving machinery and all radio apparatus the projector and the sound system are subject to occasional troubles. The writer would like to enter a strong plea for service books and complete amplifier and speaker hook-up diagrams to be furnished with the machines. If this were done, if the sound apparatus were simplified as much as possible, if the projector were built with ready accessibility to the moving parts, then nearly all repairs could be made at the school or by some local mechanic. As it is, counting the time required for shipment and repairs and for obtaining the school requisition, projectors needing some slight service are out of commission for as much as a month if the school is some distance from a factory branch.

SUMMARY

There is no use in closing our eyes to these situations. Why should the public be regaled by enthusiastic accounts about this new teaching tool without being warned as to the concomitant expense? True, the proper use of films results in quicker and better understanding and this means that it is an economical procedure in terms of precious student hours. However, since the financial support of public schools is based on average attendance and not on the efficiency of learning, the economy is not evident in a school budget. The taxpayers must reconcile themselves either to financing the film program or to depriving the students of a suitable use of films. "Suitable use" is stressed because much time can be wasted by unsuitable use. Surely it is to the interest of the film producer, the projector builder, the teacher, the community and the dealer to work together to solve the problems mentioned, with resulting increase in economy and efficiency and decrease in uncertainty and confusion.

NAVED'S 1944 CONFERENCE

The Dealer's Role
in
POST-WAR DEVELOPMENTS IN VISUAL EDUCATION

(All meetings will be held on the third floor of the Palmer House)

Saturday, August 12

10:00 A.M. Board of Directors meeting—Room 11
(Luncheon will be served in the same room)

Sunday, August 13

9 10:00 A.M. Registration—*Foyer, Third Floor*
10 12:00 A.M. Business Session—Discussion of Proposed Constitutional Revision—Room 18
12 2:00 P.M. Recess for lunch
2 5:00 P.M. Business Session—Discussion of Proposed Code of Ethics—Room 18

Monday, August 14

9 12:00 A.M. NAVED'S Post-War Program—Room 18
1. NAVED'S Ten Point Program—J. M. Stackhouse, *President*
2. NAVED'S Education Program—Donald P. Bean, *Educational Consultant*
3. Film Damage Insurance—C. F. Luce, Jr., *Aetna Insurance Company*

2: 4:00 P.M. Business Session—Room 18
Report of Officers
Report of Resolutions Committee
Report of Nominating Committee
Election of New Officers
Adoption of 1944-45 Budget

6:30 P.M. Reception for Banquet—Room 11
7 11:00 P.M. Annual Banquet—Crystal Ballroom—Room 7

Visual Materials Must Fit Classroom Needs

by Mrs. Martha Guilford, *Indianapolis Public Schools*

CONTRARY to common belief, few groups of workers, either in the professions or the trades, welcome new tools and techniques more enthusiastically than do teachers. However, due of course to the human factor involved, any new tool that the teachers accept must meet unusually exacting tests, tests of practicability, of superior effectiveness, and of educational soundness. The rightful place of the film in the schools' program of today and tomorrow, can be achieved only when visual aids dealers have recognized and met the specific needs of teachers, and have cooperated with them in inaugurating a clearly defined program which will supplement, enrich, and improve the practices now in use in our classrooms.

In the formation of such a program, the dealers must recognize immediately that each film, if it is to reach its maximum efficiency, must be tailored to meet specific teaching needs. First, it must present materials appropriate to that grade level which it is to serve. If it fails to do this, the result is unfortunate in one of two ways. It teaches down to the children, becoming only repetition of that which they already know, or merely entertainment, thus nullifying completely the film's value as a teaching tool. Or it presents material completely "over the heads," making any orderly, constructive acquisition of information impossible. Either of these two results is a far more serious matter than that of wasted time and money. Undesirable mental sets and unfortunate reactions to the use of the film in the classroom are habituated; either or both conditions are as difficult to eradicate as are most bad habits.

Second, the visual aids dealer should recognize that films must be especially adapted for use in different types of teaching—the problem-solving type lesson, the teaching of a skill subject, and the development

NAVED'S 1944 BANQUET

PALMER HOUSE
CHICAGO

CRYSTAL BALLROOM
August 14, 1944
6:30 P. M.

MENU

Honey Dew Melon
Celery Olives
Cream of Asparagus
Lorette Potatoes Fresh String Beans
Half Roast Stuffed Spring Chicken
French Bowl Salad
Spumoni Bombe
Petits Fours
Coffee

AFTER DINNER

Post-War Developments in Visual Education as Seen By:

INDUSTRY — Harlan H. Hobbs, *Manager Film Division, Owens-Illinois Glass Company*

EDUCATION — V. C. Arnspiger, *Vice-President, Encyclopaedia Britannica Films, Inc.*

HOLLYWOOD — Roger Albright, *Motion Picture Producers and Distributors of America, Inc.*

AWARD OF NAVED TROPHY
To the Fifth War Loan Drive Prize Winning Distributor — *Presentation by Theodore R. Gamble, Treasury Department.*

of an appreciation. Practically all teaching falls into one of these three types of lessons. Peculiarly up to the present time, classroom films have been made almost entirely for the first type of teaching, the problem-solving situations of the social studies and science lessons. However, the publicity given to the use of films in the teaching of skills in the GI program will undoubtedly stimulate their use in the very near future, in teaching the language arts, arithmetical processes, and vocational skills in our schools' classrooms. It is in the teaching of this type of lessons that teachers find the greatest scarcity of films to supplement their efforts. Here visual aids dealers have their richest opportunity to serve in improving classroom instruction.

But teachers appeal to dealers still further to make available films that are not only adapted to the three different types of teaching, but that will also be helpful in the presentation of the several steps that may occur within each teaching situation. Such steps include motivation, presentation of enrichment material, the setting up of correct standards of performance, and the checking on achievement. If films were made to fill such specific needs, they would afford the most effective and economical means for providing material for carrying through successfully the different steps in the teaching processes. This need not seem too idealistic or extravagant a program in the production of classroom films, for in many instances one film could be used in more than one type of lesson — the problem-solving and the development of an appreciation have many factors in common—and the possibility of a film's serving in multiple ways is not only practical but often most desirable.

Thinking classroom teachers recognize the importance of visual aids in an effective instructional program; but unfortunately at the present time, the nature of the material available in the visual education field is such as to cause them to withhold their complete co-operation in its use. May the dealers realize that, behind this seeming indifference of teachers toward visual aids, there are certain real obstacles that tend to dampen their enthusiasm; however, the teachers are confident that these obstacles can and will be removed as the dealers become more fully aware of the most urgent needs of the schools' program.

The Classroom Projector of the Future

by Joseph Dickman

Director of Visual Education, Chicago Public Schools

THE IDEAL classroom projector of the future will in my opinion be designed specifically for that purpose. It will be simplified and will not attempt to serve the requirements of auditorium, public address system, playback, and silent projector in addition. Picture and sound quality are of course basic. The new classroom projector will be engineered against film damage and be simple enough for amateur operation, portable and economical enough for the widest possible classroom use.

SIMPLICITY OF OPERATION

To achieve simplicity of operation and thus promote teacher operation and pupil operation the threading route should be well marked and spacious, sprockets should be large, small sprockets easily accessible and visible at the point of film contact and reduced to the least number that will do the job. All controls, such as lamp switch, motor switch, volume control, tone control, and framer, should be plainly labeled. Standardizing on the classroom model as the basic educational projector will allow for the elimination of the microphone and playback plugs and controls. The unsatisfactory still film feature should be abandoned and the job left to the film strip projector. Equip for sound speed only, thereby improving sound quality by use of a synchronous motor and eliminating the cost and weight of the present unsatisfactory motor speed governor. I have previously suggested the likelihood that all future instructional films will be sound films which may also be used as silents. Even amateur movie makers will probably "shoot" at sound speed for the possible addition of a sound track. The unsatisfactory reverse control could be eliminated. A single and accessible oiling spot with a visible reservoir would lessen the operator's task and add to projector life. A 15-foot power cord on an automatic take-up reel would increase "setting-up" speed and eliminate hand soiling. A sturdy cord gripping plug on the power cord is essential.

TO OBTAIN PORTABILITY

To obtain real portability rather than the present "porterability," projectors should be constructed of the lightest material that will do the back-breaking job. Picture and sound quality should not be sacrificed. The loud speaker could be an integral part of the projector. This would eliminate the weight of the speaker case as well as the weight and installation of the cumbersome, dirty, tripping, speaker cable. The illusion of sound from the screen is not a factor in classroom projection. For good sound coverage the projector could operate from the center of the room by use of a suitable flat field lens. Considerable reduction in weight would result from the elimination of unnecessary features referred to in the previous section on simplification of operation. Amplifier size could be reduced since present output is larger than classroom use requires. Reel arm capacity could be reduced to 800 feet since few instructional films do or should run beyond that size. The occasional longer film could be mounted on two or more 800 foot reels would simplify the spare reel problem and eliminate the bulk and packaging problems of 1200 and 1600 foot reels. The projector should operate outside its case, thus reducing the final lift to the projector stand and incidentally improve threading accessibility, lessen film damage by operation out in the open, and increase cooling efficiency.

PREVENTING FILM DAMAGE

To prevent film damage, which is at present costlier than it need be, engineer the projector for operation by amateurs. Simplified threading over large sprockets with rounded teeth clearly visible at the point of film contact will go far to prevent the most serious type of film damage — perforations. The second type of damage — scratching of film emulsion can be reduced by facilitating the cleaning of the film gate, where most scratching occurs, by providing for a wide-opening film gate. Operation of the projector in the open rather than in a blimp case prevents damage to film by allowing for a constant visible check of film operation.

To achieve low cost, mass production of a standardized model is essential. The school market in the

(CONTINUED ON THE NEXT PAGE)

DR. V. C. ARNSPIGER

(CONTINUED FROM PREVIOUS PAGE)

United States is limited only by the number of wired classrooms which is at least 300,000. The projector we have so far described also has all the qualities desirable in a home projector. This fact increases its market enormously. Elimination of the following items of questionable value will substantially reduce first cost and upkeep: motor speed governor, speaker case and cable and plugs, reverse mechanism, still-film feature, microphone and playback attachments, excess amplifier output, special lamps and plugs, and silent speed control. Some of the savings thus achieved could be used to improve quality in such vital parts as lenses, sprockets, shuttle, and amplifier. Reversible teeth and larger sprockets would more than double their life. Use of oilless bearings and a high degree of precision in vital parts would add life and lessen noise. Availability of service for projector repairs as well as the cost of service are extremely important to the buyer and should be investigated thoroughly before purchase.

Such a projector will be a greater boon to education than the printing press.

* * *

Our Responsibilities

★ *"School administrators have some responsibility in setting up this movement,* and if we all agree that in-service training is best, are not those of us who are principals and supervisors somewhat responsible for the proper motivation of teaching aids in the classroom? Isn't it up to us to see to it that our teachers get in-service training, and have films in the school for ready use?"

Superintendent Hamilton of the Oak Park, Illinois, Schools, addressing the Midwest Forum on Visual Aids

PREDICTIONS ON PRODUCTION OF POSTWAR VISUAL AIDS

Probable Trends in Classroom Films

by V. C. Arnspiger

Vice-President, Encyclopedia Britannica Films

ANY PROGRAM of education for the future must contemplate the use of all technological advances being made in our society which will contribute to the effectiveness of classroom instruction. The great impetus given to such development in its application to war purposes and the great strides which have been made in transportation and communication have forced us to look upon the world as a community of regions rather than as politically divided nations, each trying to live more or less to itself.

