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ECONOMIC SURVEY OF THE BITUMINOUS COAL INDUSTRY
UNDER FREE COMPETITION AND CODE REGULATION

By
F. E. Berquist
and
Associates

WORK MATERIALS NO. 69

VOLUME II

INDUSTRY STUDIES SECTION
March, 1936



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The soft coal miners have always bitterly resented the coal and iron police. During the period of a strike, the police obeyed their employers if they were ordered to break up picket lines, meetings or marches. Testimony regarding brutal and unlawful attacks by coal and iron police upon coal miners may be found in both volumes of the Senate hearings concerning the investigation of conditions in the coal fields of Pennsylvania, West Virginia, and Ohio. (*) In times of peace, the police in the soft coal company towns were always present with uniform and gun or riot stick and were a constant reminder of the employer's power. Their duties were to patrol the company towns, to do ordinary police work there and to guard the company property both in the town and at the mine. The company owns every square foot of land in the company town and many of the leases provide that miners may be evicted at any time. Since the coal and iron police were in company pay under company orders, they were compelled to side with their employers in case of strike. The workers, therefore, regarded the coal and iron police as their enemies.

The publicity resulting from the fatal beating of a miner by a drunken coal and iron police led to a storm of protest. (**) Bills, drafted by organized labor, were introduced in the State Legislature which sought to deprive the coal and iron police of all powers except the power to guard property. The bill, which after amendment, was finally enacted on April 18, 1929, has been referred to above.

Governor Pinchot on June 30, 1931, revoked all outstanding coal and iron police commissions, which then totaled 1,915. The exact number of men engaged in policing the bituminous industry in Pennsylvania is difficult to determine. When the commissions were revoked, many employers adopted the company deputy sheriff system, which will be discussed below. The Governor's Committee which investigated special policing in industry recommended that the Industrial Police Act of 1929 be repealed. This recommendation was voted upon early in 1935.

(b) Company Deputy Sheriffs. Protection of property and maintenance of order are duties which devolve upon those operators whose mining activities center in their own company towns. In the isolated areas where the mining camp population is made up of a mixture of native whites, blacks, and foreign born, the peace of the community is subject to frequent disturbance. Tax revenue in these areas is often insufficient to maintain a large force of peace officers. This situation gave rise to the mine guard system which provides that an officer be appointed by the courts or the county sheriff and that he receive compensation from the operators. The mine guard system may be said to result from the inability of local government to maintain law and order. (***)

Public protest against the deputy sheriff system in Logan County, West Virginia, resulted in a change in the method of paying the

(*) Hearings on Senate Resolution 105, 79th Congress, 1st Session, 1928.

(**) John Barkoski of Tyre in Allegheny County was beaten to death on February 10, 1929.

(***) United States Coal Commission Report, 1921, Part I, p. 172. Also Pennsylvania Report on Special Policing in Industry, p. 16.

guards. (*) The operators loaned the County an amount equal to the extra cost of maintenance of special deputies, without any serious expectation of repayment.

The question of the mine guard system is very closely related to the matter of civil liberties in the coal mining communities. Private policing of an operator's property was especially common in those areas which were involved in the union vs. non-union controversy. Testimony has been presented upon numerous occasions to the effect that the primary duty of company deputies was to prevent any efforts to unionize a mine. (**) In some instances mine guards were used to prevent peaceful assemblages and to intimidate dissatisfied miners. A recent investigation of conditions in the Harlan, Kentucky, coal fields disclosed that there existed "a virtual reign of terror, financed in general by a group of coal-mine operators in collusion with certain public officials; the victims of this reign of terror are the coal miners and their families". (***) The report went on to say that "many are beaten and mistreated in most unjust and un-American methods by some operators using certain so-called 'peace officers' to carry out their desires".

The workers generally hate the company deputies because they are armed and uniformed men, employed not by the public but by the industry. The mine guard system may be said to engender discontent among miners which is often expressed in violence during strike periods. In case of a strike, the deputy is bound to use his authority, and if necessary his force, in the interests of his employer and to break the strike. This condition was illustrated by the events which transpired during the labor disturbances in Fayette County, Pennsylvania, in the Summer of 1933. (****) When Governor Pinchot revoked all the coal and iron police commissions on June 30, 1931, a number of employers procured for their private police, commissions as deputy sheriffs. The deputies received their commissions from the sheriff, but they were selected by the company subject to the sheriff's veto. The violent outbursts during the strike of 1933 resulted in the Governor sending a battalion of the National Guard to keep order.

The United States Coal Commission as well as other investigating groups have condemned the company deputy sheriff system. A Pennsylvania report stated that, "To abolish the company deputy system is to strike at by far the most serious present evil. If all the deputy sheriffs must be paid by the County, they will be responsible to all the citizens of the County". (*****)

(*) Ibid, supra, p. 174

(**) See U. S. Coal Commission Reports and Senate Hearings on Conditions in coal fields, etc.

(***) Report of Investigation Committee in Harlan County Coal Fields to Governor Lafoon, Frankfort, Kentucky, June 7, 1935.

(****) Report on Special Policing in Industry, op. cit.

(*****). Ibid, supra, p. 18.

3. SEASONAL AND CYCLICAL ASPECTS OF EMPLOYMENT

The Bituminous Coal Industry has long been characterized by a short average working year, intermittent employment, and seasonal variation in activity. Although the seasonal and cyclical factors are very important in their effects on employment, other conditions have also been significant from time to time in the past. For example, car shortages prior to 1923 limited the opportunities for employment. Likewise general strikes or suspensions of mining activity in the organized fields have occurred at the termination of many of the biennial wage agreements. The curve of bituminous production is characterized in the "even" years by peaks and valleys arising from such stoppages. In the period before the war it was customary for the mines in the central competitive field to close down almost completely during one, two, or three months while a new working agreement was being framed. Wide spread stoppages reduced the average number of days worked by the mines.

Another factor which influenced opportunity for employment, but which was neither seasonal nor cyclical in character was the competitive struggle between the predominately union and non-union areas following the initiation of the Jacksonville Agreement, April, 1924. Union operators, bound by higher wage scales, (\$7.50 a day as against \$4.00 to \$5.00 in the non-union fields) found their production costs higher than that of the non-union competitors and so were faced with business losses because of the higher prices. Decreases in orders for coal produced under union contract meant lowered average days worked by mines in the organized fields. This situation is clearly illustrated in the following table which compared the average triple time for two groups of states east of the Mississippi River from 1919 to 1933. Group A States represent the predominately union areas; Pennsylvania, Ohio, Illinois, and Indiana (although Pennsylvania began to break from the union in 1925 and Ohio was non-union by 1927). Group B States represent the non-union areas (although northern West Virginia operated under contract until 1925 and then abrogated its agreement while western Kentucky's agreement terminated in 1925). It will be noted from the table that the spread in working time between North and South was greatest during the period of the Jacksonville Agreement.

TABLE I

COMPARISON OF AVERAGE DAYS WORKED PER YEAR
IN TWO GROUPS OF STATES EAST OF THE MISSISSIPPI RIVER

1919 - 1933

Year	Average days worked in North - Group A <u>1/</u>	Average days worked in South - Group B <u>2/</u>
1919	189	200
1920	223	199
1921	147	151
1922	133	146
1923	183	167
1924	163	183
1925	180	221
1926	198	243
1927	160	236
1928	192	220
1929	210	239
1930	184	198
1931	160	171
1932	139	162
1933	158	187

SOURCE: U. S. Bureau of Mines

1/ Group A includes:

Pennsylvania
Ohio
Illinois
Indiana

2/ Group B includes:

West Virginia
Virginia
Kentucky

These latter situations which have been discussed illustrate sporadic conditions which arise out of the human element in the industry and are subject to control. Seasonal and cyclical factors affecting employment, however, recur periodically and are in a large measure beyond the control of any single group of individuals in the industry or even of the industry as a whole.

The number of days a minor is employed has a vital relationship to his earnings, to the wage rate, and to the cost of coal. Every day which the minor does not work, either because the mine is shut down or because of his own absence, means a lowered living standard for the miner. A higher wage rate which seeks to compensate for a short working year means high cost coal. Fluctuations in working time reflect variations in production and are significant to the min worker, the operator, and the consumer.

The average number of days worked by the mines in each year is a statistical measure of the employment afforded by bituminous coal mining. It does not, however, show the working time of the mine worker except in a general way. While it may reflect the cyclical factor -- prosperous or depressed conditions in industry and the consequent demand for coal, it does not show the variations which occur within the year -- from month to month -- and, therefore, does not indicate seasonality. The data are based upon the information furnished by the operators to the U. S. Bureau of Mines. The operators are requested to state the number of full days the mine (tipple) operated during the year (parts of days should be reduced to equivalent in full days) (*). In some instances, however, an operator may fail to reduce the fractional days to the equivalent full-time days and so reports mine "starts" rather than "days worked". Generally speaking, this error is not serious.

Tipple time operation, while perhaps the best available indicator of the time during which the capital and working force about the mines are engaged in production, is not strictly accurate as to the amount of employment offered by the mines. The underground force may be engaged in cutting and loading coal every day in the week, while the mines may dump coal over the tipple only a few days in the week. Under these circumstances the tipple time tends to exaggerate the hourly or daily productivity.

The average number of days worked in a particular area is derived from the figure for each mine multiplied by the number of men employed at the mine, and the sum of these products for all the mines in the area is divided by the sum of the men employed. This weighted average is essential in order that the real conditions of employment may not be distorted by the small mines which are many in number but which provide only a small portion of the employment. However, this average figure fails to disclose the wide diversity in the number of days worked between mines and areas.

Prior to the N.R.A. a full time year in the bituminous coal mines was considered as 308 days, allowing for 52 Sundays and 5 holidays (**). During the year 1934, a full year under N.R.A., it was estimated that the maximum number of working days amounted to 258, allowing for a 5 day work week. The average annual operating time of mines for the period 1890 to 1912 was 213 days; from 1912 to 1922, 206 days; and from 1923 to 1932 (last full year before N.R.A.) only 186 days. The record of the industry when compared with the full work year (308) days shows that from 1890 to 1912 miners worked only 69.1 per cent of full time; from 1912 to 1922, 67 per cent; from 1923 to 1932, 60.4 per cent.

(*) Coal in 1922, page 492.

(**) New Year's Day, Memorial Day, July 4th, Thanksgiving, Christmas. Although this list is typical, most of the holidays named are not universally observed. On the other hand, days not mentioned are observed in many localities.

TABLE II

Number of Men Employed and Average Number
of Days Mines Operated, 1905 -
1934

(Source: U. S. Bureau of Mines)

Year	Average No. Days Mine Operated <u>1/</u>	Number of Men Employed <u>2/</u>	Index of No. Employed
1905	211	450,629	91.6
1906	213	478,425	95.1
1907	234	513,258	102.0
1908	193	516,264	102.6
1909	209	499,754	99.4
1910	217	543,000	108.0
1911	211	549,775	109.3
1912	223	548,632	109.1
1913	232	571,882	113.7
1914	195	583,506	116.0
1915	203	557,456	110.8
1916	230	561,102	111.6
1917	243	603,143	119.9
1918	249	615,305	122.3
1919	195	621,998	123.7
1920	220	639,547	127.1
1921	149	635,754	132.0
1922	142	667,958	136.8
1923	179	704,783	140.1
1924	171	619,604	123.2
1925	195	538,493	117.0
1926	215	593,647	118.0
1927	191	593,918	118.1
1928	203	522,130	103.8
1929	219	502,993	100.0
1930	187	493,202	98.1
1931	160	450,186	89.5
1932	146	406,380	80.8
1933	167	418,703	83.2
1934	178	458,011	91.1

1/ Average weighted on basis of number of men employed at the mines.

2/ The number reported represents the total of the numbers employed at individual mines whether operated for 20, 50, 100, 300, or other number of days during the year. Thus, for a mine which operated for only a part of one month and was idle the remainder of the year, the number of men employed for such time is included in the total for the year on the same basis as if the men had been employed throughout the year. The number reported by the Bureau of Mines does not represent, therefore, the average employment throughout the year, but rather the number employed in the year, whether for the whole year or for only a short period.

The effect of the cyclical factor on working time may be noted for example in the year 1921 which was featured by the post war depression in industry generally. Bituminous coal workers worked only 149 days in 1921 which was only 72.3 per cent of the average for 1912 to 1920. It should be pointed out that the short working time in the following year, 1922 (142 days) is not attributable to a seasonal or cyclical factor, but rather to the general suspension which lasted from April 1 to August 19. Again, the rise in the number of days worked in 1925 may be attributed to the influence of the anthracite strike (ended in February) and to the British miners' strike. The year 1929, a "boom" year for industry generally and of improvement for bituminous coal (output only 7.2 per cent less than peak established in 1919) afforded but 219 working days. The effect of the general business depression on the bituminous coal industry is clearly reflected in the declining number of days worked: 1930, it was 197 days; 1931, 160 days; 1932, 145 days; and 1933 (affected by N.R.A.), 137 days.

These data for the Industry as a whole are significant in comparing one year with another; they do not, however, indicate the fluctuations in employment opportunities which take place within the year and even within a month. Moreover, the data do not disclose the variations which exist in one state as compared with another state. The following table indicates the average number of days worked in the ten leading coal producing states from 1912 to 1934:

TABLE III

AVERAGE NUMBER OF DAYS WORKED PER YEAR
TEN LEADING COAL PRODUCING STATES 1912 - 1934

Source: U.S. Bureau of Mines

<u>Year</u>	<u>Penn.</u>	<u>W.Va.</u>	<u>Ill.</u>	<u>Ken.</u>	<u>Ohio</u>	<u>Ind.</u>	<u>Ala.</u>	<u>Va.</u>	<u>Iowa</u>	<u>Tenn.</u>
1912	252	266	194	201	201	182	245	251	188	234
1913	267	254	189	212	206	190	255	280	195	241
1914	214	201	173	187	108	168	226	235	204	220
1915	226	208	179	186	142	179	223	235	220	220
1916	259	237	198	208	197	187	262	272	202	239
1917	261	225	243	214	210	221	273	273	251	241
1918	269	238	238	230	223	227	278	277	245	265
1919	218	200	160	189	164	148	239	247	176	201
1920	244	198	213	182	183	192	247	262	250	234
1921	151	149	152	152	134	128	166	166	148	154
1922	194	143	120	140	100	110	215	198	131	163
1923	213	169	158	152	150	136	232	212	181	183
1924	180	182	148	184	143	136	220	226	161	159
1925	200	225	161	206	151	159	246	254	153	211
1926	224	247	172	250	159	175	266	263	183	234
1927	203	235	114	237	98	120	251	238	114	235
1928	218	223	156	212	171	150	222	226	175	226
1929	230	247	177	232	201	172	231	249	195	223
1930	198	204	156	187	189	157	139	200	155	196
1931	169	176	136	153	174	146	136	175	142	169
1932	153	169	107	154	126	131	106	144	151	148
1933	162	197	138	170	169	160	143	185	138	162
1934	179	196	160	180	167	171	183	200	156	185

The next table, showing the number of employees and the average days worked by states for the period 1929 to 1933, illustrates clearly the effects of the general business depression upon employment in bituminous coal and also upon the miner in the field. The turning of the business cycle brought sharp declines in mine worker employment. For example, in 1932 as compared with 1929, the number of employees in Pennsylvania had declined approximately 27,000; in West Virginia, 1,000; in Kentucky 16,000; and in Illinois, 9,000. These figures based upon reports made by operators to the U. S. Bureau of Mines do not disclose accurately the serious labor situation in coal mining which developed out of the depression. Moreover, it must be remembered that declining employment characterized the industry long before the depression --- ever since 1923. (See Chapter VI.)

The coal industry is accustomed to intermittent operations and its adjustments to demand fluctuations are made not by cutting down the number of men on the payroll as such as by working fewer days. The normal working force connected with a mine ordinarily is employed whenever the mine operates. The number of days worked reflects irregularity of operation and definitely influences the amount of employment offered. The effect of the general depression upon employment opportunity is shown by the number of days worked in Pennsylvania declined 76 days or 33 per cent; in West Virginia, 79 days or 33 per cent; in Kentucky 67 days or 30 per cent; and in Illinois 65 days or 37 per cent. (See Table II 5.)

The data showing the average number of days worked by mines, even when broken down by states, do not portray the variations which exist from mine to mine. It is necessary to consider not only the number of mines which work a specified number of days, but also the production of these mines (*).

As has been stated the average number of days worked by mines do not necessarily represent the average number of days worked by the men in the mines. Mine working time as a measure of employment must take into consideration the percentage of the employees working a specified number of days in the year. The following table, which shows the per cent of men employed in bituminous coal mines working specified number of days, serves to illustrate how widely different may be the opportunities for work among the various mine workers:

(*) For a clear explanation of the significance of average number of days worked data, see "Coal in 1922", pages 492 -496.

TABLE IV

BITUMINOUS COAL

(Interstate)

II 5

NUMBER OF EMPLOYEES AND AVERAGE
DAYS WORKED BY STATES
1929 - 1933

	1929		1930		1931		1932		1933	
	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked
Alabama	25,208	231	24,393	189	22,973	136	20,443	107	18,237	148
Arizona	39	137	24	196	27	115	17	251	23	268
Arkansas	4,299	146	4,626	115	4,733	95	4,325	92	3,671	94
California, Idaho, Oregon, & Nevada	42	113	138	74	116	86	141	69	58	79
Colorado	12,057	187	11,091	169	10,028	142	8,749	142	7,908	148
Georgia	102	260	60	71	62	180	64	208	93	234
Illinois	56,725	177	53,603	156	49,685	136	47,597	112	44,145	141
Indiana	15,250	172	13,881	157	12,311	146	10,639	145	11,199	163
Iowa	7,295	195	7,901	155	7,897	142	8,086	151	7,695	138
Kansas	5,139	160	4,855	126	3,813	123	3,591	130	3,809	140
Kentucky	58,649	222	56,674	187	47,766	159	42,267	155	43,717	170
Maryland	3,289	246	3,299	197	3,224	190	3,105	150	2,880	172
Michigan	1,336	217	1,294	187	1,372	96	940	159	1,186	130
Missouri	5,618	185	5,700	166	5,362	142	5,677	161	5,690	150
Montana	2,283	199	2,085	172	1,672	153	1,525	145	1,324	166
New Mexico	3,233	214	2,902	176	2,830	145	2,602	127	2,340	168
North Carolina	160	250	70	290	32	83	26	55	10	175
North Dakota	1,421	192	1,258	180	1,300	166	1,311	186	1,301	173
Ohio	25,399	201	25,574	189	25,085	174	23,280	127	25,442	169
Oklahoma	6,321	178	5,424	148	4,634	115	3,063	120	2,974	128
Pennsylvania	131,774	230	130,150	198	116,726	169	104,532	154	115,453	162
South Dakota	32	127	43	109	56	127	84	126	147	100
Tennessee	7,619	228	7,535	196	7,448	171	7,525	148	7,051	161
Texas	1,313	212	1,305	181	1,148	140	699	152	803	162
Utah	3,458	211	3,504	168	3,268	140	2,842	176	2,906	176
Virginia	12,053	249	11,709	200	11,357	175	10,376	144	9,761	184
Washington	2,946	227	2,801	205	2,662	170	2,816	161	2,555	168
West Virginia	104,942	247	105,988	204	97,787	176	85,765	168	92,472	196
Wyoming	4,839	230	5,216	188	4,759	154	4,173	150	3,753	170
Total										
Bituminous	502,841	219	493,103	187	450,133	160	406,260	146	418,603	167
		a/		a/		a/		a/		a/

Source: "Coal in 1929, 1930, 1931, 1932" - United States Bureau of Mines annual reports.

a/ Includes Alaska.

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TABLE V

PER CENT OF EMPLOYED MINING MEN EMPLOYED IN THE U.S. COAL
FIELDS FOR A GIVEN PERIOD OF DAYS IN
CERTAIN YEARS

For Cent. of men employed

Number days worked	1908		1913		1914	
	Absolute	Cumulative	Absolute	Cumulative	Absolute	Cumulative
Less than 20 days	.3	.3	.2	.2	.3	.3
20-39	.5	1.1	.4	.6	1.4	1.7
40-59	1.5	2.4	1.0	1.3	2.6	4.3
60-79	1.8	4.2	1.1	2.7	2.4	6.7
80-99	1.7	5.9	1.1	3.8	2.0	8.7
100-119	2.7	8.6	1.2	5.0	3.0	11.7
120-139	3.4	12.0	2.5	7.5	5.4	17.1
140-159	5.1	17.1	2.9	10.4	7.7	24.8
160-179	6.3	23.4	4.5	14.9	9.5	34.3
180-199	10.0	33.4	8.3	23.2	12.1	46.4
200-219	17.3	51.5	12.2	35.4	14.1	60.5
220-239	17.4	63.7	13.4	48.3	15.3	75.8
240-259	13.4	77.1	12.8	61.6	10.2	86.0
260-279	10.0	87.1	14.3	75.9	7.2	95.2
280-299	3.2	95.3	15.3	91.5	4.8	98.0
300 & over	3.7	100.0	8.5	100.0	2.0	100.0

Total No.

employed 450,500 571,079 534,180

Avg. No.

days worked 211 202 195

Days worked	1916		1917		1918		1921	
	Absolute	Cumulative	Absolute	Cumulative	Absolute	Cumulative	Absolute	Cumulative
Less than 20 days	.4	.4	.2	.2	.1	.1	2.9	2.9
20-39	.3	1.2	.3	.5	.2	.3	4.1	7.0
40-59	.9	2.1	.6	1.1	.3	.6	4.2	11.2
60-79	1.1	3.2	.6	1.7	.4	1.0	5.4	16.6
80-99	.9	4.1	.7	2.4	.5	1.5	7.4	24.0
100-119	1.9	6.0	1.1	3.5	.9	2.4	3.3	32.3
120-139	2.0	8.0	1.4	4.9	1.1	3.5	12.4	44.7
140-159	2.9	10.9	2.5	7.4	1.9	5.4	11.4	56.1
160-179	4.3	15.2	3.9	11.3	2.8	8.2	10.3	66.4
180-199	3.3	23.5	3.5	17.8	4.6	12.8	9.6	76.0
200-219	13.5	37.0	10.3	29.1	3.9	21.7	8.3	84.3
220-239	14.2	51.2	10.6	39.7	12.3	34.5	5.1	39.4
240-259	13.7	64.9	15.3	54.0	17.5	52.0	4.3	93.7
260-279	11.3	73.7	15.8	69.3	17.3	69.3	2.5	96.2
280-299	11.1	87.8	19.2	89.0	20.6	89.9	2.5	98.7
300 & over	12.2	100.0	11.0	100.0	10.1	100.0	1.3	100.0

Total No.

Employed 360,494 602,010 613,775 363,453

Avg. No.

days worked 230 243 240 149

U. S. Bureau of Mines, Coal in 1922.

Certain features peculiar to the bituminous coal industry make the industry highly seasonal. Its product is extremely bulky. As a practical matter, production does not begin at the mine until orders for coal are received. Coal cannot be warehoused or stored as can other commodities such as grain, lumber, steel, petroleum, clothing, food products, etc. Although a limited amount of coal can be and is stored, consumer demand dictates the forthcoming supply which must be available for immediate delivery if and when wanted. Storage of coal necessitates a heavy capital investment since labor and degradation costs are expensive items and also since freight charges incident to coal transportation as well as maintenance costs of storage facilities must be included.

The highly seasonal character of the industry has long been generally recognized. The U. S. Coal Commission stated that, "Seasonal production is the net resultant of a whole series of causes, at the bottom of which is seasonal buying and consumption, modified in every field and at almost every mine by conditions of market ability of the particular coals." (*) Not only is the industry seasonal, but an even wider seasonal variation exists in particular fields. The majority of the producing areas are at a low point in April, the beginning of the coal year, and rise to a peak in the fall or early winter. The seasonal trend of production for domestic heating is highly accentuated, while those fields producing chiefly industrial coals show less violent seasonal fluctuations (**).

While the fall and winter season is the peak period of employment in coal mining generally, it is interesting to note how particular producing areas are affected by particular seasonal situations. For example, it was stated that much of the product of Pittsburgh mines went west through the Great Lakes and as lake traffic was closed during several months in the winter, most of the mines were operated on short time during those months (***)

Accentuated seasonality is illustrated especially in the western states where poorer qualities of coal - sub-bituminous and lignite - are produced and where the tonnage is primarily for the domestic markets. These coals degrade rapidly upon exposure and are not suitable for storage. The table below shows the highly seasonal production which characterizes these western states:

(*) U. S. Coal Reports, page 229.

(**) See Coal in 1931, page 434, figure 26.

(***) Report on the Miners' Strike - Bituminous Coal Field in Westmoreland County, Pennsylvania, in 1910-11. House of Representatives, 62 Congress, 2nd Session, Document 847, page 34.

TABLE VI

MINIMUM AND MAXIMUM SPREAD IN PER CENT BETWEEN
MONTHLY PRODUCTION OF BITUMINOUS COAL IN SIX
WESTERN STATES, 1927 - 1931 ^{1/}

<u>State</u>	<u>Least Spread Shown</u>	<u>Greatest Spread Shown</u>	<u>5 Year Avg. Spread</u>
Washington	57	84	62
New Mexico	63	111	69
Wyoming	95	132	109
Montana	96	177	123
Colorado	102	223	153
Utah	116	365	206

^{1/} Based on Bureau of Mines Reports. Brief of Coal Operators located in Southern Portion of the State of Wyoming Relating to "Hours of Work" to be determined in Proposed Code for Bituminous Coal, Apr. 1, 1933.

Mine labor is profoundly influenced by the seasonal character of the industry. Operators objecting to reduction of hours in the work day have stated:

"The unfortunate seasonal character of the coal industry necessitates the employee working at every available opportunity during the off-demand period, during which time men with families are compelled to receive credit from merchants who in a sense act as an income stabilizer for the men. Thereafter, when the season of heavier demand appears, the additional working time available enables them (if receiving a fair wage) to catch up on past indebtedness, closing the year with an earning equal to their necessary living costs. Deny this privilege and the employer is compelled to organize an additional force which either remains to dilute the average earnings of the regular force or otherwise when the demand falls off, they are turned loose on the community to shift for themselves. It should be kept in mind that coal mines are in the majority of cases located away from the great industrial centers where a diversity of employment exists." (*)

The fluctuations in monthly production reflect variations in non-days of employment. Monthly tonnage divided by the average output per man per day results in the approximate number of non-days of employment afforded by the industry. The following table shows the monthly fluctuations in man-days employment. In general, the difference between peak month and low month in each year approximates from 2 to 3 million man-days of employment. Assuming 25 working days in the month,

(*) Ibid., supra.



TABLE VII

PRODUCTION AND CALCULATED MAN DAYS EMPLOYMENT $\frac{1}{2}$ 1929 - 1933, BY MONTHS
(Production Data from U. S. Bureau of Mines)

Month	1929			1930			1931			1932			1933		
	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days	
January	52,398,000	10,803,711	50,414,000	9,963,241	36,949,000	7,348,868	28,261,000	5,413,985	27,868,000	5,830,126	27,868,000	5,830,126	27,868,000	5,830,126	
February	46,137,000	9,925,155	40,060,000	7,916,996	31,737,000	5,968,113	28,363,000	5,437,356	27,915,000	5,839,958	27,915,000	5,839,958	27,915,000	5,839,958	
March	40,068,000	8,261,443	36,230,000	7,160,079	34,226,000	6,457,736	32,676,000	6,259,770	24,413,000	5,107,322	24,413,000	5,107,322	24,413,000	5,107,322	
April	37,565,000	7,745,361	36,316,000	7,177,470	28,777,000	5,429,623	20,568,000	3,940,230	19,805,000	4,143,305	19,805,000	4,143,305	19,805,000	4,143,305	
May	40,908,000	8,434,639	36,413,000	7,196,245	28,613,000	5,398,679	18,627,000	3,568,391	22,531,000	4,713,598	22,531,000	4,713,598	22,531,000	4,713,598	
June	36,771,000	7,994,021	34,145,000	6,748,024	29,491,000	5,564,340	17,984,000	3,445,211	25,461,000	5,326,569	25,461,000	5,326,569	25,461,000	5,326,569	
July	41,379,000	8,531,753	35,156,000	6,948,221	30,103,000	5,679,811	18,093,000	3,466,092	29,675,000	6,208,159	29,675,000	6,208,159	29,675,000	6,208,159	
August	44,695,000	9,215,464	36,117,000	7,137,747	30,858,000	5,822,264	22,786,000	4,365,134	34,423,000	7,203,046	34,423,000	7,203,046	34,423,000	7,203,046	
September	45,334,000	9,347,216	39,126,000	7,732,411	32,255,000	6,085,849	26,662,000	5,107,663	29,715,000	6,216,527	29,715,000	6,216,527	29,715,000	6,216,527	
October	52,174,000	10,757,526	44,714,000	8,836,759	36,075,000	6,806,604	33,110,000	6,342,912	30,294,000	6,337,657	30,294,000	6,337,657	30,294,000	6,337,657	
November	46,514,000	9,590,515	38,609,000	7,630,237	30,426,000	5,740,755	31,038,000	5,945,977	31,184,000	6,523,849	31,184,000	6,523,849	31,184,000	6,523,849	
December	47,046,000	9,700,206	40,222,000	7,949,012	30,579,000	5,769,623	31,522,000	6,038,697	30,349,000	6,349,163	30,349,000	6,349,163	30,349,000	6,349,163	
TOTAL	534,989,000	110,307,010	467,526,000	92,396,442	382,069,000	72,092,265	309,710,000	59,331,418	333,631,000	69,797,280	333,631,000	69,797,280	333,631,000	69,797,280	

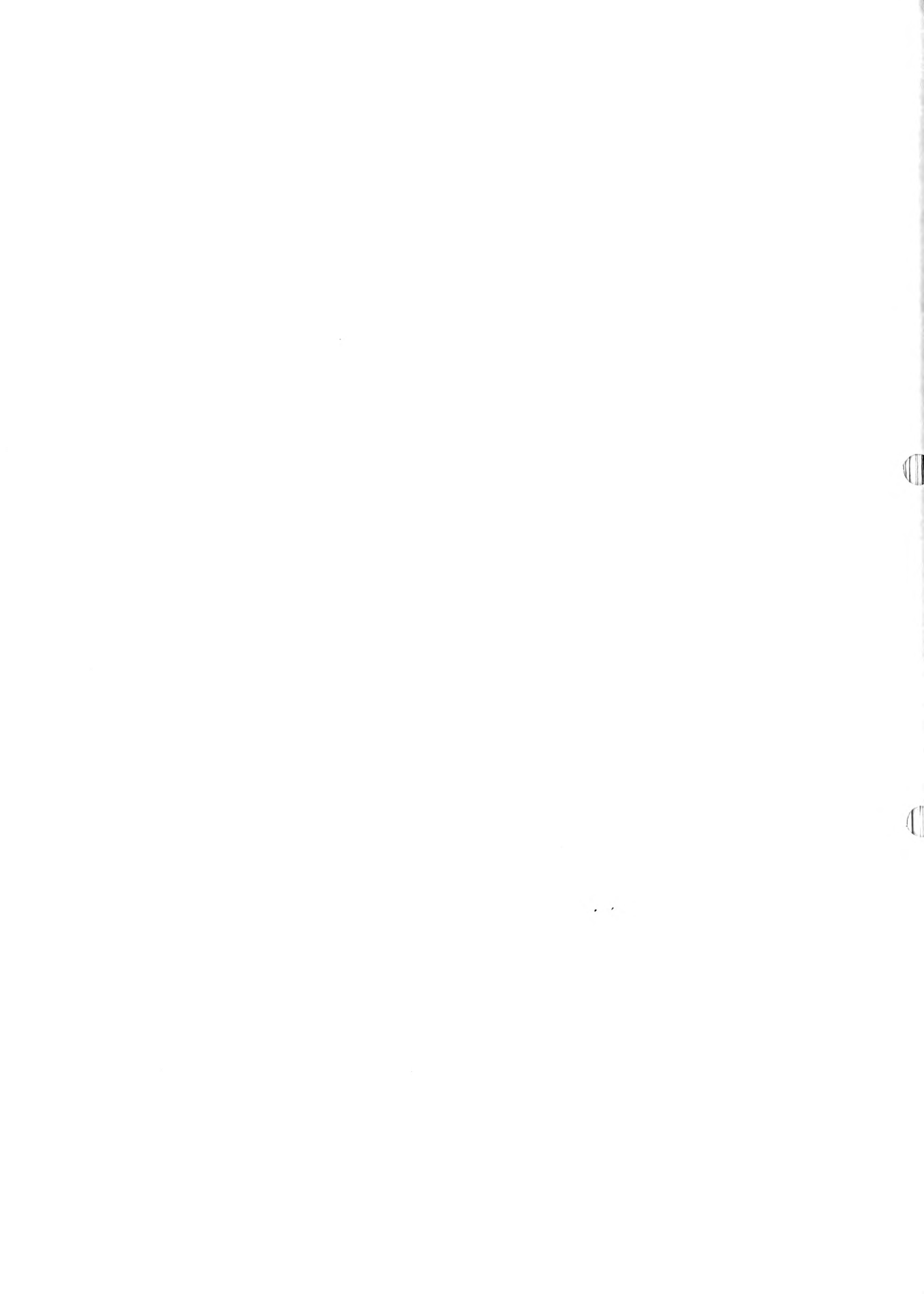
$\frac{1}{2}$ Based on Average Output per Man per Day, as follows:
1929 - 4.26 tons; 1930 - 5.06 tons; 1931 - 5.30 tons;
1932 - 5.22 tons; 1933 - 4.78 tons.



this variation in non-days employment would mean a decline in employment of approximately 100,000 men in the low month as against the peak month. While this figure is a rough approximation, it does to some degree indicate the seasonal effect upon employment.

The employment data reported by the Bureau of Mines are on an annual basis and, therefore, are not suitable for the purpose of showing variations from month to month or the seasonal fluctuations. The United States Census of Mine and Quarries reported employment data by months and states for the year 1929. These data are shown in the following table. It must be remembered that the year 1929 represents a year of unusual industrial activity and thus tends to conceal the variations in employment as against some other year when production for domestic markets was relatively more important. Taking the average monthly employment during the year as a base equivalent to 100, it will be noted that the employment index for the industry as a whole declined from 105.27 in the peak month of February to 94.29 in the low month of June, or in terms of actual employment, a decline from a peak of 432,406 men to a low of 432,552 men -- some 50,334 men being temporarily displaced. More significant than an average figure for the industry as a whole for purposes of noting seasonal fluctuations, is the actual monthly employment and the monthly index for particular states. For example, the wide seasonal variations in employment in the western states may not seem important in terms of the tonnages involved but are very significant to the mine workers affected. Furthermore, were monthly employment data available for particular coal producing fields, the highly seasonal character of employment in the industry would be even more evident.
(See Table II 1c).





The U. S. Bureau of Labor Statistics began a statistical series in 1929 showing the monthly index of employment in bituminous coal mining. The base used, equivalent to 100, was the average monthly employment during the year as shown by the Census of Mines and Quarries in 1929. This base figure was 458,732. The monthly employment indexes reported by the Bureau of Labor Statistics start from this base, but are adjusted to the employment data reported by the mines to the Bureau. The Bureau of Labor Statistics estimates that approximately 65 per cent of the total estimated employment is now reported to it. The indexes of employment as shown by the Bureau of Labor Statistics since the inception of the series up to the last available report are shown in the table below:

TABLE IX

MONTHLY INDEXES OF EMPLOYMENT IN BITUMINOUS COAL MINING,
1929 - 1935
(U. S. Bureau of Labor Statistics)
1929 = 100

<u>Month</u>	<u>1929</u>	<u>1930</u>	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935</u>
January	106.4	102.5	93.9	80.8	69.8	75.8	80.0
February	107.7	102.4	91.5	77.4	69.3	76.1	81.1
March	106.8	93.6	88.8	75.2	67.6	77.8	81.6
April	100.2	94.4	85.9	65.5	63.7	72.2	74.3
May	96.6	90.4	82.4	62.6	61.2	76.7	75.3
June	94.7	88.4	78.4	60.5	61.3	76.7	77.9
July	94.1	88.0	76.4	58.6	63.2	77.0	70.0
August	95.7	89.2	77.0	59.4	68.6	77.1	73.4
September	97.2	90.5	80.4	62.4	71.8	78.2	77.1
October	98.8	91.8	81.3	67.0	68.0	79.3	74.3
November	101.0	92.5	81.1	69.4	74.8	79.8	
December	101.4	92.5	81.2	70.0	75.4	79.7	
Average	100.0	93.4	83.2	67.4	67.9	77.2	

Taking 458,732 as the average monthly number of men employed in the industry in 1929 and equivalent to the index number 100, then the peak month in that year, February, showed 494,054 employed, while the low month, July, showed 431,667 men as employed. The number of men displaced amounted to 62,387. It will be noted that the Bureau of Labor Statistics figure differs from that of the Census of Mines and Quarries, largely because of the adjustments made by the former agency.

Perhaps a better indicator of seasonal employment or irregular operation than any discussed above is the data showing the approximate average hours worked per week by bituminous coal mines in each of the principal states. These data are more suited for showing seasonality because they represent the fluctuations in working time per week from month to month reflecting changes in consumer demand. Variations in employment tend to lag behind changes in demand, but variations in working time reflect the ups and downs in consumer purchasing quite accurately. The average working time per week in the principal states during the months of 1931 is shown in the table below. The year 1931 was selected as the last available year which was relatively free from industrial disputes.

TABLE X

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1931

(The average hours worked per week represent mine operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	26.8	30.2	28.3	27.9	22.8	23.4	25.3	27.7	27.1	28.2	28.3	27.3	25.2
Pennsylvania	26.1	30.7	30.2	28.0	25.6	25.5	24.9	25.6	24.0	24.9	25.8	25.7	22.4
Maryland	29.2	33.6	33.7	32.3	28.3	24.3	23.8	25.6	24.7	27.0	30.5	32.3	31.0
West Va. (Northern) ..	27.0	31.9	31.2	29.0	26.7	24.7	27.0	24.1	23.4	25.0	28.6	28.3	23.7
APPALACHIAN													
West Va. (Southern) ..	27.4	28.5	25.8	25.5	23.8	25.3	27.4	29.4	29.3	31.8	32.7	27.7	22.2
Eastern Kentucky	26.3	29.5	25.7	26.4	22.7	24.6	26.5	27.4	28.2	29.1	28.7	25.4	21.1
Virginia	27.1	31.0	26.4	27.6	24.6	28.8	25.8	25.4	27.6	28.7	28.6	28.1	24.1
Tennessee	26.8	31.6	31.0	31.3	26.5	22.8	21.8	23.5	26.6	27.5	26.6	25.6	22.8
ALABAMA	23.2	29.0	26.5	26.2	24.1	24.4	22.8	21.1	21.2	21.7	20.2	21.7	19.5
MIDDLE WEST													
Michigan	14.8	28.4	28.4	27.1	4.9	2.5	3.7	3.7	3.7	7.4	27.1	17.3	19.7
Indiana	22.5	30.0	25.8	27.8	19.9	20.1	18.9	17.4	18.6	20.8	23.3	23.0	24.6
Illinois	20.9	28.1	23.8	24.8	17.6	17.4	15.8	16.0	19.0	19.9	22.5	22.3	23.6
Western Kentucky	20.1	26.3	22.4	23.1	16.9	16.0	14.9	14.5	18.2	20.8	22.6	21.9	23.1
Iowa	21.8	29.3	24.2	27.3	18.2	17.2	17.6	15.5	15.9	19.8	24.8	24.8	27.2
SOUTHWEST-INTERSTATE													
Missouri	22.1	24.9	19.7	22.1	18.7	16.1	14.6	20.0	19.3	21.2	26.4	31.8	30.3
Kansas	18.9	27.0	19.5	20.6	15.4	14.2	13.1	15.4	14.8	19.2	19.5	21.2	25.3
Oklahoma	17.8	26.1	14.1	15.5	10.9	9.5	12.9	14.6	19.2	22.4	25.4	21.0	20.7
Arkansas	14.6	21.1	9.2	9.2	6.9	5.0	6.5	8.8	13.8	21.5	32.7	21.1	16.9
Texas	23.2	23.2	22.2	22.2	20.2	20.2	20.2	23.2	29.3	28.2	28.2	24.2	21.2
NORTH DAKOTA	27.1	34.1	26.6	26.0	17.9	16.3	16.3	16.8	20.1	29.3	36.3	42.3	40.7
ROCKY MOUNTAIN													
Montana	23.7	29.9	24.6	23.1	18.5	16.9	17.2	16.0	19.1	24.9	27.1	34.5	34.5
Wyoming	23.7	26.9	23.3	23.6	22.4	20.9	16.9	16.1	20.5	26.9	28.8	30.7	27.0
Colorado	21.8	32.3	22.4	24.6	15.9	16.1	12.0	11.2	17.0	24.5	27.0	27.6	30.9
New Mexico	22.3	28.4	22.7	23.2	21.4	21.4	20.6	17.5	17.1	19.7	21.9	24.9	26.7
Utah	21.5	36.3	20.1	18.5	14.2	12.4	9.3	8.5	13.2	26.6	25.6	35.3	38.8
WASHINGTON	26.2	31.0	27.9	25.8	23.6	19.2	20.5	19.2	21.0	24.9	30.1	38.0	34.9
U. S. total (including "other States")	24.9	29.7	26.6	26.4	22.3	22.6	22.7	23.2	23.8	25.5	26.8	25.8	23.6

* Much of the output of this State is produced by mines that operate 9 or 10 hours per week.

It will be noted that considerable difference is found as to peak and low months for the various states. In general, however, it may be said that the peak months for working time are October, November, December and January (especially January) with an easing off as the new coal year, beginning in April, approaches. The low months are April, May, June and July. The eastern states in general have their lowest working time in April, May and June, while the far western states consistently show July as the month of least working time per week. Seasonality, it must be noted, may be somewhat accentuated in 1931 since industrial purchasing was at a low ebb and thus domestic consumption assumed a larger proportion tending to emphasize seasonal demand.

(See table entitled "Approximate Average Hours Worked Per Week by Bituminous Coal Mines in Each of the Principal States, 1931.")

If the average hours worked per week during the year be taken as a norm, it will be noted that deviations from this norm for peak and low months differ widely in degree for the various states. These deviations may be taken as an indication of the extent to which seasonality affects working time and thus employment in the principal states.

TABLE XI

ABSOLUTE AND PERCENTAGE DEVIATIONS FROM THE AVERAGE HOURS WORKED PER WEEK DURING YEAR FOR PEAK MONTHS AND LOW MONTHS IN PRINCIPAL STATES, 1931.

State	Year	Average Hours Worked Per Week			
		Peak Month		Low Month	
		Absolute Increase	Percentage Increase	Absolute Decrease	Percentage Decrease
<u>North</u>					
Ohio	26.3	3.4	12.7	4.0	14.9
Pennsylvania	26.1	4.6	17.6	3.7	14.2
Maryland	29.2	9.4	32.2	5.4	18.5
West Va. (No.)	27.0	4.9	18.2	3.6	13.3
<u>Appalachian</u>					
West Va. (So.)	27.4	5.3	19.3	5.2	19.0
Eastern Ky.	26.3	3.2	12.2	5.2	19.8
Virginia	27.1	3.9	14.4	3.0	11.1
Tennessee	26.8	7.8	29.1	5.0	18.7
Alabama	23.2	5.3	25.0	3.7	15.9
<u>Middle West</u>					
Michigan	14.8	13.6	91.9	12.3	83.1
Indiana	22.5	7.5	33.3	5.1	22.7
Illinois	20.9	7.2	34.3	5.1	24.4
Western Ky.	20.1	6.8	33.8	5.6	27.9
Iowa	21.8	7.5	34.4	6.3	28.9

TABLE XI (Cont'd)

State	Year	Average Hours Worked Per Week			
		Peak Month		Low Month	
		Absolute Increase	Percentage Increase	Absolute Decrease	Percentage Decrease
<u>Southwest Interstate</u>					
Missouri	22.1	9.7	43.9	7.5	33.9
Kansas	18.9	8.1	42.9	5.8	30.7
Oklahoma	17.8	8.6	48.3	8.3	46.6
Arkansas	14.6	18.1	55.5	9.6	65.8
Texas	25.2	9.0	21.6	3.0	12.9
<u>North Dakota</u>					
	27.1	15.2	56.1	10.8	79.9
<u>Rocky Mountain</u>					
Montana	27.7	10.8	45.6	7.7	52.7
Wyoming	27.7	7.0	29.5	7.6	52.1
Colorado	21.8	10.5	48.2	10.6	48.6
New Mexico	22.3	6.1	27.4	5.2	23.3
Utah	21.5	17.3	80.5	13.0	60.5
<u>Washington</u>					
	26.2	11.8	45.0	7.0	26.7
U. S. Total (Other States Included)					
	24.9	4.8	19.3	2.6	10.4

It will be noted, for example, that Michigan shows an increase of 13.6 hours per week or 91.9 per cent in the peak month as against the average for the year. The low month shows a decline of 12.3 hours or 83.1 per cent. This wide fluctuation arises out of the fact that much of the Michigan production enters the domestic market. Fluctuations of this character occur throughout the middle West. In the case of the Southwest and Rocky Mountain areas, the explanation lies not only in producing for domestic markets but also because the type of the coal produced does not lend itself to storage. Variations in the eastern coal producing states are not so pronounced because in addition to supplying domestic needs, the coals enter into the industrial markets. Industrial coal, bought on contract, makes possible more regularized production.

In summarizing this section, it may be stated that the production of bituminous coal, when not affected by such disturbing factors as strikes or acute shortage of transportation, has responded quickly to sharp changes in the state of trade. When such disturbing elements enter into the picture, the bituminous coal industry might experience an artificial prosperity after other industries were undergoing retrenchment, simply because consumer stocks were depleted and required replenishment.

4. MOVEMENT FOR SHORTENING THE WORK DAY AND WEEK

Interest in the subject of reduction of hours of work in bituminous coal mining may be said to have begun in the last decade of the nineteenth century. The national convention of the United Mine Workers held at Pittsburgh on April 8, 1891, gave serious consideration to the question of establishing a basic eight-hour day in the central competitive field. (*) Many of the delegates at the convention declared themselves in favor of the eight-hour day. The eight hour question was then openly brought forward before the joint wage conference of Ohio and Western Pennsylvania operators and miners (April 7, 1891). The United Mine Workers requested that the shorter working day be discussed because the miners looked upon that question as paramount to all other issues and would refuse to take up anything else until that matter was settled. (**). The statement was made that the American Federation of Labor had selected the carpenters to make the first fight for an eight-hour day and that it had been successfully established in their craft. The miners were next designated to undertake the movement, but at the date set the miners were not in condition to ask for eight hours because they were under contract with the operators and felt obligated to respect their agreements. The American Federation of Labor convention held at Detroit, Michigan, (December 1890) re-affirmed the conclusion that the miners demand an eight-hour day. The joint conference of operators and miners reached an impasse over the eight-hour day question and adjourned sine die.

An official circular was issued on April 17, 1891 by the United Mine Workers regarding the question of the eight-hour work day. (***) An excerpt from this circular indicates the stand taken by the mine workers' organization.

"The failure of the miners and operators of Ohio and Pennsylvania to agree make possible a national movement for the establishment of the eight-hour day. While the organization is opposed to strike unless as a last resort, at the present time we see no way to avoid the conflict. In calling on you, the miners and mine laborers of the country, to lay down your picks and demand an eight-hour working day on May 1, we but carry out your instructions."

(*) Evans, Chris, History of the United Mine Workers of America, Vol. II, pages 96-101.

(**) Ibid. supra, page 106

(***) Ibid. supra, pages 114-117

A meeting of the National Executive Board and District Presidents of the United Mine Workers of America (April 25 and 27, 1891) decided to defer the eight-hour movement. The reasons for this postponement were that in several parts of the country independent action had been taken. For example, the West Virginia miners were not prepared to partake in the movement and had so decided in their convention. New Straitsville, Ohio, miners made an agreement with their employers to continue working for another year at the then existing prices and hours. These factors plus the number of unorganized miners and the inadequacy of funds in the treasury resulted in rescinding the strike order and in the failure of the first general eight-hour movement. (*) The Interstate Joint Conference became a discredited institution. The ensuing period, 1891-1897, was very critical for the United Mine Workers, being accentuated by the general industrial depression. Efforts to re-establish interstate joint conferences failed and district bargaining became the rule.

The miners' convention of 1897, decided to call a general suspension of work commencing July 4th in order to enforce the scale adopted at the convention. The organization then had some 10,000 members, but the union president said that about 150,000 men ceased work. (**) The suspension lasted from July 4th until September 11th when it was called off by the national convention. The interstate joint conference agreement of 1898 resulted from this strike. One of the clauses in the agreement provided:

"That on and after April 1, 1898, the eight-hour work day with eight hours' pay, consisting of six days per week, shall be in effect in all the districts represented and that uniform wages for day labor shall be paid the different classes of labor in the fields named, and that internal differences in any of the states or districts, both as to prices or conditions shall be referred to the states or districts affected for adjustment." (***)

(*) Ibid, supra, pages 122-126-Cf. also Suffern, Arthur E., The Coal Miners' Struggle for Industrial Status, page 64.

(**) Lubin, Isador, Miners' Wages and the Cost of Coal, page 55. Evans' History of the United Mine Workers (page 512) estimated that there were 111,000 mine workers in the competitive fields of western Pennsylvania, Ohio, Indiana, Illinois, and West Virginia

(***) Section 5, Chicago Agreement (January 28, 1898)

This agreement applied to the operators and miners of Illinois, Indiana, Ohio, and western Pennsylvania.

Progress toward a universal eight-hour day in the bituminous coal mines was accelerated during the War period. The data regarding length of the working day as shown by the Bureau of Mines refer to the number of hours that mines are supposed to be in operation, cars and orders permitting, and not to the number of hours actually worked by the men. (*) These data showed that the percentage of the number of men working in mines at which the standard day was eight hours increased from an average of about 60 per cent in the period from 1910 to 1916 to 79 per cent in 1917. (**) The percentage of men working nine hours, on the other hand, decreased from 15.5 per cent in 1914 and 17.5 per cent in 1916 to 12.5 per cent in 1917, while the percentage of men working ten hours decreased from 25 per cent in the period 1910 to 1916 to 8.5 per cent in 1917. This general change was largely the result of reduced working hours in Kentucky, Maryland, Pennsylvania (bituminous) Tennessee, Virginia, and West Virginia, more particularly in the larger non-union fields. The movement toward the shorter hour work day was still more evident in the following year, 1918. The percentage of men employed in mines where the established working day was eight hours increased from 79 in 1917 to 91 in 1918. (***) By 1920 this percentage had reached 97.1. The years 1921 and 1922, however, showed some retrogression, although the 10-hour day had practically disappeared from coal mines in the United States and the nine-hour day prevailed at only a small proportion of the mines. (****) The reduction in the percentage of men working at eight-hour mines was not due to a decrease in the number of these mines nor of men employed there. The percentage change resulted from the increased number of nine and ten hour mines, the only real reverse suffered by the eight-hour day movement was in Alabama.

The following table, which shows the length of the working day at the mines from 1903 to 1932, does not show the number of hours the men actually worked. The cutting, shooting, and loading of coal is generally paid for at fixed rates per ton, and the men doing this kind of work are known as contract men or tonnage men. These men are piece-workers and are not obliged to put in a certain number of hours at their working places. The figures, therefore, really indicate the number of hours the men had an opportunity to work during a full day on the assumption that there was a full run of cars and that the market conditions were favorable to full-time operation; they do not mean that all the tonnage men worked the number of hours stated. Other employees engaged in maintenance, haulage, and repair work are paid by the day and their hours conform more closely to the established working day

(*) Coal in 1922, page 501

(**) Coal in 1917, page 934

(***) Coal in 1918, page 721

(****) Coal in 1922, page 501

of the mine. In some occupations the day men work longer hours than the mine. The Bureau of Labor Statistics study of hours and wages in bituminous coal mining made during the first quarter of 1933 was based on reports made for 444 mines. (*) This study showed that the vast majority of the time workers at these mines began work at 6:30, 7:00, or 7:30 A.M., worked $4\frac{1}{2}$ or 5 hours in the morning, took 30 minutes for lunch, worked $3\frac{1}{2}$ or 3 hours in the afternoon, and quit work at or near 3:30 P.M. The regular or basic hours of work for these employees were, therefore, eight per day and forty-eight per week, exclusive of lunch time. Some of the pumpmen, engineers, motormen, brakemen, drivers, and cagers, and a few wage earners in some of the other occupations, worked at time, or whenever necessary, more than eight hours per day, and in several occupations some worked on Sunday. Time worked in excess of eight hours per day and work on Sunday was paid for at the regular rate.

The hours of tonnage workers are usually presumed to be approximately the same as those of time workers, but in actual practice their hours are usually more or less irregular. Some tonnage workers enter the mines as early as 6:00 or 6:30 A.M., begin work immediately upon arrival at the face, and work throughout the day, eating their lunch while waiting for mine cars or material; some quit for the day at or near noon; and still others enter the mines around or after 7:00 A.M., take as much time for lunch as they desire, and often quit before the mine as a whole ceases operation. The U.S. Bureau of Mines reported a total of 406,380 bituminous coal-mining wage earners in 5,427 mines in 1932; of this number 365,962 in 4,436 mines were reported as having the regular or basic eight-hour day. The data in the following table show the percentage of the total number of bituminous coal-mining wage earners employed at mines operating a specified number of hours per day, during the period 1903 to 1932. These figures will indicate that the general trend has been to the eight-hour day. The eight-hour day mines employed 56.4 percent of the total number of wage earners in bituminous coal mining in 1903. This percentage increased to 64 in 1907; decreased to 58.6 in 1916; increased each year to 97.1 in 1920, the highest for any year from 1903 to 1932; decreased from year to year to 93.5 in 1925; increased to 93.7 in 1926; decreased year by year to 92.4 in 1930; increased to 93 in 1931; and then declined to 91.9 in 1932.

Wage earners in the nine-hour day mines declined from 17.1 percent of the total in all mines in 1903 to 6.2 percent in 1932. In the ten-hour day mines, the percentage of wage earners declined from 26.5 in 1903 to 1.9 in 1932. Taking the weighted average hours per day for all bituminous wage earners, there was a decrease from 8.7 in 1903 to 8.10 in 1932.

(See Table on page 8)

(*) Bureau of Labor Statistics, Wages and Hours of Labor in Bituminous Coal Mining: 1933, page 15

Table I

PERCENT OF MEN EMPLOYED IN BITUMINOUS COAL MINES WHO HAD AN ESTABLISHED WORKING DAY OF 8, 9 OR 10 HOURS, 1905 to 1932 1/

Source: U. S. Bureau of Mines

Year	Percent of Total Employees in Mines Working			Weighted Average Working Day (hours)
	8 Hour Day	9 Hour Day	10 Hour Day	
1905	57.4	17.1	26.5	8.7
1904	62.1	15.8	24.1	8.6
1905	61.1	15.6	25.3	8.6
1906	73.0	13.5	23.5	8.6
1907	64.0	11.6	24.4	8.6
1908	67.5	11.1	25.4	8.6
1910	62.1	11.2	23.6	8.6
1911	62.9	10.2	26.9	8.6
1912	71.6	11.5	26.9	8.6
1913	61.2	11.2	22.2	8.6
1914	60.7	15.4	25.9	8.6
1915	59.6	17.0	25.4	8.6
1916	58.6	17.4	24.0	8.6
1917	70.0	12.6	23.4	8.3
1918	70.6	6.7	23.7	8.13
1919	95.5	3.5	1.0	8.06
1920	97.1	2.0	.9	8.04
1921	96.6	2.9	.5	8.04
1922	95.1	4.0	.9	8.06
1923	94.7	4.2	1.1	8.06
1924	95.7	5.1	1.2	8.08
1925	93.5	7.4	1.1	8.08
1926	93.7	5.5	.8	8.07
1927	95.4	4.6	1.0	8.08
1928	93.1	6.1	.8	8.08
1929	91.5	7.7	.8	8.08
1930	92.4	7.3	1.0	8.09
1931	93.0	6.1	.9	8.08
1932	91.9	6.2	1.9	8.10

1/ Percentages are calculated on basis of total men in mines definitely reported as having worked an 8, 9 or 10-hour day. A small number of mines that work more than 10 hours or less than 8 hours have been excluded, as have also all mines for which the reports were defective or in which the working day was changed during the year.

The advent of the U.I.R. and the adoption of a Code of Fair Competition for the Bituminous Coal Industry gave still further impetus to the shortening of the work day and week. Article III of the Bituminous Coal Code (effective October 3, 1935) provided that:

"No employee, except members of the executive, supervisory, and confidential personnel, shall be employed in excess of 40 hours in any calendar week after the effective date of this Code. No employee shall be required or permitted to work more than eight hours in any one day at the usual working places or otherwise in or about the mine (exclusive of lunch period), whether paid by the hour or on a tonnage basis or other piecework basis.

"There shall be excepted from the foregoing limitations (a) employees required because of accidents which temporarily necessitate longer hours for them; (b) supervisors, clerks, technicians and that small number of employees at each mine whose daily work includes the handling of men-trips and/or haulage animals and coal in transit and those who are required to remain on duty while men are entering or leaving the mine.

"The foregoing maximum hours shall not be construed as a minimum; and if at any mine a majority of the employed workers express their desire, by written request to the employer, to share available work with bona fide unemployed workers of the same mine, the number of hours' work may be adjusted accordingly by mutual agreement between such employed workers and their employers."

The effect of the Code upon the length of the working day in 1935 is reported by mines to the U. S. Bureau of Mines is clearly indicated in the following inset.

Table II

Percentage of Men Employed in Bituminous Coal Mines
that had Established Working Days of 7, 8, or 10 Hours in 1933

(U. S. Bureau of Mines)

Year	Per cent of total employees in mines working			Weighted Average working day (hours)
	8 hours	9 hours	10 hours	
Before Oct. 3	92.8	4.9	2.5	8.10
After Oct. 3	93.8	.1	.1	8.00
Avg. for year 1/	94.4	5.7	1.8	8.07

1/ In computing the average, the reported data for "before Oct. 3" have been weighted by nine months and the data for "after Oct. 3" by three months.

Added to the foregoing provisions dealing with maximum hours of employment in the Bituminous Coal Code, Article V, Section (c) authorized that as soon as possible after the adoption of the Code an investigation be made as to the practicability and cost (assuming the maintenance of existing rates of pay) of applying to bituminous coal mining a shorter work day and work week. A conference between representatives of employers and employees was to be held on January 5, 1934 to consider this question as well as others dealing with wages and differentials.

In addition to the eight-hour day movement which has just been discussed, there had been initiated another effort to reduce the work day and week. This effort began in the United Mine Worker convention of September 23, 1919 when certain discontented district officials succeeded in having the convention adopt a number of demands which the operators were required to meet or otherwise face a general strike on November 1, 1919. Among these demands was the six-hour day and five-day week. Organized mine labor has continued its interest in a basic thirty-hour work week since that date. In recent years the thirty-hour week movement has received a decided impetus from the legislative efforts of the American Federation of Labor. One of the issues brought forward by the United Mine Workers upon the expiration of the Appalachian Agreement (March 31, 1935) was the thirty-hour week.

Although the mine workers have not yet attained their objective for the thirty-hour week, a step in that direction was made when the Bituminous Coal Code was amended (No. 1) on March 31, 1934. This amendment provided that the maximum hours of employment per day should be seven and that the work week should consist of five days, thus establishing a basic 35-hour week. The details of the hours provisions during the Code period and the economic effects upon cost of production will be discussed in a later section.

The foregoing paragraphs represent a general summary of the movement for the shortening of the work day and week. In considering this subject, attention should be given to the differences in the basic working day in union, non-union and irregular fields. It is undoubtedly true that the unionized coal producing areas exerted a constant pressure upon competing unorganized fields to reduce the length of the working day. The following

table represents a calculation of the differences in the basic working day in the various coal fields. The figures indicate the number of hours that a majority of the men were given an opportunity to labor when the mine operated a standard day. (*) The fractions that appear under the union designation are contributed by the figures compiled for the union areas of West Virginia. It is quite likely that even in these West Virginia areas, the union mines were operating on an eight-hour basis. In contrast with the eight-hour day in the union mines, the non-union mines averaged about eight and three quarter hours and the irregular fields eight and a half hours.

Table III

The Basic Working Day in Union, Non-union, and Irregular Bituminous Coal Fields, (a) 1912 to 1922 (b)

	Average Standard Hours				Relative Standard Hours (base 1920)			
	All fields	Union	Non-union	Irregular	All fields	Union	Non-union	Irregular
1912	8.66	8.04	9.61	9.38	107.2	100.5	118.9	116.5
1913	8.60	8.05	9.50	9.02	107.1	100.6	117.6	113.0
1914	8.62	8.06	9.55	9.00	107.3	100.8	118.2	111.8
1915	8.61	8.06	9.51	8.95	107.2	100.7	117.7	111.3
1916	8.64	8.06	9.54	8.94	107.6	100.8	117.1	111.1
1917	8.31	8.02	8.70	8.44	103.5	100.3	100.7	104.8
1918	8.13	8.02	8.27	8.27	101.2	100.3	101.4	102.7
1919	8.05	8.01	8.11	8.11	100.2	100.1	100.4	100.7
1920	8.03	8.00	8.08	8.05	100.0	100.0	100.0	100.0
1921	8.05	8.00	8.09	8.03	100.0	100.0	100.1	99.8
1922	8.06	8.00	8.15	8.09	100.4	100.0	100.9	100.5

- (a) Fisher and Bezanson, Ibid, supra. Based on statistics compiled by the Coal and Coke Division of the Geological Survey.
- (b) The weighted average for the eleven-year period is as follows:
 Union, 8.02; non-union, 8.52; all fields, 8.32

These figures for a standard day are based upon certain assumptions. In the union fields a standard eight-hour day was in effect during the entire period shown. The irregular fields, however, were changing back and forth and in some cases the union signed an agreement permitting a longer day than eight hours. (**) Many mines in the non-union areas worked ten hours or more, but the length of the working day tended to decrease during the years 1917 to 1920. Since the non-union and irregular areas lacked uniformity in the time worked per day, the normal length of the working time had to be computed.

(*) Fisher, Aldo E. and Bezanson, Anne, Wage Rates and Working Time in the Bituminous Coal Industry 1912-1922, pages 150 and 151.

(**) Ibid, supra, pages 223-224.

The calculation was based upon the data of the Geological Survey and the established hours were weighted by the number of men employed. Unspecified mines (all others), which included mines changing their hours during the year, as well as those which failed to report, were assumed to have the same distribution as was found in those with specified hours. These figures, then, indicate the length of the working day which the mine was scheduled to work and not the number of hours that the men worked.

The United States Bureau of Labor Statistics has carried on periodic surveys regarding the wages and hours of labor in bituminous coal mining. These surveys cover a varying number of mines in eleven states (*) and differ as to the period of the year when they are conducted. The data collected are heavily weighted by captive operations which emphasize industrial changes.

The number of wage earners covered by the Bureau in the study of the industry in 1933 was 120,554 or 50.2 per cent of the total number of mine workers reported by the United States Bureau of Mines as employed in bituminous coal mining in the United States in 1933 and 53.6 per cent of the total number employed in the eleven states represented in the study. The 444 reporting mines accounted for 54.5 per cent of the total production of all mines in all states in 1933 and 57.7 per cent of the total tonnage produced by all mines in the eleven states.

The hours of employment data in this study show (1) time at the face, including time for lunch, and (2) total time in the mine, including time for lunch and travel time inside the mine from its opening to the "face" or working place in the mine and return.

"Time for lunch" was usually about 50 minutes, except in some mechanized mines where it was estimated that the men consumed 15 to 30 minutes for lunch while waiting for mine cars. The longest time reported for lunch was one hour. The weighted average lunch time taken by the 7,396 miners and loaders in the 444 mines covered in the 1933 study was 36.6 minutes per day.

The round-trip travel time in the different mines ranged from 10 minutes to two hours. The weighted average time of travel in the mine, from the opening to the place of work and return, for the 7,396 miners and loaders in the 444 mines was 54 minutes per day or 27 minutes each way.

The three basic occupations in bituminous coal mining are those of hand or pick miners, machine miners (cutters), and hand loaders. These occupations represented 67.3 per cent of all the wage earners covered by the Bureau of Labor Statistics' study. These wage earners are usually paid a rate per ton of 2,500 pounds, run of mine coal and are not, therefore, time workers.

Since miners and loaders are usually paid at tonnage instead of time rates, very few companies keep a daily record for such employees. The hours worked by the miners and loaders were ascertained, therefore, by arrangements with mine officials to keep a special day-by-day record of all hours of

(*) Alaska, Colorado, Illinois, Indiana, Kansas, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

each employee for a sample pay period. The hours worked by time workers, on the other hand, are of regular record.

The following table indicates the hours of employment for miners and loaders from 1922 to 1933. These hours data apply to the wage earners themselves and so differ from the data shown earlier in this section - the latter data being for hours worked by mines.

Table IV

Average Hours of Employment of Miners and Loaders, 1922, 1924, 1926, 1929, 1931, and 1933

(U. S. Bureau of Labor Statistics)

Year	Number of mines	Number of wage earners	Average Hours			
			In half month based on -		Per start (day) based on -	
			Time at face including lunch	Time in mine	Time at face incl. lunch	Time in mine
1922 1/	200	33,760	68.1	73.7	7.7	8.3
1924	599	91,167	64.6	70.0	7.8	8.5
1926	556	96,010	75.4	82.2	7.9	8.6
1929	535	99,405	72.6	79.6	8.0	8.8
1931	469	90,063	56.5	61.9	8.0	8.8
1933	444	79,996	57.2	63.2	8.0	8.9

1/ Includes data for Utah, Washington, and Wyoming.

Data as to hours of work for time workers are shown in the following table. It will be noted that wage earners in this group work more average actual hours than do the tonnage men.

Table V

Average Hours of Employment of All Wage Earners other than Miners and Loaders, 1922, 1924, 1926, 1929, 1931, and 1933

(U. S. Bureau of Labor Statistics)

Year	Number of Mines	Number of wage earners	Average actual hours	
			Worked in half month	Per start (day)
1922 1/	200	19,368	67.8	8.7 2/
1924	599	49,552	83.1	8.5
1926	556	52,145	91.7	8.6
1929	535	52,806	87.0	8.6
1931	469	47,725	69.8	8.4
1933	444	41,438	67.1	8.4

1/ Includes data for Utah, Washington, and Wyoming.

2/ Not including data for 777 wage earners whose starts were not reported.

The above tables may be somewhat misleading in that they tend to indicate a uniformity in working hours which does not exist. The following tables which show average hours per day (start) for different occupations in 11 coal-producing states indicate quite clearly that the eight-hour day was commonly exceeded in most of the occupations and in some instances for particular localities approached 10 and even 11 hours per day. Working time in excess of eight hours was more prevalent in the coal producing areas south of the Ohio River, especially in West Virginia, Virginia, Tennessee, and Alabama. The Bureau of Labor Statistics' data cannot be taken as an accurate determination of the average working time for employees in a given state or field, but they do serve as an indication of the lack of uniformity and the extent to which certain areas had progressed toward a standard eight-hour day.

The standard working day, prior to the Bituminous Coal Code amendment, was eight hours. The mines worked six days a week when market and other conditions permitted so that the established working week was 48 hours. There are no available data to indicate how many mines attained the maximum working week for a whole or a part of the year. Monthly production data, however, as well as the record of average number of days worked during the year indicate that the 8-hour day and 48-hour week was not generally achieved in the industry. Indeed, a relatively small number of mines are able to carry on full-time, year-round activity. Mining operations whose production is based upon long time contracts with public utility and industrial users having non-fluctuating needs or captive mines are the most likely to attain the objective of full-time, year-round activity. Likewise, during years of general industrial prosperity commercial mines supplying industrial needs obtain greater continuity of operation. On the other hand, mines producing primarily for domestic consumption or whose coals contain a high moisture content or are subject to much degradation, operate excessive hours during periods of peak demand and are almost totally shut down during the slack season.

An estimate of the average weekly operating time of mines for 1929, 1930, 1931, 1932 and 1933 prior to Oct. 3 by individual states is shown in the following table. The figures shown represent the average working time for all mines which operated at any time during the year and are weighted by the total number of men employed during the year regardless of the number of days worked or the months in which the men were employed. The data represent, therefore, the average for all mines in operation at any time during the year, but do not reflect the average time for mines in actual operation during a given month nor do they make allowances for monthly variations in the number of men employed.

It should be noted that these data for states tends to conceal the difference in operating time among various mines within the state. This situation is illustrated clearly in comparing the average hours worked per week during a given year for bituminous coal production in all the states as against the average hours worked per week during the same year for any particular state. For example, in 1929 the industry averaged 34.0 hours per week, but Alabama, Kentucky, Maryland, Virginia, and West Virginia showed a range from 36.8 hours to 39.3 hours, while average hours in Arkansas, Illinois, Indiana, and Kansas ranged from 22.6 to 27.2. In any case, even the boom year of 1929 found no state showing more than 39.3 average hours worked per week against the standard 48-hour week. The effect of changing business condition and consumer demands has already been discussed in the preceding section of this study.

Table VI

AVERAGE HOURS OF EMPLOYEES "OTHER THAN MINERS AND LOADERS", 1931
AND 1933 BY PLACE OF WORK, OCCUPATION AND STATE OR SUBDIVISION ^{1/}

(Average Actual Hours Including Time for Lunch)

State or Subdivision	: Inside Work : Brakemen		: Inside Work : Laborers		: Inside Work : Motormen		: Inside Work : Trackmen		: Outside Work : Laborers	
	: 1931-1933		: 1931 - 1933		: 1931 - 1933		: 1931 - 1933		: 1931 - 1933	
Alabama	8.5	9.0	8.4	8.7	8.5	9.1	8.5	8.9	8.6	8.9
Colorado	8.2	8.0	8.1	8.0	8.1	8.1	8.1	8.1	8.7	8.6
Illinois	8.5	8.3	8.0	8.0	8.4	8.5	8.0	8.0	8.2	8.2
Indiana	7.8	7.9	7.8	8.0	7.9	8.1	7.7	7.8	8.0	8.1
Kansas	8.0	8.1	8.2	8.0	8.0	8.2	8.1	7.9	8.1	8.3
Kentucky	8.5	8.6	8.2	8.2	8.6	8.7	8.2	8.0	8.7	8.8
Eastern		8.7		8.1		8.7		8.1		9.0
Western		8.3		8.4		8.4		7.9		8.3
Ohio	8.1	8.1	8.1	8.0	8.3	8.2	8.0	8.0	8.2	8.1
Pennsylvania	8.7	8.4	8.1	7.8	8.7	8.4	8.2	7.9	8.8	8.6
Central		8.3		8.3		8.6		8.1		9.0
Western		8.0		7.5		8.0		7.7		8.2
Tennessee	8.1	8.4	7.9	8.2	8.1	8.5	8.0	8.1	8.3	8.1
Virginia	8.8	9.0	8.4	8.5	9.0	9.1	8.3	8.3	9.0	9.0
West Virginia	8.6	8.4	8.3	8.3	8.7	8.5	8.3	8.2	8.9	8.6
Northern		8.0		7.6		8.1		7.8		7.6
Southern		8.5		8.4		8.6		8.2		8.8
Average	8.5	8.4	8.2	8.1	8.6	8.5	8.2	8.0	8.7	8.5

^{1/} Wages and Hours of Labor in Bituminous Coal Mining: 1933 - Bureau of Labor Statistics.

TABLE VII

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1929-1933

(Computed from annual reports of operators to the U. S. Bureau of Mines)

State	1929					1930					1931					1932					1933 (Pre-1933)				
	Days worked in 1929	Weighted average hours in 1929	Hours worked per year in 1929	Average hours worked per week in 1929	Days worked in 1929	Weighted average hours in 1930	Hours worked per year in 1930	Average hours worked per week in 1930	Days worked in 1930	Weighted average hours in 1931	Hours worked per year in 1931	Average hours worked per week in 1931	Days worked in 1931	Weighted average hours in 1932	Hours worked per year in 1932	Average hours worked per week in 1932	Days worked in 1932	Weighted average hours in 1933	Hours worked per year in 1933	Average hours worked per week in 1933	Days worked in 1933	NIGHTED HOURS IN ESTABLISHED WORKING DAY	HOURS WORKED PER YEAR	AVERAGE HOURS WORKED PER WEEK	AVERAGE HOURS WORKED PER WEEK
Alabama	211	8.04	2,042	39.3	189	8.01	1,703	32.8	136	8.88	1,208	23.2	107	9.01	764	18.5	148	9.13	1,351	26.0	148	9.13	1,351	26.0	
Arkansas	146	8.06	1,177	22.6	115	8.02	922	17.7	95	8.00	760	14.6	72	8.02	738	14.7	94	8.02	754	14.5	94	8.02	754	14.5	
Colorado	167	8.05	1,505	28.9	169	8.00	1,372	24.0	142	8.00	1,136	21.8	142	8.00	1,136	21.9	142	8.00	1,184	22.8	142	8.00	1,184	22.8	
Illinois	177	8.00	1,416	27.2	156	8.00	1,286	24.2	136	8.00	1,088	20.9	122	8.00	896	17.2	141	8.00	1,108	21.7	141	8.00	1,108	21.7	
Iowa	195	8.00	1,716	36.5	171	8.00	1,286	24.2	136	8.00	1,136	21.8	122	8.00	896	17.2	141	8.00	1,108	21.7	141	8.00	1,108	21.7	
Kansas	166	8.02	1,285	24.1	152	8.01	1,009	19.4	123	8.01	985	18.9	120	8.02	1,043	20.7	140	8.02	1,143	21.6	140	8.02	1,143	21.6	
Kentucky	222	8.11	1,800	34.6	187	8.11	1,517	29.2	159	8.13	1,289	24.8	155	8.15	1,243	24.3	179	8.15	1,487	26.7	179	8.15	1,487	26.7	
Western Kentucky	239	8.11	1,938	37.3	200	8.11	1,622	31.2	168	8.00	1,366	26.3	156	8.00	1,279	24.6	179	8.00	1,470	28.3	179	8.00	1,470	28.3	
Western Maryland	177	8.06	1,435	27.6	148	8.00	1,200	23.1	130	8.02	1,043	20.1	149	8.01	1,193	23.0	157	8.00	1,276	24.1	157	8.00	1,276	24.1	
Maryland	246	8.01	1,970	37.9	197	8.00	1,576	30.3	190	8.00	1,520	29.2	150	8.00	1,200	23.1	150	8.00	1,376	26.5	150	8.00	1,376	26.5	
Michigan	217	8.00	1,736	33.4	187	8.00	1,496	28.8	162	8.00	1,248	23.8	151	8.00	1,000	20.0	172	8.00	1,100	21.0	172	8.00	1,100	21.0	
Minnesota	185	8.03	1,486	28.6	166	8.02	1,331	25.6	142	8.09	1,149	22.1	141	8.07	1,000	20.0	150	8.06	1,099	21.0	150	8.06	1,099	21.0	
Montana	189	8.14	1,538	29.6	172	8.14	1,400	26.9	153	8.06	1,213	23.7	145	8.05	1,187	23.5	150	8.03	1,293	25.6	150	8.03	1,293	25.6	
Nebraska	214	8.00	1,712	32.9	176	8.00	1,408	27.1	145	8.00	1,213	23.7	145	8.00	1,016	19.5	168	8.00	1,244	24.9	168	8.00	1,244	24.9	
North Dakota	192	8.38	1,609	30.9	160	8.53	1,375	29.5	155	8.48	1,168	22.3	147	8.51	1,083	20.4	173	8.58	1,454	28.6	173	8.58	1,454	28.6	
Ohio	201	8.02	1,612	31.0	189	8.00	1,512	29.1	174	8.01	1,394	26.8	166	8.01	1,017	19.6	167	8.01	1,354	24.0	167	8.01	1,354	24.0	
Oklahoma	178	8.06	1,435	27.6	148	8.02	1,193	22.9	115	8.06	927	17.8	120	8.07	968	18.6	128	8.07	1,033	19.9	128	8.07	1,033	19.9	
Pennsylvania, bit.	230	8.02	1,845	35.5	198	8.02	1,683	32.9	165	8.02	1,395	26.1	154	8.02	1,235	23.8	162	8.02	1,399	25.0	162	8.02	1,399	25.0	
Pennsylvania, gen.	228	8.24	1,879	36.1	196	8.16	1,603	30.3	171	8.15	1,394	26.1	154	8.07	1,234	23.5	162	8.02	1,399	25.0	162	8.02	1,399	25.0	
Tennessee	202	8.00	1,619	32.0	181	8.00	1,577	30.3	160	8.00	1,394	26.1	154	8.00	1,234	23.5	162	8.00	1,399	25.0	162	8.00	1,399	25.0	
Utah	211	8.00	1,688	32.5	168	8.00	1,344	25.3	140	8.00	1,120	21.5	126	8.00	1,008	19.2	152	8.00	1,431	27.7	152	8.00	1,431	27.7	
Virginia	249	8.02	1,937	36.4	200	8.01	1,602	30.8	175	8.04	1,407	27.1	176	8.00	1,248	24.8	176	8.00	1,407	27.1	176	8.00	1,407	27.1	
Washington	227	8.00	1,816	34.9	205	8.00	1,640	31.5	170	8.00	1,360	26.2	161	8.00	1,248	24.8	176	8.00	1,407	27.1	176	8.00	1,407	27.1	
West Virginia	247	8.06	1,991	36.3	204	8.07	1,646	31.7	176	8.04	1,415	27.2	168	8.07	1,385	26.6	196	8.05	1,520	30.8	196	8.05	1,520	30.8	
West Virginia, total	223	8.06	1,797	34.6	192	8.01	1,594	29.8	174	8.01	1,394	26.6	171	8.05	1,385	26.6	196	8.05	1,520	30.8	196	8.05	1,520	30.8	
Northern	257	8.00	2,071	39.8	208	8.07	1,679	32.3	177	8.06	1,426	27.4	167	8.06	1,344	26.0	197	8.06	1,520	30.8	197	8.06	1,520	30.8	
Southern	230	8.00	1,840	35.4	188	8.00	1,504	28.9	154	8.00	1,232	23.7	150	8.00	1,000	20.0	170	8.00	1,260	24.3	170	8.00	1,260	24.3	
Total bituminous*	219	8.06	1,770	34.0	187	8.09	1,513	29.1	160	8.08	1,293	24.9	146	8.10	1,183	22.7	167	8.10	1,353	26.0	167	8.10	1,353	26.0	

* Includes several other States producing very small quantities of coal.

Annual data showing the average weekly operating time in individual states may be misleading in that they imply a regularity of operation which does not exist. It is necessary, therefore, to turn to monthly data on average hours worked per week in order to observe the wide fluctuations which occur in working time. The following tables indicate the approximate average hours worked per week by bituminous coal mines in each of the principal States for the years 1929, 1930, and 1932 (the table for the year 1931 may be found in the preceding section). Only the first nine months of 1933 are shown in order to avoid the influence of the Code.

It must be remembered that these figures indicate the average hours worked per week by mines and not by wage earners. The data do show, however, the opportunity for work available to mine workers. Bituminous coal mines in only a few states showed average working time per week in excess of 45 hours for any month during the prosperous year of 1929. These states were Maryland, Oklahoma, North Dakota, Wyoming, Utah and Washington. Coal production in these areas is primarily for domestic markets and highly seasonal. For example, although these states reported particular months when more than 45 hours per week were worked, none of them with the exception of Maryland and Wyoming, averaged more than 35 hours per week for the year. The tables for the succeeding years illustrate similar situations.

No effort has been made in this section of the study, to investigate the economic implications arising out of the movement for shortening the work day and week. That the movement is of fundamental economic significance for the bituminous coal mining industry in terms of trends toward mechanization, effects upon cost of production, and spread of employment cannot be doubted. The treatment in this section is intended to serve as an historical account of the movement. The economic problems and consequences of the shortened work day and week will be discussed in section B of this Chapter dealing with working time and labor costs under the code.