PREPARING FOR TOMORROW

Our educational system has been plunged into the tremendous problem of providing all of our people with knowledges and understandings which will equip them to participate intelligently in the modern world. Obviously, the offering of a broader general education in a shorter period of time will require either instruction in larger groups or an intensification of the offering, or both. This is likely to occur because of the fact that the increasing demand for more and more education for more and more people will place such a burden upon the schools that a substantial readjustment both in content and method will be necessary.

This education will also call for a more efficient and effective presentation of instructional materials. Society cannot afford to wait until the pupil acquires an ability to read and attains an efficiency in reflective thinking before it gives to him the basic aspects of his social heritage. In other words, education must transcend the instructional limitations involved in learning to read on a high level of comprehension before all the people can acquire the learning which only a few have at the present time. It seems here that the necessity for vicarious experience through the visualization of concepts will result in a greatly expanded use of the instructional sound film.

TEACHER TRAINING NEEDED

In order to use this modern aid to instruction more effectively there must be a greatly expanded program of teacher education both in training and in service. There must be a more complete integration of these aids with the school program, and schools must come to recognize the instructional film as a highly effective tool in the presentation of subject matter.

PRODUCTION OF FILMS FOR CLASSROOM INSTRUCTION

★ The major areas with which we must be concerned in the production of films for the modern school are discussed below.

Conservation:

♦ The tremendous destruction of human, natural, and technological resources now going on will certainly demand intensified instruction in the area of conservation of these resources. Instruction in this area will likely be focused upon: 1. A wide-spread teaching of scientific principles underlying the production, preparation, preservation, and the nutritional use of food. 2. The conservation of human resources through realistic instruction in health. 3. The conservation of natural resources, particularly our soils and fuels. 4. The conservation through intelligent use of the products of technology.

Such films as have been produced in the past which will contribute to instruction in this area are The Human Biology Series, the series presenting cultural aspects of American life, such as *The Wheat Farmer, The Corn Farmer, The Machine Maker, The Truck Farmer, New England Fishermen, Science and Agriculture, Chemistry and a Changing* World and the like. The Regional Series also will contribute definitely to understandings in this field. Films which are now under way and which are planned for the future will present the scientific principles of cooking, canning, baking, the scientific control of insect pests, electrical appliances for the home, care of the teeth, care of the feet, the human body in flight, and the like.

Regional Geography:

♦ The trend toward the study of economic-geographic regions within the United States seems to extend to the study of such regions on a world-wide basis. The war has forced great strides in air transportation, and thus has made next-door neighbors of all of the nations of the world. The traditional type of geography instruction has not and will not equip mankind to live in a world made so small by the reduction of time and space. The only defensible approach to instruction in today's geography is that which grows out of the conception of the world as a community composed of a complex of regions, each of which in an ideal situation would make its own economic contribution to the world, limited only by its resources and cultural development.

Films which have been produced and which will contribute to this regional understanding are such subjects as, *The Airplane Changes Our World Map,* The American Regional Series, *Alaska Reservoir of Resources* and our "People of Other Lands" Series. Those planned for future production will include such subjects as, *The Provinces of Canada; the Carribean area, including The West Indies, Central America and Northern South America; the Mediterranean of the Modern World (The Arctic Ocean); Food Producing Areas of the World and The Ocean of Air.* As soon as possible after the war we must plan to produce films portraying all the economic and geographic regions of the earth.

Modern Science:

♦ Living in the world today is becoming increasingly conditioned by modern science. Most of man's basic wants are largely satisfied through the application of scientific principles.

The industrial revolution must be thought of as a movement which is just getting under way after a couple of hundred years of laborious development. New products of technology are reducing one after another well established industries. Nylon has made silk unnecessary, not only in industry but in wearing apparel. Synthetic rubber, which is much more adaptable to all-around use has probably displaced rubber as a critical or even a strategic resource. The age of plastics and light alloys is replacing the age of steel as we have known it. The ceramic industries are in the throes

of a great revolution, brought on by the production of new materials. Agriculture in the past has been almost wholly concerned with the production of food. The farmer of the near future will produce many of the raw materials required by industry.

With these changes in everyday living being wrought by technology, it is becoming increasingly important that the citizen of today be equipped with a broad scientific background as a tool for effective participation in modern society. Such films as have been produced in the past in the biological and physical sciences are contributing fundamentally to the achievement of wide-spread scientific instruction. These films include such series as Plant Life, Animal Life, The Human Biology Series, Physics, Chemistry, Geology, Astronomy and such films as *Chemistry and a Changing World, Science and Agriculture, Defending the City's Health, Development of Transportation, Development of Communication, The Industrial Revolution* and *The Airplane Changes Our World Map.*

Historic Perspective:

♦ Another of the serious shortcomings of today's instruction lies in our general lack of an intelligent historical perspective. Intensive courses in history have too often failed to assist the citizen in applying man's experience of the past to the solution of his problems of today. The deeper roots of democracy's growth are too often lost sight of in our preoccupation with the minutiae of history. This preoccupation with dates and events has obscured our understandings of great social and economic trends and movements. By means of the film we are able to provide a mountaintop view of our country's history without becoming entangled in the underbrush of insignificant regimes and unimportant tangents from the general path of human progress down through the years. Such films as have been produced which are intended to give historical perspective are, *Discovery and Exploration, Colonial Expansion* and *The Westward Movement.* Other films in this area to be produced will tell the story of the revolutionary period in North and South America, and immigration to America.

Other instructional films which are now making an important contribution to historical understanding are those represented by such films as *Early Settlers of New England, A Planter of Colonial Virginia, Kentucky Pioneers, Flatboatmen of the Frontier, Life in Old Louisiana* and *Pioneers of the Plains.* These films provide a series of pictures of different localities showing characteristics of peoples who lived in specific times and places during the onward march of our national history. They serve as companion subjects to the historical films described above and are intended to provide microscopic insights into important details of the environment, the manners and customs of people who lived and worked during significant periods of our cultural growth.

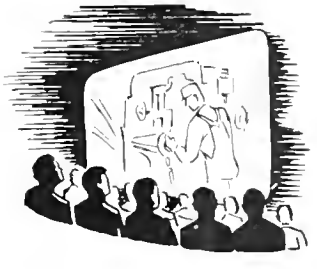
Recognition of the Individual:

♦ Education must be increasingly concerned with the recognition of the worth of the individual as the greatest element in a democratic society. Through the study of films portraying the lives and culture of the peoples of the world the student of today can be brought to appreciate the factors in human living which are instrumental in promoting and fostering the democratic way of life. The school must recognize the film as an instrument which makes possible the laboratory approach to the study of social problems. Thus, pupils may be led to form their own generalizations — generalizations based upon objectively presented reference materials rather than upon verbally stated second-hand conclusions which, in the past, have often led to confused and muddled thinking about human affairs.

The producer of instructional films must assume tremendous responsibilities in the preparation of these instructional materials. Emphasis for the time being will be directed toward films having to do with American institutions such as *American Constitution, Separation of Power in the Constitution, Bill of Rights in the Constitution, The Party System, Pressure Groups,* and the like.

Added to all these will be a series on economics including such topics as *Jobs and Production, Income, Savings and Investments, Consumption on the Living Standard, Money and Prices, Taxation and Government Expenditure, Starting a New Business,* and the like.

★ ★ ★



What We May Expect in Postwar Equipment

W. V. Moen, *Manager, Educational Division, Bell & Howell*

Schools, churches, industrial organizations and others are looking in ever increasing numbers to the visual equipment manufacturers and their dealers for devices which will permit them to do a better job of training young and old to live, work and play. The growing importance and acceptance of visual aids in all human endeavors where the transmission of information is a factor places increased responsibilities on the manufacturer, the dealer and the ultimate user. The National Association of Visual Education Dealers embraces the manufacturer, dealer, and customer, and therefore should accept the responsibility of helping each of these to benefit from and solve the problems of the other.

The manufacturer looks forward to the postwar era with confidence that the dealer and the consumer will evaluate and consider carefully the several important questions regarding equipment which we must answer together.

Will radical design changes be made in projection equipment after the war? Unprecedented progress has been made during the war and peacetime customers will receive the benefit of this progress. Progress in design will be rapid after the war but it will also be steady. Anticipation of changes in equipment should not prevent us from making the best possible use of that which we now have. The student and teacher should not be deprived of proven effective aids to learning while waiting for something new. Changes in design should be considered desirable only if they make no compromise with present standards of picture and sound quality.

Will we have great reductions in the price of equipment? The answer is not available until someone tells us what economic conditions will exist after the war and until the consumer demonstrates that he is serious about having a projector in every classroom, every factory and every home. Labor rates, cost of material and demand will tell the tale. The price of sound projectors has been cut in half since they first entered the market. Further reduction in price will be difficult and will be the result of conditions which the manufacturer hopes will be current soon after the war ends — over which he has little or no control.

Will used equipment be offered to the public by the government? Yes, but the quantity will not be large enough to cause any great disturbance. All government used equipment should be channeled to the public through manufacturers to insure service and proper condition.

Will new manufacturers enter the field? Yes. America was built on the system of free enterprise and spirited competition. It must ever be so. Consumers and dealers of visual aids will and should consider the right of any product to live or die solely on its merit and the ethics of the company manufacturing it.

Space does not allow further questions and comment. The National Association of Visual Education Dealers would do well to assist the manufacturer generate sound thinking among dealers and consumers on the above and other questions. The time to do this is now.

★ NAVED'S HONOR ROLL ★

Olan Anderson	Lieutenant, United States Navy
Paul Brand, Jr.	Major, United States Army
Kent Eastin	Lieutenant, (jg) United States Navy
J. Walter Evans	Lieutenant, United States Navy
Howard A. Gray	Major, United States Army
George Hamilton	Lieutenant, (jg) United States Navy
Milton H. Hill	Lieutenant, (jg) United States Navy
Dion S. C. Hoffarth	Lieutenant, United States Navy
Mahlon Martin, Jr.	Captain, United States Army
Francis W. Noel	Lieutenant Commander, United States Navy
Roy Reagan	Captain, United States Army
Fred G. Roberts, Jr.	Lieutenant, United States Navy
Russell S. Roshon	Lieutenant, United States Army
Lloyd P. Ryan	Major, United States Army
Keith H. South	Major, United States Army
A. L. Vogan	Lieutenant, United States Navy
Dennis Williams	Major, United States Army

PROFESSIONAL GOALS: NAVED'S OPPORTUNITY

by Donald P. Bean

Educational Consultant of NAVED

ROGER ALBRIGHT, *of the staff of the Motion Picture Producers and Distributors of America, Inc., will address members and guests attending* NAVED'S *annual banquet at the Palmer House*

INTRODUCTION

(CONTINUED FROM THE FIRST PAGE)

This special Handbook is tangible evidence of NAVED'S present preoccupation with the dealer's unusual opportunity in the postwar period. There will be increased necessity for the intelligent personal representative to inform, advise, and explain new films and new equipment to the greatly expanded market already stimulated by the war. This specialized dealer is aware that his independence and livelihood will depend upon his knowledge, his energy, and his vision.

AN AGENDA FOR DISCUSSION

NAVED'S 1944 annual meeting, entirely devoted to a discussion of the dealers' role in postwar developments in visual education, is therefore of real significance. This Handbook is the agenda for the problems to be discussed at this unusual conference. It is also a pledge of continued leadership of the specialized visual education dealer through the postwar period. A study of the table of contents will indicate that this leadership will be alert, informed, and interested in long run educational goals.

* * *

Acknowledgment

This special section of Business Screen was prepared in cooperation with NAVED'S Educational Consultant and distributed as the agenda for the annual meeting of the Association. Copies may be obtained from Business Screen, 157 East Erie, Chicago, 11, or from the Secretary of the National Association of Visual Education Dealers, 1219 Madison Avenue, Toledo 624.

J. C. ASPLEY, President of the Dartnell Corporation, in a recent issue of the Rotarian magazine, prophesied a new day for trade associations and industries that organized their efforts on the basis of putting the interests of their public ahead of narrow self interest. Trade associations are economically sound. Many are doing a magnificent job. Through cooperative effort, they are developing the interest of their customers in opening increasing markets for their products. Through their codes of fair trade practices, they are preventing destructive and unethical practices.

What they have accomplished, however, is as nothing compared to what they can accomplish in the days ahead if they really champion the service ideal and motivate their postwar plans on the basis of proving the effectiveness of private enterprise. The American Office Desk Manufacturers Association illustrates what can be done along these lines. Individually they could not afford a high priced designer; together they hired a top notch artist who developed something new in desks. When the green light is flashed from Washington, this group will be ready with a line of desks that will make the one you and I now use definitely old fashioned. Don't think we won't hear about it. A national advertising campaign is to be financed out of a general fund. The organization proposes to educate their salesmen to be office-efficiency experts, who can advise business men intelligently on equipment arrangement with an eye to the efficiency and health of the employees. Instead of encouraging salesmen to pirate each other's business, they will train them to make two sales grow where one or none grew before.

The distributors of visual education aids and materials have a comparable and even more unparalleled opportunity in the postwar period. The experiences of the armed forces have given widespread circulation and interest to educational developments which have heretofore been applied only in favored spots in education and industry. If visual education dealers live up to their traditional role of leadership and service, they will play an increasingly important part in stimulating and directing these developments.

Visual education dealers are already conscious that they have only two choices. They can either repeat the mistakes of the past and operate as individualists, spelling ruin to themselves and the industry, or they can accept the alternative plan, one that embodies wider vision and greater promise. This alternative plan involves strengthening their professional organization, adhering to its postwar program, and adopting a professional code of ethics—the one proposed for consideration at their 1944 annual meeting or some modification of it.

The acceptance of this latter objective would go far toward insuring the health and the permanence of the dealer's role in the future development of visual education. NAVED has already made great strides. It has the whole-hearted support of all branches of the industry. The future would seem to be merely a matter of continued progress toward sound professional goals.

from the Preamble to NAVED'S Code

Believing firmly in the important role which the dealer in visual aids should play in awakening teachers, administrators, and the public generally to a larger realization of the valuable contribution which the proper use of scientific teaching tools of all sorts will make to the advancement of formal and adult education; and

Believing further, that the effectiveness of this new industry will be increased by the codification of an advanced set of professional ideals understood and practiced by the industry;

We, the members of the National Association of Visual Education Dealers, do hereby subscribe to the following principles and rules of conduct of our business in the interest of maintaining, at all times, the confidence of our customers and of our colleagues:

HARLAN H. HOBBS, *Film Officer of the Owens-Illinois Glass Company, Toledo, who is another of the featured speakers on the program of* NAVED'S *annual banquet in Chicago this month.*

PERSONALITIES

★ Here are a few brief biographical facts about the personalities who appear on the program of NAVED'S banquet at the Palmer House in Chicago:

♦ Mr. Harlan H. Hobbs is the newly appointed Film Officer of the Owens-Illinois Glass Company. He was appointed after a careful survey by Walt Disney of the possibilities of using films in the solution of the training and public relations problems of that organization. Mr. Hobbs comes from Paramount and has already organized his department and introduced many innovations into the film plans of the company.

♦ A. Clyde Armspiger needs no introduction to audio-visual audiences. As Vice-President of Encyclopaedia Britannica Films, Inc., Clyde directs the production of the important new offerings of the country's largest producer of classroom films.

♦ Roger Albright is a member of the staff of the Hays office—correctly known as the Motion Picture Producers & Distributors of America, Inc. Teaching Film Custodians, Inc., which makes short subjects of the major producers available for classroom work, is one of his babies.

* * *

We Pause in Tribute

The double loss of a good friend and a pioneer member of the visual industry was sustained in recent weeks with the passing of Frank Pratt, Iowa visual education specialist, and member of NAVED. We pause in tribute on this occasion.

Visual Executive *News Letter*

EQUIPMENT MAKERS, DEALERS MEET IN INDUSTRY TRADE SESSIONS

★ Mid-August was the nation's time for heat records but it was also the visual industry's period of greatest planning activity. On August 14 and 15, in Chicago, and on August 12 in Davenport, Iowa, company executives, dealers and others associated with the production of visual training aids and equipment met in an unprecedented series of dealer meetings, trade parleys and "after-hours" gatherings.

On Tuesday, August 15, Bell & Howell officials were host to dealers in a national sales meeting; Open House for Ampro dealers was held at the Company's plant, 2851 North Western Avenue on Tuesday afternoon and followed by a banquet at the famed Kungsholm restaurant the same evening. Mr. Axel Monson, Sr., president of Ampro, and his son, Harry, Sales Manager of the Company, were hosts to the dealers.

Plant officials and sales executives of the DeVry Corporation as well as regional representatives of RCA Victor met dealers and friends attending the Naved meetings in their quarters at the Palmer House. In addition to the widely-publicized Birthday event in Davenport on Saturday, August 12, Victor Animatograph executives Sam Rose and Ernie Schroeder of Victor were genial hosts to that company's dealers and friends at an Empire Room dinner in the Palmer House on Sunday.

Other company executives glimpsed at these dealer gatherings were Chester Cooley, Vice-President, DaLite Screen; Ellsworth Dent, General Manager, the Society for Visual Education, Inc.; Wally Moen, head of the Educational division at Bell & Howell; Bob Engel, DeVry's Sales Manager and C. R. Crakes, Educational Director of the DeVry organization. President Harry Eller and Vice-President Adolph Wertheimer, Radiant Manufacturing Company executives, were affable hosts at an afternoon cocktail party, held for Radiant dealers and friends at the Palmer House on Sunday evening, the 13th.

♦ Recently appointed as exclusive distributors of DeVry motion picture sound equipment for Mississippi, Arkansas and Tennessee, Tri-State Theater Service Supply Company of Memphis, Tenn.

Samuel G. Rose, executive vice president, A. F. Victor, president and Ernest G. Schroeder, general sales manager of Victor Animatograph Corporation pictured at recent ceremonies marking the 21st Birthday of the 16 mm. industry as they compared modern Victor sound motion picture equipment with the first Victor 16 mm. camera and projector ever produced. Mr. Rose and Mr. Victor have been associated for 34 years the oldest executives, in point of service, in the non-theatrical motion picture industry. They first announced 16 mm. equipment on August 12, 1923.

Many new technical uses in industry as well as a great era of expansion in education, business, science and international relations lie before the 16 millimeter motion picture industry, speakers predicted at ceremonies in Davenport, Iowa, on August 12, marking the 21st birthday of 16 millimeter equipment and honoring Alexander F. Victor, pioneer of the industry and creator of the safety standard, who produced his first 16 mm. camera and projector in that year.

Government, industrial, educational and business leaders paid tribute to Mr. Victor's inventive genius and to the contributions made to the industry's advancement by the Victor Animatograph Corporation which he heads. Over one hundred industry leaders attended the dinner event.

The many new uses in which 16 mm. photography is used in industrial production were described by James D. Shevlin, director of industrial relations and film executive of Deere & Co., agricultural machinery manufacturers. "We have used it to make time studies and we are going to use it more," said Mr. Shevlin. "Your time studies have to be accurate, especially when you are working with a wage incentive system. With a motor-driven 16 mm. camera they can't be disputed. Process analysis means something to industry; work simplification and motion study may mean a great deal more. Training with 16 mm. has come to the fore. At Deere & Co. we have used it to train new workers, supervisory help both new and old and even technicians. We have used it because it is standard, because it is easy to move, because of its safety and because of the volume of film material available.

"I wonder how many realize how industry depends on 16 mm.?" Mr. Shevlin asked. "At Deere & Co. we use it in our experimental department; we use it to recruit workers; and we use it to get into production. Then we also use it in sales and sales promotion in assisting our dealers and distributors to service their equipment and we use it to keep our principal buyer, the farmer, aware of our products."

For postwar 16 mm. equipment Mr. Shevlin suggested lighter projectors, and remote control and freeze control to expand the use of the machines in industry.

"The 16 mm. machines used in instructional training programs by the armed forces have taught the soldier how to use complex equipment in this most complex and complicated war in history," O. H. Coelln, Jr., publisher of Business Screen, pointed out, "but we go into the uncertain future in which we must still win the peace. To win the peace, the whole world must *understand* in a much better way.

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21ST BIRTHDAY:

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in a much more *thorough* way. We face a tremendous job. We have taught our fighting men the skills of *destruction:* now we have got to teach them new skills of *construction.* These 16 mm. projectors speak a universal language we can understand more and understand it better through the medium of 16 mm. sound motion pictures."

DESCRIBES LATIN FILM PROGRAM

The work being done by 16 mm. projectors in cementing Inter-American relations was described by Robert C. Maroney, director of motion picture distribution for the Coordinator of Inter-American Affairs. Today 16 mm. pictures from America are reaching three and a half million South Americans every month, he said and are training industrial workers and farmers, raising the standards of living of all the Latin American countries as well as creating there a better understanding of American life and American business.

"Victor took what was once a toy and converted it into a practical tool for mass education and the preservation of democracy," C. R. Reagan, director of the non-theatrical motion picture division of OWI, declared. He cited the work done by 16 mm. in the recent war loan drive, through a national committee of the industry headed by Horace O. Jones, Eastern Sales Manager for Victor.

CITES VISION OF PIONEERS

The ever-growing importance of sound motion pictures in education was stressed by Dr. V. Clyde Arnspiger of Encyclopedia Britannica Films who declared that the vision of pioneers like Mr. Victor was being realized in promoting higher standards of learning. Displaying a Victor advertisement of 1911 which emphasized the use of motion pictures in teaching he said, "for his vision and courage I pay tribute to Alexander F. Victor and his associates."

Others who spoke included Mayor A. R. Kroppach of Davenport; Samuel G. Rose, vice-president of the Victor Co. and associated with Mr. Victor for 35 years, and William Redpath of General Films, Ltd., Toronto, pioneer salesman for the Victor company. Lee Dougherty, San Francisco insurance executive, was toastmaster.

TOM HODGE

One of the highlights of the meeting was a display of Victor equipment dating back 34 years and including the first 16 mm. camera and projector ever built.

* * *

♦ HAROLD HOPPER, for two years chief of the motion picture photographic division of the War Production Board in Washington, will become general manager of Metro-Goldwyn-Mayer Studios, September 1, M-G-M officials have announced.

HODGE TO N. Y.

★ CHICAGO and Midwestern program chairmen, civic leaders and a host of his other friends in the visual industry heard with regret last month that Tom Hodge, Film Officer for the British Information Services in Chicago, has transferred to New York City.

While his friendly cooperation and genial personality will be missed by all who came in contact with him throughout the Midwestern states, friends and fellow workers alike joined in wishing him Godspeed and success in his new post as head of the Theatrical Section of the Film Division, British Information Services in New York City. He will also serve as Assistant to Tom Baird, Director of the Film Division.

Before he came to America from England two years ago, Mr. Hodge campaigned extensively for the Ministry of Education and the British Film Institute to secure better and more intensive use of films in education. In the war years he was in charge of mobile cinema units in the Northwest of England. John Hamilton of the University of Minnesota will be in charge of the Chicago office on Sept. 1.

Official U. S. Marine Corps Photo

"One of my boys shot that"...

YOU are, let us say, a veteran newsreel photographer with the wartime job of training combat cameramen.