TABLE VIII
APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BIUMINOUS COAL MINE S IN EACH OF THE PRINCIPAL STATES, 1929

average hours worked per week represent mine operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	31.0	30.1	31.2	34.2	29.3	30.2	23.9	30.9	31.0	34.3	32.1	34.4	37.9
Pennsylvania	32.5	37.2	37.1	33.7	33.1	34.1	34.8	34.9	34.4	37.0	37.9	37.0	34.9
Maryland	37.9	47.2	46.3	33.3	21.7	31.3	33.9	32.2	33.5	30.1	41.4	41.4	42.7
West Va. (Northern)	34.0	37.5	34.0	31.4	30.3	33.1	34.0	34.0	34.0	30.0	33.7	30.0	32.0
APPALACHIANS													
West Va. (Southern)	33.8	42.1	41.8	33.1	33.2	37.9	38.7	31.4	41.8	44.1	45.0	42.3	35.0
Western Kentucky	37.3	39.7	30.3	30.3	31.3	35.4	33.7	30.4	37.7	41.3	42.3	37.2	38.5
Virginia	33.4	41.2	43.0	33.9	34.3	33.7	33.2	34.7	34.3	41.7	41.4	40.4	39.3
Tennessee	33.1	33.0	42.0	32.0	34.5	34.5	33.0	32.8	34.7	33.2	33.4	37.7	33.0
Alabama	39.3	43.1	44.4	36.5	40.0	38.7	39.5	30.7	30.9	39.0	41.9	32.2	44.8
MIDDLE WEST													
Michigan	33.4	37.3	34.8	30.8	27.0	29.9	33.5	30.8	34.7	30.0	30.0	37.3	30.0
Indiana	26.5	32.1	32.0	25.0	19.5	22.3	21.4	21.8	32.8	26.3	23.1	28.4	33.9
Illinois	27.2	37.0	38.5	23.4	19.0	20.1	13.9	20.0	23.1	27.9	30.2	31.0	36.5
Western Kentucky	27.6	40.5	39.3	24.5	20.8	20.7	14.1	20.4	23.9	25.4	31.2	29.5	33.0
Iowa	30.0	37.2	44.0	20.5	21.3	21.7	20.2	21.3	24.1	32.4	30.2	39.8	40.4
SOUTHWEST AND MOUNTAIN													
Missouri	28.0	38.2	40.0	25.5	21.2	22.3	21.4	21.8	20.5	29.5	31.2	34.3	35.9
Kansas	24.7	37.2	32.2	32.7	14.3	14.3	13.8	17.8	22.4	17.2	29.5	27.2	28.8
Oklahoma	27.0	45.1	41.5	30.2	13.7	14.1	15.7	20.2	21.8	31.9	30.3	36.3	40.1
Arkansas	22.0	34.1	30.0	12.7	9.2	9.0	10.7	7.4	13.5	31.0	33.3	29.2	33.7
Texas	35.0	39.9	40.3	33.1	32.1	32.1	30.1	34.0	38.9	30.0	35.0	27.2	30.9
NORTH DAKOTA	30.9	32.5	32.5	21.0	17.0	11.8	7.8	9.3	11.3	49.4	42.2	48.9	51.5
ROCKY MOUNTAIN													
Montana	29.0	34.9	40.0	20.1	20.5	21.9	19.0	21.0	27.0	34.9	30.5	37.0	34.1
Wyoming	35.4	45.3	43.7	31.2	28.1	23.7	33.2	24.5	30.0	42.4	40.0	45.3	39.8
Colorado	28.9	41.3	43.2	23.9	21.4	18.3	15.7	17.2	20.4	33.3	30.3	41.4	39.5
New Mexico	32.9	39.3	37.2	30.2	31.4	30.0	28.3	31.4	28.3	31.4	30.8	39.1	34.8
Utah	32.5	50.1	48.2	27.9	24.4	19.0	14.2	13.4	23.0	30.0	30.7	40.5	40.0
WASHINGTON	34.9	44.3	42.8	32.3	32.8	27.0	30.2	25.1	24.1	35.3	34.9	33.7	40.9
U. S. total (including "other States")	34.0	38.8	39.2	30.1	28.7	28.3	30.3	31.1	32.4	30.5	37.8	30.7	30.8

2 Much of State output comes from mines operating 9 or 10 hours a day.

TABLE IX

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES - SEPT. 1930

(The average hours worked per week represent mine operating time and are calculated as follows: For mine operations to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this it is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working days in any month will be proportional to the production of that month. (In averaging the working time the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
ROCKY MOUNTAIN													
Ohio	29.1	31.2	29.9	24.5	25.6	27.4	27.7	28.1	28.1	29.0	32.2	31.0	32.0
Pennsylvania	30.5	33.5	32.2	29.9	30.5	29.9	29.7	28.9	28.2	30.6	32.2	31.8	28.7
Maryland	30.3	40.9	37.3	28.7	28.7	22.9	27.8	24.6	25.4	27.8	30.7	31.9	36.0
West Va. (Northern) ..	29.8	34.2	31.0	29.8	30.4	30.4	29.8	26.3	27.4	28.9	29.2	30.7	28.6
APPALACHIAN													
West Va. (Southern) ..	32.3	38.3	33.2	27.0	30.2	31.2	31.6	32.6	32.6	35.5	34.9	33.1	27.8
Eastern Kentucky	31.2	38.5	34.5	25.8	30.3	30.6	29.7	29.0	30.1	33.2	33.3	31.0	28.5
Virginia	30.8	38.0	36.8	30.7	29.2	27.4	27.5	26.3	26.7	31.4	31.5	33.4	31.4
Tennessee	30.8	38.9	32.5	29.9	30.6	28.8	28.4	27.5	27.7	30.1	31.4	33.2	33.0
Alabama	32.8	41.7	38.5	32.5	34.4	31.5	29.4	27.4	28.1	30.5	32.5	34.0	33.3
MIDDLE WEST													
Michigan	28.8	38.0	34.0	32.7	19.6	17.0	20.9	26.2	13.1	27.5	35.3	32.1	38.0
Indiana	24.2	32.0	29.7	23.8	21.7	19.8	18.6	18.3	20.6	23.5	26.1	26.3	28.4
Illinois	24.0	35.3	28.4	22.6	20.2	18.0	17.2	18.0	20.1	22.4	27.6	29.1	29.2
Western Kentucky	23.1	37.2	29.8	22.8	18.7	17.4	17.7	18.1	20.3	23.6	23.6	23.4	25.1
Iowa	23.9	38.2	28.0	22.8	19.4	16.4	16.7	15.6	18.3	23.0	28.6	27.7	31.8
SOUTHWEST-INTERSTATE													
Missouri	25.6	35.6	31.6	24.0	22.7	19.7	20.6	22.3	25.0	24.4	27.4	27.4	27.4
Kansas	19.4	28.2	26.8	15.5	13.8	11.8	11.5	13.3	14.0	20.1	24.8	25.0	29.0
Oklahoma	22.9	46.3	33.5	11.8	13.3	11.6	14.1	15.1	18.1	23.4	33.2	28.9	25.7
Arkansas	17.7	34.2	21.9	7.4	7.4	6.7	8.9	12.0	15.2	24.1	30.1	23.4	24.1
Texas	30.3	32.6	44.9	34.8	21.3	21.3	22.6	24.7	28.1	35.9	31.4	30.3	40.3
North Dakota	29.5	56.3	36.5	25.2	12.1	10.5	11.6	10.5	12.2	30.0	57.5	52.1	36.5
ROCKY MOUNTAIN													
Montana	26.9	40.0	29.4	22.3	19.5	19.3	20.1	19.3	21.7	28.3	36.2	34.0	31.0
Wyoming	28.9	43.9	28.8	25.1	22.6	21.6	20.4	21.3	26.0	32.8	35.5	35.3	33.6
Colorado	26.0	47.4	30.3	22.1	14.6	18.1	15.3	16.7	16.3	25.9	31.8	35.7	38.0
New Mexico	27.1	43.4	27.9	24.4	24.1	25.0	25.0	21.6	21.6	20.3	32.2	35.6	28.8
Utah	25.8	47.9	29.0	18.6	12.4	12.3	11.2	11.9	16.5	30.3	36.0	42.1	41.6
WASHINGTON	31.5	45.0	32.3	29.4	26.0	25.6	26.9	24.7	25.2	31.2	37.4	37.8	36.5
U. S. total (including "other states")	29.1	36.3	31.9	26.7	27.0	26.4	26.2	25.9	26.6	29.6	31.7	31.7	29.6

* A large proportion of the output in this State came from mines operating 9 and 10 hours a day.
 * Denver experienced the coldest weather of record in this month.

F. O. TAYLOR
 Bureau of Mines
 August 6, 1933.

TABLE X

AVERAGE MONTHLY PERCENTAGE HOURS WORKED PER WEEK BY STATE LOCAL MINES IN EACH OF THE PRINCIPAL STATES, 1932

The average hours worked per week represent mines operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	20.1	28.7	26.1	26.4	7.0	6.4	7.2	12.1	15.6	21.1	29.1	30.5	31.5
Pennsylvania	23.9	24.1	24.2	25.4	25.4	20.6	19.0	19.4	20.7	24.1	28.6	28.7	28.3
Maryland	23.0	20.8	32.5	31.6	24.2	18.0	13.6	13.9	15.6	20.2	23.3	23.9	29.1
West Va. (Northern) ..	26.7	29.2	31.7	30.7	30.9	28.5	22.4	22.3	21.9	25.0	27.8	26.7	22.8
APPALACHIAN													
West Va. (Southern) ..	26.2	24.9	26.0	27.2	23.5	21.9	20.8	20.8	25.1	29.4	34.2	31.5	28.3
Eastern Kentucky	24.7	22.0	23.2	25.6	18.9	18.9	19.3	20.1	25.4	30.4	33.7	31.5	27.2
Virginia	22.4	23.5	24.4	23.3	18.2	17.4	17.3	17.1	19.7	25.6	27.9	27.8	26.8
Tennessee	23.5	26.9	25.0	27.6	19.9	18.8	18.4	18.0	19.0	22.9	26.7	27.4	29.2
ALABAMA													
Alabama	17.6	19.3	18.6	18.1	16.7	16.5	13.6	13.0	15.1	17.6	21.3	21.7	20.3
MIDDLE WEST													
Michigan	24.8	36.5	37.1	39.0	26.6	12.0	5.0	6.1	7.1	20.5	31.4	37.5	36.8
Indiana	22.1	25.3	27.4	33.1	11.3	14.5	15.2	15.3	15.4	22.1	28.1	28.5	29.1
Illinois	17.3	25.9	28.7	37.7	2.3	3.4	3.9	5.1	10.5	16.0	21.7	25.1	26.9
Western Kentucky	23.1	22.0	21.2	22.2	16.6	19.9	19.5	3.1	23.2	25.0	29.6	25.8	29.1
Iowa	24.4	30.1	32.1	30.7	22.2	17.5	18.6	16.3	17.0	24.1	26.1	29.1	29.9
SOUTH-EAST-INTERSTATE													
Missouri	25.2	30.4	30.2	29.3	15.0	15.6	18.5	20.8	20.4	22.7	29.9	34.7	35.0
Kansas	20.1	28.4	25.1	20.0	13.4	11.7	11.7	10.7	12.4	20.6	28.6	29.7	29.6
Oklahoma	18.6	25.0	17.9	14.0	6.0	5.6	7.0	11.6	9.9	19.8	36.9	39.2	30.3
Arkansas	14.2	20.9	18.2	10.0	3.6	4.1	3.7	1.4	4.0	19.0	37.8	27.2	21.0
Texas	24.9	27.2	25.2	25.2	20.8	21.4	26.3	24.2	23.3	27.0	26.5	26.8	26.5
NORTH DAKOTA													
North Dakota	28.9	46.1	42.6	32.0	14.8	12.3	10.3	8.5	10.6	26.4	45.6	50.3	47.6
ROCKY MOUNTAIN													
Montana	21.6	28.2	29.5	22.7	12.7	13.4	13.3	9.9	12.4	23.7	29.8	34.4	30.6
Wyoming	21.8	36.8	27.5	20.4	17.4	16.4	15.5	11.8	16.9	25.2	30.5	27.0	26.4
Colorado	21.5	35.6	28.5	24.3	12.6	9.6	9.7	8.2	12.0	24.9	29.3	28.8	34.9
New Mexico	19.8	27.7	21.5	18.5	18.0	15.1	15.0	12.7	15.8	18.8	25.9	26.5	24.2
Utah	19.6	34.4	31.1	16.1	11.7	9.1	7.2	6.5	12.1	20.1	25.2	25.6	37.3
WASHINGTON													
Washington	23.7	31.4	32.2	25.4	21.5	19.6	18.2	14.3	15.9	23.1	25.3	27.9	26.8
U. S. total (including "other States")	22.8	25.3	26.0	27.6	18.0	16.6	15.7	16.3	19.3	23.9	28.9	28.6	27.6

TABLE XI

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES

First Nine Months (Pre-Code) 1933

Region and State	January	February	March	April	May	June	July	August	September
North									
Ohio	24.7	27.5	21.4	16.4	19.1	21.9	27.0	34.6	33.3
Pennsylvania	24.6	24.8	22.2	20.5	22.5	27.0	31.5	31.8	29.8
Maryland	31.0	30.4	24.5	20.4	19.1	19.1	24.8	31.5	29.3
West Virginia (Northern)	25.5	25.1	22.2	20.2	22.7	26.6	34.9	36.0	39.1
Appalachian									
West Virginia (Southern)	30.3	31.6	24.1	27.5	26.1	21.7	38.4	40.2	36.3
Kentucky (Eastern)	25.4	28.8	20.6	19.6	23.0	28.5	34.9	37.6	37.6
Virginia	26.2	29.1	23.1	22.8	24.7	30.2	37.8	37.0	32.3
Tennessee	26.6	27.2	20.9	19.7	21.1	25.0	31.9	33.8	28.7
Alabama	26.6	24.4	20.1	21.3	22.7	23.4	32.1	32.7	32.3
Middle West									
Michigan	37.8	34.7	27.3	6.8	6.4	5.8	6.7	7.4	10.4
Indiana	26.1	30.8	22.6	19.7	18.1	18.6	21.6	24.6	25.6
Illinois	25.9	26.3	23.3	15.9	14.6	14.8	18.1	19.6	21.9
Kentucky (Western)	25.5	27.8	20.5	16.2	15.0	17.7	19.5	22.4	25.1
Iowa	28.7	32.4	23.9	16.5	16.7	15.1	14.9	16.3	15.9
Southwest-Intervale									
Missouri	28.4	37.3	24.2	16.7	15.1	15.1	16.0	20.2	19.9
Kansas	29.3	28.5	19.0	16.6	13.5	15.3	17.3	24.4	22.0
Oklahoma	21.6	28.8	6.4	8.8	8.0	11.4	16.6	27.1	27.4
Arkansas	17.2	20.1	5.9	4.0	3.9	5.7	10.8	20.4	24.1
Texas	24.9	26.7	26.2	25.8	25.8	29.2	31.7	32.0	34.4
North Dakota	42.2	49.6	27.4	15.5	10.5	9.3	11.0	14.2	31.9
Rocky Mountain									
Montana	30.0	33.4	21.9	16.2	17.9	15.4	18.9	22.2	26.1
Wyoming	26.4	28.0	20.0	21.2	20.1	18.5	20.9	22.1	31.5
Colorado	29.8	35.1	19.2	17.0	15.1	9.8	11.1	19.0	31.7
New Mexico	32.5	34.4	21.5	18.9	20.5	21.1	22.9	23.9	27.0
Utah	41.1	48.1	19.4	15.7	16.6	12.0	14.2	20.0	34.3
Washington	34.4	35.8	33.6	20.6	21.4	20.1	23.5	23.9	20.6
U. S. Total	26.9	28.5	22.0	19.4	20.9	23.7	28.9	31.0	28.8

Includes Alaska, Arizona, California, Georgia, Idaho, North Carolina, Oregon, South Dakota, which are relatively unimportant code-producing states.

CHAPTER IV 1/

SECTION B. WAGE RATES AND HOURS: EMPLOYMENT
AND EARNINGS UNDER THE CODE.

Labor Costs: Major Factor in Costs, Sales
Realization and Value of Product.

The bituminous coal industry occupies a unique position among the basic industries in the employment afforded by it as well as in the proportion of the total cost of production and the value of product represented by labor cost. With the exception of agriculture and transportation no other single industry employs as many people as bituminous coal. Similarly, the bituminous coal industry stands out from other industries in that its labor cost exceeds 60 percent of the total cost of production. For example, in the reports made by the industry to the B. B. B., the mine labor cost in Division I, representing about 70 percent of the national tonnage, was 65.2 percent of the total cost of production, excluding selling and administrative costs (see Table I) for the 5-month period November, 1933 to March, 1934. The labor cost for the 10-month period - April, 1934 to January, 1935 (7-hour day) in this area was 66.7 percent of the total production cost.

The labor cost per ton in Division II is smaller in proportion to total production than in either Division I or III. During the period November, 1933 - March, 1934, the labor cost was about 73 cents per ton or 60.4 percent of the total production cost, while in the following 10-month period of labor cost rose to 83 cents per ton but maintained about the same proportion to production cost. It will be noted that Indiana's labor cost was only 53 percent of the total production cost.

The explanation for the relatively lower labor costs in Division II (Indiana and Illinois -- Iowa was excluded because of insufficient data) is to be found in the fact that this area has a considerable tonnage produced by strip mining operations.

The increased significance in the labor cost as related to the total production cost in the 10-month period as against the 5-month period is to be explained by the Amendments 1, 2 and 3 to the Bituminous Coal Code which increased wage rates and reduced the hours in the working day from 8 to 7.

1/ Prepared by Louis Levine.

TABLE I

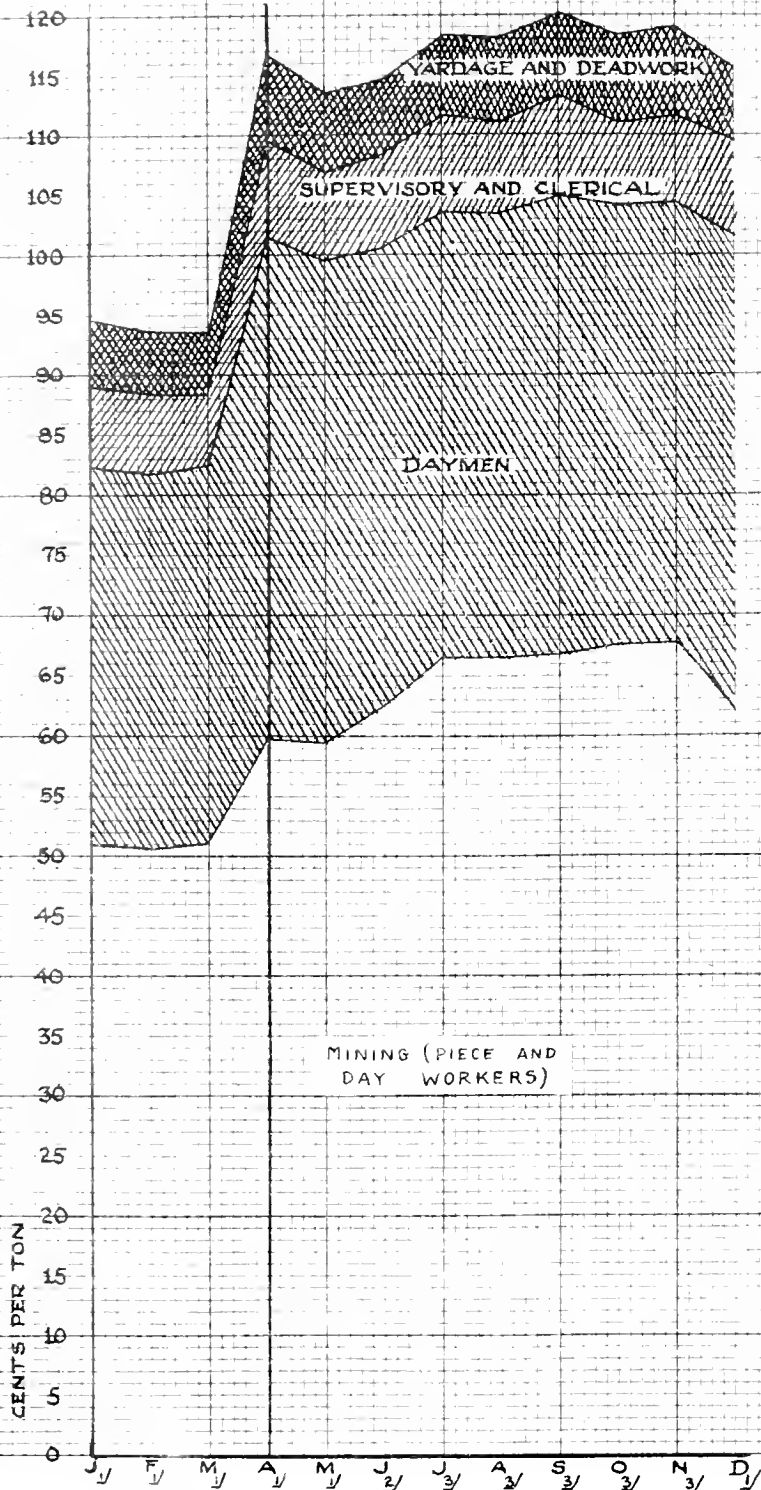
PER CENT OF MINE LABOR COST TO TOTAL PRODUCTION COST (*) IN SPECIFIED BITUMINOUS COAL PRODUCING AREAS FOR THE PERIODS NOVEMBER, 1933, - MARCH, 1934 AND APRIL, 1934 - JANUARY, 1935.

(Based on Bituminous Coal Unit, N.R.A. Form A Reports)

Coal Producing Areas	5 Month Period			10 Month Period		
	November, 1933	March, 1934	April, 1934 - January, 1935	Total	Production	Per Cent
	Labor Cost	is of Production Cost	Labor Cost	Labor Cost	is of Production Cost	Per Cent
Eastern Sub-Division	1.0695	67.3	1.2968	1.9306	67.2	
Western Pennsylvania	\$.9895	64.4	\$1.1901	\$1.8083	65.8	
Ohio	.9534	68.6	1.1507	1.6506	69.7	
Michigan	1.5703	64.0	1.9308	2.9349	65.8	
Panhandle a/	.9823	67.3	1.1281	1.5860	71.1	
Northern West Virginia	.7749	66.8	.9957	1.4617	68.1	
Southern No. 1	.9427	63.4	1.1459	1.7496	65.5	
Southern No. 2	.8765	64.2	1.0884	1.6265	66.9	
Total Division I 1/	.9427	65.2	1.1519	1.7265	66.7	
Indiana (deep & strip)	.6049	53.0	.7191	1.3507	53.2	
Illinois (deep & strip)	.7754	62.9	.8663	1.3813	62.7	
Total Division II 2/	.7299	60.4	.8291	1.3739	60.3	
Alabama, So. Tenn., and Georgia b/	1.1218	64.1	1.4130	2.0919	67.5	
Total Division III 3/	1.1218	64.1	1.4130	2.0919	67.5	

* Exclusive of selling and administrative costs.
 1/ Excluding Western Kentucky - insufficient data.
 2/ Excluding Iowa - insufficient data.
 3/ Division III did not report for January, 1935.
 a/ Panhandle did not report March, 1934.
 b/ So. Tenn. and Georgia did not report April and December, 1934 data.

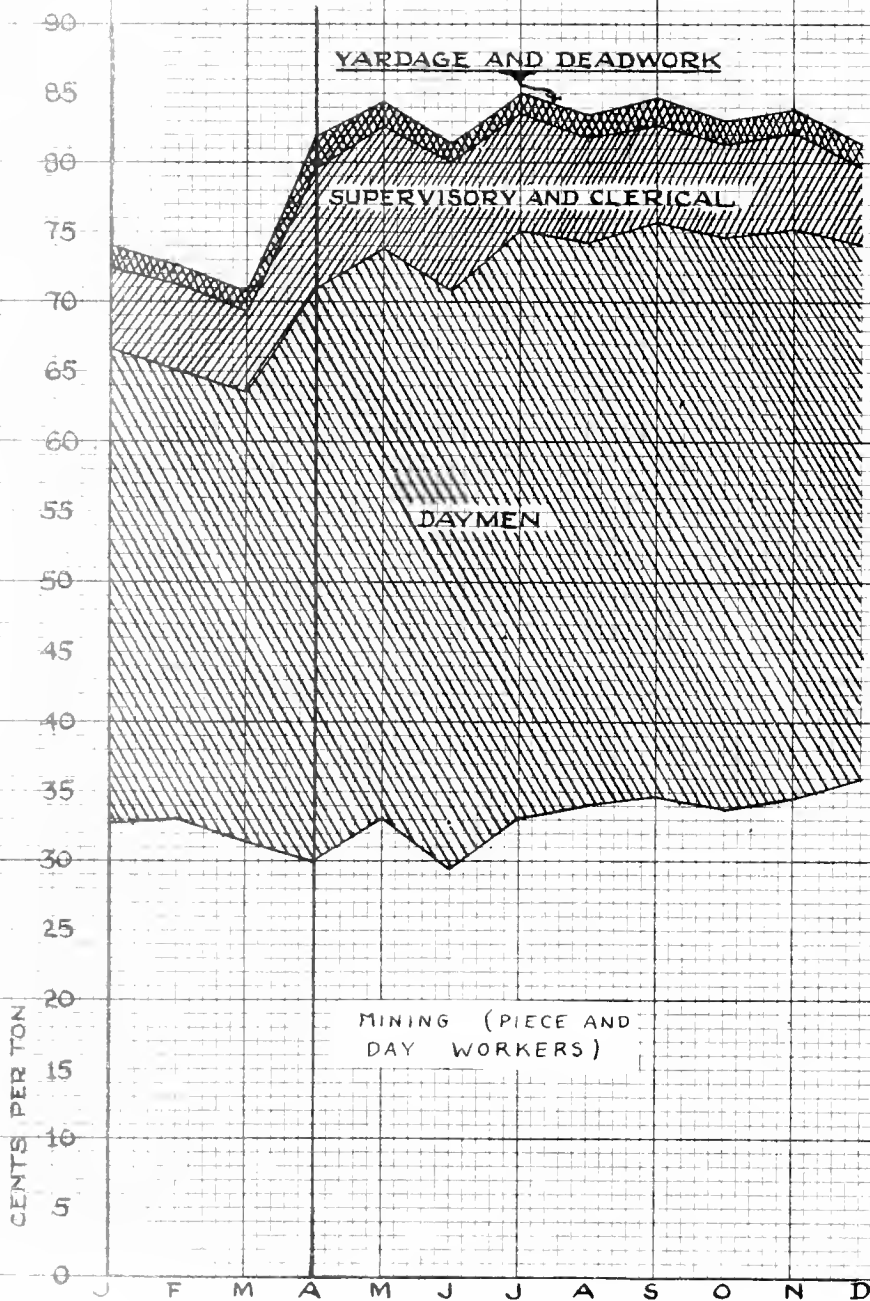
LABOR COST PER TON FOR DIVISION I 1934



1/ Excluding Western Kentucky
 2/ Excluding Western Kentucky and Southern Subdivision # 1
 3/ Excluding Western Kentucky and Southern Subdivision # 1 and Southern Subdivision # 2

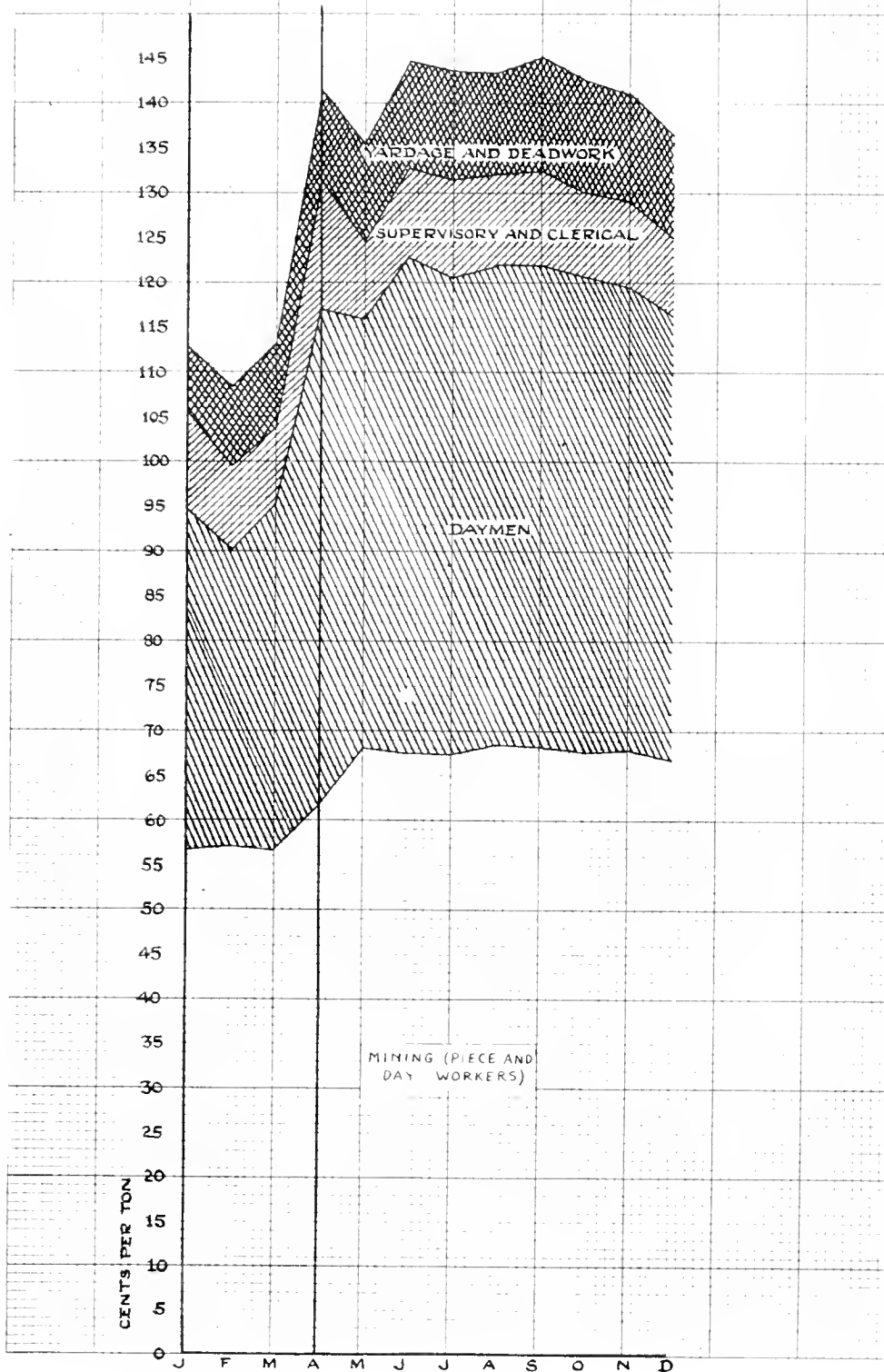
9537

LABOR COST PER TON FOR DIVISION II * 1934



(* Excluding Iowa which did not report in 1934)

-271-
**LABOR COST PER TON
 FOR
 DIVISION III *
 1934**



(*) Southern Tennessee and Georgia did not report in April.

Table II shows the relation of wages to value of bituminous coal based upon the f.o.b. mine price in the years 1919, 1922, 1929, and 1934. These years are the only ones for which sufficiently large coverage of wage data are available. Thus the wage cost per ton data for the years 1919 and 1929 are derived from the Bureau of Census; 1922 data are based upon the U. S. Coal Commission survey; and the 1934 data are those reported to the NRA. The figures for production and f.o.b. mine price are those reported by the U. S. Bureau of Mines (except that 1934 value per ton is based upon a combination of NRA and Bureau of Mines data). The selected coal producing areas shown on Table II are among the most important ones in the country and represent more than 85 per cent of the national tonnage. Wages in most instances were in excess of 60 per cent of the total value of product. However, these percentages vary from one observation date to another because of various changes taking place in the relationship between wage costs and realization. Alabama, for example, shows wages as 60.3 per cent of total value in 1922 as against 67.2 per cent in 1919. This decrease in the wage percentage is largely attributable to the fact that Alabama by 1922 had become non-union and wage reductions had taken place. In 1929, however, Alabama shows an increase in the percentage (68.3) of wages in the total value. This increase is not due to an increase in wage costs -- as a matter of fact wages changed only slightly, but f.o.b. mine prices declined from \$2.34 per ton to \$2.08. Other factors than changes in relationship between wages and value must also be considered. A large output in a particular year may signify greater regularity in operation and thus reduced wage costs per ton. Again, changes in the technique of mining -- increasing mechanization -- may mean lowered wage cost. In both Indiana and Illinois the percentage represented by wages of the total value declined sharply between 1922 and 1934 (Indiana from 68.1 to 44.4; Illinois from 68.9 to 52.3). During the same period f.o.b. mine prices dropped in both states (Indiana from \$2.85 per ton to \$1.54; Illinois from \$2.89 to \$1.60), but wages per ton fell even more sharply (Indiana from \$1.94 to .684; Illinois from \$1.99 to .837). The reduction in wage cost, however, is not due primarily to lowered wage rates in these two highly unionized states. In fact until 1928 mine workers in both Indiana and Illinois enjoyed a \$7.50 basic day rate and from 1928 to 1932 a \$3.10 basic day rate and after the latter date \$5.00 a day. The explanation for the declining wage costs per ton lies in the extensive development of strip mining operations in both these States. The percentage of the state tonnage produced by strip mines between 1922 and 1933 increased in Indiana from 7.2 to 36.8 and in Illinois from 1.2 to 15.0. The tendency to extend stripping operations, as well as mechanization, is due largely to the high union wage scales in an effort to reduce wage costs per ton. (*)

Another indication of the position of the bituminous coal industry as regards the wage factor may be secured in comparing this industry with other industries. Table III shows the wage bill, value added by production and the per cent which wages represented of that value for specific major industries in 1929.

(*) Kiessling, O. E., Tryon, F. G., and Mann, L., The Economics of Strip Mining, Bureau of Mines, Economic Paper 11, 1931, pp. 8-9.

RELATION OF WAGES TO VALUE - FOB MINE - BITUMINOUS COAL PERIOD 1919 - 1931 - 1929 - 1934

PRODUCTION	WAGES - PER TON					VALUE - PER TON					PERCENT WAGES OF TOTAL VALUE					PERCENTAGE INCREASE - DECREASE IN WAGE COST PER TON AND REALIZATION PER TON
	1919	1923	1924	1929	1934	1919	1923	1924	1929	1934	1919	1923	1924	1929	1934	
Pennsylvania	1.31	1.84	1.74	2.15	2.42	3.11	4.20	4.10	5.15	5.70	32.4	39.2	38.4	43.5	43.5	
Ohio	1.48	1.76	1.74	2.15	2.42	3.11	4.20	4.10	5.15	5.70	32.4	39.2	38.4	43.5	43.5	
W. Va.	1.85	2.25	2.25	2.85	3.25	4.15	5.25	5.15	6.35	6.95	40.7	40.7	40.7	46.6	46.6	
60 No. 1	1.71	2.05	2.05	2.55	2.95	3.85	4.95	4.85	5.95	6.55	38.5	38.5	38.5	44.4	44.4	
60 No. 2	1.47	1.81	1.81	2.31	2.71	3.61	4.71	4.61	5.71	6.31	35.7	35.7	35.7	41.6	41.6	
Indiana	1.49	1.83	1.83	2.33	2.73	3.63	4.73	4.63	5.73	6.33	35.7	35.7	35.7	41.6	41.6	
Illinois	1.51	1.85	1.85	2.35	2.75	3.65	4.75	4.65	5.75	6.35	35.7	35.7	35.7	41.6	41.6	
Alabama	1.19	1.42	1.42	1.76	2.00	2.60	3.20	3.10	3.80	4.40	27.9	27.9	27.9	34.6	34.6	

PERCENT OF STATE TONNAGE PRODUCED BY STRIP MINES

	1919	1922	1929	1935
Pennsylvania	0.4	7.7	0.5	0.5
Ohio	4.8	11.1	7.5	7.5
Indiana	4.5	7.2	30.6	34.4
Illinois	0.1	2.2	8.9	11.0
Alabama	8	2.0	1.8	1.4

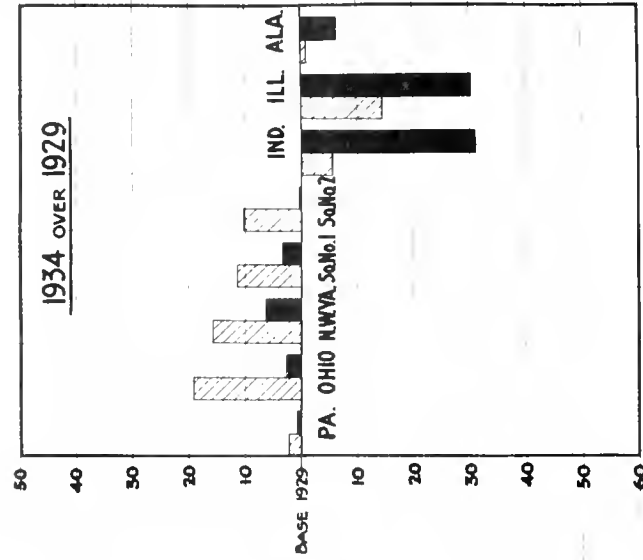
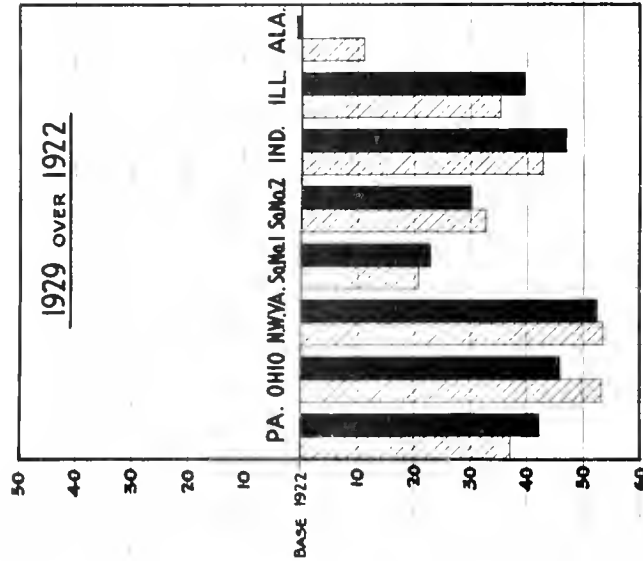
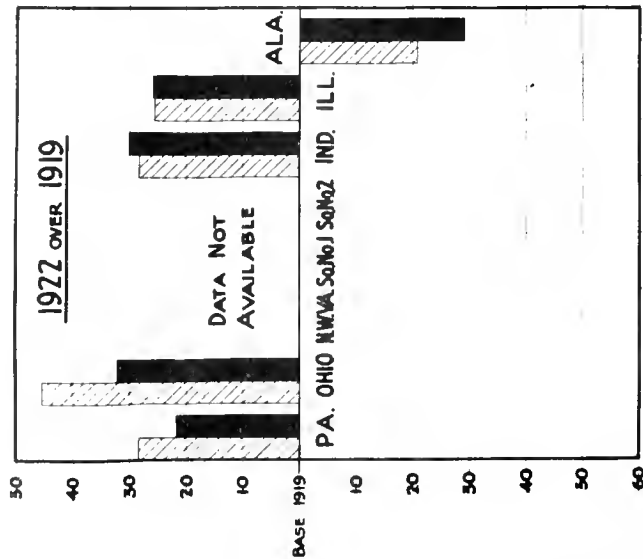
* Percentage of state tonnage not available for 1934

RELATION OF WAGES TO REALIZATION - STRIP MINES 1934

Indiana	30.9
Illinois	28.7

1/ Includes strip and open-pit mines
 2/ Excludes in part or in all of tonnage which reported value
 3/ Includes the coal remaining in stock
 4/ Data for 1935 where available

Percentage Changes in Relation of Wage Cost to Realization — 1922 over 1919 — 1929 over 1922 — 1934 over 1929



LEGEND
 ■ Percent Change in Wage Cost
 ▨ Percent Change in Realization

WAGE DATA
 1921 and 1929 - Bureau of Census
 1922 - U.S. Coal Commission
 1934 - N.R.A.

REALIZATION
 U.S. Bureau of Mines except in 1934
 for Ohio, No. W.Va., So. No. 1, So. No. 2
 Indiana and Illinois, which are N.R.A.

PREPARED BY
 Bituminous Coal Unit, Division of Review
 N.R.A. Under the direction of F.E. Berquist

Value added by production is used in this table rather than value of product because it is a more accurate indication of the wage factor significance in a particular industry. For example, motor-vehicles, not including motor-cycles, show the value added by production as \$1,321,281,511 and wages as 27.7 per cent of that amount. If, however, the value product be taken, the amount would be \$3,712,793,274 and wages would represent only 9.8 per cent of that amount. Clearly, the difference between the value product and the value added by manufacture is to be explained largely by the cost of materials. It should be remembered that these materials already have wage costs and so there is a duplication in the value product. The manufacturing industries selected for comparison were only those paying wages in excess of \$100,000,000 in 1929 and the mining and quarrying industries listed were only those whose wage bill exceeded \$50,000,000 in that year. It will be noted that wages in the bituminous coal industry were 69.9 per cent of the value added by production (almost the same as anthracite). No other industry, except railroad repair shops, approaches that high a percentage. Railroad repair shops show wages to be 88.2 per cent of the value added by production, but it must be remembered that this industry is not really comparable since the process is almost entirely labor. The only other industries showing very significant percentages in wage costs are motor-vehicle bodies and parts (53.8), cotton goods (51.8), and clay products (50.1). All of these percentages are considerably lower than that of bituminous coal mining.

In view of the significant role played by wages in the bituminous coal industry, questions of wage adjustments and policies are matters of paramount importance. Wage payments are dependent upon a number of factors, most important of which for labor are productivity and union organization and for operators - marketability and sales realization. In bituminous coal, because the demand for coal is relatively inelastic (despite inroads of substitute fuels) and over development is general, the price structure prior to the Code was highly unstable and any increase in labor costs (especially in wage contracts) would have to be absorbed by the operator. Decreasing realization per ton, so generally characteristic of the industry from 1928 to 1933, meant increased efforts to reduce the most expensive cost item, namely, labor. The negotiations over wage adjustments in the industry developed serious disturbances and unrest. (*) This situation was intensified by the competition between the union and non-union fields.

The relationship between wage costs and mine prices has been set forth in Table II. The section of that table headed "Percentage Increase or Decrease in Wage Cost Per Ton and Realization Per Ton" is graphically presented in Chart I. This chart shows the relationship of changing wage costs to changing prices. When sales realizations per ton decrease, there is usually an accompanying intensification of competition to secure markets and also an increased effort to reduce costs whether by non-union operations, reduced wage rates, or new techniques and mechanization. On the other hand, when sales realization per ton increases, there is a lag in the rise of wage costs (partly because higher prices give impetus to more continuous operation and so more efficiency and lowered production

(*) See Chapter IV, section on "Collective Bargaining".

RATIO OF WAGES PAID TO VALUE ADDED BY PRODUCTION IN MAJOR INDUSTRIES, 1929^{1/}

(Manufacturing industries listed include all individual industries paying more than \$100,000,000 in wages in 1929. Mining and quarrying industries listed include all individual industries paying more than \$50,000,000 in wages in 1929.)

Industry	Wages	Value Added ^{2/} by Production	Percent of Wages to Value Added
Mining			
Bituminous Coal	\$ 574,800,072	\$ 821,986,689	69.9
Anthracite Coal	229,967,059	327,558,561	70.2
Copper	73,199,785	224,284,690	32.6
Petroleum and Natural Gas ^{3/}	167,989,615	687,126,983	24.4
Manufacturing			
Boots and Shoes, other than rubber	222,407,732	450,867,448	49.3
Bread and other bakery products	274,561,581	789,011,311	34.8
Car and general construction & repairs, steam railroad repair shops	590,202,724	668,872,810	88.2
Clay products (other than pottery) and non clay refractories	106,918,327	213,235,771	50.1
Clothing (except work clothing) men's, youth's and boys' not elsewhere classified	179,768,308	460,599,226	39.0
Clothing, womens' not elsewhere classified	243,851,143	775,166,822	31.5
Cotton Goods	324,289,094	626,148,110	51.8
Electrical machinery, apparatus and supplies	456,377,629	1,329,897,949	34.3
Foundry and machine-shop products, not elsewhere classified	697,508,589	1,753,395,872	39.8
Furniture, including store and office fixtures	242,832,096	521,662,189	46.5
Iron and steel: steel works and rolling mills	689,015,541	1,461,705,648	47.1
Knit Goods	210,714,335	443,015,714	47.6
Lumber and timber products, not elsewhere classified	421,584,874	853,868,932	49.4
Meat packing, wholesale	165,867,420	460,526,341	36.0
Motor-vehicle bodies and motor vehicle parts	366,503,385	680,944,156	53.8
Motor vehicles, not including motor cycles	366,579,233	1,321,281,511	27.7
Nonferrous-metal alloys and products, not including aluminum products	116,943,996	309,393,137	37.8
Paper	140,398,374	392,578,048	35.8
Petroleum refining	131,176,993	608,323,593	21.6
Planing-mill products (including general mill work) not made in planing mills connected with saw mills	116,422,664	257,574,999	45.2
Printing and publishing, book and job	251,576,692	739,907,403	34.0
Rubber tires and inner tubes	127,081,975	340,569,919	37.3
Silk and rayon manufactures	137,547,146	319,018,971	43.1

^{1/} Sources: U.S. Census of Mines and Quarries, 1929

U.S. Census of Manufactures, 1929, Volume I, pages 21 to 34

^{2/} Value added by production in case of mining excludes cost of supplies, fuel and power purchased; in case of manufactures, cost of materials, containers for products, fuel, and purchased electric energy were excluded.

^{3/} Figures for petroleum and natural gas are for 1919, U.S. Census of Mines and Quarries, 1919, p. 40.

costs and partly because in unionized areas wage rates set forth in contracts are more rigid). No set formula applies to this relationship because of local conditions. Thus in 1923 as contrasted with 1919, Pennsylvania realization advanced 23.5 per cent while wage costs rose 21.9 per cent. In Ohio, realization increased 45.5 per cent while labor advanced 32.4 per cent. The gain in labor costs was more proportionate in Illinois (labor cost rose 35.9 per cent and realization 25.7) and in Indiana (labor rose 30.2 per cent; realization, 23.4 per cent). Realization in Alabama declined 20.9 per cent while labor costs decreased (area became non-union) 29.1 per cent. It must be remembered that 1923 is not a satisfactory year for purposes of comparison because even though data are available for that year, it was also the period of the greatest strike in the industry's history.

In 1929, as against 1923, all fields showed a great decrease in realization and wage costs declined in all areas except Alabama. Generally speaking, the changes in wage costs corresponded more closely to the changes in realization during this period than during the period preceding 1922. To a large extent this correlation is explained by the fact that most of the areas (except Indiana and Illinois) had become non-union by 1929 and so wage reductions were made as prices declined. In the case of Indiana and Illinois the greater decrease in wage costs is explained by the extension of striping operations referred to in the preceding pages.

The data, comparing 1934 with 1929, indicate increases in both realization and wage costs for Pennsylvania, Ohio, Northern West Virginia, Southern No. 1 and Southern No. 2, while in Indiana, Illinois and Alabama there were decreases in realization and wage costs. It is significant that the increases in realization exceeded the increases in wage costs and the decreases in realization were less than the wage cost declines.

Pre-N.R.A. History of Wages, Employment and Earnings: Data relating to the total wage bill of the industry are not entirely satisfactory. The only wage data which are available covering the entire industry are those of the census years, 1919 and 1929. The wage bill, including contract work, in 1919 was \$635,457,034 and \$576,689,699 in 1929. Thus, even in the prosperous year of 1929 the industry's wage bill was only 84 per cent of 1919 wage bill.

Turning to particular producing states for which annual wage bill data are available after 1929 (see Table IV), it is found that the wage bill declined in each succeeding year. For example, in Pennsylvania the wage bill fell from approximately \$156,000,000 in 1929 (state report) to a low point of almost \$57,000,000 - a decline of 63.5 per cent. The Ohio wage bill decreased from \$23,224,000 in 1929 (state report) to a low of \$9,492,000 in 1932 - a decline of 59 per cent. The Indiana wage bill during the period 1929 - 1933 declined 71.5 per cent or approximately \$12,945,000. This decline would no doubt have been even greater had not three months of 1933 (N.R.A.) been included.

When it is remembered that these wage bills had been declining in the industry generally since 1923, it can readily be observed that the bituminous coal industry had indeed fallen to low levels immediately prior to the enactment of the N.I.R.A. Since the bituminous coal wage bill affects

TABLE IV

ANNUAL WAGE BILL FOR BITUMINOUS COAL INDUSTRY
IN SPECIFIED STATES, 1929-1934

States	1929		1930		1931		1932		1933		1934	
	United States Census	State Report	State Report	State Report	State Report	State Report	State Report	State Report	State Report	State Report	State Report	State Report
Pennsylvania	\$157,730,207	\$155,995,200 ^{1/}	\$130,029,000	\$91,315,000	\$57,082,500	\$62,523,600	\$97,966,854					
Indiana	18,101,859	15,450,203 ^{2/}	13,400,204	10,713,104	7,026,016	5,257,303	8,980,920					
Ohio	24,446,839	23,223,857 ^{3/}	20,405,126	16,691,395	9,491,590	14,335,394	21,485,102					
Virginia	11,846,453	-	-	8,255,462	5,093,503	-	-					
Tennessee	5,999,623	6,015,581 ^{4/}	5,320,112	-	-	-	-					
							1,278					

1/ Pennsylvania Annual Report on Productive Industries.
 2/ Indiana Annual Report of the Division of Minerals and Mining.
 3/ Ohio Division of Labor Statistics: Statistics of Mines and Quarries.
 4/ State of Virginia - Annual Reports, Department of Labor and Industry: Industrial Statistics.
 5/ Tennessee Annual Reports on Mineral Resources.

the purchasing power and well being of at least 450,000 mine workers and their families - perhaps some 2,000,000 individuals in all, its significance in the national picture of economic conditions is great. The wage bill reflects the economic situation existing in the coal industry. It is directly related to the industry's output which is dependent upon the number of days worked and so upon consumer demand, mine breakdown, holidays and labor disturbances.

The statistical series, showing indexes of employment and payrolls in the bituminous coal mining industry, established by the Bureau of Labor Statistics in 1929 is another indicator as to the decline suffered by the industry. This series (Table V) is based upon the reports made by a varying number of mines (about 1250) representing approximately 50 per cent of the total number of employees in the country. The base year 1929, equalling 100, may then be correlated with the Census report on wages in the industry for 1929 which was \$576,689,699 (including contract work). Each year succeeding 1929 until the enactment of the NIRA shows a declining payroll. In 1930 the average payroll had decreased 18.9 per cent (compared with 1929) or approximately \$108,994,000, and by 1931 the payroll was \$245,000,000 less than that of 1929 - a decrease of 42.5 per cent. The low point in the annual payroll occurred in 1932, when the index for the year was 35.6 or \$205,300,000 - a decline from 1929 of 64.2 or \$371,388,000. The falling payroll continued into the first nine months of 1933, the average index for that period was 31.5. In August, 1933 the payroll index began to rise so that the average for the year was higher than that of 1932.

The declining wage bill in the industry is attested to by various individuals who were deeply interested in the economic and social problems of the bituminous coal industry. One central Pennsylvania operator stated that the basic day wage rate was reduced in 1927 from \$7.50 to \$6.00; on June 16, 1929, the rate was reduced to \$5.00; on November 16, 1931, it was reduced to \$4.00; and on December 6, 1932, it was further reduced to \$3.44. (*) This operator went on to say:

"We figured that was about as far as we could go. And that was really the highest wage paid by a group of representative operators in our district. Wage cutting had become so prevalent in the industry that it was difficult for anyone to know exactly what any other operator was paying. It had become a matter of individual slashing of prices and then the individual slashing of wages in order to meet the prices and to try to keep in business." (**)

(*) O'Neill, Charles, Testimony, Case of James Walter Carter v. Carter Coal Company, Supreme Court of the District of Columbia, Transcript of Record to Supreme Court of the United States, October Term, 1935, p. 346.

(**) Ibid, supra., p. 347.

INDEX OF PAYROLLS IN BITUMINOUS COAL MINING INDUSTRY,
JANUARY, 1929 to NOVEMBER, 1935.

(12 Month Average, 1929 = 100)

Month	1929	1930	1931	1932	1933	1934	1935
January	106.1	101.4	73.3	47.0	36.1	51.3	59.6
February	116.6	102.1	68.3	47.0	37.2	54.6	66.1
March	108.6	86.4	65.2	46.8	30.7	58.9	67.5
April	89.2	81.7	58.6	33.9	26.6	51.4	45.0
May	91.9	77.5	54.4	30.7	26.9	54.4	49.1
June	90.0	75.6	52.4	27.3	29.2	55.1	64.7
July	85.6	68.9	50.4	24.4	33.6	49.7	35.9
August	92.8	71.1	50.6	26.4	43.3	50.4	45.8
September	98.6	74.9	53.8	30.2	44.1	51.4	60.1
October	106.8	79.4	56.2	37.8	44.1	57.6	69.8
November	106.0	79.1	54.6	38.0	50.7	58.3	65.5
December	108.2	77.7	52.3	37.7	50.8	57.0	
Average	100.0	81.3	57.5	35.6	37.8	54.2	57.2 ^{1/}

^{1/} Average for 11 months

Source: U. S. Bureau of Labor Statistics

Another operator, from Ohio, stated that there was no stability whatever in the industry all during the period from April 1, 1927 until the fall of 1933; that conditions became progressively worse and wage trends were downward. (*) He said that the wages in Ohio, Northern West Virginia, and Western Pennsylvania went as low as between \$2.00 and \$3.00 per day and that miners did not average more than 3 days work per week, so that weekly earnings were approximately \$6.00 to \$10.00.

The Bituminous Coal Unit of the Research and Planning Division of NRA in December, 1933 sent out its Form C (employment and earnings data) to the coal operators requesting, in addition to the usual data, that the wage rates paid for various occupations in May, 1933 (pre-Code) be noted thereon. In view of the fact that most of the coal producing areas were non-union immediately prior to the NRA, the wage rates lacked uniformity even within a given field. The pre-Code wage rate data secured by the NRA are significant in showing the great diversity in wage rates and are also indicative of the low levels to which wage rates had fallen in the period immediately preceding the national industrial recovery program. Since compliance with the NRA request for May, 1933, wage rate data was voluntary; only those mining operations who kept good accounting systems or who were willing to disclose their pre-code wage information complied. As a result, the data shown represents the larger and better organized establishments and are, therefore, conservative and tend to understate the real depths to which wage rates had fallen.

These data are shown for three important occupations in bituminous coal mining - trackmen (basic underground skilled group), outside common labor, and loaders (men working on a tonnage basis). Table VI sets forth the number and per cent of mines in selected areas and the wage rates paid to trackmen in May, 1933. In those instances where a mine reported more than one rate for the same occupation, each rate was treated as a separate report. These wage rate data for six selected areas - Western Pennsylvania, Eastern Pennsylvania, Ohio, Northern West Virginia, Southern Subdivision No. 2, and Alabama - are shown in Chart II. It should be remembered that the Jacksonville scale (ending April 1, 1927) specified \$7.50 per day for trackmen. The May, 1933 data for Western Pennsylvania show that 49 mines or 32 per cent of the usable reports paid less than \$2.50 per day, while only 18 mines or 12 per cent paid more than \$3.50. In Eastern Pennsylvania, the showing is somewhat better since 74 mines or 81 per cent of the reports used paid \$3.00 or more per day (no mines paid \$4.00 or more). Turning to a southern coal producing area - Southern Subdivision No. 2 - it is found that 75 mines or 46 per cent of the used reports paid less than \$2.50 per day (two mines paid less than \$1.50 per day), while only 5 mines or 5.5 per cent paid \$3.50 or more per day. The lowest wage level shown in Chart II is that of Alabama, where 16 mines or 61 per cent of the satisfactorily reported total paid less than \$2.50 per day. More than half the mines in Alabama reported a 9 or 10 hour day for May, 1933, which means that trackmen receiving \$2.50 or less a day were paid 28 cents or less an hour. Considering that the trackman's work requires a fair degree of skill and experience and involves some risk and that it is in the highest level of miners' jobs, the wage rates paid in May, 1933 were indeed low.

(*) Findley, Harry O., Testimony, Carter Coal Case, op. cit. p. 384.

TABLE VI

NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH TRACKMEN WERE PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS ^{1/} MAY-1933

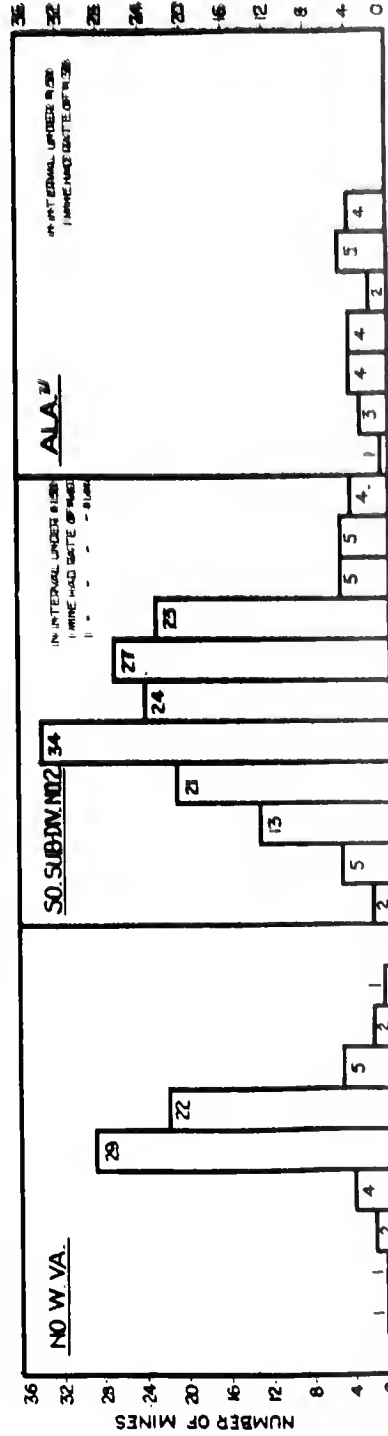
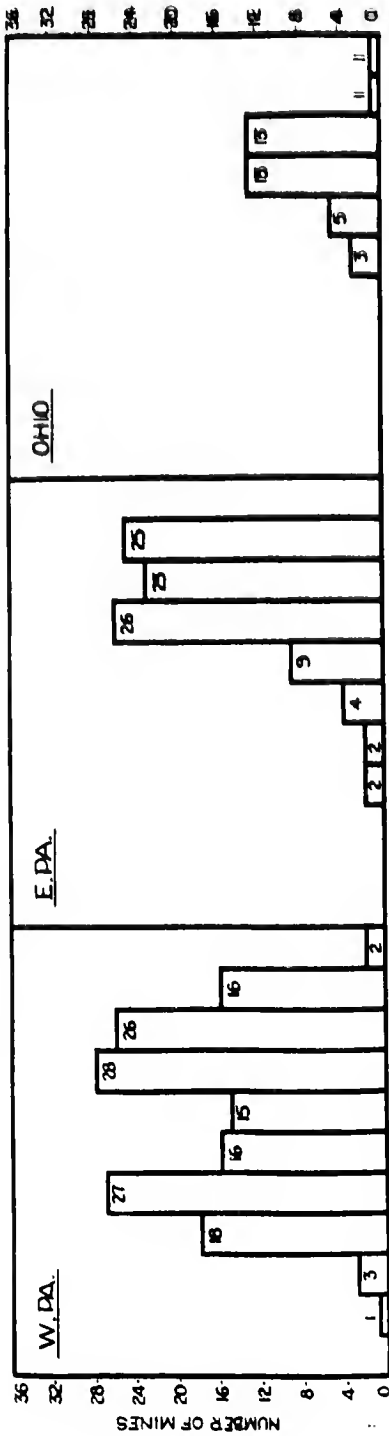
Division	Total		Under \$1.50	Rates -- Dollars --											Total	Percent
	Mines	Employees		2.00-2.24	2.25-2.49	2.50-2.74	2.75-2.99	3.00-3.24	3.25-3.49	3.50-3.99	4.00-over	Total	Percent			
WESTERN PENNSYLVANIA	173	151	1 (0.7)	3 (2.0)	18 (10.6)	16 (10.6)	75 (97.7)	28 (17.4)	24 (14.5)	74 (103.5)	2 (1.3)	52 (30.5)	2 (1.3)	51 (29.8)	29.2	
EASTERN PENNSYLVANIA	144	91			2 (2.2)	2 (2.2)	5 (5.5)	5 (5.5)	26 (28.1)	26 (28.1)				5 (5.0)	3.5	
MICHIGAN & UPPER PENNSYLVANIA	55	5			1 (2.0)	1 (2.0)	5 (3.9)	13 (23.6)	1 (2.8)	1 (2.8)	1 (2.8)	1 (2.8)	1 (2.8)	34 (61.6)	61.6	
OHIO	18	36			1 (5.6)	2 (11.1)	29 (63.9)	22 (44.4)	5 (11.1)	5 (11.1)	1 (2.2)	1 (2.2)	1 (2.2)	67 (100.0)	100.0	
NORTHERN WEST VIRGINIA	84	57			1 (1.5)	1 (1.5)	2 (2.8)	6 (8.4)	5 (6.9)	6 (8.4)	1 (1.4)	1 (1.4)	1 (1.4)	13 (22.8)	22.8	
SOUTHERN No. 1 (S.W.Va.)	139	15			5 (3.6)	15 (10.0)	21 (15.1)	27 (19.4)	23 (16.6)	5 (3.6)	5 (3.6)	3 (2.2)	3 (2.2)	67 (100.0)	100.0	
SOUTHERN No. 2	311	163			1 (0.7)	2 (1.3)	2 (1.3)	4 (2.5)	2 (1.3)	2 (1.3)	2 (1.3)	3 (1.9)	3 (1.9)	13 (20.6)	20.6	
KENTUCKY	61	30			1 (1.6)	2 (3.2)	4 (6.4)	7 (11.2)	7 (11.2)	7 (11.2)	7 (11.2)	7 (11.2)	7 (11.2)	165 (100.0)	100.0	
LOUISIANA	39	16												30 (100.0)	100.0	
BIG SANDY-LEWIS	45	31			2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	2 (4.4)	16 (51.6)	51.6	
HARLAN	37	21			1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	1 (2.7)	16 (100.0)	100.0	
VIRGINIA	25	10			1 (4.0)	4 (16.0)	4 (16.0)	2 (8.0)	2 (8.0)	2 (8.0)	2 (8.0)	2 (8.0)	2 (8.0)	10 (100.0)	100.0	
WILLIAMSON (S.W.Va. & No. Va.)	32	18			2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	2 (6.3)	18 (100.0)	100.0	
SOUTHERN APPALACHIAN (No. Va.)	58	21			1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	1 (1.7)	21 (100.0)	100.0	
DIVISION III	34	16			2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	2 (5.9)	16 (100.0)	100.0	
ALABAMA	36	23			3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	3 (8.3)	23 (100.0)	100.0	
So. Tennessee & GEORGIA	6	4			1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	1 (16.7)	4 (100.0)	100.0	

^{1/} REPORTED BY OPERATORS TO BITUMINOUS COAL UNIT NIRA ON FORM 'C'

^{2/} MORE THAN HALF THE MINES IN ALABAMA WERE WORKING A TEN HOUR DAY

NOTE: FIGURES IN PARENTHESES ARE PERCENTAGES

No. of Mines in Selected Areas in which Trackmen were paid Rates Falling in Specified Wage Rate Intervals May 1933



DOLLARS UNDER 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 3.50 4.00 UNDER 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 3.50 4.00 OVER PER DAY 1.50 1.74 1.99 2.24 2.49 2.74 2.99 3.24 3.49 3.99 OVER 1.50 1.74 1.99 2.24 2.49 2.74 2.99 3.24 3.49 3.99 OVER 1.50 1.74 1.99 2.24 2.49 2.74 2.99 3.24 3.49 3.99 OVER PER HOUR .87 2.18 2.49 2.80 3.11 3.43 3.74 4.05 4.36 4.69 OVER .87 2.18 2.49 2.80 3.11 3.43 3.74 4.05 4.36 4.69 OVER

Reported by Operators to Bituminous Coal and Iron Form No. 1
 NOTE: Certain Mines Reported More Than One Rate, and These were Counted as Separate Reports.
 # More than half the mines were working 3 to 4 hour days.
 Prepared by Bituminous Coal and Iron Division of Bureau of Mines
 Under Direction of F. E. Bernhart

The wage rates paid to outside common laborers reported for May, 1933 are shown in Table VII and a graphic presentation for the six selected areas is made on Chart III. In Western Pennsylvania, for example, out of 104 reports used, 73 or 61 per cent, showed the outside common labor rate as less than \$3.50 per day, while only 3 reports showed a rate of \$3.50 or more per day. The Eastern Pennsylvania reports for 60 mines showed 29 mines or 47.5 per cent paying less than \$3.50 per day and only 2 mines paying \$4.25 or more per day. In Northern West Virginia out of a total of 35 reports, 21 or 60 per cent showed a daily average rate of less than \$3.50. Although the outside common labor rate in these northern producing areas seem low, the wage rate level in Southern Subdivision No. 2 was even lower. In that area out of a total of 90 mines, whose reports were used, 73 mines, or 81 percent, paid less than \$2.25 per day; 28 of these mines paid less than \$2.00 per day. Seven mines in Southern Subdivision No. 2 reported a rate of less than \$1.50 per day and three of these paid \$1.25 or less a day---less than 16 cents per hour based on an 8-hour day. Again, these wage rates may be considered as conservative indicators and tend to understate the grave situation which had developed. Moreover, it should be remembered that wage rates and not earnings are being treated here. A mine worker employed in a mine which operated only 2 or 3 days a week could receive only \$6.00 to \$8.00 a week from which amount deductions for house rent, fuel, doctor, etc. would have to be made.

The tonnage rates paid to loaders in May, 1933 as reported to the M.R.A. by the operators are also indicative of the depth to which wages had fallen by that time. (Table VIII - Chart IV) The rates paid to loaders, even under contract with a union, varies from area to area since it is a rate per ton and is dependent upon size of seam, working condition, etc. In general it may be said, however, that the wage rate for union loaders during the Jacksonville Agreement period (1924 - 1927) was between 75 and 80 cents per ton. In contrast to this rate, it is found that Western Pennsylvania did not report a rate in excess of 50 cents per ton for May, 1933. As a matter of fact, out of 162 rates reported for this area, 93 or 57 per cent were less than 25 cents per ton -- 9 rates being less than 20 cents per ton. To the usual reader a wage rate per ton is meaningless unless some knowledge exists as to the output per man per day for a particular occupational group. The output per man per day reflects the thickness or thinness of seam, degree of mechanization, etc. and, therefore, varies not only as between districts, but even between individual mines. However, in order to arrive at a rough approximation of the Western Pennsylvania loaders' earnings per day in May, 1933, assume an output per man per day of 7 tons, (*) then 57 per cent of the reported rates in that area would represent an earning of \$2.45 or less per day. Since there is no information as to the number of men who were paid a specified wage rate, one must be careful to avoid the error of assuming that a majority of the rates means a majority of the men.

(*) Coal in 1933-34, U. S. Bureau of Mines reports 5.23 tons as output per man per day for underground men in Pennsylvania. The above liberal assumption of 7 tons per day is made so that the estimated earnings will not be understated.

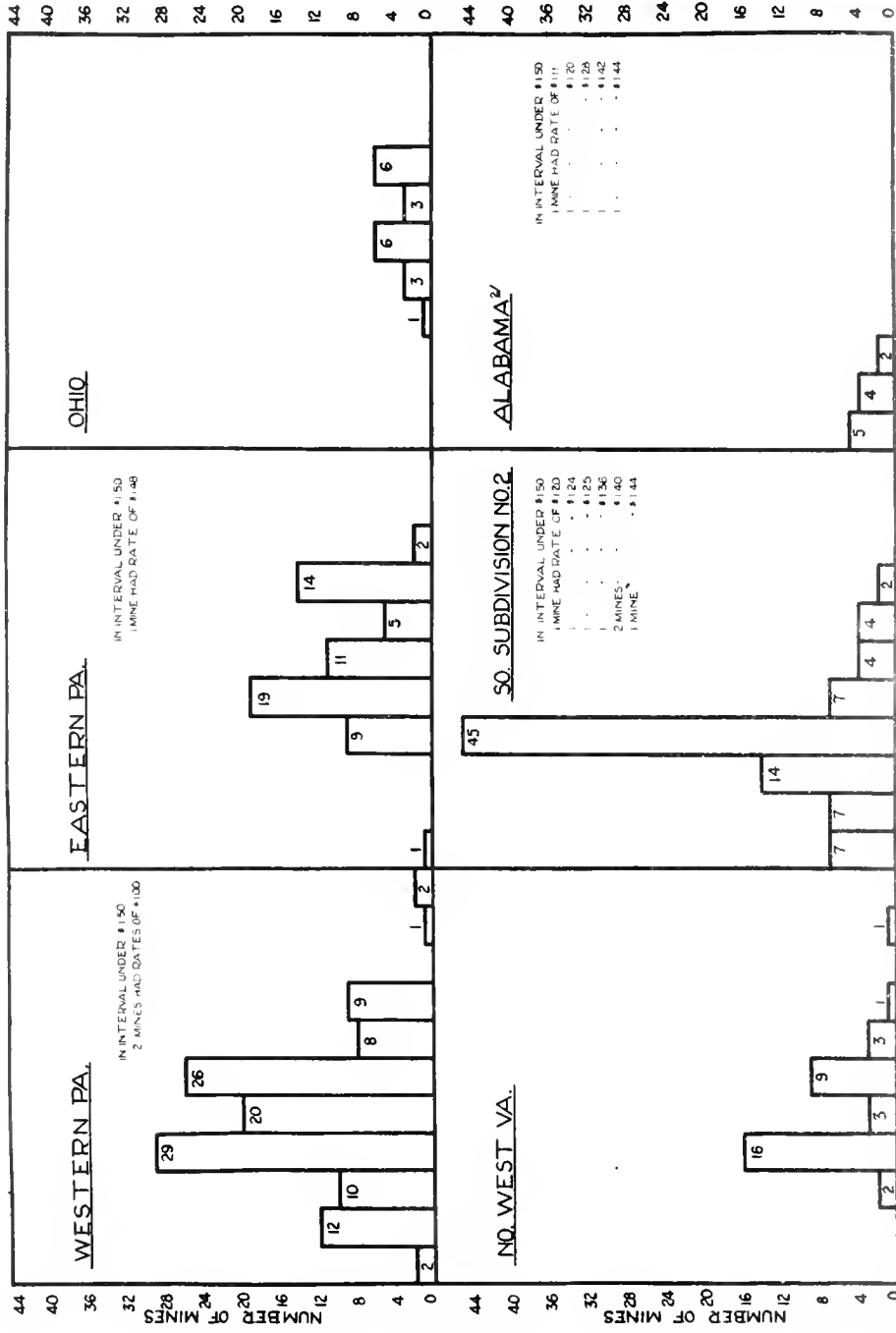
TABLE VII

NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH OUTSIDE COMMON LABOR WAS PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS ✓ MAY 1933

District	Mines not in operation		Mines in operation		Rates in Dollars per Day											Total Mines	Total Percent of Mines	
	No.	%	No.	%	1.50-1.75	1.75-2.00	2.00-2.25	2.25-2.50	2.50-2.75	2.75-3.00	3.00-3.25	3.25-3.50	3.50-4.00	4.00-4.50	4.50-5.00			5.00-5.50
Western Pennsylvania	123	79	704	2 (1.7)	72 (10.2)	10 (1.4)	29 (4.1)	29 (4.1)	19 (2.7)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)	24 (3.4)
Eastern Pennsylvania	99	39	60	1 (1.6)														
Maryland & Upper Potomac	15	9	6															
Ohio	31	12	19															
Northwestern West Virginia	45	10	36															
Southwestern No. 1	94	87	7															
Southwestern No. 2	126	96	30	7 (12)	7 (11)	14 (23)	45 (69)	7 (11)	7 (11)	4 (6)	4 (6)	4 (6)	4 (6)	4 (6)	4 (6)	4 (6)	4 (6)	4 (6)
Kentucky	40	21	19															
Louisiana	31	20	11															
Mid-Southern	29	7	22	3 (13)	1 (4)	6 (27)	11 (50)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)	1 (4)
Mississippi	20	12	8	2 (25)	1 (12)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)	4 (50)
Missouri	12	13	5	1 (20)														
Virginia	14	5	9															
Washington, Southern No. 1 & 2	18	7	11															
Washington, Northern No. 1 & 2	16	11	5	1 (20)														
District III																		
Alabama	17	7	10	5 (45)	4 (24)	2 (12)												
Southwestern and Common	3	1	2															
Total																		

3 Reported by operators to Bituminous Coal Unit NMA on Form 'C' & More than half the mines in Alabama were working a 5or-10 hour day Note figures in parenthesis are percentages

Number of Mines - Selected Areas in which Outside Common Labor was paid Rates Falling in Specified Wage Rate Intervals — May 1933



PER DAY	1.50	1.74	1.99	2.24	2.49	2.74	2.99	3.24	3.49	3.99	OVER	PER HOUR	.187	.218	.248	.280	.311	.343	.374	.405	.436	.468	.499	OVER											
DOLLARS UNDER \$1.50	175	200	225	250	275	300	325	350	400	UNDER	150	175	200	225	250	275	300	325	350	350	350	350	350	350	400										
CENTS	0	188	219	250	281	312	344	375	406	437	500	0	188	219	250	281	312	344	375	406	437	500	0	188	219	250	281	312	344	375	406	437	500		
PER HOUR	.187	.218	.248	.280	.311	.343	.374	.405	.436	.468	OVER	.187	.218	.249	.280	.311	.343	.374	.405	.436	.468	.499	OVER	.187	.218	.249	.280	.311	.343	.374	.405	.436	.468	.499	OVER

¹ Reported by Operators to Bituminous coal unit N.R.A. Form C.
² NOTE: Certain Mines Reported More Than One Rate and These were Counted as Separate Reports.
³ More than half the mines were working 8 or 10 hour day.
 Prepared by Bituminous Coal Unit, Division of Review, N.P.A.
 Under Direction of F. E. Thorquest

In Eastern Pennsylvania the reported tonnage rates for loaders in May, 1933 were much higher. Out of a total of 74 reported rates, 65 or 88 per cent were in excess of 35 cents per ton. No rate for less than 25 cents per ton was shown. Northern West Virginia reported 43 rates or 31 per cent of the total as being less than 25 cents per ton. A weighted average of the earnings per day for machine loaders in Northern West Virginia, based upon the May, 1933 rates, was \$2.58. (*) In view of the fact that 31 per cent of the reported rates were less than 25 cents per ton, it would follow that more men were employed at the higher rates or that the output per man per day was in excess of 10 tons in order to earn \$2.58 per day.

Southern Sub-Division No. 2 reported 162 rates for loaders for May, 1933, of which 117 or 72 per cent were less than 30 cents per ton. On the other hand, 14 rates or approximately 9 per cent paid 35 cents or more per ton. It will be noted that many southern coal producing areas (Table VIII) - Kanawha and Logan Counties, West Virginia; Hazard, Kentucky; and Williamson, Southern West Virginia and Northern Kentucky reported a high percentage of their loader rates as being less than 20 cents per ton.

The foregoing material, indicating the declining wage rates and wage bill in the bituminous coal industry, is very significant in its effect upon a widespread labor population. (See Chart V.) Since bituminous coal mining is carried on in some twenty-six widely scattered states, demoralization of mine labor - aside from the effects upon operators and consumers - has a tremendous influence on the economic well-being of these areas. In considerable portions of these states more than 60 per cent of the productive industrial workers are employed in bituminous coal mining. Serious reductions in payrolls mean curtailed purchasing power and affect the whole national economy. The bituminous coal industry for a decade had been growing increasingly worse in terms of markets, prices, wage bill and employment. Indeed, it may be said to have contributed more than its share to the deeply depressed economic conditions which existed in the early months of 1933.

Employment in bituminous coal mining in terms of seasonal and cyclical variations has already been discussed. (**) In this section the employment situation will be treated according to the trend of the last decade in order to provide a background for the situation which existed immediately preceding the adoption of the Bituminous Coal Code. The shrinkage in employment after 1929 in the bituminous coal industry was neither peculiar to itself nor more drastic than occurred in other industries. But unlike most other industries, the bituminous coal industry did not have its peak employment in 1929. Unemployment in coal mining had been growing since 1923.

(*) Statistical Compilation, Northern West Virginia Subdivisional Code Authority, Fairmont, West Virginia, April 1, 1934, p. 109.

(**) See Chapter IV section on Seasonal and Cyclical Fluctuations in Employment.

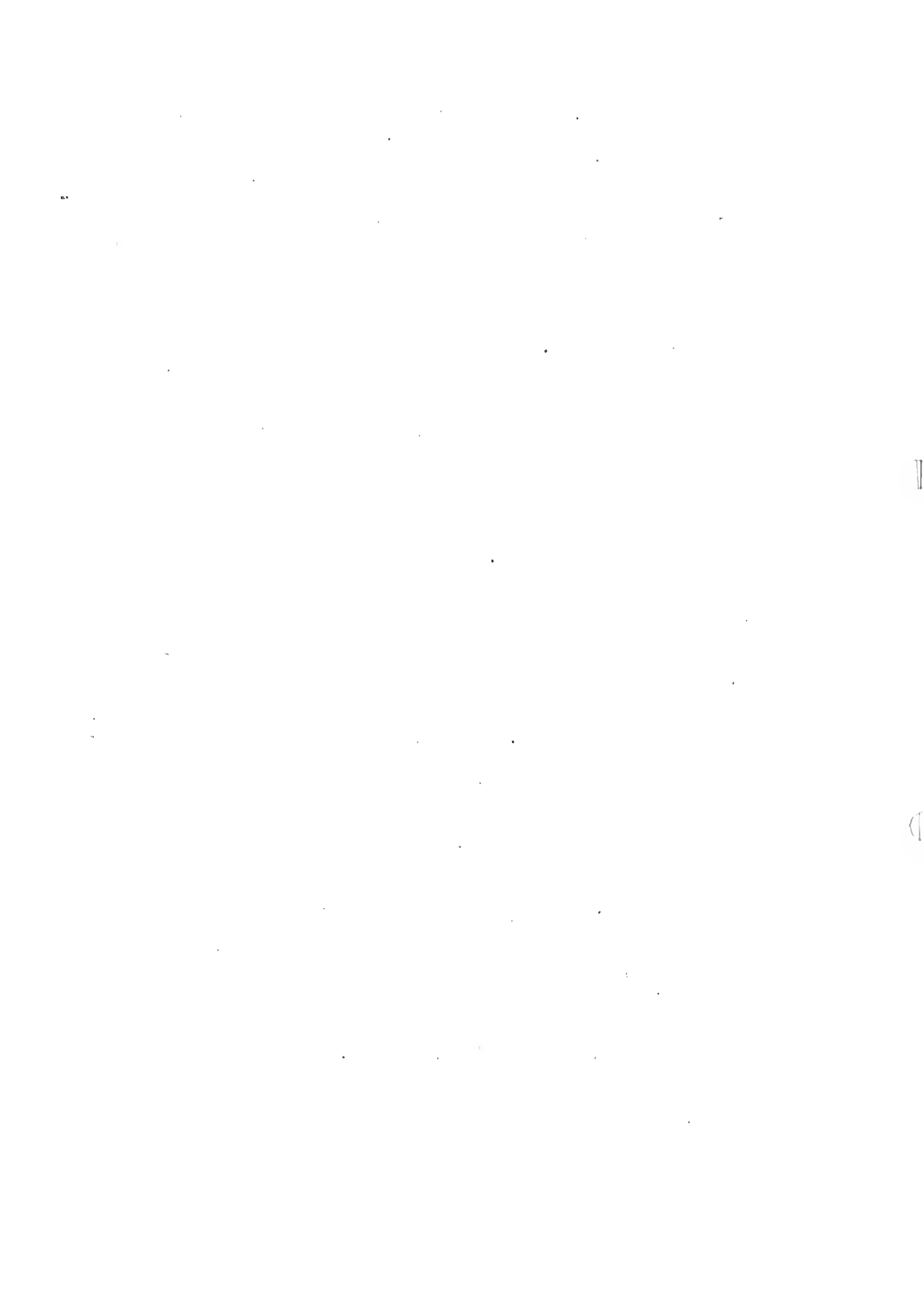


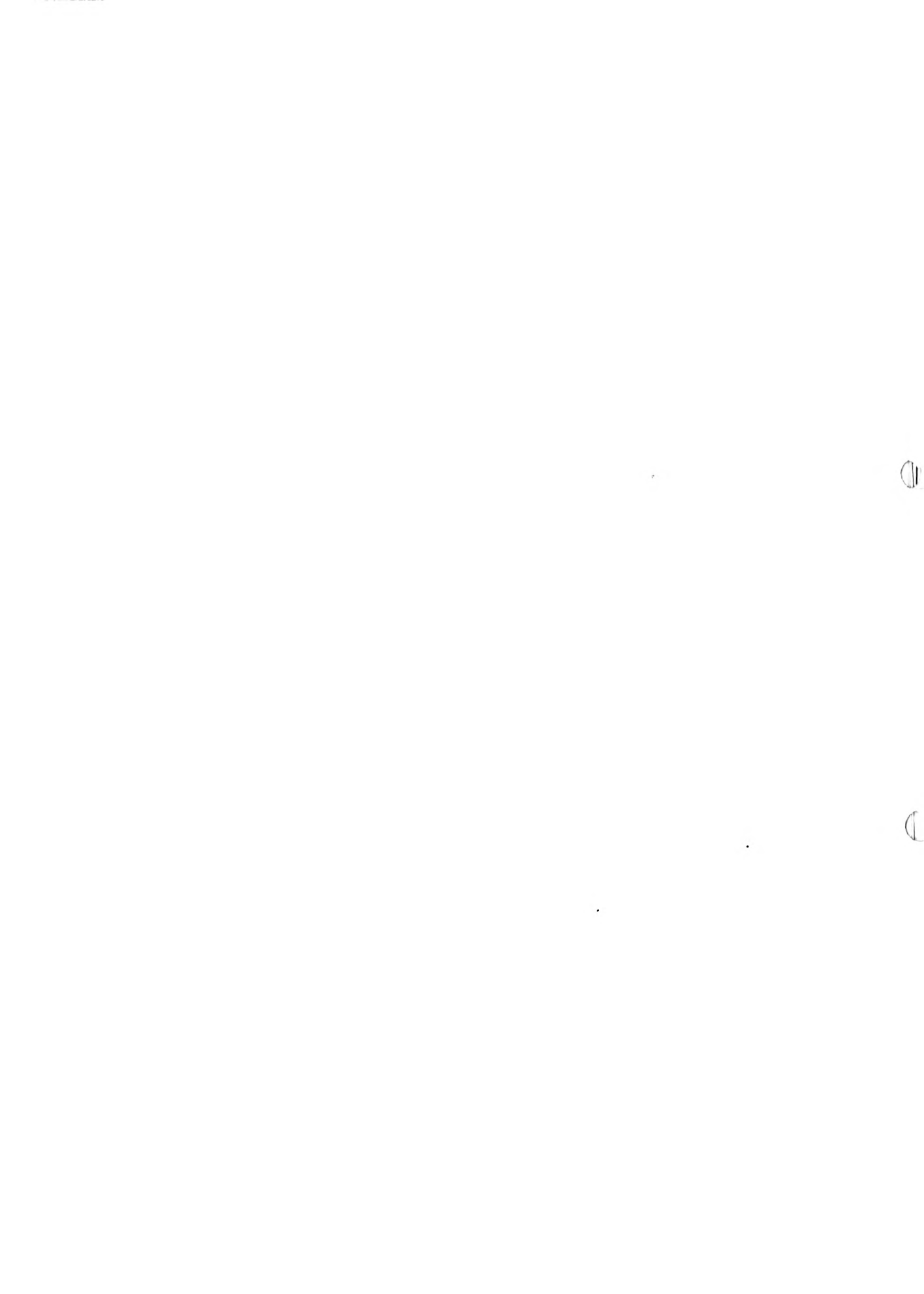
TABLE VIII

NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH LOADERS WERE PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS \searrow MAY 1933

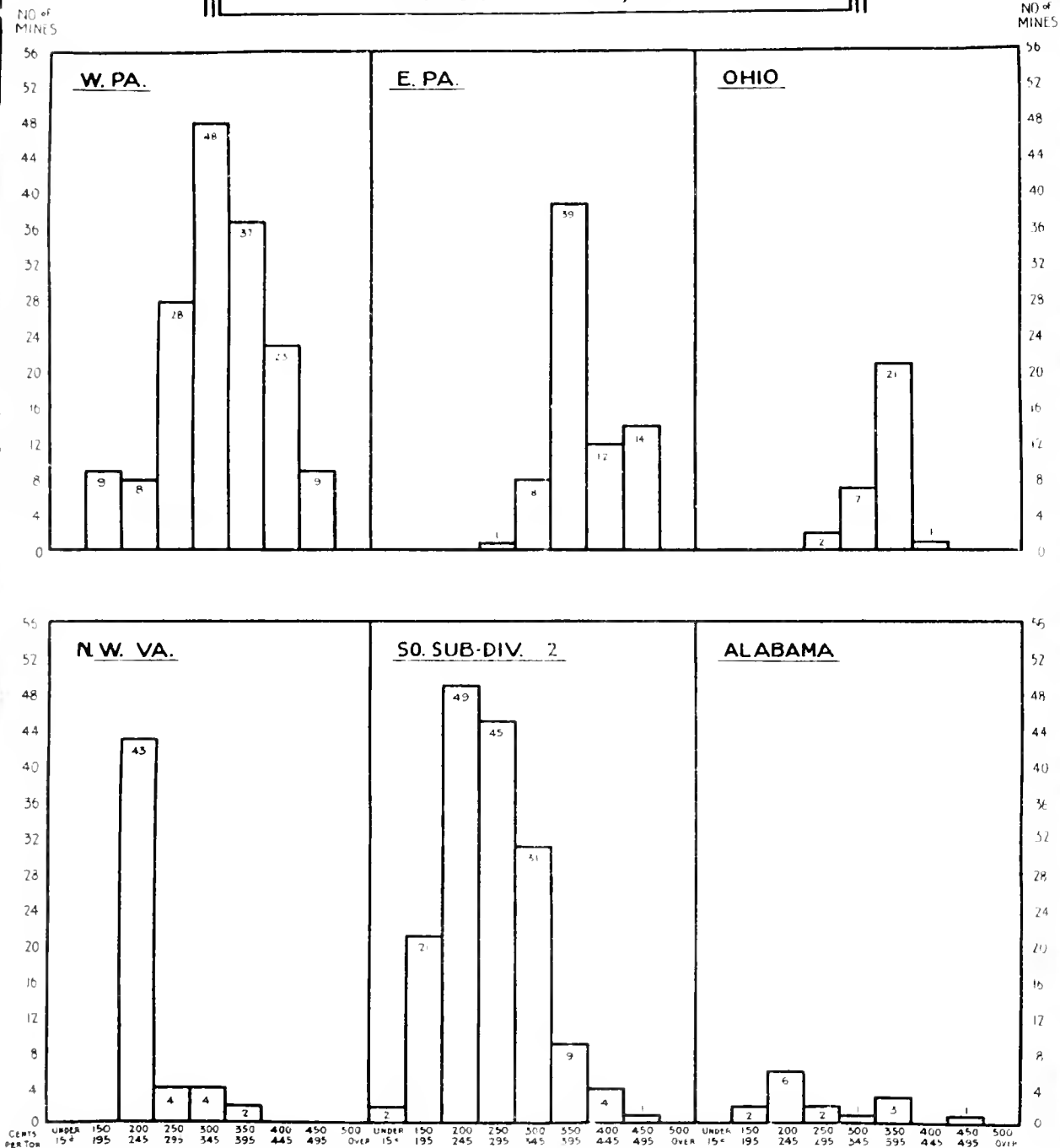
DIVISION	TOTAL NUMBER OF MINES	NOT REPORTING OR REPORTING INCOMPLETELY	TOTAL NUMBER INCLUDES	UNDER 15¢	RATES IN CENTS					40.44 1/2 ¢	41.44 1/2 ¢	TOTAL ACROSS MINES	MINES REPORTING MORE THAN 1 RATE
					15-17 1/2 ¢	20-24 1/2 ¢	25-29 1/2 ¢	30-34 1/2 ¢	35-39 1/2 ¢				
DIVISION I													
WESTERN PENNSYLVANIA	165	46	119	9 (5.6)	8 (4.9)	28 (17.5)	48 (24.6)	37 (22.8)	23 (14.2)	9 (5.6)	142 (100.0)	19	
EASTERN PENNSYLVANIA	118	45	73			1 (1.4)	8 (10.8)	34 (32.7)	12 (16.2)	14 (18.9)	74 (100.0)	1	
MARYLAND & UPPER POTOMAC	6	3	3			2 (66.7)	1 (33.3)				3 (100.0)		
OHIO	56	25	31			2 (6.5)	7 (22.6)	21 (67.7)	1 (3.2)		31 (100.0)		
NORTHERN WEST VIRGINIA	85	32	53			4 (7.6)	4 (7.5)	2 (3.8)			55 (100.0)		
SOUTHERN No 1 (Downing)	135	127	6			1 (16.7)	4 (64.6)	1 (16.7)			6 (100.0)		
SOUTHERN No 2	292	153	139	2 (1.2)		49 (36.2)	31 (19.1)	9 (5.6)	4 (2.5)	1 (0.6)	162 (100.0)	18	
KANAWHA } WEST VIRGINIA	55	32	23	1 (3.6)		2 (7.1)	11 (39.5)	4 (14.3)			28 (100.0)	5	
LOGAN	36	27	9	3 (33.3)		6 (66.7)					9 (100.0)		
Big Sandy - Elkhorn } KENTUCKY	43	14	29			7 (25.3)	9 (30.0)	2 (6.7)			30 (100.0)	1	
HAZARD	36	16	20	1 (3.7)		12 (44.5)	7 (25.9)				27 (100.0)	6	
HARLAN	27	16	11	1 (4.7)		5 (38.3)	4 (26.7)				15 (100.0)	2	
VIRGINIA	30	16	14			8 (47.0)	1 (5.9)	2 (11.8)		1 (5.9)	17 (100.0)	1	
WILLIAMSON, S.W.V. & N.V.	37	18	19	1 (5.0)		6 (30.0)	1 (5.0)				20 (100.0)	1	
SOUTHERN APPALACHIAN No 1 & 2	28	14	14			3 (18.8)	7 (43.7)	1 (6.2)			16 (100.0)	2	
DIVISION III													
ALABAMA	25	11	14	2 (13.3)		6 (40.0)	2 (13.3)	3 (20.0)	1 (6.7)		15 (100.0)	1	
So. Tennessee & Georgia	2	1	1								1 (100.0)		

\searrow Reported by operators to Bituminous Coal Unit, N.R.A. on Form "C".