First, a little theory—but not too much. Then, the mechanics of the camera. So far it's easy. But from here on the course gets tougher. The boys have to learn that each individual "shot" must have point . . . that the picture as a whole must have continuity—must effectively "cover" the story. The first tries are apt to be terrible . . . but you and your boys keep at it . . . until finally they step out as promising cameramen.

And one day, months later, you watch a wonderful example of combat photography run off—and you're proud as Punch. You can't help singing out, "One of *my* boys shot that."

Eastman Kodak Company

Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*
FORT LEE CHICAGO HOLLYWOOD

One of a series of advertisements by KODAK testifying to the achievements of the movies at war

Britannica Films Holds National Sales Conference

★ Department heads and the national sales staff of Britannica's wholly-owned subsidiary, Encyclopaedia Britannica Films, Inc., met with the officers of the parent company in a series of conferences in Chicago, on August 10 and 11, the first sales convention ever held by the film division. Talks were given by representatives of four different interested groups.

Officials of Encyclopaedia Britannica, Inc., who addressed the Conference were William Benton, Chairman of the Board, E. H. Powell, President, Walter Yust, Editor-in-Chief, L. C. Schoenewald, Vice-President in Charge of Sales and John R. Rowe, Educational Director.

Speakers who are officials of Encyclopaedia Britannica Films, Inc. were H. C. Grubbs, Vice-President, Dr. V. C. Arnspiger, Vice-President in Charge of Research and Production, H. R. Lissack, Director of Distribution, and John McGilvray, Secretary and Treasurer.

From the University of Chicago was Prof. Stephen M. Corey who is also Educational Advisor for both Encyclopaedia Britannica and the Film Company subsidiary. From the film company's sales staff, the speakers were Mary E. Windle, Utilization Teacher, V. J. McClelland, District Manager, W. V. Shields, Sales Agent, Maj. Dennis R. Williams, former District Manager, Paul Cox, Sales Agent, J. M. Stackhouse, Sales Agent and Kirby Ambler, Sales Agent. In addition, Clarence Shaffer of the Britannica Educational Department gave a demonstration lesson in the use of reference works.

Dimensions of the Postwar Re-employment Problem:

♦ In the year 1940, some 16,600,000 people were gainfully employed in our working-fighting forces. To provide a satisfactory level of production and employment, it will be necessary to increase the number of post-war jobs by many millions over 1940. The figure named by Mr. Philip Murray, President of the Congress of Industrial Organizations, is 9,000,000. The Brookings Institution recently estimated that 8,000,000 more jobs would be required. The Committee for Economic Development puts it at somewhere between 7,000,000 and 10,000,000.

Is this the postwar science classroom? The postwar designer for the Sheldon Company of Michigan has envisioned this modern classroom in which training aids—charts, maps, dioramas, models and projected aids play an important role.

Midwestern Forum Speakers Present Postwar Problems

★ A brief digest of talks given at the Sixth Annual Midwestern Forum on Visual Teaching Aids, held at the University of Chicago on July 21 and 22, reveals some of the postwar plans which education has for the extended use of the visual medium.[1]

Who Will Make Them

♦ Everybody will try to. Special interest groups, various industries, schools, college professors, manufacturers of projection apparatus, Hollywood, the government, and private commercial companies. While it appears that after the war everybody will attempt to make educational pictures, few will succeed because it is a difficult job.

Making a successful educational picture calls for an understanding not only of the film medium, but also of an understanding of the school curriculum and of good instructional methodology. The United States Office of Education has made first class visual aids that were needed for war training. The present attitude of Congress, however, indicates that there is little disposition on the part of this body to subsidize the production of educational motion pictures after the war emergency.

The group most likely to emerge from post-war competition as successful will be the private producers of educational pictures who will serve education in somewhat the same way as the private manufacturers of textbooks have served education.

Who Will Distribute Them?

♦ There are two different problems in distribution. One has to do with marketing or actually selling classroom motion pictures and the other involves the distribution from film libraries to the ultimate consumer. These comments pertain to distribution used in the latter sense.

There are two kinds of distributing libraries. One is a library

1. This abbreviated report of four brief talks given Saturday afternoon, July 22nd, 1944, as part of the program of the Midwestern Forum on Visual Teaching Aids was prepared by Stephen M. Corey, Professor of Educational Psychology, University of Chicago, who acted as Chairman of the meeting. Mr. Don C. Rogers, Assistant Superintendent of Schools, Chicago, Illinois, answered the question, "Who will make them?" Mr. L. C. Larson, Chairman of the Board of Directors, Educational Film Library Association and Consultant in Audio-Visual Aids, answered the questions, "Who will distribute them?" and "Who will pay for them?" Mr. Ernst C. Waggoner, Director of Science and Visual Instruction, Elgin High School, Elgin, Illinois, discussed, "Who will evaluate and use them?"

which distributes on a rental basis to consumers, and the second is a library which is owned by those persons or agencies that use the pictures. There is reason to expect that with respect to school uses within the predictable future, cities of 10,000 population, or greater, of which there are some 1,000 in the United States, will have their own film libraries. This, however, will serve less than one-half the population and the remainder will probably continue to be served by rental or cooperative libraries.

Prints housed in public libraries and for loan to civilians to be used in their homes will become increasingly popular. Not only will such films be used in homes but by all sorts of Service Clubs, Youth Organizations, and c o m m u n i t y groups.

Who Will Pay for Them?

♦ In the long run those who use the classroom motion pictures will pay for them. Subsidizations are practicable for the development of an experimental type of picture and to explore production techniques, but just as has been the case with textbooks, films will have to be sufficiently valuable to schools to justify spending whatever funds are necessary.

Even though the initial cost of most educational motion pictures is too high, the cost per pupil is frequently unbelievably low. Records were kept on one print that was shown 1,500 times to 35,000 people at a cost of one mill per individual. While this represents an unusual situation, it indicates that today carefully chosen films that are used widely results in a low per pupil cost.

Who Will Use and Evaluate Them?

♦ No matter how excellent the films are, and no matter how cheap they come, their pedagogical utility is nil unless they are intelligently used in the classroom. The success with which they are used in the classroom is much more important than the frequency with which they are used, although the latter index is constantly cited to prove that classroom motion pictures are being used effectively.

There is still much fumbling in the utilization of classroom motion pictures although the situation has improved greatly in those schools where some person has been made especially responsible for consultation on the use of visual materials.

In the last analysis it is the classroom teacher who d e t e r m i n e s whether or not the films are used effectively. Consequently, any materials prepared to help in utilization must be materials prepared not only to reach administrators and supervisors, but also to reach the classroom teacher. She must be given an opportunity to screen pictures before they are purchased because with the exception of those prints accompanied by long teacher's manuals it is impossible to make inferences about the actual content of a picture from the advertising circulars.

Foundry training films get expert attention: Midwestern foundry experts and staff technicians for the U. S. Office of Education join with producers to assure technical accuracy. From left to right: Robert Wesley, Atlas director; Stanley McIntosh, of U. S. Office of Education; Ed Christiansen, USOE. Grouped around mold are: Roy Schroeder, Instructor at Washburne Trade School, Chicago; C. F. Wells, Pres., Chicago Foundry Co.; A. DiGirolamo, foreman, Chicago Steel Foundry. In the background, standing, (l. to r.) are: John Curtis, Atlas Ed. Film Co.; Wm. Cureton, Supt., W. A. Jones Fdry. and Machine Co.; John Duggan, Supervisor, Chicago Public Schools and I. R. Rehm, President, Atlas Educational Films.

COMING EVENTS: Sales training aids now available in motion pictures and sound slidefilms: *next issue!*
BUSINESS SCREEN MAGAZINE

ARMY USE of TRAINING AIDS

"The Army is convinced more than ever that training aids — especially training films and film strips — when properly used are invaluable in efficient instruction, and it is my own opinion that in the educational field the quality of instruction will increase as the quality of visual aids and the technique of proper use of these aids increases. In other words, to be a better teacher, one will have to be skilled in the proper use of visual aids."

Thus slaying once more the fabulous dragon of visual aids as a teacher-replacement in the educational system, Col. D. C. Tredennick outlined for Washington visual war workers, recently, some of the ways in which the Army uses visual aids and the devices employed for getting maximum effectiveness from them and for implementing them with the training program.

Col. Tredennick, chief of the Visual Aids Branch, Training Literature and Visual Aids Division, Army Ground Forces — with headquarters at the Army War College — was preceded by Maj. A. M. Weimar, chief of the Visual Aids Section of the Army Service Forces, in addressing nearly a hundred people engaged in visual work in the nation's capitol who meet weekly for discussion of developments in the field.

Opening the session Maj. Weimar outlined the Army's accepted visual aids: *Training films*, which are movies for training purposes based on established War Department doctrine; *film bulletins*, *pictorial reports* of developments not yet established doctrine; *combat bulletins*, picturizing combat experiences useful to trainees, which though not news releases are intended to be current; *filmstrips*, both sound and silent; *charts, posters and graphic portfolios* — the latter consist of charts and pictures in series to cover an entire subject, with instructions for the lecturer's use provided on the back; and such special training devices as *models*, *miniatures* and *sand tables*.

Care in the early preparation of any visual aid program, Maj. Weimar pointed out, saves considerable money and later effort, in addition to assuring a more satisfactory completion. In beginning a training film, for example, the requesting agency prepares a lecture covering the subject of the projected film, as a basis for Army Pictorial Service's writing of the scenario; since the lecture simply defines what is to be covered, however, a military adviser is assigned to work with the scenario writer to assure accuracy in all technical details and aid in expanding the subject for visualization; the same adviser follows the production through its entire progress. Though it sounds involved and complicated, Maj. Weimar asserted it was essential.

"Unfortunately movies and graphics have long been associated with entertainment," he continued. "Training films can't be entertaining, but some substitute for entertainment must be found or the audience will go to sleep and the entire effort is wasted. Use of problem situations has been especially helpful; in these we establish a character with whom the soldier in the audience may identify himself and so grasp the material more easily.

"Camera techniques can also be effective, though as yet we haven't gone far in development of new and striking uses of the camera itself. Models likewise have been found good; oftentimes they will save considerable time in preparation as compared with animation, and may simultaneously increase clarity."

Sound filmstrips are not being used as extensively as silent ones, Maj. Weimar reported. In either case, however, captions are extremely important; their omission results in a measurable loss in effectiveness. Here the visual presentation is considered more important than the narration, and preparation of the visualization first is paramount. The Army's current policy is to plan a filmstrip by means of rough layouts for approval purposes and follow these through in the normal manner with a significant saving of time and production costs. At the same time it was declared that filmstrips are substitutes for charts, rather than for motion pictures.

When graphic presentations are prepared a complete series of dummies is used because the logic of the sequence is essential in a series of fifty or sixty charts.

All these types of training aids, taken together with textbooks, form a package, Maj. Weimar concluded. None of them should be planned except in connection with the literature which will make a single training unit. The speaker expressed the hope that such units would be used increasingly in high school and college for presentation of introductory material — the background of knowledge — leaving the instructor free to concentrate on more advanced work and on the individual student's development.

Continuing from that point Col. Tredennick reiterated that "Training will proceed only in line with approved doctrine," thus emphasizing the utility of field and technical manuals — one of each of which has been prepared to instruct the instructors in proper methods, for the Army also requires that the process involved in teaching be understood and mastered by the instructor.

The mechanism of instruction, then, consists of (1) preparation by the instructor; (2) explanation; (3) demonstration; (4) application; (5) examination; and (6) discussion.

Army training methods have been developed from the fundamental fact that the only means by which human beings impart ideas to one another are the five physical senses. All of these, at one time or another, are used in the five most commonly used military training methods: lectures, conferences, demonstrations, group performance, and coach-and-pupil method, in which two students take turns as coach and as pupil.

Taking a lead from civilian educational practices the Army recognized early the value and importance of visual aids as a means of enriching and vitalizing Army training. This factor became increasingly important as it became necessary to speed up training and to train large numbers of soldiers.

Col. Tredennick then explained

the principles upon which visual aids are produced: "Based on a knowledge of what our training subjects are, a study of the particular problem involved, and our experience in conducting training in a particular subject, we get an excellent insight as to whether some aid is needed and then decide what type of aid to produce. Weighing the many factors involved we decide on production of training film, film strip, graphic portfolio, chart, model, or demonstration piece. Regardless of type, it must be integrated with training and fill a place in the training cycle.

"The recognition of this principle in education is important if visual education is to grow in value and fill its proper place. The proper evaluation of subject matter, determination of a need of an instructional aid, and then the selection of the proper aid for that subject are essential elements of the educational problem. A teaching aid can be justified only when it satisfies a need. Ideally, it originates in the recognition of a specific need for such an aid at a specific point in the instructional process; it is developed and constructed with this need in mind; it is approved because it meets the need; and it is used in the specific situation in which the need is felt. This concept points toward the teaching agency—those who are specifically charged with the instructional process or its supervision — as the agency which conceives the project, determines its content, guides its development, approves the finished product, and prescribes its use.

"Having produced a training aid," Col. Fredennick continued, "the Army is interested in seeing that it is used properly. Continual pressure is applied toward recognition that training aids are essential to efficient instruction and continual efforts are made to assist training officers in knowing what aids are available and how they are best used."

Beyond a special field manual on military training aids, preview facilities are available at all stations for use in evaluating training films, film and combat bulletins and filmstrips for any given training program. Training film digests are issued as a further spur to film-use, and as a help in evaluation. Training film instruction guides are issued frequently. And for filmstrips there are illustrated instructor references, posters and booklets. The Army Ground Forces now are using charts showing frames in series from a number of filmstrips, and these give the instructor an opportunity for study without having to go through the strip itself; when posted over equipment to which it is applied, it gives the soldier an opportunity for self-instruction.

A number of studies have been made of effectiveness of visual aids, and especially with training films. One Army Service Force survey indicated that with men of low intelligence, repetition of the film increased learning and retention, though there was no marked effect from repetition with men of higher intelligence. Improvement was seen, again, if some time — hours or days — elapsed between showings.

Regardless of conditions, however, and the number of types of aids used — sometimes just a training film, sometimes three or four different aids to a specific program — the men's knowledge of the subject matter presented in a film was materially increased by supplementing the film with an introductory explanation or with a follow-up quiz. Although the more intelligent men learned more from each type of presentation than did the men of less intelligence, value of the supplementary instruction itself was as great for the less intelligent men as for the more intelligent. The influence of the introductory exercise was not restricted to the specific material discussed in it, but applied also to topics not covered by the introduction. Use of material which cannot be assembled or disassembled during a presentation likewise increased learning, and with this the need for early planning of the visual aid was reiterated.

It was pointed out that all of this training is below college level, and by way of introductory remarks it has been found valuable simply to key a film that is to be seen by a group by the instructor's saying "This film is about . . . look for this and this and this . . . " and while focusing attention on certain specific things may limit absorption, points stressed are those which are the essentials of the training, those which must be gotten over to make an effective soldier — and help to keep him a live and fighting one.

Using control groups in which 100 per cent equaled the scores in a map-reading examination following a film with which there was no preparatory period, Army Service Forces studies showed a 12 per cent increase in knowledge with use of the brief introduction, a 16 per cent increase where a review quiz covered and pointed up all the material in the film, and a 19 per cent increase with both introductory explanation and review quiz.

WAR FILMS FOR WAR USE

★ WAR FILMS FOR WAR USE is the latest release from the Bureau of Motion Pictures, Office of War Information. This booklet lists 79 non-theatrical films available from 270 film library distributors in 18 states. The booklet describes these war information films and lists the names of all distributors cooperating with OWI to provide nation-wide distribution.

These 16-mm films inform the American people of the status and progress of the war. They cover the fighting fronts and the home front. They point out the issues of the war and clarify the nature of our enemies. They build an understanding and a respect for our Allies in Britain, in China, in Russia, and around the world. They drive home dramatically and positively what Americans are doing and must do for Victory.

WHEREVER AMERICANS MEET

These motion pictures are for use wherever Americans meet for a serious purpose. They are being widely used in war plants, labor groups, service clubs, women's clubs, parents' groups, civilian defense meetings, community gatherings, schools and colleges, churches, rural meetings, and fraternal groups.

Films on our fighting forces include *Desert Victory*, *The Negro Soldier*, *Reports from AAF*, *Target for Tonight*, *Report from the Beachhead*, and *What Makes a Battle*.

Films on our allies include *Report from Russia*, *Here Is China*, *The Dutch Tradition*. Films on the production front include *Suggestion Box*, *Day of Battle*, *Behind the Winning Punch*, *The Arm Behind the Army*.

HOME FRONT DRAMATIZED

The nature of our enemies is covered by such films as *Divide and Conquer*, *Our Enemy — The Japanese*, *The World at War*. The home front is dramatized with many films, including *Food and Magic*, *Challenge to Democracy*, *It's Everybody's War*, *Magic Bullets*, and *When Work Is Done*.

These films have been made available through the cooperation of various Federal agencies, including Office of Defense Transportation, Office of Price Administration, War Production Board, War Relocation Authority, U. S. Department of Agriculture, U. S. Public Health Service, etc. Others have been produced by the Signal Corps, the AAF, and Coast Guard. Still others are films made available by British Information Services, Free French Press, National Film Board of Canada, Netherlands Information Bureau, Polish Information Center, United China Relief, etc.

Copies of the above directory of OWI War Films may be obtained from the Bureau of Motion Pictures, Office of War Information, Washington 25, D. C. All bookings for these films should be made from your local film library cooperating with OWI in war film distribution.

Canada's "Guns for Victory"

♦ *Guns for Victory* is the title of a new motion picture in color, just completed for Atlas Steels Limited of Welland, by Associated Screen News Limited. Two reels in length, it describes in detail the production of special steels for gun barrels and breech blocks. The entire process is shown, from melting furnace through heat treating, press, hammer, rolling mill and machining operations. Some of the steel is even followed into ordnance plants where guns, large and small, are completed for the navy, army and air force.

Directed by Jack Chisholm, the picture was produced from a scenario by Stephen Leacock Jr., with commentary handled by Albert Miller.

Guns for Victory is a sequel to *Vision Fulfilled* which has been showing before technical groups throughout Canada. The latter subject was a five-reel description of processes and facilities of the Atlas Steel plant at Welland. It was produced to give buyers and users of steel a better understanding of steel-making processes. It is also expected to serve a useful purpose in the development of export business, since it is ample proof of the capacities and capabilities of the Welland steel-making plant.

Plowshares Into Swords

♦ Cockshutt Plow Company of Brantford, Canada, will shortly release a new motion picture in color, *Together We Serve*. It was produced by Associated Screen News Limited for Cockshutt, principally for showing in farm areas, to show "how a company that helps the farmers is helping to win a war."

Not only farm scenes and the manufacture of farm implements for mass production of food for victory are shown. A number of Cockshutt plants are visited as well to show how plowshares are turned into swords—to show the making of moulded plywood airplane fuselages, undercarriage assemblies for aircraft, exhaust manifolds, shell cases and grenades.

This is the first picture in color to show the processes in making bonded plywood aircraft components. It is three reels in length, and will be released shortly for showings across Canada in the areas served by Cockshutt Plow.

NAVED Insures Films

♦ Film users who have worried about their responsibility for film damage may now breathe more easily. Those who have been forced to replace twenty-five to fifty feet of a film damaged while in their care have discovered that most film rental contracts placed the responsibility for all such loss or damage on the customer.

Film exchanges are now in a position to provide a special form of insurance for film damage to protect their customers from all such loss or damage to film while in transit to the renter or in use on their projectors. The charge for this insurance is nominal —10 cents for programs under one hour and 20 cents for longer programs.

The insurance is underwritten by Aetna Insurance Company, but it it available only through members of the National Association of Visual Education Dealers.

OFF THE PRODUCTION LINE

(CONTINUED FROM PAGE 16)

visible "crawl" in the picture. The slow motion sequences permit the human eye to "take its time" in following the swift action of various camera shutters, of the performance of popular flash bulbs, and of high-precision timings. This has been achievd through adroit use of extremely high speed motion picture photography.

To partially "freeze" the lightning-fastion action of shutters and flash bulbs, the producers were compelled to film some of the sequences at speeds running up to 3000 frames per second. Photoflash, incidentally, provided the tremendous amount of light required.

The new sound movie features the operations and characteristics of between-the-lens and focal plane shutters, various midget flash bulbs, and the relative merits of sundry reflectors—all with relation to one another. Detail action is shown through deft use of animation.

Photographic "stills", it was pointed out at the film's premiere, are playing a significant role in virtually all operations of the armed forces. Countless flash pictures are being taken by the military for public consumption as well as for illustration in connection with case histories of all kinds.

The high-speed sequences were made by Henry Lester, widely known photographer and technician for the Morgan & Lester firm of New York.

Script for the film was written by G. E. Lamp Department's P. A. Carson, Frank E. Carlson and Don Mohler. The entire production was supervised by O. H. Young, manager of the Photolamp Division of G. E. at Nela Park. Prints of the film are in the hands of G. E. Lamp Department's district offices where arrangements may be made for showing the picture locally.

Shows N. Y. Market

♦ Produced by Harold B. Sherwood, advertising manager of the New York Daily News, a technicolor production showing the composition of the New York market had a recent presentation in Chicago, with a week's screenings at lunch and at cocktail time drawing some 600 advertising men and women.

The production detailed an investigation of the sections of the city and the suburbs from which 16,000 customers of New York City's dozen Florsheim shoe stores came, to provide a picture of the economic status of customers of this high-priced chain which amazed the company and resulted in a substantial change in advertising approach.

Screen Advertising Increases

♦ Theater-screen advertising has increased 25% in the last year, chiefly as a result of local advertising, according to a report in *Motion Picture Herald*. With national brand copy off considerably since the start of the war the report cited a test program in which 22 national advertisers planned to spend a quarter million dollars to determine effectiveness of the medium; three national campaigns are due to run in theaters this fall, as part of the program which also calls for use of marketing research methods applied to studies of results.

Industrial Advertisers' 7-Point Sound Slidefilm

♦ Basis of a new 15-minute sound-slidefilm produced for the professional development committee of the National Industrial Advertisers Association is a seven-point check-list for making industrial advertising campaigns bring results. Each frame emphasizes the important part to be played by advertising in building postwar markets for, according to J. M. McKibbin, postwar advertising success will depend largely on ability to learn and profit from failures. McKibbin, manager of application data and training for Westinghouse Electric & Manufacturing Company (East Pittsburgh, Pa.) and NIAA vice-president, developed the program in cooperation with the association's executive committee.

The seven checks are: (1) Do I have sufficient data from the manufacturing division? (2) Have I done a thorough job of market determination? (3) Have I correlated campaign with distribution strength or weakness? (4) Is my advertising appropriation adequate for the job? (5) Has my budget been loaded down with non-advertising expenses? (6) Does my advertising help the customer solve HIS problems? (7) Have I made provision for the thorough training of the field selling force?