Note: Figures in parenthesis are percentages.



Number of Mines in Selected Areas in which Loaders were paid Rates Falling in Specified Wage Rate Intervals — May 1933.

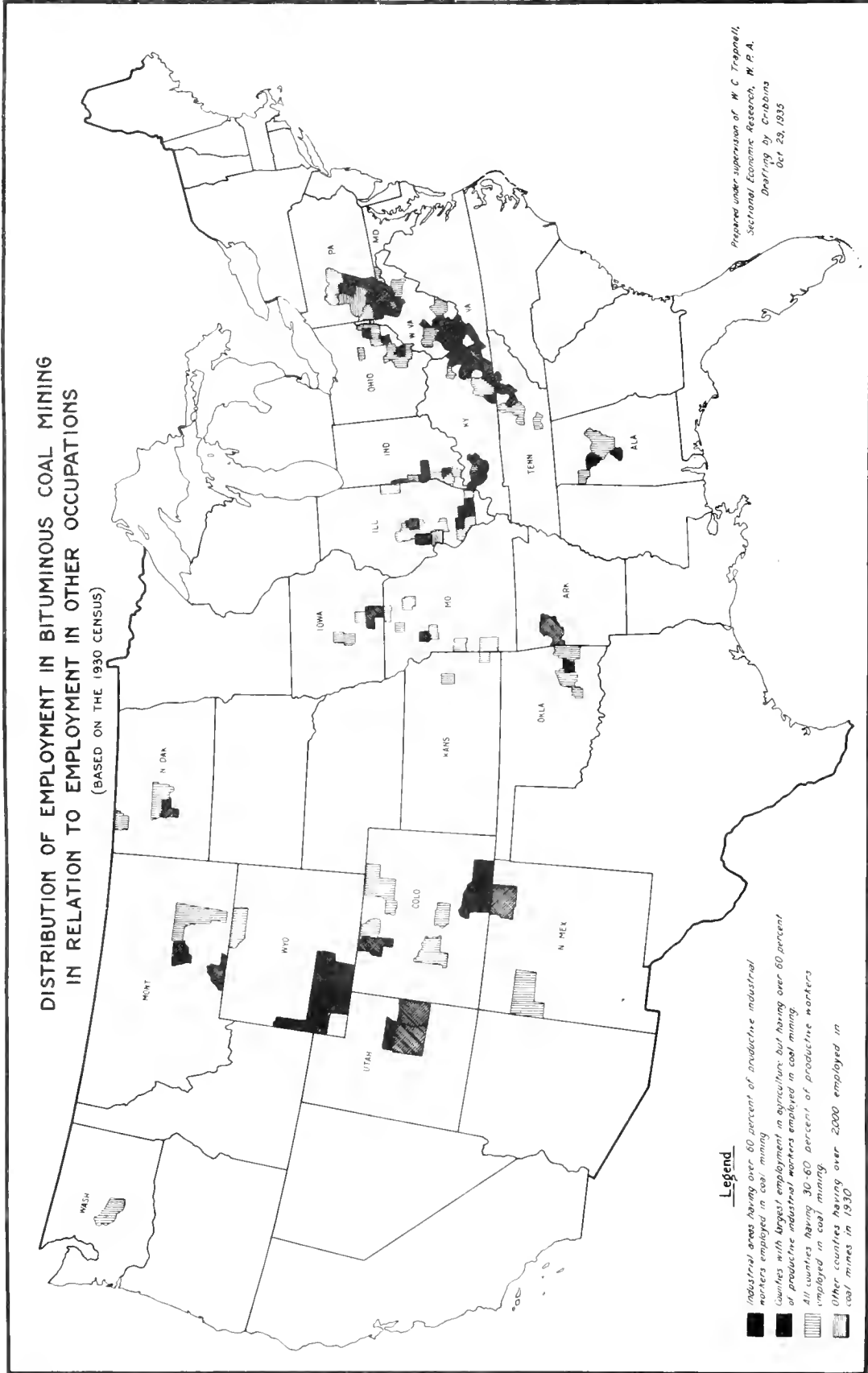


Reported by Operators to Bituminous Coal Unit, N.R.A. on Form "C"

NOTE: Certain Mines Reported More than One Rate and these were Counted as Separate Reports

PREPARED BY Bituminous Coal Unit, Division of Research, N.R.A., under the direction of F. E. Bergquist

**DISTRIBUTION OF EMPLOYMENT IN BITUMINOUS COAL MINING
IN RELATION TO EMPLOYMENT IN OTHER OCCUPATIONS**
(BASED ON THE 1930 CENSUS)



Legend

- Industrial areas having over 60 percent of unproductive industrial workers employed in coal mining
- Counties with largest employment in agriculture but having over 60 percent of productive industrial workers employed in coal mining
- All counties having 30-60 percent of productive workers employed in coal mining
- Other counties having over 2000 employed in coal mines in 1930

Prepared under supervision of W. C. Trapnell,
Sectional Economic Research, W. P. A.
Drafting by Cribbins
Oct. 23, 1935

It is necessary, therefore, in discussing the unemployment problem in this industry to refer back to the events of more than a decade ago. Moreover, while declining employment is a serious problem wherever it is found, in bituminous coal mining the problem is more grave than elsewhere. The coal miner lives in a decidedly restricted labor market. When the miner is thrown on a declining labor market alternative occupations affording employment are lacking and his mobility is so limited by his impecunious state as to shut him out from other areas where work may be available.

The data set forth in Table IX and Chart VI indicate clearly the trend of employment in the bituminous coal industry during the ten year period preceding the advent of the N.R.A. It will be noted that the employment peak was reached in 1923 when the total number of employees in the industry approximated 705,000. At the same time the number of commercial mines in operation totaled 9,331 - the highest figure in the history of the industry. The remarkable growth in mining operations and therefore of capacity arising out of the war period is evident when it is seen that only 7 years before this date the total number of commercial mines was 5,726 or 3,505 less than the number in 1923. While these operations afforded increased employment, they were outgrowths of a temporary war-time demand and of unusually favorable market prices because of transportation shortage and labor disputes. The tremendous increase in excess capacity in the face of a post-war recession in demand inevitably brought liquidation of mining operations. The closing down of mines was accompanied by decreasing employment. In other cases where mines continued to operate, the number of days worked in the year was materially reduced. In still other instances operators desperately seeking to reduce costs introduced mechanical cutters, loaders, etc. and thus displaced numerous employees. In the one year between 1923 and 1924 the number of mines in operation declined 1,745, or approximately 19 per cent, while the number of employees were reduced by 25,000, or 12 per cent.

The decrease in the number of operating commercial mines and in employment continued steadily in each year after 1923 (except in 1926 when the British strike influenced prices sufficiently to re-open a few mines and improve employment slightly down to 1923). These shut down mines representing potential tonnage and increased excess capacity continued to threaten the depressed market. Only the passage of years with increasing disrepair, flooding, roof cave-ins, etc. could remove these mines from the picture. Thus in 1929 when industry generally was booming and people were talking of permanent prosperity, the bituminous coal mining industry since 1923 had closed down some 3,274 mines or 35 per cent of the total operating in that year. Employment in the same period decreased in excess of 200,000 or approximately 29 per cent. The fact that employment did not decrease as greatly as the number of mines indicates that the larger mines employing great numbers of men continued in operation.

The downward trend in employment and in the number of commercial mines in operation continued until the summer months of 1933, when in anticipation of improved economic conditions under the National Industrial Recovery Act, employment increased and a number of mines re-opened. By 1932, however, employment in the industry stood at 406,000 or 300,000 less than were employed in 1923.

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TABLE IX

TRENDS OF EMPLOYMENT, WORKING TIME, WAGE RATES AND LABOR PRODUCTIVITY AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1934

(Columns (1) to (6) from annual reports of the U. S. Bureau of Mines; Columns (7) and (8) computed from reports of the U. S. Bureau of Labor Statistics; Column (9) from Report of the U. S. Coal Commission and MRA Code)

Year	Number of men employed (thousands)	Average number of days:			Net tons per man per day	Number of commercial mines in operation	Average daily earnings all daymen covered by Bureau of Labor Statistics, sample surveys		Illinois scale inside daymen (trackmen)
		Worked	Idle				West Virginia	Tennessee	
			On account of labor disputes ^a	Other causes ^b					
1899	271	234	8	66	3.05	4,000	(c)	(c)	\$1.90
1900	304	234	5	69	2.98	(c)	(c)	(c)	2.28
1901	340	225	2	81	2.94	(c)	(c)	(c)	2.28
1902	370	230	7	71	3.06	(c)	(c)	(c)	2.28
1903	416	225	3	80	3.02	(c)	(c)	(c)	2.56
1904	438	202	8	98	3.15	(c)	(c)	(c)	2.42
1905	461	211	2	95	3.24	5,060	(c)	(c)	2.42
1906	478	213	28	67	3.36	(c)	(c)	(c)	2.56
1907	513	234	1	73	3.29	(c)	(c)	(c)	2.56
1908	516	193	11	104	3.34	(c)	(c)	(c)	2.56
1909	543	209	1	98	(c)	5,775	(c)	(c)	2.56
1910	556	217	35	56	3.46	5,813	(c)	(c)	2.70
1911	550	211	2	95	3.50	5,887	(c)	(c)	2.70
1912	649	223	10	75	3.68	5,747	(c)	(c)	2.85
1913	572	232	5	71	3.61	5,776	(c)	(c)	2.85
1914	584	195	13	94	3.71	5,592	(c)	(c)	2.85
1915	557	203	4	101	3.31	5,502	(c)	(c)	2.85
1916	561	230	4	74	3.90	5,726	(c)	(c)	3.00
1917	603	243	4	61	3.77	6,939	(c)	(c)	3.50 Apr., 5.00 Oct.
1918	615	249	1	58	3.78	8,319	(c)	(c)	7.00
1919	622	195	25	88	3.84	8,994	e/ \$4.09	e/ \$3.21	5.70 Nov.
1920	640	220	6	82	4.00	8,921	(c)	(c)	6.00 Apr., 7.50 Aug.
1921	664	149	3	156	4.20	8,033	f/ \$5.87	(c)	7.50
1922	683	142	78	88	4.28	9,299	(c)	(c)	7.50
1923	705	179	2	127	4.47	9,331	(c)	(c)	7.50
1924	620	171	7	130	4.56	7,586	e/ \$4.93	e/ \$3.55	7.50
1925	583	195	2	111	4.52	7,144	(c)	(c)	7.50
1926	594	215	1	92	4.50	7,177	b/ \$4.91	b/ \$3.35	7.50
1927	594	191	45	72	4.55	7,011	(c)	(c)	7.50
1928	522	203	8	97	4.73	6,450	(c)	(c)	6.10 Sept.
1929	503	219	(d)	89	4.85	6,057	l/ \$4.76	l/ \$3.28	6.10
1930	493	187	2	119	5.06	5,891	(c)	(c)	6.10
1931	450	160	3	145	5.30	5,642	j/ \$4.57	j/ \$3.19	6.10
1932	406	146	13	143	5.22	5,427	(c)	(c)	5.00 Aug.
1933	413	157	9	132	4.78	5,555	k/ \$3.25	k/ \$2.66	5.00
1934	l/ 450	---	---	---	---	---	---	---	5.00

^a Includes strikes, suspensions, and lockouts.

^b Includes no market car shortage, mine break-downs, and all other causes of lost time except labor disputes.

^c No data.

^d Less than 1/2 day.

^e Surveys made between January and May.

^f Surveys made between October 1, 1921 and February 15, 1922.

^g Surveys made between October and December.

^h Surveys made between November 26, 1926 and March 22, 1927.

ⁱ Surveys made in first quarter.

^j Surveys made in first quarter.

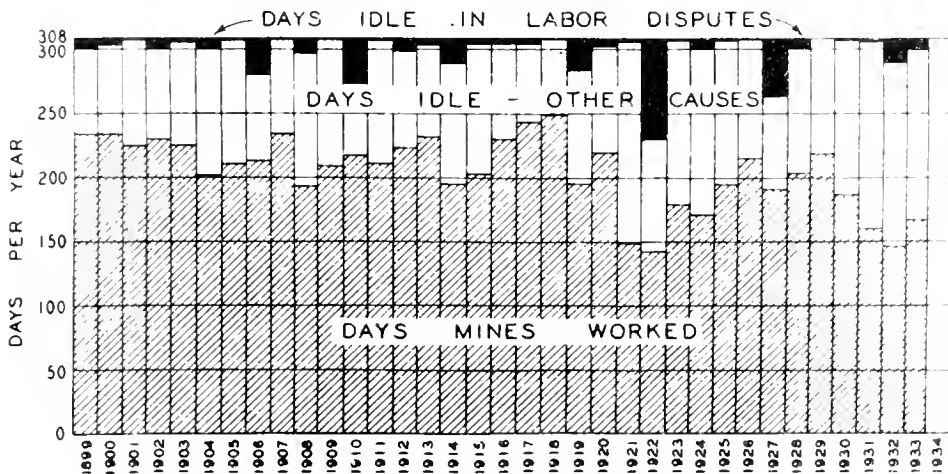
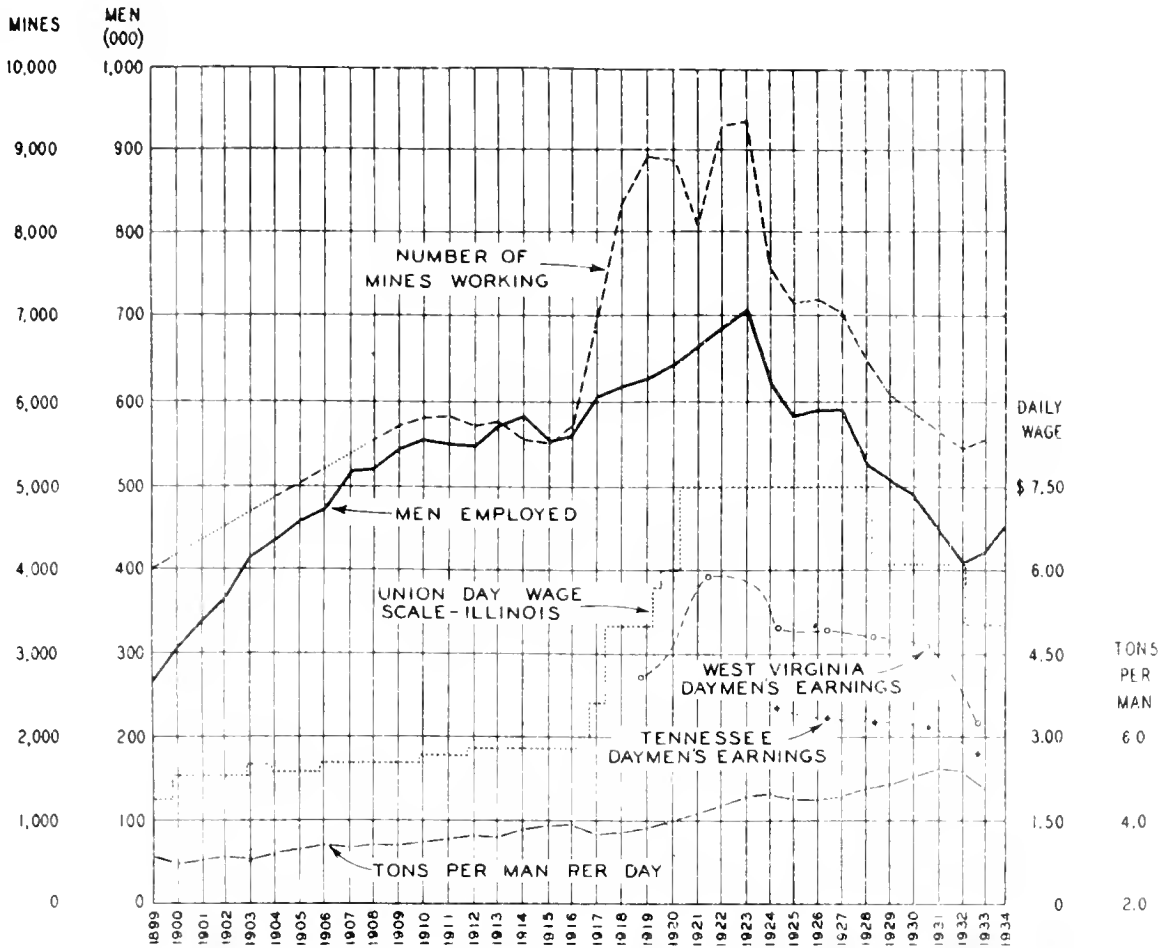
^k Surveys made in February

^l Estimated.

Prepared by: F. G. Tryon and W. H. Young,
Coal Economics Division,
U. S. Bureau of Mines.
October 27, 1935.



CHART VI
TRENDS OF EMPLOYMENT, WORKING TIME, WAGE
RATES AND LABOR PRODUCTIVITY, 1899-1934



SOURCE: U. S. Bureau of Mines
Bureau of Labor Statistics

By P. O. Tryne and W. E. Young,
Coal Economic Division,
U. S. Bureau of Mines,
October 25, 1934

Drafting by R. L. Anderson.

Throughout the period under discussion, it will be noted that the output per man per day steadily increased. Whereas in 1922 this output amounted to 4.28 tons per day, by the end of 1951 it amounted to 5.30 tons per day. The increasing output per man per day evidences new techniques, greater mechanization and operation of mines having more favorable natural working conditions. Thus, the development of strip mining in Indiana and Illinois meant greater output per man concurrently with lower labor costs and reduced employment. Again, the electrification of the mines, modernization of mine lay-outs, mechanization of cutting and loading -- all seeking to reduce production costs -- also spelled unemployment for large numbers of men. Those individuals, who were fortunate enough to retain their jobs, found that their working time was seriously reduced. Part time employment meant deflated pay envelopes. The average number of days worked per year in the decade, 1913 - 1922, was 205.8; in the following decade, 1923 - 1932, this average had declined to 186.6. The lower portion of Chart VI shows "days idle in labor disputes" to have been of no great consequence since 1923. But "days idle - other causes" (primarily lack of markets) became increasingly significant in that period. Even the prosperous year 1929 afforded only 319 days of work - the most that bituminous coal mining had had since 1920.

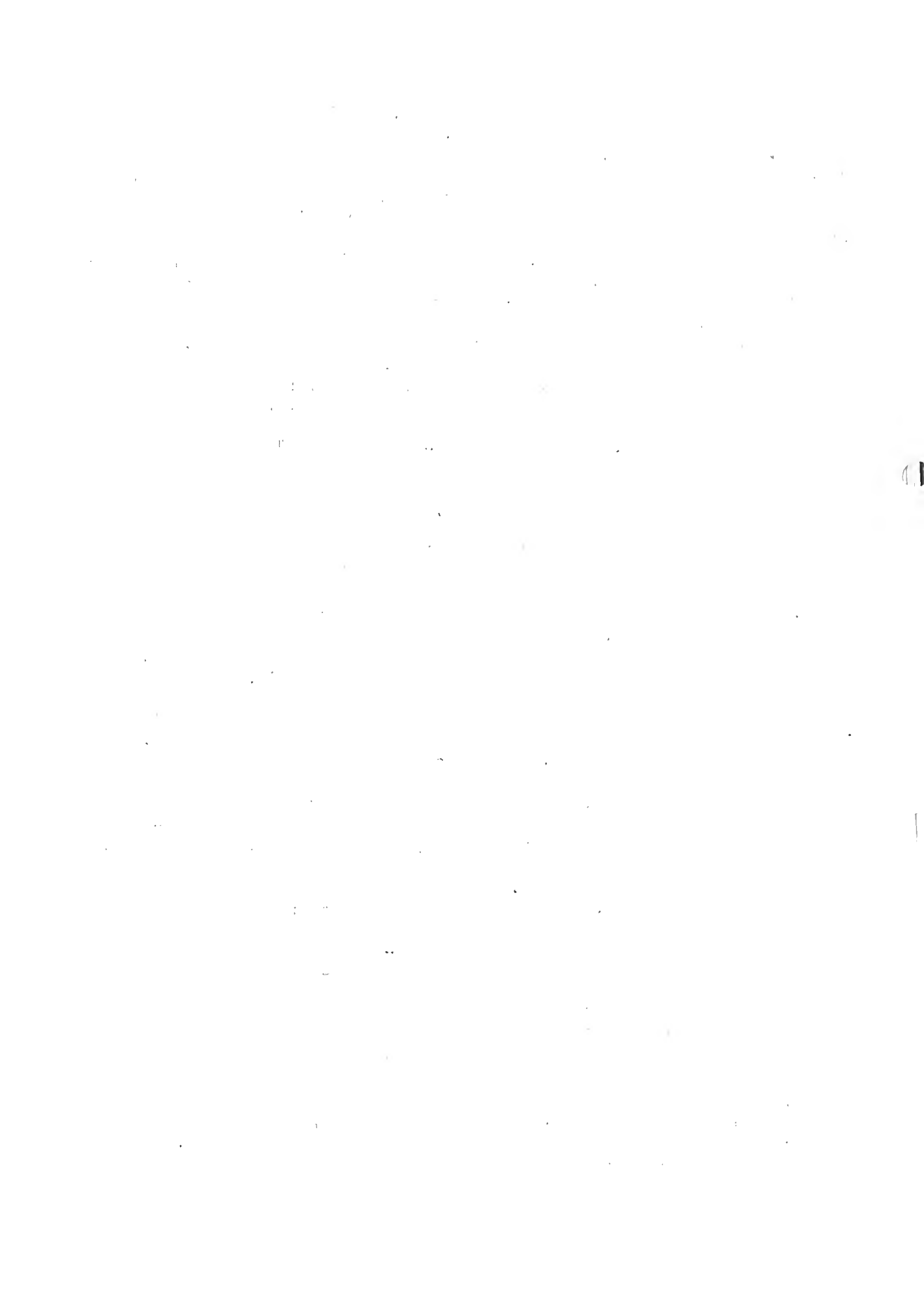
The situation in the bituminous coal fields had become so critical by 1951 that President Hoover requested the American Friends Service Committee to undertake a child feeding program in the bituminous coal areas. The project began with \$225,000 and more money was later raised by private subscription. Child feeding programs were conducted at 640 schools scattered through 40 counties in the states of Pennsylvania, West Virginia, Kentucky, Maryland, Tennessee and Illinois. (*)

The only continuous and comparable data showing earnings of bituminous coal miners over a period of years are those collected by the U. S. Bureau of Labor Statistics. This agency in 1919 instituted periodic surveys regarding the wages and hours of labor in bituminous coal mining. These studies, in general, have been carried on every two years. They provide employee data for bituminous coal mining in eleven States - Alabama, Colorado, Illinois, Indiana, Kansas, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia. These States produce more than 90 per cent of the national tonnage.

Studies have been made for the following periods:

January to May	-1919
October 1 to February 15	-1921 - 1922
October to December	-1924
November 26 to March 27	-1926 - 1927
First Quarter	-1929
First Quarter	-1931
February	-1933

(*) Morris, Homer, Testimony, Transcript of Record, James Walter Carter v. Carter Coal Company - Supreme Court of the United States, October Term, 1935, p. 503.



In each year the data were collected for each employee in each occupation in the industry, showing the number of starts or calendar days on which he worked, the number of hours worked, and the amount earned in a representative half-monthly pay period. The wage data, except for a few companies which made transcripts of their records to the bureau, were taken directly from the payrolls, clock cards and other records of the companies studied.

The number of mines for which data were secured varied from one survey to another. The data covered 200 mines in 1922, 599 in 1924, 566 in 1926, 335 in 1929, 439 in 1931, and 444 in 1933. The recent surveys covered approximately one-third of the total number of employees in the industry. In general the surveys included many larger mines and numerous captive mines. Since the composition of the sample favors the larger well organized mining operations as well as those having industrial affiliations, it is undoubtedly true that the number of starts in the pay period and the regularity of operation are greater. As a result the average earnings indicated are perhaps somewhat higher than might otherwise be the case. Likewise, the data for the unorganized areas being based on the records of the better companies are apt to present higher average earnings. The average earnings data reported by the Bureau of Labor Statistics are not earnings after deductions for occupational expenses (powder, dynamite, tool sharpening, blacksmithing, etc.) have been made.

Although the hours and wage studies present data for each individual occupational classification, for purposes of treatment here the occupations will be set up into two groups. One group called "tonnage men" is made up primarily of miners (gang miners, hand or pick miners, machine miners (cutters), and machine miners (cutters) helpers) and loaders (contract, hand, and machine). These employees work underground or inside the mine and are generally paid tonnage rates. The other group called "day men" includes all employees working either inside or outside (surface) of the mine who are paid time or day rates; that is, rates per hour, day, or week. The data for the day men are generally more accurate than data for the tonnage men because the time and earnings of the former are entered on the payroll records.

The average earnings of both tonnage and day men, in general, declined continuously since 1922. It is true that the half month earnings of tonnage men in 1926 showed a slight rise, but this increase was temporary, reflecting the influence of the British strike and increased demand for coal with accompanying increased working time. The average hourly earnings of tonnage men based on time at the face, including time for lunch were 91.8 cents in 1922, 84.3 cents in 1924, 81.7 cents in 1926, and 68.7 cents in 1929. The decrease between 1922 and 1929 was 22.8 cents per hour or 24.9 per cent. Average earnings per start or day for this group were \$7.03 in 1922, \$6.60 in 1924, \$6.46 in 1926, and \$5.50 in 1929. Daily earnings of tonnage men declined between 1922 and 1929 to the extent of \$1.53 or 21.8 per cent. Earnings in the half month fell from \$62.30 in 1922 to \$49.85 in 1929 - a decrease of \$12.45 or 20 per cent.

For the day men group, average hourly earnings between 1922 and 1929 declined 14.8 cents or approximately 30 per cent. Daily earnings for this group during the same period decreased \$1.53 or 21 per cent. The slight difference in the percentage decline between hourly and daily earnings is explained by the reduction in the average hours worked per day.

Average Earnings of Tonnage Men and Day Men in Specified Years 1/

Year	Tonnage Men			Day Men		
	Per Hour ^{2/}	Per Start (Day)	In Half Month	Per Hour	Per Start (Day)	In Half Month
1922	\$ 0.915	\$7.03	\$ 62.30	\$ 0.753	\$ 6.55	\$66.17
1924	.843	6.60	54.44	.696	5.92	57.31
1926	.817	6.46	61.61	.664	5.70	60.27
1929	.687	5.50	49.85	.605	5.17	52.57
1931	.599	4.82	33.32	.595	5.02	41.58
1933	.395	3.18	22.59	.439	3.68	29.46

1/ U. S. Bureau of Labor Statistics

2/ Time at the face, including lunch

Considering that most industries in 1929 had a record for the preceding years of increasing average earnings, the bituminous coal mining industry's record was indeed bad. Despite the low wage level existing in the coal industry in 1929, earnings continued to decline in the following years with the influence of the business depression. The earnings received by tonnage men and day men in 1931 and 1933 are shown in the above inset. In the last survey made by the Bureau of Labor Statistics, February, 1933, it was found that the amount earned per hour by the wage earners in the industry in that year was 41 cents. (*) The average hourly earnings were 35.3 cents in 1922, 73.8 cents in 1924, 76.3 cents in 1926, and 35.9 cents in 1929. The decrease between 1922 and 1933 was 52 per cent and between 1929 and 1933 was 38 per cent.

Because an average of earnings for all wage earners in the industry tends to be misleading in that it conceals variations existing between particular occupations and producing areas, more specific information is needed. Data giving somewhat more detailed information regarding earnings for all wage earners, tonnage men, and day men in the States east of the Mississippi River as reported in the surveys of the Bureau of Labor Statistics are set forth in Table X. The explanatory notes at the top of the table are essential to a proper understanding of the qualifications attaching to the data set forth.

A comparison of the daily earnings of day men discloses wide differences in the various states. For example between 1921 - 22 and 1927 daily earnings for this group of men in Illinois, Indiana, and Ohio were in excess of \$7.00, whereas in Pennsylvania, Kentucky and West Virginia these earnings ranged from something less than \$5.50 to \$6.50, and in Virginia, Tennessee and Alabama the earnings were from \$3.50 to \$4.50. The explanation for the variation in earnings levels for each group of states during the period discussed above lies primarily in the degree of unionization. Thus, Illinois, Indiana, and Ohio were strongly organized areas operating under union contracts. The group of states comprising Pennsylvania, Kentucky, and West Virginia were only partially organized and for varying periods of time so that although the earnings in the unionized portions brought up the average level, the non-union area earnings were sufficient to keep the average below that of Illinois, Indiana, and Ohio. The final group of States, Virginia, Tennessee and Alabama was non-union and operated under a great variety of wage rates, lower than those specified in union contracts. By 1929 all of the states shown on Table X, except Illinois and Indiana, were non-union. The wage rates in Illinois and Indiana were reduced in a new union contract negotiated in 1928.

APPRAISED EARNINGS OF BITUMINOUS COAL MINES WORKERS FOR HALF MONTHS, YEAR, AND QUARTER, AS REPORTED IN THE PERIODIC SAMPLE SURVEYS OF THE U. S. BUREAU OF LABOR STATISTICS

These data are derived from the detailed returns in the bulletins of the U. S. Bureau of Labor Statistics dealing with hours and earnings in bituminous coal mining (Bulletin Nos. 856, 316, 315, 309, 316, and 601) also Monthly Labor Review, October, 1931, pp. 146-176).
 At intervals of approximately two years, the Bureau of Labor Statistics has obtained reports covering one semi-annually pay period from selected mines in the principal coal States. The annual and composition of the sample has varied somewhat from year to year, but in recent surveys it has covered approximately one-third of the total number of men employed. The mines surveyed are generally the larger ones, including numerous highly mechanized and the indicated average earnings, especially in the non-mine States, during the depression may be above what would be found if all the smaller commercial mines were included as well.
 A question may also arise as to the strict representativeness of the sample when a given State is rapidly changing from coal to non-coal status, as was true, for example, in Ohio after 1927. Under such conditions if the sample happens to include a disproportionate number of mines paying the union scale, the indicated hourly earnings may be above the average of all mines, or if the sample includes an undue proportion of mines on a non-union basis, the indicated hourly earnings may be below the actual average.
 The figures here-with show the average earnings of all the tonnage men (miners, head or muckers including the cutters, and loaders) and of all day men (larids and outside). Of the two sets of data those for the day-men are the more accurate, because the time as well as the earnings of these day workers is recorded on the payroll. The measurement of the hourly earnings of the piece workers or tonnage men, on the other hand, is extremely difficult, because of the general lack of systematic records of the time spent by them at work. In effort has been made by the Bureau of Labor Statistics to obtain special records of the time of tonnage men during the pay periods covered by the returns. In view of the great difficulty of estimating accurately the amount of tonnage men on this point, the computed daily and hourly earnings of the tonnage workers cannot be considered as accurate as those of the day workers.
 The months of the year in which each of the respective surveys was made are indicated in the second column of the table. It will be understood that not all mines or fields covered were completed for the same pay period. Thus the survey of 1921-22 was made between the dates October 1 and February 15; hence the findings for one State during the same survey may represent a payroll in October, 1921, and the finding for another State a payroll in February, 1922. At a time when wage rates were falling in the non-union fields, such differences in the periods of observation here described in some instances affected the strict comparability of the averages from State to State.

The trend of wages during the intervals between these sample surveys is not accurately known. From this explanation, it will be seen that the figures are not precisely comparable from either survey to survey or from State to State and that complete records for all mines in all pay periods might show different relationships. The date, however, are the most important help of evidence as to the trend of miners' earnings during this period.

Year	Month in which complete pay period covered	Illinois		Indiana		Ohio		Pennsylvania		West Virginia		Virginia		Tennessee		Alabama	
		Per month	Per hour	Per month	Per hour	Per month	Per hour	Per month	Per hour	Per month	Per hour	Per month	Per hour	Per month	Per hour	Per month	Per hour
1915	Jan.-May	0.77	14.73	0.70	13.03	0.73	13.08	0.75	13.08	0.69	12.66	0.67	12.38	0.63	12.38	0.59	11.88
1921-1922	Oct. 1-26, 1921	0.85	15.47	0.82	14.87	0.78	14.26	0.79	14.26	0.67	12.66	0.63	12.38	0.63	12.38	0.59	11.88
1928	Oct.-Dec.	1.07	20.47	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1928-1929	Nov. 28-Dec. 28	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1929	First quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1929	Second quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1929	Third quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1929	Fourth quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1929	February	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1930	Jan.-May	0.85	15.47	0.82	14.87	0.78	14.26	0.79	14.26	0.67	12.66	0.63	12.38	0.63	12.38	0.59	11.88
1932-1933	Oct. 1-26, 1932	0.85	15.47	0.82	14.87	0.78	14.26	0.79	14.26	0.67	12.66	0.63	12.38	0.63	12.38	0.59	11.88
1936	Oct.-Dec.	1.07	20.47	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1936-1937	Nov. 28-Dec. 28	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1939	First quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1939	Second quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1939	Third quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1939	Fourth quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1939	February	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1940	Jan.-May	0.85	15.47	0.82	14.87	0.78	14.26	0.79	14.26	0.67	12.66	0.63	12.38	0.63	12.38	0.59	11.88
1942-1943	Oct. 1-26, 1942	0.85	15.47	0.82	14.87	0.78	14.26	0.79	14.26	0.67	12.66	0.63	12.38	0.63	12.38	0.59	11.88
1948	Oct.-Dec.	1.07	20.47	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1948-1949	Nov. 28-Dec. 28	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1949	First quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1949	Second quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1949	Third quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1949	Fourth quarter	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38
1949	February	1.05	19.48	1.06	19.88	0.94	17.08	0.93	16.58	0.78	14.26	0.73	13.28	0.73	13.28	0.69	12.38

(a) Figures for 1920 represent the average per hour in the mine; those for 1921-22 and thereafter represent the average per hour at the face including time for travel.

The February 1933 survey disclosed that day men's daily earnings had fallen to \$2.52 in Alabama, \$2.66 in Tennessee, \$2.89 in Virginia, \$3.25 in West Virginia, \$3.09 in Kentucky, \$3.57 in Pennsylvania, and \$3.34 in Ohio, while in unionized Illinois and Indiana these earnings were \$5.03 and \$4.96 respectively.

The discussion of declining earnings for day men applies equally well for the earnings of the tonnage men. Indeed it may be pointed out that after the day men strike of 1920 and the subsequent increase in wage rates for day men, the earnings of tonnage men relative to that of day men declined more rapidly. With falling demand for coal came drastic reductions in tonnage rates, decreased working time, and increased mechanization in an effort to cut costs. A greater degree of specialization and increased division of labor likewise tended to detract from the significance of the tonnage men - especially the pick miners. Only in the highly unionized States of Illinois and Indiana were the tonnage men able to maintain some wage rate differential over the day men and thus have higher earnings. In the other states, especially after union organization had broken down, tonnage rates fell more rapidly than did day rates.

The earnings per day of tonnage men in Illinois during the period 1921-22 to 1927 ranged from \$8.66 to \$8.90, but by 1933 had declined to \$5.15. In Indiana during the same period (1921-22 to 1927) the daily earnings ranged from \$8.20 to \$8.44, and in 1933 had declined to \$5.41. Daily earnings of tonnage men in Ohio, however, where union organization had broken down after 1927, declined from \$7.66 in 1921-22 to \$2.69 in 1933. Similarly in Pennsylvania tonnage men's daily earnings during this period had declined from \$6.13 to \$2.33. The lowest earnings per day for tonnage men disclosed in the 1933 survey were found in Virginia, Tennessee, and Alabama, where they were \$2.54, \$2.40, and \$2.31 respectively.

Code History of Wages and Hours: The general demoralization of labor relations, wages, and hours of work with which the bituminous coal industry was faced in the period preceding the summer of 1933 is clearly evident from the testimony presented in the hearings held by the National Industrial Recovery Administration from August 9 to 12, 1933. (*) These hearings were held for the purpose of presenting evidence, proposals, and recommendations for the formulation of a code of fair practices and competition for the industry. While much of the testimony presented was irrelevant to the immediate subject at hand, representatives from various coal producing areas did testify on conditions which they alleged made necessary certain wage provisions and wage differentials.

The N.R.A. attempted to reconcile the large number of proposed codes which were submitted by compiling a national basic bituminous coal code which would be "sufficiently flexible in its provisions to meet the needs of the various geographic divisions of the industry". (**) This code was submitted to the industry on September 7, 1933. Provisions were made for the hearing of any objections or amendments to the basic code on September 11, 1933.

(*) For a discussion of the various wage and hours provisions set forth in the proposed codes preceding the final emergence of the Bituminous Coal Code, see Chapter II.

(**) N.R.A., Release No. 673, Notice Regarding Basic Bituminous Coal Code.

The maximum hours of work and the minimum rates of pay standards were set forth in Articles III and IV respectively. Since the provisions of this code immediately preceded those finally approved by the President, it is of some interest to make note of them.

Article III - Standards of Maximum Hours of Labor was as follows:

"No employee shall be employed in excess of 32 hours in any calendar week during a consecutive period of 26 weeks in any twelve months period, nor in excess of 40 hours in any calendar week during the other 26 consecutive weeks of such twelve months period; PROVIDED, however, that any employer may elect to operate any mine on a schedule of employment of not to exceed thirty-six hours per week throughout the twelve months period. No employee shall be required to work more than 8 hours in any one day at the usual working place (exclusive of lunch period) whether paid by the hour or on a tonnage basis"....

"If at any mine a majority of the unemployed workers, who are organized in the manner required in Section 7(a) of the National Industrial Recovery Act, express their desire to share available work with other bona fide unemployed workers of the same mine, or a written request so to share the work is addressed to the mine management, signed by a majority of the employed workers, the number of hours work to be allotted to the unemployed workers shall be determined, by conference of the Mine Adjustment Committee, or in case of disagreement by the decision of the District Adjustment Committee and duplicate copies of the decision of the Committee shall be furnished to the local mine management and the local mine employees' duly authorized representatives."

Article IV - Standards as to Minimum Rates of Pay, Inside Rates - was expressed in the following language:

"The basic minimum rate for inside labor including the occupations of tracklayers, bottom loaders, drivers, trip riders, grippers, water haulers, machine haulers and timbermen shall be the rate hereinafter set forth in Schedule A for each District then described, with the understanding that other occupations will maintain their customary differentials above or below the said basic minimum rate. Should any of these rates conflict with contract rates in any district or portion thereof, negotiated collectively with a union of the employees' own choosing, the contract rates shall govern."

"Each of the Divisional Code Authorities hereafter described shall within fifteen days from the effective date of this Code, submit for the consideration and approval of the National Recovery Administration a supplemental schedule setting forth its minimum rates of pay to mine workers employed on a tonnage basis in pick mining, hand loading, undercutting, solid shooting, and also to

mine workers employed in strip mining, mechanized mining and deep work, to conform to the basic minimum rate for inside labor, and where the mine workers in any district are organized and have bargained collectively for such wages and working conditions, to report what, if any, collective bargains have been made."

Some other provisions set forth in Article V (Conditions of Employment) of this Code which differ from those in the finally accepted Code were:

(f) "No person under sixteen (16) years of age shall be employed inside any mine nor in hazardous occupations outside any mine, provided, however, that where a state law provides a higher minimum age, the state law shall govern."

Section (g) provided for a report to the N.R.A. from a designated investigation committee on or before November 30, 1933, regarding among other things: (1) the practicability and cost (assuming maintenance of existing rates of pay) of applying to bituminous coal mining a shorter work day and work week, giving consideration to a 30-hour, a 32-hour and a 35-hour week, (2) the effect and advisability of revising wage differentials in the various regions and districts of the industry. Provision was also made for a joint conference on December 1, 1933, between representatives of employers and employees under the Code to discuss wages, hours and differentials. Unless this conference made revisions the labor provisions of the Code were to continue until April 1, 1934, and thereafter during the effective period of N.I.R.A. or until changed by mutual agreement of operators and mine workers subject to approval of the Administrator.

The provisions noted above called forth a storm of protest at the hearing held by the N.R.A. The Code, as finally drafted after a conference of N.R.A. officials and a joint conference of operators appointed September 12, 1933, followed the general outline of the draft made public September 7, but made a number of modifications. Among the more important changes in labor provisions were:

(1) An increase in the maximum work-week from 36 to 40 hours.

(2) Limiting the decision to share work with unemployed miners to mutual agreement between the employed workers at the mine and their employers, thereby eliminating the provision for appeal to a district adjustment committee.

(3) Elimination of occupational specifications in setting up minimum wages.

(4) Elimination of provision requiring Divisional Code Authorities to submit supplemental schedules covering minimum piecework rates.

(5) Increase in the minimum age for employment inside the mine or in hazardous occupations outside from 16 to 17 years.

(6) Date for review of wages and differentials postponed from

November 30, 1933 to January 5, 1934.

(7) Application of maximum hours, minimum rates and differentials limited to April 1, 1934, unless revision is made by mutual agreement as a result of the January conference.

(8) Provision that the difference in districts in the minimum rates under Schedule A are not to be considered as fixing permanent wage differentials or establishing precedents for future wage scales.

When the Code was submitted to the President for approval, he made three important changes before adding his signature. He added a sentence to Section 3, Article VII relating to compilation of statistics by Code Authorities, which stated:

"All coal producers subject to the Code shall furnish to any government agency or agencies designated by the Administrator such statistical information as the Administrator may, from time to time, deem necessary for the purpose recited in Section 3(a) of the National Industrial Recovery Act; and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies, as the Administrator may direct."

The President reserved the right to name three additional members to the National Bituminous Coal Industrial Board as against the number (15) specified in the Code submitted to him.

The third important change involved the highly controversial Section 7(a) of the N.I.R.A. (*)

(*) Section 7(a) of Title 1 of the National Industrial Recovery Act stated:

"Every code of fair competition, agreement, and license approved, prescribed, or issued under this title shall contain the following conditions: (1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

The Code as it went to the President contained a Schedule B which was a "clarification" of Section 7(a) as set forth by General Johnson and Mr. Donald Richberg. The clarification statement announced that the section meant nothing more nor less than it stated and that "the words 'open shop' and 'closed shop' are not used in the law and cannot be written into the law." The President, however, eliminated paragraph b of Article V which referred to Schedule B on the basis "that attempts by those submitting codes to interpret Section 7(a) of the National Industrial Recovery Act have led to confusion and misunderstanding; such interpretations should not be incorporated in Codes of Fair Competition".

The Bituminous Coal Code was approved by President Roosevelt on September 18, 1933, but it did not become effective until October 2, 1933. The labor provisions as set forth in this Code have been considered models for industry. This distinction is not surprising when the great number and diversity of occupations in the two major classifications of tonnage men and day men in this industry are considered. Moreover, the steady disintegration of union power in the decade preceding the enactment of the N.I.R.A. seemed to indicate that mine labor would lack a strategic position from which to voice its demand. A few weeks prior to the enactment of the N.I.R.A., however, the United Mine Workers launched a nation wide organization campaign, penetrating almost every non-union area. With surprisingly little active opposition from the operators, except perhaps in the case of the steel affiliated captive mines, the union made effective use of Section 7 (a) of the Act.

Immediately prior to the union organization campaign only a very small percentage of the national tonnage was being produced under contract with the union. The principal wage contracts were those in effect for considerable portions of Division II and IV, the State of Wyoming, two operators in the State of Washington, one operator in the State of Colorado, a number of operators in Southern Ohio, a few operators in Northern West Virginia, and two operators in Pennsylvania. The remainder of the industry operated without contract wage scales in their respective areas. As might be expected wages and hours were neither uniform nor stable for the major portion of the industry, covering in excess of 90 per cent of the national tonnage. When code negotiations began in Washington in the summer of 1933, however, the United Mine Workers were in a position to give effect to their demands.

At the same time that the code negotiations were taking place, a wage and hour agreement between the Appalachian operators and the United Mine Workers was being negotiated under the direction of the President in conformity with Section 7(b) of the Recovery Act. Informal negotiations began on August 19, 1933 and the agreement was signed on September 21. It represented a reestablishment of the United Mine Workers in Ohio, Pennsylvania and certain outlying districts to the south as well as an extension of union organization to Southern fields never before unionized. The wage agreement ran from October 2, 1933 to March 31, 1934 affecting a normal output of 300,000,000 to 350,000,000 tons and approximately 315,000 mine workers in Ohio, Pennsylvania, West Virginia, Maryland, Virginia, Eastern Kentucky and Northern Tennessee.

President Roosevelt approved and signed the agreement on September 22. He stated when he approved this agreement that it was with "the

understanding that the hours, wages and conditions of employment recited herein may also be applied to employees not parties hereto; and that the requirements of Section 7(a) of the National Industrial Recovery Act will be complied with in carrying out this agreement".

The Appalachian wage agreement provided that supplementary district agreements be made to care for local conditions. It also repeated the Bituminous Coal Code provision for a conference of employers, employees, and the N.R.A. on January 5, 1934 to discuss wages, hours and differentials. Other provisions related to the 8-hour day, election of checkweighmen, selection of pit committees and machinery for settling disputes.

Captive mine operations in Western Pennsylvania gave rise to considerable difficulty before agreement could be reached. An extensive strike involving approximately 75,000 men for a period of several months took place. The central demand was effectuation of Section 7(a) of the Recovery Act. The steel companies contended that they were operating under the Steel Code and that it was not necessary for them to sign the Coal Code or enter into wage agreements. After United Mine Workers efforts to halt the stoppage had failed, the N.R.A. intervened. An agreement was finally signed September 29 under Section 4(a) of the N.I.R.A. (*) Steel companies operating captive mines agreed "to comply with the maximum hours of labor and minimum rates of pay which are or shall be prescribed under or pursuant to the Coal Code for the district in which such mine is located so long as the Coal Code shall remain in effect". The situation with reference to formal union recognition and the "check-off" continued to be complicated.

The Bituminous Coal Code established basic minimum rates for two classes of labor, namely, outside common labor and inside skilled labor. It further provided that "other classifications of employ-
ment will maintain their customary differentials above or below said basic minimum rates and that payments for work performed on a tonnage or other piece work basis will maintain their customary relationship to the payments on a time basis provided in said basic minimum rates."

Title 1, Section 4(a) of N.I.R.A.

"The President is authorized to enter into agreements with, and to approve voluntary agreements between and among, persons engaged in a trade or industry, labor organizations, and trade or industrial organizations, associations or groups, relating to any trade or industry, if in his judgment such agreements will aid in effectuating the policy of this title with respect to transactions in or affecting interstate or foreign commerce, and will be consistent with the requirements of clause (2) of subsection (a) of Section 3 for a code of fair competition."

In determining the minimum rates of wages, it was necessary to consider the competitive relationship of the many producing fields in different coal-consuming markets. The competitive elements arise out of the quality of coal, freight rates, the labor market, etc. Since the relative importance of these factors vary from field to field, the establishment of separate districts was necessary. The Deputy Administrator, K. M. Simpson, stated that:

"As far as practicable, however, the number of districts has been kept to a minimum and the spread in rates has been reduced to the narrowest limits possible and still promote competitive equilibrium. Rates submitted in the numerous codes proposed showed wide variations, both as to the minimum wages and the differentials between different competing areas. It would be utterly impossible to reconcile all the conflicting rates proposed by the different interests involved. The effort has been made to arrive at a set of rates which would result in the least economic dislocation and at the same time carry out the purposes of the N.I.R.A. - employment and increased purchasing power." (*)

These sectional differences were recognized by dividing the country into seventeen wage areas. A uniform minimum wage rate existed within each of these wage areas, except in two districts. (**) No data were available from which accurately to determine the differentials which should exist between competing districts. Outwardly these minimum rates were fixed by the N.R.A. when the original code was promulgated; actually, in most instances, the rates resulted from collective bargaining and the N.R.A. merely incorporated these contract rates into the Code. (***) Thus, the differentials in rates of pay represented agreements arrived at by representatives of different geographical divisions within the industry as being fair and equitable, and approved by the N.R.A. Basic rates set forth in the Appalachian wage agreement, referred to above, and in earlier unexpired contracts in fields outside of the Appalachian region (for example, Indiana and Illinois) became the basic minimum rates specified in the Code. In other districts where no union contracts to set the standards

(*) N.R.A., Code of Fair Competition for the Bituminous Coal Industry, Washington, 1933, pages XII and XIII.

(**) District F - Iowa; Wayne and Appanoose Counties of Iowa.
District K - New Mexico; Southern Colorado.

(***) Hale, Sydney A., The Bituminous Coal Mining Industry, Chapter VIII, p. 169 in Galloway, George B. and Associates, Industrial Planning Under Codes, Harpers, 1935.

existed, the N.R.A. and the interested operators negotiated the minimum rates. By September 29, 1933 when the Supplemental Executive Order was made public, (*) every district except Alabama and Texas had accepted the minimum rates proposed by the N.R.A. Texas was eliminated from consideration on the basis that its business was entirely intrastate. Considerable controversy existed in Alabama, where it was contended that the minimum rates of \$3.40 per day for inside skilled labor and \$2.40 per day for outside common labor had been imposed, but efforts were being made to have the operators accept these rates. Western Kentucky operators had proposed rates of \$2.64 and \$2.24 and strenuously protested against a proposed base rate of \$3.84 per day for inside labor, but finally accepted rates of \$4.00 for inside skilled labor and \$3.00 for outside common labor. October 2, 1933, the date when the Code went into effect, found basic rates of pay for all producing areas in the industry and more than 90 per cent of the national tonnage under union wage contracts.

The basic minimum rates as established by the Bituminous Coal Code are shown in Table XI. Districts A, B, C, H and J-1 comprised Division I of the bituminous coal industry. These districts, with the exception of Western Kentucky, were in direct competition with one another, often selling similar coals in the same markets. Moreover, since Division I produced about 70 per cent of the national tonnage, it was extremely important that the basic minimum wage in each of the wage districts be so adjusted to one another as to bring about fair and comparable competitive conditions. The Bituminous Coal Code was the first instrument to give effective recognition to a condition in the industry which had resulted in constant and recurring price cutting and wage slashing in an ever downward spiral, namely, the competition between unionized portions of the Northern producing areas and the non-union coal fields in the South.

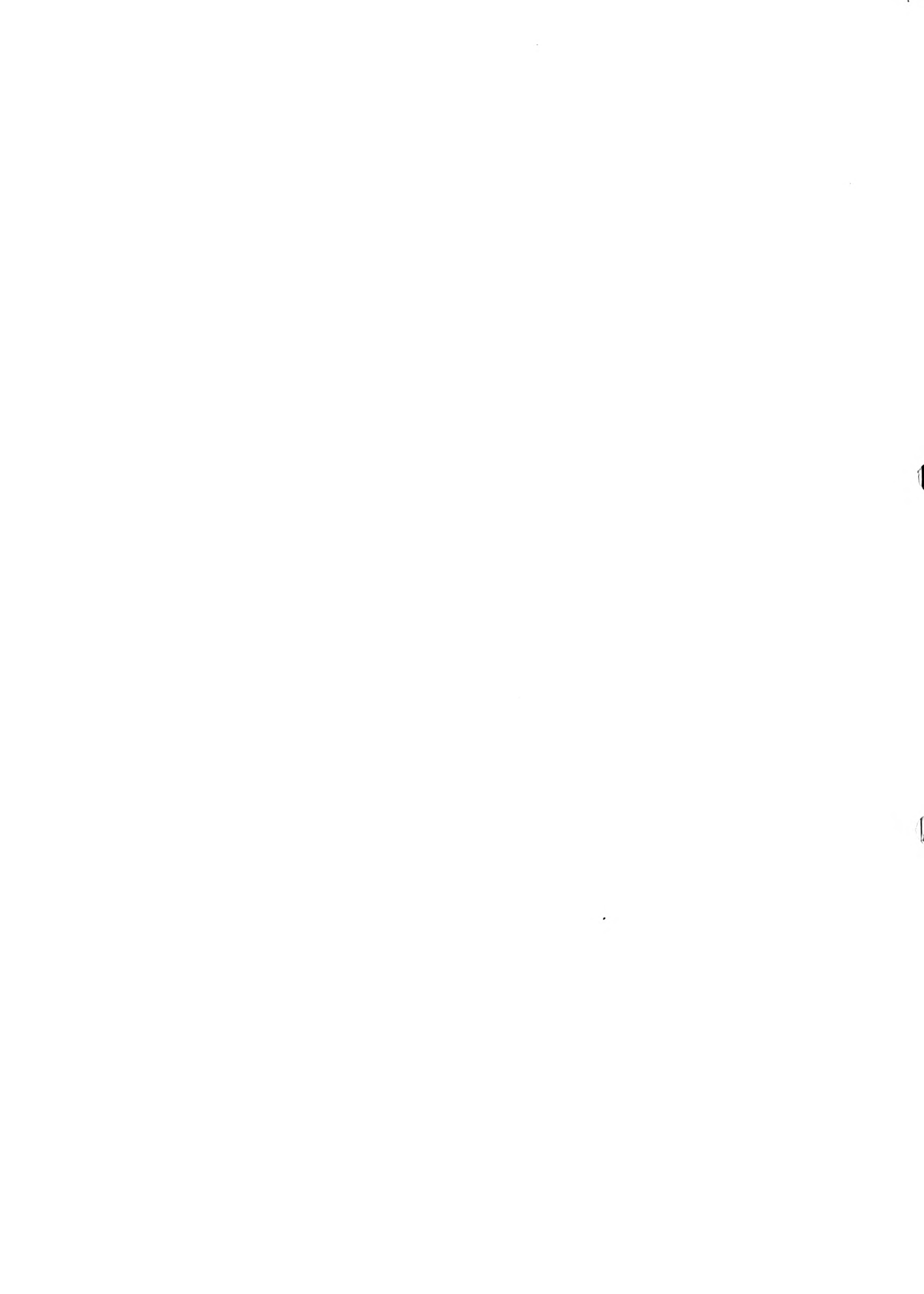
(*) This order approved the revised Schedule A of the Bituminous Coal Code.

TABLE XI
BASIC MINIMUM RATES OF PAY ESTABLISHED UNDER THE COME
ACT BY AMENDMENTS Nos. 1, 2 and 3

Districts	Effective October 2, 1933 (Original Code)				Effective April 1, 1934 (Amendment No. 1)				Effective April 1, 1934 (Amendment No. 2)				Effective June 11, 1934 (Amendment No. 3)			
	Minimum basic retailed labor		Minimum outside common labor		Minimum basic retailed labor		Minimum outside common labor		Minimum basic retailed labor		Minimum outside common labor		Minimum basic retailed labor		Minimum outside common labor	
	Dollars per day	Cents per hour	Dollars per day	Cents per hour	Per cent (Skilld Labor)	Per cent (Unskilled Labor)	Per hour (Per day)	Per hour (Per day)	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour
Tennessee	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Texas	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Utah	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Virginia	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Washington	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
West Virginia	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Wisconsin	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Wyoming	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Alabama	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Arkansas	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
California	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Colorado	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Connecticut	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Delaware	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Florida	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Georgia	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Idaho	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Illinois	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Indiana	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Iowa	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Kansas	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Kentucky	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Louisiana	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Maine	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Massachusetts	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Michigan	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Minnesota	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Mississippi	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Missouri	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Montana	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Nebraska	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Nevada	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
New Hampshire	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
New Jersey	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
New Mexico	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
New York	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
North Carolina	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
North Dakota	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Ohio	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Oklahoma	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Oregon	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Pennsylvania	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Rhode Island	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
South Carolina	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
South Dakota	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Tennessee	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Texas	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Utah	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Vermont	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Virginia	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Washington	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
West Virginia	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Wisconsin	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2
Wyoming	4.00	87 1/2	3.00	67 1/2	80.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2	64.00	71 1/2

1 Includes Hancock, Broome, Otsego and Madison Counties.
2 Includes all mines in counties of Lewis, Barber, Gilmore, Updegraff, Randolph, Putnam, and Webster Counties and those mines in Nicholas County served by the B. O. R. R.
3 Includes all mines in counties of West Virginia not named under districts A and B and under the
4 Includes all mines in Kentucky located east of a north and south line drawn along the western bound-
5 City of Louisville.
6 City of Louisville.
7 Includes all mines in California not named under Districts J and K.
8 Includes all mines in California west of a north and south line drawn along the western boundary of
9 Includes all mines in California east of a north and south line drawn along the western bound-
10 Includes Hancock, Letcher, W. M., Rowles, Adams, Arapahoe, El Paso, Douglas, Elbert, and Jeter-
11 Counties.
12 Note.— Differences between districts in the foregoing minimum rates are not to be considered as fixing
13 permanent wage differentials, but establishing precedents for future wage studies.

Changed by Amendment No. 2



This situation, which had demoralized the industry and had broken down union organization from the Jacksonville scale period forward to 1933 (*) was finally subjected to regulation through the influence of Section 7(a) of the NIRA leading to the Appalachian wage agreement and the incorporation of collectively negotiated basic rates for the Northern and Southern coal fields. The wage differential question became one of the most important and controversial issues in the industry. (**)

The basic minimum day rate established in District A (Division I - North, except Northern West Virginia) for inside skilled labor was \$4.60 and for outside common labor \$3.60. District C (Division I - South or Southern Appalachian areas) had \$4.20 per day for inside skilled labor and \$3.20 for outside common labor. Northern West Virginia (District B) held a mid-position in the competitive relationship between the Northern and Southern Appalachian areas. Its inside skilled day rate was \$4.36 and its outside common day rate was \$3.36.

In Indiana (District D) the day rate for inside skilled labor was \$4.575 and for outside common labor \$4.20. The Illinois (District E) rates for inside skilled and outside common labor were \$5.00 and \$4.00 respectively. These basic rates in Indiana and Illinois, as has already been stated, were in unexpired contracts and were not disturbed by the Bituminous Coal Code. Western Kentucky (District F), which entered into direct competition with Indiana and Illinois, had a \$4.00 inside skilled rate and a \$3.00 outside common rate. It, therefore, enjoyed a favorable differential of \$1.00 against Illinois and 57½ cents for inside skilled and \$1.00 for outside common against Indiana.

The coal producing areas in the deeper South, east of the Mississippi River, had the lowest basic rates in the industry. The minimum day rate in Alabama, Georgia and Southern Tennessee (District J) for inside skilled labor was \$3.40 and for outside common labor \$2.40. These areas were not very significant in the total tonnage produced and their competition was localized. It should be noted also that most of these areas had always been non-union. In general, therefore, although the wage scale was low it did not tend to depress the wage level of the industry as a whole. The Northern Tennessee coal fields (District J-1) had somewhat higher minimum rates - \$3.84 for inside skilled and \$2.84 for outside common labor.

West of the Mississippi River, the lowest wage rates were found in the southwestern coal fields - Missouri, Kansas, Arkansas, and Oklahoma (District G) where the inside skilled rate was \$3.75 and that for outside common labor \$3.28. District F which included all of Iowa was divided so that Wayne and Annesoke counties represented a separate

(*) See Chapter IV, section on Collective Bargaining - Wage Negotiations and Industrial Disputes.

(**) For a discussion of the wage differential problems and controversy, see Chapter IV, Section C.

section. This division was based upon a recognition of a difference in mining conditions and also on the fact that Wayne and Appanoose Counties had enjoyed a differential over the remainder of Iowa since 1928. The inside skilled rate for Iowa (exclusive of Wayne and Appanoose Counties) was \$4.72 as against \$4.56 for Wayne and Appanoose Counties, while the outside common rate was \$4.00 against \$3.86. The Dakotas were set up as a separate district (G) with a rate of \$4.00 for inside skilled and 3.00 for outside common.

As a result of the NIRA and the adoption of the Code, New Mexico, Colorado, (except Rocky Mountain Fuel Co. which began operating under union contract in 1930) Utah, and large parts of Wyoming, Montana and Washington came under union contracts. The lowest wage rates in these Rocky Mountain and far western States group existed in New Mexico and Southern Colorado (District K) where inside skilled labor received \$1.48 and \$4.44 per day respectively, while outside common labor in both areas received \$3.75. District L (Northern Colorado) under the influence of the leadership of the Rocky Mountain Fuel Co. paid \$5.00 for inside skilled labor and \$3.75 for outside common labor. Utah, Wyoming and Washington paid inside skilled rates of \$5.44, \$5.42 and \$5.40 respectively. The highest basic rates in the industry were paid in Montana where inside skilled labor received \$5.63 per day and outside common labor received \$4.82 per day.

The wage rates and hours of work which became effective with the adoption of the Code on October 2, 1933 continued in effect until March 31, 1934. However, the Southern Indiana Coal Operators' Association in a temporary agreement made with the United Mine Workers of District 11 (Indiana) protested against the basic rates established for Warrick and Vanderburgh Counties and made provision that the entire contract be reviewed by the Bituminous Coal Labor Board of Division II. (*) The protest stated that operators in these counties sold the bulk of their tonnage in local markets and that they were unable to withstand the competition of the low cost striping operations to the north plus an unfavorable freight differential against Northern Indiana and Eastern Kentucky. The Divisional Coal Labor Board held a hearing on the matter on December 7, 1933 and on December 11, 1933 found that the wage differential requested for Warrick and Vanderburgh Counties, Indiana, namely, a rate of \$4.10 for inside skilled labor and \$3.60 for outside common labor, be granted. This recommendation to the NIRA resulted in the issuance of an Administrative Order by General Johnson on December 22, 1933 establishing the recommended minimum rates which should be effective subject to the concurrence of employers and employees on January 5, 1934 as provided by the Code. The modification or exemption of Code rates for Warrick and Vanderburgh Counties represented the only change made prior to March 31, 1934.

In general, the Coal Labor Boards took the position that any ap-

(*) The full details of the wage differential problem for Warrick and Vanderburgh Counties, Indiana are treated in Section C.

plications for exceptions in wage rates either in individual mines or local areas where adverse mining or marketing conditions made payment of Code rates difficult or impossible, could not be granted. (*) The procedure for amending the Code and this for changes in wage schedules was such that modifications could be made only on recommendation of the Administrator and approval of the President, or by direct Executive Order of the President. As has already been pointed out, however, the Code did provide in paragraph (g) of Article V an opportunity for the industry (operators and mine workers) to suggest revisions in a conference on January 5, 1934.

The wage conference under the auspices of the N.R.A. did not meet on the scheduled date, but was postponed five times so that it finally went into session on March 26, 1934. Meantime, a number of important events, presaging the trend of opinions regarding wages and hours in the industry, were taking place.

The United Mine Workers at their convention, January 23 - 31, 1934 expressed their views regarding the national recovery program and particularly the Bituminous Coal Code. The scale committee in an adopted resolution stated that the shorter work week represented the only constructive approach to stabilization and more widespread employment. It also stated that national prosperity as well as prosperity in the bituminous coal industry "can come only through the medium of higher wage levels, which, of course, means increased purchasing power and a consequent increase in employment generally". The resolution stated that the enactment of the N.R.A. and the adoption of the bituminous Code created new relationships and responsibilities for miners, operators and the Federal Government. It held that a failure of the joint conferences with Appalachian producers to agree on wages, hours or working conditions would mean that the N.R.A. would have to solve the difficulties. The miners reaffirmed their demands for a 36-hour week and instructed the scale committee to make a formal demand for increased wages at the next joint wage conference. It is interesting to note in passing that a proposed resolution calling for government ownership of public utilities and basic industries was replaced by a resolution praising the N.R.A. and the benefits arising from the Bituminous Code.

Negotiations for a new Appalachian wage agreement began in Washington on February 21, 1934 after several preliminary conferences. Operators in Subdivision No. 1 (Smokeless Coal fields) were not represented because they wished to negotiate separately. Central and Western Pennsylvania operators then protested against a continuation of the conference on the basis that a proper correlation with the Smokeless areas was necessary. President Lewis then suggested that the Smokeless negotiations be conducted concurrently and as a result the Appalachian conference continued. The mine workers presented their demand for a 6-hour day, increased wages and adjustment of inequitable differentials. The operators countered with opposition to a change in wage levels but expressed willingness to adjust differentials. The next move was the appointment of a negotiating committee made up of eighteen operators and eighteen miners and the adjournment of the conference subject to call. The Smokeless joint conference began March 1, 1934 with the appointment of a committee comprising ten operators and ten miners.

(*) Hogen, T. S., History of the Activities of Coal Labor Boards Under N.R.A., 1935, p. 35.

Thus, such in the case where the Code wage rates and hours were being formulated, the 1934 N.M.A. wage conference (scheduled for January 5) began on March 23 so that the action of the Appalachian wage negotiations created tremendous pressure. While the delay in holding the conference was attributed to the fact that the Research and Planning Division of N.M.A. had not yet completed its statistical presentation of the earnings and employment data reported by the industry on Form C, perhaps equally important was the desire of the operators and miners to reach some agreement among themselves. When the statistical data on employment and earnings became available, considerable controversy arose regarding their accuracy, especially from those areas whose showing was poor. (*) As a result of that the statistical data were not used as a basis for revision of code hours and wages.

The N.M.A. wage conference began with a number of interesting statements indicating the conflict of interests which existed. The representative of the Northern West Virginia Panhandle operators favored a 50-hour week and stated that experience under the 8-hour day through better management and improved transportation made possible a greater output than with 13 to 14 hours of work under the "clean-up" system. (**) He advocated effective coordination of intra-divisional code prices, the Bureau of Mines to fix monthly allocations of tonnage and hours of work and suggested that prices be effective for the same period as wages, subject to appeal and review. Western Kentucky operators were opposed to a shortening of the work day and work week and demanded a widening in the wage differential as against competing fields. (***) The producers in states west of the Mississippi River generally favored maintenance of the existing Code hours, but demanded special provisions allowing extra working time during periods of peak demand. (****)

The second session of the wage conference was devoted primarily to presenting the views of the mine workers. The United Mine Worker representative for Districts 31, 32, and 34 (Southwestern Interstate Field) pointed out that the Deputy Administrator had ruled that existence of a valid contract was a bar to revision or modification of Code wages even when such change was needed. (*****) He stated that a Southwest had formerly operated on the same wage scale as Illinois, Indiana and Iowa, but that an emergency 3 years before the Code necessitated acceptance of a lower wage schedule, but the Kansas miners who had a 4 year contract on a \$5.00 base had voluntarily accepted a \$1.25 reduction at the time the Code was adopted. He proposed that the minimum rate be increased from \$3.75 to \$4.60 for Arkansas, Oklahoma, Texas, Missouri and Kansas.

(*) See the following material in this Chapter on Employment and Earnings under the Code.

(**) Taylor, William, N.M.A. Conference on Shortening Hours and Increasing Wages, March 23, 1934, Vol. I, p. 7 et seq.

(***) Von Herten, J., Ibid, *supra*, p. 15.

(****) McAuliffe, Eugene (Rocky Mountain - Pacific Coal Association) Ibid, *supra*, p. 26 et seq; Houch, Stanley B. (North Dakota - South Dakota) p. 64 et seq; Clark, Albin M. (Division IV) p. 196 et seq.

(*****) Fowler, David, Ibid, *supra*, Vol. II, p. 204 et seq.

The Iowa mine workers also favored a uniform rate, stating that the wage difference in competing areas had caused some unemployment in Iowa, that had existed prior to the Code. (*) A similar proposal was made by the miners in District 15 (Colorado and New Mexico). The Western Kentucky miners (U.M.W.) protested against low wages and requested a \$4.60 base. The miners in Indiana favored the proposal, but asked that Warrick and Vanderburgh Counties be referred to the \$4.575 rate as originally specified in the Code. The representative of the Michigan miners pointed out that the Code rates were lower than those of the contract which had expired April 1, 1935. The Michigan miners looked to a revision of their rates to the pre-Code level.

In general, the operators opposed any wage revision upward and in a few cases as the sand-lodging mines in Saline County, Illinois, requested reductions. Operators in this section in Tennessee favored a reduction of day rates and an increase in mining and loading rates. The Northern Colorado operators, while protesting against working time reductions, pointed out that 90 per cent of their tonnage paid \$4.25 (Code base was \$5.00) and urged that Southern Colorado rates be increased to the \$5.00 level. (**) In Alabama a strike had been settled by a wage contract signed March 16, 1934 which was effective until April 1, 1935 subject to N.R.A. regulations and the Alabama operators held that they had already made the wage revisions which the conference generally was considering.

In reality, the wage conference was a long time. Delays and postponements were frequent. Operators were growing restive and demanded that the N.R.A. make known the wage and hours proposals for the industry. Meantime, the Appalachian wage conference was continuing under great pressure in an effort to arrive at an agreement between operators and miners. Such an agreement was made at 3 A.M. on March 30, 1934.

The first speaker in the March 30th session of the N.R.A. wage conference announced that the Appalachian agreement had been signed, making substantial changes as to maximum hours and wages. (***) He stated that the Joint Conference of Miners and Operators had adopted a resolution which proposed to amend Articles III and IV of the Bituminous Coll. Code.

The resolution proposing the amendments was approved not only by the operators and the districts of the United Mine Workers of America represented in the Appalachian agreement, but also by all the United Mine Worker districts in the country. The proposed amendments to the Code were certified to by Eastern Subdivision, Western Pennsylvania and Ohio Code Authorities.

It was proposed that Article III - Maximum Hours of Labor - should be amended to read as follows:

(*) Wilson, Frank, *Ibid*, *supra*, Vol. II, p. 311 et seq.

(**) Poole, Josephine, *Ibid*, *supra*, Vol. II, p. 260.

(***) O'Neill, Charles, *Ibid*, *supra*, Vol. III, p. 293 et seq.

"No employe, except members of the executive, supervisory, technical and confidential personnel, shall be employed in excess of seven hours per day and five days per week, subject to the exceptions hereinafter stated.

"Seven hours of labor shall constitute a day's work and this means sevenhours work at the usual working places for all classes of labor, exclusive of the lunch period, whether they be paid on the day or the tonnage or other piece work basis; except in cases of accident which temporarily necessitate longer hours for those required on account thereof, and also excepting that number of workers in each mine whose daily work includes the handling of men-trips and those required to remain on duty while men are entering and leaving the mine.

"The following classes of mine workers are exempted from the provisions as to the maximum hours of work:

(a) All workers engaged in the transportation of coal shall work the additional time necessary to handle men-trips, and/or haulage animals, and all coal in transit, and shall be paid the regular hourly rates. Outside workers engaged in the dumping, handling and preparation of coal, and in the manufacture of coke, shall work the additional time necessary, not to exceed thirty minutes, to dump and prepare the coal delivered to the tipples each day and to complete the usual duties incidental to the operation of coke ovens, and shall be paid the regular hourly rates. This rule shall not encourage the working of such overtime except where it is necessary to take care of the conditions named.

(b) Employees engaged at power houses, substations and pumps operating continuously for 24 hours daily are especially exempted from the seven-hour provision. Special exemption of employees other than those named above may be provided, by joint agreements negotiated in accordance with this code, which shall not provide for work in excess of 8 hours per day and 40 hours per week."

The other proposed amendment pertained to Article IV - Minimum Rates of Pay - and stated that from April 1, 1934 to April 1, 1935 the basic minimum rate for inside skilled labor and the basic minimum rate for outside common labor shall be the rates set forth in Schedule A (see Column 2, Table XI), with the understanding that other classifications of employment will maintain their customary differentials above or below said basic minimum rates. It proposed in order to secure parity between minimum day rates and minimum tonnage rates that on the basis of a 2,000 pound ton, pick mining be increased 10 cents; cutting, 1 cent; and all yardage and deadwork be increased 9 per cent. However, the minimum tonnage rates in Districts D, G, H, J and J-1 should be further increased in order to obtain a parity with day rates which Schedule A prescribed. The proposed schedule of minimum rates provided for a \$5.00 inside skilled rate and a \$4.00 outside common rate for District A. The Northern West Virginia (District B) wage differential was eliminated and the same wage rates were given to District B as to District A. The inside skilled rate for District C was \$4.60 and for outside common labor, \$3.60. The basic minimum rates in Division II (Districts D, E and F - Indiana, Illinois and Iowa) remained undisturbed. Inside skilled basic rate of

\$4.60 was to be applied to all fields south of the Ohio River and east of the Mississippi River, placing them on par with District C (Division I - South). The outside common labor rates for these fields were likewise to be the same as in Division I - South (3.60), except that the Western Kentucky rate would be \$3.75. In a general sense all the northern coal fields east of the Mississippi paid \$5.00 and \$4.00 (Indiana \$4.57¹ and \$4.20) while the southern fields paid, in the main, \$4.60 and \$4.00. The proposed amendment, therefore, sought to establish uniform rates over extensive areas and for a large portion of the southern fields it proposed to lessen the wage advantage over northern fields.

West of the Mississippi River, the basic minimum rates were also to be changed so as to bring about greater uniformity in wage rates. Thus in the southwestern coal fields (District G) the inside skilled rate was to be \$4.60 and for outside common labor, \$4.00. The minimum rates in Districts K and L were to be increased, but the increase in the former district was to be much larger so that the wage difference between the two districts was greatly lessened. District K was to pay \$5.10 and \$4.10 8/10, while District L was to pay \$5.25 and \$4.25. The wage rates in North and South Dakota were to be changed to \$4.50 and \$3.70.

The foregoing hours and wage amendment proposals have been treated in some detail, because they became the bases of considerable dispute in the industry. When the proposals were brought before the N.P.A. wage and hours conference, they were received with much objection. Mr. Blackwell Smith, the presiding N.R.A. official, at this session of the conference stated that "if there be voiced no objection, we will be forced to assume that everyone here has no objection to any amendment suggested." Almost all the operator representatives in the industry, outside of the Appalachian wage negotiating unit, voiced an opinion to the effect that no opportunity had been given to consider the amendment proposals and while they did not wish to render an objection they reserved all rights to withhold their approval until proper consideration to the proposals had been given. Especially vigorous were the protests made by Northern West Virginia, Alabama, Western Kentucky, Tennessee, and the Southwestern coal areas.

In reply to Northern West Virginia's protest, an operator representative from Western Pennsylvania explained that the Appalachian wage conference had agreed to eliminate the Northern West Virginia wage differential on the grounds that no difference in cost of living existed and that f.o.b. mine costs were already low in Northern West Virginia. (*) However, when this representative was asked to explain how the minimum rates for Western Kentucky had been determined, he was at a loss for an answer.

Some of the operators wished to have the conference adjourned for a week so that some time and study could be devoted to the proposed changes. The attitude of the M.R.A. was expressed in the following language: (**)

"April 1st is at hand and while we will not rush the Administrator into any action that is unduly precipitous, there will be the necessity of some pronouncement from the Administrator before the end of the day tomorrow (March 31), as I see the situation, and the nature of that announcement, as to what the operators and miners may expect so far as the Code is concerned will, in the nature of things depend upon what we, in conference, decide privately, and the Administrator after you have all had your say.

"The Administration has no thought of putting out this proposed amendment, as it is read today, as the Administration's proposal at this time. We are going to confer, in the light of what has been said today, and in the light of what may be said tomorrow morning if my proposal is carried out, (to continue the conference) as I think it may be, and tomorrow, before the end of the day, I think an announcement can be expected."

Mr. John L. Lewis then stated that the proposals were the result of five weeks' effort on the part of Appalachian operators and mine workers and that they were the most constructive ever negotiated in the coal industry. He held that the 7-hour work day and 35-hour week with the increased wage base would make an important contribution to increased purchasing power. He pointed out, significantly, that Code wages expire March 31, 1934 and that some 325,000 or 350,000 mine workers in the Appalachian area would find themselves without a wage agreement on April 1st. Mr. Lewis stated that the Indiana and Illinois wage bases were on a parity as was Iowa and so these were not disturbed. Alabama had received preferential treatment, he said, which was unjustified economically and that its rates were being adjusted to those of other southern fields. He stated that Western Kentucky minimum rates were out of alignment with those of Eastern Kentucky, Illinois, or Missouri and therefore the proposed rates made for a more proper competitive relationship. A similar situation applied with reference to Kansas, Arkansas and Oklahoma in maintaining parity with Missouri. President Lewis con-

(*) Morrow, J.D.A., M.R.A. Wage and Hours Conference, Ibid, supra, Vol. III, pp.349 - 356.

(**) Smith, Blackwell, ibid, supra, Vol. III, p. 357.

cluded his statement by saying that the United Mine Workers joined with the Appalachian operators in favoring the proposed changes.

The N.R.A. conference continued the following day (March 31, 1934) and was concluded without any change or clarification of the situation which had developed. Alabama and Western Kentucky bitterly opposed the amendment as a hasty and ill conceived measure. The Smokeless operators also protested on the score that the proposed amendment made a distinct departure from the Code in attempting to fix minimum rates for tonnage men. The N.R.A. decided to have a hearing on April 9, at which time the issues were to be further discussed.

A few hours after the conclusion of the wage and hours conference (March 31, 1934), the N.R.A. issued an executive order declaring the existence of a serious emergency in the industry and adopting the wage and hour proposals as effective Code Amendments pending the public hearing of April 9.

During the first week in April, Illinois and Indiana operators accepted the 7-hour day, although their contracts, which preceded the enactment of N.I.R.A. and were still effective, specified an 8-hour day. The Sahara and Wasson Coal Companies, Saline Count, Illinois, held out for a 50 cent differential and were confronted by a strike. Only a few Western Kentucky mines continued to operate. Northern West Virginia was almost completely shut down. "Holiday" suspensions occurred in some districts signatory to the new Appalachian agreement, while Logan County, West Virginia, was among the coal producing areas most affected by stoppages. Discontent and uncertainty were apparent in many portions of the industry.

The public hearing held by the N.R.A. April 9-11, 1934, was highly controversial and acrimonious indicating very real differences of opinion in the industry. The wage changes came up for greater discussion than did the reduction in hours so that in the main the central problem was that of wage differentials between competing districts. Alabama operators were especially vehement in their protests, claiming that 98 per cent of the State's commercial tonnage opposed the amendments. (*) They claimed that the Executive Order of March 31, 1934 was invalid, arbitrary, adopted without hearing and in violation of the Code. These operators pointed out that Article IV of the Code permitted a Code Authority to recommend an amendment but that other Code Authorities had a right to an orderly hearing. So strong was the Alabama opposition that on April 6, 1934 the operators secured an order from the Federal District Court restraining the N.R.A. from enforcing the Code Changes. The Alabama operators requested that a status quo be maintained until the wage and hour proposals had been submitted to the National Bituminous Coal Industrial Board as provided in Article VII, Section 4 of the Code.(**) Their representative went on to say that:

(*) Johnston, Forney, N.I.R.A. Hearing on Bituminous Coal Industry Modification Proposal, April 9-11, 1934, Vol. I, p. 15 et seq.

(**) Ibid, supra, Vol. III, (Night Session) p.786 et seq.

"I make the assertion here that the Administrator in approving the so-called amendments on March 31st, not only did not act after recommendation of the Industrial Board but acted without knowledge of or response to the data assembled under Article V (g) and in both respects acted in violation of the Code."

In the concluding statements the Alabama operators said:

"So far as we are concerned we have definitely and finally determined that we will not conform to any further one-man determination of policy and dictation in repudiation of essential basis and covenant of the Code."

Southern Tennessee and Georgia operators who were a part of the same divisional area (Division III - Alabama, Georgia and Southern Tennessee) were joined by manufacturers' associations in that region in similarly protesting the wage changes. The Southern Appalachian operators, on the other hand, stated that they had previously withdrawn from the wage conference because Alabama and Southern Tennessee had continued to have a wage advantage and not until the March 31 Executive Order had placed them on an equitable basis had they signed the United Mine Worker contract.(*). These operators, therefore, favored keeping the Executive Order intact. The Hazard, Kentucky, field made a similar claim for parity with Division III wage rates.