New York advertising executives asked to cite reasons for some of their "failures," indicated chiefly Point No. 2, then Point 6. Points 1, 3 and 7 each received about the same number of mentions. McKibbin emphasized that the last, on training the field selling force, "can make all the other six count."

CATERPILLAR

CONTINUED FROM PAGE 15

the best equipment in the World. It also illustrates their adept handling of that equipment.

Our Fighters was supplied to "Caterpillar" dealers to show their customers how the armed services are using machines which would normally be building better roads and highways, plowing fields, irrigating land, spraying orchards, working in oil fields, quarrying rock and numerous other peace time jobs.

Unites Component Suppliers

This film was also used on an unusual project. "Caterpillar" buys thousands of component parts from hundreds of foundries, forge shops and manufacturing plants which make both finished and semi-finished items from air-cleaners to piston rings. This film was shown to employees of these suppliers so that they might know the part their products play in "Caterpillar" machines in the many theatres of war.

Each of these supplier firms were contacted first by letter asking if they thought this plan had merit as a morale builder and if they agreed that it did to arrange a proper time and place for the showing.

At some of these plants the picture was shown during the lunch period, at others, during work shift changes and at some on company time. Forty minutes was required for the film's running time.

Showings Very Extensive

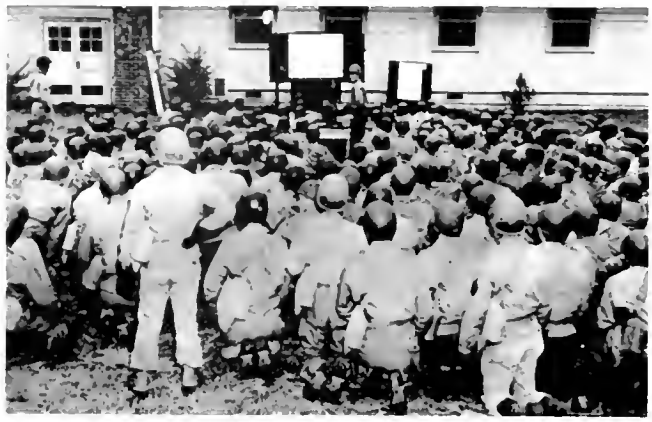
The sizes of plants ranged from fifty to two thousand employees. Sometimes the film was projected in a warehouse, sometimes in the shop, in the plant assembly room, or wherever space was available. At some plants it was necessary to show the films several times so that all their employees might see it. Cardboard or tarpaulin was used to cover windows or sky lights. Often packing boxes were used for seats. In six weeks the movie was shown to 7500 workers in five states.

The entire projection equipment was portable. It consisted of a Bell and Howell Filmosound with a 750 watt lamp and a one-inch lens. The screen was a Dalite 52 x 72 inch.

All four of the above movies are 16 mm. sound films, in black and white; the photography on all but *Our Fighters* was made by the company's photographic staff. Script was written by the advertising department and the sound recordings purchased commercially.

These movies might well be termed "by products" of advertising. At the same time they are doing a public service which will be remembered when the company can again fully serve civilian customers.

TROOPS SEE FILM SHOWINGS IN BROAD DAYLIGHT



"Daytime" Shadow Box Screen in use at Fort Sam Houston (Texas). This Radiant screen was especially developed for such purposes.

WIRE RECORDING

★ On the "audio" side of audio-visual aids to selling and training, new developments of an old idea threaten something of a postwar revolution. The idea: magnetic recording on steel tape or heavy steel wire. The refinement: magnetic recording on a .004-inch wire (about the thickness of a human hair) feeding from a spool of five-inch diameter and two-inch width, instantly playable without processing and with high fidelity, and capable of more than 100,000 playbacks without serious deterioration.

Adaptable to a wide range of uses outside the teaching and selling fields—for such things as court reporting, home recording of broadcasts, logs of airplanes flights, for example—at least two possibilities are seen within the field: use with slidefilms for lecture work, replacing disc recordings, and use with a variety of public displays.

First tried by Danish physicist Valdemar Poulsen who got poor reproduction from recordings on heavy wire, the most recent development is the work of 27-year-old Inventor Marvin Camras, with further development by the Armour Research Foundation at the Illinois Institute of Technology.

With several disc recording companies said to be seeking licenses, the Armour Foundation has licensed General Electric, McLouth Steel Corporation (Detroit), Utah Radio Products Company (Chicago), and C. G. Conn, Ltd. (Elkhart, Ind.) to manufacture recorders. The wire, which undergoes no mechanical change but merely takes on new magnetic qualities, and which may be "wiped" clean of its sound by feeding through a de-magnetizing head, is being made by the National Standard Company (Niles, Mich.)

It is expected that cost will be moderate, since many of the essential parts are already available in the standard radio set itself; ultimately, of course, it may be developed into a built-in feature of many radio receivers. Present size of the unit is comparable to a typewriter or large portable radio, with a pocket-sized portable dictating machine now in the works.

Sturdiness has been proved in a variety of conditions, and it has been demonstrated that no attention need be given the unit while it is operating.

* * *

♦ More than 35,000 prints of training films produced by the U. S. Office of Education have been sold thus far, recent statistics revealed.

CALSHIP'S INDUCTION FILM

(SEE ILLUSTRATION ON PAGE 16)

AFTER SEEING California Shipbuilding Corporation's new induction film, "new-hires" at Calship in twelve months will save the company approximately twenty times the cost of producing the motion slidefilm.

That is the opinion of Russell Bergemann, Calship's industrial relations manager, who believes that Calship's new visual education induction program will help greatly to speed the shipyard's production of "Ships for Victory."

"Increased efficiency as a result of increased beginning knowledge of the plant, and of its rules and its services, should save at least one hour for every one of the 35,000 men and women Calship expects to hire in the next twelve months," Bergemann said in discussing the film. "By giving the in-coming worker a visual idea of what confronts him, the induction film can save each new employee dozens of lost motions in adjusting to his new work."

The new induction program, inaugurated in July, 1944, was conceived more than a year earlier. It was in early September, 1943, that J. M. Warfield, administrative manager of California Shipbuilding Corporation, called upon Calship's public relations department to devise a more satisfactory induction program for new employees.

At that time, the recruits were brought from an exhausting struggle at the hiring hall to a classroom for unillustrated lectures on the yard and safety practices. The new workers listened for approximately two hours and left the lecture room bored, confused and unprepared for many problems ahead.

After study of Army and Navy induction training methods and those in use in other plants, a visual program was decided upon. It could present these advantages:

1. The program would be uniform on all three shifts. It could be approved in toto and would not vary in any manner.

2. It could orient the employee more quickly, enabling him to fit into production sooner, thus saving countless hours of waste motion.

3. It would be a definite aid to morale, giving employees an accurate picture of Calship's background, purpose, history, problems, importance, aims and opportunities. Fewer accidents, fewer lost hours and fewer terminations would be the result.

4. A much greater portion of the program would be remembered, as it would appeal to the eye as well as the ear.

5. Tremendous savings would be effected by the company. Not only the program itself could be shorter but the entire proceedings could be handled by one man. Still more important, because of quicker orientation, each new employee could save from one to a dozen or more hours in his first few weeks of employment. This, multiplied by the yearly number of new-hires, mounts to an extremely impressive saving, not only in dollars but in man hours.

ILLUSTRATED BOOKLETS USED

To reinforce the visual program, illustrated booklets covering Calship history, services, rules and practices were planned for distribution to the new workers. These booklets would contain a map of the yard and would be small enough to fit in a lunch box or overall pocket so that the worker could have it handy for the first few weeks.

An orange and blue booklet, Calship Ways, covers in printed form the points the new worker has just seen on the screen. Profusely illustrated, its 48 pages present a map of the yard, four full-page photographs and 28 cartoons by Bill Tara, contracting artist. A second booklet, Safety Helps, also illustrated by Tara, explains more fully the yard's safety rules and practices.

TERMED VAST IMPROVEMENT

"The reaction seems favorable," comments Walter Routery, section head of force control, who has been in charge of presenting the film each day. "We have not had time to discover definite results yet but at least we are sure that none of the important points of the induction program get lost, strayed or stolen in the presentation. While we could have wished for something better, this seems the best solution we could have obtained on our budget. The film, together with the booklets, is indeed a vast improvement over the lecture system we had."

Bergemann thinks the film is also valuable as a morale builder. "The employee who is shoved into a tool room under Way 7 has little opportunity to find out anything about the finished ship. This film gives him a perspective of the yard and the importance of the job. For this reason alone, the expense of the new program would be justified."

CONTINUED FROM PAGE 18

POSTWAR TELEVISION

will make television networks possible.

Apparently the American public is prepared to accept television, for a market survey made by RCA of eleven principal cities revealed that if receivers could be produced for $200, approximately 60% of the people would buy them. Although it is difficult to foresee the exact place of television in the home, it has already been ascertained that the novelty of television wears off very quickly. Television will, therefore, have to hold its audience on merit alone. The competition will be stiff, for comparison with Hollywood feature motion pictures, which in 1943 cost an average of $395,000 each to produce according to the Film Daily, is immediately invited.

Even when television develops to a point where it reaches an audience comparable to the present large radio networks, the expenditure of a sum of money anywhere approaching the cost of a Hollywood production will be prohibitive. This cost differential, together with the poorer quality of the television image, as compared with the theatrical screen, will doubtless make it impractical to produce anything akin to the Hollywood product. The type of film which the non-theatrical producers of the country have long been successfully marketing will, therefore, have the field almost to themselves. Time may even record television as a medium for disseminating education and information rather than a medium for entertainment.

Advantages are Compared

Live action television will possess some, but not all, of the important advantages of the motion picture as a means of communication. It will not, for example, be able to telescope the time angle, nor will most of the advantages of selective editing be possible. The advantages of the motion picture as a basis for television broadcasts will be freely called on for the spontaneity of television is an asset, which is of doubtful value except in the case of news, sporting events and competitions. Unquestionably the great news telecasts of the future will prove to be the most interesting events on the air. When the spontaneity angle is really worthwhile, it will certainly be capitalized on through televised theatre projection. When such events are broadcast by television, they will attract the greatest television audiences.

It's a Movie Projector

For the daily run of the mill telecasts we can, however, consider the television sets as a sound movie projector in the home. That which makes a motion picture interesting will make a television broadcast interesting. Today one must go through considerable trouble, a great deal of expense, or both, in obtaining and projecting a 16 mm. sound motion picture. Tomorrow, with television, we will need only to flick our wrist and have the choice of a wide selection of audio-visual education and entertainment material.

Since television may cut deeply into the audiences which the pre-war non-theatrical motion picture played to, it is opportune to summarize the reasons why the film will be assured a leading place in the television structure.

As previously mentioned, motion pictures will enable the simultaneous broadcasting of the same material from a large number of stations (before networks are developed) and will also permit the rebroadcasting of important events at times convenient to a station's audience. Motion pictures furthermore will insure perfect performance. Mistakes in dialogue and acting and unfortunate camera angles can be eliminated in film editing and retakes can be made at will. This is extremely important, for unlike radio, scripts will show in television.

Relieves Script Memorizing

Therefore, long and tedious rehearsals and memorizing of scripts would be required before a convincing television continuity would be ready for live action television. With motion pictures, scripts can be rehearsed immediately before each short scene and largely memorized as the shooting progresses. If a fluff is made, all that is wasted is a few feet of film instead of the reputation of all those concerned. We all know how many retakes are required in film production. Think of the preparation and rehearsals that would be required if we knew that no retakes could be made. When dealing with children, animals or other subjects whose actions cannot be precisely foretold, the necessity for using film and securing a satisfactory take by the trial and error method is obvious.

Present day television has not the light sensitivity of fast motion picture film. This offers considerable advantage in depth of focus and picture quality, when film is used as an intermediate step between live action and the television camera.