Smokeless Subdivisional Code Authority (Subdivision No. 1 of Division I) stated that the Executive Order was illegal because it did not conform with the Code when it specified tonnage rates(**). Their representative pointed out that the Code originally only specified basis minimum day rates for inside skilled and outside common labor and that to establish tonnage rates would result in inequities because of differences in the amount loaded per man in various areas. He suggested that a parity in the earnings of day men and tonnage men should be the objective and stated that the N.R.A. statistical studies (Form C - Earnings data) showed that earnings in the Smokeless District were higher than in the North.

Another vigorous protest to the Code amendments was made by the Northern West Virginia operators who held that the Pennsylvania and Ohio operators had arbitrarily and without sufficient advance notice eliminated the wage differential, resulting in a complete mine shut-down and unemployment for 18,000 men. They stated that they had withdrawn from the Appalachian wage conference when they discovered that they were not being given any consideration. These operators pointed to the fact that

(*) Gunter, L. C., *ibid*, *supra*, Vol. I, p. 151 et seq.

(**) Richards, W. A., *ibid*, *supra*, Vol. I, p. 232 et seq.

a North - South Commission to study wage differentials was proposed but that Northern West Virginia was not to be subject d to its inquiry. (*) They requested a retention of their former differential status subject to submittal of the question to an impartial commission. Representatives from Central Pennsylvania, Western Pennsylvania and Ohio (the three Code Authorities which recommended the amendments) replied to Northern West Virginia's contentions by stating that sufficient data were already at hand indicating favorable natural conditions and low production costs in Northern West Virginia which made a differential unjustifiable.

Western Kentucky indicated a willingness to accept the 7-hour day but demanded a \$4.00 base rate in lieu of the \$4.60 rate specified in the amendment.

West of the Mississippi River there were three major areas of discontent - Southwestern Fields, Iowa and the Dakotas. The Southwestern operators pointed out that their area produced 62 per cent of the total natural gas in the country and that it consumed 57 per cent of the nation's total consumption. (**) In addition, this area was subjected to intense oil competition. These operators contended that Illinois was their largest competitor and that increased mechanization and strip mining in that State had so reduced production costs as to make impossible the wage scale specified in the amendments for the Southwest. They predicted a cessation of operation and unemployment for 16,000 miners. Iowa operators also stated that they could not pay the same wage base as Illinois and Indiana and that the restriction of working time would lead to unemployment. The Dakotas continued their objections to a shortening of working hours and stated that miners' earnings had already fallen because of specified maximum hours of work.

The foregoing details of the controversy and opposition revolving about the wage changes made by the amendment to the Code indicate the discontent which prevailed in certain areas of the industry. In general these wage rate changes represented an increase of 40 cents per day for Division I, except Northern West Virginia (64 cents) and Western Kentucky (60 cents). The basic day rates for Division II remained the same (except outside common labor in Wayne and Appanoose Counties, Iowa). In Division III (Alabama, Georgia and Southern Tennessee), the change meant an increase of \$1.20 a day, while other Southern Tennessee areas (District J-1) had an increase of 75 cents. For Division IV (Missouri, Kansas, Arkansas and Oklahoma) the wage change meant an increase of 85 cents per day.

As a result of the protests which were registered in the April 9-11,

(*) For a complete treatment of this wage differential problem, see the following section.

(**) Shank, W. C., *ibid*, *supra*, Vol. II, p. 443 et seq.

1934 hearing, the N.R.A. issued an order which was approved as Amendment No. 2 on April 22, 1934, modifying Amendment No. 1 and making such modification retroactive to April 1. The new amendment reduced the day rates to \$3.80 and \$2.80 in Division III (District J) and to \$4.24 and \$3.24 in Southern Tennessee (District J-1) so that the same wage increase over the original Code rates - 40 cents - was applied to these areas as to all the southern producing fields (except Northern West Virginia and Western Kentucky). In the case of the southwestern fields (District C), however, the basic rates were reduced to \$4.35 and \$3.75 which represented increases over the original Code of 60 cents for inside skilled labor and 47 cents for outside common labor. Amendment No. 2 also specified in regard to tonnage and other piece work that increases in District B (Northern West Virginia) "shall be satisfied pending further order, by an increase per 2,000 pound ton for said District of two and one-half ($2\frac{1}{2}$) cents in loading rates and one-half ($\frac{1}{2}$) cent in cutting rate".

A continuation of objections and protests by the operators from the southwestern coal areas against the wage rates specified in Amendment No. 2 resulted in the issuance of another modifying order on June 4, 1934 (effective June 11, 1934) which became known as Amendment No. 3. This last modification set up separate basic rates for strip and deep mining operations in Division IV. The strip mines retained the same basic rates as established in Amendment No. 2, but rates for shaft, drift and slope mines were reduced 35 cents (\$4.00) for inside skilled labor and 22 cents (\$3.53) for outside common labor. No evidence was presented to indicate the basis upon which the wage differential between deep and strip mines was determined. It would seem that the ability to pay a certain wage in the face of existing competitive conditions rather than a study of labor costs was the determining factor in establishing the wage differential.

In issuing the modifying amendments, the N.R.A. banned destructive invasions of operators paying lower wages into markets of competitors having higher minimum rates. The ban stated that in view of the lower scales granted the districts in question and pending further study and order,

"there shall be no sales by operators in said districts into the normal consuming markets of another district which is subject to higher rates of pay, at any prices for coal of comparable grades and quality, less than the price for such coal in said market charged by such other district, and there shall be no destructive invasion of such other consuming markets and, in the absence of satisfactory agreements governing this matter, the determination of the Administrator on complaint of any such destructive invasion shall be conclusive."

The wage question was thus tied up to the problem of competitive prices and this prohibition gave rise to frequent conferences between affected groups regarding satisfactory price correlation, and where agreement could not be reached the matter devolved upon the N.R.A.

Pre-Code and Code Wage Rates

The Bituminous Coal Code established basic minimum rates which were substantially higher than those which had prevailed earlier in 1933 for all fields except where union contracts were in effect. Perhaps the most satisfactory wage rate data available (and indeed there are no other data except those reported for May, 1933 by a few subdivisions of the industry on the N.R.A. December C Form for the period prior to the Code) are those secured by the Bureau of Labor Statistics for February, 1933. In order, therefore, to compare the hourly wage rates during the Code period with those of earlier years, it is necessary to turn to the Bureau of Labor Statistics data. The data for this comparison are presented in Table XII. Since the Bureau of Labor Statistics does not make a very intensive survey for the areas west of the Mississippi River, the only bases for comparing pre-Code and Code wage rates are those few union contracts which were in effect. This latter comparison is made in Table XIII.

An analysis of the data set forth in Table XII discloses that the Bituminous Coal Code not only increased the wage rates above the 1933 level, but it also brought about a greater uniformity of wage rates by eliminating differentials which existed between competing areas. For example the Bureau of Labor Statistics found separate basic rates for the same occupation in Central and Western Pennsylvania, but the Code established one rate for the entire State. What is more, the Code applied the same rate for Ohio, Michigan and Panhandle, West Virginia and later (April 1, 1934) included Northern West Virginia. Again, in 1933 there were separate basic hourly rates in each of the fields making up the Smokeless and Appalachian area ranging from 33.5 cents to 39 cents for inside skilled labor, but the Code established a uniform rate for the entire region. Were 1933 data available for Georgia, Tennessee (Hamilton and Rhea) and Southern Tennessee, a similar change would be noted. In this regard, the N.R.A. was clearly in accord with the principles advocated by organized labor in the industry namely, that in so far as possible a status of competitive equality should be maintained, but wherever possible the same occupation should receive the same rate. With a few exceptions, which have already been noted, the N.R.A. attempted to establish a uniform basic wage rate for all areas north of the Ohio River and east of the Mississippi River and a slightly lower uniform rate for all southern producing fields. Where, however, union contract rates were in effect, as in Indiana and in Illinois, no change took place except when the working hours per day were reduced from 8 to 7, the hourly rate was proportionately increased.

Turning to the wage rate increases effected by the Code, it will be noted that the wage rates in effect from October 2, 1933 to March 31, 1934 were generally above those prevailing earlier in 1933, but were considerably lower than those of 1929. In a very general sense, it may be said that the Code established rates which were somewhat lower than the November, 1917 wage scale which prevailed in the union contracts

TABLE XII

COMPARISON OF BITUMINOUS COAL CODE HOURLY WAGE RATES WITH THOSE PREVAILING IN FEBRUARY, 1933 AND FIRST QUARTER, 1929 -States EAST OF THE MISSISSIPPI RIVER

	Bituminous Code				Vituminous Code				Bureau of Labor Bureau of Labor			
	Apr. 1, 1934		May 27, 1935		Oct. 2, 1933		Mar. 31, 1934		February 1933		1st quarter 1929	
	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor
Pennsylvania	\$.714	\$0.571	\$0.575	\$0.450	\$0.441	\$0.325	\$0.636	\$0.496				
Central					.455	.342	.689	.520				
Western					.433	.315	.684	.481				
Ohio	.714	.571	.575	.450	.392	.343	.626	.532				
Michigan	.714	.571	.575	.450								
Panhandle, W. Va.	.714	.571	.575	.450								
Northern W. Va.	.714	.571	.545	.420								
Smokeless & Appalachian:					1/ .350	1/ .283	1/ .586	1/ .482				
Southern W. Va.	.657	.514	.525	.400	.381	.307	.573	.449				
E. Kentucky	.657	.514	.525	.400	.390	.293	.577	.444				
Virginia	.657	.514	.525	.400	.338	.260	.437	.354				
E. Tennessee	.657	.514	.525	.400	2/ .305	2/ .255	2/ .440	2/ .337				
Upper Potomac W. Va.	.657	.514	.525	.400								
Maryland	.657	.514	.525	.400								
Indiana	.655	.600	.572	.525	.577	.523	.760	.694				
Illinois	.714	.571	.625	.500	.623	.494	.762	.700				
W. Kentucky	.657	.536	.500	.375	.343	.257	.525	.422				
Alabama	.542	.400	.425	.300	.303	.196	.459	.272				
Georgia	.542	.400	.425	.300								
Tennessee												
(Hamilton & Rhea)	.542	.400	.425	.300								
S. Tennessee	.604	.462	.480	.355								

1/ Includes Panhandle and Upper Potomac districts.

2/ Entire State.

of 1933. Selecting some of the more important producing areas, which were not under union contract in 1933, by way of illustrating the wage rate increases during the Code period, it will be noted, for example, that the inside mill hourly rate in Pennsylvania rose from 44.1 cents in 1933 to 57.9 cents during the original Code months - an increase of 13.4 cents or 30.4 per cent. During the amended Code months the hourly rate in Pennsylvania was further increased so that it was 71.4 cents or 61 per cent above the 1933 level. Inside skilled labor gained even more in Northern West Virginia, where the 1933 hourly rate of 35 cents was increased to 51.5 cents or 47.7 per cent during the original Code period. The Northern West Virginia inside skilled hourly rate was further increased after April 1, 1934 to 71.4 cents or 104 per cent above the 1933 level. This wage rate increase, arising out of the elimination of the differential, explains the opposition of Northern West Virginia to the amended Code.

In the southern producing fields similar wage rate increases may be noted. For example, the inside skilled rate in Southern West Virginia increased 37.3 per cent during the early Code period over the 1933 level and for the amended Code period, the increase amounted to 73.4 per cent. This inside skilled hourly rate in Northern Tennessee for the same periods increased 36.7 per cent and 96.1 per cent. The Alabama rates for the same occupation increased 40.2 per cent in the first Code period and even after the modifying amendments the increase amounted to 73.9 per cent over the 1933 rate.

The data presented in Table XIII indicate clearly the N.R.A. wage rate procedure with reference to those areas having union wage agreements. It will be noted that in every instance the basic hourly rates for both inside skilled labor and outside common labor specified in the union contracts were either unmolested or changed very slightly by the Code during the period of October 2, 1933 to March 31, 1934. During the months when the amendments were in effect (April 1, 1934 to May 31, 1935) the basic hourly rates were increased in all the western areas primarily because of the shortening of working hours in the day, but in the Southwestern States, New Mexico and Colorado, the day rates as well as the hourly rates were increased. In Wayne and Appanoose Counties, Iowa, only the day rate for outside common labor was increased by the amendment. For those areas where the day rate remained the same, the shortening of the work day meant an increase of approximately 14.3 per cent in the hourly rate. But in the Southwestern fields, even after the modifying amendment inside skilled labor in deep mines received an increase of 21.8 per cent and in the stripping operations the increase amounted to 32.5 per cent.

TABLE XIII
COMPARISON OF BITUMINOUS COAL CODE HOURLY WAGE RATES WITH UNION
CONTRACT RATES IN EFFECT IN 1933 AND 1929 IN STATES WEST OF THE
MISSISSIPPI RIVER

	Bituminous Code		Bituminous Code		Union Contract		Union Contract	
	April 1, 1934	May 27, 1935	Oct. 2, 1933	Mar. 31, 1934	Rate, 1933	Rate, 1929	Track-	Outside
	Inside	Outside	Inside	Outside	Track-	Outside	men	Common
	Skilled	Common	Skilled	Common	men	Common	men	Common
	Labor	Labor	Labor	Labor	Labor	Labor	Labor	Labor
Iowa (Tayne & Aronnoose)	\$0.651	\$0.571	\$0.5700	\$0.4525	---	---	(\$0.725	\$0.6475
Iowa (Percent Payne & Aronnoose)	.671	.571	.5775	.5000	\$0.587	\$0.500	(
Missouri	5/ .571	5/ .504	4.637	4.100	2/ 4.69	2/ 4.09	.625	.545
Kansas	5/ .571	5/ .504	4.637	4.100	2/ 4.69	2/ 4.09	.6375	.545
Arkansas	5/ .571	5/ .504	4.637	4.100	2/ 4.69	2/ 3.89	---	---
Oklahoma	5/ .571	5/ .504	4.637	4.100	2/ 4.69	2/ 3.89	---	---
New Mexico	.723	.550	5.000	4.637	---	---	---	---
Southern Colorado	.723	.585	5.550	4.687	---	---	(.375	.569
Northern Colorado	.750	.607	6.250	4.637	4/	4/	---	---
Utah	.177	.640	6.300	5.600	---	---	---	---
Southern Wyoming	.775	.635	6.775	5.550	.677	.540	.340	.736
Northern Wyoming	.775	.649	6.775	5.675	.677	.5675	.340	.7437
Montana	.805	.689	7.037	6.025	.725	.603	.825	.500
Washington	.771	.571	6.750	5.000	.675	.500	.344	.625
North Dakota	.643	.529	5.000	4.000	---	---	---	---
South Dakota	.643	.529	5.000	4.000	---	---	---	---

1/ Exclusive of Randolph, Tacon and Adair Counties. Contract of Southwestern Interstate Coal Operators' Association and Ray and Clay Counties Operators' Association.
 2/ Cherokee and Crawford Counties.
 3/ Contract of Arkansas-Oklahoma Coal Operators' Association.
 4/ Rocky Mountain Fuel Company's rate is \$0.6563 for trackmen and \$0.50 for outside labor.
 5/ These rates were for all shaft, drift or slope mines. The stripping rates were 62.1 cents and 53.6 cents - Amendment No. 3.

Late Code and Post Code Labor Developments: The increasing number of sales of coal at prices below the Code levels plus the growing general non-compliance and lack of enforcement of Code provisions during the latter months of 1934 gave rise to considerable dissatisfaction among the United Mine Workers. Organized labor viewed violations of Code prices and consequent lowering of mine realizations as a real threat against continued observance of contract and code wages. John L. Lewis sent a letter on December 17, 1934 to the Divisional Administrator, Wayne Ellis, pointing out that:

"Large groups of producers are most flagrant in their studied violations of the trade practices and price regulations of the Bituminous Coal Code ... An extra-ordinary volume of coal is being sold out of code prices through the medium of serious contracts and throughout the practice of mutilating dates and price provisions in valid contracts... In addition, large scale tonnage is being contracted for delivery subsequent to the date of legal expiration of the National Recovery Act at prices amazingly below code ..."

"You are aware that the approved minimum price structure of the bituminous coal industry is irrevocably correlated with the wage structure, as set forth in the collective bargaining agreements of the industry and approved as to their minimum rates and hours by the President..."

"It is incontestable that the deliberate wrecking of the approved price structure of the industry places the wage structure in jeopardy. The United Mine Workers of America do not propose to endure such jeopardy resulting from a breach of faith between the coal operators and the National Recovery Administration and which, in fact, amounts to a breach of contract with the United Mine Workers of America...."

"It is imperative that the National Recovery Administration act at once.... Among other things, the United Mine Workers of America suggest an immediate meeting of the National Bituminous Coal Industrial Board, the obligations of which are outlined in Section 4, Article VII, of the Bituminous Coal Code. This Board has had only one meeting during the life of the Code."

A meeting of the National Bituminous Coal Industrial Board began on January 3, 1935 to consider the serious situation which had developed in the prices and marketing of bituminous coal and to make recommendations looking toward an improvement of the conditions in the industry. Again at this meeting, Mr. Lewis, who was a presidential appointee to the Board, stated:

"... if through the inefficiency of the industry itself and its leadership, the price structure is to fall, then I may say to you that the United Mine Workers consider that it is an intrusion and a breach of the contract itself, and the interests I represent do not now or later (intend) to idly sit by and see that intrusion perpetrated, and see the wage structure breached, without serving notice as it now does, formally and on the record of this meeting, that it will take any necessary steps to

preserve the integrity of these wage contracts and to impress upon the leaders of the bituminous coal industry and the representatives of the National Recovery Administration the imperative necessity of making good the commitments of the industry and the government." (*)

Mr. Lewis stated that the mine workers' organization was willing to cooperate with the operators in every way to strengthen observance of code prices. He pointed out that in the past the operators had not been willing to concede labor representation in the councils of the industry. Mr. Lewis formally requested that the N.R.A. provide ways and means whereby a representative of the United Mine Workers might have a right to sit and vote on the Code Authorities. (**) The motion was subjected to a vote of the Board and was defeated 8 to 7. Mr. Lewis indicated that if the resolution were not adopted, he considered the crisis in the industry sufficiently important to take the matter to the National Industrial Recovery Board and to the President himself. Again at a meeting of the National Bituminous Coal Industrial Board on January 11, 1935, Mr. Lewis moved the adoption of an Amendment to the Bituminous Coal Code to read as follows:

"An Amendment to Article 7, Section 2, after the word 'membership' on line 12, as follows:

"All Code Authorities, divisional or subdivisonal, shall have as a member thereon a representative of the accredited and recognized organization of employees." (***)

This resolution was subjected to a vote and was adopted 10 to 4 (one member of the Board not present). Several operator representatives and presidential members had changed their opinions since the meeting of January 4, 1935.

The N.R.A. sent out on February 2, 1935, a formal notice of an opportunity to be heard on amending Article VII, Section 2, second sentence to provide labor representation on all divisional or subdivisonal Code Authorities. On March 14, 1935, the N.R.A. announced approval of the recommendation submitted by the National Bituminous Industrial Board for labor representatives on Code Authorities. This approval took the form of Amendment 7 to the Bituminous Coal Code, which read as follows:

"Delete the period of the second sentence of Sub-Section (a) of Section 2, Article VII, and substitute therefor a semi-colon, and add after such semi-colon the following:

Provided each Code Authority, Divisional or Subdi-

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- (*) Meeting of National Bituminous Coal Industrial Board, January 3, 1934, Vol. I, p. 116.
 - (**) Ibid, supra, January 4, 1935, Vol. II, pp. 379-388.
 - (***) Meeting of National Bituminous Coal Industrial Board, January 11, 1935, p. 34.

visional, shall have one member thereon who shall be selected from nominations submitted by the accredited and recognized organization of employees".

In this way organized labor in the bituminous coal industry secured the long sought objective of labor representation in groups of operator members. While the amendment represented a gain in the prestige of union organization among the mine workers, it had no real economic significance in the affairs of the industry. The amendment did, however, indicate the influence and power of the United Mine Workers in the bituminous coal industry. Early in January, 1935, of 775 approved basic and supplementary codes in operation, no more than 26 allowed for labor representation on the Code Authority. (*) The clothing codes represented the most important group (15 codes) giving such labor representation. The bituminous coal code through Amendment 7 made a great addition to the total number of employees in the United States having representation on Code Authorities.

The Appalachian Wage Agreement of April 1, 1934 provided for a joint conference of operators and mine workers to be held in Washington, D. C., February 18, 1935, "to consider what revisions, if any, shall be made in this Agreement as to hours, wages and conditions of employment, and to establish such differentials between districts as the Conference finds in the report of the Joint North-South Differential Commission". This conference began on the scheduled date despite rumors of postponement arising out of the fact that a Senate Sub-Committee was to begin hearings on February 19th on proposed coal legislation.

The United Mine Workers originally proposed that the operators agree to the following program:

1. Six-hour day and thirty-five hour week.
2. Increase of 15 cents per ton on combined cutting and loading rates.
3. Increase of 50 cents per day to all outside and inside day wage men.
4. Increase of 25 cents per day on all pick mining rates.
5. Increase of 20 per cent on all yardage and deadwork.
6. Time and one-half for overtime; double time for Sundays and holidays.
7. Elimination of inequitable differentials in and between districts.

The operators on February 20th rejected the mine workers' demands except that pertaining to wage differentials. They made a counter proposal to the effect that a wage agreement be signed to be effective from April 1, 1935 to March 31, 1936 and that no changes be made in wages except where inequitable differentials were eliminated or in hours of work per day and week except when changed by legislative action. This proposal

(*) Iron, Leverett S. et al., The National Recovery Administration, An Analysis and an Appraisal, The Brookings Institution, 1935, p.459.

was rejected by the miners. The operators expressed considerable anxiety as to what might happen to the Thirty-Hour Week Bill, the Guffey Coal Bill, and the President's Message on N.R.A. The existing situation resulted in the adoption of a resolution that the conference be adjourned until March 11, 1935.

When the joint conference reconvened, the operators reiterated their position. Differences of opinion developed among the operators as to whether Northern West Virginia was a part of the northern coal producing area. Operator representatives from Eastern Pennsylvania, Western Pennsylvania, Ohio and Panhandle claimed that Northern West Virginia had foregone its claim to inclusion with northern operators when it had refused to sign the Agreement of 1934. It was suggested that the conference be recessed until after a consultation with United Mine Worker officials. After this recess, Charles O'Neill of Eastern Pennsylvania offered the following resolution which was seconded by Phillip Murray of the United Mine Workers:

"It is moved that the joint scale committee be set up with equal voting power as between northern and southern districts outside of Northern West Virginia; that Northern West Virginia be given representation on the scale committee but with the understanding that on all votes Northern West Virginia shall be polled last; that in the event of a tie vote between the northern operators and southern operators, then Northern West Virginia shall not vote nor record any opinion on the issue then under consideration; provided that Northern West Virginia shall be entitled to vote and have its vote recorded and counted on all matters pertaining exclusively to the Northern West Virginia district whether a tie vote exists or not; provided, further, that this shall be adopted as a rule of this Convention but that nothing herein contained shall affect the unit rule already adopted by the Convention."

The resolution was adopted and the general conference was adjourned subject to the call of the Joint Wage Scale Committee. The Committee continued in constant session without arriving at an agreement.

As the expiration date (April 1st) of the Appalachian Agreement approached, it became increasingly important that some agreement be reached. Neither the Administration nor the Industry looked with favor upon a shut down of mining operations. Mr. Richberg, Chairman of the National Industrial Recovery Board, invited a sub-committee of the Joint Scale Committee of operators and miners to meet with him on March 28th for the purpose of discussing with him and the Board the problems of the wage conference. The Board extended its good offices to the conference in the hope of bringing about an amiable settlement of differences between operators and mine workers.

At the conference of the Joint Wage Scale Subcommittee and the National Industrial Recovery Board, Mr. Richberg proposed to issue an

order March 30th extending all wage provisions of the existing coal code until June 16th (expiration date of the N.I.R.A.) The proposed extension was also to apply to certain unfair trade practices which expired after April 1st. It was stated that the N.I.R.B. proposal was a suggestion and not an ultimatum and if operators and miners were willing the proper procedure would be for the operators to make such application to the N.R.A. Arrangements were made for the entire Board and the Joint Scale Committee to meet again.

On March 30, 1935, the operators and miners announced an agreement to extend the provisions of the existing wage contract until June 16, 1935. Representatives from all districts in the Appalachian Agreement signed the new agreement except Southern Appalachian and Harlan. Meantime, operators along with others sought to secure an extension of the N.I.R.A. for a two-year period. It was hoped that by the expiration date of the new wage agreement, the question of new legislation would be settled.

The National Industrial Recovery Board on March 30, 1935 issued an order which became effective as Amendment 8 to the Bituminous Coal Code. This Amendment stated:

"Add a new sentence to, immediately to follow the present provision of, and to become a part of, Article XI to read as follows:

"This Code and all the provisions thereof, despite any provisions to the contrary contained therein and especially, but without limitation to, those provisions of Articles IV, VI, and VII providing for a time limitation upon the effect of such provisions or any of them, which may provide that the effect of such provisions or any of them shall terminate prior to June 16, 1935, shall remain effective to and including June 16, 1935."

The Joint Scale Committee continued its efforts to secure a more permanent agreement without success. On April 9, 1935, the Southern Appalachian Coal Operators Association withdrew from the Joint Conference. Meantime, the Bituminous Coal Unit of the N.R.A. was ordered to engage in a rush program of securing cost of production data on Form A for the period April, 1934 through January, 1935. Efforts to secure Congressional action on the Guffey Coal Bill were going forward.

The Joint Wage Conference postponed its work from one date to another and finally met on May 20, 1935. During the course of ensuing meetings, the Conference seemed unable to reach an agreement. The news of the U. S. Supreme Court decision in the Schechter Case, declaring the N.I.R.A. unconstitutional, on May 27, 1935, resulted in the Joint Wage Conference adjourning sine die. At this last meeting, John L. Lewis offered the following resolution which was adopted:

"Resolved, That in the event no wage agreement has been negotiated before the date of expiration of the exist-

ing agreement, that the Joint Conference authorize the continuance of work by all necessary maintenance men, provided that such men shall be paid the present wage for their services in their respective classifications plus any increase or adjustment that may come in the working out of the base agreement, which shall be retro-active as effecting these men as of June 17, 1935. All details affecting the application of this arrangement shall be adjusted by representatives of the United Mine Workers of America in the respective districts."

Mr. Lewis refused to consider any suggestion that separate district agreements be made. Once again a nation-wide shut down of mining operations seemed imminent.

At the invitation of President Roosevelt, John L. Lewis (U.M.W.), D. C. Kennedy (operators), Senator Guffey, Representative Snyder and Major George Berry (N.R.A.) attended a conference at the White House on June 14, 1935. As a result of this conference, the existing wage agreement was extended to June 30, 1935. When this new extension was about to expire (June 29, 1935), the Secretary of Labor transmitted to the operator and mine worker representatives a request that the contract be again extended for 30 days (August 1st). This proposal was accepted by the Joint Wage Conference.

It was apparent that both mine workers and operators were looking toward the enactment of the so-called Guffey-Snyder Coal Bill. A Subcommittee of the House Ways and Means Committee held hearings on the Bill from June 17-28, 1935. A revised and redrafted Bill (H.R. 8479) was not reported back to the full Committee until July 30th. Meantime, President Roosevelt once more transmitted a request through the Secretary of Labor to the Joint Wage Conference that the contract be extended to September 16th. Again the Conference complied with the request. The House Ways and Means Committee on August 12, 1935 amended and approved the coal regulation bill (number changed to H.R. 9100). The bill was passed by the House on August 19th and after amendment was passed by the Senate on August 22nd. After a conference of House and Senate conferees, the bill was sent to the White House on August 23rd and finally signed by the President on August 30th.

The Joint Wage Conference met several times without success but on September 14, 1935 agreed to extend the wage contract to September 22nd after intervention of Assistant Secretary of Labor McGrady. At this meeting the United Mine Workers offered a new proposal:

1. Continuation of the 7-hour day and 35-hour week.
2. Increase of 50 cents per day on all day and monthly men.
3. Increase of 10 cents per ton on combined cutting and loading rates.
4. Increase of 10 cents per ton on pick mining rates.
5. Increase of 15 per cent on yardage and deadwork.
6. Same increase given to handloaders to be given to men employed on machine loading and other mechanical devices and on striping

operations; to be worked out in district conferences.

7. One-year contract, expiring September 16, 1936.

When the Wage Conference again met on September 21st, complete disagreement was reported. Assistant Secretary McGrady intervened and asked that the Conference reconvene. The operators came forward with a proposal which accepted the union demands on all points except that 6 cents per ton increase for tonnage men (rather than 10 cents) was offered, 10 per cent increase on yardage and deadwork (rather than 15 per cent), and a contract to run until April 1, 1937. The mine workers refused to accept the operators' proposal. Four days later, John L. Lewis stated that the miners would be willing to accept the operators' program except that the tonnage rate increase be 9 cents per ton. Meantime, however, the United Mine Workers went out on strike (contract expired September 22nd) and a nation-wide shut down followed. Only the Progressive Miners and a few non-union mines continued to operate.

The strike ended with the signing of a new Appalachian Wage Agreement on September 27, 1935. The wage contract granted an increase of 50 cents per day to all day and monthly men, 9 cents per ton on combined cutting and loading rates, 9 cents per ton on pick mining rates, an increase of 10 per cent on yardage and deadwork, seven-hour day, thirty-five hour week to apply and contract to run until April 1, 1937. Four districts did not sign the Appalachian Agreement - Southern Appalachian, Hazard, Virginia and Harlan. Southern Appalachian and Harlan districts were not present and Hazard and Virginia refused to sign pending action of these districts. Most of the coal producing areas, outside of the Appalachian Conference, accepted the wage increases in the new agreement and resumed work. Michigan, Alabama and Southern Appalachian areas, however, were not working even by October 13, and not until November 1 did the 9,000 eastern Tennessee and southeastern Kentucky miners return to work. Alabama did not reach an agreement until November 17, 1935. The Alabama contract is interesting in view of the fact that the wage increases granted were less than 50 per cent of those for the rest of the country. Day and monthly men received an increase of 20 cents per day, tonnage workers received a $4\frac{1}{2}$ cents per ton increase, and yardage and deadwork rates were increased 5 per cent.

Working Time and Labor Costs Under the Code: The Bituminous Coal Code in setting up standards of maximum hours of work and minimum rates of pay sought to effectuate the ultimate objectives of the N.I.R.A.--greater employment and increased purchasing power. The establishment of the 8-hour day for the entire industry did not represent a radical change. With the possible exception of certain of the southern producing areas where the Holcomb system was in effect and men worked 9, 10 or even more hours per day, the industry generally was already operating on the basis of an 8-hour day.

It is difficult to draw any definite conclusions as to the effects of Code hours on output per man per day or on labor costs and total costs of production. The Bureau of Mines reports only annual figures on the productivity per man per day. Thus the 1933 figures are made up of 9 pre-Code months and 3 months under the Code, while the 1934 figures contain 3 months of 8-hour day operation and 9 months of 7-hour operation.

These figures do not, therefore, accurately reflect changes in working hours. Similarly, no data regarding labor costs or total costs of production were available for the period immediately preceding the adoption of the Code. As to the effect on employment only rough approximations based upon the Bureau of Labor Statistics index or the Bureau of Mines' reports are possible.

Unfortunately, no accurate information can be secured which shows the average hours per week that employees worked in the various mining areas. Operating companies rarely keep accurate records of the actual hours worked, especially of tonnage men who comprise approximately two-thirds of the working force. The nearest approach to the working time afforded employees is the number of days (starts) mine tipples operated. By assuming that the tipple operated according to the standard hours of work per day an estimate of hours of tipple operation may be secured. It must be remembered that such data indicate the working hours of the mines rather than that of the men. (*) The lack of satisfactory working time data is regrettable because such data are essential to a proper evaluation of the factors entering into the controversy concerning reduction of hours in the work day and week.

The change from the 8-hour day to the 7-hour day in the bituminous coal industry was undoubtedly accompanied by numerous readjustments. The exact effects of the shortening of the work day are, however, unknown. A reduction in the number of working hours per day might supposedly be reflected in decreased output, but on the other hand, the operating company could add more employees to its payroll, install new mechanical devices such as loading or cutting machines, or improve its underground haulage ways and transportation facilities. Any one of these factors would tend to offset the decrease in working time. Again, output cannot serve as a satisfactory reflector of changes in working hours because of fluctuations in market demand. It is rather clear that miners working regularly and continuously supplying a steady market have better tonnage records than when the work is intermittent. Much, too, depended upon the managerial policy displayed by the operating company. Where a company failed to furnish work for all its men every day when consumer demand permitted because of poor mine lay-out, cutting insufficient number of rooms, and shortages in mine cars, a reduction in working hours per day would require better planning or else the operating company would fall by the wayside in the competitive struggle. Likewise, a company which was lax in its policy toward absenteeism on the part of its men could offset reduced hours by a more stringent and disciplinary program. In these instances, therefore, lower maximum working hours might not result in decreased output, but on the contrary could bring about greater efficiency.

Those companies, on the other hand, whose operations were already highly mechanized or whose program was well planned and efficient with nine lay-outs, etc. based upon an 8-hour day, undoubtedly faced greater hardships when the maximum hours per day were reduced. Since such companies were already making effective use of their men, equipment and resources, opportunities for further extensive improvements were lacking.

(*) For a discussion of working time in the industry see sections on "Seasonal and Cyclical Fluctuations in Employment" and "Movement for Shortening the Work Day and Week".

It is conceivable that under these circumstances a company faced with a shorter work-day might find its operating efficiency impaired, its output lowered and its labor costs disproportionately increased. If the company were readily well managed, however, these difficulties would be only temporary or while the readjustments were taking place. Once the mining operations were rearranged to fit into the shorter workday, the company would again appear relatively superior to its competitors.

It is safe to say that highly efficient operating conditions were not prevalent throughout the coal industry. Since room for improvement was extensive, insofar as the shorter workday served as a stimulus to greater efficiency, the industry benefitted from better coordination of man power, technical equipment and natural resources. It does not follow that the reduced work day operated to bring about a more intensive use of the factors of production throughout the entire industry. Nor can any definite answer be given as to whether the industry could stand a further reduction in working hours. Some well informed operators have taken the stand that the "slack" in the industry has been taken up and that a further reduction in working time would result in considerable distress, mine shutdowns and excessive increases in production costs. Organized labor, however, holds that a 6-hour day and 30-hour week would result in greater employment with no untoward effects upon the operators.

It is significant to note that in a large measure the inability to make any estimates or predictions regarding the effect of a further shortening of the work day grows out of the lack of necessary statistical data for costs, employment, working time and earnings. Thus, for example, a careful analysis of the contentions made by operators in some areas such as Iowa, North Dakota, and South Dakota cannot be made because supporting statistical data are lacking. These operators state that restriction of working time in their areas results in lowered employment and reduced earnings because they operate under highly seasonal conditions, producing low quality coals (lignite; friable and high moisture content) for a primarily domestic market and that the working force is made up of part-time miners who are really neighboring farmers. While neither the tonnage nor the number of men employed is large in these areas, the problem has given rise to considerable controversy.

Indicative of the variety of opinion existing among operators regarding the shortening of working hours are some of the following excerpts. The Chairman and operator representative of the Panhandle, West Virginia Subdivisional Code Authority made these significant remarks:

The primary purpose of the National Industrial Recovery Act, and which I think to some extent we in the industry have at least temporarily lost sight of, is to increase employment. Generally speaking this cannot be brought about in our industry in any other way than by shortening of the maximum working hours"

"Experience during the past seven or eight months has shown that reduction in daily working hours, and in some cases even weekly working hours, does not necessarily result in a corresponding reduction in tonnage produced, the percentage of reduction in productive capacity being a great deal

less than the percentage of reduction in working hours.

"In the case of mines operated by some of the companies I represent where prior to the NIRA we were operating on a clean-up system which kept some of our men working for 10, 12 and even as as much as 14 hours per day, we have found that on an 8-hour day not only do we not produce less tonnage per day with the same number of men but as a matter of fact, we are actually producing a greater tonnage in some mines. We have found since the adoption of the 8-hour day that it would not be necessary to work 10 or 12 hours per day only for the company's own delinquencies. We found that the trouble was with our underground transportation system and that after we speeded up this system our men in some of the mines are producing more coal in 8 hours than they previously did in the 10 and 12 and longer hour day." (*)

The speaker, in making the foregoing statements, proposed that the industry establish a basic 30 hour week.

An operator representative appearing on behalf of the Rocky Mountain - Pacific Coal Association viewed a further limitation of working hours in an entirely different light. (**) He contended that his area (Division V) required the maintenance of the 3-hour day and a restoration of the right to work a maximum of six days per week during the brief peak demand when orders for coal were available. In addition to the seasonal factor, this speaker pointed out the increasing competition from substitute fuels and energy and stated that this industry could not bear the burden of increased costs resulting from a reduction in working time. He held that mine labor would be the ultimate victim because of lowered earnings. This western representative pointed out that a reduction of one hour from the established work day of 8 hours represented a reduction of 12.5 per cent, while if the daily rate would be increased 14.3 per cent; and if the work day were reduced by two hours or 25 per cent, the hourly wage rate would be increased 33.3 per cent. Shortening the work day, according to this operator, would defeat the desired objectives of increased earnings and employment because it would make competition with other fuels more difficult; create extraordinary costs where thin seams and other difficult mining conditions required much labor; and it would concentrate production in mines requiring a minimum of labor such as stripping operations where labor could be displaced by machines or low cost mines where the seams were thick and flat.

When it is remembered that the mining operations in Division V were generally among the most highly mechanized and that the mine management policy was quite efficient, a change in the working hours schedule might result in considerable hardship. Moreover, the working force in the western states comprised a large percentage of men paid on a day basis, contrary to the industry generally, and a reduction in hours per

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- (*) Taylor, William, Bituminous Coal Industry Conference on Wages and Hours, March 26, 1934, Vol. 1, pp. 496
(**) McAuliffe, Eugene, *ibid.*, supra, pp. 26-62

day meant a rise in the hourly rate without necessarily any increased efficiency. (*) A change in the number of hours per day affects a time worker more than a pieceworker. Tonnage men do not work a specified number of hours, being more concerned with output which determines their pay, but day men benefit from a reduced work day without having any incentive to improve their output. A similar situation applies to machine men when paid on a time basis.

The Northern West Virginia Subdivision Code Authority published statistical data tending to indicate that the reduction in working hours per day from 8 to 7 effected a decrease of approximately 5 per cent in the out-put per man-day in contrast to the 12.5 per cent decline in . . . working time. (**) An analysis of the effect of the 7-hour day on productivity made by the Smokeless Code Authority arrived at approximately the same conclusions.

The Rocky Mountain-Pacific Coal Association completed a study in February, 1934, based upon questionnaires sent to operators, which attempted to calculate the cost increase resulting from the application of both a 7-hour and 6-hour day to the coal industry in Division V. (***) These calculations covered 79.7 per cent of the tonnage mined in 1932 (approximately 90 per cent of the 1933 tonnage). The results of this study are set forth in table XLV. According to the evidence presented in this table, the estimated cost of shortening the work day from 8 to 7 hours was 25.76 cents per ton or for the reported tonnage a total of \$3,671,530. If the work day and work week were reduced to six hours per day and thirty hours per week, the cost of production would be further increased 26.03 cents per ton or \$7,692,939 for the tonnage reported by the operators.

The proportion which labor costs contributed to the estimated increase in production costs resulting from the shortening of the work day may be noted in Table XV. According to estimates made, labor costs (exclusive of supervisory and clerical) would increase 15.51 cents per ton or \$2,401,255 when the working hours were reduced to seven per day. A further reduction to the 6-hour day would result in an increase of 34.98 cents per ton or \$5,405,037. Thus, according to these estimates labor

(*) The IRA Form C reports on employment and earnings for Nov. 1 - 16, 1933, showed that approximately 60 per cent of the men in Division V were paid on a time basis (Northern Wyoming and Montana employed a negligible number of tonnage men) while Bureau of Labor Statistics surveys have found that approximately 66 2/3 per cent of the men studied in the eastern areas were tonnage men.

(**) Northern West Virginia Subdivisional Code Authority, "Compilation of Statistical Data covering Period October 1, 1933 to March 31, 1934", p. 196; and Supplement No. 1 (May to October, 1934) p.87.

(***) Brief of Coal Operators Located in Division V of the Code of Fair Competition for the Bituminous Coal Industry, for Restoration of the Eight-Hour Day and the Privilege of Working Six Days Per Week When Work is Available, November 10, 1934.

TABLE XIV

Calculated Increases in Cost of Production Resulting from a Shortening of the Work-Day to Seven Hours and to Six Hours (*) (Accruing hourly and tonnage rates remain unchanged)

State	Questionnaires received	Tons mined, 1932	Tons reported on Questionnaires	Per Cent Tonnage 1932	Increased Cost of Seven-Hour Day		Increased Cost of Six-Hour Day	
					Per Ton	Amount	Per Ton	Amount
Colorado	41	5,598,721	4,492,477	80.3	.2904	\$1,304,536	.5994	\$2,093,475
Wyoming	14	4,170,963	3,027,828	96.6	.1905	766,765	.4133	1,665,388
New Mexico	7	1,263,386	1,194,329	94.5	.2767	350,480	.6020	719,093
Utah	12	2,552,127	2,447,581	85.8	.2395	586,335	.4810	1,177,771
Montana	9	2,125,225	1,901,974	89.5	.1905	286,320	.3220	512,511
Washington	8	1,591,426	1,247,249	78.1	.2979	370,398	.6239	777,513
North Dakota	4	1,739,653	1,400,043	81	.1893	26,496	.3530	19,441
South Dakota	0	49,074						
Total	95	19,390,580	15,450,681	79.7	\$.2376	\$ 7,671,530	\$.4979	\$ 17,602,959

(*) Brief of coal operators located in Division V, etc., op. cit. p.

TABLE XV

Calculated Increases in Costs of Day Labor and Tonnage Rates Resulting from a Shortening of the Work Day to Seven Hours and to Six Hours. (*)

(Assuming hourly and tonnage rates remain unchanged)

State	Increased Costs of Seven-Hour Day			Increased Costs of Six-Hour Day		
	Day Labor		Tonnage Rates	Day Labor		Tonnage Rates
	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount
Colorado	\$.0835	\$ 375,278	\$.0943	\$ 423,696	\$.1812	\$ 813,732
Wyoming	.1082	457,564	.0159	64,016	.2499	1,006,855
New Mexico	.0787	93,889	.1225	146,363	.1660	222,151
Utah	.1087	266,223	.0473	115,707	.2339	572,531
Montana	.0865	187,255	.0039	7,453	.2212	420,438
Washington	.1433	173,321	.0760	94,499	.5172	394,543
North Dakota	.0570	12,179	.0344	4,812	.1776	24,871
South Dakota	---	---	---	---	---	---
Total	\$.1000	\$1,544,709	\$.0554	\$ 856,564	\$.2256	\$3,455,031
					\$.1262	\$1,950,006

(*) McAukliffe, Eugene (on behalf of Rocky Mountain Pacific Coal Association), Bituminous Coal Industry Conference on Wages and Hours, March 26, 1934, Volume I, pp. 44 and 45.

costs (day labor and tonnage rates) represented 65.4 per cent of the increased cost of production resulting from a change to a 7-hour day and 70.3 per cent of the increased cost when work hours per day were reduced to 6. It is interesting to note also that the increased costs of day labor represented approximately 64 per cent of the increase for all labor costs (exclusive of supervisory and clerical) when the working hours were reduced. In this latter regard, it will be noted that Washington, Utah and Montana made the largest contributions to the increase in costs of day labor.

The Rocky Mountain-Pacific Coal Association study stated:

"The results submitted (discussed above) were most carefully audited and checked by those in charge of the compilation, and have been found, in the light of the increases sustained during the months April to September, 1934, to be over-conservative, such increases as have been reported, fully equal to or in excess of the figures shown in the compilation of February, 1934."

Unfortunately, Division V did not report cost of production data to the NRA for the period covering the 7-hour day so that the estimated labor costs arising from the shortened day set forth by the study cannot be verified.

The operators in Division 111 issued a report pointing out the situation which had developed in the bituminous coal mining industry in Alabama, Southern Tennessee and Georgia after the Code Amendments. (*) According to this report:

"The nine months experience from April 1, 1934 to December 31, 1934 has proven the impossibility of the survival of the industry under the 7-hour day and \$2.90-\$3.30 wage scale. The commercial producers of Alabama, realizing the imperative need to adjust their operations to meet the shorter hours, worked earnestly and to the full extent of their financial means to the end of reducing costs without disemployment of labor. Daily production dropped 12 per cent from 32,100 tons average for 70.8 8-hour days to 28,300 tons average for 131.7 7-hour days; average tons per man day dropped from 3.60 for the year 1932 to 3.26 for the year 1933, to 3.0 (estimated) for the 8-hour period 1933-1934, and to 2.7 (estimated) for the 7-hour period April - December 1934; costs increased from \$2.00 per ton to \$2.33 per ton; and realization increased from \$1.94 per ton to \$2.29 per ton - lacking four cents of meeting the cost of production." (**)

(*) Report of the Situation of the Bituminous Coal Industry of Division 111, March, 1935 - Alabama Mining Institute, Southern Tennessee Coal Producers Association, Tennessee-Georgia Coal Producers' Association.

(**) Ibid, supra, p. 4

The operators in this Division of the industry strongly opposed any further reduction of working hours per day. In referring to the six-hour day these operators stated that Alabama coal mine employees were recruited mainly from the farming section and until the advent of the NRA were accustomed to a 9-hour work day. The decrease of working time to 8 hours and later to 7 hours per day, it was claimed, had removed all inefficiencies leaving little opportunity for further improvement. The operators also pointed out that the shortened work day had subordinated safety to the need of doing in 7 hours what formerly had required 9 or 10 hours so that the 1934 fatality rate (5.12 per million tons) had increased 25 per cent over 1933 and 40 per cent over 1932. As further evidence of the effect of the speeding up process on safety, it was stated that whereas haulage fatalities were only 11 per cent of the total fatal accidents in 1932 and 32 per cent in 1933, in the year 1934 they represented 34 per cent of the total.

The only statistical approach to an analysis of the effect of the reduction in working hours from 8 to 7 per day upon the labor costs lies in the cost of production data (Form A) reported to the NRA from November, 1933 through January, 1935. (*) The reported information covered various costs incident to production and so necessarily treated labor costs, but the schedules were not drawn up for the particular purpose of securing detailed data relating to the labor costs. The total mine labor costs was made up of four cost groups - daymen, mine (piece and day workers), yardage and deadwork, and mine supervisory and clerical. The data submitted showed the total tons produced, number of days tipples started, and number of mines reporting. Amounts paid out to each of the labor cost groups and the cost per ton for each reported. While this information was valuable and more satisfactory than any previously available data, it lacked certain details essential to a proper evaluation of labor costs. Originally the NRA had set up a statistical program which provided for the reporting of employment and earnings data (Form C) and which operated for three pay periods (two weeks) from November 16, 1933 to December 15, 1933. A variety of factors contributed to the discontinuance of this portion of the statistical reporting. (**)

As a result only the Form A data are available for any considerable length of time extending over the 8-hour and 7-hour periods. Unfortunately these data do not indicate the number of employees engaged in each occupation, the actual working time of each employee for specific occupations, individual earnings per start and pay period for various occupational groups, and the degree of mechanization. It is, therefore, difficult to accurately evaluate the extent to which the shortening of the

(*) Chapter V treats these cost data in considerable detail for various sections of the industry. The statistical procedure of compilation, editing, etc., are discussed elsewhere.

(**) The data reported relating to employment and earnings and the controversy centering around this program are discussed elsewhere in this study.

work day resulted in the expressed objectives of increased employment and earnings. However, insofar as labor costs per ton were increased during the period of reduced working time per day, it is reasonable to assume that a large proportion of the increased costs went to mine workers. It does not follow that the increased costs arose only out of the shortened work day, since in many portions of the industry basic day rates and tonnage rates were also increased. In those areas where basic wage rates were increased, it is impossible to determine what portion of the increased labor costs should be allocated to reduce working hours and what portion may be attributed to increased rates.

Any comparisons of labor costs per ton that are made between areas or for different periods should properly give consideration to the average number of days mines operated in the respective areas or periods. It should be kept in mind that as the number of working days per month increases, labor costs per ton are progressively decreased. But as has already been pointed out the number of mine starts or days operation per month is only an approximation of the exact working time and does not indicate the actual time (hours) worked. Since output is largely reflective of working time, the tonnage produced for a given area or period of time is equally significant in the effect upon labor costs per ton.

It has been thought desirable in comparing the labor costs per ton under the 8-hour work day and under the 7-hour work day to use comparable months of the year when seasonal demand would have similar effects. Such a comparison is set forth in Table XVI. Total mine labor costs (including supervisory and clerical) per ton are compared for the months of November and December, 1933 and January, 1934 (8-hour working day) and November and December, 1934 and January, 1935 (7-hour working day) in specified divisions and subdivisions of this industry. Unfortunately, no cost data were reported for Western Kentucky in Division 1 and for Iowa in Division 11 during the latter months of the statistical program. Similarly Divisions IV and V early in 1934 made only scattered cost reports to the NRA and by June had ceased reporting altogether. Table XVI, therefore, compares labor costs under the 8-hour and 7-hour days for the areas east of the Mississippi River (except Western Kentucky). Since these areas produce approximately 92 per cent of the national tonnage, a comparison of their labor costs may be taken as indicative of the industry. In considering the percentage increase in labor costs per ton during the 7-hour pay period attention should be given to the change in the reported tonnage.

The weighted average labor cost per ton for Division 1 (exclusive of Western Kentucky) during the months of the 8-hour day period used in Table XVI amounted to 94.25 cents, but during the months of the 7-hour day period this cost increased to \$1.1578 per ton - an increase of 22.84 per cent. Since the reported tonnage declined 5.5 per cent, it may be said that a small portion of the increased cost should be attributed to that factor, but undoubtedly the significant items contributing to this increased labor cost per ton were the shortened work day and the increased basic wage rates.

TABLE XV

Comparison of Mine Labor Costs per Ton During 8-Hour Day Period (November and December, 1933 and January 1934) and 7-Hour Day Period (November and December, 1934 and January 1935) in Specified Areas of the Bituminous Coal Industry.

Area	Per Cent Change in Reported Tonnage	Labor Costs Per Ton		Per Cent Change in Labor Cost
		Nov. & Dec. 1933 and Jan., 1934	Nov. & Dec., 1934 and Jan., 1935	
Division I				
Eastern Subdivision	-2.0	\$ 1.0518	\$ 1.2889	22.54
Maryland	-14.3	1.1518	1.3072	15.50
Upper Potomac	+10.9	1.1340	1.3293	17.22
Western Pennsylvania	-8.0	.9933	1.1855	19.35
Northern W. Virginia	-13.2	.7761	.9908	27.66
Ohio	+9.5	.9605	1.1521	19.95
Michigan	-10.0	1.5770	1.8335	16.27
Panhandle, W. Virginia	-1.2	.9747	1.1476	17.74
Southern No. 1. <u>1/</u>	+5.2	.9493	1.1562	21.80
Southern No. 2 <u>1/</u>	-10.4	.8826	1.0968	24.27
Total Division I <u>2/</u>	-5.5	.9425	1.1578	22.84
Division II				
Indiana deep	-3.2	.7672	.8077	5.28
Indiana strip	-2.9	.3044	.4281	17.48
Indiana deep and strip	-3.1	.6202	.6689	7.85
Illinois deep	+12.1	.8647	.9528	10.19
Illinois strip	+10.8	.3543	.4337	22.41
Illinois deep and strip	+11.9	.7828	.8694	11.06
Total Division II				
deep <u>3/</u>	+6.8	.8435	.9248	9.64
Total Division II				
strip <u>3/</u>	+4.6	.3589	.4278	19.20
Total Division II				
deep and strip <u>3/</u>	+7.9	.7392	.8211	11.08
Total Division III <u>4/</u>	+7.5	1.1345	1.3862	22.19

1/ Comparison for months of December and January. Data for November, 1934 are not available.

2/ Excluding Western Kentucky: comparison for months of December and January since Southern No. 1. and Southern No. 2 did not report November, 1934 separately.

3/ Excluding Iowa.

4/ Comparison for months of November and December. No report for January, 1935.

The amendments to the Code affected the various Subdivisions of Division I in differing degrees. Thus, for example, in Eastern Subdivision the labor cost per ton increased from \$1.0718 to \$1.2889 per ton or 22.54 per cent while tonnage declined only 2 per cent. In Maryland the labor cost per ton increased 15.5 per cent and tonnage fell 14.3 per cent. The Upper Potomac Subdivision reported a 10.9 per cent increase in tonnage, but over the same period labor cost per ton rose from \$1.134 to \$1.329 or 17.22 per cent. The Western Pennsylvania Subdivision, which along with Eastern Subdivision and Ohio sponsored Amendment No. 1, reported an 8 per cent decrease in tonnage and an increase of 19.35 per cent in labor cost per ton (\$.9933 to \$1.1855). The largest percentage increase in labor cost per ton in Division I was registered by Northern West Virginia. While a part of this increase may have arisen from the 13.2 per cent decline in tonnage, it is also known that this area had a greater increase in basic day rates and tonnage rates than any other area in Division I as well as the uniform reduction in working hours per day. However, no information is available whereby a proper allocation of the increased labor costs may be made to the appropriate influencing factors. In Ohio, despite a 9.5 per cent increase in output which normally would have meant increased working time and lowered labor costs per ton, the Code Amendments witnessed a 19.95 per cent increase in labor costs (\$.9605 to \$1.1521). In the case of Southern No. 1 and Southern No. 2 comparison of labor costs could only be made for the months of December and January because the November, 1934 data could not be separated from the reports for a number of months made by these areas. Southern No. 1 reported a tonnage increase of 5.2 per cent and a labor cost increase of 21.8 per cent (\$.9493 to \$1.1562). In Southern No. 2 the tonnage declined 10.4 per cent and the labor cost rose from \$.8826 to \$1.0968 or 24.27 per cent.

Labor costs per ton in Division II (excluding Iowa) when compared for the 8-hour and 7-hour day periods are especially interesting. This interest arises from the fact that the basic day rates for inside skilled labor and outside common labor in Indiana and Illinois were unchanged by Code Amendments so that only the hourly rates were increased to meet the reduction in hours for the working day from 8 to 7. Tonnage rates likewise remained undisturbed. It is logical, therefore, to assume that any increase in labor costs per ton following the Amendments to the Code resulted primarily from the shortening of the work day. The labor costs in Division II have added interest in that data are available for both deep and strip mining and it is therefore possible to note the varying effect of a shortened work day on these operations.

Total production of deep and strip mines in Division II increased 7.9 per cent during the months of the 7-hour day period which are compared with those of the 8-hour day period and the labor cost per ton rose from \$.7392 to \$.8211 or 11.08 per cent. The percentage increase in labor costs in Division II was less than that of either Divisions I or III. The explanation for the relatively smaller labor cost increase is found primarily in the fact that basic day rates were not increased, but it may be said that the labor cost increase might have been smaller had it not been for the strip mining operations. It will be noted that deep mine labor costs in Division II increased from \$.8435 to \$.9248 or 9.64 per cent, but labor costs in strip mines of this Division rose 19.20 per cent (\$.3589 to \$.4278). Several factors combined to increase labor costs in strip mining much more than in deep mining. Strip mines are highly mechanized

and their operations were patterned on an 8-hour day basis so that the reduction in working hours to 7 per day not only disturbed the operating schedule and thus reduced efficiency, but also less opportunity existed to bring about improvement through further mechanization. This latter situation was subject to readjustment and so may not be considered of basic importance. Far more significant was the fact that the working force in strip mines is made up of day men, while the deep mines employ a large proportion of tonnage men. Since day men are paid on a time basis any reduction in working time even though not accompanied by a wage rate increase means higher labor costs because daily output is definitely reduced. The change in working hours per day from 8 to 7 meant a definite reduction of 12.5 per cent in working time for the day men. In the case of tonnage men, who comprise the majority of the employees in deep mines, a similar reduction in working hours does not have the same effect upon output because these men rarely worked a full 8 hours even before the change and since they were paid on a piece work basis, they could speed up their work so as to maintain approximately the same output with less working time.

The foregoing remarks made with reference to Division II apply equally well for the Subdivisions in Illinois and Indiana. In Illinois deep mines, the change in working time was reflected by an increase of only 10.19 per cent in labor costs, while strip mine labor costs per ton increased 22.41 per cent. The Indiana deep mines, despite a decrease in tonnage of 3.2 per cent, had an increase in labor costs of only 5.28 per cent while strip mine labor costs per ton rose 17.48 per cent.

Labor costs per ton in Division III increased from \$1.1345 to \$1.3862 or 22.19 per cent -- approximately the same as for Division I. The tonnage reported in Division III increased 7.5 per cent, however, while that of Division I fell 5.5 per cent. It is, therefore, logical to assume that had Division III maintained the same output in both the 8 and 7-hour day periods, its labor cost increase would have been greater than in Division I.

The foregoing discussion treats labor cost per ton in the various areas of the industry under the Bituminous Coal Code and its Amendments. It is similarly important to compare the labor cost per ton prior to the Code and under the Code after the wage and hours revisions. The only data indicating labor cost per ton immediately prior to the Code are those which were calculated from the wage rates in effect on May, 1933 as reported to the N.R.A. on Form C in December, 1933. These calculations assume a continuation of similar working conditions in every respect except that wage rates were increased with the adoption of the Code. Such an assumption had some validity for the first part of the Code period (November, 1933 through March, 1934) except in those areas (as Alabama) where the Code established a shorter and uniform work day. When, however, the Code was amended so that working hours per day were reduced and wage rates were further increased, the calculated pre-Code labor cost loses some of its validity. It must, therefore, be admitted that the labor costs per ton for May, 1933 as shown in Table XVII are only rough approximations, but are being used for want of any more accurate information. Since only those operators whose wage rates were relatively high reported what they paid in May, 1933, it may be that the labor cost per ton during the Code period increased even more than Table XVII indicates.

The comparison of labor costs during the 10 months period, April, 1934 through January, 1935, with those calculated for May, 1933 show that in five important Subdivisions of Division I, the labor cost per ton increased within the rather narrow range of 48.5 cents to 56.4 cents. These areas (Eastern Pennsylvania, Western Pennsylvania, Ohio, Northern West Virginia and Southern No. 2) produce approximately 77 per cent of the tonnage in Division I. It is reasonable to assume that had all the Subdivisions of Division I reported May, 1933 labor cost per ton, a weighted average of such costs when compared with those under the Code after amendments would show that labor costs per ton for Division I (producing in excess of 70 per cent of the national output) increased approximately 50 cents.

The percentage increase in labor cost per ton for those areas in Division I which reported for May, 1933 varied widely. Northern West Virginia, as might be expected in view of the day and tonnage rate increases effected by the Amendments, showed the sharpest rise - 106.2 per cent. This increase in labor cost explains the protests of the Northern West Virginia operators against the Code Amendments. The next largest labor cost increase, 94.3 per cent, occurred in Southern Subdivision No. 2. Western Pennsylvania followed these areas closely with an increase of 90.1 per cent. The smallest labor cost increase for those areas reporting is found in Eastern Pennsylvania - 59.9 per cent.

Labor cost per ton in Division III rose from \$.747 in May, 1933 to \$1.413 for the 10 month period, April, 1934 through January, 1935, or 89.2 per cent. This large increase is explained by the fact that a 9 and 10-hour day and very low wage rates prevailed prior to the Code, while after the Code Amendments, the working day consisted of 7 hours and wage rates had been increased. Alabama mining operations were affected by the Code hours and wages more than those of any other area for which data are available. Labor cost per ton increased from \$.677 to \$1.411 - an increase of 73.4 cents per ton or 108.4 per cent.

Similar data for Divisions II, IV and V are not available. However, in most of these areas the wage rates established in existing contracts were specified in the Code and made applicable to other mines which had no contracts. The increase in labor cost per ton came chiefly after the Amendments to the Bituminous Coal Code.

Employment under the Code:

In view of the fact that increased employment was a primary objective of the Bituminous Coal Code, it is unfortunate that no statistical data are available from which to determine accurately the degree of success attained by the Code with reference to this objective. The employment data reported by the Bureau of Mines are on an annual basis. Since the Bituminous Coal Code became effective October 2, 1933, the Bureau of Mines data give no indication as to the employment prior to the Code and under the Code. Similarly, it should be noted that the amendments to the Code which reduced hours of work per day and increased basic rates were effective from April 1, 1934 and so again it is impossible to state precisely from the Bureau of Mines' data the effect of reduced working time on employment. Moreover, since the employment

TABLE XVII

Comparison of Labor Cost Per Ton May, 1933 with Labor Cost Per Ton Under the Code (November, 1933 - March, 1934 and April, 1934 - January, 1935)

Division and Subdivision	Labor Cost			Increase Due to Code			Labor Cost			Increase Due to Amendments			Average Increase Under Code			
	May 1933	December 1933	Per Ton	December, 1933 over May, 1933	Per Ton	Per Cent Increase	Nov. 1933 through Mar. 1934	Per Ton	Per Cent Increase	10 months - April, 1934 - January, 1935 over 5 months November, 1933-March, 1934	Per Ton	Per Cent Increase	10 months, April, 1934 - January, 1935 over May, 1933	Per Ton	Per Cent Increase	
																Per Ton
Division I																
Eastern Pennsylvania	\$.810	\$ 1.074	1.074	\$.264	32.6	\$ 1.066	\$ 1.295	.229	21.5	10 months, April, 1934 - January, 1935 over 5 months November, 1933-March, 1934	.485	59.9	10 months, April, 1934 - January, 1935 over May, 1933	.564	90.1	
Western Pennsylvania	.626	1.005	1.005	.379	60.5	.990	1.190	.200	20.2		.564	90.1		.564	90.1	
Ohio	.654	.959	.959	.305	46.6	.953	1.152	.199	20.9		.498	76.1		.498	76.1	
Michigan	--	1.618	1.618	--	--	1.570	1.931	.361	23.0		--	--		--	--	
Panhandle	--	.971	.971	--	--	1.570	1.128	.146	14.9		--	--		--	--	
Northern West Virginia	.483	.776	.776	.293	60.7	.775	1.128	.221	28.5		.513	106.2		.513	106.2	
Total Division I - North	2/.883	.961	.961	--	--	.974	1.186	.212	21.8		--	--		--	--	
Southern No. 1	--	.960	.960	--	--	.943	1.146	.203	21.5		--	--		--	--	
Southern No. 2	.563	.891	.891	.328	58.3	.876	1.088	.212	24.2		.525	93.3		.525	93.3	
Maryland & Upper Potomac	.708	1.142	1.142	.434	61.3	1.121	1.321	.200	17.8		.613	86.6		.613	86.6	
Western Kentucky	--	.708	.708	--	--	2/	--	--	--		--	--		--	--	
Total Division I - South	2/.911	.911	.911	--	--	.910	1.119	.209	23.0		--	--		--	--	
Total Division I	2/.941	.941	.941	--	--	.943	1.152	.209	22.2		--	--		--	--	
Division II																
Illinois	--	.791	.791	--	--	.775	.866	.091	11.7		--	--		--	--	
Indiana	--	.613	.613	--	--	.605	.719	.114	18.8		--	--		--	--	
Iowa	--	1.447	1.447	--	--	2/	--	--	--		--	--		--	--	
Total Division II	--	.777	.777	--	--	.730	.829	.099	13.6		--	--		--	--	
Division III																
Alabama	.677	1.112	1.112	.435	64.3	1.109	1.411	.302	27.2		.734	108.4		.734	108.4	
Total Division III	.747	1.130	1.130	.383	51.3	1.122	1.413	.291	25.9		.666	89.2		.666	89.2	

Source: U.S.A. Bituminous Coal Statistics
 1/ Does not include March, 1934
 2/ Incomplete data



data published by the Bureau of Mines are based upon operator reports, they tend to indicate the working force attached to the mines but do not show irregular and discontinuous employment. (*) As a result, the average number of men employed at the mines is apt to be somewhat higher than the number of men regularly employed. Bearing the foregoing remarks in mind, the Bureau of Mines shows that employment in 1933 amounted to 418,703 while that of 1934 was 458,011 - an increase of 59,208 or approximately 9.4 per cent. Since it is generally recognized that the N.I.R.A. gave an impetus to greater employment in the summer months of 1933 and that the Bituminous Coal Code brought increased employment after October, 1933, it is probable that the percentage increase in employment during the code period over the pre-code months was somewhat higher than that shown by the Bureau of Mines.

Most bituminous coal employment data, being based upon reports made by mining companies, are subject to the limitations inherent in such reporting, namely, that they include all individuals on the payrolls rather than the number actually working full time. The United States Census of Population and Unemployment taken in April, 1930 as a house to house canvass is more comprehensive and in the case of unemployment denotes the mine worker's status on a single working day - that preceding the enumerator's visit. Since the Bureau of Labor Statistics monthly index of employment is the only available month to month indication of employment changes, it has been applied to the Census of Occupations as of April, 1930, converted to 100 per cent and carried forward. The resultant estimates of employment and unemployment are shown in table XVIII.

The April, 1930 survey showed a total of 621,545 coal mine employees in the industry. The estimated number of anthracite miners was deducted resulting in a total of 477,090 bituminous coal miners. Returns for all gainful workers showed approximately 1.5 per cent as unable or unwilling to work. Deducting this percentage from 477,090 leaves approximately 470,000 able bodied workers attached to the industry. The April, 1930 survey indicated 38,149 men as being without jobs, or approximately 32,000 able workers unemployed. The survey recorded 83,793 coal mine workers (including anthracite) as having been laid off on the day preceding the enumerator's visit. Of this group, 18,386 men or 22 per cent had been idle for more than four weeks. Undoubtedly many of these men retained their place on the payroll and so would be reported to the Bureau of Mines and to State Bureaus as employed, although these men clearly were not at work during the lay-off period. The data set forth in Table XVIII represent the application of the Bureau of Labor Statistics index to the base of those reported as with jobs in the April, 1930 census.

According to the estimates in Table XVIII, the low point in bituminous coal employment was reached in July, 1932 when the index stood at 58.6 and slightly over 200,000 men were unemployed. Unemployment in this month arises in some measure from the seasonal character of the industry. The index for the year 1932 was 67.4, while in the first six months of 1933 the index averaged 65.5. Viewed in this

(*) See Seasonal and Cyclical Fluctuations of Employment



Table XVII

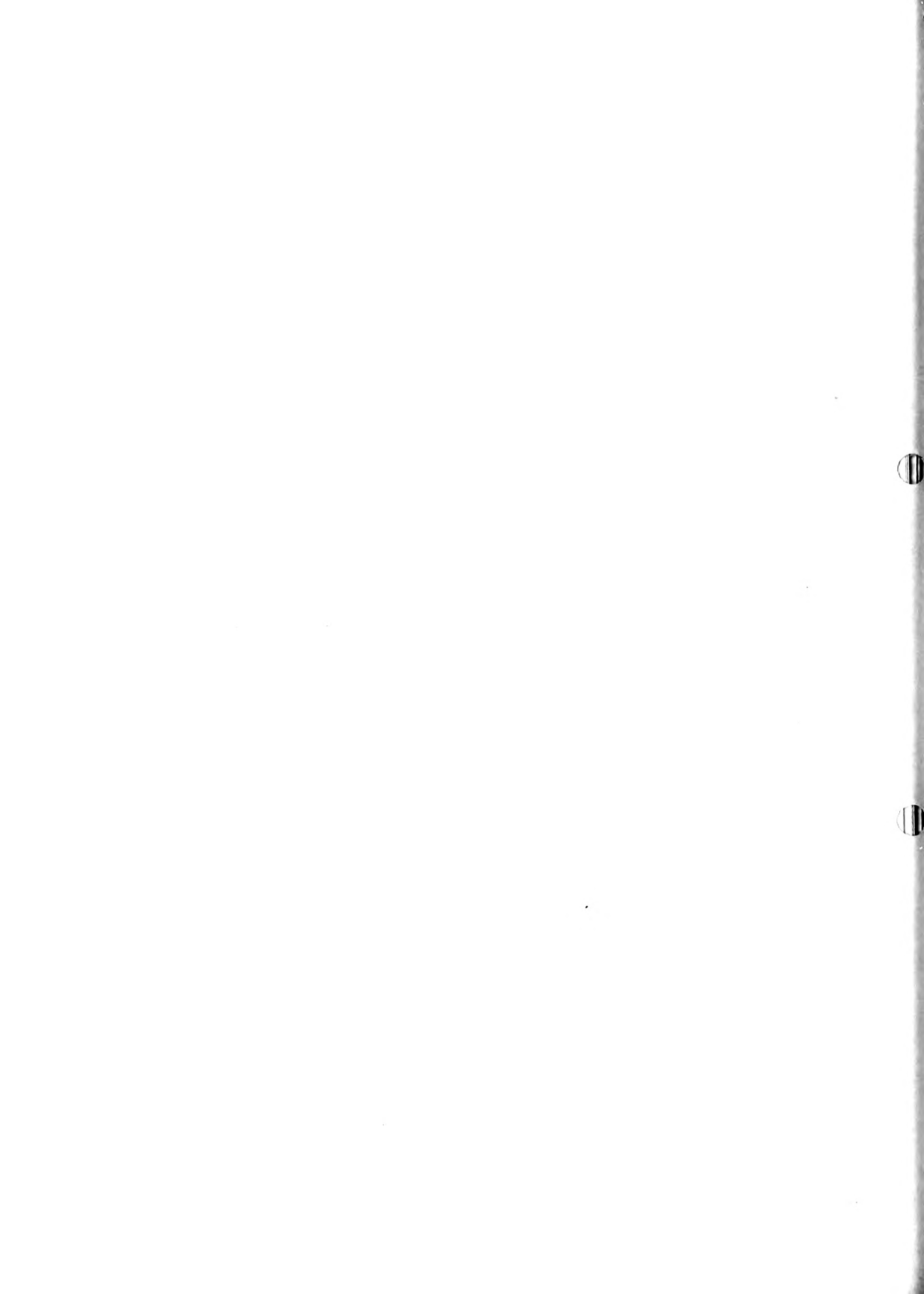
ESTIMATE OF THE NUMBER OF COAL MINE OPERATIVES ON PAYROLLS AND WITHOUT JOBS IN THE BITUMINOUS COAL INDUSTRY, 1930 - 1935. BY MONTHS 1/

Months	1930			1931			1932			1933			1934			1935		
	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls Without Jobs	Number of Coal Mine Operatives Without Jobs
January	93.9	429,710	40,290	60.8	369,749	100,253	69.8	319,421	150,279	75.8	346,896	123,104	60.0	366,120	103,880	60.0	366,120	103,880
February	91.5	418,738	51,262	71.4	354,197	115,803	69.3	317,131	152,469	76.1	348,225	121,765	61.1	371,131	98,869	61.1	371,131	98,869
March	88.8	406,382	63,618	75.2	344,131	125,869	67.6	309,355	160,045	77.8	356,084	113,946	61.6	373,421	96,579	61.6	373,421	96,579
April	94.4	432,000	36,000	65.9	299,765	170,235	63.7	291,514	174,466	72.2	330,394	139,606	74.3	340,027	129,973	74.3	340,027	129,973
May	90.4	413,683	56,317	62.6	286,459	183,941	61.2	280,066	189,934	76.7	351,000	119,000	75.3	344,262	125,394	75.3	344,262	125,394
June	88.4	404,585	65,475	60.5	276,869	193,131	61.3	280,541	189,499	76.7	351,000	119,000	77.9	356,446	113,314	77.9	356,446	113,314
July	88.0	402,710	67,290	58.6	266,186	201,614	63.2	289,224	180,776	71.0	352,382	117,618	70.0	380,702	149,672	70.0	380,702	149,672
August	89.2	408,197	61,803	59.4	271,814	198,186	68.6	313,934	156,066	77.1	352,614	117,186	73.4	374,204	134,120	73.4	374,204	134,120
September	90.5	414,158	55,842	62.4	285,582	184,448	71.8	328,579	141,421	78.2	357,869	112,131	77.1	357,131	117,186	77.1	357,131	117,186
October	91.8	420,120	49,480	67.0	306,590	163,410	68.0	311,170	158,830	79.3	362,880	107,120	74.3	344,027	129,273	74.3	344,027	129,273
November	92.5	423,317	46,683	69.4	317,606	152,394	74.8	342,317	127,683	79.8	365,170	104,830	76.5	344,027	129,273	76.5	344,027	129,273
December	92.5	423,317	46,683	70.0	320,328	149,672	75.4	345,038	124,962	79.7	364,738	105,262	76.5	344,027	129,273	76.5	344,027	129,273
Average	93.4	427,421	42,579	67.4	306,448	161,552	67.9	310,738	159,282	77.2	353,290	116,710	76.5	344,027	129,273	76.5	344,027	129,273

1/ Based on estimate of number of Coal Mine Operatives and Jobs as reported by the Bureau of Labor Statistics Monthly Index of Employment.

(a) Two months average.

INDEX	B. L. S. CONVERSION	
	INDEX	Number on Payroll
94.4	100.0	432,000
90.4	95.8	413,683
88.4	91.6	404,585

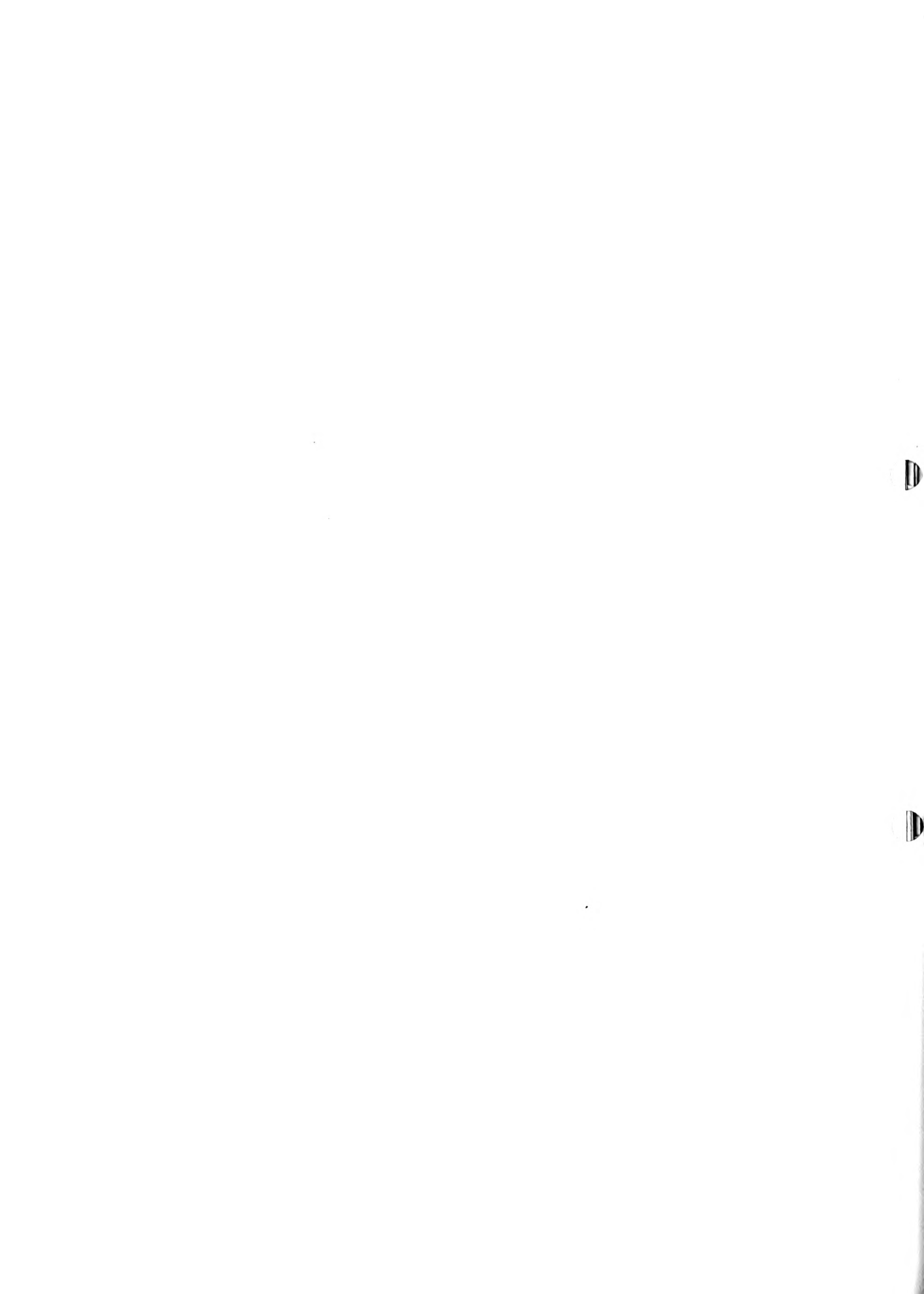


manner, the early months of 1933 represented the lowest level of employment in the industry. The passage of the N.I.R.A. in June, 1933 and the adoption of the Bituminous Coal Code in October, 1933, were reflected by increased employment so that the index for the latter months of 1933 average 79.3. The average employment in this period (321,710) increased 23,039 as against the first six months of 1933. If the average employment in the first six months of 1934 (includes three months of code amendment) is compared with that of the first six months of 1933 (pre-N.I.R.A. and Coal Code) the estimated employment increase is about 47,589 (from 299,671 to 347,260). Average employment in 1934, a full year under the Code, amounted to 354,290 in contrast to 310,733 in 1933 - an increase of 43,452 or approximately 14.7 per cent. It is likely that the employment increase approximated slightly more than 41,000 men. In March, 1935 the Bureau of Labor Statistics' index stood at 81.6 and 373,441 men were estimated as employed. This month was the highest point of employment since July, 1931 and undoubtedly the chief contributing factor was the threat of a general shut down following the expiration of war contract on March 31, 1935. The employment decline registered in October, 1935 came with the new war contract when mining operations had carried over heavy stocks of coal from previous months.

The foregoing estimates of increased employment purport only to calculate the number of men added to bituminous coal mining payrolls. No accurate statement can be made indicating the degree to which the Bituminous Coal Code contributed to added employment, but it is significant that these increases came at the time when the N.I.R.A. was enacted and the Code adopted. Neither do the estimated employment increases show the volume of employment afforded in terms of regular or continuous working time. Obviously, the most exact measures of real employment are data indicating man-days, or preferably man-hours, in the industry for a specified time period. Unfortunately such data are lacking so that only estimates of changes in the number of men on the payroll can be made without showing the degree of full-time or part-time employment.

It will be noted the estimated average unemployment even for the code year, 1934, was 116,710. Although the Bituminous Coal Code did bring about increased employment, the gain was not as extensive as might have been expected. Several factors contributed to this situation - especially the fact that many companies had sought to retain men by part-time work during the down-swing phase of the business cycle and thus were somewhat limited in adding more employees later; and also rising labor costs gave an impetus to mechanization which did not displace men so much as it made added employees less necessary. Similarly, rising labor costs served to increase stripping mines which rely heavily on mechanical operation. In some cases, too, the increased mine prices made possible the installation of new equipment. It should be remembered that the number of days the mines worked in 1934 increased 6.6 per cent over 1933 (167 to 176). Against these factors were the greater production in 1934 as against 1933 (7.7 per cent) and the lowered output per man per day for the same periods (8 per cent).

Despite the fact that the employment situation in bituminous coal mining improved considerably during the code period and thereafter as



compared with the preceding period, a large number of mine workers, exceeding perhaps 115,000 men were unemployed. That the condition was a serious one is evidenced by the fact that the Bituminous Coal Conservation Act of 1935 specified among the other duties of the Commission a study of:

"The rehabilitation of mine workers displaced from employment, and the relief of mine workers partially employed. The Commission's findings and recommendations shall be transmitted to the proper agency of the Government for relief, rehabilitation, and subsistence homesteads". (*)

An indication of the grave situation of the unemployed and partially employed in coal mining areas may be secured from the data set forth in Table XIX. These data were derived from information reported by the Works Progress Administration. A coal mining area was defined as any county within a state where at least 60 per cent of the productive industrial workers were reported in the 1930 Census as employed in coal mining. The anthracite miners of Pennsylvania were excluded so that the data represents bituminous coal mining. The significant item in this Table is the percentage of the population in these coal mining areas that was reported as being on relief in June, 1935. It will be noted that in the coal mining areas of twelve states with a population of 2,134,190, the number of persons receiving relief amounted to 490,251 or 23 per cent of such population. Thus, approximately, one out of every four persons in these coal mining areas was reported as being on relief in June 1935. The lowest percentage of population on relief in coal producing areas was found in Wyoming with 10 per cent, while the highest percentage was 37.2 in Ohio. It is regrettable that the data do not show how many of the persons on relief were persons able and willing to work and so under improved circumstances might have been classed as gainfully employed.

The comparison between the percentages of persons in coal mining areas and in entire states on relief rolls is perhaps the best indication available as to the serious plight of the mine workers. For example, 15.9 per cent of the population in the specified states were on relief in June, 1935, while in the coal mining areas the percentage of persons on relief amounted to 23 per cent. If relief data regarding these states were available for the period prior to the NRA, it is probable that considerable improvement would be evident for the later period. In any case, the available data do indicate that the bituminous coal mining areas are still hard pressed and that people in these areas are in perhaps worse circumstances than are people living in areas having more diverse occupations. Thus in Ohio, 37.2 per cent of the population in coal mining areas were on relief, while in the entire state 17 per cent of the population were on this basis. A similar situation applies in Indiana where 35.6 per cent of the coal mining area population is on relief and 13 per cent for the entire state. In only three of the listed states did the entire state relief percentage exceed that of the coal mining areas - Utah, West Virginia and Wyoming. Of this

(*) Bituminous Coal Conservation Act of 1935, Section 16, paragraph 3.

TABLE XIX

COMPARISON OF PERCENTAGE OF POPULATION ON RELIEF IN
COAL-MINING AREAS AND IN ENTIRE STATES IN JUNE, 1935. (*)

STATE	Areas Having 60 Per Cent of Pro- ductive Industrial Workers Employed in Coal Mining.		Persons on Relief in Entire State	
	Population	Number of Persons on Relief	Number	Per Cent
Alabama	59,445	12,561	344,463	13
Colorado	53,070	17,460	228,608	22
Illinois	221,392	64,213	1,010,321	13
Indiana	23,233	8,275	426,563	13
Kentucky	376,312	87,096	495,468	19
Ohio	44,175	16,422	1,102,518	17
Pennsylvania	591,614	153,092	1,177,303	19
Tennessee	26,827	5,519	347,200	13
Utah	17,793	4,004	104,384	21
Virginia	5,157	11,216	233,259	10
West Virginia	629,594	107,490	568,319	21
Wyoming	26,059	2,203	25,517	11
Total	2,134,190	490,251	5,858,988	15.9

(*) Derived from information supplied by Works Progress Administration.
Anthracite miners in Pennsylvania excluded.

group West Virginia is the only important coal producing state and its entire state relief percentage does not greatly exceed the percentage in coal mining areas.

Earnings under the Code:

The original statistical program undertaken by the NRA for the bituminous coal industry included, among other data, the reporting by the industry of mine workers' earnings. These earnings data were submitted on the Form C. Unfortunately, this portion of the statistical program ceased during the latter part of December, 1933. (*) As a result, earnings were reported for only three pay periods from November 1st through November 15, 1933. These earnings data were very essential to a proper investigation of the wage differential problem. Moreover, had the Form C reporting been continued through the period following the Code amendments, a much more realistic analysis of the effects of the shortened work day and the increased basic wage rates upon total earnings for an area as well as upon earnings of particular occupational groups would have been possible.

The Form C reports for the period December 1 to 15, 1933 requested the operators to report opposite each labor classification the wage rate in effect in May, 1933. These reports were edited in the Coal Section of H.T.A., the final study being confined to only those reports which were included in the December employment and earnings study. Schedules reporting incomplete information, such as May rates for day men but not for piece workers, or multiple rates for piece workers were rejected. In the included reports, numerous occupations were eliminated, particularly those composite groups having no specific rate, such as "Other Skilled", "Other Unskilled", etc., any group for which no rates were reported, and those for which two or more rates were reported.

A ratio was computed between the rates reported for each period for each occupation, and this ratio applied to the total earnings of the men in that occupation for the period December 1 to 15, thus securing a calculated total earnings figure for May. From the summary of all these totals, it is possible to calculate the increases in the actual December earnings over what they would have been in May, had the same opportunities for work existed at that time, i.e., the same number of days and the same number of hours per day.

The estimated earnings increases for mine workers in December, 1933 as against May, 1933 are set forth in Table XX. It will be noted that the Subdivisions comprising Michigan, Panhandle, Southern No. 1, and Western Kentucky in Division I did not report satisfactory data for making any comparisons. Of the submitted December reports, 44.6 per cent of the total earnings represented were for mines having complete data on May rates. For these mines and areas in Division I, the total average earnings increased \$769,106 or 50.4 per cent during this pay period on the basis of the December wage rates (original rates in Code) as against the May, 1933 rates (pre-Code). The degree to which certain important occupational groups benefited under the Code is significant. For example, miners' earnings increased 50 per cent; loaders'

(*) For a discussion of the controversy leading to the cessation of Form C reporting see Section on Wage Differentials.

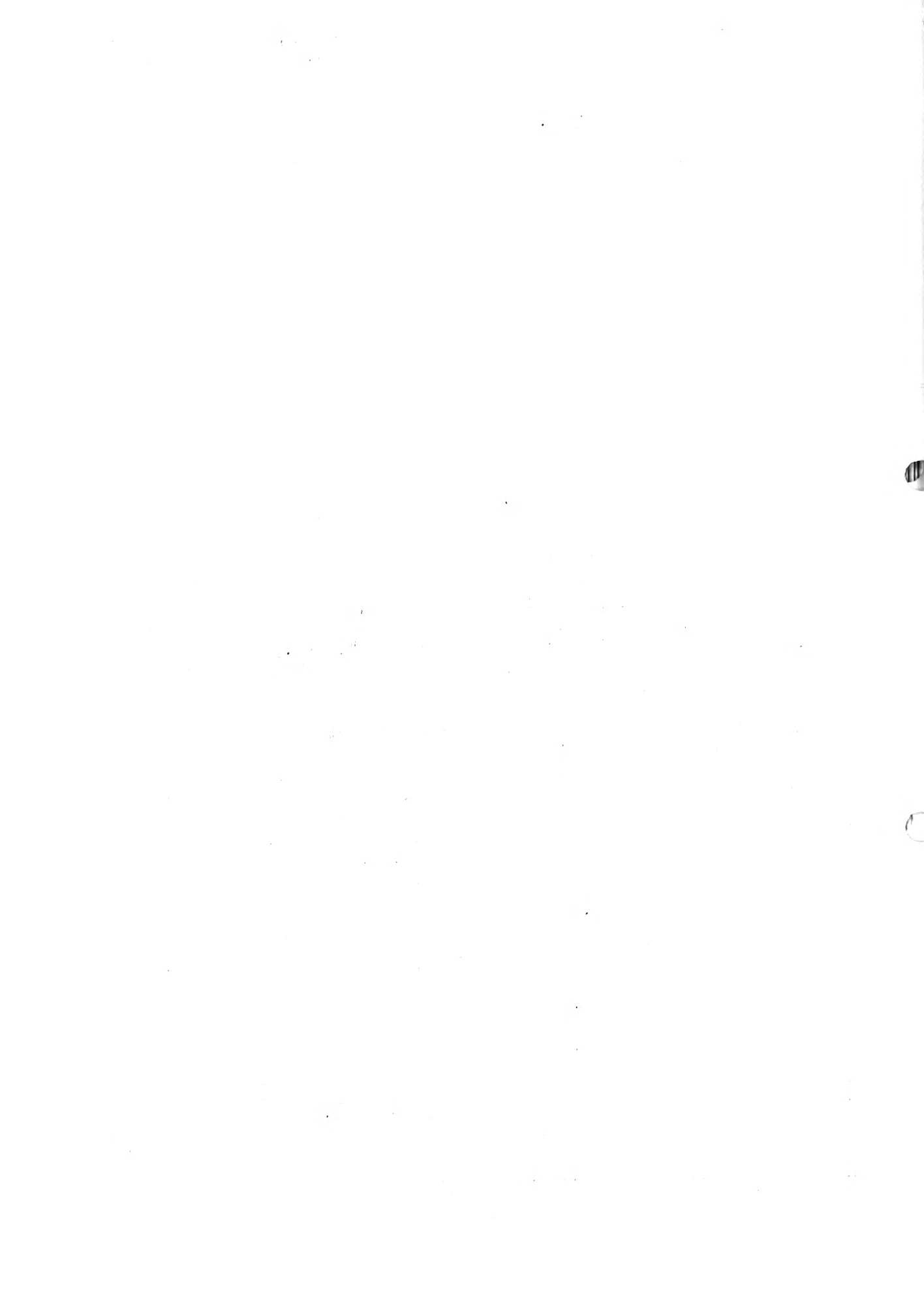


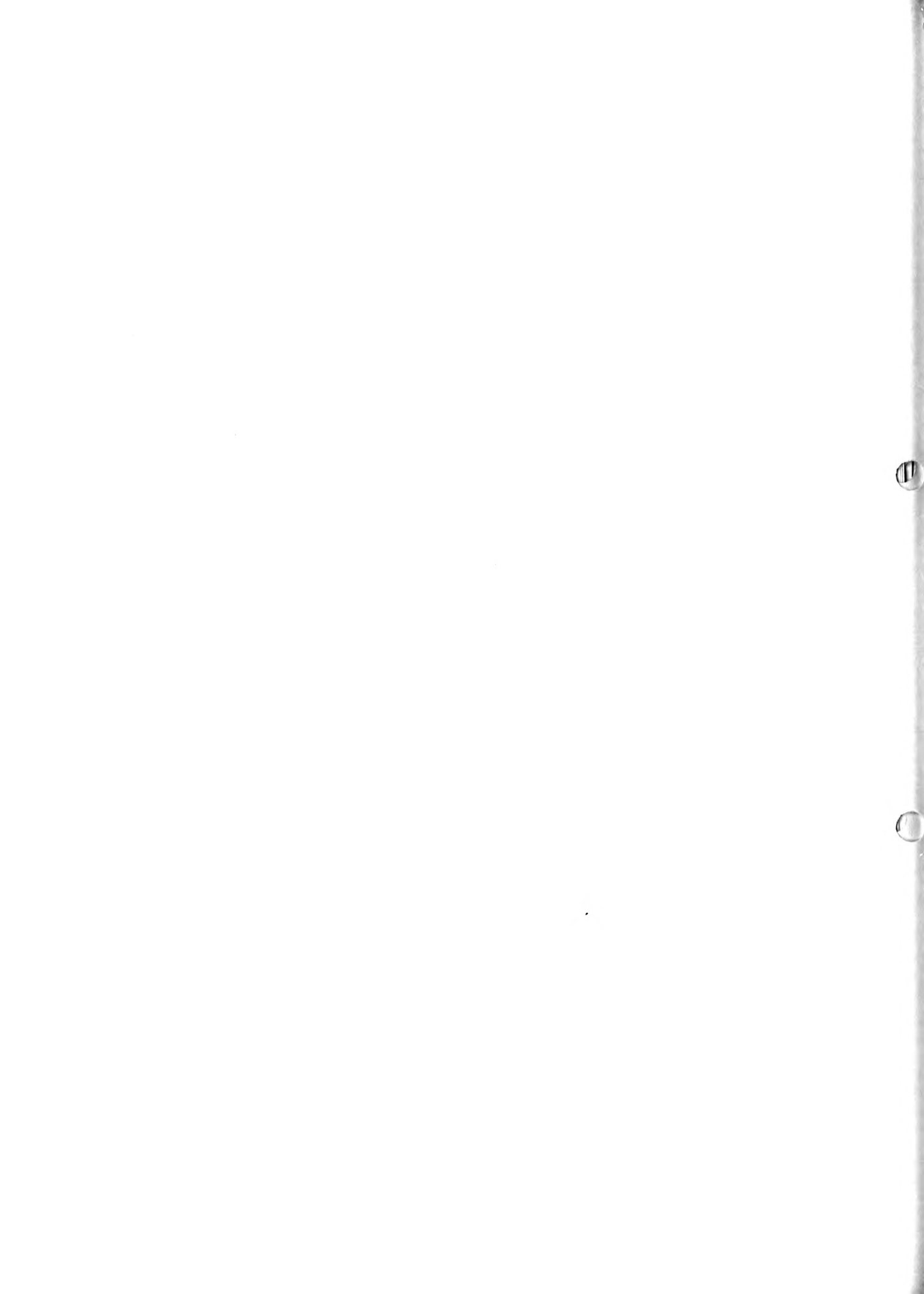
TABLE XX

SUMMARY OF ESTIMATED INCREASES IN EARNINGS OF WAGE EARNERS IN BITUMINOUS COAL MINES

(Actual earnings in first pay-roll period of December, 1933, compared with estimated earnings of same employees, in same work-time, if employed at rates prevailing in May, 1933.)

SUB-DIVISION	Number of mines reporting Dec. 1-15	Total earnings in all wage earners Dec. 1-15	Number of mines in selected sample Dec. 1-15	Total earnings of selected sample Dec. 1-15	Percent of total earnings of selected sample (4)	Estimated total earnings of selected sample at May rates (6)	Percent increase in earnings (7)	Selected sample		Total earnings		Percent increase (10)	Percent increase in earnings (11)	Estimated total earnings at May rates (12)	Percent increase (13)	Total earnings in selected sample Dec. 1-15	Total earnings at May rates (14)	Estimated total earnings at May rates (15)	Percent increase (16)	
								Dec. 1-15	May rates	Dec. 1-15	May rates									
Eastern Pennsylvania 1/	153	1,012,247	75	47,893	4.7	47,893	30.5	77	77	77	77	10	31.6	47,893	62.5	148,893	109,452	109,452	35.5	
Maryland & Upper Potomac	24	103,336	10	26,485	25.6	26,485	61.3	78	78	78	78	6	50.7	78	60.6	14,270	8,780	8,780	83.5	
Western Pennsylvania	158	1,365,045	80	302,281	22.1	302,281	69.5	407	407	407	407	61.8	312,566	194,401	64.3	184,755	104,662	104,662	57.4	
Northern West Virginia	82	426,262	44	170,752	40.1	170,752	69.7	247	247	247	247	62.6	145,429	115,325	69.5	71,741	63,448	63,448	54.0	
Ohio	43	431,000	21	170,752	39.6	170,752	57.7	170	170	170	170	47.3	170,752	116,721	49.7	57,384	40,312	40,312	42.4	
Michigan 1/																				
Pennsylvania 2/																				
West Virginia 2/																				
Southern Sub-Division 3/	262	1,514,937	84	301,017	19.9	301,017	48.3	306	306	306	306	56.3	259,695	184,840	57.5	168,686	108,656	108,656	62.1	
Western Kentucky 4/																				
Total Division I	712	6,147,135	39	1,627,184	26.5	1,627,184	67.4	1,604	1,604	1,604	1,604	63.7	1,099,474	799,000	63.7	551,211	430,710	430,710	51.2	
Total Division III 5/	47	236,809	20	55,641	23.5	55,641	41.3	61	61	61	61	44.3	30,345	20,290	49.6	22,290	14,206	14,206	56.9	

1/ Sample includes all mines which reported comparable data.
 2/ Includes Southern Somerset County.
 3/ No May rates reported.
 4/ No reports.
 5/ Not enough mines reported May rates to make sample representative.
 6/ Alabama, Georgia and Southern Tennessee.



earnings, 53.3 per cent; and loaders, 51.2 per cent. On this basis the loaders received the largest increase, but the average increase for all groups was fairly similar. However, particular Subdivisions show wider variations in the percentage increase of earnings for certain occupational groups. Thus, in Northern West Virginia loaders' earnings increased 69.5 per cent as against 54 per cent for day men and 63.6 per cent for miners.

In Division III where more than 8 hours of work per day prevailed prior to the Code, the standard 8-hour day and increased wage rates under the Code resulted in an increase of \$28,546 or 51.3 per cent for one day period. As might be expected, the Code brought a greater percentage increase in earnings to the day men than to the other occupational groups. Day men's earnings increased 56.9 per cent as against 49.6 per cent for loaders and 49.3 per cent for miners. Undoubtedly, a large part of the greater earnings increase to day men is to be attributed to the shortened work day and the elimination of the "clean-up" system under the Code.

When these earnings data are considered in terms of the average earnings per day, a comparison of the data for the pre-Code and Code period disclose interesting information. This comparison is made in Table XXI.

It is significant to note the relatively low daily earnings which prevailed prior to the adoption of the Bituminous Coal Code. The areas in Division I, which reported May, 1933 wage data, represent approximately 57 per cent of the national annual tonnage. In these areas even the occupation requiring most skill and experience - miners - averaged only \$2.99 per day prior to the Code. Day men and loaders averaged \$2.21 and \$2.79 per day respectively. With the advent of the Code, miners' daily earnings for all these areas averaged \$4.48 or an increase of \$1.49 per day. Daily earnings of day men rose to \$4.21 during the early Code period - an increase of \$1.40 per day and loaders' earnings increased to \$4.32 per day or \$1.53 more than had previously prevailed.

The foregoing data, being averages for an extensive portion of the industry, tend to conceal the wide variations which occurred in daily earnings, increases for particular districts and subdivisions. Northern West Virginia experienced the largest increases when daily earnings of loaders and miners are considered. Loaders' earnings in Northern West Virginia increased \$1.93 per day, while miners' daily earnings in this area rose \$1.90. The lowest subdivisional increase in earnings for loaders and miners was found in Central Pennsylvania where loaders earned \$1.12 and miners \$1.07 more per day than previously. In the case of the day men, the largest subdivisional increases in daily earnings occurred in Maryland and Upper Potomac and in Southern Sub-division No. 2 - \$1.54 and \$1.53, respectively. Central Pennsylvania experienced the least increase in day men's daily earnings - \$1.12 more than had previously prevailed. Within individual districts, daily earnings increases approximating \$2.00 or more were not uncommon and in one area - the Connellsville, Pittsburgh Seam in Western Pennsylvania - an increase of \$3.00 per day was reported.

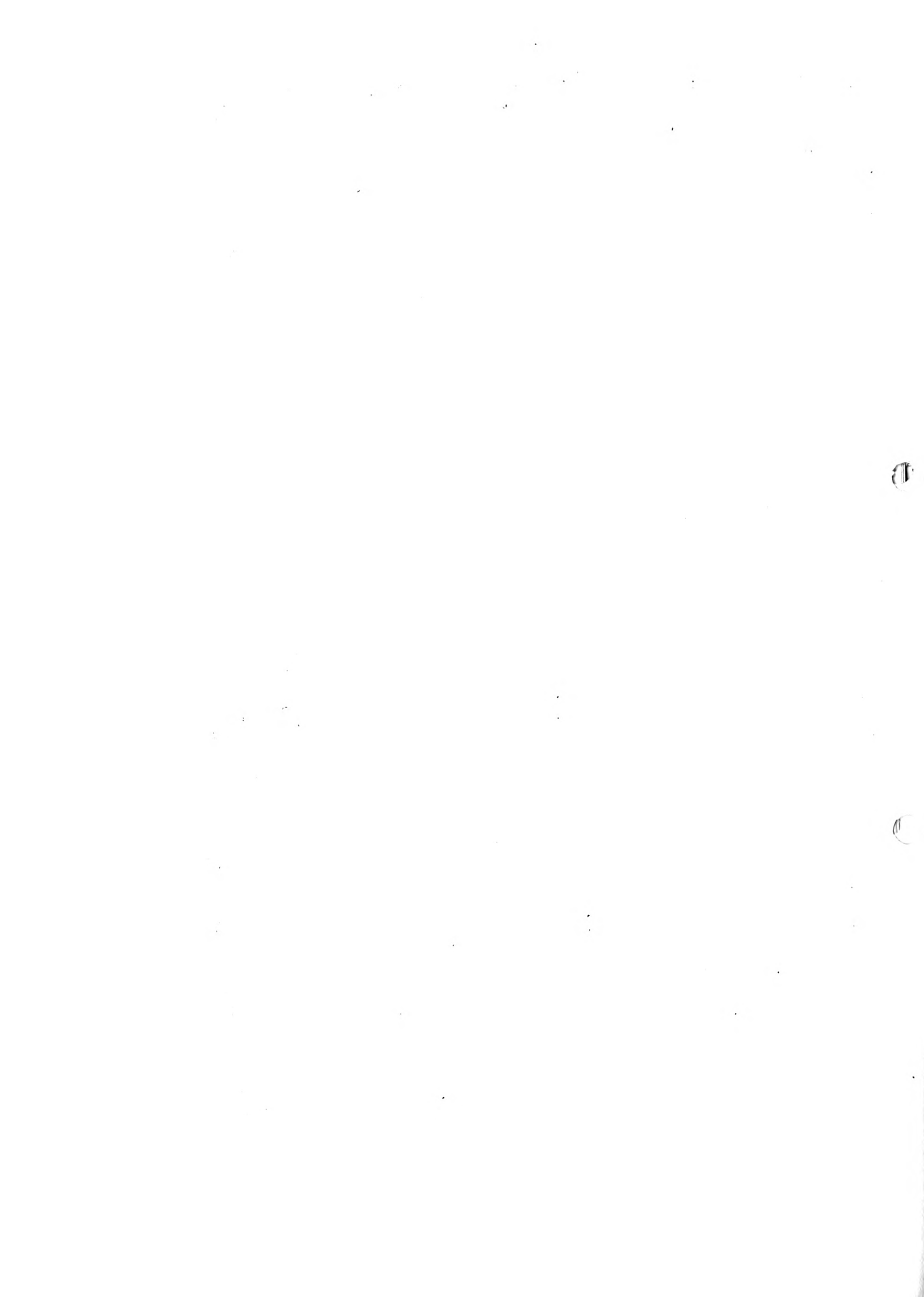


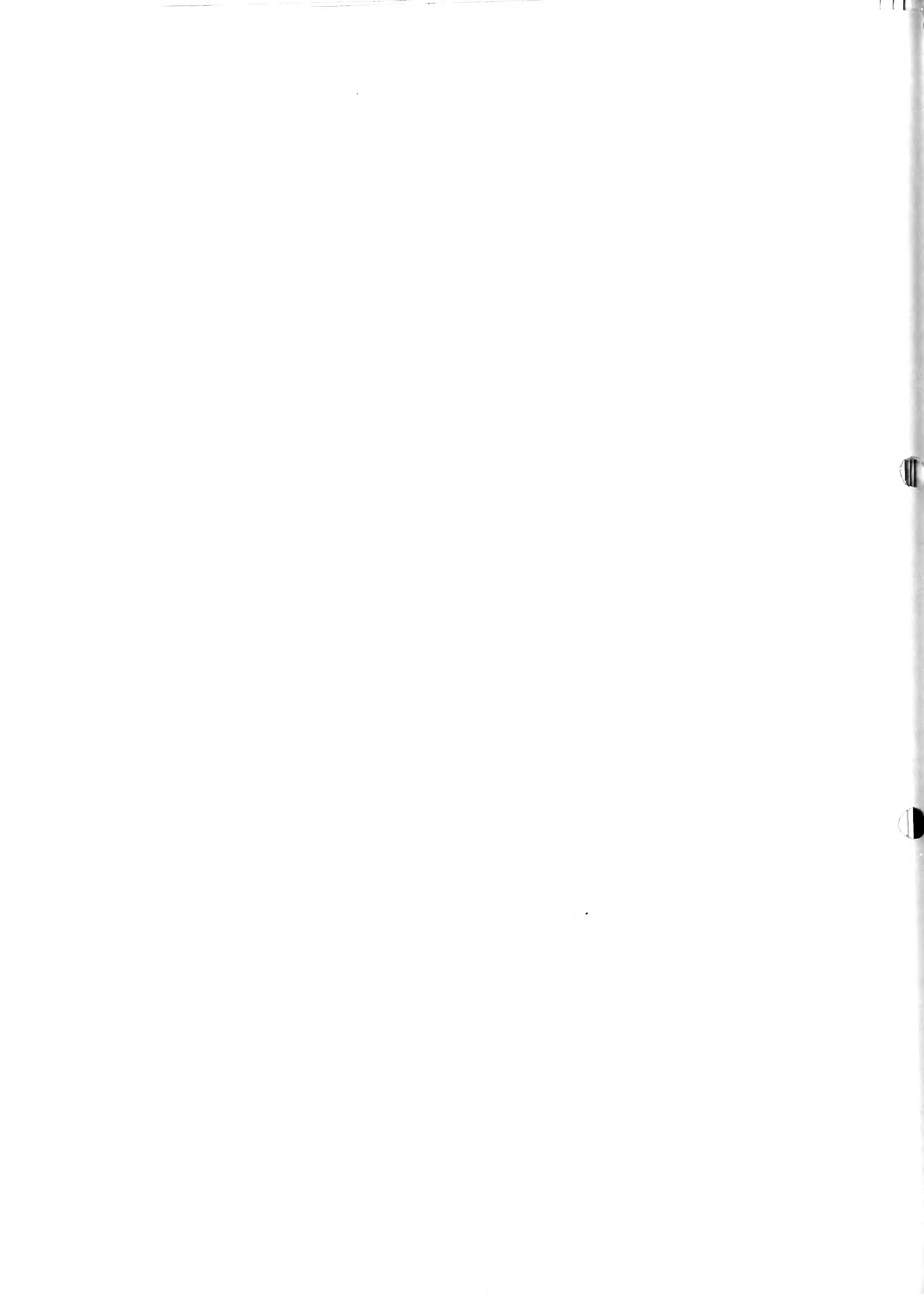
TABLE XIII

COMPARISON OF AVERAGE EARNINGS PER DAY OF EMPLOYEES IN BITUMINOUS COAL MINES
BEFORE AND AFTER ADOPTION OF CODE 1/.

Sub-division and Area	Miners-Piece-work and Max-rate Basis			Day-Men - Inside and Outside			Loaders		
	Average Earnings per Man per Day			Average Earnings per Man per Day			Average Earnings per Man per Day		
	December 1-15 1933	May, 1933 (estimated)	Increase December over May, 1933	December 1-15 1933	May, 1933 (estimated)	Increase December over May, 1933	December 1-15 1933	May, 1933 (estimated)	Increase December over May, 1933
Central Pennsylvania									
Barnesboro	\$ 3.87	\$ 3.06	\$.81	\$ 4.28	\$ 3.29	\$.99	\$ 3.67	\$ 2.86	\$.81
Blacklick and Broadtop	4.50	3.35	1.15	4.23	2.89	1.34	4.19	3.21	.98
Clearfield	3.54	2.72	.82	4.18	2.95	1.23	3.46	2.58	.88
Nanty-glo	4.94	3.90	1.04	4.31	3.13	1.18	4.93	3.87	1.06
Raynoldsville	4.67	3.41	1.26	4.21	3.09	1.12	4.57	3.33	1.24
South Fork	4.24	3.35	.89	4.39	3.40	.99	4.02	3.04	.98
Southern Somerset	4.53	2.98	1.55	4.23	2.91	1.32	4.27	2.82	1.45
Total	4.41	3.34	1.07	4.28	3.15	1.13	4.37	3.25	1.12
Maryland and Upper Potomac									
Maryland	3.93	2.40	1.53	4.05	2.44	1.61	3.64	2.27	1.37
West Virginia	4.70	3.01	1.69	3.95	2.47	1.48	4.82	3.00	1.82
Total	4.28	2.67	1.61	4.00	2.46	1.54	4.06	2.53	1.53
Western Pennsylvania									
1, 2 and 3 - Thick Vein	4.66	3.19	1.47	4.36	3.10	1.26	4.46	2.99	1.47
4 - Thin Vein, Avella	3.97	2.01	1.96	4.40	2.28	2.12	3.74	1.81	1.93
5 - Thin Vein 2/	4.24	2.67	1.57	4.36	2.93	1.43	4.03	2.46	1.57
6 - Thin Vein 3/	3.73	2.34	1.39	4.40	3.01	1.39	3.52	2.19	1.33
7 - Connellsville, Pgh. seam	5.55	2.95	3.00	4.34	2.22	2.12	5.38	2.82	3.06
8-12 - Connellsville, Sewickley 4/	4.41	2.67	1.74	4.40	2.66	1.74	4.28	2.48	1.80
9 - Connellsville, all others	5.57	3.15	2.42	4.41	2.67	1.74	5.81	3.30	2.51
10 - Upper Freeport	4.51	2.71	1.80	4.35	2.40	1.95	4.22	2.47	1.75
11 - Thick Freeport	4.59	3.44	1.15	4.39	3.46	.93	4.38	3.12	1.26
13 - Butler - Mercer	3.21	2.36	.85	4.38	2.52	1.86	3.02	2.16	.86
14 - Greensburg	4.88	2.55	2.33	4.29	2.67	1.62	4.69	2.39	2.30
15 - Latrobe	3.62	1.81	1.81	4.36	2.60	1.76	3.49	1.67	1.82
16 - Liguer	-	-	-	4.21	2.50	1.71	-	-	-
Total	4.52	2.85	1.67	4.37	2.93	1.44	4.30	2.63	1.67
Northern West Virginia									
Pittsburgh - Reistone	5.08	3.03	2.05	4.20	2.75	1.44	4.90	2.83	2.07
Sewickley, Freeport - Kittanning	3.99	2.31	1.68	4.20	2.59	1.61	3.78	2.13	1.65
Praston Jomty	3.73	2.85	.88	4.18	2.31	1.87	3.72	2.76	.96
Sewell	4.67	3.24	1.43	4.17	2.95	1.22	4.53	3.08	1.45
Total	4.84	2.94	1.90	4.20	2.74	1.46	4.67	2.74	1.93
Ohio									
Division 1	4.17	3.02	1.15	4.36	3.17	1.19	3.93	2.81	1.12
Divisions 2 and 3	4.26	2.74	1.52	4.30	2.93	1.37	4.06	2.56	1.50
Total	4.22	2.86	1.36	4.33	3.03	1.30	4.00	2.68	1.32
Southern Sub-division #2									
Big Sandy - Elkhorn	4.63	3.19	1.44	3.97	2.58	1.39	4.44	3.02	1.42
Earlan	4.59	2.92	1.67	4.00	2.23	1.77	4.45	2.77	1.68
Hazard	4.05	2.48	1.57	3.94	2.30	1.64	3.79	2.32	1.47
Kanawha	4.52	2.95	1.57	3.96	2.59	1.37	4.37	2.80	1.57
Logan	4.11	2.57	1.54	3.94	2.54	1.40	3.95	2.46	1.49
Southern Appalachian	3.81	2.56	1.25	3.92	2.20	1.72	3.72	2.42	1.30
Virginia	4.44	2.59	1.85	4.02	2.49	1.53	4.17	2.46	1.72
Williamson	4.67	2.82	1.85	3.95	2.21	1.74	4.30	2.54	1.76
Total	4.41	2.82	1.59	3.97	2.44	1.53	4.21	2.66	1.55
Total of Division I	4.48	2.99	1.49	4.21	2.81	1.40	4.32	2.79	1.53
Alabama									
District 1	3.47	2.04	1.43	3.05	1.74	1.31	3.24	1.90	1.34
District 2	3.12	1.93	1.19	3.05	1.83	1.22	3.25	2.02	1.23
Districts 3 and 4	3.39	1.90	1.49	2.97	1.85	1.12	3.75	2.19	1.56
Total	3.24	1.94	1.30	3.02	1.82	1.20	3.27	2.00	1.27

1/ A comparison of the number of men included in this study with the total number included in the Employment and Earnings Study for the period December 1-15, 1933 shows this study to be representative to the following extent:
 Division I - Miners, 55.2 per cent; Day-men, 62.7 per cent;
 Loaders, 57.2 per cent.
 Alabama - Miners, 44.9 per cent; Day-men, 51.6 per cent;
 Loaders, 66.5 per cent.

2/ West of Monongahala River.
 3/ East of Monongahala River.
 4/ Includes Hunter Area.



It is unfortunate that the reporting of wage data for the above period was incomplete and that the statistical program of reporting earnings data will not continue into the period after the Code amendments. Such data would have been invaluable in establishing equitable wage differentials between various competing districts.

The Wage Bill Under the Code

The only continuous statistical indication of the amount paid out in wages in the bituminous coal industry for several years prior to the Code is the index of payrolls (based upon 1929), published by the Bureau of Labor Statistics. These data have been set forth in Table V of this Section. The total wage bill for the industry, exclusive of supervisory and clerical wages, in 1929 according to the Census of Mines and Quarries approximated \$574,800,000. This amount was used as the base for the Bureau of Labor Statistics' index. According to this index the average payroll for each year since 1929 would be as follows:

Index and Amount of Payrolls in Bituminous
Coal Mining, 1929 - 1935, by years. (*)
(000s of dollars omitted)

<u>Year</u>	<u>Index</u>	<u>Amount</u>	<u>Change from Base Year</u>	<u>Change from Preceding Year</u>
1929	100.0	\$574,800,	-	-
1930	81.3	467,312,	-\$107,488	-\$107,488
1931	77.5	330,110,	- 244,290	- 136,802
1932	35.6	204,639,	- 370,171	- 125,881
1933	37.8	217,274,	- 357,526	+ 12,645
1934	54.2	311,542,	- 263,258	+ 94,268
1935 <u>1/</u>	57.2	328,786,	- 246,014	+ 17,244

The above annual data disclose a steadily declining payroll from 1929 forward through 1932. In the latter year, the average payroll was approximately \$370,171,000 less than that of 1929. The average payroll in 1933 increased \$12,645,000 over the preceding year. Again in 1934, the payroll increased \$94,268,000 over 1933 and for eleven months in 1935, it averaged \$17,244,000 above that of 1934. It is interesting to note that the 1935 average payroll approximated that of 1930. While these annual data indicate a constantly improving payroll since 1933, they show that even in 1935, bituminous coal payrolls averaged \$246,014,000 less than in 1929 and it is generally recognized that payrolls in this industry were declining for almost a decade prior to 1929. It is evident, therefore, that the industry's payrolls are still at a low level.

No effort has been made to adjust these payroll figures to changing cost of living data. In this latter sense, it is likely that the mine workers' real income during the early depression years was somewhat better than the payroll data tend to indicate. Since a primary objective of the M.I.R.A. and the Bituminous Coal Code was to increase purchasing power, nominal wage data should be related to the cost of

(*) Bureau of Labor Statistics, 1929 base year

1/ Average for 11 months.

living. Unfortunately, no satisfactory information is available regarding mine workers' cost of living and it is obvious that general or even industrial workers' cost of living cannot be applied.

In order to evaluate properly the influence of the code period on bituminous coal payrolls, it is necessary to turn from the annual data and set up the index for the months of a coal year. Thus, for the twelve month period, April, 1933, through March, 1935, the payroll index averaged 32.5 and amounted to \$186,810,000. For a similar twelve month period, April 1934 through March, 1935, the index averaged 56.5 and amounted to \$334,762,000. The former period represents pre-M.I.R.A. and pre-code months, while the latter period covers the months after the code amendments. The comparison shows that the payroll index during the code period increased 24 points and the amount increased \$137,952,000. It may be said, therefore, that payrolls during the latter months of the code period were approximately \$138,000,000 greater than in the pre-code months.

The only other statistical evidence on labor costs in coal mining (NRA) from which estimates may be made of the wage bill tends to corroborate the Bureau of Labor Statistics' payroll data. The estimated wage cost per ton in May, 1933 for 73 per cent of the tonnage in Division I and 57 per cent of the national annual output was 61.4 cents. As has been previously stated in this section, the May, 1933 wage data are considered somewhat high so that any comparisons with later wage costs per ton tends to be conservative and understates the probable increase in the return to the labor. For the nine months period, April through December, 1934, (after code amendments) the wage cost per ton averaged \$1.153. This cost represented an increased wage cost of 53.9 cents per ton or 87.8 per cent. Applying this increase to the total production of these areas of Division I, which reported their May, 1933 costs to NRA, during the period April 1, 1934 through March 31, 1935 - 206,000,000 tons - the increase in the wage bill amounted to \$111,000,000. (*) These areas made the greatest gains in the industry because in addition to the general shortening of the workday from eight to seven hours (April 1, 1934), they had two increases in basic wage rates (October 2, 1933 and April, 1934). The estimated number of employees in these areas approximated 265,000. Accepting the increase of \$111,000,000 in the wage bill, then the average increased return per worker amounted to \$419 for the coal year, April, 1934 through March, 1935, as against what the earnings would have been had the May, 1933 wage rates and hours continued. If it is assumed that the average output per man per day were 4.2 tons, then the daily wage in these areas was \$2.26 higher after April, 1934 than in May, 1933.

Similar wage data are available for Division III (Alabama, Georgia and Southern Tennessee) of the industry. The labor cost in May, 1933 was 74 per cent per ton. During the period April through December, 1934, under the Code, the labor cost averaged \$1.39 per ton, an increase of 65 cents or 87.8 per cent. The approximate tonnage produced in this area for the coal year April, 1934 through March, 1935 was 10,500,000.

(*) All sub-divisions of Division I reported except Southern No. 1, Michigan, Panhandle, and Western Kentucky. The areas which did not report represented approximately 15 per cent of the division's output.

Applying the per ton labor cost increase to this tonnage, gives approximately \$6,800,000 as the amount by which the wage bill was greater than if the May, 1933 rates had continued. The estimated number of employees in Division III is about 15,000. On this basis the wage return per worker in this area for the year after April, 1934 was slightly over \$375 than if the pre-Code wage rates had continued.

The return to labor in Division II (Indiana and Illinois - excluding Iowa) were not increased as greatly as in either Division I or Division III. Union contracts were in effect for almost all of the production in this Division prior to the Code. The wage rates specified in these contracts were carried forward into the code period. However, with the code amendment on April 1, 1934 - shortening the work day - hourly rates were increased and wage returns were likewise higher. The labor cost per ton in this division (excluding Iowa) for deep and strip mines combined was 72.99 cents during the five month period (November, 1933 through March, 1934) prior to the amendment. For the ten month period following the amendment (April 1, 1934), the labor cost was increased to 82.91 cents per ton - 9.92 cents or 13.6 per cent. The output in this area for the 12 months following the amendment approximated 53,000,000 tons. Applying the labor cost per ton increase to this tonnage results in an increase of \$5,750,000 in the wage bill over what would have been received had the previous Code wages and hours continued. The estimated number of employees in Illinois and Indiana approximates \$55,000. On this basis, each employee received slightly over \$100 more in the year after April, 1934 than he would have received under the original code provisions.

Thus, taking the total producing areas east of the Mississippi River (exclusive of Southern No. 1, Panhandle, Michigan and Western Kentucky), the estimated tonnage would represent approximately 75 per cent of the national output and the employment would cover 338,000 men. The increases in the wage bill for the twelve months following April, 1934 over the pre-Code wages in this area was approximately \$123,500,000 or about \$365 more per employee.

The remainder of the industry, Division IV (comprising Missouri, Oklahoma, Kansas and Arkansas) and Division V (Rocky Mountain area) produce together less than 9 per cent of the national tonnage. Wage data for these areas, as well as for those in Division I which were excluded (about 16 per cent of the national output) are not available for making any comparison pre-Code and Code wage bills. Since no union contracts existed prior to the Code for the latter areas in Division I, it is probable that the wage increases approximated those of the other areas in the Division. In the case of non-union portions in Divisions IV and V, the rates of pay established by the Code were higher than existed previously. Further wage increases were secured with the shortening of the work day after the Code amendments.

An overall survey of the NRA wage data when compared with the Bureau of Labor Statistics' payrolls increase as indicated by their index, show approximately the same results. For example, the NRA wage bill increase estimate is \$123,500,000 for 75 per cent of the

national production, while the Bureau of Labor Statistics index for the entire industry indicates a wage bill increase of approximately \$138,000,000. It seems very probable that the comparatively large wage increases in those areas of Division I for which data are lacking and the lesser increases in Divisions IV and V after the Code amendments would bring the NRA estimate very close to that reported by the Bureau of Labor Statistics.

WAGE DIFFERENTIALS: THEIR HISTORY, THEIR INFLUENCE
ON THE COAL INDUSTRY

Definite ascertainment of the "wild" and "crazy" situation existing at a given time between different fields, or at any different fields or mines within a district, would require a certain amount of knowledge concerning wage scales, organization of labor force, mining conditions and the adjustment of payments to variations in such conditions. Such fullness of information it may be stated at the outset is not in existence. Elaborate accounting records have never been produced at a joint conference. Or as stated recently by the man whose experience with, and knowledge of, wage differentials is perhaps as wide as that of any one: "There never has been a scientific study of this question. As matters now stand, the established differentials in many instances have been the source of continued discord among miners and operators alike." (*) With this may be compared his earlier testimony before the United States Bituminous Coal Commission in 1920: (**)

"Inequalities on tonnage rates, on machine differentials and otherwise, which the men claim are entitled to consideration, prevail. Some of these conditions have prevailed for a great number of years. They have prevailed because the Mine Workers have heretofore been powerless to secure their modification or adjustment and though in conference after conference we have taken up these matters and sought consideration, we were oftentimes by force of circumstances compelled to enter into an agreement, which did not carry with it any adjustment of these differentials and startling inequalities. Although in some fields the differentials were originally small matters, amounting to only a very few cents per ton, they have year after year.....through the system of applying percentage increase upon these rates and differentials, grown and grown, until today they menace the security of the industry."

From 1908 until its breakdown about 1927 the Interstate Joint Conference's wage agreement was the foundation of the wage structure. From 1927 until the establishment of Code rates in late 1933 such stable wage rates as existed were the result of district, or individual mine, agreements. When Code rates were eliminated the Appalachian Wage Agreement had supplanted the Central Competitive Field contract as the basis of stabilized wage rates. The Interstate Joint Conference went no further than to establish wage rates for four

1/ Prepared by Charles E. Persons.

(*) Lewis, John L. Transcript of Proceedings, Coal Code Hearing, August 10, 1933, p. 329.

(**) Transcript of Evidence--a typewritten manuscript in 4 volumes, made available by the courtesy of the National Coal Association. Vol. I, p. 33.

basing points, one in each of the four states of Illinois, Indiana, Ohio, and Western Pennsylvania. (*) These rates supposedly were guides to be followed by the state and district conferences later. The degree of their influence, however, frequently has been misconceived. In practise they were not regarded as fixed rates. Rather the negotiators in district conferences were concerned to raise or lower existing rates in the same degree that basing point rates had been changed. Original union contracts tend to accept the wage structure as found. Successive adjustments in the district conference may be based fundamentally on the wage levels of 1898 or even of an earlier date.

In the outlying districts, although the areas covered by union contracts varied with the fortunes of unionism, at one time or another union contracts were found in Central Pennsylvania, Iowa, Maryland, Northern West Virginia, the Kanawha, Panhandle, and New River districts of West Virginia, some few districts in Southeastern Kentucky and Tennessee, Western Kentucky, Michigan, Washington, Wyoming, Montana, Missouri, Kansas, Arkansas, and Oklahoma. The last four states named made up the Southwestern Interstate Conference with a history of wage negotiations of its own. Aside from these outlying districts contracts were made at times with individual mines in other fields, e.g., in Northern Colorado, Southern West Virginia and Alabama. Price competition bound all these districts, with the possible exception of the extreme northwest, to the Central Competitive Field. Hence it was natural that wage changes there should be reflected in the outlying districts. This tendency the union organization strongly supported. Testimony was given in 1920 to the effect that "whatever (advance) was granted in the Central Competitive Field was applied to the tonnage rates in the Southwestern District." In the Kanawha field of West Virginia it was understood that "whatever rise or fall in the Central Competitive Field took place, the same percentage of increase or decrease would affect" that district. While in Colorado it was stated that "under the joint contract we have a clause which automatically gives us the same advances in wages that may be applied in the Central Competitive Field." (**)

However, this principle frequently yielded to the pressure of other forces. The incursion of competing fuels in the southwest area provided special conditions which resulted in the building up in that area of a special wage system on a lower level than the "principle" would have established. Union weakness joined either to employer strength or to the sheer pressure of competitive forces reached a similar result elsewhere.

Finally the non-union fields had a wage structure which rose and fell with fluctuation in the demand for coal and in the supply of labor without reference to contract dates. The general wage situation here was not uninfluenced by the wage structure in union fields. It tended to maintain a distinct wage differential below the standards they set up. It is worthy of note that non-union conditions were not confined to distinctly non-union fields. There were apt to be non-union inclusions within union territory. Sub-marginal mines or hard pressed managers might find an opportunity for profit in maintaining such wage differentials. (Subsequent discussion follows the order indicated by the preceding paragraph: the Central Competitive Field; the Outlying Union

(*) In Indiana the separate agreement for the Block Coal District made, in effect, a second basing point.

(**) Transcript of Evidence before the United States Bituminous Coal Commission. See Vo. III, p. 1632, Vol. IV, p. 2602, Vol. III, p. 1986.

Districts; the Non-union Areas.

From this standpoint of exactitude of knowledge regarding the true wage situation, it is unfortunate that the basic wage agreement in the Central Competitive Field was customarily reduced to a few basic wage determinations. Thus the pick mining rate which covered by far the most important part of wage cost in coal mining operations during the early years of Interstate Joint Conferences was fixed for the four basing points as shown for successive dates in the following table:

BASING POINT RATES FOR PICK MINING

	1886*		1897*		1898		1916		1923	
	Screened ROM		Screened ROM		Screened ROM		Screened ROM		Screened ROM	
Pittsburgh (thin vein)	\$.71	\$ -	\$.65	\$ -	\$.66	\$.4266	\$ -	\$.6764	\$ -	\$1.1164
Indiana Bituminous No. 1	.65	-	.56	-	.66	.40	-	.64	-	1.08
Grape Creek, Ill. (Danville)	.75	-	.65	-	-	.40	-	.64	-	1.08
Hocking Valley, Ohio	.60	-	.56	-	.66	.47-1/7	-	.6764	-	1.1164
	<u>1924-27</u>		<u>1928</u>							
	Screened ROM		Screened ROM							
Pittsburgh (thin vein)	\$ - \$1.1164		Non-Union							
Indiana Bituminous No. 1	- 1.08		\$.91							
Grape Creek, Ill. (Danville)	- 1.08		.91							
Hocking Valley, Ohio	1.1164		Non-Union a/							

a/ Small group of operators in Southern Ohio - had contract with rate of 37.64 cents per ton for pick mining.

Here the original differentials for screened coal set in 1886 ranged from 60 cents in Hocking Valley to 75 cents in Grape Creek, Illinois. This considerable spread of 15 cents serves as well as any other illustration to point out the difficulties inherent in correlating wage rates with earning opportunity or with costs of production. For the labor and the expense involved in gaining a ton of screened coal in the mines at the four basing points is dependent on numerous factors - the size of the opening in the screens, the friability of the coal mined, the methods employed in extraction, and the methods of weighing or measuring the coal produced. It might easily have been true that the seeming wage differentials here prescribed were only an adjustment to cover differences in mining practices or in geological conditions and that the actual earnings and the real costs of production were substantially equivalent in the four districts. It will be noted that when the transition was made to payment on a

* Lubin, Isidor, Miners' Wages and the Cost of Coal, p. 83. Other rates from study of union contract by Mrs. Charlotte Warner Fitch, of U.R.A. staff.

run of mine basis, the major part of this ostensible wage differential was eliminated. A new differential of 3.84 cents per ton between the Indiana and Illinois basing points on the one hand and those of Pennsylvania and Ohio on the other was maintained unchanged until the Interstate Joint Conference machinery broke down in 1927.

By that time material changes had taken place. The advance of mechanization through the introduction of machine cutting and later of machine loading had reduced the importance of the pick mining rates as measures either of miners' earnings or of operators' costs. Moreover, the advance of mechanization had proceeded at different rates in the four states. To a degree also the basing point which had first been selected as fields with similar mining conditions and equal strength of union organization had to some extent ceased to merit this basing point designation. Other districts had risen in importance and Hocking Valley, at least, was losing ground. The mere fact that pick mining rates at the four basing points were substantially equal no longer held the answer to questions regarding the existence of wage differentials and their extent. In any case the content of the pick miners' duties have varied widely in different fields and even among miners in the same fields. In a small mine and under early conditions the pick miner performed all the operations incidental to getting out the coal and loading it in the mine car. He was tracklayer, timberman, under cutter, shotfirer and loader. In union contracts may be found all possible combination of these duties with corresponding variations in wage rates. The detailed comparative statement of Mr. Statton, a West Virginia operator, speaking of conditions in the Kanawha field is instructive.

"In the Central Competitive Field the miner handles 12 inches of slate, lays down his own track and pushes his cars from the parting to the face of his room, all of which is included in the price per ton.....But in our district we pay for 12 inches of slate 98½ cents per linear yard. The company lays the track, delivers and hauls the cars from the miners' face of his room and entries. Clearly a flat advance in both of these fields would work injustice in one or the other; only a percentage advance could be impartial." (*)

To discover the actual weight of wage differentials would require precise correlation of these diverse adjustments of duties and wages.

Further difficulties arose because of the different development of mining methods in different fields. In some fields hand methods persisted and mines were small measured by output or by number of men employed. In others full advantage was taken of the advance of mechanical methods and the mines turned out a large tonnage daily and gave employment to very considerable labor forces. In the small mines little division of labor exists while in the large mechanized mines both specialization of labor and closeness of supervision have gone to lengths which are new and strange in the bituminous coal industry. The exact measurements of wage differentials under such contrasting conditions is practically impossible with any data now available.

(*) Transcript of Evidence 1920. Vol. IV, p. 2601.

In the small hand operated mines the pick mining rate is all important. Day rates are of minor significance and machine rates have no bearing on either earnings or costs. In the large mechanized mines pick mining is incidental and of very slight importance. Under special conditions a few tons may be obtained by hand mining; the bulk of the tonnage is produced by machine methods.

After the pick mining rate the Interstate Conferences have been concerned with the wages paid day men. The conference in 1898 was notable for the establishing of an eight-hour day throughout the Central Competitive Field and for setting up uniform wage rates for inside day men. The basic rate then established was \$1.75 for most classes. Trackmen and timbermen received \$1.50; pipemen \$1.25 and trappers 75 cents. "This scale was obtained by taking the average of the wages paid in all the competitive districts and reducing it to an eight-hour basis." (*)

At succeeding Interstate Joint Conferences, the practice was to make changes in the inside day rate by adding or subtracting equal amounts from the existing rates. Thus uniformity of inside day rates at the four basing points was maintained as long as the Interstate Joint Conferences continued. This meant that at these basing points men performing the same duties had equal pay. From their viewpoint no wage differentials existed. From the standpoint of the operators these uniform wages might, nevertheless, represent wage differentials. "One mine in which most of the work of laying track in the rooms, taking up floors, tunneling, etc., is done by the miners themselves will have relatively few company men underground; another in which much of the work is done by company men may have as many inside workers as it has miners. (**) When inside day rates were increased mines organized with the maximum of inside day men would find their costs of production per ton materially increased on comparison with mines where the bulk of the work was done by men on tonnage rates. This amounted to a wage differential favoring the small pick mines. (***)

However, there have been some exceptions to the rule of paying uniform inside day wages in the Central Competitive field. In Indiana the motormen rate has been higher than in the other three states. This came about as the result of an agreement between operators and miners whereby motormen were reclassified and certain helpers eliminated with an accompanying increased rate for the motormen. Southern Ohio was given a concession on inside day rates running from 30 to 60 cents per day lower than was paid in the balance of the state. This was intended to put operators in that district on an equal competitive basis with those at the Hocking Valley basing point. (****)

(*) Lubin, Isador, *Cous cit.* - p. 141

(**) Lubin, Isador, *at supra*, p. 139.

(***) Compare the testimony for the operators by Mr. C. E. Maurer. "They have a little thin seam of coal in that field where they employed 60 per cent day man and 40 per cent miners. In order to produce that coal and put it on the market they had to have a reduced wage for day men."

(****) See testimony of Mr. John Moore, President of the Ohio Mine Workers. Transcript of Evidence, U.S. Bituminous Coal Commission, 1920

The 1898 scale committee attempted to formulate a scale for outside day labor but failed due to the fact that many of these outside occupations, engineers, firemen, etc., came under craft unions not affiliated with the United Mine Workers of America. Not until 1912 did the Interstate Joint Conference take into account wages for outside day men and even then only to specify the amount of change to be made in the existing rates. No provisions were made for uniformity at the basing points and it was assumed that variations in outside wage rates, like deadwork variations, were to be continued.

This situation naturally led to a great diversity in the rules applying to these men and their wages. In Indiana, blacksmiths worked nine, and inside day men, eight hours per day. Engineers had duties to perform outside of their regular hours. In some sub-districts in Ohio certain occupations were not affiliated with the United Mine Workers of America. (*) The wage structure was even more complicated. The following table shows the varying rates in effect in 1922 for the occupation, outside common labor. (**)

	<u>Outside Laborers</u> <u>(dollars per day)</u>
Illinois	6.86
Indiana	6.85
Ohio	
Cambridge	7.22
Crooksville & Hocking	7.25
Jackson & Ironton	6.90
Pomeroy	6.30
Massillon, Panhandle, Tuscarawas & Coshocton	6.30
Western Pennsylvania	6.60

Not only was there a considerable variation in the wage scale for one occupation but the diversity in the status of outside workers resulted in considerable variation between the various classes of labor. The Illinois contract made little attempt to equalize rates and stated only that the \$6.86 rate was a minimum rate, while firemen and stokers shall receive \$7.25. (***) The Western Pennsylvania contract listed the following occupations with rates.

Dummers.....	\$6.92	per day
Ram operators.....	7.10	" "
Pushers.....	6.82	" "
Trimmers.....	6.86	" "
Car cleaners.....	6.60	" "

It further specified that blacksmiths, carpenters, rivermen, firemen and other outside labor rates were to remain as they were. (****)

In Indiana, the contract specified a flat rate of \$6.85 for outside day men, with the exception of blacksmiths, who worked nine hours at a rate of \$7.92 and firemen, for ten hours, at \$7.356 per day. (****)

(*) Lubin, Isador, ut supra, pp.

(**) Fisher, W. E. and Bezanson, Anne, Wage Rates and Working Time in the Bituminous Coal Industry, Appendix Table 52.

(***) Contract between Illinois Coal Operators Association and the United Mine Works of America, 1922 to 1923.

(****) Contract between Indiana Bituminous Coal Operators Association and the United Mine Workers of America, 1922 to 1923.

(****) Contract between Pittsburgh Coal Producers Association and the United Mine Workers of America, 1922 to 1923.

The Ohio scale, for Hocking Valley, reported the following scale. (*)

First blacksmith	\$7.77 per day
Second blacksmith	7.45 " "
Blacksmith helper	7.25 " "
Mine carpenters ...	7.45 " "
Dumpers & trimmers	7.25 " "
Greasers & couplers	5.06 " "
Engineers & firemen em- ployed by the day	7.25 " "

Again in the field of yardage and deadwork rates the diversity of actual wage rates may be overlooked if examination is not carried beyond the statements of wage contracts. The Interstate Joint Conference did not fix these rates. It was customary to determine a percentage rate of increase or decrease applicable to the existent rates at the basing points. Similar provision was made in the district contracts. For example the wage agreement covering Illinois, effective August 10, 1932, reads: "All yardage, deadwork and horsebacks on which a scale has been established shall be reduced twenty-five per cent from rates in effect under the contract which expired March 31, 1932." Correlating inter-district rates in search for wage differential data would require even in the simpler field of yardage, a painstaking comparison of yardage rates for entry, room turning and break through work, giving full consideration to such factors as seam thickness, methods of mining and division of duties field by field. Thus only can the student hope to discover the true status of comparative earning potentiality or of production costs.

In the field of deadwork payments it is practically impossible to measure wage differentials. Payments for such unstandardized and non-uniform tasks as cleaning up falls, and eliminating irregularly occurring impurities in coal seams are ordinarily arranged between individual miners and their mine foremen. No schedule of rates can be arranged for such unpredictable occurrences. Indeed some contracts provide that when the coal seam in a given room contains an undue amount of impurities, it shall be handled by day men and the miner affected shall be given an "average room." It is unquestionably true that deadwork payments, and yardage only in lesser degree, are a fruitful source, albeit incommensurable, of wage differentials. Hard pressed mine managers reduce deadwork payments to the minimum and chisel on yardage allowances; Liberal managers at prosperous mines especially if supported by vigorous unionism, pay considerable wage differentials at this point. Data from NRA records show that significant wage differentials might arise here. Thus a ten-month average from April 1934 to January 1935, both inclusive, shows that Maryland and Upper Potomac, with very difficult mining conditions, paid 12.5 cents per ton for yardage and deadwork out of a total labor cost of \$1,295. This is 9.65 percent. Michigan for the same period paid 29 cents out of a total labor cost of \$1.93 or 15 percent. Western Kentucky with wage standard based on non-union conditions from 1926 to 1933 shows for the two months - November and December 1933 - for which reports are available, about 1/3 of a cent per ton in an average labor cost of 71 1/2 cents per ton. This makes less than half of one percent.

(*) Contract between District #6, Ohio and the United Mine Workers of America, 1922 to 1923.

Wage rates in the other districts are based on those existing when the union first organized. They may have been higher or lower than those obtained in the Central Competitive Field. Thus the rates in Washington, Wyoming and Montana were distinctly higher due to a higher cost of living in that region and to the existence of a generally higher wage level. In Western Kentucky, on the contrary, when a union contract was first negotiated in 1909 wage rates were considerably lower than those of the Central Competitive Field. This is explained as due to the pressure of neighboring non-union areas. These lower rates were nevertheless incorporated in the contract subject to a promise of the operators that the interstate wage level would be granted in case the union succeeded in organizing the remaining Western Kentucky mines.

Contracts succeeding the original agreement were affected by the changes made in the Interstate Joint Conference. However, because of the original acceptance of the individual wage rates their relation to the Central Competitive Field is by no means uniform. For before the advent of Code control can it be shown that the lack of uniformity had lessened rather than increased. In the remaining unionized areas Competitive pressures, e. g., had driven basic rates in the Southwest from \$3.75 to \$4.00 while the Indiana and Illinois Competitive rate was \$5.00.

The basis for this situation was stated by Mr. Clark, representing the Central Pennsylvania Field, before the United States Bituminous Coal Commission as follows: "Our agreements have been built up from a competitive standpoint and from a standpoint that filled the conditions surrounding the mining industry from an operating standpoint."(*)

"The principles underlying wage setting were pointed out with equal frankness by Mr. John Mitchell in his testimony before the Commission on Industrial Relations.

"As I say, it is impossible to determine the cost solely upon the earnings of a man, because if we were to do that, if we were to say that a man could earn \$4 a day at Da'ville he ought to earn \$4 at every other mine, because if the board fixed entirely upon wages some of the mines could not operate; the physical condition of the mine and the freight rates would exclude them from the market; so that if there be some natural condition in the mining field that makes it more expensive to operate these mines at a base point, we have to understand what the mine owners, I think, all recognize that that burden should be carried in part by the mine owner by reduced profits, and part by the miners in less wages; so that in a rough way an attempt has been made to establish our mining scales, based upon the comparative opportunities of the different mining fields and perhaps upon the opportunities of the miners in the different fields to earn their wages." (**)

(*) Transcript Vol. IV p 2854 a

(**) Quoted Report of The United States Coal Commission, 1923 Part III, p. 1047.

This is to say when plainly stated that the indigenous wage scales found when unionization takes place the net result of a struggle between competitive forces and the weakness of the unorganized miners is of capital importance. The situation in the Bituminous Coal Industry with its super-abundance of productive capacity and its shrinking markets is such that in each field a mine is opened up and is operated to the furthest extent possible, in view of mining conditions joined to the willingness of the labor force to accept low wages, makes possible. Moreover, the operator will sink to the most distant fields and absorb the greatest amount of freight charges which is made possible by savings in production costs contingent on extended time of operation. Whatever the wage situation, it is always correctly defended as the highest which can be maintained if the mines in operation are to be continued and miners to be employed for the established annual days of operation.

Neither miners nor operators, therefore, will consent to unionization except it be tacitly, if not implicitly stated, that the existing competitive situation is to be maintained. Thus the joint circular of operators and miners sent out in 1886 calling the first interstate conference plainly stated:

"If the price of labor in the United States was uniformly raised to the standard of three years ago, the employers of labor would occupy toward each other the same relative position in point of competition as at present. Such an advance would prove beneficial to their interests, as it would materially help to remove the present general discontent of the miners in their employment." (*)

This is to say that both parties must be assured that their opportunities for employment and for the enjoyment of wages and of profits are not to be diminished. Against any attempt to raise wages above the competitive levels established before unionization, the operators fight with the pertinacity born of justified fears for the life of their mines. These fears are frequently intensified by the spectacle of numerous bankruptcies among their business associates and rivals. Under such conditions the union officials were not inclined to push the demand for wage increase beyond the level attained in the Central Competitive Field and in neighboring outlying districts. Here then is the basis for wage differentials found between the Central Competitive Field and the outlying districts in general as well as between the various outlying districts. They were established as were similar wage differentials between the states combined in the Interstate Joint Conference, under pre-unionization conditions of intensified competition. They were embodied in wage contracts and maintained by the policy of percentage increase in tonnage rates together with fixed increases on day rates. To this wage structure and labor cost the productive and distributive organization accommodates itself. Superabundant competition forces the industry to produce and sell every ton which the wage structure allows. It is always literally true that to increase wage costs in any district will destroy the marginal and submarginal mines desperately striving to maintain a place in the industry. It must be held in mind that survival for them is not dependent on any wage level, high or low, but rather on the maintenance of the comparative wage situation under which their entries were opened and their markets established.

(*) (Evans, Chris. History of the United Mine Workers of America, Vol. 1, p. 142).
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The general wage differential so far as the non-union fields are concerned is simple in statement. Under competitive pressure the non-union operators seek to take advantage of the relatively stable and permanent wage structure embodied in union contracts and to maintain for themselves a lower wage level. At times even above these non-union operators may be in the heart of union territory. A notable example was the "iron clad" contract of the New York and Cleveland Gas Coal Company effective in 1896 and for some years thereafter. This contract boldly stated that the price to be paid for minia coal should be 10 cents per ton less than any other price paid in the Pittsburgh district, but it further provided that if a strike occurred in the other mines of the district this wage should be increased 10 cents per ton during such strike. (*) The report on the strike in 1910-1911 in Westmoreland County, Pennsylvania, disclosed a similar situation. Here the miners were still working 10 hours daily although unionized mines in the Interstate Competitive Field had been on 8 hours since 1898. (**) Despite this material disadvantage in hours, earnings of both tonnage and day workers were lower in the non-union mines than in neighboring unionized operations.

The wage differential controversy carried on by the union with the distinctly non-union fields of West Virginia, Eastern Kentucky, Tennessee, Georgia and Alabama is familiar to all students of coal problems. It was persecuted with increasing intensity as the development of these new fields highly favored by natural conditions and reenforced with favorable wage differentials invaded the markets of union operators and endangered the union wage structure. It was not only the lower wage but the greater flexibility of wage rates which did damage. When demand slackened these non-union operators cut wages and extended sales at the expense of operators bound to the payment of union wage scales. In times of brisk demand the non-union operators promptly raised wages and bid high for an increased share in the limited wage force. In periods of strike stoppage in union fields, these non-union mines continued production and reaped a harvest from high profits, intensive operation and abundant labor supply. However the general wage level in non-union fields was materially below the union standards. Measurement is difficult since no general wage scales exist in non-union mines. Each mine had its own wage system. Indeed "in some of them each laborer made his own bargain with the mine official and his rate was, in large part, determined by his own bargaining power". (***) A general statement covering an eleven year period is found in a work based on investigation made for the United States Coal Commission. The conclusion reads:

(*) Article by J. E. George in Vol. XII Quarterly Journal of Economics, pp. 200-211.

(**) Neill, Charles P. Report on the Miners' Strike in Bituminous Coal Fields in Westmoreland County, Pennsylvania in 1910-1911 Passum.

(***) Lubin, ut supra, p. 200.

At the start of our record in 1912, the average rates per hour paid to day men were 30 cents in union fields, 25 cents in irregular, and slightly less than 22 cents in non-union areas. By the close of 1922, day rates in union fields averaged 89 cents, in irregular 51 cents, and in non-union 40 cents per hour. During the depression, the differences were larger than is indicated by these absolute comparisons. The maintenance of union scales in the first half of 1933 when rates in other areas decreased meant that the average hourly rates of union day men were 40 cents above the non-union and 38 cents above the irregular areas." (*)

Within this general situation of union fields, divided between the Central Competitive Field and the outlying districts, and the non-union areas, certain recognized wage differentials developed. These may be discussed under the headings: machine, freight, thin vein, and geographical differentials. Insofar as these wage differences have been consciously fixed, they are all conditioned by the purpose to maintain the principle of competitive existence for all operators and for all groups of miners. This principle, be it remembered, is of belated application. Wage scales and differentials are not predetermined and applied to mines as they are developed and as they establish markets. Rather they wait on unionization and adopt an inchoate -- one is tempted to say unprincipled -- wage structure based on nothing more defensible than competitive struggle. Once accepted these wage differentials must be maintained if certain mines are to operate and the miners there employed are to work. Otherwise stated, the maintenance of the relative competitive advantages is essential to retain the loyalty of miners and operators to the wage conference. Either party will forsake the agreement if convinced that their interests are not protected.

This was effectively stated in 1920 by Mr. W. N. Taylor speaking

(*) Fisher, Waldo E. and Bezanson, Anne, Wage Rates and Working Time, Bituminous Coal Industry 1912 - 1922, pp. 151-152. -- "Irregular areas" are those in which "the union and the operators have waged an almost continuous struggle over the question of union recognition". There was produced approximately 10 per cent of the soft coal during the period 1912 - 1922: Non-union areas about one-third. Su. p. 23.

for the operators in the Southwestern District.

"We have built up by collective bargaining, relative scales, so that the fields can enjoy, through competitive relations, a certain market between the fields of the Southwest against their eastern competitors. To disturb those relationships would be the elimination of many of our mining centers. These centers have a right to live, whether some people think they have or not. If disturbed we cease to exist and our miners must leave their homes and seek other fields. The operators cannot leave, because their mines are in the ground and cannot be moved."(*)

An apt illustration of these factors is found in the machine differentials. The interstate Joint Conference at first based its wage structure on the pickmining rate. When compelled to take account of machine undercutting it was handling the interests, at first, of a minority group. To maintain the majority competitive interests of operators and miners it set rates for machine operation which gave the managers introducing the machines little beyond a fair return on the investment in the machines. Thus the majority of miners and operators still carrying on pick mining were protected. In addition the miners operating machines made a handsome wage and the only voices in the conference dissenting were those of the, at first, inconsiderable minority of operators using machine cutters. When, nevertheless, mechanization progressed the market competition had been adjusted to the labor costs imbedded in this wage structure. It was far easier to maintain the established machine differentials than to face the disruption incident to setting up a relative wage base on an accurate scientific determination, assuming that any one party to the agreements harbored such an unusual design.

Further diversity developed as new districts were progressively brought into the unionized wage structure at various stages of mechanization and with relative rates for machine and hand operation variously adjusted. With mechanical loading added to machine cutting the mines in which geological conditions required hand operation were forced back definitely into the class of submarginal mines. As an alternative to ceasing operation entirely, hand mining rates were progressively reduced and the machine differentials had a new manifestation.

It must not be supposed that machine differentials were uniform throughout the Central Competitive Field. The basic rate for

(*) Transcript, ut supra, Vol. III, p. 1638. Cf. views of Mr. J. B. Wilson of Oklahoma, p. 1736.

Danville, Illinois for machine mining, i.e. undercutting by machines, plus hand loading after machines, was set at 10 cents lower than the hand rate. In all districts outside Danville the differential was set at 7 cents. This "was based on the average machine differential which prevailed under non-union conditions before 1898".(*) Those differentials despite much operator discontent were maintained throughout the period when the Interstate Joint Conferences were effective. In the Indiana Bituminous district a machine differential of 7 cents a ton was maintained. Ohio had nine different differentials, as detailed in the table on the following page. Four of its 15 districts had 17.64 cents, which was the machine differential of the Hocking Valley basing point. Pomeroy and two other sections had 20.6 cents, the highest differential; Deerfield had 14.86 cents, the lowest; Crooksville 16.25 cents; Coshocton 16.6 cents; Sandy Valley had a 16.75 day rate for machine cutting. Pennsylvania had 17.64 cents in the thin vein area, 14.8 cents in veins rated as thick. In outlying districts the machine differentials are described as a "motley array running from 3 cents in some sections of the Southwest to 18 cents in Michigan. In some districts machine miners are paid on a day rate basis, while in others they are paid a fixed amount for each square foot of coal that they undercut." The table following shows these machine differentials for the Interstate Competitive field:

(*) See Lubin, *op. cit.* pp 107 et seq. for discussion of machine differentials.

Comparison of Hand and Machine Rates and Differentials

Pennsylvania, Ohio, Indiana, Illinois (*)

(mine-run basis, rates in dollars and cents per net ton)

	Pick Rate	Machine Rate (Loading and Cutting)	Differen- tial
Pennsylvania			
Thin Vein	1.1164	0.94	\$0.1764
Thick Vein	1.0311	0.8851	0.1480
Ohio			
Amsterdam	1.116	0.94	0.176
Cambridge	1.1164	0.94	0.1764
Coshocton	1.146	0.98	0.166
Crooksville	1.146	0.9235	0.1625
Deerfield	1.195	1.0464	0.1486
East Palestine	1.180	1.021	0.159
Hocking Valley	1.1164	0.940	0.1764
Jackson	1.180	0.9774	0.2026
Ironton	1.146	0.9774	0.1686
Massillon	1.1817	0.9757	0.2060
Panhandle	1.1164	0.940	0.1764
Pomeroy	1.146	0.940	0.2060
Tuscarawas and Sandy Valley	1.146	0.975	0.1710
Indiana	1.080	0.96	0.12
Illinois a/			
District #1	1.357 a/	1.290 a/	0.067
District #2 (Danville)	1.080	.980	0.100
District #3	1.089 a/	1.017 a/	0.072
District #4	1.083 a/	1.014 a/	0.069
District #5 and 9	1.083 a/	1.011 a/	0.072
District #6	1.040 a/	.970 a/	0.070
District #7	1.041 a/	.973 a/	0.068
District #8	1.166 a/	1.080 a/	0.086

a/ Weighted rates

(*) Source: Fisher, W. E., and Bezanson, A., Wage Rates and Working Time on the Bituminous Coal Industry, appendix tables 4 and 7.

These were the contract rates from April 1, 1920 to March 31, 1927.

Wage differentials based on freight differentials are deeply imbedded in the general wage set up. When Southern Illinois rose to importance in production, the field secured a 4 cent differential over Central Illinois on the pick mining rate because of the higher cost of shipping coal to Chicago, which was then the principal market for both fields. Although the marketing situation soon changed the wage differential persisted. Western Kentucky and Northern West Virginia defended their low wage scales vigorously on the score of their disadvantageous situation and greater shipping costs as compared with their nearest rivals. The tendency is to regard freight rates as inescapable and irreducible charges. Wages, on the contrary, are held subject to reduction to any extent required to enable the mines to continue operating. Earnings of miners can be supplemented by farming or gardening. And low standards of living, resultant from low wage scales, are skilfully transformed in public statements into lower costs of living. At bottom these wage differentials are based on the sincere conviction that developed mines must operate. This belief is held by miners as well as operators. In the case of the miners this conclusion has frequently been enforced by prolonged shut downs and resultant lack of a means of livelihood. Mines are thereafter reopened at any wage scale which permits operation. Such scales then become accustomed and accepted.

Thin vein differentials work counter to the freight differentials in that as adjusted they make it more, rather than less, difficult for the mines to operate. They are based on the natural belief of the wage earners that tonnage rates should be higher when more difficult natural conditions are encountered by the miners. The difficulties of gaining a ton of coal in a 2 foot vein are much greater than those met in a 5 or 6 foot seam. On principle the wage scale should be so adjusted as to make the earnings of miners equivalent in both cases. In practice the tonnage rate, while higher in the thin seam, may fall far short of completely balancing the more difficult conditions. In the historical development of wage systems numerous survivals were left not now defensible on an exact comparison of natural conditions.

Most important of these is the Pittsburgh thick and thin vein differential of \$.0853 per ton. In its origin in 1902 this has been explained as a freight differential based on the dockage fees on the Monongahela River. It persisted and drew the fire of the United Mine Workers' president in the Code Hearings in 1933. He described the imaginary line drawn, put the pick miners' differential in favor of the so-called thin veins at 10 cents per ton, and stated that a corresponding differential had been granted for hand loading and machine cutting. He declared:

"Despite the fact the operators producing coal in the so-called thick vein enjoy a differential in pick and machine mining below thin competitors in the Pittsburgh District, yet it is notoriously true

that much of the coal mined in the so-called thick vein territory is about the same in thickness as in the so-called thin vein district.

"Operators suffering for years from the effects of these differentials have sought in vain to make the tonnage rates the same throughout this area, and mine workers have complained, even to the extent of striking against a continuation of this abuse."(*)

With this may be contrasted the statement, made in 1920, of Mr. Don Rose, an operator in the Freeport seam of Western Pennsylvania. He testified that the Pittsburgh seam is continuous covering the entire district and that variation in thickness is of a gradual and comparatively steady character. It increases in thickness as one traverses it from north to south and any dividing line must be an arbitrary one. The differential originally "was established on the basis of equality of potential earning power on the part of the miners in each district." "Large investments in coal lands, development and equipment have been made, based upon the full knowledge of the dividing line and upon its bearing upon mining operations. Any disturbance of this question at this time would certainly result in substantial injury to such investments."(**)

Here is a clear-cut illustration of the difficulty of changing wage scales once the competitive pressures have expanded production by the favored districts to exploit the last vestige of advantage from the situation. For the operators dependent on the wage differential, its defense becomes necessary to existence and no historical exegesis or philosophical dissertation affects their attitude in the least degree. They are blessed with entire single mindedness of vision and purpose.

It is not difficult to point out great seeming divergence in the thin vein differentials. Thus the rate paid for pick mined coal in a 3 foot 6 inch seam is \$1.08 in Indiana; \$1.1817 in the Massillon District, Ohio; and \$1.24 in the East Palestine District, Ohio.(***) Further "coal of this height in the Southwest Interstate Field generally carries a rate of \$1.15 or more; in counties of Missouri \$1.20, \$1.23, \$1.25 and \$1.40, while in Subdistrict 2 of Iowa we find \$1.21. (****) Again, 2 feet 3 inch seams in the East

(*) Transcript of Code Hearings; pp. 330-331.

(**) Emphasis added. Transcript, Vol. II, pp. 985-6.

(***) Lybin, Opus Cit. p. 98

(****) These rates from Coal Section Study of Union Contracts.

Palestine section of Ohio of the Central Field have a \$1.30 pick rate; in Michigan a \$1.53 rate; and in Subdistrict 4 of Iowa the extreme rate of \$1.80. Similar differences can be found by comparison with almost any other outlying district."(*) Ostensibly these divergencies are based solely on the seam thickness. In reality the wage differential is affected by other natural difficulties such as the presence of gas or water, the folded or pitching position of the seams, the division of labor and methods of mining and cleaning the coal, not to mention the relative bargaining strength of the parties to the agreement and the historical incidents, or accidents, of wage scale development and of trade unionization. No safe conclusion can be drawn here without a most complete and painstaking comparison of all factors which affect the miners' opportunity for earnings and the operators costs of production. It might easily be true, e.g., that the wide divergence quoted between East Palestine, Ohio, and District 4, Iowa, worked out to substantial equivalence both in miners' earnings and in operators' costs when all factors were assessed at their correct value. No such study has ever been made and for the differentials quoted data is not in existence on which to base it.

Emphasis on geographical wage differentials is of comparatively recent development. Such discussion is not found in the reports of the United States Coal Commission nor in works based on these data.(**) Until that date chief interest attached to the organizational differentials, i.e. union vs. non-union. Because the southern and the southeastern fields were of large importance in the non-union districts, this discussion had a geographical bearing. After 1914, with the growth of southern West Virginia production to competitive importance, records began increasingly to carry debates over the north-south wage differentials. While chief interest attached to this geographical controversy, it should not be forgotten that other such differentials of importance existed. The Rocky Mountain Pacific coal fields had wage scales materially higher than those based on the Central Competitive Field wage scales. After 1924 the the Southwestern Field under pressure from competing fuels broke away from union control and developed a wage scale distinctly lower than that maintained in Central Competitive territory while the southern fields had the lowest wage system of all.

While this general conclusion as to the southern wage levels is generally accepted, the precise measurement of this north-south wage differential has never been attempted. A promising start on an exact scientific study was made under Code administration with

(*) Lubin, Op. cit. p. 162

(**) This is true of both Lubin's and of Fisher and Bezonson's books quoted above.

the appointment of a North and South Commission. (*) It suffices to mention here that extensive differences were discovered in methods of operation and in natural difficulties encountered resulting in the planning of an elaborate engineering study. One member of the commission stated his conclusion thus:

"It is apparent that there is a difference in the services performed and the proportion employed of company men and loaders in the various districts and, therefore, a higher cost in some districts than in others for the company men. This difference in cost should be obtained and should be reflected in the piece workers' rates. The present rates are based on unlike things and unlike amounts of labor required and work performed."(**)

These suggestions were equally applicable at earlier dates.

(*) See the discussion below.

(**) NRA files. Letter of James D. Frances and suggestion for information to be obtained by Engineers, July 26, 1934.

WAGE DIFFERENTIALS AT THE CODE HEARING

The most uncompromising stand against wage differentials was taken by C. E. Hosford, speaking as a representative of the Coal Producers Association of Western Pennsylvania. His opinions have great interest in view of his present position as Chairman of the Bituminous Coal Commission. Mr. Hosford stated at the outset of his argument:

"In my judgement, it is unfair to allow the mines of one district to work eight, nine or ten hours. Again, I say, it is unfair that one district is permitted to have one scale of wages and another district to have a different scale of wages when these two districts meet competitively in the marketing of their coal." (*)

The speaker admitted that wage differentials had existed for years and that differences in costs of living constituted a "sound economic reason" for them. But he continued:

"Now, there is no desire to take away from any producing district the advantage which it obtains from its geographical location, nor should it be deprived of any advantage which it has through the natural conditions affecting production. If the coal seams are thicker, if there is no draw slate, if there are no partings in the coal, and from that results a greater capacity per man, thus resulting in lower costs, that advantage should be enjoyed by that district, but we submit that no district should be protected by any artificial differential.

"Carrying out this theory, we submit that regardless of the district in which the work is performed and regardless of the return to the operator from that particular work or service, the wage earners in the various districts of the Appalachian Range should be on an equal basis as to hours of labor and should receive equal rates of pay. This applies just as well to the men who are paid on a piece-work basis as to those who are paid by the hour. If a motorman or other skilled laborer inside the mine receives, just let us arbitrarily say 50 cents an hour in Ohio and Pennsylvania, that same rate should be paid in the Southern fields." (**)

His conclusion was positively stated:

"I submit that in the final drafting of the code or codes, which will apply to our district and to those other districts which are competitive with us, that there is absolutely from a theoretical standpoint, from an economical standpoint or from a practical standpoint no justification for the allowance of any differential whatsoever." (***)

Similar convictions were stated by Frank E. Taplin on behalf of the Central Coal Association. As he put the problem:

(*) N.I.R.A. Transcript of Hearing on Code of Fair Practices and Competition, Vol. III, p. 440.

(**) Ibid p. 441.

(***) Ibid p. 444.

"If production and employment are to be equitably spread over the entire Greater Appalachian Range, it is vital that maximum working hours, minimum rates of pay and uniform working conditions be the same in all of the districts within this Range. The general code submitted provides for not to exceed 5 percent differential in favor of the mines south of the Ohio River as against the mines north of the Ohio River, but it is our earnest desire that for equitable reasons there should be no differential between those districts in base wages." (*).

A less extreme position was taken by the "general code" which was sponsored by a group of bituminous coal operators in the States of Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Michigan, Iowa, Kentucky, Arkansas, Oklahoma, Colorado, Montana and Wyoming. In presenting this code, Mr. George B. Harrington said:

"When we first approached this subject we discussed the possibility of setting up a basic wage scale for the entire country. The many complexities which immediately arose showed the utter impracticability of such procedure and brought us to the conviction that the only solution was to arrive at some simple formula for minimum basic wages and simple formula for adjusting and conforming tonnage and other rates to the basic day rates.

"The basic rate for underground mine-workers is fixed at \$5.00 for an eight hour day; for outside men, \$4.00. Within the industry it is recognized that specified classifications of labor receive somewhat less than the basic wages, and certain other classifications receive somewhat more. Such basic rate of pay, however, provides a living wage for the mine-workers, and it has entered into the sale prices of bituminous coal to such an extent that the industry, with the few limitations in the clause of the Code set forth, is adjusted to such wages, or can be adjusted thereto."(**)

These minimum rates were subject to the following adjustments:

"(a) In those districts south of the Ohio River and east of the Mississippi River, and in the Morgantown and Fairmont districts of West Virginia, the minimum day rates may specify a differential below the basic rates of not to exceed five percent.

(b) It is recognized that in the States of Oklahoma, Arkansas and Texas special conditions exist, and authority is given for joint agreement between the representatives of the mine workers and the operators on the question of proper differentials.

(c) Existing higher differentials established in Colorado, Utah, Wyoming, Montana and Washington during past years by reason of higher living costs shall not be disturbed." (***)

(*) Transcript, Vol. II, p. 366.

(**) Transcript, Vol. II, pp. 235-236.

(***) Proposed "General" Code of Fair Competition for the Bituminous Coal Industry, p. 4.

With these adjustments the United Mine Workers were in agreement. However, having accepted the cost of living principle as a justification for the higher wage levels of the Rocky Mountain and Pacific territory, their representative, President John L. Lewis, was at pains to show that a lower cost of living did not constitute a defense for the lower wage scales of the Southern fields. (*) He argued that lower wage levels required southern miners to live on a lower standard and emphatically stated that such evidence as exists indicates that very possibly the cost of living, for an equivalent standard of living, is higher on the average in Southern than in Northern communities. (**)

A paragraph may be quoted:

"As to the question of differentials within districts, attendant upon tonnage rates, it is the expressed desire of the United Mine Workers of America that in the district conferences created for the purpose of establishing tonnage rates comprehending a condition of fair competition within districts and with competing districts, that the conferees should apply themselves most diligently to the task of eliminating these absurd internal differentials, and make secure to the tonnage worker a minimum wage at least equivalent to the minimum rates for underground day workers." (***)

In the Code presented jointly by the Northern Coal Control Association and the Smokeless and Appalachian Coal Association, labor costs in the production of coal were called for which "make it possible for the producer to meet, on a comparable price basis, the competition of other fuels and other sources of energy, such as oil, natural gas, wood, anthracite, and hydro-electric power." (Article V) "Firm differences of opinion among the represented groups" developed on the question of other district wage differentials. These operators set forth detailed wage scales, evidently based on wages in effect. The standards set were distinctly below those of the general Code. For Pennsylvania and Ohio the maximum wage for inside day men was 50 cents per hour applying only to machine runners, motormen and rock drillers. Most of the important inside workers had 48 cents per hour while helpers rated 43 cents. By the Smokeless and Appalachian Association the maximum set for inside day men was 45 cents per hour; the bulk of occupations had 43 cents, helpers 38 cents.

The Rocky Mountain Pacific group of operators had agreed on a code containing general principles. When it came to wage standards, however, each of the Associations concerned submitted its own wage scales. These were regularly those in effect in the district covered. Most frequently the wage agreement with the United Mine Workers was quoted in full and made a part of the Code, basic rates generally ranging upward from \$5.00 per day. The Montana district, which was recognized to have the highest wage rates, paid miners, timbermen and tracklayers \$5.80 per day. Bratticemen, shotfirers, drillers, team drivers, pumpmen and head cagers were rated from \$5.70 to \$5.75 per day.

(*) See this agreement, Transcript of Hearing, pp. 337 et seq.

(**) Ibid p. 337.

(***) Transcript, Vol. II, p. 334.

The Southwestern Coals Association in a written brief (*) presented by its President, Mr. W. C. Shank, explained the "special conditions" existing in this area as due to the exceptional competitive pressure exerted by oil and gas competition. Wage scales, as proposed in the Code submitted, seemingly were based on the current rate of \$3.75 per day for inside day men. In four of the seven districts as shown in the insert following, inside day men were rated at 44 cents an hour or \$3.72 for an 8-hour day; outside day men at 41 cents, except in one case 40 cents. Two districts, both in Missouri, presented rates of 37½ cents inside and 32¾ cents outside per hour. The McAlester and Wilburton districts of Oklahoma were exceptional, proposing 47 cents per hour for inside day men and 39 cents for outside work.

Proposed Minimum Basic Day Rates (Cents per Hour)
Presented by Operators in Kansas, Missouri
and Oklahoma

	<u>Cherokee & Crawford Cos., Kans. Barton Co., Mo.</u>	<u>Lafayette County, Mo.</u>	<u>Ray & Clay Cos., Mo.</u>	<u>Randolph, Adair & Macon Cos., Mo.</u>
				<u>Shaft Mines</u> <u>Strip Mines</u>
Inside	44	44	44	37½ -
Outside	41	41	41	32¾ 41
	<u>Henryetta & Tulsa Districts, Okla. Shaft Mines</u>	<u>McAlester & Wilburton Districts Okla.</u>		<u>Boone, Bates, Linn & Vernon Cos., Missouri. Shaft Mines</u>
Inside	44	47		37½
Outside	40	39		32¾

Alabama coal operators presented a code through the Alabama Mining Institute and their case was presented before the Hearing by Mr. Forney Johnson. They complained of intense competition by oil, gas and hydro-electric power with an imminent potential competitor in the T.V.A. development. Further they called attention to their difficult mining conditions and to the necessity which they were under of washing three-fourths of their coal. They found some excuse for their low wage levels in the location of their mines in rural surroundings allowing miners to supplement their incomes with farming, gardening and canning operations. Mr. Johnson described the "grave condition of the coal industry in Alabama" with "an actual loss in corporate income per ton of coal mined of 23 cents, or \$112.00 per man employed", and spoke of the "shocking condition of destitution and unemployment in the Birmingham area." (**)

(*) N.R.A. Files, B.C.S. 13, Minutes and Exhibits Coal Code Hearings, August 1933.

(**) See the presentation of Forney Johnson, Transcript, Vol. III, p.463 et seq. Fassin, also the Letter attached to the "executed counterpart" of the Code from the officials of the Alabama Mining Institute.