Provides Legal Record

Telecasting from films will give a record, important from a legal standpoint, of what actually went on the air. It will thus eliminate any necessity for recording on film, or in any other manner which may be devised, a transcription of the picture and sound presentation of the screen.

Even with live television broadcasts the use of stock footage or specially taken films as transition or background material will be important. Rear projection as used in present day film production will doubtless offer the same advantages to the electronic camera as it does to the film camera. Television equipment will enable the operator to cut or dissolve from a film image to a live image as readily as the mixer at a recording studio blends one film track with another.

Can be Used in Field

After being televised, films can be used in their present fashion for non-theatrical showings. Film cuttings from one production may profitably be used for later shows, and a file of past films will offer valuable reference material to directors, artists and producers in planning new and better productions.

Techniques which have been developed for obtaining unusual effects through retarding or accelerating the speed with which motion pictures are taken will be a necessary intermediate step if we are to show such effects on the television screen. The entire field of animation and the use of slow motion are two outstanding examples of tele-

vision's reliance on a film. While optical effects can be obtained to a limited degree with direct television equipment, it may well prove more practical to produce them first on film.

A Medium for Advertisers

Without doubt television will be supported by advertisers. Therefore, the field for producing short commercials will be large. These will require split-second editing and a precision and pace which will be difficult, if not impossible, to match through live action television. When televising direct, there is always the possibility of costly blunders which could do serious damage to a sponsor's public relations program. Imagine, for example, the effect on a cigarette promotional campaign if a smoker before the television camera was suddenly taken with a coughing spell just after a puff of a "throat soothing" smoke. Films because of their dependable character will not only be good insurance for the advertiser but the same commercials can be used over and over again if the unions will permit.

What of the Unions?

The union situation in regard to television may best be summarized at the present as one of watchful waiting. However, when television leaves its present experimental period there probably will be many jurisdictional disputes. The various unions in radio, the theatre and the motion picture will all vie for a leading place in the field.

Distribution has long been the greatest problem facing the non-theatrical producer. Television may be the answer. The first showing of a new film in the future may not be to small audiences like that of today, but to the great American public in every city and state in the Union.

Motion picture producers, because of long experience in dealing with the pictorial, will hold an important advantage in the early day of television over those who are at present working in the radio industry, for the visual sense is by far the most dominant means of absorbing information.

Let us, therefore, be progressive and active in the formative years of television to the end that we may become an integral part of the new industry.

New Lens Cleaning Fluid

♦ Opti-kleen, the new lens cleaning fluid recently launched by Bell & Howell Company, is this company's answer to the problem of efficiently cleaning surface-coated glass. A reflection-reducing process, surface-coating was introduced as a wartime necessity, and will be a peacetime "must".

The appreciable superiority of surface-coated lenses is matched by Opti-kleen, especially designed to keep pace with this lens improvement. Reflection-reducing coatings may be severely damaged by the use of a cleaning material containing wax, so Bell & Howell laboratories brought forth this doubly-effective solution for any lens or finder cleaning, acclaimed superior due to the absence of all solids, which eliminates the possibility of residue from the cleaning fluid being left on the surface of the glass.

Canadian workers see both training films and war reports at regular intervals through film showings arranged by the Industrial Circuits Division of Canada's National Film Board

STANDARD OIL'S WAR SERVICE

♦ Throughout the West, Standard Oil Company of California has enrolled its motion picture service in the war effort with remarkable results. Hundreds of thousands of war workers have thrilled to recent war releases which Standard has brought them on the job. In familiar surroundings they have gained a greater appreciation of how inseparable are the war fronts and the home front.

Rating high among the unusual showings Standard has conducted were a series of motion picture shows screened for mine workers hundreds of feet underground in the mines of the Inspiration Consolidated Copper Company at Inspiration, Arizona. War Communiques, released by the War Department, were shown during the miners' luncheon period.

Reach Thousands of Groups

Standard's free picture service, which is available for the asking, has brought information, instruction and entertainment to thousands of interested groups. Showings have been made to service clubs, fraternal organizations, schools and industrial groups. They have been held in the assembly halls of housing projects, in induction centers of West Coast shipyards, in the cook and bunk houses of lumbermen and oil field workers and in granges where farmers and their families assemble. They have also been held in State penitentiaries.

The pictures are fitted to the audience and experience has shown that war workers and service clubs prefer war films and pictures about our Allies or the enemy. During the Fifth War Loan campaign, in cooperation with local War Finance committees, Standard made many showings of the War Department's special films released for this drive.

Show Technical Films

Many showings of technical films have been made to vocational training schools and various branches of the armed services. These pictures deal chiefly with the petroleum industry and the manufacture and use of fuels and lubricants.

To convalescing servicemen in government hospitals, Standard has brought films of an entertainment nature which are always welcome. These showings are made to large groups assembled in Red Cross Centers or USO halls and at other times are conducted in the wards for bedridden patients.

Films go everywhere: a Standard Oil showing down in the mines of the Inspiration Consolidated Copper Company at Inspiration, Arizona. Miners are seeing war films through arrangements made by this sponsor.

Activity Began in 1935

The use of motion pictures by this company is not a new activity. Its first motion pictures were produced in 1935 to better acquaint employees with the scope of the company's operations and its products. As their educational value became known outside of company circles showings were made upon request to schools, industrial concerns and other interested groups.

Thus, Standard was fortunate, with our country's entrance into the war, to have available a trained staff of men fully equipped to conduct motion picture shows. The company at once enlarged its film library to include films on first aid and many other civilian defense subjects. Today many of the pictures shown are provided by the War Department and the Office of War Information. Standard of California's motion pictures and service have enrolled for the duration and are filling a definite public need.

Aid Cotton Production

♦ To stimulate morale, cut absenteeism and aid in boosting production, J. Walter Thompson's motion picture department is releasing through local theatres in areas where cotton textile and tire cord mills are located a series of seven four-minute films prepared at the suggestion of the War Production Board to make workers more enthusiastic about their jobs and their contribution to the war. The series is part of a larger WPB campaign dedicated to morale improvement in the cotton textile business.

Using some scenes borrowed from such industrial concerns as Pepperell Manufacturing Company, E. I. duPont de Nemours & Company and U. S. Rubber Company to save needless duplication, the short films include on-the-spot dramatic sketches enacted by local people, and brief talks by such government officials as WPB's Charles Wilson, James F. Byrnes, director of War Mobilization, Vice-Admiral S. M. Robinson of the Office of Procurement & Material, and Lt. Gen. Brehon Somervell of the Army Service Forces.

Sound Masters, Inc., did the production. Script was handled by the Thompson film department which, additionally, prepared an exploitation booklet and posters.

* * *

♦ Sales education and service training appear to be the first two subjects of current importance in postwar film planning of industrial concerns.

INDUSTRIAL FILM SOURCES

JOB TRAINING
(Shop and Office)

DRAFTING TIPS—30 minute, 16mm sound motion film showing *basic drawing techniques*; a short-cut in breaking in beginning draftsmen. Price, $55. Available from Princeton Film Center, Princeton, N. J.

TAKE A LETTER PLEASE—24 minute, 16mm sound film on *how to dictate a letter*; a shrewd and humorous corrective for time-wasting, nerve-wracking pitfalls in letter dictating. Especially helpful in training new junior executives. Price, $20.44. Produced by U. S. Navy. Available from Castle Films, 30 Rockefeller Plaza, New York 20, N. Y.

ADVANCED TYPING SHORTCUTS—16mm U. S. Navy sound film showing *methods by which typists and secretaries can turn out work with less effort*. Useful for improving experienced typists. Price, $23.76. Available from Castle Films, 30 Rockefeller Plaza, New York 20, N. Y.

THE INSIDE OF ARC WELDING—16mm sound film in six ten-minute parts, each complete in itself. Titles include: *Fundamentals, Flat Position, Horizontal Position, Alternating Current—Flat and Horizontal Position, Vertical Position, and Overhead Position.* Available singly or as a complete series from General Electric Visual Instruction Section, Schenectady, N. Y., or the nearest General Electric branch or welding distributor.

THE INSIDE OF ATOMIC-HYDROGEN ARC WELDING—16mm sound film in two ten-minute parts, each complete in itself. *Part One describes the fundamentals of arc welding, Part Two shows the proper techniques for principal types of joints, how to control the molten pool and corrections for improper welding conditions.* Available from General Electric's Visual Instruction Section, Schenectady, N. Y., or the nearest General Electric branch or welding distributor.

LIGHT ON MATHEMATICS—a 24-unit slide-film kit-set *review of arithmetic, geometry, algebra, and graphs.* Useful for engineers and others who work in mathematics. Price, $81 (for complete series). Individual subjects also available at $1 each from Jam Handy Organization, 2900 East Grand Blvd., Detroit, Mich., and Jam Handy offices in Chicago, New York, Washington, Dayton and Los Angeles.

THE WORKING OF MAGNESIUM—30 minute, 16mm sound film on *how to work magnesium and what can be done with it*; includes precautions for the prevention of fire and corrosion and handling accidents. Particularly helpful to engineering, industrial and technical groups. Available from Dow Chemical Co., Midland, Mich.

DIAL INDICATOR GAGES and THE DIAL INDICATOR—20 minute, 16mm sound films teaching the *basic facts on how to use the dial indicator and the dial indicator gage.* Particularly helpful in introducing new employees to general plant methods. Available from producer, Federal Products Corporation, Providence, R. I.

HOW TO WELD ALUMINUM—35 minute, 16mm sound film made in cooperation with Aluminum Company of America. Covers *arc-welding, gas-welding, adjustment of torch, metal-arc, carbon-arc, and atomic hydrogen process*, as well as complete and incomplete heat and bend tests. Useful for both beginners and experienced welders. Available from Aluminum Company of America, 801 Gulf Bldg., Pittsburgh, Pa.

UNIONMELT WELDING AN ELECTRIC WELDING PROCESS—15 minute, 16mm sound film describing the principles and application of unionmelt welding which allows high-quality welds to be made in one pass at high speeds. Available from Linde Air Products Company, 205 East 42nd Street, New York, N. Y.

UNIONMELT WELDING IN INDUSTRY GENERAL APPLICATIONS—15 minute, 16mm sound films showing *the actual use of unionmelt welding* in a number of applications ranging from pressure vessels and pipe to the construction of railroad equipment. Available from Linde Air Products Company, 205 East 42nd Street, New York, N. Y.

HOW TO FORM ALUMINUM—a series of five 16mm sound films on *different phases of aluminum fabrication.* Titles include: *General Sheet Metal Practice*, 24 minutes; *Blanking and Piercing*, 16 minutes; *Tube and Shape Bending*, 14 minutes; *Drawing, Stretching and Stamping*, 22 minutes; *Spinning*, 17 minutes. Available from Aluminum Company of America, 801 Gulf Bldg., Pittsburgh, Pa.

FOREMAN TRAINING

IT'S OUR JOB—35 minute, 16mm sound film on *problems foremen must meet and means of solving them.* Sequences cover the subject of foremanship from properly introducing a new worker to his job to cooperation with other foremen. Especially useful for breaking in new foremen. Available from Pratt and Whitney Div. of United Aircraft Corporation, East Hartford, Conn.

INDUSTRIAL HEALTH AND SAFETY

(Note: A complete 32-page safety film catalog of both motion pictures and sound slidefilms, covering industrial safety, public safety, fire prevention, first aid, health and hygiene, farm safety, and others may be obtained at reprint cost of 15 cents a copy by writing the editors of this magazine.)

HELP WANTED—16mm sound film showing the *basic principles of first aid.* Very helpful in conducting beginning first aid classes. Available from Johnson & Johnson, New Brunswick, N. J.

THIS TOOL IS SABOTAGE—25 minute, 16mm sound motion picture on *the importance of well balanced meals in combatting industrial absenteeism and the fatigue which causes many accidents.* Suitable for women's clubs, schools, or plant personnel showings. Available also in 35mm from Westinghouse Visual Education Section, Mansfield, Ohio.

HOW TO FIT SAFETY GLASSES AND GOGGLES—14 minute, 16mm sound motion picture film on *how to fit safety glasses and how to adjust them comfortably*, useful for persons in charge of first aid or safety. Film and booklet available from American Optical Co., Southbridge, Mass.

THE FIRE THIEF—sound slidefilm covering most frequent causes of industrial fires. Useful for employee and fire warden showings. Available (sale) from sponsor, National Safety Council, 20 North Wacker Drive, Chicago, Ill.

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers, specializing in products and services for the use of projected training and informational aids in industry, education and government, are at your service. A majority of firms listed can provide official War Films, U. S. Office of Education training subjects, and other visual aids as well as screens, projectors (to eligible purchasers) and accessories. Projection service facilities, including operator and equipment, may also be arranged through a majority of the firms listed. For specific information concerning locations not listed please address the Reader Service Bureau, Business Screen Magazine, 157 E. Erie, Chicago, Illinois.

SEE THESE CONVENIENT REGIONAL SOURCES FOR EQUIPMENT, FILMS AND SERVICE

EASTERN STATES

CONNECTICUT

Hebert Studios, Inc., 53 Allyn St., Hartford 3, Conn.

DISTRICT OF COLUMBIA

The Jam Handy Organization, Inc., Transportation Bldg., Washington, D. C.

MARYLAND

Kunz Motion Picture Service, 432 N. Calvert St., Baltimore 2, Md.

Stark Films, 537 N. Howard St., Baltimore 1, Md.

MASSACHUSETTS

Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE

A. H. Rice and Co., Hollis, N. H.

NEW JERSEY

Audio-Film Libraries, 41 Washington St., Bloomfield, N. J.

NEW YORK

Buchan Pictures, 79 Allen St., Buffalo, N. Y.

Bertram Willoughby Pictures, Inc., Suite 600, 1600 Broadway, New York City.

Walter O. Gutlohn, Inc., 25 W. 45th St., New York 19, N. Y.

The Jam Handy Organization, Inc., 1775 Broadway, New York City.

King Cole's Sound Service, 203 E. 26th St., New York City.

John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA

Kunz Motion Picture Service, 1319 Vine St., Philadelphia 7, Pa.

SOUTHERN STATES

ALABAMA

Willred Naylor, 1907 Fifth Ave., North, Birmingham 1, Alabama.

FLORIDA

Ideal Southern Pictures Co., 9536 N. E. Second Ave., Miami, Fla.

GEORGIA

The Distributor's Group, Inc., 756 W. Peachtree St., N.W., Atlanta, Ga.

Reagan Visual Education Company, [illegible] Atlanta, Ga.

Stevens-Ideal Pictures, [illegible] Cone St., N. W., Atlanta, Ga.

KENTUCKY

D. T. Davis Co., [illegible] W. Short St., Lexington, Ky. [illegible] Louisville, Ky.

LOUISIANA

Stanley Projection Company, [illegible] Murray St., Alexandria, La.

Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

Feltus B. Stirling, 2005 Ferndale Ave., Baton Rouge 15, La.

Ideal Southern Pictures Co., 336 Barrone St., New Orleans, La.

TENNESSEE

Ideal Pictures Corp., 18 S. 3rd St., Memphis, Tenn.

Frank L. Rouser Co., Inc., P. O. Box 2107, Knoxville 11, Tenn.

VIRGINIA

Ideal Pictures, 210 E. Franklin St., Richmond, Va.

MIDWESTERN STATES

ILLINOIS

Ideal Pictures Corp., 28 E. 8th St., Chicago, Ill.

Walter O. Gutlohn, Inc., 19 S. La Salle St., Chicago 3, Ill.

The Jam Handy Organization, Inc., 230 N. Michigan Ave., Chicago, Ill.

Garland B. Fletcher Studios, 218 W. Main St., Urbana, Illinois.

IOWA

Pratt Sound Film Service, 805 Third Ave., S. E., Cedar Rapids, Ia.

KANSAS-MISSOURI

Central Visual Education Service, Broadview Hotel Bldg., Wichita, Kas.

Kansas City Sound Service Co., Room 1, Lobby floor, 926 McGee St., Kansas City 6, Mo. (Ideal Pictures)

Erker Bros. Optical Co., 610 Olive St., St. Louis 1, Mo.

MICHIGAN

Engleman Visual Education Service, 701 W. Warren Ave., Detroit 1, Mich.

The Jam Handy Organization, Inc., 2821 E. Grand Blvd., Detroit 11, Mich.

Capital Film Service, 217 W. Grand River, East Lansing, Mich.

MINNESOTA

Film Preview, 1504 Hennepin Ave., Minneapolis, Minn.

This Directory Is Restricted to Specializing Visual Dealers

*For the convenience of Business Screen readers, listings in this National Directory are restricted to qualified visual dealers and branches of national organizations. Qualified dealers should apply for application form. (See address above.)

Your Inquiry Is Invited

OHIO

Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio.

The Jam Handy Organization, Inc., 310 Talbott Building, Dayton, Ohio.

Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.

Martin Sound Systems, 610 State Ave., N. E., Massillon, Ohio.

Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

WISCONSIN

Photoart House, 844 N. Plankinton Ave., Milwaukee, Wisc.

WESTERN STATES

CALIFORNIA

Donald J. Clausonthue, 1829 N. Craig Ave., Altadena, Calif.

Ideal Pictures Corp., 2408 W. 7th St., Los Angeles, Calif.

The Jam Handy Organization, Inc., 7046 Hollywood Blvd., Los Angeles, Calif.

Screen Adettes, Inc., 1709 W. 8th St., Los Angeles 14, Calif.

Walter O. Gutlohn, Inc., 4247 Piedmont Ave., Oakland 11, Calif.

Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.

Photo & Sound, Inc., 606 Montgomery St., San Francisco, Calif.

Screen Adettes, Inc., Sixty-Eight Post Bldg., 68 Post St., San Francisco 4, Calif.

Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Los Angeles Co., Calif.

COLORADO

Ideal Pictures Corp., 1739 Oneida St., Denver, Colo.

OREGON

Ideal Pictures Corp., 915 S. W. 10th Ave., Portland, Oregon.

Moore's Motion Picture Service, 306-310 S. W. Ninth Ave., Portland 5, Ore.

Screen Adettes, Inc., 314 S. W. Ninth Ave., Portland 5, Ore.

TEXAS

Walter O. Gutlohn, Inc., 302½ S. Harwood St., Dallas 1, Texas.

National-Ideal Pictures, 2024 Main St., Dallas, Texas.

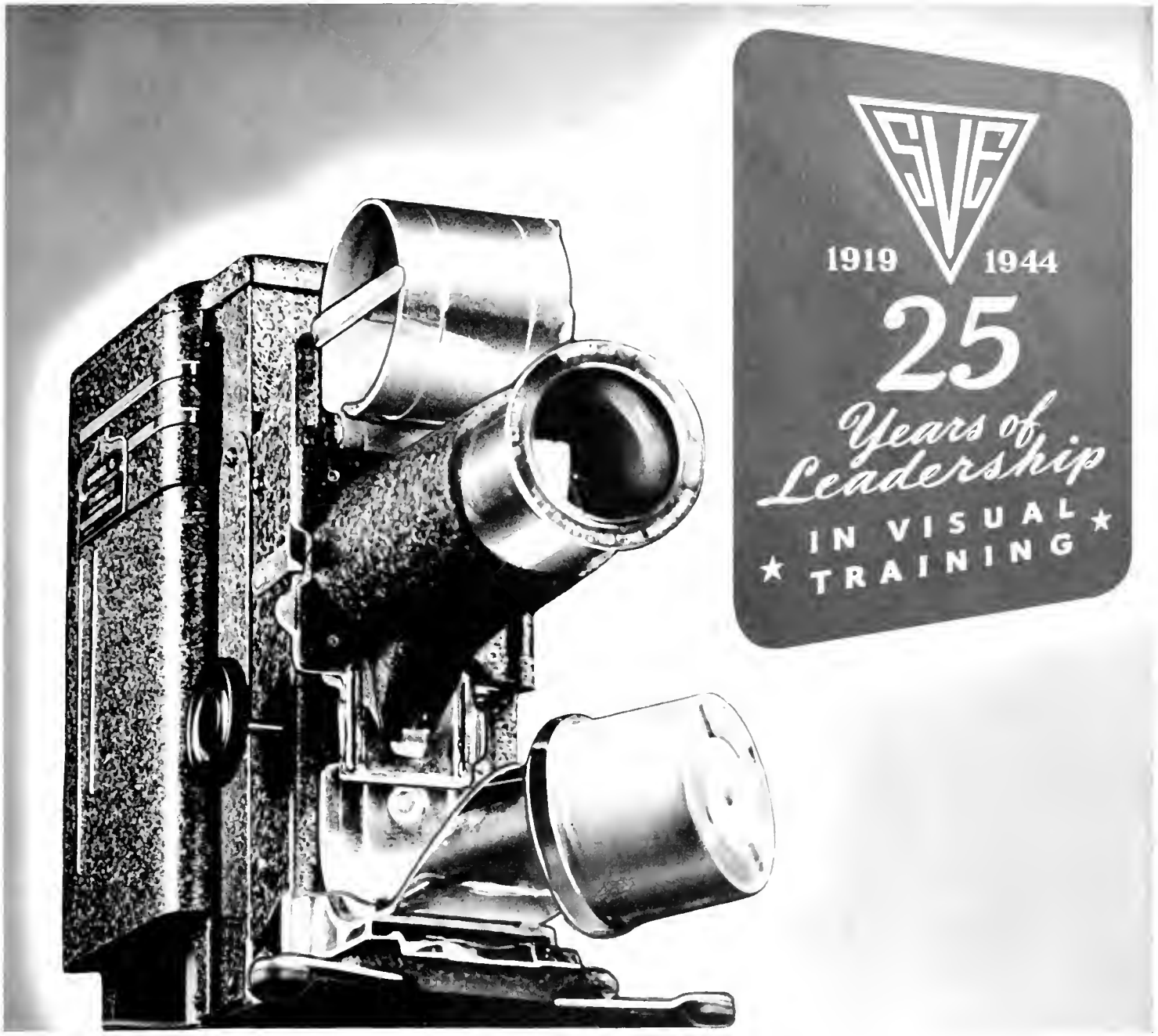
Visual Education, Inc., Twelfth at Lamar, Austin, Texas. Also, 216 Gulf States Bldg., Dallas 1, Texas.

WASHINGTON

Rarig Motion Picture Co., 5514 University Way, Seattle 5, Wash.

HAWAII

Motion Picture Enterprises, 121 S. Beretania, Honolulu, T. H.



S.V.E. 300-Watt Model G Slidefilm Projector

As the Society celebrates its Silver Anniversary, culminating 25 years of service to industry, schools, churches and the Armed Forces of our nation, it looks forward to the opportunities which lie ahead for still further improvements in visual training material, projection equipment and other aids to more thorough learning.

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DETROIT 11 2900 East Grand Boulevard MAdison 2450

DAYTON 2 310 Talbot Building ADams 6289

CHICAGO 1 230 N. Michigan Boulevard STAte 6758

LOS ANGELES 28 7046 Hollywood Boulevard HEmpstead 5809