Near his conclusion, Mr. Johnson asked "the National Recovery Administration to bear in mind that the coal mines cannot pay wages at all in excess of the rates proposed by the Code and cannot continue to pay those rates by selling less coal than was sold in 1932; that effective increase of the competition from other fuels and hydro-power is inevitable, and that every fraction of a cent forced upon the cost of Alabama Coal accelerates the substitution of the competing fuels, shortens the Alabama coal radius and curtails its tonnage and its labor."(*) The proposed wage rates even in the light of the accompanying discussion setting forth competitive conditions seem painfully low. The minimum hourly rate for inside workers was to be 30 cents per hour or \$2.40 for an 8-hour day; for outside workers (other than slate and sulphur pickers) the hourly rate was to be 25 cents. Workers who on June 16, 1933 were paid in excess of the lowest price class were to be given higher rates "based on the existing average differentials over minimum" wages.

Thus the range of basic wages proposed for major geographical divisions during the Code hearings ranged from \$2.40 per day for inside skilled labor in the South to \$3.75 per day in the Southwest; \$5.00 in the Central Competitive Field and the regions directly affiliated thereto, and \$5.25 to \$5.80 in Rocky Mountain and Pacific mining fields.

In the testimony of representatives of the Coal Trade Association of Indiana there occurs instructive comment on the wage differential situation between Illinois and Indiana. In both States wage agreements with the United Mine Workers had been maintained practically ever since 1898. But even during the continuance of the Central Competitive Field negotiations each of the states "had local rates of pay and conditions of contract that differed from those in the other states". After such negotiations ceased, contracts were continued in Indiana which were "entirely independent of and without reference to contracts in other districts". Since the current contract did not terminate until March 31, 1935, an attempt to standardize rates met certain difficulties. The basic wage rate in the Indiana contract was \$4.57 $\frac{1}{2}$ per day. A new basic rate of \$4.00 was proposed. The basic rate generally suggested for the area was \$5.00 per day.

Illustrations will indicate the difficulties in appraising the effect of divergent wage systems on potential earnings or labor costs of production, i.e., on wage differentials. In the Illinois scale tracklayers, bottom cagers, drivers, trip riders, grippers, water haulers, machine haulers and timbermen were paid \$5.00 per day; helpers had \$4.75. In Indiana the minimum rate of \$4.57 $\frac{1}{2}$ applied to helpers as well as higher skilled men. It was a minimum, not a basic, wage. Despite the seeming difference of 42 $\frac{1}{2}$ cents in the daily wage for these inside workers, the Indiana spokesman found the average hourly rate in Illinois to be 59 cents as compared to 57 cents in Indiana. Again the Indiana outside minimum day rate was \$4.20 applying to sulphur pickers as well as others; the general Illinois rate was \$4.50 but sulphur pickers had but \$3.00. Machine workers had the following comparative wages:

(*) Transcript ut supra. Vol. III, pp. 495-6.

	<u>Illinois</u>	<u>Indiana</u>
Cutting machine operator and helper	\$ 7.00	\$ 6.75
Shearing machine operator and helper	6.00	6.75
Drillers	5.75	6.15
Loading coal on conveyors	5.70	6.75

These rates are said to average 75 cents an hour in Illinois and 83 cents in Indiana. But obviously such averages have little meaning. A proper weighting of such rates would require complete knowledge of the relative importance of these operations in the two States and, indeed, in each mine studied. What machine mining meant in the potential earnings and in the actual cost of operation in each State would depend on the relative advance of machine mining, the relative effectiveness of the mechanical set up and the importance still attaching to pick mining. No such analysis was attempted. It may safely be asserted that such a precise measurement is impossible. (*)

The Code hearings developed also two regions in which a peculiar triangular competitive relation had existed for some time besides a considerable number of submarginal areas presenting pleas for wage differentials based on a variety of handicaps. In most cases, however, there was evidence that these areas were affected by the advance of mechanization and were in danger of falling victims to a belated manifestation of the Industrial Revolution. Quite regularly the representatives of these mines placed emphasis on their ability to furnish employment because of their reliance on hand methods. They had confidence that the N.R.A. would support their cause because of its intent to better the direful conditions of unemployment which had had a large part in calling that agency into being.

The older of the triangular competitive set ups was composed of Western Kentucky whose stern conflict with mines in the Central Competitive Field brought crushing pressure on an outlying part of the Western Kentucky coal seams which by an accident of political map drawing was included in Indiana. This was the Warrick and Vanderburgh Counties area. Closely parallel was the competitive situation between Iowa and Missouri and a coal field in Wayne and Appanoose Counties of Iowa, which on geological and coal marketing considerations, was associated closely with the Missouri coal field.

The situation in the West Kentucky triangle, at the time of the Code hearings, had developed in the course of the breakdown of the Jacksonville Agreement. The West Kentucky wage agreement with the United Mine Workers lapsed in April, 1925. The basic inside day wage rate in effect under the contract had been \$6.85, comparable to \$7.50 in the Central Competitive Field. After the Western Kentucky operators went non-union, they put into effect a scale of \$4.09 per day. This meant a wage differential under the Indiana rate of \$3.41 per day. With the putting into effect of a \$6.10 day

(*) See the testimony of Mr. Charles G. Hall, Transcript Vol. III, p. 600, and of Mr. Harvey Cartwright, Ibid p. 623.

rate in Indiana on November 1, 1928 after the strikes resulting from the breakdown of the Jacksonville Agreement, Western Kentucky is stated to have reduced their wage scale progressively. A rate of \$2.50 was quoted as a maximum when the Code Hearings were in progress. (*) In Indiana, on September 10, 1932 the inside skilled labor rate had been set at \$4.57½ per day. This statement is substantially in accord with the evidence of Mr. C. F. Richardson, who represented the Western Kentucky Coal Association. He stated that "since 1924 the differences in wages as between Western Kentucky and Illinois has exceeded \$2.00 per day". Under questioning he quoted the current wage for inside workers at \$2.58 per day; for outside at \$2.24. Both rates had been increased under the stimulus of the President's Reemployment Agreement - the outside rate from \$2.11. (**)

Mr. Richardson's apology for these wage rates was based primarily on adverse freight differentials. Western Kentucky operators were hampered by restricted home markets. Whether they attempted to ship to the south, west, north or east, they encountered competition from fields with lower transportation costs. Kentucky coal did not store well. Seams were narrow, production largely by hand labor, and conditions generally unfavorable for mechanization. Favorable factors were stated to be that practically all the employees were native born Kentuckians, that safety records were unusually good and that the mines were surrounded by small farms allowing the workers to supplement mine earnings with farm work or through the cultivation of gardens. Despite the low wages and low labor cost per ton, Mr. Richardson declared that "during the last five years Western Kentucky had produced and sold coal at an actual loss". In 1929, 128 railroad mines were in operation; at the time of the hearings the number had fallen to 60.

The effect of these wage reductions on the mines in Warrick and Vanderburg Counties of Indiana was stated by Mr. William R. Bootz for the Southern Indiana Coal Producers Association. Although geologically their coal seams were an extension of the Western Kentucky measures, the Southern Indiana operators had been included in the Central Competitive Field wage agreements by virtue of their geographical situation. At the time of the Code Hearing, the Association comprised 11 companies operating 11 hand loading mines. Roof conditions were described as bad, requiring excessive timbering, and destructive competition was encountered from small wagon mines paying wages of \$1.50 per day and making delivery by trucks. Under pressure of the Western Kentucky competition, most of the railroad mines in Warrick and Vanderburg counties had been closed preceding 1926. At that time, as stated by Mr. Bootz, an effort was made to secure a wage adjustment from the officials of District No. 11 of the United Mine Workers. This effort failed. "Then voluntarily," said he, "our employees solicited these companies to negotiate. Each year since 1926 our employees, through representatives of their own choosing, have made wage contracts with our companies." These contracts evidently provided severe reduction of wages in order to enable the companies to operate. At the hearing the existing wage scale was stated to be \$1.50 per day at some mines and \$2.50 at others where the men worked in excess of eight hours.

(*) See the testimony of William R. Bootz, representing the Southern Indiana Coal Producing Association, Transcript, Vol. IV, p. 618.

(**) Transcript, Vol. III, p. 576 and p. 582.

Basic wage scales, as proposed in the Indiana Coal Operators Code at the Code Hearings, were \$3.60 per day for outside labor and \$4.00 for inside labor. To these rates the Warrick and Vanderburg County operators assented. The Western Kentucky Code made rates for common labor - outside at \$2.24 per day; inside at \$2.64. There was a further provision that "skilled labor shall be paid according to the custom of the mine". This means lack of uniformity in the rates for occupations on which wage scales are customarily based and renders impossible any direct comparison with Indiana rates.

The second triangular situation displays an almost exact parallel to that just discussed. Missouri fills the role of Western Kentucky, Iowa of Indiana, and Wayne and Appanoose Counties of the Southern Indiana operations. The wage differential situation built up in the three areas, as stated in the Code hearings, ascribed the first move to the Wayne and Appanoose operators, who in 1927 withdrew from the Iowa Coal Operators Association and established a \$5.00 basic wage under open shop conditions. They did this according to the statement of their spokesman, Mr. Jake Ritter, (*) at the hearing, although they were highly favorable to collective bargaining. In October 1928, the other Iowa fields made a new contract nominally at a \$6.10 basic day rate. As explained by Mr. George Heaps, however, an adjustment was made between tonnage rates and day wages, in the interests of an equitable division of pay. Tonnage rates were reduced 14 instead of 20 per cent; day wages were set at \$5.80 rather than the \$6.10 standard of Illinois. (**) At the same time Northern Missouri operators had established a basic day wage rate of \$5.00 under open shop conditions. In 1931, Wayne and Appanoose operators made a contract with the United Mine Workers for a \$5.00 basic rate which they interpreted to mean recognition of a \$1.10 wage differential under the Iowa rate. Missouri also made a contract with the union at this time which carried a basic rate of \$3.75. When the Iowa contract terminated in 1933 it was renewed but with a reduction in the day rate. This reduction was nominally to \$5.00 but the 30 cent adjustment in favor of tonnage men was retained making the basic wage \$4.70. The union refused to grant any differential to the Wayne and Appanoose operators and they were again on an open shop basis at the time of the hearings.

The spokesman for these operators stated that the coal seams exploited in Wayne and Appanoose Counties were exactly the same as those in Northern Missouri. They were much thinner than the Iowa seams. As a result of extensive brushing and of the presence of excessive quantities of impurities in the coal, about a third of the material hoisted was waste. Methods of mining were different from those used in Iowa fields where the coal was shot down. In Wayne and Appanoose the coal, after

(*) Transcript Vol. I, p. 200 et seq. See also the data presented in his letter of transmittal attached to the Code submitted.

(**) Transcript Vol. IV, p. 643.

being undercut, was wedged down or allowed to break down under the pressure of overlying strata.

A passage from the presentation of Mr. Heaps of the Iowa Operators Association may be quoted here because of the light it throws on the relation of mechanization to the wage differential problem in this field. Said Mr. Heaps:

"It might be well to call to the attention of the Administration here and now that unless something is done to readjust the relationship between hand and mechanized mining in this country, it will be only a short time until hand mining will disappear. Miners now employed in many communities of the land, such as Iowa, will be forced to seek some other kind of labor and all other allied labor serving these mines will be eliminated, leaving mechanized mining with its extremely low use of man power in undisputed possession of the industry." (*)

The proposals for wage rates submitted with the Iowa Coal Operators Association Code followed those of the Des Moines Agreement closely. Thus the minimum pay for basic inside occupations was set at $58\frac{3}{4}$ cents per hour, or \$4.70 for an 8-hour day. Outside workers, except slate and sulphur pickers, were to receive \$4.00. Aside from these definite rates the Code carried the following blanket clause: "All other classes of labor not specified above, shall be paid the rates of wages set forth in the present Des Moines Agreement."

The Wayne and Appanoose County operators contented themselves with submitting the "general code" with which they expressed themselves as "in full accord" except for a proposal to add to the list of minimum rate adjustments in Article IV the following:

"Recognizing that due to mining conditions in Appanoose and Wayne Counties in the State of Iowa, this field is entitled to a differential below the basic day wage in effect in the other fields in Iowa, the minimum day rate for the Appanoose and Wayne Counties, Iowa, field may specify a differential below the basic rates of \$1.10 per day." (**)

Such a differential would place these Counties' basic wage at \$3.60 per day which would give them a 15 cent differential below the Missouri union rate. The operators from that State did not appear at the Code Hearings and presented neither code nor wage proposals. Seemingly they were content with their union wage agreement, which was the adjustment

(*) Transcript, Vol. IV, p. 646.

(**) President Ritter's letter of transmittal, N.R.A. files.

implicitly proposed by the minimum wage adjustment proposals of the general code.

For convenience and brevity the various sub-marginal areas will be discussed in turn, stating so far as information is available, the conditions alleged to furnish justification for wage differentials and the wages proposed.

A. Southern Ohio Coals, Inc. presented a code but seemingly was not represented at the Hearings nor did they send in a written brief. The district is included here because of the considerable day wage rate differential maintained in its favor for a long period, as mentioned above, and because of the low level of the minimum wages proposed. These were quoted from the agreement for Hocking, Crooksville and Pomeroy Counties effective June 15th, 1933. Picking rates were 53 cents per ton; basic rates on inside day labor \$3.28 per day; for outside labor \$3.12 per day. It should be mentioned that these proposals were to govern only until a "uniform state-wide wage scale was negotiated or federal legislation is made effective". Perhaps it is justifiable to assume that the members of Southern Ohio Coals, Inc. anticipated that in either event the customary wage differentials would be retained.

B. The case for the Georges Creek and Upper Potomac region was presented by the Coal Control Association for the area. This group subscribed to the Code presented by the Northern Coal Central Association and the Smokeless and Appalachian Coal Association with the addition of special minimum wage scales. The Georges Creek coal field of Maryland was first operated in 1832. Its famous "Big Vein" is described as practically exhausted except for second and third mining to recover the pillars left in the original mining. This obviously means difficult and expensive conditions. Other veins, Tyson and Balerstown, are thin. The former lies above the Big Vein and the rock measures have been broken and crushed because of the earlier removal of the underlying coal. The Upper Potomac field is in mountainous territory, which is sparsely settled and its mines are small. Seventy-eight per cent of the coal is hand mined. It is of inferior quality. The coal seams include numerous dirt partings requiring careful preparation. In the markets this coal is subject to a considerable price differential, exceeding 14 cents per ton when compared to Central Pennsylvania coals generally. Complaint was made also of the lack of local markets and of handicaps due to freight differentials. Spokesmen for the field claimed that "a lower wage differential is necessary, has always been in effect, and will always be necessary". (*)

(*) Brief presented by Andrew B. Crichton, N.R.A. files, B.C.S. 13, Exhibits and Minutes.

Minimum wage scales proposed carried \$3.44 per 8-hour day for basic inside labor; \$2.68 for outside workers. There were further statements to the effect that "all skilled labor not classified should be paid according to the custom at the mines" and that "minimum rates for piece work in each district shall conform to these hourly rates of pay and be uniform as that term is usually applied within each district".

C. The Preston County field, while a part of the Northern West Virginia district, is adjacent to the Georges Creek and Upper Potomac Field and somewhat similar in the character of the difficulties encountered. The operators were organized in the Preston County Coal Operators Association, and presented a code and brief. They desired to administer their code independently rather than to come under the control of "operators functioning at a distant point, who have no personal knowledge of the local conditions and practices in Preston County". They stated further that their members "by choice and by necessity were not accustomed to mingle with men of large affairs and from past experience could not expect to receive" the amount of attention desirable in administering their affairs.

Coal seams in the County average 4 feet in thickness. The coal produced was described as distinctive in analysis, ranking midway in volatile content between that of the surrounding mining sections of West Virginia and that of Western Pennsylvania and Ohio. It is sold by wholesale coal merchants, jobbers or active agents in the coal trade. "The mines do not have sufficient production to contract any large tonnage". Hence "practically all this coal is sold from day to day to relatively small consumers and practically each car is sold as a separate transaction". It was alleged that a 20 per cent price differential was necessary to sell Preston County coal in competition with the higher quality high or low volatile coals. Miners were all native born and their families had been residents of the County for generations. The coal mines were practically the only industry in the County and upon their continued operation 10,000 people depended directly for a livelihood and an equal number indirectly. It is implicit in the discussion that hand loading is the regular practice.

On the basis of these handicaps it was claimed that wage differentials of 20 per cent were required and that such a wage adjustment was of long standing. Definite wage scales were stated in the code with a maximum rate of \$3.16 for an 8-hour day quoted for motormen; \$3.00 for grades of inside labor upon which basic rates are usually established; outside labor at \$2.75 per day and 40 cents per net ton for pick-mining.

D. With the discussion of conditions in Somerset County, Pennsylvania, may conveniently be grouped a brief received from a group of operators in Cambria and Johnstown Counties. The Somerset County Coal Operators Association was represented at the hearing by Mr. J. S. Brennen, who stated that coal produced in the County was shipped "almost entirely eastbound". It met keen competition from southern producers and was in general so friable as to be unsuited for screening and sizing. When sold as run of mine, it was so small in average size as to necessitate its sale in competition with screenings from competitive fields. The field was developed under these handicaps and a "labor differential of almost the

same extent has normally existed". Even so the district had "lost more than our share of tonnage in the distressed period". (*) The presentation concluded by "respectfully requesting that (the County) be given continued advantage of its geographical and competitive situation, recognizing our usual differential under Central Pennsylvania, and placed on the same basis as our Southern low volatile competitors - five cents per hour under the Central Pennsylvania scale, tonnage rates in proportion."

A group of ten operators in Cambria and Johnstown Counties presented a brief distinctly legal in phraseology. So far as its argument is pertinent here, it assailed the Code presented for the Central Pennsylvania district, alleging that the wage scale proposed represented a severe discrimination against pick mines where the coal was hand loaded. Comparisons of machine differentials effective in Western Pennsylvania were declared to show a much more favorable wage situation for hand operated mines. The attorneys contented themselves with arguments to prove "grossly unfair and discriminating differentials". No positive statement of proposed rates was given.

E. The producers of hand-mined bituminous coal in Hamilton, Sequatchie, Marion, Bledsoe and Rhea Counties in Tennessee and in Walker and Dade Counties in Georgia "finding themselves at variance with the proposed code of operators of large mechanical mines situated in northern Tennessee and in the States of Kentucky and Alabama" presented their own code and were represented in the hearings by Mr. H. J. Weeks. No formal organization existed but the letter of transmittal was signed by ten operators. They claimed for their product a relatively high fuel ratio, from 2 to 3¹ as compared to 1¹ to 2 on competitive coal. The mines are old, situated in a district of small towns with a permanently located native born mining population. The thinness of the seams and the small size of the operation make it uneconomical to mechanize nor will the result warrant the investment. "With one exception these mines had never been unionized or connected with a national labor organization and that exception no longer had an active union." The operators claimed that these small mines have operated "a full week of 5 or 6 days of 8 hours each, except during the summer months for the past three years". They concluded:

"It is impossible for a hand operated mine of 200 ton capacity a day to pay the identical wages that a mine as far distant as 150 miles with a capacity of from 500 to 5,000 tons per day. If such a code and such a blanket wage provision is enacted in this hearing it will be but a continuation of the alliance between the big shipper and the railroads that has been existing in the past."

The reference here was to the freight rate situation which they claimed had set up a barrier placing their coal at a disadvantage in the Chattanooga market.

The wage scales proposed are small compared with those for other areas. They must be judged with reference to the fact that these mines are operated entirely by man and mule power. Aside from the pick miners there is "no other skilled labor in the mine". The pick mine rates varied

(*) Transcript, p. 155.

from 45 cents a ton in coal over 36 inches in thickness to 75 cents a ton for coal under 24 inches. Unskilled labor both within and outside the mine was to have a minimum wage of 25 cents an hour. Skilled labor outside the mine "such as blacksmiths, engineers, electricians, the prevailing scale for such work as adopted in their profession in the nearest locality". (*) Painfully low as these wages seem, it should be noted that they were stated to be "30 to 50 per cent above the present scale".

F. The Code jointly submitted by the Coal Producers Association of Illinois and the Progressive Miners of America was stated to be "in fundamental principles exactly the same as the General Code. The majority of the members of the Association were hand loading mine operators. That fact seemed to mark the reason for splitting from the Illinois Coal Operators Association. The effective field of the new Association was in Saline, Jackson, Williamson and Gallatin Counties, but they had ambitions to develop state wide membership and wage agreements. In this ambition they were actively supported by the Progressive Miners Organization. In the four Counties named above, there existed a further operators' organization composed of small producers, known as the Off Railroad Coal Mine Operators. Since these mines depended entirely on trucks and wagons for transportation and did not have access to large markets, they believed that they should have a wage differential of 20 per cent under that of the large operators. They set their minimum basic wage at 50 cents per hour for inside men and "an equal proportionate wage for tonnage men".

The Coal Producers Association and the Progressive Miners succeeded to a contract made with the United Mine Workers in August 1932. This had a basic wage of \$5.00 per day. A special adjustment, however, was made by those organizations applicable in Saline County. Here the coal seams were relatively low, ranging from 4 feet 6 inches to 6 feet. Neighboring counties had coal from 6 to 12 feet in thickness. In Saline County there was further difficulty because of the presence of draw slate from 1 to 18 inches in thickness, which came down with the coal and made a difficult problem in loading clean coal. Two companies in the County had a mine each completely mechanized; other mines were partly mechanized. The contract entered into April 1st, 1933, stated that in consideration of the removal of all mechanical loading devices from each and all of said mines "the scale, salary and wages, and all payments for wages or services or earnings of the employees shall be ten per cent less than that provided in the joint contract". (**) The result of this adjustment was said to have been both an increase in employment and a rise in average daily earnings as compared to the result under mechanized operation.

(*) Testimony of Mr. H. J. Weeks, Transcript Vol. I, p. 175, Letters of transmittal and code, MRA files, B.C.S. 13.

(**) Transcript, Vol. III, Testimony of W. C. Kane, pp. 536 et seq. Coal Producers' Association Code, p. 13.

G. The St. Clair and Madison County, Illinois, Coal Operators' Association accepted the Illinois Coal Producers' Association Code with certain modifications. Members of this Association for the most part operated truck mines tributary to the City of St. Louis. Most were hand operated. It was stated that "the hand method of mining requires five men while strip mines produce the same amount of tonnage with one man and mechanized mines with 2 men. Markets were distinctly local, "90 per cent of the production being sold within an area of fifty miles". These operators had not customarily dealt with unions and desired such local administration as would allow continuance of local control and wage agreements. (*)

H. For convenience two other submarginal areas in Illinois may be grouped here. The Vermilion County Small Coal Operators Association presented through their Code Committee a code based on that resulting from the Chicago meeting of operators. They aspired to represent 113 mines classed as "non-shipping mines" whose business was confined to local trucking and wagon trade. It will be noted that their territory is that of the Danville basing point under the Interstate Joint Conference machinery. These small operators proposed for adoption the minimum rate of pay set forth in the state contract between the United Mine Workers of America and the Illinois Coal Operators Association. This was to be conditioned upon "the established relative competitive wage scales in the several districts of the country" - a proviso in considerable need of clarification.

The case of the Prairie State Mining Company, located at Granville, Putnam County, Illinois, was presented by Mr. Ward Guthrie. (**) He claimed for this company a 20 per cent differential below the "rates prescribed for machine operated mines in the central region". This was based on the difficulty encountered in operating by hand methods in a 3 foot to 3 foot 6 inch vein of coal located between two strip mines. He reinforced his argument by reciting the unfortunate recent history of the mine which was closed for the seven years from 1923 to 1930. The mine was the only industry in Putnam County and furnished employment to a number of men from 60 to 75 years of age. A scale of wages was quoted of \$1.00 per ton for pick miners, \$4.00 for an 8-hour day for "bottom laborers" and \$3.50 for top laborers. The conclusion of the plea reads: "Denied this exception as to wages, the only other alternative is the closing of this property with the result that over half of the miners now employed and receiving living wages will be left destitute and because of age, unable to get work in other mines or industries."

I. The Littleton, Colorado, Coal Operators Association composed of three small coal companies was advised by the Northern Colorado Coal Producers Association, within whose territory their operations were included, "that due to the difference in situation, mining operations, the coal vein and other causes", they should not join the general association.

(*) Testimony of Mr. C. G. Stiehl, Transcript Vol. III, p. 450.

(**) Transcript, Vol. III, p. 446, et seq.

Accordingly, they presented their own code and proposed the scale of wages currently in effect for adoption.

This scale carried a basic inside wage for day workers of \$5.00; \$4.00 for top men; 35 cents a ton for pick-mining; 50 cents for machine loading and 35 cents for shovelers. The distinctly submarginal position of these mines is evident on comparison of these rates with those in the Northern Colorado Coal Producers Association wage scale. While the basic inside wage agrees at \$5.00 per day, most classifications of top day labor drew \$4.50 per day; pick miners had 69 cents a ton; machine loaders 55 cents and shovelers 45 cents in the Louisville district; 35 in the Erie and Frederick districts.

Wage Differentials in the Code as Approved: As noted above the final formulation of the Code and the setting up of basic minimum day rates in "Schedule A" waited upon the conclusion of the first Appalachian Agreement. The extreme pressure for this settlement led to the adoption of certain compromises on wage differentials which it was later declared were never meant to be permanent. This was notably true of the troublesome Northern West Virginia differential. The area covered by the Appalachian Agreement included all the territory of Division I except Western Kentucky and Michigan. It applied to districts producing approximately 70 per cent of the tonnage of bituminous coal. Adding to this basis the western states in which there was general agreement that existing high wage levels should be maintained; the three states of Division II, in which the union contracts furnished an acceptable basis for minimum wage standards; and the Southwestern states, where the competition of other sources of energy enforced the current wages despite their low levels, made the coverage whether measured by fields, tonnage or by employees so large that immediate action became feasible. Aside from Division III which furnished a partly broken, there remained only some submarginal areas and some districts intermediate between major fields in which minimum rates must be established. For this work the districts with determined wages furnished points for comparison which greatly facilitated the work of B.L. officials.

It will be helpful as a point of departure to get in mind the wage differentials included in the districts first settled. The solid basis for the Appalachian negotiation was found in the union contract rates maintained in Division II. Rates in these three states, however, were not uniform. (*) Illinois had a \$1.00 inside day rate and an outside rate of \$4.00. While no other district had exactly the same basic wages, these rates, nevertheless, have some pretensions to be regarded as the basic wages of the Code regime. The technical staff of the Bituminous Coal Section reported: "in our judgment (it is) best to suggest the rates of (Illinois-Indiana) as a range". As noted in Chapter II it was to these levels that Amendment No. 1 attempted to raise the Northern Appalachian districts, and it was from this basis that concessions to the Southern Appalachian districts and to Divisions III and IV were measured. The current rates in the other states of Division II had modified the \$3.00 standard. In Iowa, as stated above this affected only the inside rate and was with intent to equalize earning opportunities of day men and tonnage men. The inside day rate had been reduced to

(*) See Schedule A as approved and Table I appended to this Chapter which gives the comparison between hourly wage rates for Inside Skilled Labor and Outside Common Labor for each district with every other.

\$4.70 and countervailing increase made in the tonnage rates. In Indiana the inside day wage was \$4.57¹ or 42¹ cents per day below the Illinois standard; outside day wages on the contrary were \$4.80 per day or 20 cents higher. The discussion at the Code hearing related above shows that Indiana, after the breakdown of the Jacksonville Agreement, had pursued an independent course. Her rates were not directly comparable with those for Illinois since the occupational coverage of various rates differed materially.

In the area covered by the new Appalachian Agreement were comprehended three wage levels. District A, including Pennsylvania, Ohio and the Pennsylvanian district of West Virginia by union agreement, and Michigan, through the efforts of the MRA officials, took \$4.80 for inside day workers and \$5.10 for outside. Michigan fields at the time were idle due to a strike. In this settlement the pre-existing rates were reduced from a \$5.00 basic level. Union spokesmen later declared that their district was the only one in the United States in which the miners were required to take a wage reduction below the rates of April 1, 1933. (*) Northern West Virginia, District B, had a three cent per hour, or 24 cents per day, wage differential below District A. This was the wage adjustment proposed in the Appalachian Code. (**) The technical staff of the Bituminous Coal Code Section recommended that it be tentatively adopted for a three months period. The same recommendation was made for the North-South differential of 40 cents a day applied to both inside and outside workers. The "South" here is District C including Southern West Virginia, Eastern Kentucky, Upper Potomac, Maryland, Virginia and Northern Tennessee.

Division V whose union rates, as a general statement, were covered in as Code rates, had a considerable range of wages rising from the \$5.00 inside and \$3.75 outside of Northern Colorado to \$5.63 inside and \$4.32 outside in Montana. Exceptions to these high standards are found in the district directly affected by the competition of the Southwestern States. District K made up of New Mexico and Southern Colorado agreed with Northern Colorado in outside rates but had \$4.48 and \$4.44 respectively for inside skilled labor. The lignite districts of North and South Dakota, also, had the exceptionally low rates of \$4.00 inside and \$3.20 outside. This was not a competitive matter but rather due to

(*) Transcript of Hearing, March 28, 1934, p. 231.

(**) Protest of Northern West Virginia Subdivision, October 3, 1934, p. 3 et seq.

the low heat value of the fuel mined in those states and the highly seasonal period of operation.

Division IV rates of \$3.75 and \$3.23 were simply covered in to Code rates from the union agreement without discussion and, judging from later developments without much satisfaction to any interested group. At this time and later the extreme pressure of competing fuels constrained the adoption of this result. "It is recognized", said the Technical Staff, "that in the states of this area special conditions exist, and authority should be given for joint agreement between the representatives of the mine workers and the operators on the question of proper differentials".

Following the advice of the same group, the IMA representatives took up the various sub-marginal areas as special cases. The greatest difficulty was found in reaching a settlement for Western Kentucky and for Alabama. After a series of conferences between representatives of Western Kentucky, Indiana, Illinois and Iowa during which bitter complaints were voiced against the "cut throat competition" of the Western Kentucky fields based on a low wage cost, a compromise settlement was reached at \$4.00 inside and \$3.00 outside for that area. In Alabama no agreement could be arranged. Spokesmen for the producers called attention to the fact that 30 per cent of their output was sold on contracts with the railroads and that these contracts had no wage rate increase release clauses. At the highest the operators would not consent to a wage above \$3.20 for inside skilled labor and IMA agents would not accept a lower rate than \$3.40. The latter rate was finally prescribed by the Administrator shortly before Schedule "A" was finally approved by the President. The outside rate was set at \$2.40. These rates applied to District J including Alabama, Georgia and two counties of Southern Tennessee. For the other seven counties of Southern Tennessee, District J-1 was constituted. This area served as a buffer district and in that capacity had rates midway between District J and District C. Inside rates were set at \$3.84; outside at \$2.84.

It will be noted that no comparative adjustment had been made for Western Kentucky's nearest competitor in Southern Indiana. This area covered the Counties of Warrick and Vanderburgh. Mines in Southern Iowa occupying a similar position between Missouri with its \$3.75 basic rate and Iowa with \$4.70 were somewhat more fortunate. As a result of the repeated conference held in September between IMA officials and representatives of operators and miners, they were granted a 14 cent per day differential below Iowa's rates. It will be remembered that at the Code hearing this district had advanced claims to a \$1.10 differential under the Iowa rate. This claim they based on rates once recognized in union contracts. Nevertheless a spokesman for the district at the hearing on Amendment No. 1 referred to the 14 cents as a "fairly decent differential". (*)

(*) Hearing, March 28, p. 282.

All the other claimants for special consideration who appeared at the Code hearing: Georges Creek, Maryland; Preston County, West Virginia; Somerset County, Pennsylvania; and the various Illinois groups shared the fate of Warrick and Vanderburgh Counties and were refused concessions under basic wage rates. However, it should be stated here that after the public hearing they were given patient consideration in private conferences. (*) Thus on September 21, 1933, a conference was held with Somerset County representatives at which they protested against the rate of \$4.69. MRA officials stated that prices might be raised to offset the new wage rates. Thereafter the operators appealed direct to President Roosevelt. He referred the matter back to MRA officials who decided that the rate should stand. It should be noted that while Preston County did not receive special concessions they shared in the wage differential granted Northern West Virginia. Three counties of Western Pennsylvania - Mercer, Beaver and Lawrence, put in a plea for a 40 cent differential in day wages. Their representatives argued that such a differential had been customary and that their tonnage rates were high due to operating in thin veins. They were refused on the ground that this claim was similar to those of Somerset and Preston Counties previously denied and because it was "necessary to have a consistent policy".

Conferences regarding the wage rate adjustment between Division IV and V were particularly interesting because of the light thrown on the far reaching effect of wage differentials. It was agreed that the low wage rates in eastern Kentucky and resultant competitive prices had forced wage reductions in the Southwest and these had reacted, in turn, on Southern Colorado and New Mexico. There was further the question of the relationship of wage rates in Northern Colorado. Southwestern operators stood firmly for the current rates because of the pressure of the substitute fuel-oil and gas. Since these wages were written into contracts, their position was a strong one. Under these conditions MRA officials decided that contract rates would have to stand. Southern Colorado-New Mexico rates were accordingly adjusted between those of other Districts in Division V and the exceptional wage rates of the Southwest.

Two other features of the Code wage structure deserve mention here. The thorny questions of tonnage rates and their adjustment to day wage rates were not settled beyond the Code provision that "other classifications of employment will maintain their customary differentials above or below said basic minimum rates and that payments for work performed on a tonnage or other piece work basis will maintain their customary relationship to the payments on a time basis provided in said

(*) Memos. of Conferences in M.R.A. files.

basic minimum rates". Again the entire wage settlement was of a temporary nature. The Code provided for a conference on January 5, 1934 "for the purpose of determining what, if any, revisions may be desirable at that time of the wages, hours and differentials". Even though not revised as a result of this conference, the hours of work, minimum rates of pay and wage differentials were to continue in effect only to April 1, 1934. This defining of a three to six months period for the wage settlements was an essential part of the strategy adopted to secure compromise settlements. It was expected that cost and wage reports collected and compiled by M.R.A. would furnish a sound basis for later conferences. Interested groups, both of miners and operators, had well laid plans to modify the wage and hour situation.

A quotation from the report of the technical staff will be enlightening at this point:

"When it comes to the problem of settling differentials for the south, the staff frankly admits that the data essential for formulating reliable opinion are not available. The Administrator should be informed that although the Illinois General Code recommended a 5 per cent differential between the North and South areas and the North and South Code recommended 5 cents per hour between the Ohio and Pennsylvanian fields on the one hand, and the Smokeless Appalachian Fields on the other, and 3 cents an hour between Northern West Virginia and Ohio--Pennsylvania, neither of the proponents of these Codes submitted substantiating data of a character which would help the Administration in arriving at an informed judgment. Any discussion of the North-South differentials must take cognizance of the fact that as the result of a combination of freight and wage differentials plus such factors as better quality of coal, shifts in market preferences, differences in natural conditions of mining such as height of seams, roof conditions, timber requirements and differences in overhead costs such as taxes, depletion and insurance, large coal fields have been developed, railroads have been built and extended, large industries have been located at points with a convenient source of supply available from several districts and whole communities have been brought into existence. Any change of differentials is, therefore, a life and death matter to the operators and miners and communities in the fields of both the north and south." (*)

Between the effective date of the Code and that of its first amendment, two noteworthy modifications of the wage differentials situation were made. The first of these applied to the Warrick - Vanderburgh problem; the second to certain hand operated mines in Saline County, Illinois. Special interest attaches to these adjustments. In each case Division II's Bituminous Coal Labor Board intervened but the policy pursued in the two Codes was diametrically opposed. As mentioned above, the approved Code in Schedule A made no mention of Warrick and Vanderburgh Counties. In consequence mines situated there came automatically under the Indiana rates of \$4.57½ and \$4.20. However, the Southern Coal Operators Association had a temporary contract at lower rates with the

(*) Letter from Technical Staff of Code Section to James H. Pierce, August 17, 1933.

United Mine Workers which expired December 17th, 1934. The Coal Trade Association of Indiana was consistently in favor of the differential proposed at the time of the Code Hearing for those two southern counties. Immediately on the publication of Schedule A, the managing director of that Association wired the Recovery Administration strongly supporting the wage adjustment and pledging the support of this Association to a committee which was to interview these officials the next day. (*)

The Administrator of the Coal Code referred the matter to the Divisional Labor Board and the case came up for hearing December 7, 1933. The Board ruled unanimously in favor of the contentions of the Warrick and Vanderburgh operators. They found that the mining conditions of these counties and of Western Kentucky were practically identical; that freight differentials ran against Southern Indiana to the extent of from 10 to 26 cents on shipment to Indianapolis and from 25 to 40 cents to the Chicago market; and that the principal reliance had been, and must continue to be, on markets to the northward. It is noteworthy that the Board reported that "hand loading was universally prevalent". There is further significance for its bearing on the difficulties inherent in assessing actual wage differentials from day wage rates in the following quotation from the Board's decision:

"The wage rate fixed in the Code for Western Kentucky, just across the river from the Indiana counties, is \$4.00 for inside labor and \$5.00 for outside labor. There is a further differential in favor of Western Kentucky which does not appear in the schedule of rates in the Code. The minimum inside day wage rate as applied to West Kentucky as against the \$4.57 $\frac{1}{2}$ rate for Indiana creates a differential in the labor cost in favor of West Kentucky as against southern Indiana, by virtue of Article 4 of the Code under Minimum Rates of Pay, which reads: 'The basic minimum rate for inside skilled labor and the basic minimum rate for outside common labor shall be the rate hereinafter set forth in Schedule A for each district therein described for each such classification of labor with the understanding that other classifications of employment will maintain their customary differentials above or below said minimum rates . . .'. The basic minimum rates set out for Indiana as \$4.57 $\frac{1}{2}$ actually represents the minimum for inside day labor, while in West Kentucky, because of their customary differentials, the \$4.00 inside day wage rate does not apply to all of the employees, their customary differentials being below the minimum set forth in Schedule A, namely, \$3.76, and since the rate set forth in Schedule A for top labor provides for the payment of \$4.20 in Indiana as against \$3.00 in West Kentucky, represents a 40 per cent differential in outside labor in favor of West Kentucky."

(*) Decision Divisional Board No. II, December 18, p. 5.

Although the Board was fully in sympathy with the request of the Southern Indiana operators it declared that "a change in the rate can be made only by an Executive Order of the President amending the Code." Accordingly the decision rendered December 18, 1933 went no further than to recommend "that action be taken at once by the Administrator to assure the operators of Vanderburgh and Warrick Counties that the differential suggested be granted and that it will be retroactive to the 17th of December, 1933". This assurance would allow continuous operation of the mines under the terms of the temporary joint wage agreement. Such an order was issued by Administrator Johnson under date of December 22, 1933. It set minimum inside day rates of \$4.20 per day; outside of \$3.60 per day. This concession did not affect day rates in strip mines which continued on the Indiana basic rates. This meant the creation of a new type of differential - deep vs. strip mines - and furnished a precedent followed later in Division IV by Amendment No. 3. The newly created rates were to be in effect only "pending completion of investigations now in process by N.R.A. as to wages, hours and working conditions in the bituminous coal industry". (*)

The second modification of Code wage rates grew out of the case of mines in Sahara County, Illinois. This again was a reopening of an appeal not granted when the Code was formulated and Schedule "A" promulgated. It should be remembered that it was heard before the same Board which decided the Warrick - Vanderburgh case. The mines interested had a contract effective preceding the Code and not terminating until April 1, 1935. This agreement granted to the operators a wage concession of 10 per cent, reducing the basic day wage from \$5.00 to \$4.50 in return for a promise to operate their mines entirely by hand labor. It was agreed that these provisions had resulted in extending the markets with a consequent extension of operating time. The miners there had greater monthly earnings despite the lower wage scale.

No action was taken to validate this contract before the Code was approved. On October 10, 1933, the operators filed a petition asking for an exception from Code rates to the extent that the terms of their contract differed from those of the State of Illinois. This petition was automatically referred to the Coal Labor Board. It came up for hearing December 29, 1933. Prior to that date, General Counsel Richberg in response to a question from the Chairman of the Labor Board, transmitted through the Presidential Member of Division II Code Authority, had ruled on the question whether Code rates superseded those incorporated in a valid contract. His positive statement, dated December 21, 1933, read:

"The Bituminous Coal Code is binding on the employees in the industry and a contract to pay \$4.50 a day furnishes no excuse to an employer

(*) Quoted in Hearing, March 31, 1934 p. 433-4

for not paying \$5.00 a day. As a matter of law, individuals by contracting cannot prevent the exercise of governmental authority as, for example, in the regulation of interstate commerce, so that in the case of conflict the regulations of the Coal Code necessarily control." (*)

Notwithstanding this positive ruling and in contravention of their own decision of less than a month earlier, the Board on January 13th, 1934, unanimously "concluded that the contracts should be upheld and by virtue of its authority so ordered for a preliminary period of six months".

Under these conditions it was not surprising that the Board was at pains to support its decision. "This contract", reads the decision, "is not oppressive. It is deemed on all sides to be a good contract." * * "The compensation is above that which is fixed as the minimum of decency and comfort. Moreover it is a matter of common knowledge that more days of work in a year are provided under this contract than would be if the \$5.00 rate were exacted." After quoting legal precedents as to the sanctity of legal contracts, the Board found that from the standpoint of fair competition conditions required by the Bituminous Coal Code, the 10 per cent differential was justified. "The thickness of the vein of coal", said they, "and the draw slate condition of these mines deprive the operators of any advantage, even with the wage reduction, over the mines of neighboring counties". The United Mine Workers not content with this concession to their rivals, the Progressive Miners, appealed the case to the National Bituminous Coal Labor Board. Before this Board reached consideration of the matter, however, the United Mine Workers withdrew their appeal and the case was dismissed as closed.

The story of Amendments Nos. 1, 2 and 3 has been told above. At this point nothing further will be attempted than to state the net effect on the wage differential situation of these modifications. The successive changes in wage rates may be followed in Table II appended. Division II was the greatest gainer. Its own day rates were unchanged aside from a minor change in Wayne and Appanoose which eliminated the 14 cent day wage differential for outside day workers. On the other hand the day rates of its nearest competitors in Division I were increased 40 cents per day. Western Kentucky was to be increased 60 cents per day on inside skilled labor and 75 cents on outside common labor while Northern West Virginia had increases of 64 cents in both classes of labor. Thus Districts A and B after the Amendments had day rates equal to those of Illinois and in the case of inside day labor appreciably above those of Indiana and Iowa. Indiana's outside rate was 20 cents higher while Iowa's was the same.

(*) Letters in N.R.A. files.

In Division V day wages were changed in only a few districts. In Northern Colorado the inside day rates were raised 25 cents to \$5.25 and outside rates 50 cents to \$4.25. This was of nominal importance since for the most part this meant nothing more than writing into the Code the rates actually paid. Changes in Southern Colorado and New Mexico were of greater importance. The increase itself was of significant amount, from \$4.44 and \$4.48 inside to \$5.00 and from \$3.75 outside to \$4.10. It will be noted that these raises are materially higher than those nominally given to the competing district to the north. In most cases the increases were a net reduction of the effective wage cost differential since Northern Colorado mines had previously paid these new Code minima. In the matter of the Southwest competition the net result of the Amendments was to further handicap Southern Colorado and New Mexico. In the original Schedule A these States had a 73 cent inside wage differential above states in the Southwest and 47 cents in outside labor. After Amendment No. 3 became effective the differentials between deep mine rates were \$1.10 and 57 cents; in strip mines 75 and 35 cents. The net result so far as day wage rates were concerned was an increase in the relative wage cost burden imposed on Southern Colorado and New Mexico. For the balance of Division V the relative wage situation was unchanged. The 50 cent increase in both inside and outside day labor in the Dakotas had little practical significance since there was little compliance with Code rates. (*)

In the final outcome the day wage differentials between Southern Tennessee and Southern Appalachian field remained unchanged at 36 cents per day. Alabama and Georgia had 80 cents below Southern Appalachian the same differential written into the original Code. The Southwest gained at the expense of Alabama since the regional differentials in favor of Alabama had been 35 cents on inside rates and 88 cents on outside rates. The new adjustment allowed only 20 and 73 cents on deep mined coal. The wage differentials between Illinois and the Southwest had been considerably narrowed. The interdistrict hourly wage rate situation is presented in detail in Table III.

The effect of piece rate changes remains obscure. A flat general advance was provided in Amendment No. 1 of 10 cents per ton for pick mining, 8 cents for machine mining, 1 cent for cutting and 9 per cent on yardage and deadwork. This of itself disturbed the existing wage adjustment since it applied indifferently to districts in which day rates had been advanced and to those in which the original Code day wages were maintained. The states in Division II and most districts in Division V should show an increase in tonnage costs as compared to day wage costs. This is on the assumption that tonnage produced did not decrease in proportion to the one-eighth cut in hours of operation to which the unchanged day rates applied. In any case, there can be no doubt that districts in which both day rates and tonnage rates were increased would show increased labor costs of production by comparison with interests in which but one category of wage rates was increased.

(*) Transcript of Hearing before Division V Labor Board, June 8, 9 and 11, 1934, Bismarck, North Dakota.

Another complication entered at this stage of Code wage history to further confuse the problem of correctly comparing the interdistrict wage differential situation. The general tonnage rate increase has just been stated. There was a further clause, applying to District B, Northern West Virginia; District G, the Southwest; District I, Western Kentucky; and Districts J and J-1, which made up Division III. This called for an additional increase in piecework rates "by an amount sufficient to maintain the parity" between the new day rates and these tonnage rates. In the outcome, as noted above, Western Kentucky successfully evaded all changes in piece rates, and submitted to only so much increase in day rates as resulted from applying the old day rates to the shortened hours. Northern West Virginia compounded the requirements by granting an additional increase of $2\frac{1}{2}$ cents in loading rates and $\frac{1}{2}$ cent in cutting rates. Pick-mining rates and yardage and deadwork got no more than the 10 cents and 9 percent called for in Amendment 1. Consideration of the fact that day rates in this district has been jumped 64 cents a day or over 14 percent will indicate that this was by no means a countervailing advance sufficient to maintain the old parity with day rates. Spokesmen for Northern West Virginia maintained that the rates as adjusted made the earnings of their tonnage workers equivalent to those of similar workers in competing districts. (*) In the Southwest in the final adjustment of day rates, which it will be remembered gave much less of an increase to deep miners than the normal 40 cents per day, a concession was made below the standard increases in tonnage rates. The pickmining increase was but 8 cents per ton; the combined machine cutting and loading rate increase was 7 cents and the yardage and deadwork advance was the standard 9 percent. (**)

Study of union wage contract rates found in agreements by the Bituminous Coal Code Section in Research and Planning, reveals that in several other cases the advances called for by the Code were not, in fact, received. Fields in the Smokeless region generally received but 9 cents increase in the pickmining rate, as shown by the following insert:

(*) Protest and Brief, *supra*, pp. 66 et seq.

(**) See Chapter II.

PICKMINING

LOADING AFTER
LACHINE

	Oct. 2 1933	Apr. 1 1934	Inc. Cents	Oct. 2 1933	Apr. 1 1934	Inc. Cents
New River	.517	.607	+09			
Winding Gulf	.454	.544	+09			
Greenbraer	.447	.537	+09			
Pocahontas & Tug River	.357	.437	+08			
Kanawha	.492	.582	+09			
Logan	.384	.474	+09			
Williamson	.414	.504	+09			
Big Sandy (Under 48 inches)	.545	.635	+09			
Hazard	.432	.522	+09			
Marion (56 to 44 Inches)	.480	.570	+09			
Sou. Appalachian (70 to 8 inches)	.530	.610	+08			
Iowa, Wayne and Appamore ^{a/}	1.500	1.410	+110	.82	.91	+09
Arkansas	.73	.80	+03	.51	.64 ¹	+06 ¹
Oklahoma	.73	.80	+03	.50	.64 ¹	+06 ¹
Mo. - Roy & Clay	1.21	1.29	+08	.72 3/5	.78 3/5	+06
Kans.-Crawford & Cherokee and Barten Cr., Mo	.30	.88	+08	.55	.61	+06

a/ Screened lump or hand picked basis.

The important areas of Pocahontas, Tug River and Southern Appalachian were given but 8 cents. These adjustments seem to have been made by private negotiation and entirely without reference to N.R.A. authority. Beyond the statement that they were granted in return for concessions on yardage and deadwork payments, these adjustments have not been explained.

It remains to discuss three wage differential controversies which persistently demanded the attention of N.R.A. officials. The first of

these arise between Divisions IV and V. The complaint of Division V was based on a provision in Amendment No. 3 which read:

"In view of the differentials accorded the Southwest there shall be no sales by operators of said District into the normal consuming markets of another District which is subject to higher rates of pay at any price for coal of comparable grade and quality, less than the price for such coal in said market charged by such other District, and there shall be no destructive invasion of such other consuming markets, and, in the absence of satisfactory agreements governing the matter, the determination of the Administrator on complaint of any such destructive invasion shall be conclusive."

Division V made formal complaint alleging that Nebraska, Kansas, South Dakota and Northern Texas were normal consuming markets of Wyoming, Colorado and New Mexico coals; that Southwestern coals were as good as the best western coals and much better than the average of those coals; and citing production data and the records of railway shipments to prove that the operators of Division V had suffered from the competition of Division IV. Conferences were held at Kansas City in June, 1934; at Colorado Springs on August 13 and 14th; and a formal hearing assembled at Chicago on September 10, 1934. At that time the case of Division V was fully presented. Spokesmen for that section manifested a desire to arrange a compromise. Division IV, on the contrary, brought forward scant statistical or other data while enlarging on their difficulties due to competing fuels. They acknowledged that their prices had been reduced but declined to discuss division of competitive territory or adjustment of prices. The only suggestion they proffered was that Division V's wage standards and prices might be reduced to compare with those in Division IV. The ruling of Division Administration Ellis, dated October 3rd, sustained the contention of Division V, and ordered Division IV to desist from invading the normal markets of the complaining states. Little compliance was given to the order. On March 13, 1935 the Chairman of Division V complained to N.R.A. that Division IV "had made no attempt to comply". Letters originating in Division IV of somewhat later date state that the Code Authority of Division IV had "successfully ignored" the order to date. At that time the Code Authority was engaged in collecting opinions to the effect that observance of the order would severely damage operators in their district. (*)

The second controversy was the Northern West Virginia case discussed at some length above, where it has been carried through the Code and Code amendment stages. The compromises, then made, so far as Northern West Virginia was concerned were accepted only as tempo-

(*) Transcript of hearing and correspondence, N.R.A. files.

rery expedients. They were sacrifices made necessary by the desire to retain the benefits of Code control. There is abundant evidence to demonstrate that the rates were sincerely felt to bear inequitably on the district. Their acceptance, pending study of additional data, was a lesser evil than a return to unrestricted competition.

The elaborate printed Protest and Brief, a document of about 100 pages with supporting statistical tables, charts and maps, summed up the position of operators in Northern West Virginia. It was jointly submitted by the Northern West Virginia Subdivisional Coal Association and the Subdivisional Code Authority, under date of October 3, 1934. In brief summary, the argument contended that the original Code minima had fairly extended a wage adjustment of long standing. The doctrine of vested interests was given effective statement. "The operators", reads the brief, "have acted on the faith of the correctness of those wage differentials in their business relation, in acquiring and developing their properties and in making their contracts." It was alleged that the amended rates had seriously disturbed the parity of pay for tonnage and piece workers, had increased the costs of production for Northern West Virginia by a greater percent than had been true for competing districts, and had caused their district a loss in tonnage produced without sufficient "spread" between costs and realization to permit price reductions.

A showing was made that Northern West Virginia due to the fact that but 4 percent of production was consumed in the district, was under necessity of shipping coal unusually long distances and was at a serious disadvantage because of discriminating freight rates. This handicap had been, and should continue to be, balanced by a lower production cost. Coal seams in the district were thick. The coal was clean, roof and drainage conditions good, and draw slate infrequently encountered. (*) Hence the lower tonnage rates per ton gave equivalent or greater earning opportunity to the miners than the higher per ton rates in other fields. Some of these in Ohio and Western Pennsylvania required the handling by the miners of up to 12 inches of draw slate without extra compensation. (**) The protestants appealed to the records both of N.R.A. and of the Bureau of Mines to prove that under Code wages, this district had not extended production to the detriment of competing areas. In closing, the brief states:

"Even handed justice demands that no alteration of wage differentials of long standing in any mining district should be made without justifiable data therefor assembled by an impartial tribunal covering a sufficient period of time

(*) See Transcript of Hearing, April 10, 1934, Testimony of Mr. J. Noble Snider, p. 308.

(**) See Brief, Section IX, pp. 70 et seq.

to be dependable." (*)

Such an impartial tribunal was invoked to settle this and the third leading wage differential case - that concerning the Smokeless field. This controversy was coterminous with Code history. It took definite shape in the conferences which preceded Code formulation. Smokeless operators were clear in their recollection that both General Johnson and John L. Lewis had promised that the wage rates for their district written into "Schedule A" should be continued only as long as was necessary to show the relative wage costs imposed by Code rates on them and on their northern competitors. This commitment was acknowledged by Messrs. Johnson and Lewis. (**). But it was further stated that the promised adjustment was conditioned upon "proved injustice". Data for such proof was not then available.

A connected story can be pieced together from the opposing arguments. Difficulties were encountered at the first Appalachian joint wage conference in reaching agreement on the relative tonnage rates for loaders of Central and Western Pennsylvania and of the Smokeless field. Appeal was made to General Johnson as arbiter. It was claimed for the northern fields that loaders averaged 10 tons per day as compared to 11 tons in the south. On this basis and considering the new loading rate for the North to represent an increase of 10 cents per ton, General Johnson prescribed a 9.2 cents increase for the Smokeless field. Representatives of that district disagreed both with the statement of average tons loaded in the North and with the statement that the new loading rate amounted to a 10 cents per ton increase. They accepted the new rate under protest as a temporary settlement. It was to hold only until data was available for an exact statistical determination.

When under Amendment No. 1 it was proposed to apply a further increase of 3 cents per ton to the loading rate in North and South alike, the Southern spokesmen voiced an indignant protest. They presented evidence to show that the average loading rate per man per day in Northern fields was 7 tons instead of 10 as claimed when the first Appalachian Agreement was signed. The Smokeless field had an average loading rate per man per day of 11 tons. Thus the northern miner loading coal earned \$4.29 in Central Pennsylvania; \$4.42 in Western Pennsylvania; and but \$4.00 in Ohio. In all these Subdivisions, earnings of loaders should have equalled \$4.60 per day to maintain the desired parity with inside day men's wages. In the Smokeless area, on the contrary, earnings of loaders had been \$4.74 although the requirement of parity with day wages called for but \$4.20. (***)

(*) See Section XII.

(**) Letter in Transcript of Hearing, April 9, 1934, p. 249.

(***) Brief of W. A. Richards for Code Authority of Southern Sub-division 7, presented April 9, 1934, p. 3, N.R.A. files.

This failure to maintain equity between the Subdivisions and parity between day and tonnage earnings, the southern spokesman argued would be emphasized by the flat increase of 8 cents per ton proposed by Amendment No. 1. This 8 cents applied to the Northern loader's average day's output of 7 tons made 56 cents increase per day. Since the loaders in the Smokeless fields' output was 11 tons, it meant a gain to him of 88 cents per day. Thus the loaders differential in the two areas would be increased by 32 cents a day. Since the inside day men's wage in the Smokeless field had been increased but 40 cents, this 88 cent increase in the loader's daily earnings would further extend the failure of the Code to attain parity between inside day wages and loader's tonnage earnings. (*) The earnings and employment data of N.R.A. support this presentation. There is less support for the biting conclusion of the brief quoted which reads: "We can only conclude that the Amendment was drawn as it was to secure the private advantage of certain of the districts which participated in drawing it."

The explanation quoted for this disparity in daily tonnage loaded and in consequent earnings was the difference in the organization of inside labor in the two fields. N.R.A. reports taken for the November 1 to 15th payroll period in 1934 showed the following situation as to the relative percentages of day and tonnage men in the districts concerned:

	<u>Tonnage Men</u> <u>Per Cent</u>	<u>Day Men</u> <u>Percent</u>
Western Pennsylvania	70.3	29.7
Central Pennsylvania	74.5	25.5
Ohio	74.1	25.9
Northern West Virginia	67.2	32.5
Southern Subdivision No. 1 (Smokeless)	56.2	43.8
Southern Subdivision No. 2	61.3	38.7

These data show that the contention of the spokesmen of the Smokeless field were well based albeit in the open hearing somewhat exaggerated. The 43.8 percent of day men in their field much exceeded that of any of the Northern fields and was approached only by the other southern field. Under this organization, it was the contention of the Smokeless representatives that lower tonnage rates for loaders were fully justified by the lesser demands made on the miners. Day men timbered their working places, cleaned up falls, laid track, placed empty cars at the foot of their rooms and removed the cars when loaded. In addition loaders were paid additional compensation for handling draw slate. In some of the Northern fields draw slate up to 12 inches in thickness was handled by loaders without additional compensation.

(*) Brief ut supra, p. 4.

These claims had support, at the time, from the Director of N.R.A. Research and Planning in the following terms:

"The Smokeless operators' petition for establishment of parity between earnings of tonnage men and day men raises the same issues as those in the Northern West Virginia Case.

"The Smokeless operator's reports to the N.R.A. indicate an unusual differential of the earnings of piece workers above the earnings of day men. This spread will be further widened, perhaps in absolute amount and certainly relative to the spread in other fields, by the general flat increases in tonnage rates specified in the Amendment.

"On the basis of parity between earnings of tonnage men and day men, or on the basis of maintenance of approximately the same spreads between such earnings in the various fields, the Smokeless operators can support their claim for an adjustment in tonnage rates. The Amendment places them at a disadvantage relative to Eastern Pennsylvania because it involves the same increases in piece work costs per ton but larger increases in day labor costs per ton than in Eastern Pennsylvania. This is due to the relatively larger number of day men and to the specialization of the loaders' duties in the Smokeless field."(*)

Despite this weighty support and the earnest and capable presentation made in behalf of the contention of the Smokeless operators, no amendment of the loading rates was secured. Instead the problem was turned over to the North-South Commission provided for in the second Appalachian Agreement. This body was to be made up of 4 northern operators with 4 miner representatives; one each from the fields of Western Pennsylvania, Eastern Pennsylvania, Ohio, and Northern West Virginia; and a similar number of operators and miners "fully representative of the Southern fields". (**) The assignment of this Commission covered only the Smokeless and the Northern West Virginia controversies. The plans of N.R.A., however, much exceeded these limits. It was intended to make a comprehensive study of all wage differential questions. To this end a special official was engaged in July, 1934, and plans laid for the gathering of all needed data on wages, earnings and employment. The North-South Commission

(*) Report of Leon Henderson, April 19, 1934.

(**) Wage Agreements, 1934, p. 31.

met in June and July and worked out plans to furnish data. After various delays the group met again in September when insoluble questions arose regarding the handling of reports on the time worked by tonnage men. For these workers no time record is ordinarily kept and attempts to define man-starts in a way acceptable to everybody concerned did not succeed. In consequence, the projected study was abandoned in December, 1934, (*) This result can only be regarded as a major statistical disaster since it defeated all plans for a substantial investigation of the wage differential situation. In the hope of salvaging something from the wreck, a letter from the Smokeless representative, together with his suggestions to guide the investigators, is appended to this chapter. The essence of his statement was bound up in the sentence "The present rates are based on unlike things and unlike amounts of labor required and work performed."

Persistent study of wage differential problems will deepen appreciation of this wise observation. Many of the most heated controversies have persisted, at least since 1920, as a reading of the records of the United States Bituminous Coal Commission discloses. No discernible advance has been made toward their settlement. They are chronic, deep seated maladjustments calling for radical surgical treatment. Superficial observers are tempted to conclude that the wage differential situation is merely irrational, inexplicable and a logical field for the exercise of the talents of "braintrusters" and economic planners. At bottom most wage differentials have two chief reasons for being. They result from severe economic pressures or they are historical survivals from unregulated non-union conditions. Given coal seams in backward districts with a population living on low economic levels, the tendency is for coal mines, like all other industries, to build up a wage system adapted to the current standard of living. Thereafter the decrease in production costs resulting from full and continuous production induces the operator to push his sales and shipments to the most remote markets he can reach. This results in establishing an equilibrium between costs and realization at his low wage standards. When the union enters this situation it can only gain recognition by accepting the current wages. When N.R.A. promulgated Amendment No. 1, sub-marginal districts as the Southwest, Division II and Western Kentucky, not to mention areas of lesser importance, alleged with conviction and truth that such wage advances would necessitate the closing of mines. It should be emphasized in this connection that this state of affairs is not always associated with a low wage level. Too little attention is paid to the favorable differential maintained in Division V. Here, too, production is keyed to the output possible at current labor costs. But a scant labor supply joined to a high standard of living established wages at a relatively high level.

(*) Final Report of Willard E. Hotchkiss to the Director of Research and Planning, December 15, 1934.

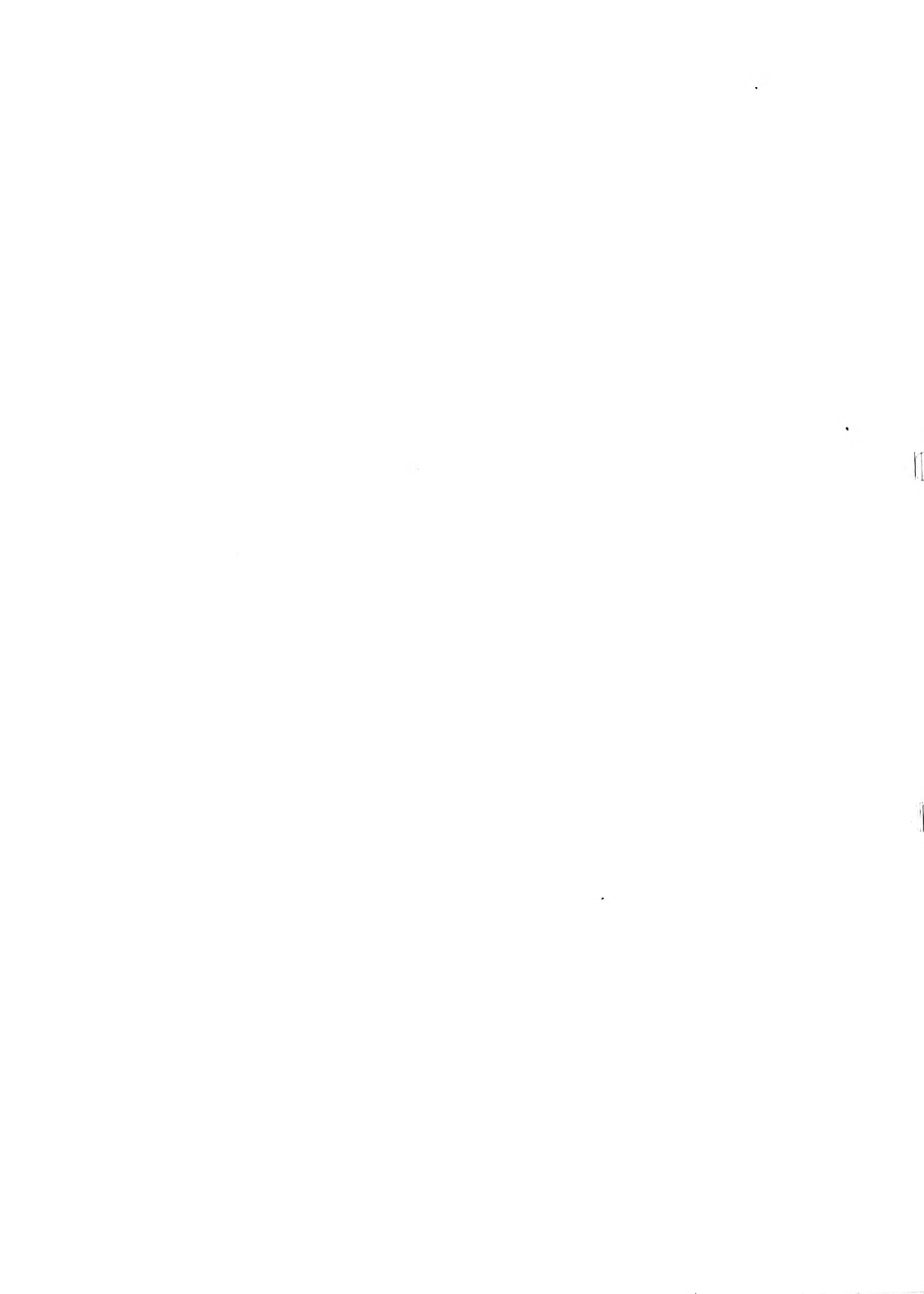
The National Recovery Administration owed its existence to the great depression. In consequence it operated in parlous times. All its actions and judgments were conditioned by a desire to increase employment. However, it may well be doubted whether its efforts to erase wage differentials would have been more successful in normal times. When faced with the dilemma that maintenance of wage standards means destruction, or even serious hampering of industry, governmental regulation has pretty regularly abandoned the wage standard. And it may be added has been aided and abetted by labor in so doing. Thus the history of development under successive Amendments Nos. 1, 2 and 3 was perfectly normal and could have been precisely predicted by any student of affairs blessed with a good memory and a modicum of insight.

In wage questions there is always an insufficiency of data. But in the case of wage differentials this handicap transcends the lack of mere wage recording. The need is for exact knowledge of mine conditions and labor organization. It does not follow in the bituminous coal industry that men rated the same and given the same occupational designation, are doing the same or even equivalent work. Illustrations of this are given above. But they are incidental-better accidental - discoveries which suggest that adequate research would disclose a comprehensive lack of comparability, not only district by district, but in many cases, mine by mine.

This is eminently true in areas where the progress of mechanization is incomplete. Some thin seams with irregularly occurring impurities, cannot be economically mined with machines. The persistence of hand operations in an industry now passing through its industrial revolution gives rise to a situation not correctly to be included in wage differential discussion. What we have here is not a maladjusted wage situation but rather the familiar and futile struggle of artisans against the machine. In the beginning the industry established a machine differential. At present the industry is setting up preliminary handicaps. Some of these are openly arrived at as in the Saline County case; more are concealed in the general preliminary rate as related to machine operations. As the best available illustration of inter-district differences in conditions, a statement of relative payments for yardage and deadwork is appended to the chapter. The relative payments by divisions are shown in the following insert:

	Percent Yardage & Deadwork is of total <u>Labor Cost</u>
Division I	6.1
Division II	2.1
Division III	8.3

The extreme variation by districts is from 1.1 percent in Indiana to 15 percent in Michigan as shown in Table IV appended to this Chapter.



Chapter IV C Table II
 BASIC MINIMUM RATES OF PAY ESTABLISHED UNDER THE COLA
 ACT BY AGREEMENTS Nos. 1, 2 and 3

9837

District	Effective October 2, 1933 (Original Code)			Effective April 1, 1934 (Amendment No. 1)			Effective April 1, 1934 (Amendment No. 2)			Effective June 11, 1934 (Amendment No. 3)		
	Minimum outside skilled labor Dollars per day	Outside per hour	Minimum outside common labor Dollars per day	Minimum outside (Skilled Labor) Per Hour	Minimum outside (Skilled Labor) Per Day	Minimum outside common labor Per Hour	Minimum outside skilled labor Per day	Minimum outside common labor Per day	Minimum outside skilled labor Per day	Minimum outside common labor Per day		
Pennsylvania	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Lower Peninsula of Michigan	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Panhandle District of West Virginia ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Northern West Virginia	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Southern West Virginia ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Eastern Kentucky	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Western Kentucky	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Marshall	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Virginia	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Northern Tennessee ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Iodolia	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Illinois	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Iowa ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Wayne and Ayrshire Counties of Iowa	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Missouri, Kansas, Arkansas, and Oklahoma	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Western Kentucky ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Alabama	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Florida	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Florida and Blue Counties of Tennessee	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District J ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Marion, Grundy, Sequatchie, White, Van Buren, Warren, and Blaine Counties of Tennessee	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
New Mexico	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Southern Colorado ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Northern Colorado ¹	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
Utah	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District M	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District N	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District O	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District P	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District Q	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District R	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District S	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District T	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District U	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District V	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District W	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District X	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District Y	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		
District Z	4.00	67 1/2	4.00	30	71 1/2	4.00	30	71 1/2	30	71 1/2		

¹ Includes Hancock, Brooke, Ohio, and Marshall Counties, Ohio; Jackson and Webster Counties and their mines in Nicholas County covered by the B. & O. R. R. V. Includes all mines in Kentucky located east of a north and south line drawn along the western boundary of the City of Louisville.

² Includes all mines in Kentucky west of a north and south line drawn along the western boundary of the City of Louisville.

³ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁴ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁵ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁶ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁷ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁸ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

⁹ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹⁰ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹¹ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹² Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹³ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹⁴ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹⁵ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹⁶ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

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¹⁸ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

¹⁹ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

²⁰ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

²¹ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

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²³ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

²⁴ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

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²⁸ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

²⁹ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

³⁰ Includes all mines in Colorado and named outside Districts J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, and Z.

Notes - Differences between districts in the foregoing minimum rates are not to be considered as rates maintained by agreement or established previously for future wage scale.

Missouri, Kansas, Arkansas, and Oklahoma, except that, in Missouri, Kansas, Arkansas, and Oklahoma.

By Changed by Agreement of No.

Differentials in Hourly Wage Rates Established by the Code

October 2, 1933.

CODE NUMBER	DISTRICT	Cents per hour	Inside Skilled Labor								
			DIST. A	DIST. B	DIST. C	DIST. D	DIST. E	DIST. F (Wayne & Annapolis Cos.)	DIST. G (Wayne & Annapolis Cos.)	DIST. H	
A	Pa-Ohio-Michigan-Panhandle	.575	-	-.030	-.050	-.033	-.050	-.013	-.045	-.025	-.106
B	Northern West Virginia	.545	+.030	-	-.020	+.027	+.080	+.043	+.025	-.076	-
C	S. West Va., E. Kentucky, Upper Potomac	.525	+.050	+.020	-	+.047	+.100	+.063	+.045	-.056	-
D	Maryland, Virginia, No. Tennessee										
E	Indiana	.572	+.003	-.027	-.047	-	+.053	+.016	+.002	-.103	-
F	Illinois	.625	-.050	-.080	-.100	-.053	-	-.037	-.055	-.156	-
G	Iowa	.588	-.013	-.043	-.063	-.016	+.037	+.017	-.018	-.119	-
H	Iowa-Wayne & Annapolis Cos.	.570	+.005	-.025	-.045	+.002	+.055	+.038	+.011	-.	-
I	Missouri-Kansas-Arkansas-Oklahoma	.489	+.105	+.076	+.056	+.103	+.156	+.119	+.070	-.031	-
J	Western Kentucky	.500	+.075	+.045	+.025	+.072	+.125	+.088	+.088	+.010	-
J-1	Alabama-Georgia-So. Tenn. (Hamilton & Rhees)	.425	+.150	+.120	+.100	+.147	+.200	+.163	+.145	+.044	-
K	Southern Tennessee	.480	+.095	+.065	+.045	+.092	+.145	+.108	+.090	+.011	-
L	New Mexico	.560	+.015	-.015	-.035	+.012	+.065	+.028	+.010	-.091	-
M	Southern Colorado	.555	+.020	-.010	-.030	+.017	+.070	+.033	+.015	-.086	-
N	Northern Colorado	.625	-.050	-.080	-.100	-.053	-	-.032	-.055	-.156	-
O	Utah	.680	-.105	-.135	-.155	-.108	-.055	-.092	-.110	-.211	-
P	Northern & Southern Wyoming	.680	-.105	-.135	-.155	-.108	-.055	-.092	-.110	-.211	-
Q	Montana	.678	-.103	-.133	-.153	-.106	-.053	-.090	-.108	-.209	-
R	Washington	.704	-.129	-.159	-.179	-.132	-.079	-.116	-.134	-.235	-
S	North & South Dakota	.675	-.100	-.130	-.150	-.103	-.050	-.087	-.105	-.206	-
T	North & South Dakota	.500	+.075	+.045	+.025	+.072	+.125	+.088	+.070	-.031	-
Outside Common Labor											
A	Pa-Ohio-Michigan-Panhandle	.450	-	-.030	-.050	+.075	+.050	+.050	+.033	-.040	-
B	Northern West Virginia	.420	+.030	-	-.020	+.105	+.080	+.080	+.063	-.010	-
C	S. West Va., E. Kentucky, Upper Potomac	.400	+.050	+.020	-	+.125	+.100	+.100	+.083	+.010	-
D	Maryland, Virginia, No. Tennessee										
E	Indiana	.525	-.075	-.105	-.125	-	-.025	-.025	-.042	-.115	-
F	Illinois	.500	-.050	-.080	-.100	+.025	-	-	-.017	-.090	-
G	Iowa	.500	-.050	-.080	-.100	+.025	-	-	-.017	-.090	-
H	Iowa-Wayne & Annapolis Cos.	.483	-.033	-.063	-.083	+.042	+.017	+.017	-.	-.073	-
I	Missouri-Kansas-Arkansas-Oklahoma	.410	+.040	+.010	-.010	+.115	+.090	+.090	+.073	-	-
J	Western Kentucky	.375	+.075	+.045	+.025	+.150	+.125	+.125	+.108	+.035	-
J-1	Alabama-Georgia-So. Tenn. (Hamilton & Rhees)	.300	+.150	+.120	+.100	+.225	+.200	+.200	+.183	+.110	-
K	Southern Tennessee	.355	+.095	+.065	+.045	+.170	+.145	+.145	+.128	+.055	-
L	New Mexico & Southern Colorado	.469	-.019	-.049	-.069	+.056	+.031	+.031	+.014	-.059	-
M	Northern Colorado	.469	-.019	-.049	-.069	+.056	+.031	+.031	+.014	-.059	-
N	Utah	.560	-.110	-.140	-.160	-.035	-.041	-.068	-.075	-.158	-
O	Northern Wyoming	.568	-.118	-.148	-.168	-.035	-.041	-.068	-.075	-.158	-
P	Montana	.603	-.153	-.183	-.203	-.072	-.103	-.103	-.120	-.193	-
Q	Washington	.600	-.090	-.120	-.140	+.025	-	-	-.017	-.090	-
R	North & South Dakota	.400	+.050	+.020	-	+.125	+.100	+.100	+.083	+.010	-
S	Southern Wyoming	.555	-.105	-.135	-.155	-.030	-.055	-.055	-.072	-.145	-

Differentials in Hourly Wage Rates Established by the Code

October 2, 1933.

CODE NUMBER	DISTRICT	Inside Skilled Labor											
		DIST. H	DIST. J	DIST. J-1	DIST. K (New Mexico) (So. Colo.)	DIST. K L	DIST. M	DIST. N	DIST. O	DIST. P	DIST. Q		
A	Pa-Ohio-Michigan-Panhandle	-.075	-.091	-.095	-.015	-.020	-.033	+.050	+.105	+.103	+.129	+.104	-.075
B	Northern West Virginia	-.045	-.122	-.065	+.015	+.010	+.080	+.135	+.133	+.159	+.130	+.104	-.045
C	S. West Va., E. Kentucky, Upper Potomac	-.025	-.100	-.045	+.035	+.030	+.100	+.155	+.153	+.175	+.150	+.025	-
D	Maryland, Virginia, No. Tennessee												
E	Indiana	-.072	-.147	-.092	-.012	-.017	+.053	+.102	+.106	+.132	+.103	+.072	-
F	Illinois	-.125	-.200	-.145	-.065	-.070	-	+.055	+.053	+.075	+.050	+.125	-
G	Iowa	-.088	-.163	-.108	-.028	-.033	+.037	+.092	+.090	+.116	+.087	+.068	-
H	Iowa-Wayne & Annapolis Cos.	-.070	-.145	-.090	-.010	-.015	+.055	+.110	+.108	+.134	+.105	+.070	-
I	Missouri-Kansas-Arkansas-Oklahoma	+.031	-.044	+.011	+.091	+.086	+.156	+.211	+.209	+.235	+.206	+.031	-
J	Western Kentucky	-	-.075	+.020	+.060	+.055	+.125	+.180	+.178	+.204	+.175	-	-
J-1	Alabama-Georgia-So. Tenn. (Hamilton & Rhees)	+.075	-	+.055	+.135	+.130	+.200	+.255	+.253	+.279	+.250	+.075	-
K	Southern Tennessee	+.020	-.055	-	+.080	+.075	+.145	+.200	+.198	+.224	+.195	+.020	-
L	New Mexico	-.060	-.135	-.080	-	-.005	+.065	+.120	+.118	+.144	+.115	-.060	-
M	Southern Colorado	-.055	-.130	-.075	+.065	-	+.070	+.125	+.123	+.149	+.120	-.055	-
N	Northern Colorado	-.125	-.200	-.145	-.065	-.070	-	+.055	+.053	+.075	+.050	-.125	-
O	Utah	-.180	-.255	-.200	-.120	-.125	-.055	-	-.002	+.004	+.005	-.180	-
P	Northern & Southern Wyoming	-.178	-.253	-.198	-.118	-.123	-.053	+.002	-.002	+.026	-.003	-.178	-
Q	Montana	-.204	-.279	-.224	-.144	-.149	-.079	-.024	-.026	-	-.029	-.204	-
R	Washington	-.175	-.250	-.195	-.115	-.120	-.050	+.005	+.003	+.029	-	-.175	-
S	North & South Dakota	-	-.075	-.020	+.060	+.055	+.125	+.180	+.178	+.204	+.175	-	-
Outside Common Labor													
												South. North.	
A	Pa-Ohio-Michigan-Panhandle	-.075	-.150	-.095	+.019	+.019	+.110	+.105	+.118	+.153	+.080	-.050	-
B	Northern West Virginia	-.045	-.120	-.065	+.049	+.049	+.140	+.135	+.148	+.183	+.080	-.020	-
C	S. West Va., E. Kentucky, Upper Potomac	-.025	-.100	-.045	+.069	+.069	+.160	+.155	+.168	+.203	+.100	-	-
D	Maryland, Virginia, No. Tennessee												
E	Indiana	-.150	-.225	-.170	-.066	-.066	+.035	+.030	+.043	+.078	+.025	-.125	-
F	Illinois	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	+.100	-
G	Iowa	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	+.100	-
H	Iowa-Wayne & Annapolis Cos.	-.108	-.183	-.128	-.014	-.014	+.077	+.072	+.085	+.120	+.017	-.083	-
I	Missouri-Kansas-Arkansas-Oklahoma	-.035	-.110	-.055	+.059	+.059	+.150	+.145	+.158	+.193	+.090	+.010	-
J	Western Kentucky	-.075	-.150	-.095	+.094	+.094	+.185	+.180	+.193	+.228	+.125	+.025	-
J-1	Alabama-Georgia-So. Tenn. (Hamilton & Rhees)	+.075	-.055	-	+.169	+.169	+.260	+.255	+.268	+.303	+.200	+.100	-
K	Southern Tennessee	+.020	-.095	-	+.114	+.114	+.205	+.200	+.213	+.248	+.145	+.045	-
L	New Mexico & Southern Colorado	-.094	-.169	-.114	-	-	+.091	+.086	+.099	+.134	+.031	-.069	-
M	Northern Colorado	-.094	-.169	-.114	-	-	+.091	+.086	+.099	+.134	+.031	-.069	-
N	Utah	-.185	-.260	-.205	-.091	-.091	-	-.005	+.008	+.043	+.060	-.160	-
O	Northern Wyoming	-.180	-.255	-.200	-.086	-.086	-.086	-.005	-.013	+.048	-.055	-.155	-
P	Montana	-.228	-.303	-.248	-.134	-.134	-.043	-.048	-.035	-	-.103	-.203	-
Q	Washington	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	+.100	-
R	North & South Dakota	-.025	-.100	-.045	+.069	+.069	+.160	+.155	+.168	+.203	+.100	-	-
S	Southern Wyoming	-.133	-.268	-.213	-.099	-.099	-.008	-.013	-	+.035	-.068	-.168	-

Chapter IV (c)

Table IV

Labor Cost Per Ton for Yardage and Deadwork and Total Labor Cost

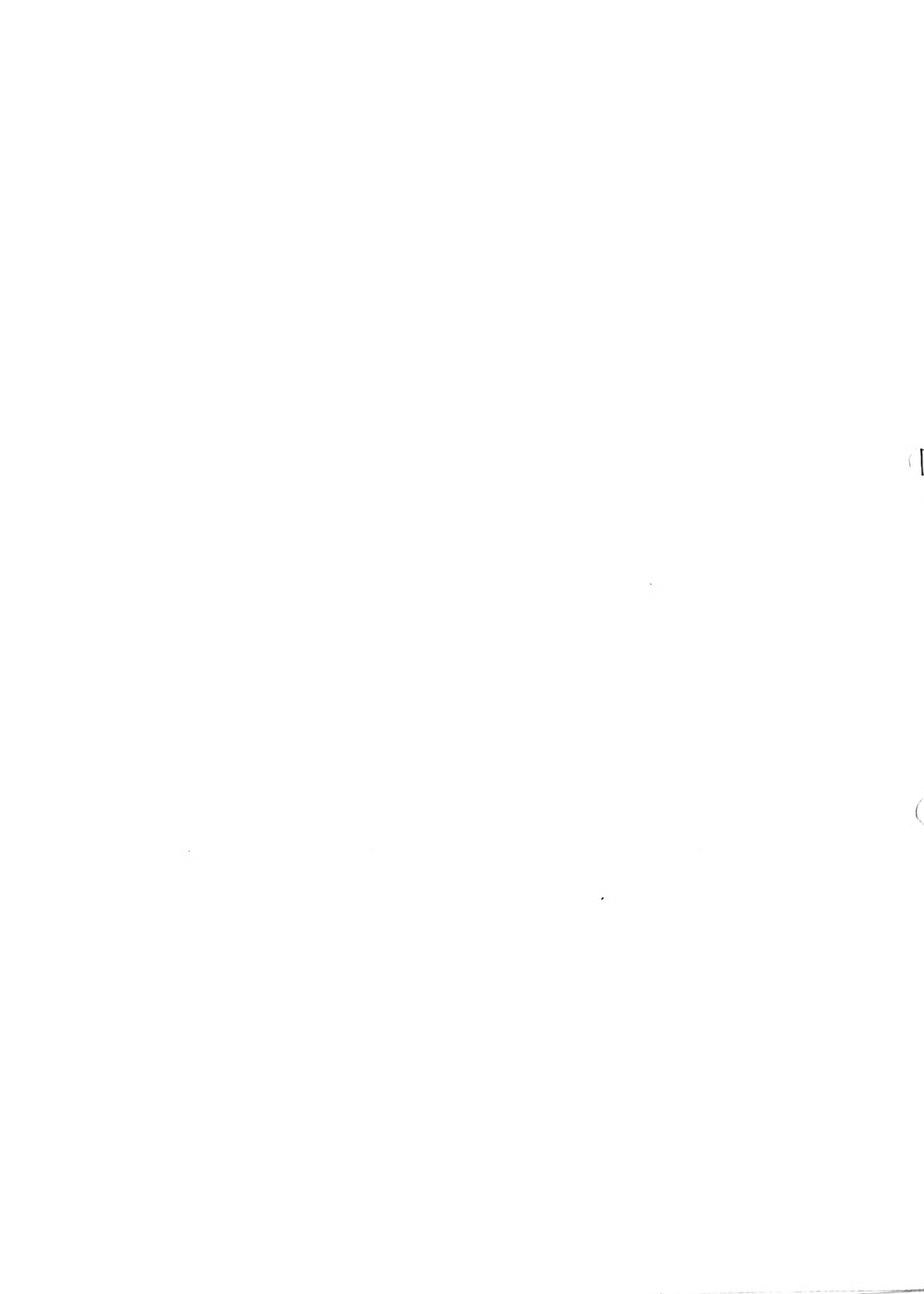
Before and After April 1, 1934 -- Bituminous Coal Industry

	Yardage and Deadwork		Per Cent Yardage and Deadwork		Yardage and Deadwork		Total Labor Cost		Per Cent Yardage and Deadwork	
	Total - 10 Months		is of Total Labor Cost		Total - 3 Months		Total - 3 Months		is of Total Labor Cost	
	Apr. 1934 Thru Jan. 1935	Apr. 1934 Thru Jan. 1935	Jan. - Feb. - Mar. 1934	Jan. - Feb. - Mar. 1934	Jan. - Feb. - Mar. 1934	Jan. - Feb. - Mar. 1934	Jan. - Feb. - Mar. 1934	Jan. - Feb. - Mar. 1934	Nov. - Dec. 1933	Nov. - Dec. 1933
Eastern Sub-Division 1/	\$.1257	1.2950	.1007	9.7	1.0650	9.5				
Western Pennsylvania	.0567	1.1901	.0469	4.8	.9879	4.7				
Ohio	.0543	1.1517	.0402	4.7	.9483	4.2				
Michigan	.2905	1.9308	.2296	15.0	1.5534	14.8				
Panhandle, West Virginia	.0985	1.1281	.0739	8.7	1.0110	7.3				
Northern West Virginia	.0237	.9957	.0176	2.4	.7748	2.3				
Average Division I - North	.0729	1.1858	.0589	6.1	.9730	6.1				
Southern Number 1	.0795	1.1459	.0629	6.9	.9389	6.7				
Southern Number 2	.0576	1.0884	.0384	5.3	.8698	4.4				
Maryland	.0848	1.3338	.0767	6.4	1.1089	6.9				
Upper Potomac	.1262	1.3066	.1102	9.7	1.1040	10.0				
Western Kentucky	Did not report		1933 a/		1933 a/					
			Nov. .0034	Dec. .0032	Nov. .7268	Dec. .7082			Nov. 0.5	Dec. 0.5
Average Division I - South	.0585	1.1192	.0502	6.1	.9053	5.5				
Total Division I	.0707	1.1519	.0546	6.1	.9397	5.8				
Illinois (Deep and Strip)	.0205	.8663	.0184	2.4	.7715	2.4				
Indiana (Deep and Strip)	.0080	.7191	.0058	1.1	.5906	1.0				
Iowa (Deep and Strip)	Did not report		1933 a/		1933 a/					
			Nov. .2059	Dec. .2062	Nov. 1.4650	Dec. 1.4473			Nov. 14.1	Dec. 14.2
Total Division II (Strip)	.0174	.8291	.0151	2.1	.7245	2.1				
Alabama	.1124	1.4110	.0773	8.0	1.1012	7.0				
Southern Tennessee and Georgia	.1511	1.4261	.1300	10.6	1.1883	10.9				
Total Division III	.1175	1.4130	.0843	8.3	1.1136	7.6				
Southwestern (Kansas, Mo. & Okla.)	Did not report		.1542		1.3767	11.2				
Arkansas and Eastern Oklahoma	Did not report		Jan. b/ .0599	Feb. .0531	Jan. b/ 1.5715	Feb. 1.5326			Jan. b/ 3.8	Feb. 3.5

1/ Excluding Maryland and Upper Potomac

a/ Did not report after Dec. 1933

b/ Did not report after February.



CHAPTER IV (c) APPENDIX AA

Huntington, W. Va.
July 26, 1934.

TO MEMBERS of the NORTH and SOUTH COMMISSION:

Operators:

Chas. O'Neill
J. D. A. Morrow
W. L. Robinson
J. D. Francis
R. E. Taggart
L. C. Gunter
C. A. Cabell

Miners:

James Mark
F. T. Fagan
Fercy Tetlow
Frank Hiley
Van A. Bittner
Wm. Turnblazer
Sam Caddy
J. T. Saxton

Gentlemen:

It was understood at the last meeting of this Commission that I would prepare and send out a circular memorandum of my conception of the duties of the Engineers of the North and South Commission.

I have done this without having had the opportunity to discuss the matter with any other member of the North and South Commission, and nothing therein reflects views other than my own. I have not had the time to put on this what I would like to have had, and the matter should have more detailed study. In order that we may have something before us for discussion, I am mailing this to each member of the Commission, and also a copy to Mr. Berquist.

I do not know whether I will be able to personally attend this meeting on the 31st. If not, my alternate will be present.

I want to again call the Commission's attention to our action in eliminating cars containing less than three tons. I believe this is going to result in a greater distortion of figures than we thought at the time the matter was voted, and while I do not want to take up the time of the Commission, I believe that, in the interest of common accuracy, the matter should be given further consideration.

The earnings in all the districts in which I am interested show that the elimination of all 1-car starts (or 3 tons) makes a difference in the district of 22¢ a day. In other words, if the 1-car starts were eliminated, the earnings would be 22¢ more, and that would be shown on the reports agreed upon. In some of the districts where much smaller cars are used, the effect is greater than in the preliminary reports of the districts I refer to and the earnings may be increased an average as much as 44¢ a day over the real wage, or between 8% and 10% difference between what the earnings actually are and the indicated earnings.

What we all want is a record that will be comparable and stand for years, and that will not have to be explained any more than necessary. I realize that absolute mathematical accuracy in a record of this kind is hardly possible.

There was one other thing at the last meeting that, to my mind, was ambiguous, and that is the item of mines under 50,000 tons yearly capacity. In speaking of this, I had in mind that we were discussing companies with production of less than 50,000 tons. One company may have three or four hundred thousand tons production, while a number of its mines may have a production of less than 50,000 tons each. I believe that any company having a capacity of over 50,000 tons, should show their entire production, regardless of the capacity of the individual mines smaller than 50,000 tons. They should all be included.

The Engineers should carefully report the number of mines in each district having under 50,000 tons; the number of men employed in these mines; the percentage this tonnage bears to the total in the district, and the percentage the number of employed men bears to the total employed in the district.

Yours very truly,

(Signed)
James D. Francis

JDF/H

INFORMATION TO BE OBTAINED BY ENGINEERS
for
THE NORTH-SOUTH WAGE DIFFERENTIAL COMMISSION.

1. "LIST OF OPERATING COMPANIES".

A complete list of operating companies, listing each mine and tonnage for 1933 and showing average daily tonnage, should be obtained. This list may be available at the Bureau of Mines.

2. "SECTIONS OF SEAMS".

Representative detailed sections of seams worked should be taken. These sections should show the character of the top and the bottom and the character and thickness of each parting.

3. "IMPURITIES IN SEAM WHICH ARE PAID FOR"

The average thickness of impurities, and/or top, and/or bottom, handled by the miner on a dead work basis should be shown and the percentage of this material per ton of coal should be computed. The present dead work rates should be given and the cost per ton of coal for handling this material should be computed.

4. "IMPURITIES IN SEAM INCLUDED IN LOADING RATE".

The thickness of seam impurities and/or top and/or bottom handled by the miner for which he receives no extra compensation should be obtained and a comparative statement in tons of such material handled and tons of coal loaded should be calculated, and the percentage of material handled and coal loaded should be computed.

The amount of slate, impurities and waste coal handled by the miner for which he is not compensated, varies considerably in different districts and in different mines. In some cases the miner must handle approximately one ton of such waste material for each ton of coal loaded; while in other mines very little waste material has to be handled by the miner. This is neither fair to the miner nor to the producer. Accurate data should be collected by the engineers so that more uniform and more equitable rates can be arrived at.

5. "CONDITION OF SEAMS".

The engineers should thoroughly observe and note the mining conditions of the seam as to grades, pitches, horsebacks, water, and all other unusual conditions.

6. "GENERAL PRACTICES".

The engineers should gather all available information as to the customs and practices in the various mines, such as:

- a. In which mines are the miners required to clean the coal at the face and to what extent.
- b. To throw back bug dust.
- c. To sweep the face before shooting.
- d. To timber his place and to what extent.
- e. To bail water.
- f. To gob partings or load in cars.
- g. Whether the impurities have to be handled twice.
- h. To place cars by hand or are they placed by motor; to push cars to and from face and entry.
- i. To lay track and to what extent.
- j. To drill holes in shooting top or bottom slate.
- k. To scrap bottom.
- l. Size and height of cars to determine whether coal can be easily loaded; type of machines; depth of cut and tons of coal per cut in both rooms and headings,

and all other practices or duties which might affect the amount of tonnage he is able to load per "man-start".

7. "PERCENTAGE OF DAY MEN".

The number of inside day men and the number of loaders employed should be obtained and the percentage of each class of workmen computed.

It is apparent that there is a difference in the services performed and the proportion employed of company men and loaders in the various districts and, therefore, a higher cost in some districts than in others for the company men. This difference in cost should be obtained and should be reflected in the piece worker's rates. The present rates are based on unlike things and unlike amounts of labor required and work performed.

8. "TONNAGE ELIMINATED IN N. R. A. REPORTS".

In the N. R. A. reports an elimination of three tons in counting man-starts will be permitted. This tonnage deducted from the total tonnage loaded should be obtained and its percentage of the total tonnage should be computed. The number of starts by miners preparing their working places during which start no coal is loaded and no man-start is counted, should be obtained.

9. "PICKING TABLES".

The number of men employed on picking tables and in cars, in cleaning coal, and the percentage of same as compared with the number of loader employed should be gotten. This is necessary in order to show comparatively the amount of cleaning done at the face by the miner and by company employees. The number required for this purpose varies considerably in different districts and in different mines.

10. "DEDUCTIONS FROM RATES".

The engineers should compile a schedule of all published rates and all deductions from same which are made because the loader is relieved of certain duties. These deductions are made for shearing, drilling, shooting, bug dusting, explosives when not furnished by the miner, and for other things. Where the miner buys his own explosives and shoots his own coal the cost per ton should be obtained. This data is necessary in order that these deductions be made on a more uniform basis than is now being done.

11. "EQUIPMENT AND MANAGEMENT".

The engineers should collect all available data as to the equipment of the mine; whether it is sufficient to supply the needs of the miners and provide them an opportunity to earn an average inside day wage; whether the equipment used is modern or obsolete. The time and effort necessary to earn the same wage is directly affected by the type and quantity of equipment.

Management and planning is an important factor in providing the miner an opportunity to earn fair wages with the least effort. If, due to inefficiency of management, lack of proper equipment and planning, the miner is not furnished with sufficient cars in which to load his coal and must wait on cars even though engaged in the work of handling impurities in the coal during the waiting period, the wage scale should be so adjusted as to allow him to earn an average day wage. This would promote both effort and efficiency on the part of the management.

IN CONCLUSION: We think that a sufficient number of capable engineers should be employed to secure ample data as above outlined which can be used in connection with the M. R. A. reports, in order that comparable rates between districts can be arrived at.

CHAPTER V 1/

COST OF PRODUCTION, SELLING AND ADMINISTRATION
UNDER CODE CONDITIONS

A. Effect of N.R.A. Code on Costs

Prior to October 1933, when the Code became effective, a decade of downward price trend had driven the annual average price per ton for bituminous coal from \$2.68 in 1923 to \$2.20 in 1924, and \$2.04 in 1925. In 1926 prices about held their own, but in 1927 fell to \$1.99, in 1928 to \$1.85, in 1929 to \$1.78. This in spite of the fact that prices and general business conditions were on a steady upward curve during these latter years. The depression beginning in the fall of 1929 added new impetus to the price decline, until by 1932 the "average value" had sunk to \$1.51. Due to the operation of the Code and a reversal of depression influences through the operation of general industry codification, 1933 rose to \$1.34, and 1934 to \$1.75. (*)

Costs necessarily follow in large degree the trend of prices, and the price or average realization betterments under the Code are directly traceable to the standardization of minimum wages at higher levels and maximum working hours at 8 daily, 40 weekly, coupled with price-fixing to support the resulting labor costs, which alone comprise from slightly under 60 to about 65 per cent of total costs in the different producing areas.

Full treatment of labor costs, wages, and wage differentials will be found in other chapters. It is necessary here to lay merely a foundation for understanding the direct relationship of labor cost to total cost, which inevitably follows price trends, even though they have not always kept pace. Year after year of increasing losses were experienced by the industry as a whole, beginning in 1925, until 1934, when the average realization of Divisions I, II and III combined (accounting for over 92 per cent of total U. S. production) showed a slight margin above the average costs as reflected in N.R.A. summaries.

The underlying causes during this pre-N.R.A. decade of stagnating price levels were many, chief among them being a large overcapacity to produce pressing on a market no longer showing a more or less dependable annual increase in demand; growing competition from other fuels; and notable strides in fuel economy. This potent pressure on prices might have been resistable had not a situation existed within the industry itself that lent full impetus to the downward pressure of other factors. This situation is found in the fact that while the northern producing areas, during the earlier half of the pre-code decade, were generally unionized

1/ Prepared by Ellery B. Gordon and W. T. Crandell.

(*) All "average value" figures from U. S. Bureau of Mines data as summarized in table presented as Defendant's Exhibit 3a in case of James Walter Carter vs. Carter Coal Company et. al., files of N.R.A. Bituminous Coal Unit.

and bound by wage agreements, the south was largely non-union and independent of contracts as to hours of work or wage scales. Wages, constituting 60 per cent or more of the total cost, a larger percentage than in any other major industry, offered the one very substantial cost item that possessed flexibility. There developed (1) a continuous round of price reductions by non-union fields in a determined effort to extend their volume of business, followed by reductions in wages paid in order to permit such price cuts; (2) a resulting upward swing in the ratio of non-union tonnage to the industry's total tonnage; until (3) the union districts found themselves faced with the necessity of meeting this price competition or experiencing disastrous loss of business to the non-union fields. By 1927 and 1928 the Ohio and Pennsylvania fields had begun to break away from their wage agreements in order to permit of price reductions and stem losses so far as possible. New wage agreements in Illinois and Indiana twice reduced wage scales, and the eastern fields eventually went non-union practically 100 per cent. Followed a continuance of the cycle of successive inter-sectional price and wage reductions, until average prices during the depression years became so low that for 1933 they resulted in an industry loss of over \$51,000,000. (*)

It may fairly be said that during this period the intense competition was basically one of wage rates, non-union workers being obliged to accept what the successive price cuts permitted the operators to pay them.

Although no cost data for the months preceding the Code are available, M.R.A. Form C, covering Employment and Earnings, called for reporting mines to show on their December returns the rates of pay in effect in May, 1933. From this data for May and December from identical mines, it is possible to arrive at approximate wage-rate increases under the Code as compared with pre-Code conditions. The December wage data were projected to show what the earnings of workers would have been had the May rates prevailed in December. From the data reported as actual earnings in December and the wage rates paid in May, it is possible to calculate the increases in actual December earnings over what the May rates (had they continued in effect) would have produced in December. This estimated increase is slightly over 50 per cent in Division I, and about 51 per cent in Division III.

Translating these earnings into Labor Cost per ton, the estimated figures for May were set against the reported costs for December 1933, and comparisons of Realization just prior to and under the first period of the Code, up through March 1934. Cost Table 106 ("Labor Cost per ton May 1933, compared with Labor Cost per ton 10 months April 1934 through January 1935; Realization per ton January through September 1933 compared with Realization per ton April 1934 through January 1935") shows the increases in Labor Cost effected by the Code with its 8-hour day and nationally effective wage scales and by Amendment 1 thereto with its 7-hour day and increased wage rates. Because of the inter-dependence of

(*) "Statistics of Income," 1932, U. S. Bureau of Internal Revenue; shown in Defendant's Exhibit 6a, James Walter Carter vs. Carter Coal Company, et. al., files of M.R.A., Bituminous Coal Unit files.

labor costs and prices, the average realization per ton for each of these periods is shown for comparison.

Since labor cost bears known relationships to total cost in the first or 8-hour-day period of the Code ending March 31, 1934, as well as in the second or 7-hour-day period beginning April 1, 1934, and since labor cost is the only element of total cost for which pre-code comparisons can be made, these data are only partially indicative of the full Code increase in total costs. For those areas whose May 1933 rates are available, the immediate effect of the Code on labor cost alone was as follows:

	<u>Average Increase per Ton</u>
Eastern Pennsylvania	26.4 cents
Western Pennsylvania	37.9 "
Ohio	30.5 "
Northern West Virginia	29.3 "
Southern Subdivision No. 2	32.8 "
Maryland and Upper Potomac	43.4 "
Alabama	43.5 "

The extent of increases in other cost items between May and December 1933 is not known.

Accepting these May 1933 labor costs as representing probably a somewhat higher average than would have been found had all mines reported, logically assuming that those who refrained may well have been those paying still lower rates in the pre-code period, it can safely be said that total costs increased by something more than the above averages. It is well known that the spring and summer of 1933 stimulated general activity that turned both production and price curves upward for the first time since 1930, which undoubtedly affected other items of bituminous coal costs as well as labor costs.

The average cost per ton again rose sharply with the adoption of Amendment 1, reducing working hours to 7 a day, 35 a week, and increasing basic wage rates. This increase is well illustrated in the charts presented with this chapter showing by months the average costs of each code authority Division and Subdivision. Discussions of these charts and accompanying tables occur later.

Combining the labor cost increase over May 1933 with the increase in total cost in the second, or 7-hour-day period of the Code, a total average cost increase of at least the following cents per ton is found in those areas for which comparative data are available:

Estimated Increases in Cost Under F. D. A. Code

Division I (*)	Increase in Labor Cost December '33 over Nov. '33	Increase in Total Cost April '34-January '35 over Nov. '33-March '34	Average increase in total cost under code, something more than
Eastern Pa.	\$.364	\$.390	\$.654
Western Pa.	.379	.500	.679
Ohio	.305	.279	.584
Northern W. Va.	.293	.552	.645
Southern Subdivision No. 2	.526	.373	.606
Md. & Upper Potomac	.464	.750	.764
Average	\$.332 (*)	\$.513 a/	\$.644

It must be emphasized that the first column represents figures composed of the labor cost increase only, insofar as the immediate effect of the Code on costs is concerned. Unquestionably some unknown increases occurred between May and December 1933 in the cost of supplies, and quite possibly in some fixed charges, selling and administrative expenses. For that reason the indicated "increases in total cost under code" represent a minimum figure - the actual increases were probably greater by some unknown amounts.

Of the above estimated total increases, labor cost represented the following amounts, for comparison:

	Increase in Total Cost under Code something more than:	Increase in Labor Cost under Code
Eastern Pa.	\$.654	\$.485
Western Pa.	.679	.564
Ohio	.584	.493
No. est Va.	.645	.513
Southern Subdivision No. 2	.606	.525
Md. & Upper Potomac	.764	.613
Average	\$.644	\$.497

Footnote on next page.

Division II was already operating under a union scale agreement the basic rates of which were incorporated in the approved Code. No record of pre-code 1933 costs is available, but presumably any increases experienced in December as compared with May 1933, would have been minor so far as labor cost is concerned.

The final word as to increase in total cost in all of Division I has to be that it was probably somewhere around 65 cents per ton during the Code period. In Division II, it was perhaps something more for deep mines than the 12½ cents, caused by Amendment 1 which instituted the 7-hour day and 35-hour week; for strip mines something over 21 cents.

In Division III the total increase in labor cost alone was 66.6 cents per ton during the Code period. December 1935 labor cost for Division III was 38.3 cents over May 1933; the 10-months' period under Amendment 1 averaged an increase in total cost of 35 cents per ton. It is safe to say that Code operation saw a total increase in cost of over 75 cents per ton.

B. Cost Reporting During Code Period

The purpose of monthly cost reporting to N.R.A. was (1) to provide composite cost figures for comparison with the average realization as one measure of the reasonableness and result of minimum prices fixed under the Code, (2) inform the Administration as to the effect of the adoption of the Code and Amendment thereto upon labor and other costs, (3) to make available to the industry generally for its information and guidance current summaries and averages of costs, realization, and margins. (*)

Cost Data Typical and Representative

(a) A typical operations excluded from final summaries:
It is plain that any summarized totals should be representative of typical operations, costs that are not distorted by abnormal or sub-normal conditions. To this end, the editing staff at Washington excluded some mine reports from the tabulations. (**)

Footnote from other page.

(*) Exclusive of Michigan, Panhandle of W. Virginia, Southern Sub-division No. 1, Western Kentucky, for which May 1933 data were too incomplete for use. The average for these areas of Division I for May 1933 is weighted by the total tons produced as reported in U. S. Bureau of Mines W. C. R. 922, March 11, 1935.

a/ Average for these areas of Division I weighted by total tons produced these months by each area, as reported in U. S. Bureau of Mines W. C. R. 922, March 11, 1935, and W. C. R. 932 Supplement, May 25, 1935.

(*) For full description of forms used and procedure followed, see Appendix I.

(**) The bases for exclusion of mine reports from tabulation are discussed in Appendix I.



APPROXIMATE REPRESENTATION OF TONNAGE SHOWN IN STATISTICAL SUMMARIES AS COMPARED WITH ESTIMATED TOTAL COMMERCIAL PRODUCTION

	November - December, 1933				January - February - March, 1934				5 Months - November 1933 - March 1934				10 Months - April 1934 - January 1935				
	Total		S. R. A.		Total		S. R. A.		Total		S. R. A.		Total		S. R. A.		
	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	100% of Captives Production	Plate Mined Production	
Western Neb.-Dv.	6,593	4,490	77.8	11,517	9,996	8,289	82.9	18,130	2,361	15,769	12,779	70.0	30,137	4,026	26,111	20,209	77.9
Western Penna.	9,253	2,618	28.3	14,865	4,668	31.4	24,124	7,306	16,818	15,178	90.2	13,909	13,909	100.0	28,694	28,694	100.0
Ohio	3,704	3,193	86.2	6,630	5,790	3,756	64.9	10,334	1,351	8,983	5,866	65.1	16,276	2,682	14,254	14,254	100.0
Pennsylv.	714	107	15.0	1,152	177	18.9	1,866	1,866	284	1,582	632	39.9	3,178	488	2,690	1,962	72.2
Michigan	110	110	100.0	225	225	100.0	335	335	335	335	100.0	304	304	100.0	478	478	100.0
Northern W. Va.	3,553	2,717	76.5	6,253	4,742	75.8	9,606	7,114	74.2	8,692	7,084	81.5	14,696	1,743	12,953	10,468	80.8
Southern No. 1	6,105	2,233	36.6	11,962	3,759	31.4	18,407	5,717	31.1	17,636	15,872	89.0	34,723	1,042	33,681	32,294	95.8
Southern No. 2	10,730	9,568	89.2	19,396	17,571	90.6	29,926	27,871	93.1	27,836	21,379	76.8	59,732	5,521	54,111	36,876	68.0
Eastern Ky.	1,479	1,479	100.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Div. I	42,387	36,785	86.8	72,020	61,648	85.7	112,928	101,172	89.6	145,774	127,072	87.2	203,177	28,604	174,573	138,309	79.3
Illinois	7,486	7,103	94.9	13,009	11,717	90.1	20,895	19,232	92.0	20,895	18,820	90.1	32,973	3,274	29,699	26,262	88.2
Indiana	2,993	2,962	99.0	4,725	4,661	98.6	7,718	7,613	98.6	7,718	7,613	98.6	11,687	162	11,525	8,083	70.1
Iowa	693	617	89.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Div. II	11,572	9,014	77.8	17,734	16,378	92.4	28,613	26,433	92.4	28,613	22,447	78.4	44,860	3,436	41,424	35,175	84.7
Ala., So. Tenn., Georgia	1,697	943	55.6	3,176	2,011	63.3	4,873	3,165	64.9	4,873	3,282	67.4	7,482	2,722	4,760	4,279	90.1
Total Div. III	1,697	943	55.6	3,176	2,011	63.3	4,873	3,165	64.9	4,873	3,282	67.4	7,482	2,722	4,760	4,279	90.1
Total Div. IV	1,711	945	55.2	2,633	1,468	55.7	4,304	2,339	54.3	4,304	2,173	50.5	---	---	---	---	---
Total Div. V	4,095	3,197	78.1	5,142	4,014	77.9	9,237	7,211	78.1	9,237	7,211	78.1	---	---	---	---	---
TOTAL U. S.	61,462	53,522	87.1	100,705	83,966	83.3	159,995	141,830	88.7	159,995	138,165	86.4	255,460	35,002	220,458	177,743	80.6

* Total Production, Bureau of Mines, minus the Production of 100% Captive Mines, less Commercial and Mixed (except seaming partly captive and partly commercial) to compare with U.S.A. Commercial Tonnage

- 1/ Based on 1933 data; % of captive not available for 1934
- 2/ As submitted by Division III through H. S. Salmon, Presidential Member
- 3/ Data for period April 1934 through December 1934 only
- 4/ Does not include Arkansas and Eastern Oklahoma for March
- 5/ Exclusive of Northern Wyoming, Southern Colorado and New Mexico and North Dakota for March
- 6/ Exclusive of Western Kentucky and Iowa, Texas and Alaska; also of Ark. & W. Ohio, So. Colo., So. Wyo. So. Colo., E. Mex., E. D., after Feb. 1934.
- 7/ Total of Division I (excluding Western Kentucky), Division II (excluding Iowa), and Division III
- 8/ Including Texas and Alaska

(b) Substantial Per Cent of Total Production Represented in Summaries as Published, November 1933 through January 1935: The tonnage covered by mine reports tabulated, as published in the 3 volumes November and December 1933; January, February, March 1934; and April 1934 through January 1935; all inclusive, comprises satisfactory representation of the commercial production in each of those periods. The accompanying table shows this comparison in detail.

The coverage in per cent of total production (as reported by the U. S. Bureau of Mines) for November-December, 1933, is 71.2%, January-February-March, 1934, is 65.8%. After April, 1934, Divisions IV and V did not report and for April 1934 through January 1935, the coverage is 61.2% of the total U. S. production, but 66.6% of the production of Divisions I, II, and III, which are included in the published summaries.

These percentages, however, are not a true measure of the high degree to which these summaries are representative. A fairer measure is that based on the proportion of tonnage included in the summaries as compared with the "Commercial and Mixed" tonnage produced, as shown in the table.

C. Factors Affecting Production Cost.

1. Number of Days Tipple Started, or Available Working Time During the Month: Certain upkeep work is necessary whether a mine is operating or not (such as pumping, repairing of props, etc.) plus inescapable overhead such as property taxes, salaries, depreciation on certain equipment, property insurance, etc. For this reason, the cost per ton during a month of light operation will be considerably higher than any month of full operation, other things being about equal. A mine which has booked business that will enable it to operate 12, 16 or 21 days in a month will show a progressively lower cost per ton for its operation during that month than if it were able to operate only 8 days. Mine operators are at times faced with the problem whether to accept orders at cost or below cost in order to operate at a smaller loss, as against the known loss from remaining idle.

An approximate measure of the influence on production cost of the number of working days per month is ascertained in the following tabulations (*) of production cost items for specified number of working days. This table is prepared from operators' reports furnishing cost data for working days, idle days and Sundays and holidays. For all deep mines in Eastern Subdivision of Division I, for example, 113 mines reported an average of 19 tipple starts in January 1935 and a total output of 1,637,496 net tons at a production cost of \$1.8462 per ton. Labor and supply costs are segregated, in aggregates, between average working day, average idle day, and average Sunday and holiday. The average numbers of working days, idle days, and Sundays and holidays are also reported, 19.0, 7.0, and 5.0 respectively, so that the per day average variable costs are determined by division. Variations in working days connote equal but opposite variations in idle days, Sundays and holidays, being determined by law and custom, are determinate for any one month.

(*) Bituminous Coal Statistics, April, 1934 through January 1935, sheet AP1, page 24 is appended.

Thus, it is possible to calculate the approximate variable cost per ton, assuming the output to vary directly with and proportionately to the number of days worked, for any combination of working and idle days. Fixed charges are those costs that remain constant in amount per month such as taxes on mine property, etc.; or those costs that are charged at a fixed rate per ton regardless of output, such as royalties and the like. Projections are calculated by reducing aggregate variable costs to aggregate costs per working day, per idle day, and per Sunday or holiday and then by multiplying these respective per day aggregates by the number of working or idle days comprising any desired combination. To these aggregates are added the aggregate costs of fixed charges (those constant in amount regardless of output and those varying in aggregate directly with the output). Per ton costs are obtained, of course, by dividing the aggregate costs thus obtained by the output which is assumed to vary with the number of days worked.

Costs projected by this method are used repeatedly throughout this chapter, as a means of eliminating the factor of days worked, to establish an approximate measure of the real increase in costs under the code.

2. Geological Factors: By this is meant such natural factors as thickness of seam; degree and direction of inclination or pitch (with respect to natural drainage); prevalence or practical absence of "faults" for example, squeezing out of coal for a varying distance involving "yardage and deadwork" before workable coal resumes; folds in the underlying or overhead strata necessitating the removal of rock or slate to maintain working height; widening of draw slate, overlying the coal and taken down for the purpose of safety in roof; and many others which involve temporary mining of rock or other dead-loss operations.

Examples of these factors do not stand out in the group averages as published. Individual mines, however, when reporting on Form A, were requested to fill in the blank: "State any special local condition that affects production cost or market value for this period". Below are quoted several of the replies appearing on Form A reports from mines which showed in certain months an unusually high cost in some items, either as compared with their own normal, or as compared with the district average:

- "Extremely bad roof".
- "Cap and bone coal gobbed, 8 inches".
- "Partings in seams; low coal; heavy draw slates".
- "Bad roof".

The effect of yardage and deadwork on production cost is direct. In the following few examples from unidentified mine reports for successive months, this "yardage and deadwork" item is one of the factors in the higher cost of producing in one month than in the other:

EXAMPLE: - 1	<u>1st Month</u>	<u>2nd Month</u>
No. of days tippie started	19	20
Production per day	1,599 tons	1,622 tons
Item 5c -Yardage & Deadwork	\$0.1607 per ton	0.1450 per ton
Producing cost	\$1.9793 " "	1.9638 " "

No. of units (or other measure) produced	No. of units (or other measure) entering into total production costs	TOTAL PRODUCTION COSTS		PER UNIT COSTS		PERCENTAGE DIFFERENCE	
		Total	Per Unit	Total	Per Unit	Total	Per Unit
1	1	100.00	100.00	100.00	100.00	0.00	0.00
2	2	199.98	99.99	100.00	50.00	-0.02	-50.00
3	3	299.94	99.98	100.00	33.33	-0.06	-33.33
4	4	399.88	99.97	100.00	25.00	-0.12	-25.00
5	5	499.80	99.96	100.00	20.00	-0.18	-20.00
6	6	599.70	99.95	100.00	16.67	-0.24	-16.67
7	7	699.58	99.94	100.00	14.29	-0.30	-14.29
8	8	799.44	99.93	100.00	12.50	-0.36	-12.50
9	9	899.28	99.92	100.00	11.11	-0.42	-11.11
10	10	999.10	99.91	100.00	10.00	-0.48	-10.00

Form A - OPERATING DATA - ITEMS ENTERING INTO TOTAL PRODUCTION COSTS TABLE NO. A-1-2-1

No. of units (or other measure) produced	No. of units (or other measure) entering into total production costs	TOTAL PRODUCTION COSTS		PER UNIT COSTS		PERCENTAGE DIFFERENCE	
		Total	Per Unit	Total	Per Unit	Total	Per Unit
1	1	100.00	100.00	100.00	100.00	0.00	0.00
2	2	199.98	99.99	100.00	50.00	-0.02	-50.00
3	3	299.94	99.98	100.00	33.33	-0.06	-33.33
4	4	399.88	99.97	100.00	25.00	-0.12	-25.00
5	5	499.80	99.96	100.00	20.00	-0.18	-20.00
6	6	599.70	99.95	100.00	16.67	-0.24	-16.67
7	7	699.58	99.94	100.00	14.29	-0.30	-14.29
8	8	799.44	99.93	100.00	12.50	-0.36	-12.50
9	9	899.28	99.92	100.00	11.11	-0.42	-11.11
10	10	999.10	99.91	100.00	10.00	-0.48	-10.00

Form A - OPERATING DATA - ITEMS ENTERING INTO TOTAL PRODUCTION COSTS TABLE NO. A-1-2-1-1

No. of units (or other measure) produced	No. of units (or other measure) entering into total production costs	TOTAL PRODUCTION COSTS		PER UNIT COSTS		PERCENTAGE DIFFERENCE	
		Total	Per Unit	Total	Per Unit	Total	Per Unit
1	1	100.00	100.00	100.00	100.00	0.00	0.00
2	2	199.98	99.99	100.00	50.00	-0.02	-50.00
3	3	299.94	99.98	100.00	33.33	-0.06	-33.33
4	4	399.88	99.97	100.00	25.00	-0.12	-25.00
5	5	499.80	99.96	100.00	20.00	-0.18	-20.00
6	6	599.70	99.95	100.00	16.67	-0.24	-16.67
7	7	699.58	99.94	100.00	14.29	-0.30	-14.29
8	8	799.44	99.93	100.00	12.50	-0.36	-12.50
9	9	899.28	99.92	100.00	11.11	-0.42	-11.11
10	10	999.10	99.91	100.00	10.00	-0.48	-10.00

EXAMPLE: - 2	<u>1st Month</u>	<u>2nd Month</u>
No. of days tipple started	20	23
Production per day	497	487
Item 5 c - Yardage and Deadwork	\$0.0934 per ton	\$0.1728 per ton
Producing cost.	2.0668 " "	\$2.0862 " "

EXAMPLE: - 3.		
No. of days tipple started	18	19
Production per day	396 tons	493 tons
Item 5c -Yardage & Deadwork	\$0.1458 per ton	\$0.2368 per ton
Producing cost	\$1.9493 " "	\$2.1026 " "

In Examples 2 and 3, other factors also operated to affect cost: In Example 2, an increase of about 8 cents in "Yardage and Deadwork" in the 2nd month was nearly offset by the influence of 3 days increased working time; in Example 3, various other influences added to the increase in cost in the 2nd month.

3. Method of Mining Followed: There are technical advantages attaching to the various general methods of mining - but engineers will often differ as to the most economical method to follow under particular conditions. Pick mining, of course, is the only method available under certain conditions, the conditioning factors being thickness of seam, pitch (incline) of seam, etc., which may preclude the use of cutting machinery and/or loading machines. But in mines where leading devices can be used, the cost of production will be directly affected by the extent to which mechanization has been installed. To a degree, the use of mechanical aids to production is limited by natural and geological conditions, of course; also in some instances by the opposition of labor, and in some instances by either ultra-conservatism or financial weakness on the part of management or owner.

The introduction of cutting machines, mechanical loading machines, power locomotive hauling, and other inside labor and time saving equipment has been one of the outstanding factors in the lowering of production costs by increasing the output per man-day. This subject has been specially treated in Chapter I.

4. Productivity of Men and Mine: It is so obvious as to require mere mention, that the man-day output bears directly on the production cost per ton. The possible man-day output is conditioned by the many geological characteristics, mining methods, and degrees of mechanization, already mentioned. Other conditioning factors, as between men, rest upon willingness, ambition, energy - and between groups, upon the spirit which animates each group. All these conditions together more or less determine the productivity of one mine as compared with another, or the rate of daily output in different periods in the same mine.

5. Unavoidable or Unpredictable Interruptions: Among such factors in cost may be mentioned breakdowns in machinery, power, ventilation; accidents of a major character such as the fall of an elevator with casualties, an explosion with casualties, any fatal accident - on account of a major inside accident mining customarily has ceased for at least the balance of that day. Labor suspensions or strikes or lockouts are not to be classed in this category, since ordinarily such cessation of

work will be predictable for at least a few days, often a few weeks.

6. Other factors: The usual differences from month to month or from mine to mine due to management methods, tax variations, capital costs, etc., are of course general throughout the industry, but in the aggregate offset each other to some extent, and are inherent in any industry's averages.

D. Importance of Principal Cost Items with Relation to Total Cost.

A recapitulation of the percentage borne by each principal group of items in selected subdivisions shows the relationships and an indication of varying changes in the percentages between the two clearly defined periods of the N.R.A. Code:

Percentage of Total Cost Represented
by Constituent Cost Items (*)

8-Hour Day Period					
Subdivision	Labor Cost	Mining Supplies	Misc. & Fixed Charges	Prod'n Cost	Selling and Adm.
Eastern Pa. (excl. Md. & U.P.)	61.51	14.89	15.35	91.75	8.25
Western Pa.	60.18	12.86	20.40	93.44	6.56
Ohio	62.55	12.53	16.08	91.16	8.84
No. West Va.	58.92	12.30	16.93	83.15	11.85
Southern #1	56.89	13.84	19.05	89.78	10.22
Southern #2	56.82	13.64	17.92	89.44	11.56
Ind.- Deep	54.31	19.89	16.30	90.50	9.50
Ind. - Strip	32.45	23.56	30.07	86.08	13.92
Ill. - Deep	60.22	16.41	14.10	90.79	9.21
Ill. - Strip	32.11	24.50	28.35	84.96	15.04
Alabama	56.60	16.67	16.44	89.71	10.29

(*) Source - Cost Tables 6, 17, 31, 36, 41, 46, 60, 61, 66, 67, 78
this Chapter.

Percentage of Total Cost Represented
by Constituent Cost Items (*)

Subdivision	7-Hour Day Period				
	Labor	Mining	Misc. &	Prod'n	Selling
	Cost	Supplies	Fixed	Cost	and
	\$	\$	\$	\$	\$
Eastern Pa. (excl. Md. & U.F.)	61.03	15.05	15.14	91.22	8.78
Western Pa.	61.32	12.96	18.89	93.17	6.83
Ohio	63.87	12.95	14.72	91.54	8.46
No. West Va.	59.73	11.80	16.15	87.68	12.32
Southern #1	52.85	13.93	17.07	89.85	10.15
Southern #2	59.81	13.23	16.33	89.37	10.63
Ind. - Deep	53.73	20.35	16.21	90.29	9.71
Ind. - Strip	34.73	26.03	25.21	86.02	13.98
Ill. - Deep	59.51	13.62	13.57	89.70	10.30
Ill. - Strip	34.36	25.82	24.57	84.75	15.25
Alabama	60.82	16.46	13.81	91.09	8.91

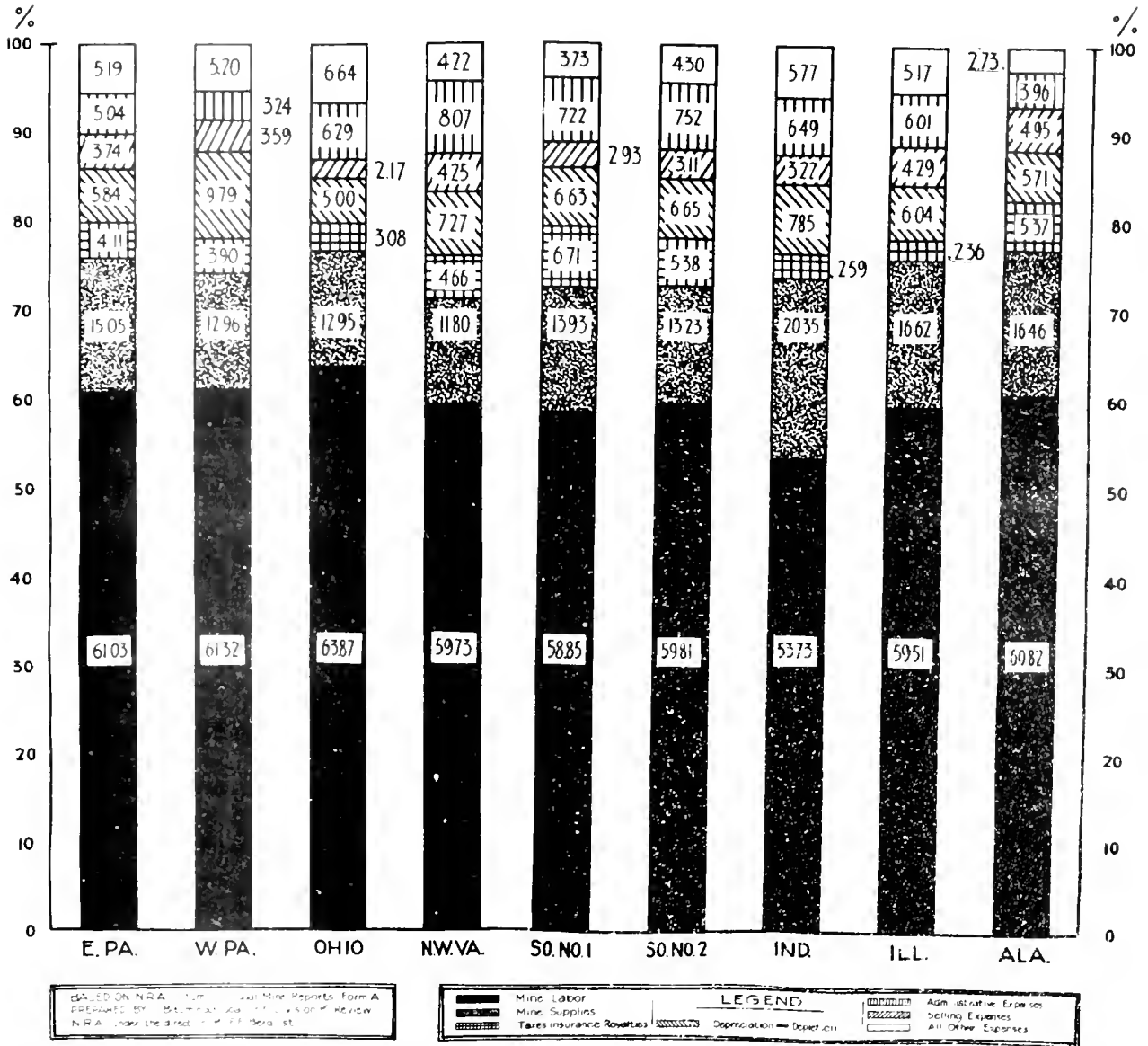
(*) Source - Cost Tables 6, 17, 31, 36, 41, 46, 60, 61, 66, 67, 78 this Chapter.

The accompanying cost chart number 18 illustrates graphically the percentage relationships in these selected areas for the 7-hour day period, April 1934 through January 1935, as a whole.

Labor Cost: It has been repeatedly stated in public hearings that labor cost is the controlling item, averaging generally between 60 and 65 per cent of the total. The wage rates that lie behind this cost element, being at once the largest and most flexible cost factors, have been depressed as a means to price cuts during times of sectional struggle for business, particularly during the period 1924 to 1933 (see details in labor and price sections of this study).

All the principal areas average around the accepted range of 60 to 65 per cent of the total. Exceptions are Southern Subdivisions 1 and 2 of Division I, and the Indiana deep mines, which show in the first or 8-hour day period a labor cost nearer 55% than 60% of the total. In the second period, labor cost in Southern No. 1 and 2 gained to nearly 60% of the total cost, due to the influence of the reduction in working hours from 8 to 7 and increases in wage rates. Indiana, however, which in 1934 mechanically loaded 61.4% of its output (a gain of 12.8% over 1933) even reduced its proportionate cost chargeable to labor from 54.31% to 53.73% in its deep mines. Illinois, another highly mechanized section, also showed a slight reduction in labor cost ratio to total cost, but its ratio is nearly 60% of total cost. All the other areas covered above reflect an increase in percentage relationship to total cost after the 7-hour day went into effect. The stripping mines of Indiana and Illinois are particularly noticeable in the above table, for

Percentage which Each Cost is of the Total Operating Cost in Bituminous Coal Mining for Selected Areas during Period April 1934 — January 1935.



BASED ON N.R.A. Bituminous Coal Mine Reports Form A PREPARED BY Bituminous Coal Division of Review N.R.A. under the direct supervision of the District

LEGEND

- Mine Labor
- Mine Supplies
- Taxes Insurance Royalties
- Depreciation - Depreciation
- Administrative Expenses
- Selling Expenses
- All Other Expenses



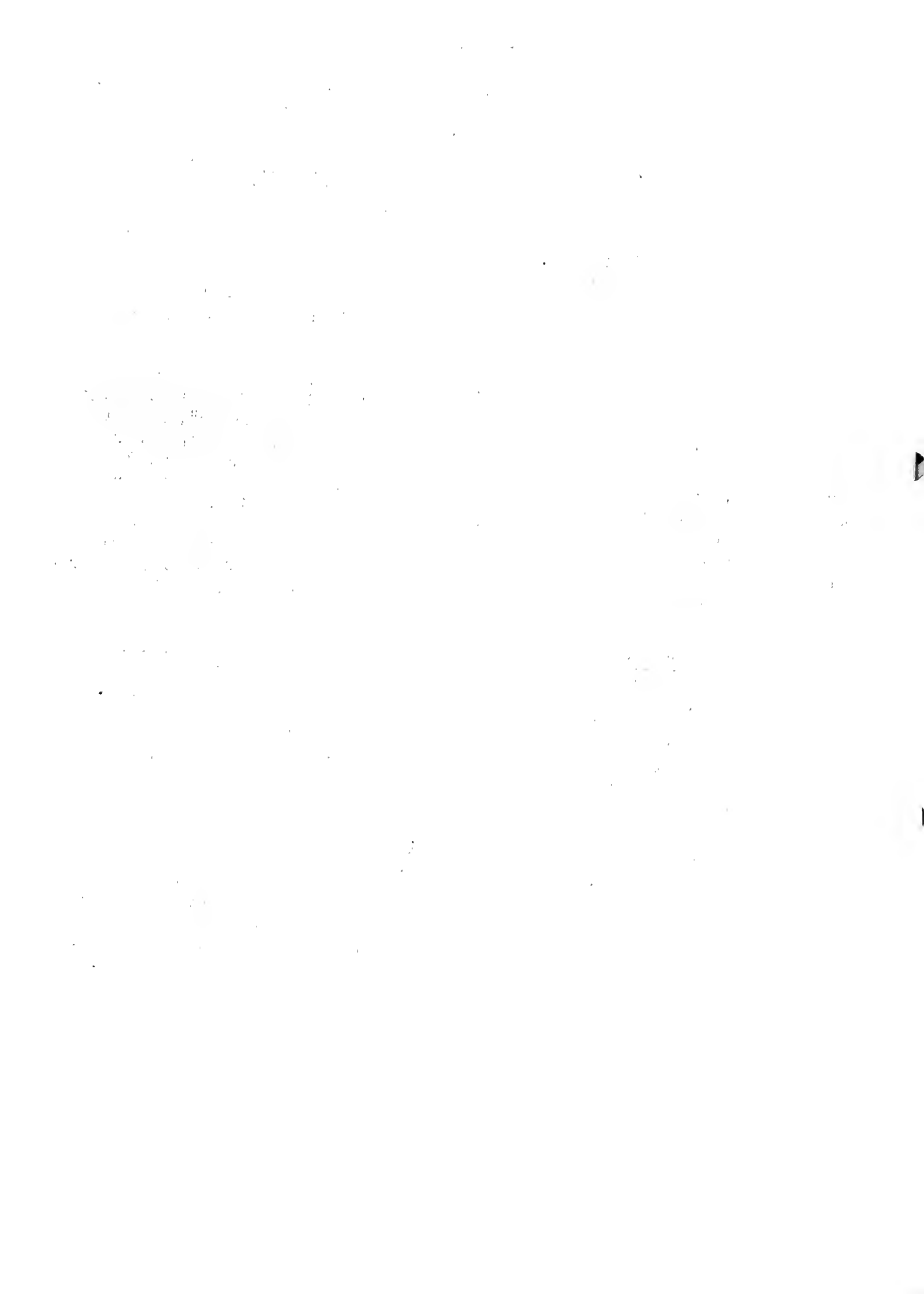
their radically lower ratio of labor to total cost. This type of mining, largely with powerful steam shovels, is of course highly mechanized, with a comparatively low per ton labor cost.

Mining Supplies: In the Subdivisions of Division I, supplies cost ran generally between 12% and 15% of the total cost. In the deep mines of Division II, Indiana and Illinois, however, this cost bore from 16% to 20% of total cost, while in Alabama (the largest part of Division III) it averaged around 16% to 17%. The cost of supplies is controlled by necessity and is, of course, variable both from month to month in any mine and from mine to mine as well as from district to district. Physical mining and safety requirements vary, and costs of principal supply items vary with distance from the source.

Miscellaneous and Fixed Charges: This item is made up of two classes of charges that vary from month to month quite differently. They are (1) the cost of "fixed charges usually on a lump sum basis", normally varying only slightly from month to month in amount, but as output per month increases, the per ton cost decreases. General supervisory salaries, rent, taxes, insurance, depreciation, etc., are ordinarily on a monthly basis and vary in cost per ton as the output varies. (2) The group of fixed charges composed of "fixed charges usually on a per ton basis", which, of course, vary in amount depending on production, consist principally of royalties and depletion. The combination of all these overhead items constituted a variable proportion of total costs, running generally from 14 to 20 per cent.

Production Cost: This term has been used throughout the N.R.A. cost studies as representing the total of the cost charges involved in producing only, exclusive of sales and general administrative expenses. For the deep mine operations, this producing cost averaged in the Subdivisions of Divisions I and II slightly under and slightly over 90 per cent of total cost, Western Pennsylvania Subdivision I showing 93.44 per cent with others ranging lower - Northern West Virginia averaging 88.15 per cent of total cost.

Selling and Administrative Expenses: Generally speaking these items averaged around 10 per cent of total cost, with the Northern Subdivisions running under 10 per cent, and Western Pennsylvania averaging as low as 6.56 per cent. The Southern Subdivisions averaged slightly over 10 per cent. Since these expenses are frequently the subject of critical analysis, especially the administrative costs which include salaries of executives, a brief statement of the cost in cents per ton will be here undertaken.



Selling and Administrative Costs, Averaged in Cents
Per Ton for Selected Areas in Divisions I, II and
III, Composite for 10 Months April 1934
through January 1935

	<u>Selling Expense (*)</u>		<u>Administrative Expense (*)</u>	
	<u>Cents</u> <u>Per Ton</u>	<u>% of Total</u> <u>Cost</u>	<u>Cents</u> <u>Per Ton</u>	<u>% of Total</u> <u>Cost</u>
Eastern Pa. (excluding Md. and Upper Potomac)	10.69	5.04	7.94	3.74
Western Pennsylvania	6.29	3.24	6.96	3.59
Ohio	11.34	6.29	3.91	2.17
Northern West Virginia	13.45	8.07	7.09	4.25
Southern No. 1	14.06	7.22	5.71	2.93
Southern No. 2	13.68	7.52	5.66	3.11
Indiana - deep	10.42	6.49	5.17	3.23
Indiana - strip	11.43	6.30	7.83	5.68
Illinois - deep	9.72	6.01	6.94	4.29
Illinois - strip	9.91	7.86	9.31	7.39
Alabama	9.30	3.96	11.47	4.95
Division I - North	9.46	4.90	6.79	3.52
Division I - South	13.32	7.34	5.74	3.05
Division I as a whole	11.68	6.13	6.25	3.28
Division II - deep (Ind. & Ill.)	9.87	6.10	6.58	4.07
-strip	10.53	3.05	8.71	6.65
Divisions I, II, III combined	11.29	6.12	6.54	3.65

(*) Source: "Bituminous Coal Statistics April 1934 through January 1935", pp. 8 and 9; files of M.R.A. Bituminous Coal Unit: except Indiana, Illinois, Division II, deep and strip segregated costs which were computed from the unpublished data in some files.

The comparatively lower selling cost average for Western Pennsylvania stands out. Undoubtedly the presence in that Subdivision of the country's largest operating company with wide ramifications through subsidiary distributing corporations exercises a downward influence on the average selling cost per ton. It is quite possible that discretionary allocations of selling & ad. were made to subsidiary corporations, such as lake docks. This Subdivision also is in the heart of the by-product and steel district, with heavy-volume consumers.

Other subdivisions average around 9 to 14 cents per ton for selling, Division I - North averaging 9.46 cents and Division I - South 13.32 cents per ton, with 11.68 average for the Division as a whole. Selling expense for Division II is slightly under that for Division I, the average amounts being 10 and 11.68 cents per ton respectively.

On the other hand, administrative expense per ton generally averages higher in those subdivisions having lower selling costs than in those with the higher selling costs (Western Pennsylvania again being an exception), running from about 5 to 8 cents, with Alabama almost 11½ cents.

In dealing with selling and administrative expenses, several facts should be remembered. Not always do company accounts accurately segregate the real selling costs; principal administrative officers often do a large part of the selling, especially to the important customers. Specialization upon or exceptionally good access to large-volume consumers as against dependence upon a larger number of customers whose average business is small in volume, with commensurately greater expense of selling per ton; or a wide expanse of territory covered in selling as against the more fortunate situation, even with the same number and size of customers, congregated in a comparatively small area; or a group of comparatively small mines contributing to the average as against larger average size mines in another subdivision, with the effect generally of a larger cost of selling per ton in the former area; difference in policy as to size of commissions paid or channels of distribution utilized -- these and other factors largely unrevealed in the N.R.A. cost reports may reasonably account for variations in selling expense, and to a lesser extent administrative expense.

Generally speaking, the combined selling and administrative cost in cents per ton, as reported from month to month, ran from 15 to 20 cents, the 10-month average for Division I being 17.9 cents per ton, 9.4% of total cost; Division II 17.1 cents per ton, 11.1% of total cost; and Divisions I, II and III combined, 17.8 cents per ton, 9.8% of total cost.

E. Average Costs, by N.R.A. Code Divisions.

Monthly averages are presented in this chapter in tabular form, with illustrative charts for the principal Subdivisions and Divisions. The charts and tables show the following items:

- Labor Cost
- Supplies
- Miscellaneous and Fixed Charges
- Production Cost (total of foregoing)
- Selling and Administrative Expense
- Total Costs
- Average Number of Days Tiptoe Started

The number of reporting mines whose figures enter into the averages, and their total production in tons, also appear on the tables.

The reader will be able to trace average costs in any Division or Subdivision or field area within a Subdivision. For a more detailed breakdown of the costs themselves into sub-items, reference may be made to the published summaries in three volumes (November-December 1933; January-February-March 1934; April 1934 - January 1935), which are an appendix to this study.

1. Divisional Averages: An average cost figure for all the

mines operating within a Division must admittedly reveal only a very general picture. Nevertheless, in this industry such averages are very significant.

Division I, for instance, comprises all the bituminous coal fields east of Indiana (except Alabama*Georgia*Southern Tennessee) and include also Western Kentucky. This Division accounts for more than 72% of the entire United States production. It competes, generally speaking, for the business of the East, middle West and Northwest - in the East among its own neighbors, and elsewhere with Division II primarily. In any coordinated discussion of the industry, Division I fields usually are bracketed together. This is particularly true since the World War, though this large producing territory finds itself sub-divided by wage-scale differentials into two sections, called for convenience Division I North and Division I South.

In the Bituminous Coal Conservation Act of 1935, the districts formerly comprising Division I under the N.R.A. Code were combined with Indiana, Illinois and Iowa (N.R.A. Code Division II) to establish "Minimum Price Area Number 1". Prices fixed under this Act must show an average return "as nearly as may be" to the weighted average of the total costs per net ton on all "tonnage of such minimum price area". Clearly, Divisional averages during the Code period take on an added significance as forming a body of cost data comparable with those requisite as bases for price fixing under the Bituminous Coal Conservation Act of 1935. For purposes of future comparison, therefore, a statement will follow the discussion of Divisions I and II, presenting the combined averages of these Divisions.

2. Two Distinct Periods Under Code: The N.R.A. Code period naturally divides itself into two parts: (1) The 8-hour day and 40-hour week period through March 1934; and (2) the 7-hour day and 35-hour week period beginning April 1, 1934, and running through to the termination of the N.R.A. Code May 27, 1935.

Bituminous Coal was the first industry in history to adopt a nationwide 7-hour day. (See Chapter IV-(b) on Wages and Hours.)

Cost statements on Forms A and B were required by N.R.A. beginning with November 1933, so that summaries are available for the five months ending in March 1934 (the 8-hour day period), and for the ten months starting with April 1934 through January 1935, (in the 7-hour day period) when monthly reporting ceased.

The proportionate relationships of the cost items shown during the first 5-month period were fairly constant from month to month in the divisional averages. Although in the different months the averages were not always based on reports of identical mines, nevertheless the representation in tonnage is so large as to be fairly conclusive of broad indications. For instance, average production costs show a variation approximately indicative of the effect of a variable number of days worked.

It should be borne in mind that average costs as between any two Divisions normally appear at different levels, due in varying degrees to typical geological conditions, expanse and population density of marketing territory, wages and other labor factors, etc. For instance.

In Divisions I and II, the cost of selling, generally is likely to be less per ton than in Divisions IV and V, due to a more congested market; labor costs average less in Division II than in either Division IV or Division I, due partly to the heavy weighting of stripping operations and partly to favorable operating conditions; in Division V the costs appear higher than in Divisions I or II because of average higher wage scales, higher selling costs - a more scattered market, and longer transportation with higher freight costs on equipment and supplies.

The Divisions compare as follows for the two M.R.A. Code Periods:

	Mine Labor	Mine Supplies	Misc. & Fixed Chgs.	Selling & Adm.	Total Cost
	\$Per ton	\$Per ton	\$Per ton	\$Per ton	\$Per ton
Division I					
Nov. 1933-Mar. 1934	.9427	.2168	.2872	.1522	1.5989
Apr. 1934-Jan. 1935	1.1519	.2575	.3171	.1793	1.9058
Division II					
Nov. 1933-Mar. 1934	.7299	.2471	.3511	.1372	1.3453
Apr. 1934-Jan. 1935	.8291	.2944	.2504	.1709	1.5448
Division III					
Nov. 1933-Mar. 1934	1.1213	.3077	.3189	.1999	1.9483
Apr. 1934-Jan. 1935	1.4130	.3658	.3131	.2064	2.2983
Division IV					
Nov. 1933-Mar. 1934	.8011	.3297	.4106	.3296	1.7710
Apr. 1934-Jan. 1935	(a)	(a)	(a)	(a)	(a)
Division V					
Nov. 1933-Mar. 1934	1.0753	.3111	.4120	.2423	2.0414
Apr. 1934-Jan. 1935	(a)	(a)	(a)	(a)	(a)

(a) Not available

3. Division I: Average Costs - (In 1934 produced 72.77% of the U.S. total, according to U. S. Bureau of Mines preliminary estimate)

For Division I, labor cost averaged nearly 59% of total costs during the 5-month period when the 8-hour day was in effect, and in the second period under 7-hour day averaged nearly 60% per cent of total costs.

The number of days worked is a heavy factor in costs per ton, Labor paid on a day and hour basis obviously will vary in cost per ton depending on tons produced; shorter working time will reduce the production, but often day workers will work full time in unproductive or low production days. Tonnage men, on the other hand, will, given the same proportions of men working at the respective rates in two different periods, show very nearly

the same over cost per ton for their labor while the wage rate remains unchanged. Yards, etc and deadwork will also more or less average out in a composite representing a large number of mines, although in individual mines the cost per ton may vary a good deal, but two months month and another. Mine Supervisory and Clerical cost is likely to run more or less the same in total amount from month to month, varying per ton according to the days the mine worked and the tons produced.

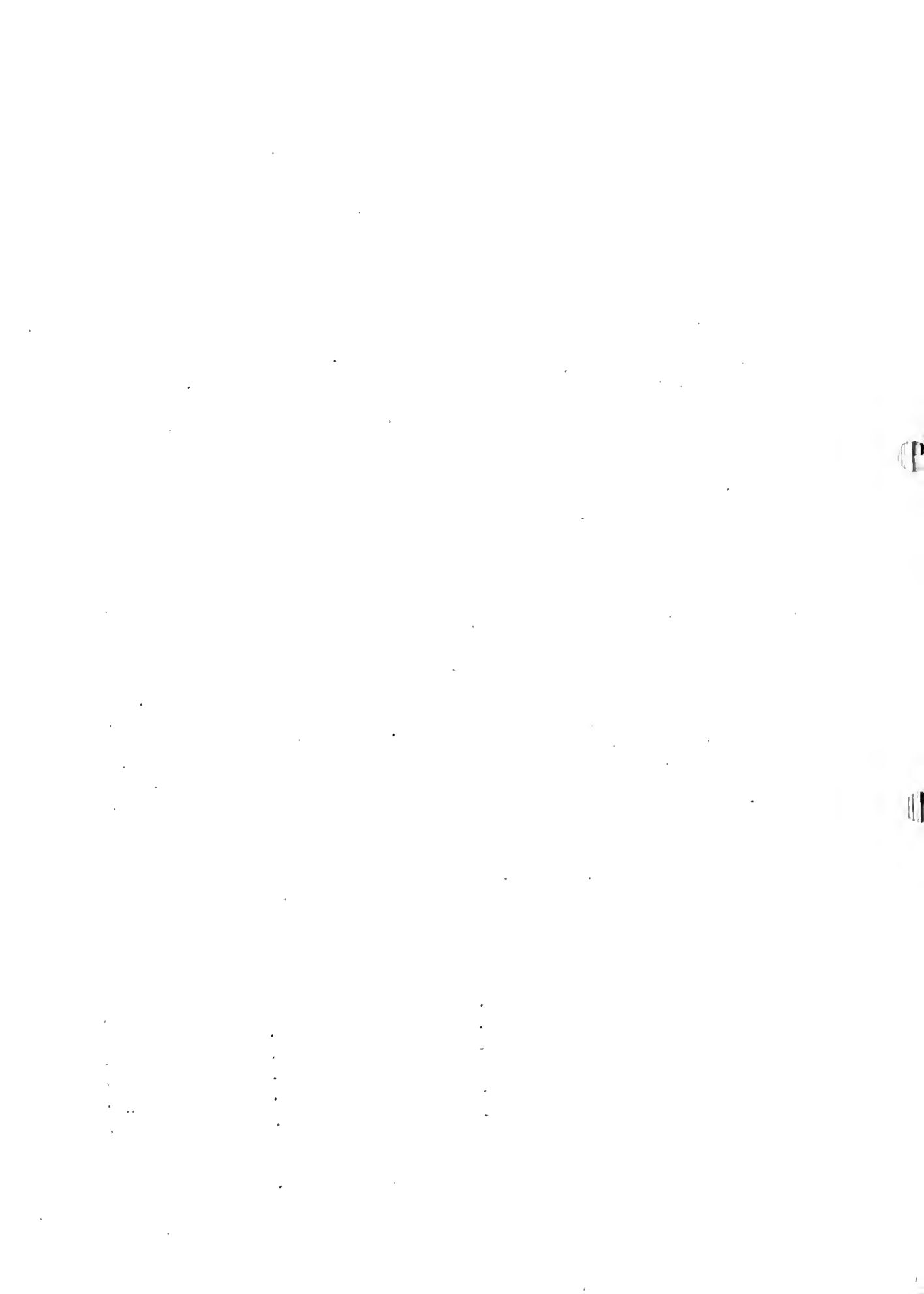
Total Labor Costs, averaged for all of Division I, reflect the monthly changes in working time only to a slight degree, but comparatively narrow variations in each of the cost groups comprising production costs (labor, supplies, miscellaneous and fixed charges) combine to illustrate quite clearly the effect of variable working time. The November 1933 production cost, \$1.4319 in a 17.1 day month, rose in December to \$1.4934 as days worked fell to 15.9; and by March had fallen back to \$1.4123 when the average number of days tipshoes started rose to 21.3, a very good month.

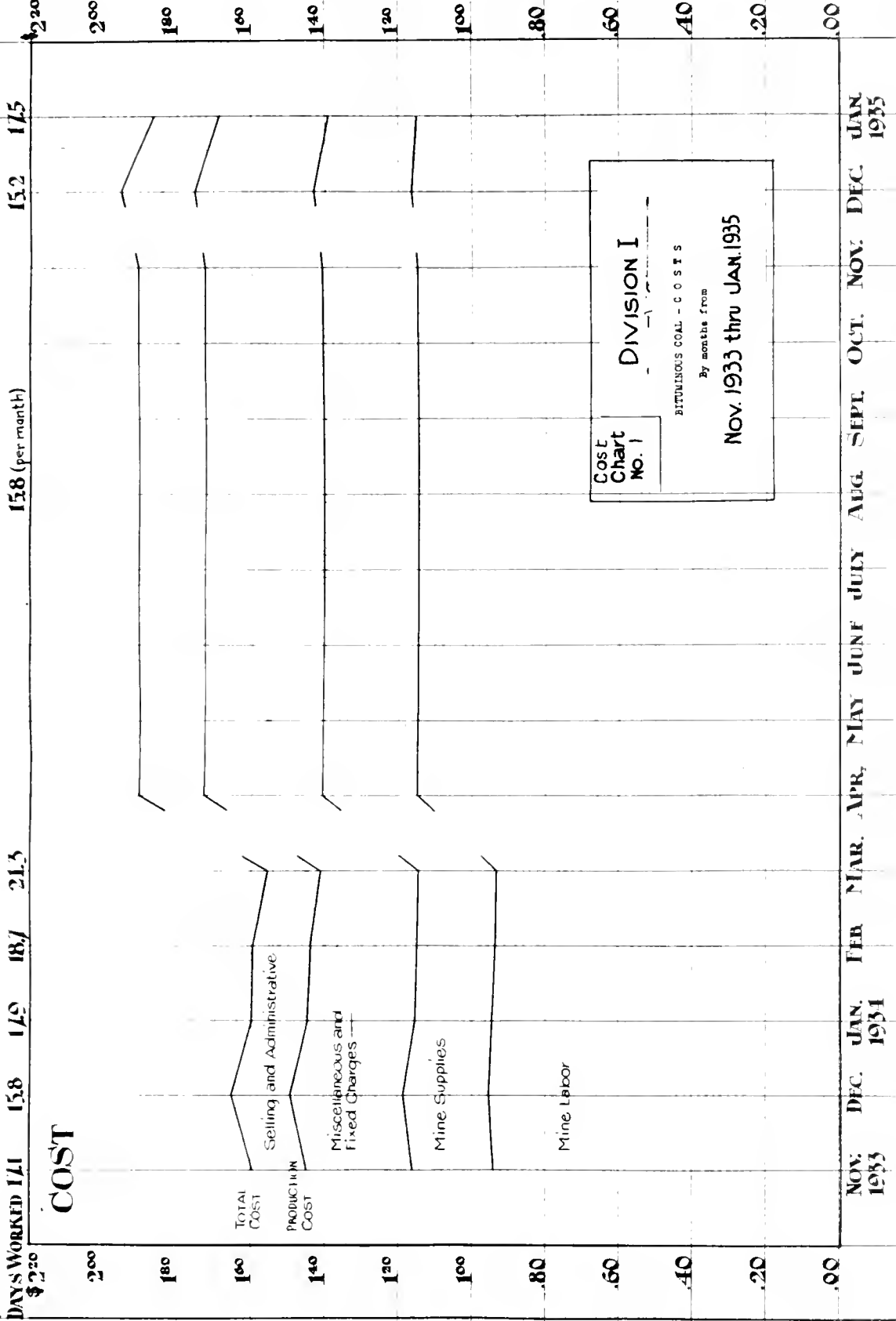
It is not intended to attribute the entire variation to working days, but undoubtedly in the averages this is the largest direct-effect factor. Nearly all other factors appear at irregular times in reports of individual companies, but the working time factor is likely to appear in the vast majority of mines and affect the cost of a vast bulk of tonnage all in the same month.

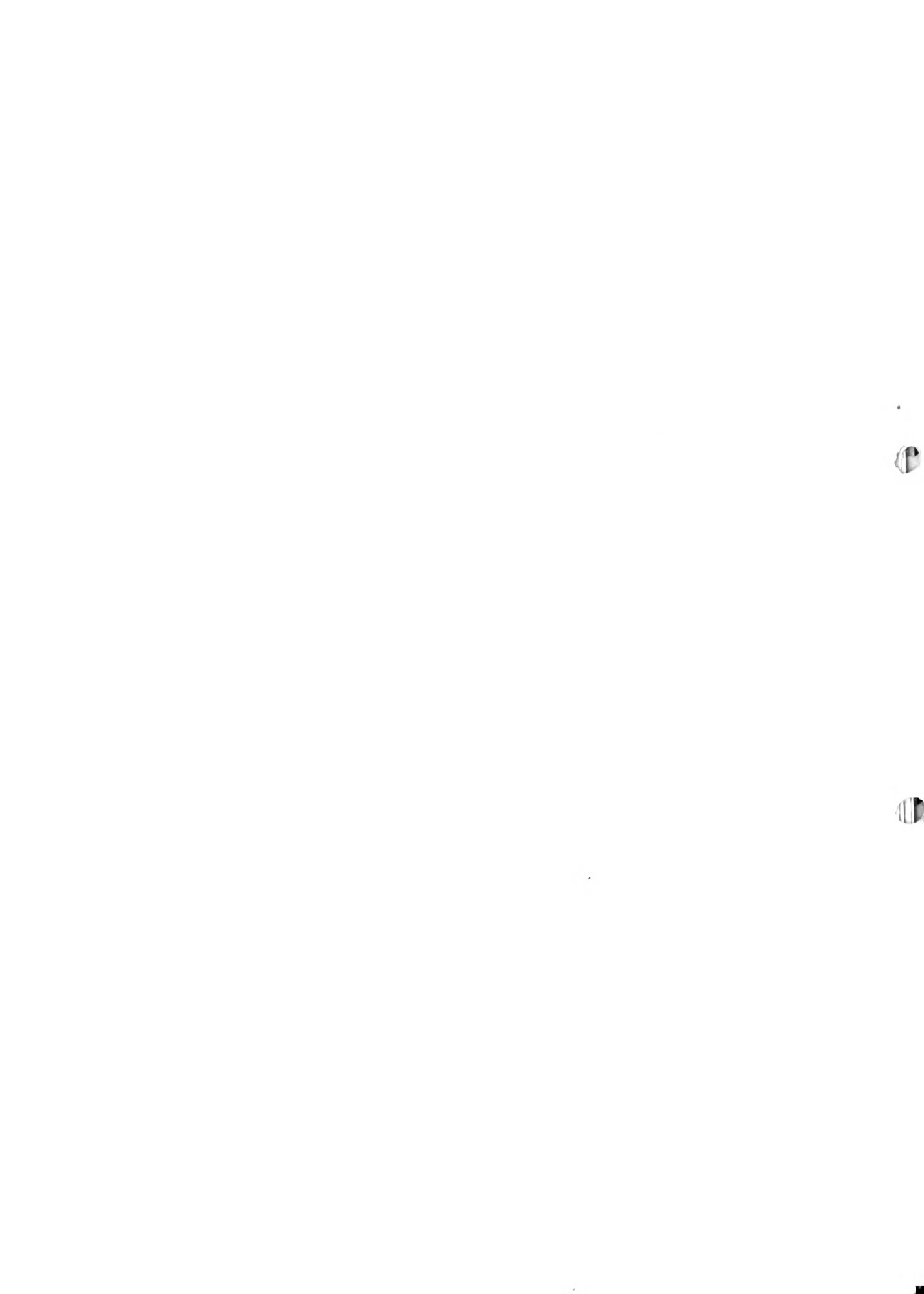
It is unfortunate that two Southern Subdivisions of Division I (Southern No. 1 and Southern No. 2) reported for the 8-month period April-November 1934 in one statement, which necessitates showing the Division I Summary in that manner. The 10-month average cost for this period indicates the increase in labor cost to have averaged 20.92 cents per ton under Code Amendment 1 as compared with the earlier period. Other costs increased also, namely Supplies 4.07 cents, Miscellaneous and Fixed Charges 2.29 cents, for a total increase in Production Cost of 27.98 cents per ton. Selling and Administrative expense increased 2.71 cents, resulting in Total Cost increase during this 10-month period of 30.69 cents.

	5-Month Period Nov. 1933 through March 1934 (8-hour day)	10-Month Period April 1934 through January 1935 (7-hour day)	Increase
	Per ton	Per ton	Per ton
Mine labor	\$0.9427	\$1.1519	\$0.2092
Mine Supplies	.2168	.2575	.0407
Miscellaneous & Fixed Charges	.2872	.3171	.0299
Production Cost	1.4467	1.7265	.2798
Selling and Administration	.1522	.1793	.0271
Total Cost	\$ 1.5989	\$ 1.9058	\$.3069

Not all of this increase is directly due to the increased wage scale and reduction of maximum hours to 7 a day, 35 a week. The cost of supplies was also increasing; and the factor of working days had a decided influence. The simple average of the working days in the 8-hour day period, would be







18.2 per month for the five months; in the 7-hour day period, it would be 15.8 per month (15.7 for the 8-months composite from April through November). This reduction in working time operated as a direct influence to increase costs per ton. It is to be expected that ordinarily a period of months which includes April to August or September will reflect the relatively lower summer rate of production. During this 1954 stretch, April was affected adversely by certain interruptions due to the new schedule of hours and wages - some attributable to the operators and some to labor (see more detailed discussion in Chapter IV). In no succeeding month did the average working days equal the 18.2 average of the initial 5-month period, and the averages for November, December and January failed to reach the time worked in 1953 by 2.1 days in November, 1.7 in December, and .7 a day in January.

The comparative influence of working time, of labor cost increase, and of other increases known to have taken place, such as cost of supplies, etc., is not discernible or capable of segregation in the reports as submitted.

In the 5-month period, an average of 863 mines reported a total production of 79,072,000 tons, or 862,879 per day, an average per mine per day of 1,348 tons. In the 10-month period, an average of 793 mines reported a total production of 113,302,000 tons, or 876,483 per day, an average per mine per day of 1,105 tons. This indicates a substantially different sample of mines in the two periods; the resulting average costs in both periods rest upon the composition by Subdivisions, which will later be examined. (*) The significance of these comparative rates of production is also tied up with a consideration of the number of additional men employed, the greater number of working places operated, the number of loading machines added to offset the effect of reduced hours per day. Data on these points are not available.

Before leaving the Divisional discussion, the two major sections of Division I should be considered, since those producing areas north of the Ohio and Potomac Rivers (including also Northern West Virginia), known as Division I - North, operated on a higher basic wage scale than did those south thereof, known as Division I - South.

4. Division I - North - (In 1934 produced 38.02% of the total U. S. production, according to preliminary estimate of U. S. Bureau of Mines)

This is the Section of Division I for which the N.R.A. Code established basic minimum wage rates for inside skilled labor of \$4.60 per 8-hour day (\$3.36 in Northern West Virginia), as against \$4.20 per 8-hour day in Division I - South; and for which Amendment 1 established a day rate of \$5.00 beginning April 1, 1934, as against \$4.60 in the South.

Reference to the table indicates that the first 5 month period, under

(*) Relative weight of each Subdivision appears in table "Approximate Representation of Tonnage Shown in Statistical Summaries", for reference to which see earlier in this Chapter, page 22.

the 8-hour day, resulted in an average labor cost of 37.35 cents per ton. The 7-hour day cost scale increased by 21.23 cents to \$1.1858 per ton in the 10 months following. Supplies in the second period were up 4.46 cents; miscellaneous and fixed charges 3.9 cents; selling and administration 5.2 cents; total increase of 33.68 cents per ton from \$1.1642 to \$1.5010. Thus, increased labor costs accounted for 65% of the increased cost, although, as indicated in the discussion of Division I costs just above, not all of this increase in labor cost can be attributed to the increase in rate of sale and reduced working hours. The average monthly working time in the 10-month period was only 15.19 days per month as against 18.2 days in the early period.

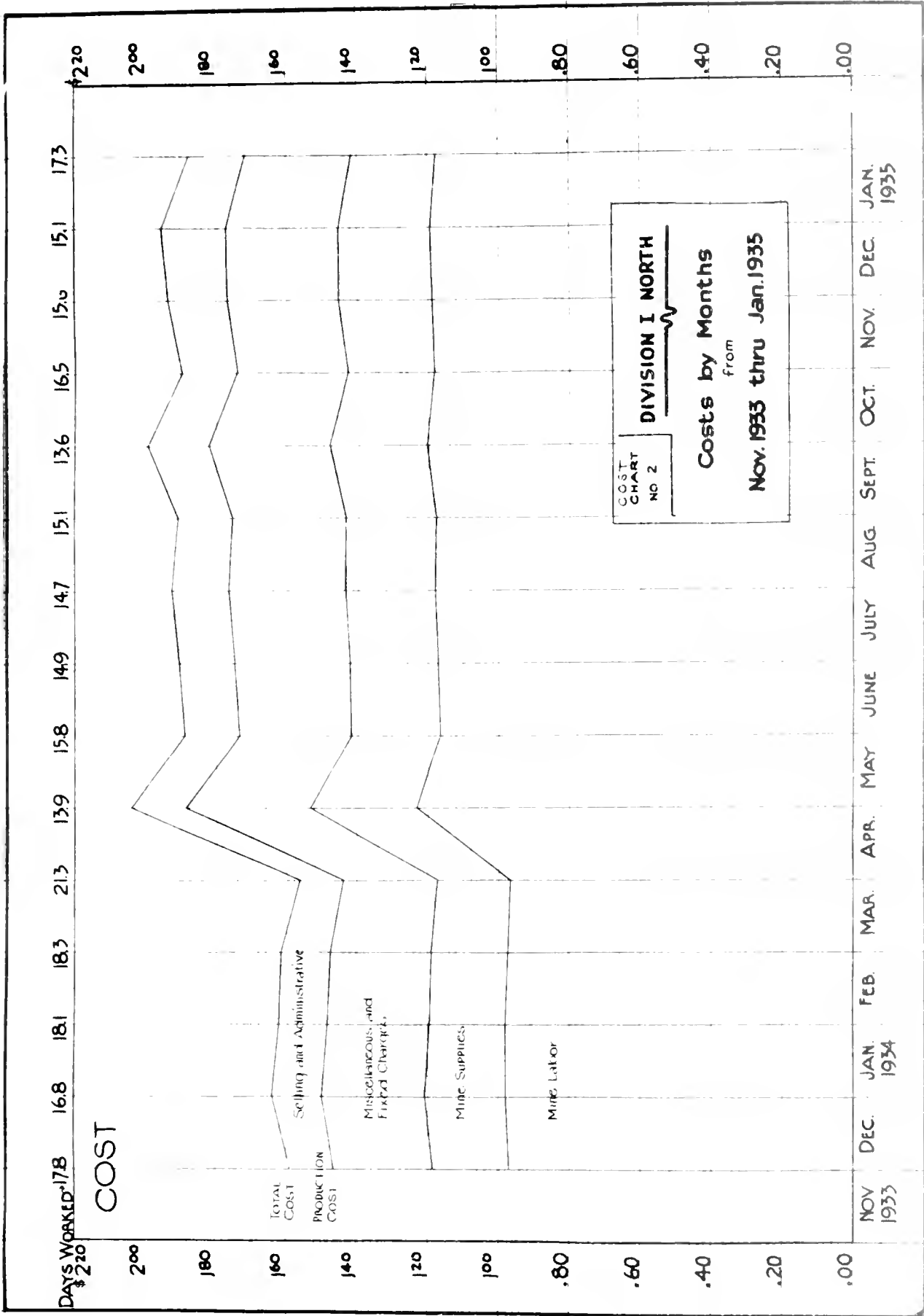
It is interesting to compare the output per mine per working day in the two periods. Under the 8-hour day, the 433 mines reporting showed an average of 1040 tons a day per mine, while during the 7-hour day period, 408 mines reported an average daily output of 1095 tons per mine. Again, data to place the responsibility for the faster output are lacking, but it undoubtedly lies in a combination of more men, more working places, more mechanical equipment.

At the time of the adoption of Amendment No. 1, operators estimated that the new hours and wage scale and other rising costs meant an average increased cost of about 35 cents per ton.

5. Division I - South - (In 1934 produced 34.75% of the U. S. total, according to preliminary estimates of the U. S. Bureau of Mines)

Average labor costs in the South were lower than in the North by 6.39 cents per ton in the early Code period, and 6.67 cents in the latter period. The total costs in the two sections were very nearly the same in the first period, mainly due to higher average selling and administrative expenses reported in the South. In the second period, however, although both sections showed very similar increase in labor cost, the North reported greater average increases in the other items, which results in an average total cost of \$1.9296 for the North and \$1.8829 for the South, a difference of 4.67 cents per ton in favor of the South.

The (simple) average monthly working time was only 16.4 days in the second period as against 18.2 days in the earlier period. It may be noted here that the South shows relatively better working time throughout the usual "slack" months of the year than does the North largely because of the steadily maintained production of the smokeless coals in Southern Subdivision No. 1 (see later discussion of this Subdivisions' costs in detail).



COST CHART NO 2
DIVISION I NORTH
 Costs by Months
 from
 Nov. 1933 thru Jan. 1935

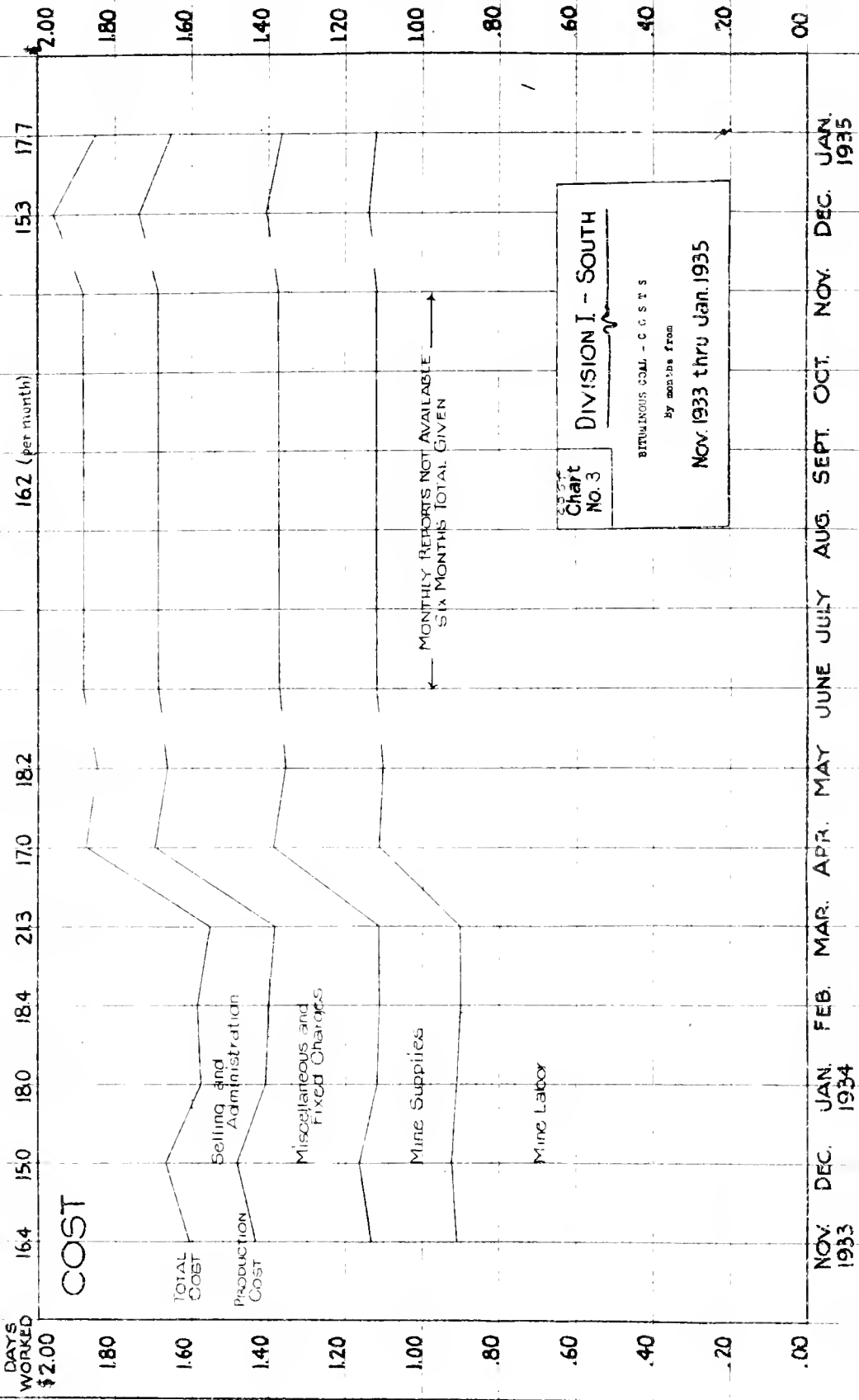


Chart No. 3

DIVISION I - SOUTH

BITUMINOUS COAL - C. G. S. T. S.

by month from

Nov. 1933 thru Jan. 1935

MONTHLY REPORTS NOT AVAILABLE
SIX MONTHS TOTAL GIVEN

DAYS WORKED
\$2.00

NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN.
1933 1934 1935

6. Division II (In 1934 accounted for 16.48% of the U. S. total production, according to preliminary estimates of U. S. Bureau of Mines)

In Indiana and Illinois a substantial part of the output is produced by stripping operations. In 1933, of the total Indiana output 36.6% was from strip mines, and in Illinois 15%. (*) The influence of these lower-cost stripping operations on average costs is decidedly downward. Deep and strip mines all compete for the same business.

The lower strip mines costs are, however, not entirely responsible for the lower average costs in Division II as against Division I. A combination of circumstances, including (1) better seams on the average; (2) the use of a higher proportion of workers on a day basis than in Division I; (3) a much higher percentage of total production loaded mechanically than in Division I; all weigh heavily in the lower average of deep mining costs in Division II.

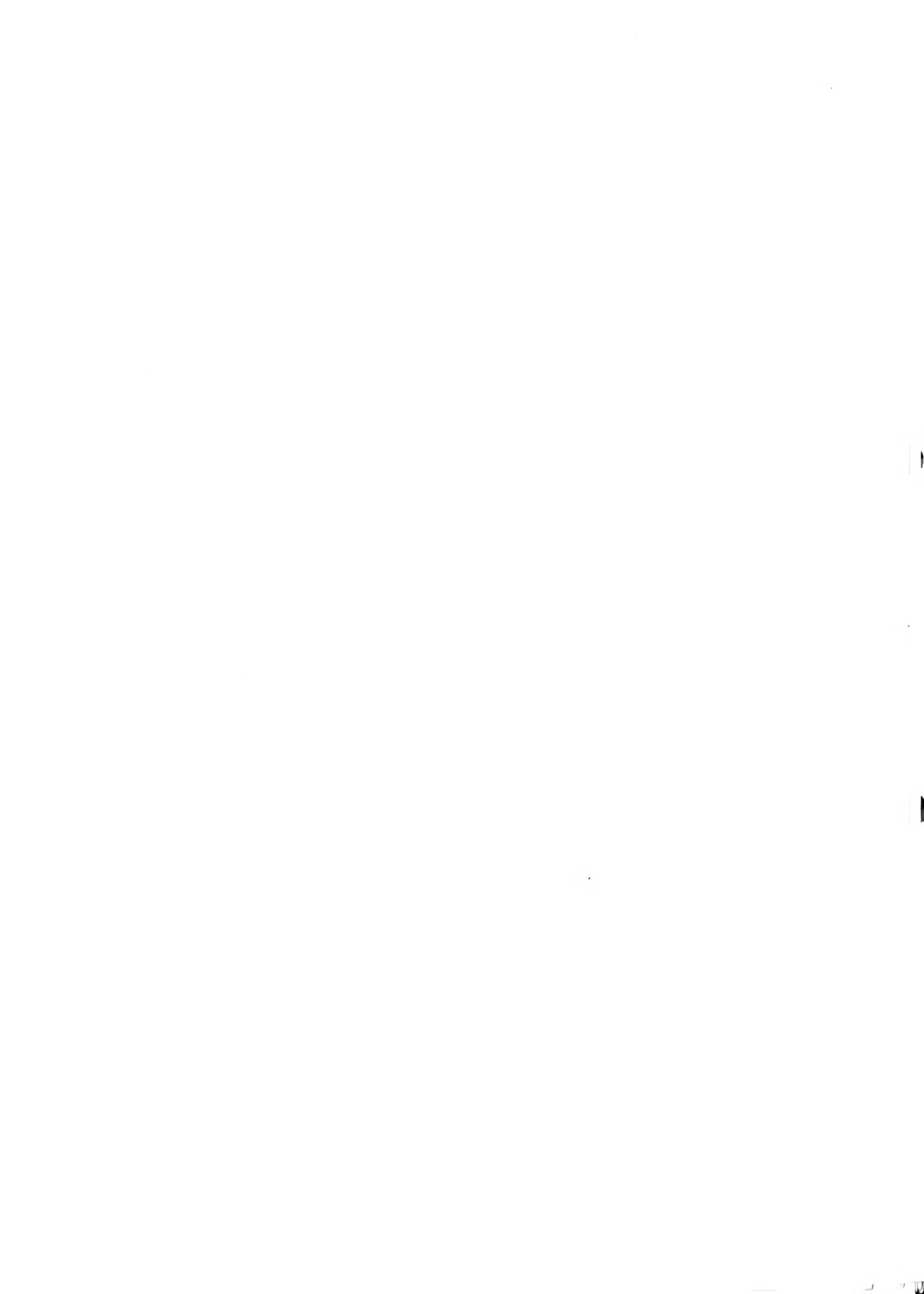
For the Division as a whole, including both deep and strip mines, the figures disclose the combined influence of the 7-hour day, new wage scale, and other increasing costs, in the two N.R.A. Code periods, intensified by a number of days worked monthly averaging 16.8 in the first period and only 14.6 in the second period:

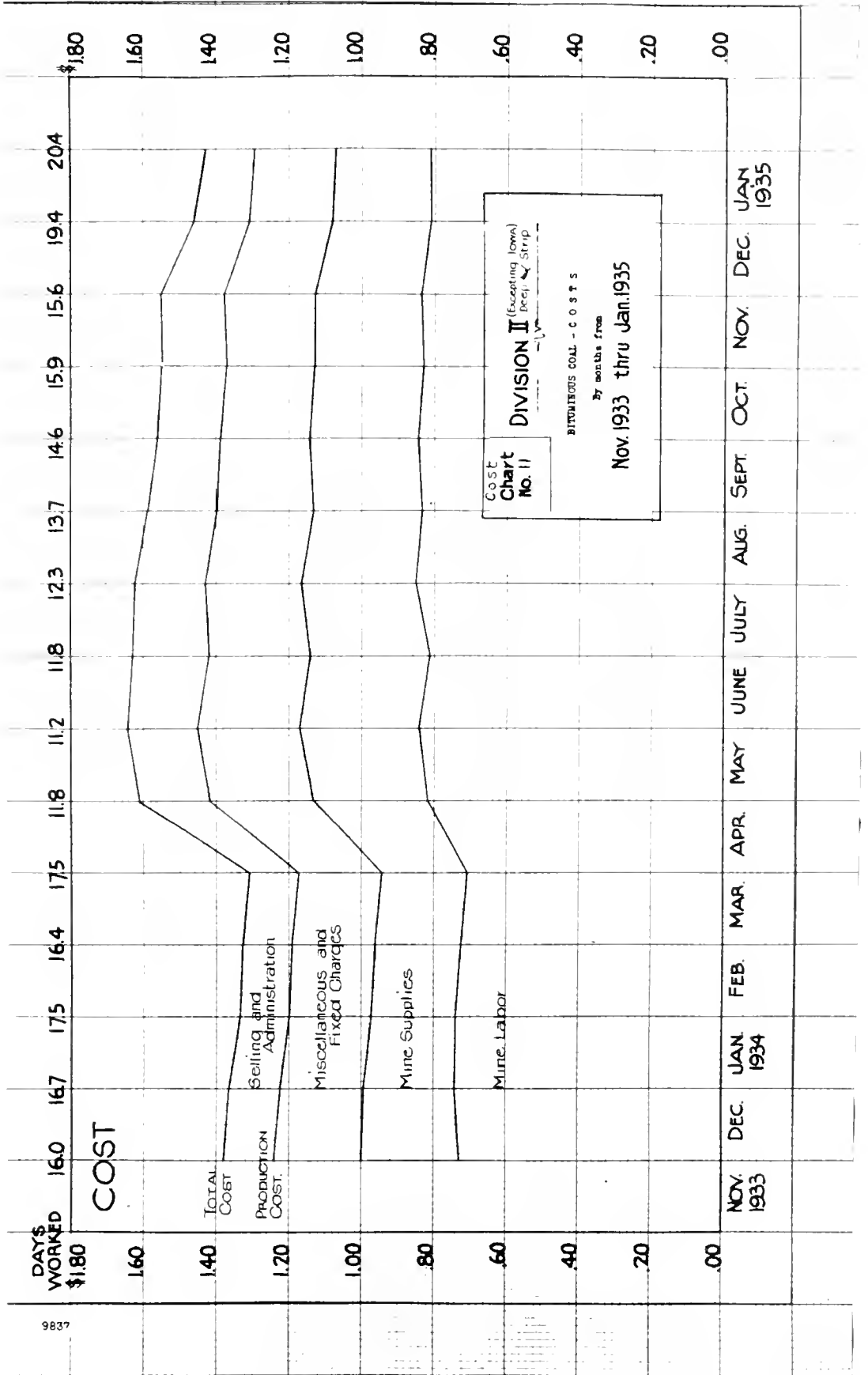
	5 Months November 1933 through <u>March 1934</u> Per ton	10 Months April 1934 through <u>January 1935</u> Per ton	Increase Per ton
Mine Labor	\$.7299	\$.8291	\$.0992
Mine Supplies	.2471	.2944	.0473
Miscellaneous & Fixed Charges	<u>.2311</u>	<u>.2504</u>	<u>.0193</u>
Production Cost	\$ 1.2081	\$ 1.3739	\$.1658
Selling & Administration	<u>.1372</u>	<u>.1709</u>	<u>.0337</u>
Total Cost	<u>\$ 1.3453</u>	<u>\$ 1.5448</u>	<u>\$.1995</u>

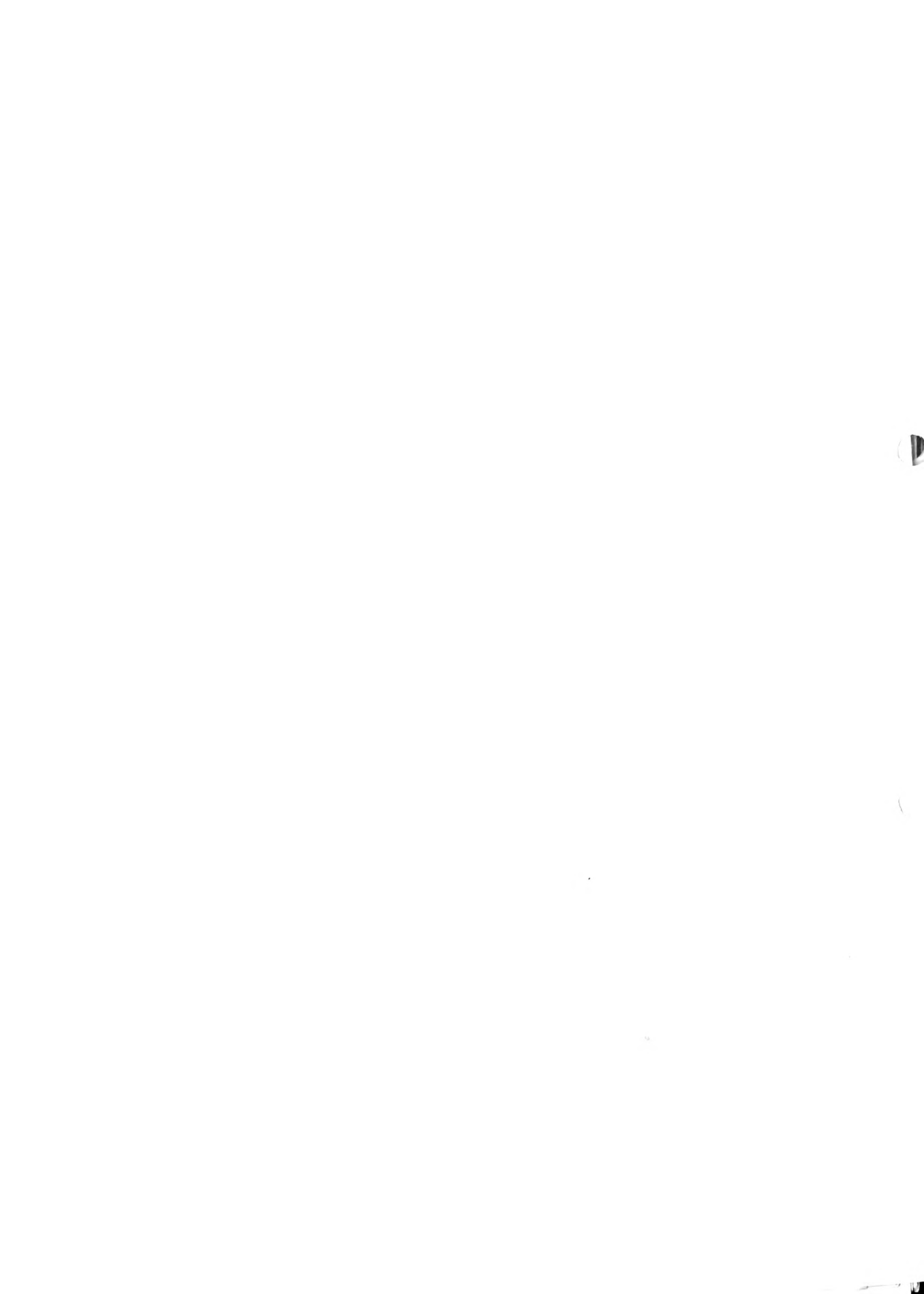
Note from the ensuing analysis of the averages for the Division II Deep mines and the Division's Strip mines that the influence of the Deep mine group in the Division averages was comparatively heavier in the 8-hour day period than in the second or 7-hour day period. Thus the average total costs of the Deep mines during the 10-months of the 7-hour day was \$1.6157, an increase of \$.1987; the Strip mine figure (\$1.3088) was an increase of \$.2198, resulting in a combined Deep and Strip average increase of \$.1995.

Note also that in Division II, Amendment 1 on April 1, 1934, effected a change only in the maximum hours - the basic rates per day remained unchanged, so that the increased labor cost resulting from Amendment 1 was due mostly to the change in the working day, by contrast with Division I

(*) U. S. Bureau of Mines, "Coal in 1933, Detailed Statistics", p. 302.







where the hours and basic scale were both changed at this time. (*)

The average output per mine per day was 1,575 tons in the 8-hour day period, but increased to about 1,610 under the 7-hour day; the first figure is the aggregate of 170 mines, while the second is for only 149 mines, however, a substantially different sample.

The Deep Mines composed 78.13 per cent of the total production of the reporting mines during the initial 5-month period, or 17,538,000 out of 22,447,000 tons. In the succeeding 10 months, a shorter work-week period, the reporting deep mines composed 76.9 per cent, or 27,035,000 out of 35,155,000 tons.

In the earlier period, the (simple) average of days worked per month was 17; in the second period only 14.6 days, due to the smaller number of working days per month in the spring and summer. The total days worked per mine for the three-month period beginning November 1933 was 51.1 and for the same three months in the 1934 period was 55.6 days. A month-by-month comparison of costs for these 3 winter months discloses the following:

<u>Division II Deep Mines</u>	<u>Average Days Worked</u>	<u>Average Total Cost per Ton</u>
November 1933	16.3	\$ 1.4490
November 1934	15.5	1.6103
December 1933	17.0	1.4337
December 1934	19.5	1.5327
January 1934	17.8	1.4099
January 1935	20.6	<u>1.4897</u>
1933 - Total 3 Months	51.1	\$ 1.4299
1934 - Total 3 Months	55.6	\$ 1.5374

While it is fairer to compare like seasons to measure the 8-hour day costs with those under the 7-hour day, there is the factor of different numbers of days worked, which in this case operates to offset some of the increase in costs. The bare fact is that in these three seasonally comparable months the cost increase shown is \$.1075; but the actual increase would unquestionably show as somewhat more than that, if the working time in the two winter periods had been the same. By projecting the ascertained average one-day cost, by items, in the same manner as described in section C-1 of this chapter, the average increase in cost may be approximated for the three months, November 1934 - January 1935, over November 1933 - January 1934, had the reporting mines worked 55.7 days in both periods. The projected cost would then compare with the November 1934 - January 1935 actual averages as follows:

(*) See Schedule A of the Code and revisions of Schedule A in Amendments 1, 2, 3, N.R.A. Bituminous Coal Unit files, "Code".

Division II <u>Deep Mines</u>	Average Days <u>Worked</u>	<u>Average Production Cost</u>	
		Projected for <u>Nov. 1933-Jan. 1934</u>	Actual <u>Nov. 1934-Jan. 35</u>
November	15.6	\$1.3362	\$1.4600
December	19.6	1.2610	1.3844
January	<u>20.5</u>	<u>1.2796</u>	<u>1.3553</u>
Total 3 Months	55.7	\$1.2753	\$1.3938

Thus by projection it appears that the adoption of the 7-hour day, 35-hour week, with increased/hour-rates, on April 1, 1934, resulted in an average increase in production cost of about \$.1205 per ton for the reporting deep mines of Division II (excluding Iowa) on a comparable basis of days worked during these three winter months.

The Strip Mines of Division II, exclusive of Iowa, showed average total costs during these same two comparable periods as follows:

<u>Division II Strip Mines</u>	<u>Average Days Worked</u>	<u>Average Total Cost per Ton</u>
November 1933	14.7	\$1.1410
November 1934	16.0	1.2790
December 1933	16.0	1.1213
December 1934	19.1	1.2068
January 1934	16.4	1.0796
January 1935	<u>19.9</u>	<u>1.2226</u>
1933 - Total 3 Months	47.1	\$1.1131
1934 - Total 3 Months	55.0	\$1.2337

To approximate the actual effect of the 7-hour day and accompanying increase in wage scale in April 1934, a projection has been made similar to that used for the deep mines just discussed above, which produces the following comparison of average costs in the 3 winter months of 1933 with those of 1934 on the basis of the same number of working days:

Division II <u>Strip Mines</u>	Average Days <u>Worked</u>	<u>Average Production Cost</u>	
		Projected for <u>Nov. 1933-Jan. 1934</u>	Actual <u>Nov. 1934-Jan. 1935</u>
November	15.9	\$.9370	\$1.1029
December	19.0	.8695	1.0248
January	<u>19.8</u>	<u>.8202</u>	<u>1.0551</u>
Total 3 Months	54.7	\$.8717	\$1.0586

The approximate average increase in production cost per ton, on the basis of comparable working days during these 3 winter months thus was \$.1869 per ton for this group of reporting strip mines.

efficient mines entering into the averages showed an output per mine per day of 1700 tons in the 5 months under the 8-hour day, but increased to 1,975 tons under the 10 months of the 7-hour day. There were 34 reporting mines in the former figure and 42 in the latter. No competent accounting for the improved rate of production is available.

7. Divisions I and II Combined: This combined area includes the producing fields of Iowa, Illinois, Indiana, Kentucky, Ohio, Michigan, West Virginia, Northern Tennessee, Virginia, Maryland and Pennsylvania. In 1934, the production of these Divisions constituted 89.25 per cent of the total United States output, or 319,884,000 out of 358,395,000 tons, according to the preliminary estimate of the U. S. Bureau of Mines.

The significance of these combined averages lies in the fact that this area is identical with minimum price area number 1 under the Bituminous Coal Conservation Act of 1935. Prices as fixed under this Act must be coordinated and averaged in realization "as near as may be" to the average cost of all the producing fields embraced in the minimum price area. (*) (No chart is available for Divisions I and II combined; one is attached, however, covering Divisions I, II and III combined).

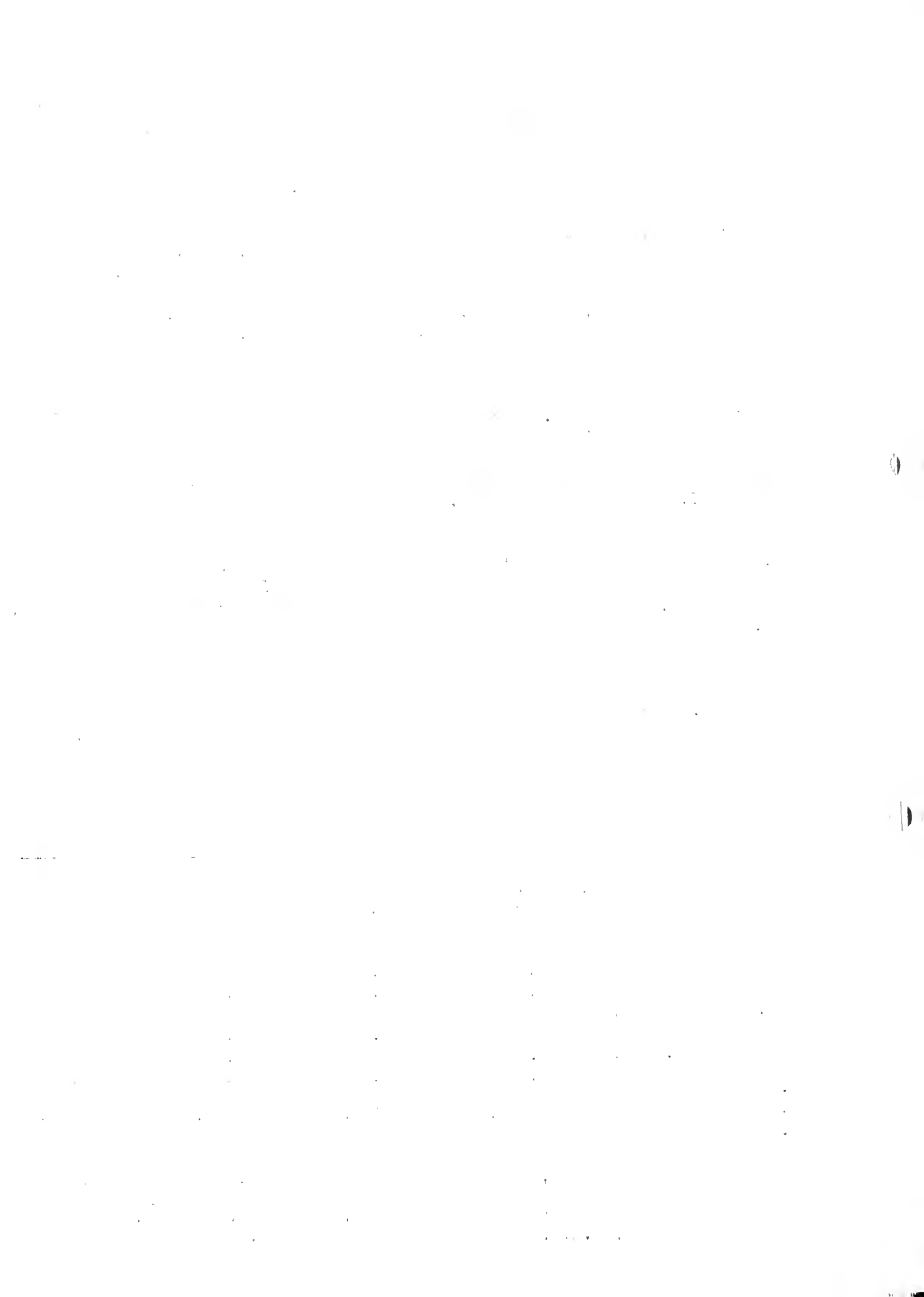
A comparison of the average costs for the 3 winter months beginning in Nov. 1933, with the same months beginning November 1934, is not possible because of the form in which Southern Subdivisions I and 2 reported in the latter period, when only an 8-month average covering April through November, 1934, is available.

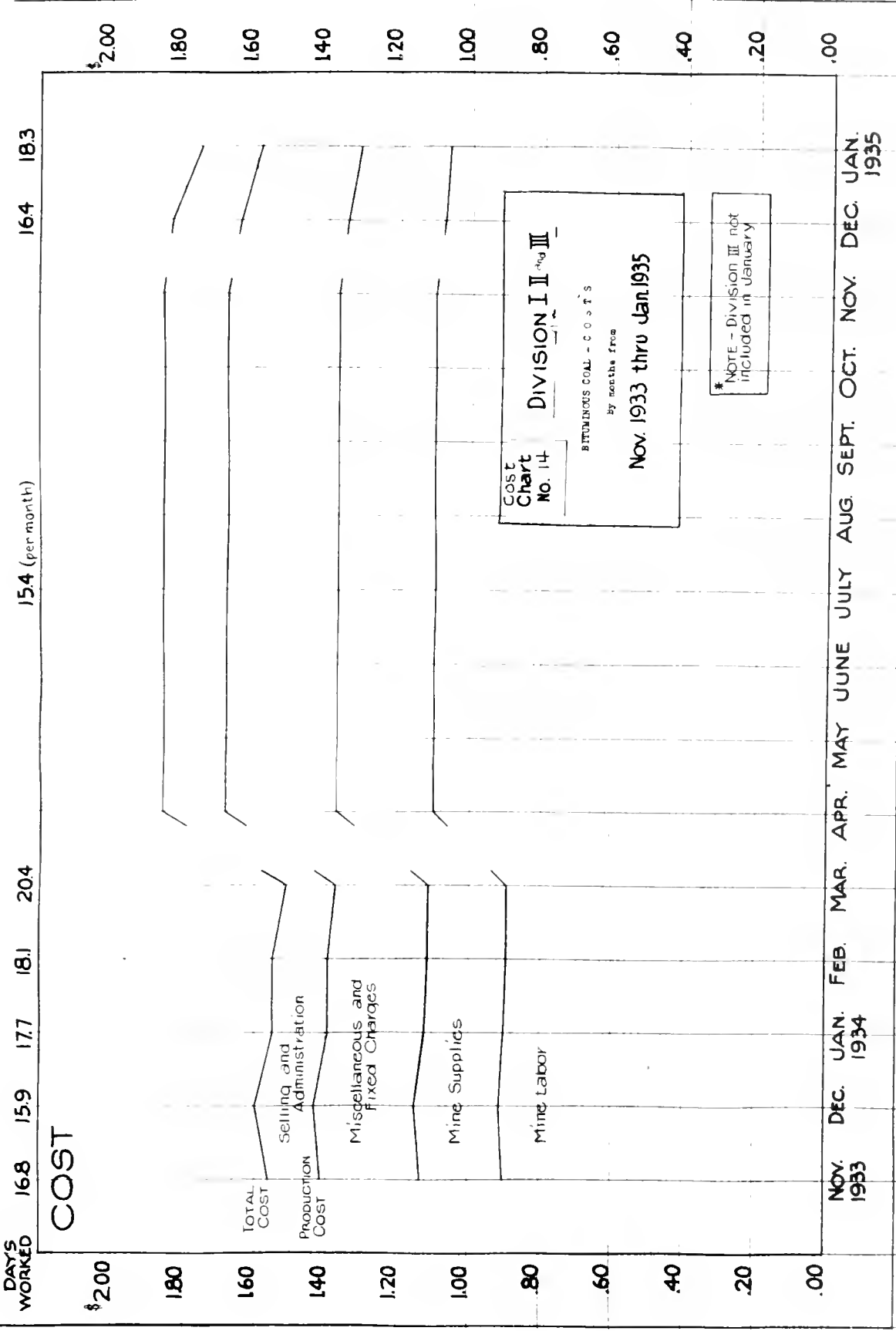
The composite averages of Divisions I and II are shown in the following table for the 5 months of the 8-hour day compared with the 10 months of the 7-hour day. For strict comparability, the deep mines alone are shown in one comparison and the deep and strip mining averages combined in another.

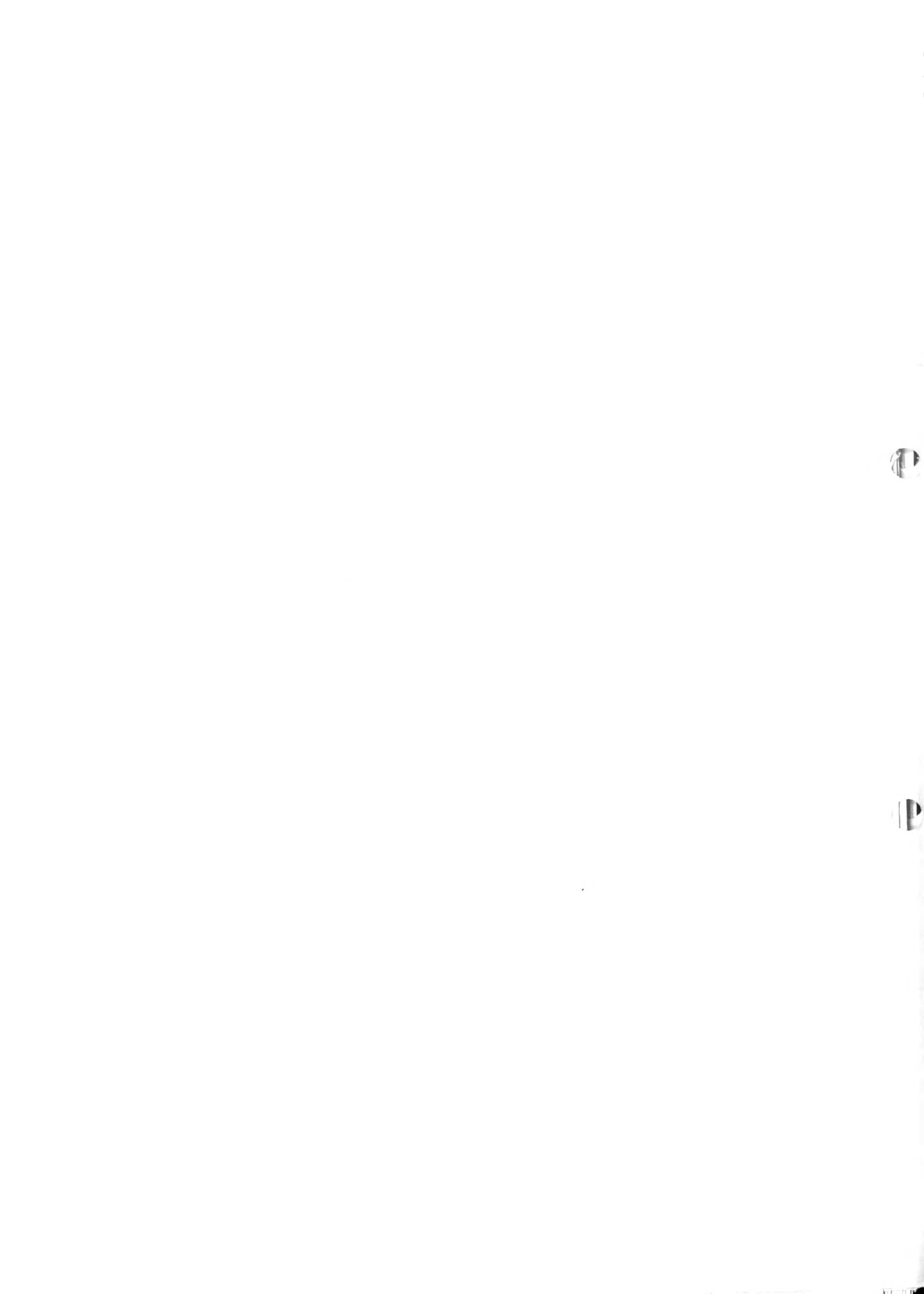
DIVISIONS I and II COMBINED
AVERAGE COSTS

	Deep Mines Only		Deep and Strip Mines Combined	
	5 Months	10 Months	5 Months	10 Months
	Nov. 1933 - March 1934	April 1934- Jan. 1935	Nov. 1933 - March 1934	April 1934- Jan. 1935
	8-Hour Day	7-Hour Day	8-Hour Day	7-Hour Day
	Per Ton	Per Ton	Per Ton	Per Ton
Mine Labor	\$.9285	\$1.1177	\$.8956	\$1.0861
Mine Supplies	.2315	.2613	.2235	.2650
Misc. & Fixed Chgs.	.2727	.3025	.2748	.3036
Production Cost	1.4175	1.6815	1.3939	1.6550
Selling & Adm. Exp.	.1484	.1739	.1489	.1777
Total Cost	\$1.5659	\$1.8534	\$1.5428	\$1.8327
No. Days Tipples Started	89.47	155.1	89.9	156.1
No. of Mines	999	910	1033	942
Production (Thousands of tons)	96,610	165,344	101,519	173,464

(*) Bituminous Coal Conservation Act of 1935, Section 4, Part II, subsection (a), U.R.A. Bituminous Coal Unit files.







The Deep Mines: On a simple average basis, the mines reporting in the 8-hour day period averaged 17.9 working days per month, while during the 7-hour day period the reporting mines averaged only 14.5 days per month. The comparison of total costs between the two periods is not a fair measure of increase in cost, due to the direct factor of shorter average number of days worked in the second period. The increase as shown stands at 20.35 cents per ton. However, the influence of the summer months in reducing available working time destroys the period's comparability with the 5 winter months of the previous season. Based on projections of production cost for Division I and Division II separately, and applying the influence of the working-day weighted by tonnage indicates an average increase for Division I of about 23.85 cents, for Division II of about 14.53 cents, and for Divisions I and II combined of 20.35 cents per ton. Note that these figures represent projected production costs, and do not include the increase indicated for Selling and Administrative costs, which appears at 2.88 cents per ton without respect to the influence of working days. It is fair to say that the change in cost between the 8-hour day and the 7-hour day periods approximated 23 or 24 cents per ton for this entire area.

8. Division III (In 1934 produced 2.96% of the U. S. total, according to U. S. Bureau of Mines preliminary estimate.)

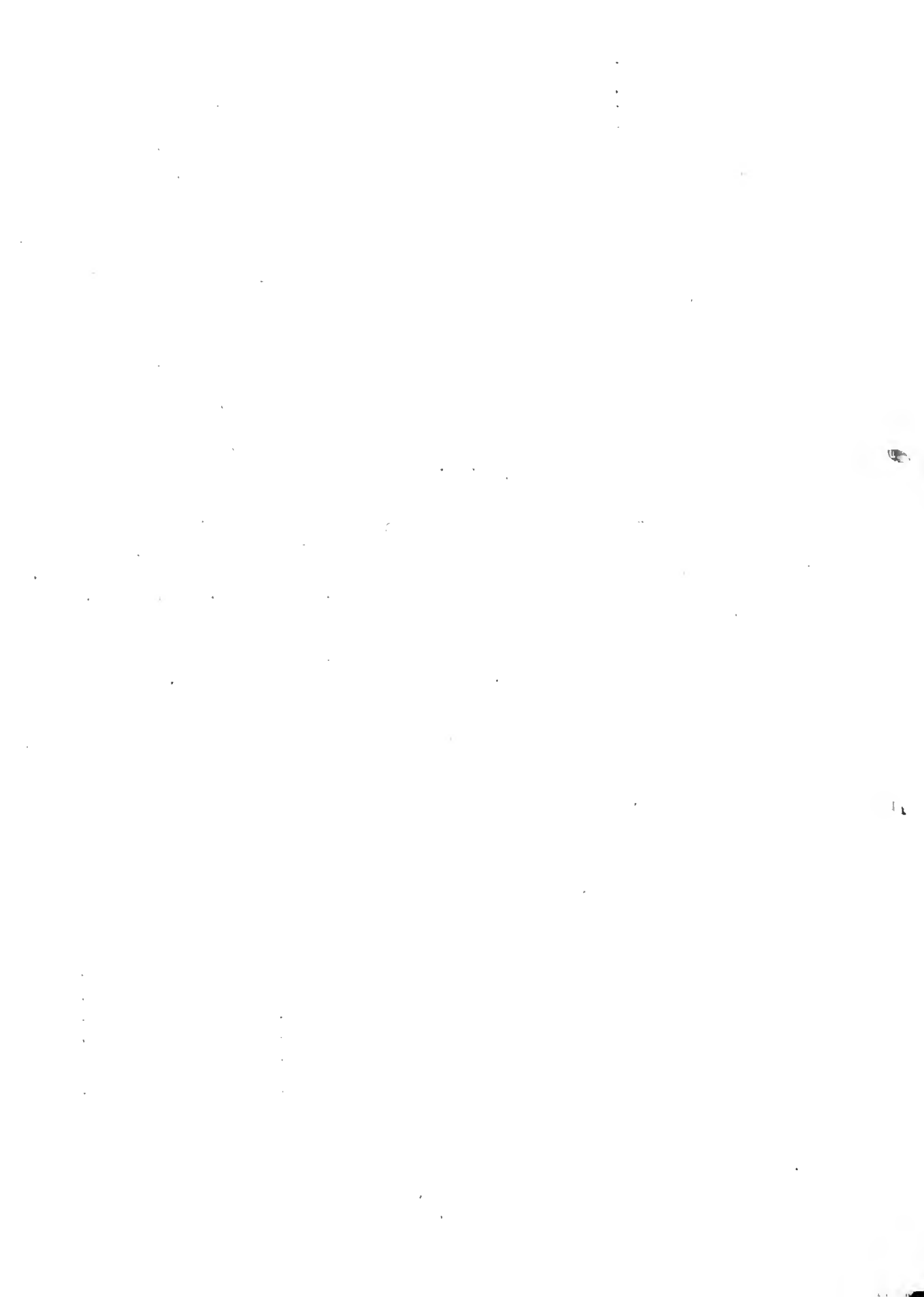
Division III (Alabama, Georgia and Southern Tennessee) was more materially affected by the 7-hour day than either Division I or Division II. Labor cost rose from 57.53% of total cost during the first or 8-hour day period to 61.48% in the 9 months after Amendment 1, and from \$1.1218 to \$1.4130, or 29.12 cents per ton.

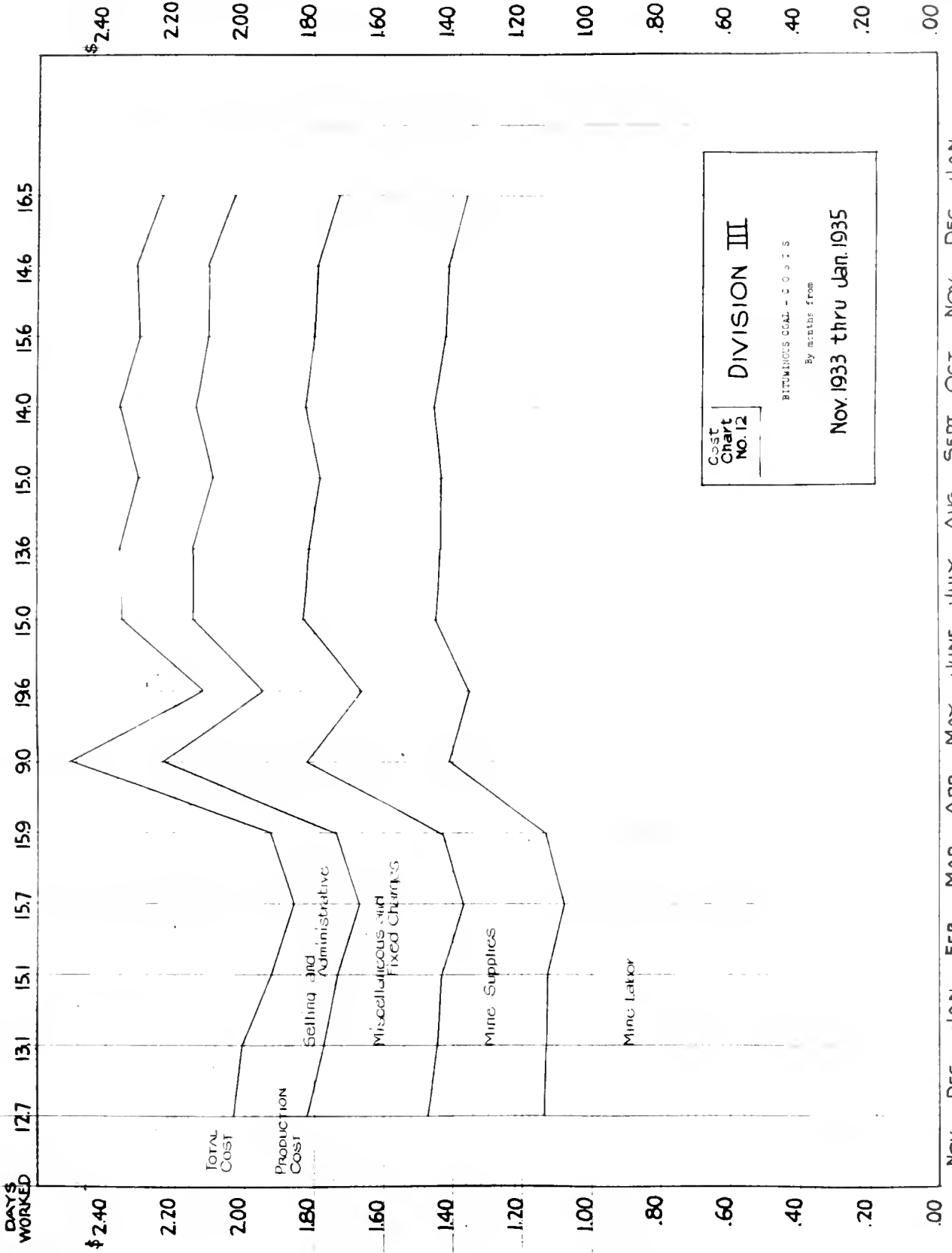
In the first period the mines averaged 14.5 operating days per month and in the second period 14.6 days. Therefore the increase of 29.12 cents in labor cost may be said to be due to the 7-hour day and new wage scale.

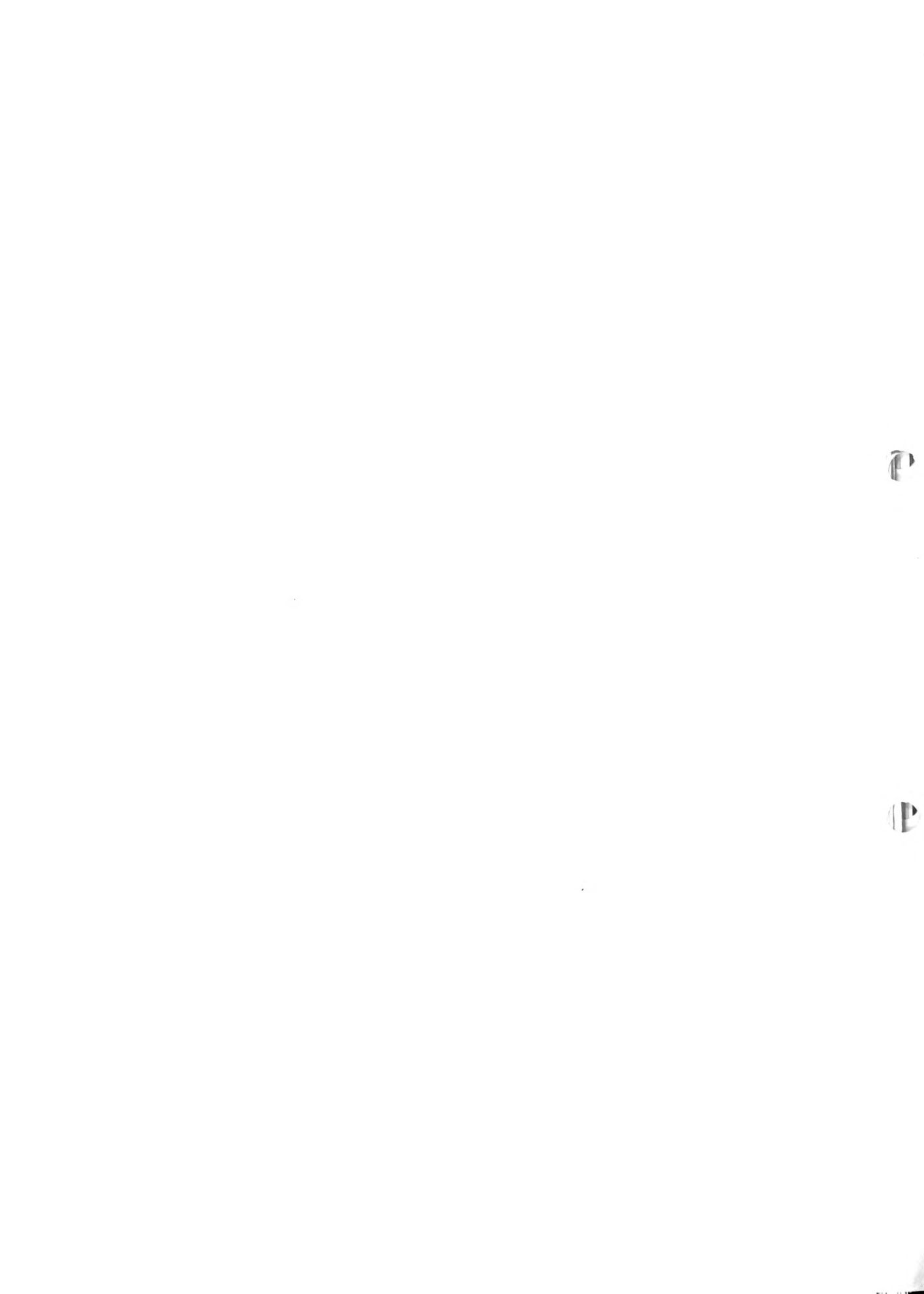
The cost of supplies also averaged higher per ton in the second period, increasing from 30.77 to 36.53 cents, or 5.81 cents. Selling and Administrative was up from 19.99 to 20.64, or 65/100 cents per ton, but Fixed Charges were 58/100 cents less. The two periods compared as follows:

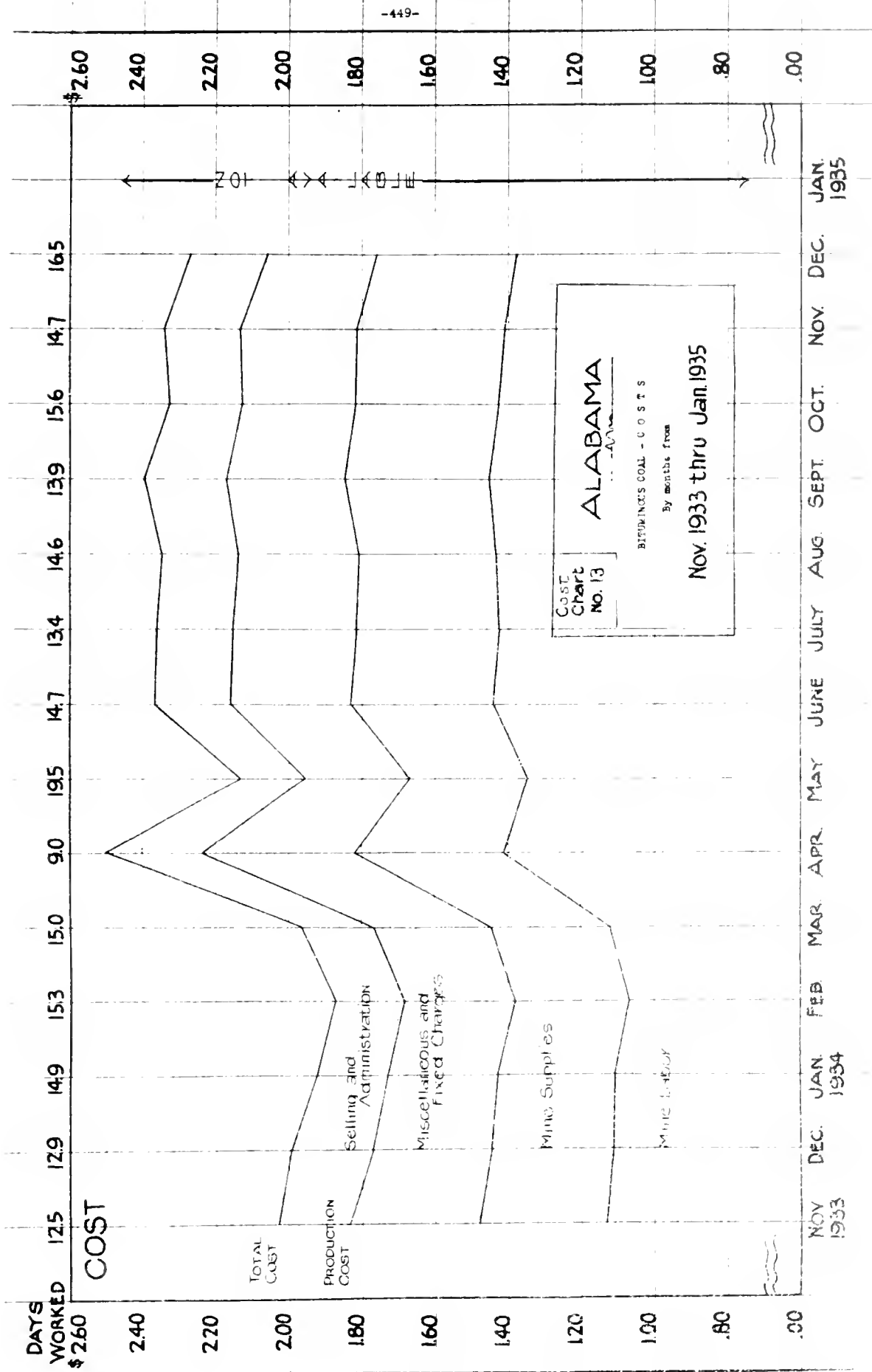
	5-Month Period Nov. 1933 through March 1934 (8-Hour Day)	10-Month Period April 1934 through January 1935 (7-Hour Day)	Increase
	Per Ton	Per Ton	Per Ton
Mine labor	\$ 1.1218	\$ 1.4130	\$.2912
Mine Supplies	.3077	.3658	.0581
Misc. and Fixed Charges	.3189	.3131	.0058
Production Cost	1.7484	2.0919	.3435
Selling & Administration	.1999	.2064	.0065
Total Cost	\$ 1.9483	\$ 2.2983	\$.3500

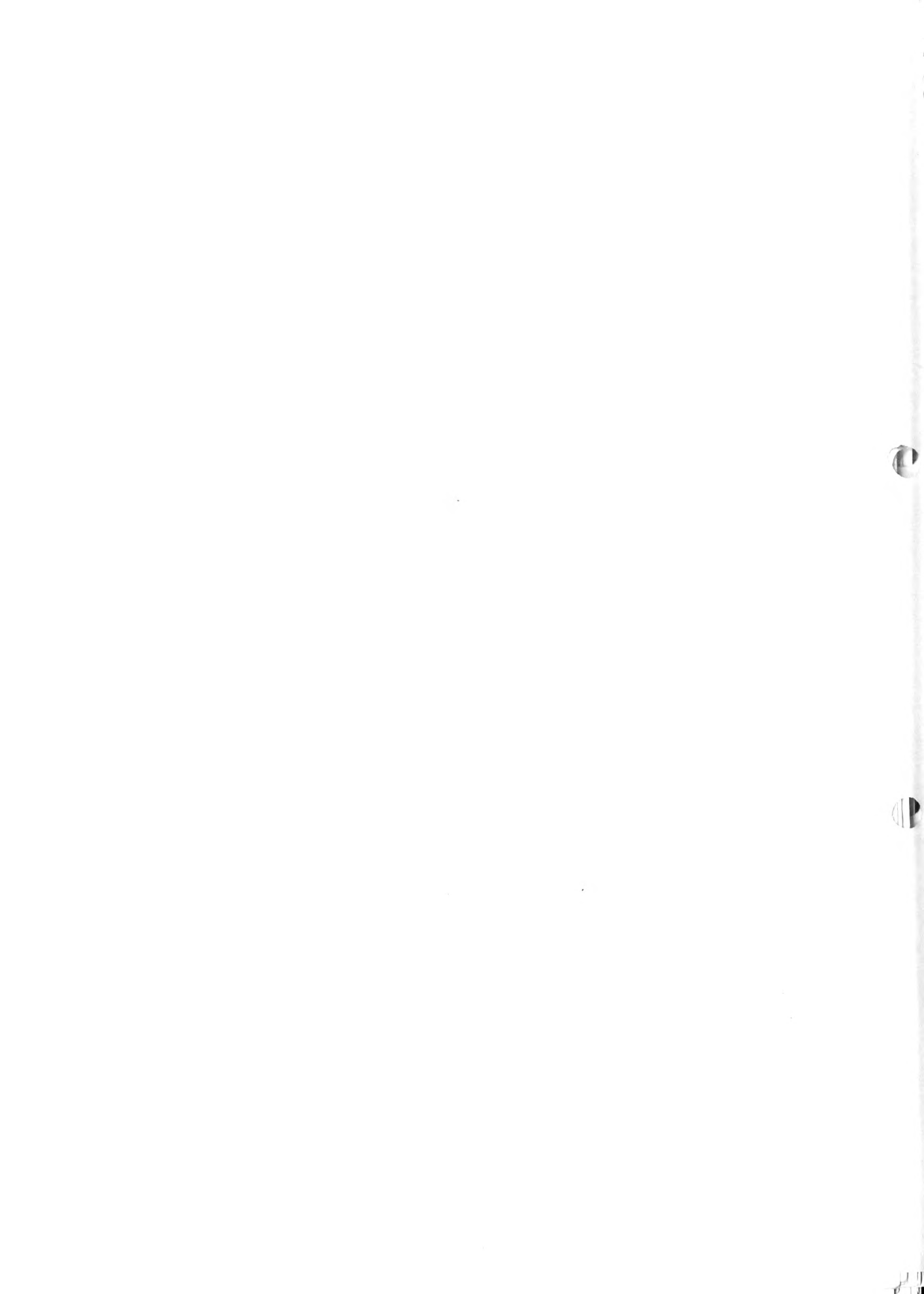
Average total costs in the second period were thus increased 35 cents per ton over the initial period, labor and supplies almost exactly accounting for it. The average output per mine per day under the 8-hour day was about 700 as against about 650 under the 7-hour day, with an average respectively of 47 and 50 mines contributing to the figures.









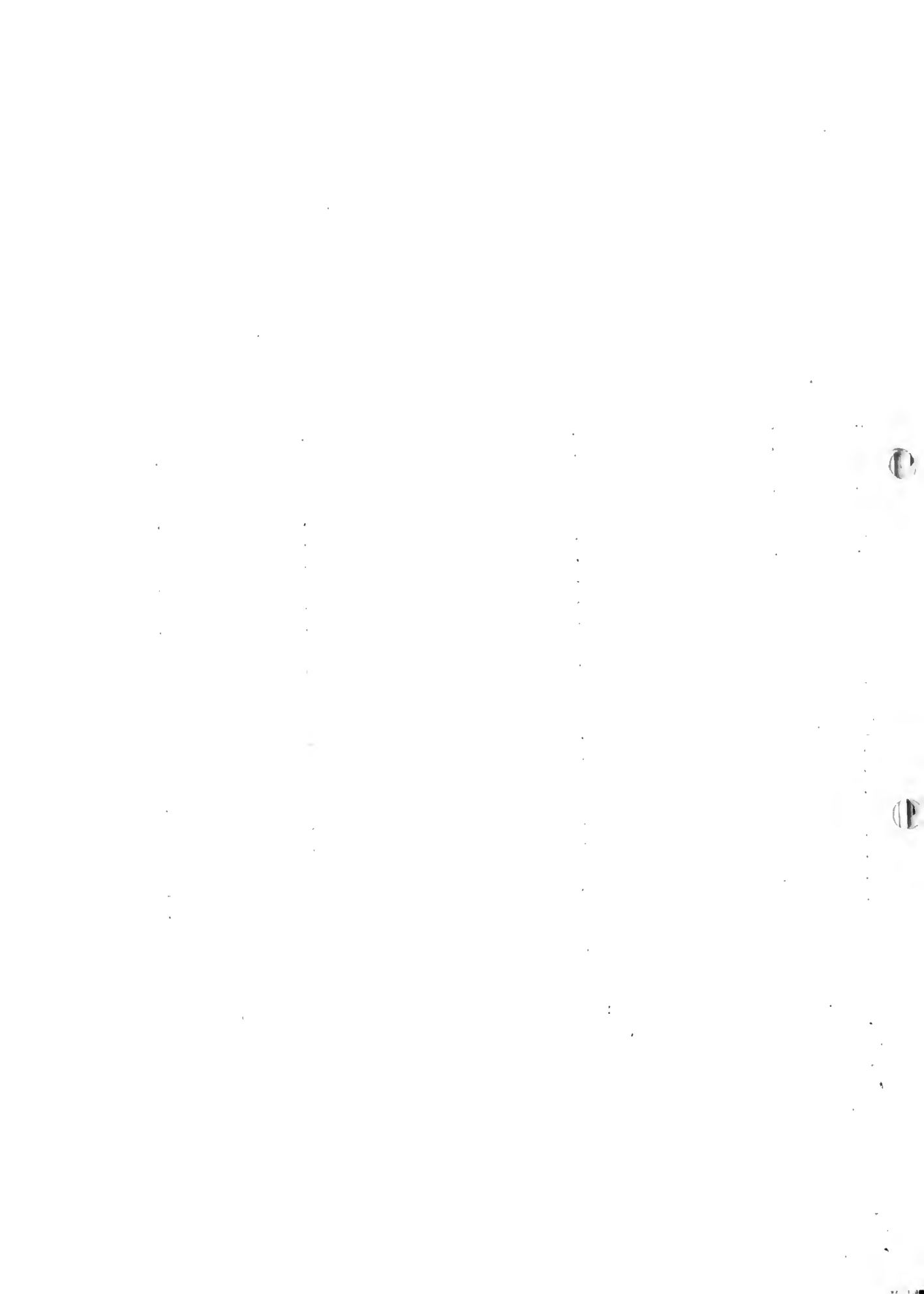


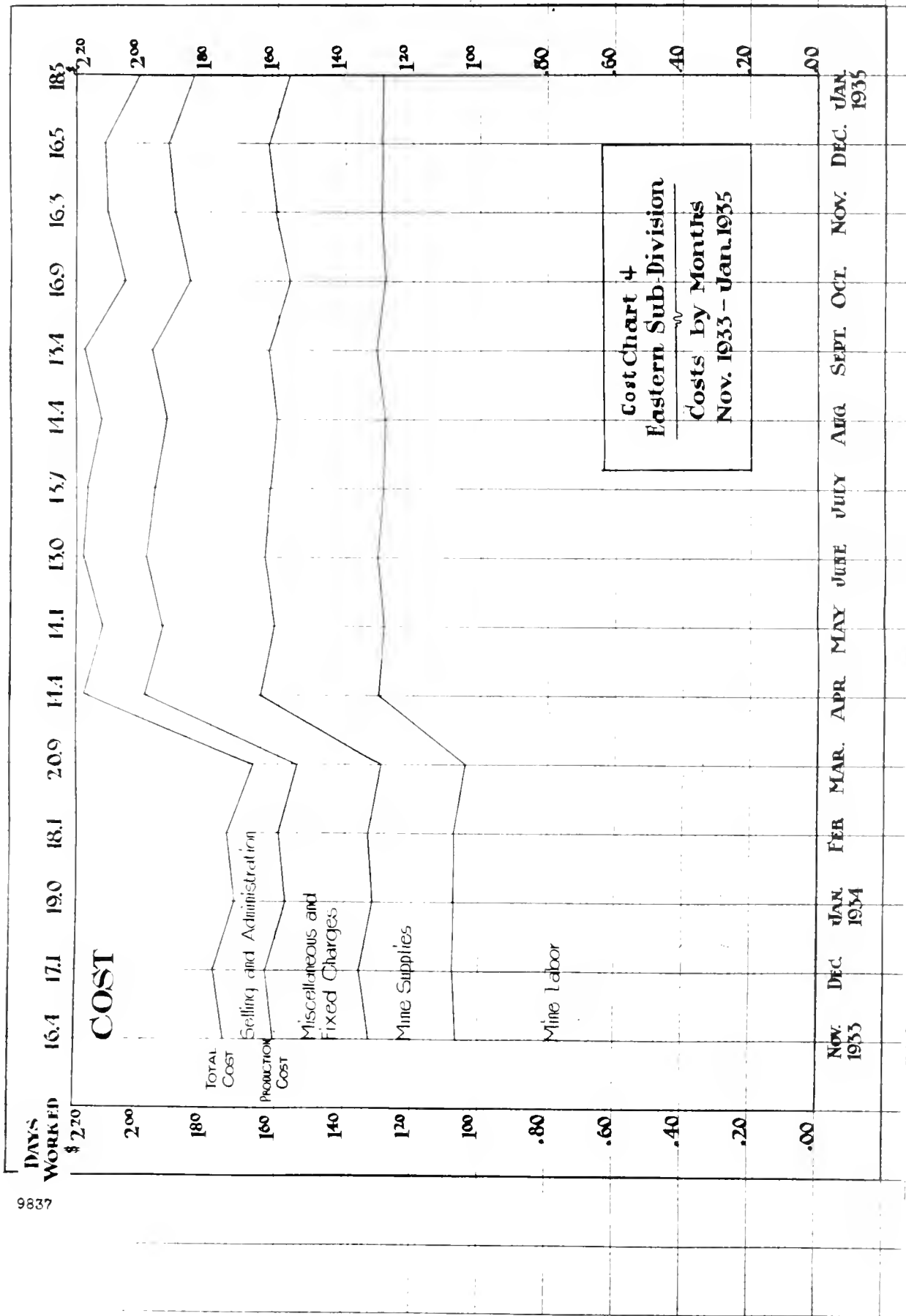
The frequency tables show a group of mines in the lowest-cost interval consistently working fewer than the divisional average days (except in April 1934, which was a month of upset because of suspensions after the new wage scale and 7-hour day became effective). In fact, in the month of December 1934, the two lowest-cost groups worked fewer days than the divisional average and fewer than any of the higher-cost groups. Using November 1933 and December 1934 for sample analyses, a brief recapitulation may be made as follows:

DIVISION III FREQUENCY TABLES

Cost Per Ton	No. of Mines	Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
<u>November 1933</u>					
(under)					
\$1.50 - 1.60	4	9.6	1,408	3.1	\$ 1.557
1.60 - 1.70	3	12.0	1,015	13.8	1.655
1.70 - 1.80	7	15.1	591	15.2	1.744
1.80 - 1.90	7	12.1	481	17.2	1.665
1.90 - 2.00	6	17.1	880	15.5	1.933
<u>2.00 - 2.10</u>	4	5.7	510	13.5	2.105
2.20 - 2.30	2	3.4	1,067	7.7	2.244
2.30 - 2.40	3	5.1	592	13.6	2.355
2.40 - 2.50	3	8.5	1,006	3.1	2.434
2.50 & over	9	13.4	574	12.5	2.320
Total	50	100.0	752	12.7	\$ 2.034
<u>December 1934</u>					
\$1.50 - 1.60	3	4.6	319	10.0	\$ 1.661
1.60 - 1.70	5	10.6	995	11.4	1.655
1.70 - 1.80	5	22.1	1,331	17.7	1.968
1.80 - 1.90	3	5.3	433	20.3	2.032
1.90 - 2.00	7	13.9	659	13.2	2.151
2.00 - 2.10	4	6.1	431	19.9	2.213
2.10 - 2.20	4	6.0	463	17.1	2.355
2.20 - 2.30	4	8.2	549	19.7	2.450
2.30 & over	11	20.3	354	11.6	2.695
Total	46	100.0	697	16.5	\$ 2.341

9. Divisions IV and V: Reporting of costs and realization from mines in the Southwest and Rocky Mountain Divisions did not continue into the 7-hour day period. No discussion, therefore, can be made as to comparative effect of Amendment 2 on average costs. Mining conditions in these Divisions do not make for as low-cost operations, in general, as are found in the Divisions to the east. Strata are, for the most part, much thinner and less continuous, faults and partings are more persistent, and deadwork is therefore much more of a factor in cost. The coals from these areas compete in a widely scattered market with fuel oils and natural gas from the Texas and Oklahoma Oil fields as well as with the lower-cost coals from other sections of the country, especially Division II. All of these adverse mining and marketing conditions are reflected in generally smaller mining operations and fewer average number of days worked per month.





Cost Chart 4
 Eastern Sub-Division
 Costs by Months
 Nov. 1933 - Jan. 1935



F. Average Costs by M.R.A. Code Subdivisions.

Analytical discussion of costs will not be made for the seam groups or areas within the principal Subdivisions. The reader is referred to condensed tabulations of costs by areas, in tabular form during the entire 15-month reporting period, which appear in the appendix of cost tables.

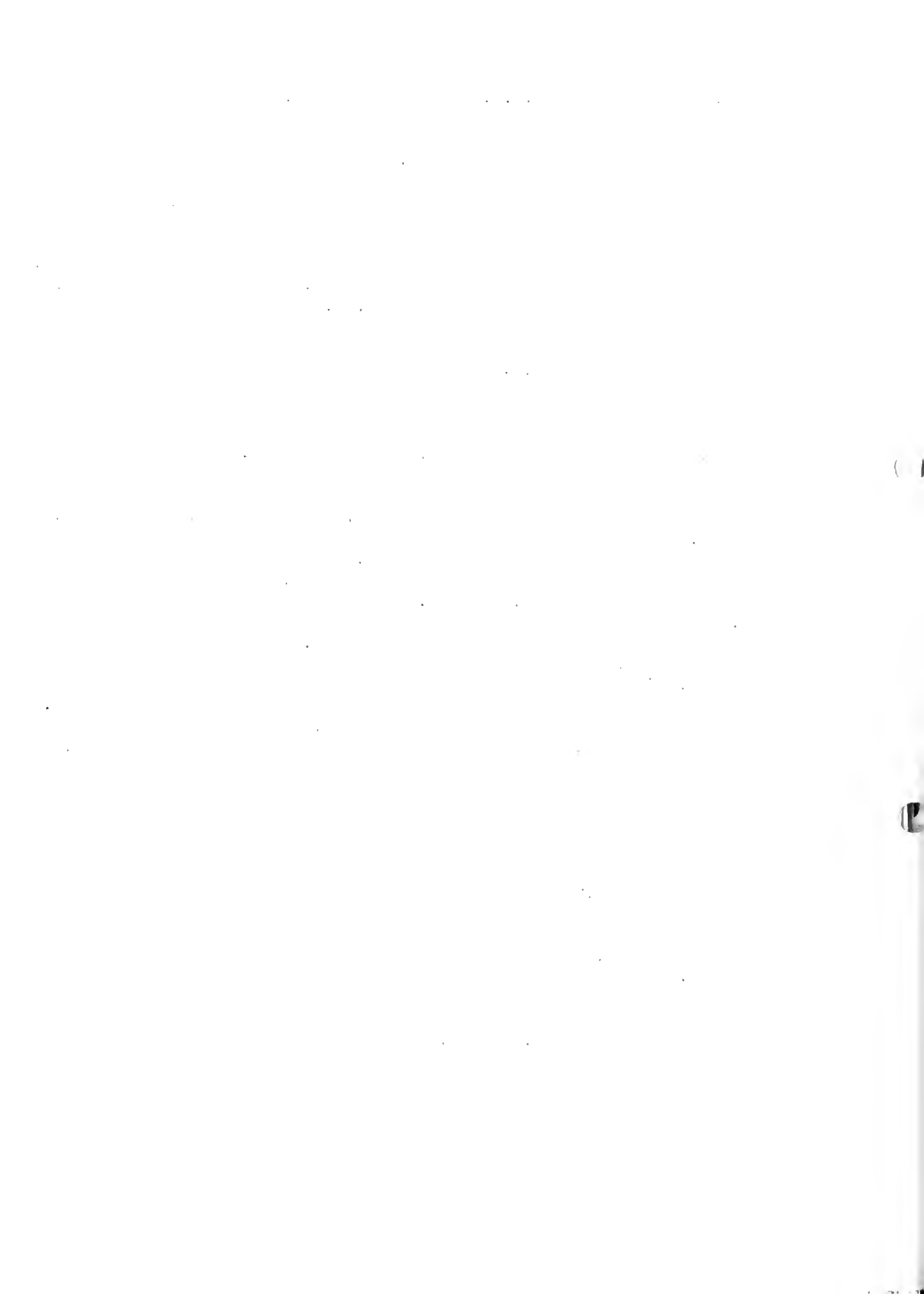
1. Eastern Subdivision of Division I: This Subdivision includes Central Pennsylvania, Southern Somerset, Maryland and Upper Potomac fields. In 1934 its production totaled 37,794,000 tons or 10.55 per cent of the U. S. total, according to preliminary estimates of the U. S. Bureau of Mines. (*) Of the Subdivision total, Maryland and Upper Potomac output was 2,462,000 tons and the other 35,332,000 tons were produced in Central Pennsylvania (called "Eastern Pennsylvania" in M.R.A. terminology)

Total cost averaged \$1.7328 during the 5 months of 8-hour day (40-hour week) operation, during which period the reporting mines worked an average of 91 days, or a simple average of 18.2 days per month.

In the 10 months of 7-hour day (35-hour week) operation beginning April 1, 1934, the average total cost increased by 38.54 cents to \$2.1182 per ton. This period, however, included six slack months of the spring and summer, and the working days per month averaged only 15.1; obviously the increase in cost in this period is in part due to less working time. The actual increase in production cost alone was 34.21 cents. By projection methods already explained, the approximate production cost, had the same mines operated 18.2 days monthly (as they did in the earlier period), is indicated as about 9 cents per ton less. This represents the influence of the smaller number of working days. In other words, the increase in production cost during the 7-hour day period may be estimated at nearer 25 cents per ton than the 34.21 cents shown in the summaries. Of this 25 cents, labor cost contributed about 18.5, supplies about 2.3 cents, miscellaneous and fixed charges about 3.7 cents per ton. Selling and administrative expense showed an actual increase of 4.83 cents. It is fair to say that the total cost in the Eastern Subdivision increased, on a comparable basis, about 29 cents per ton under Amendment 1.

An examination of the dispersion of mines and tonnages according to cost intervals of 10 cents, conveys a fairer picture of the mine relationships as to cost than can be had from averages alone. For purpose of comparison, a brief discussion will here be made of the cost dispersions for November 1933 and for January 1935, typical months in the 40-hour and 35-hour week periods, respectively.

Mines in this Subdivision showed for November, 1933, a dispersion of costs, ranging from the "\$1.20 - \$1.40" group to "\$2.50 and over." To aid in analyzing the significant indications, the following brief recapitulation is presented:



Eastern Subdivision of Division I - November 1933

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
\$1.20 - \$1.40	7	9.8	1,534	20.1	\$ 1,340
1.40 - 1.50	11	10.5	1,039	19.0	1,457
1.50 - 1.60	19	15.4	1,019	17.4	1,559
1.60 - 1.70	22	9.9	689	15.4	1,643
1.70 - 1.80	24	16.8	869	17.6	1,763
1.80 - 1.90	26	16.0	817	16.5	1,857
1.90 - 2.00	14	7.9	855	14.5	1,940
2.00 - 2.10	14	5.5	617	13.8	2,067
2.10 - 2.20	7	1.4	348	13.1	2,141
2.20 - 2.50	8	3.5	733	13.1	2,415
2.50 & over	12	3.3	554	10.9	2,704
Total	164	100.0	816	16.4	\$ 1,752

The lower cost ranges obviously embrace, in general, mines with higher per-day output and with greater average working days. Outstanding exceptions are (1) the \$1.60 - \$1.70 group with lower average output per mine per day than 4 of the higher cost groups and with fewer average days worked than 2 of the higher cost groups; and (2) the \$2.20 - \$2.50 group of 8 mines with larger average output per day than 3 of the lower-cost groups, and the same average number of working days as the \$2.10 - \$2.20 group of 7 mines whose average daily output was less than half as great for the same average number of days worked. It should be remembered that each group average is for a number of mines one or more of which may be an exception to this general trend. It should also be remembered in all these frequency comparisons that size of mine is a minor influence and that this factor together with number of days worked is insufficient to account for a difference of placement in the next interval-group if working days of a group had equalled the average of the Subdivision.

With these principal exceptions, the progressively increasing cost groups reflect, as would be expected, a general trend downward either in Average Number of Tipple Starts or in Average Daily Output per Mine, or both.

There are other important cost influences such as thickness of seam, geological weaknesses in roof or floor, faults, etc., which undoubtedly help to account for the higher cost groups, especially that ranging from \$2.20 to \$2.50. Data are not available from which to make analyses sufficiently searching to disclose all of the factors responsible for these exceptions.

A similar examination of the frequency dispersions for 166 mines reporting in January 1935, under the increased costs of the second Code period, reveals a different general picture as regards distribution of the mines among the groups. The group of largest average daily producers are far from the lowest-cost group, and the highest cost group enjoys better than the average number of working days:

Eastern Subdivision of Division I - January 1935

Cost Per Ton	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day	Avg. No. of Timble Starts	Avg. Cost Per Ton
(under)			(Tons)		
\$1.30 - \$1.60	9	7.0	1,120	17.8	\$ 1.549
1.60 - 1.70	12	5.4	604	18.8	1.666
1.70 - 1.80	17	7.1	621	17.1	1,754
1.80 - 1.90	20	12.5	795	20.1	1,839
1.90 - 2.00	23	21.6	1,270	18.8	1,955
2.00 - 2.10	25	13.6	767	18.0	2,036
2.10 - 2.20	18	11.5	929	17.5	2,160
2.20 - 2.30	10	6.9	882	19.8	2,261
2.30 - 2.40	12	7.2	836	18.3	2,333
2.40 - 2.50	4	1.1	551	12.9	2,469
2.50 & over	16	6.1	486	19.9	2,741
Total	166	100.0	929	18.5	\$ 2.018

Note that several of the larger mines, as to average daily output, do not fall in the low-cost brackets. In fact, the two groups \$1.60 - \$1.70 and \$1.70 - \$1.80 are composed of medium size mines on the average and had about average working days, stamping them as enjoying definitely low-cost operating conditions. Per contra, the two highest-cost groups combined averaged 18.3 days of work, or about the average of all reporting mines in January 1935, and are quite conclusively stamped as operating on the average under high-cost conditions, not necessarily connected with their smaller daily rate of production.

Possible Result of Allocation of Production on Cost Basis: In the absence of more detailed knowledge of all the conditions attaching to the higher-cost groups, it is somewhat unfair to speak of the possible effect on costs if a certain percentage of highest cost mines were to be closed. It is in fact quite possible that some of the highest cost mines produce special coals required for certain uses, and find a ready market even at higher prices. It must be borne in mind that this is a purely statistical application and ignores several practical considerations, among them the "special coals" already mentioned. There is also the prime consideration of consumer advantage in price, so that an actual application of the allocation theory might well leave mines in the picture at very high cost levels but enjoying preferred geographical location with reference to markets. Freight rate advantages might well offset or more than offset cost disadvantages. With full knowledge of probable qualifying circumstances, such a projection has been made, using Eastern Subdivision as the example, November 1933 as a typical 8-hour-day month, and January 1935 as a typical 7-hour-day month. The representation of these reporting mines is about 78 per cent of total commercial production. This fact alone stamps the data available as insufficiently representative for the purpose at hand, since it is probable that the 22 per cent of unreported tonnage was produced largely by small operations mining at comparatively high costs.

The responsibility for producing the entire output is here assigned to the remaining mines, and cost of production is projected on the assumption of an opportunity for all mines to enjoy approximately the same number of working days per month. Such an allocation points to a practical monopoly among a limited number of mines.

The result for November 1933 leaves the 137 mines which operated at costs up to \$2.00 per ton and produced 36.3 per cent of the total shown, and permits them 19.9 days of operation to produce about the same total tonnage as was reported by the 164 reporting mines. Roughly projected by interval groups, a decrease in cost is shown for the entire 137 mines amounting to 12 cents per ton, to an average cost of \$1.635.

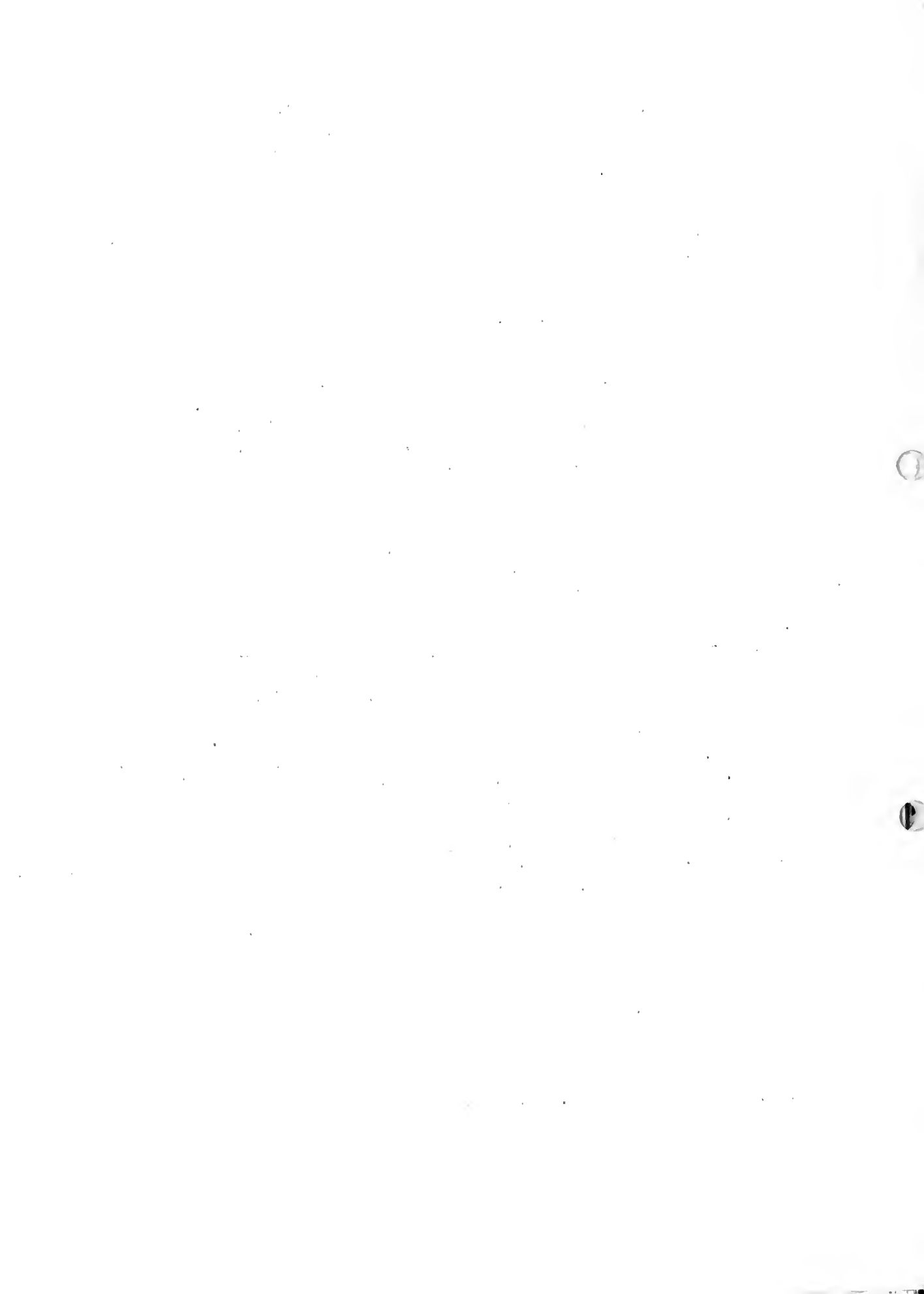
The result for January 1935 would leave in operation 134 mines which reported costs up to \$2.30 per ton and produced 85.6 per cent of the total of all 164 reporting mines; it would also permit the 134 mines 21.6 working days to produce the total of 2,543,000 tons. Roughly projected, by dispersion groups, the decrease in cost appears as 12.7 cents per ton, with the cost for the 134 mines averaging \$1.891 per ton.

These theoretical projections are presented merely as indicative of the result of purely statistical allocation of 100% of production to mines which represented about 85% of the reported output. Similar projections have not been made for other subdivisions, but the basic material exists in files of N.R.A. from which to do so.

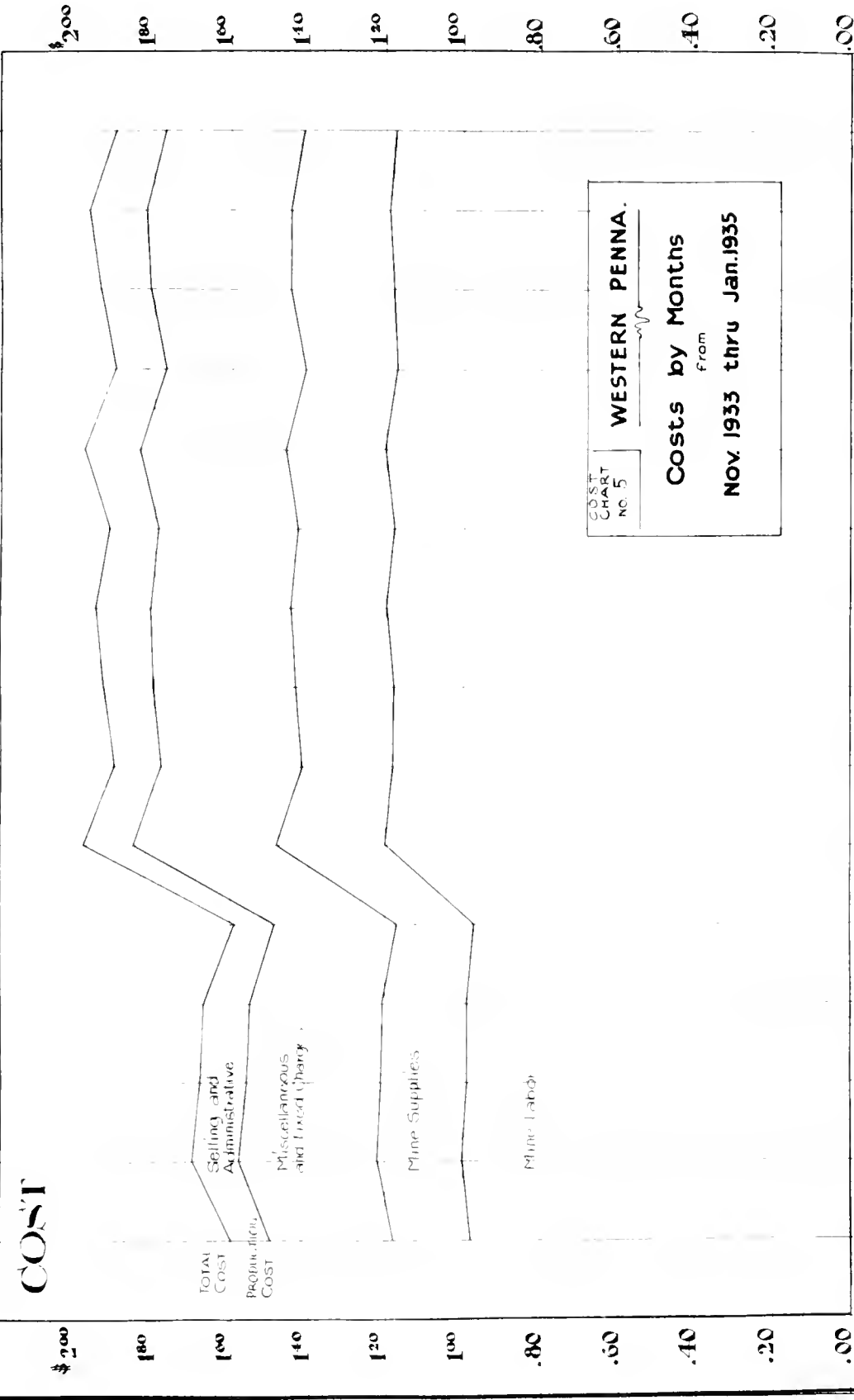
2. Western Pennsylvania Subdivision of Division I produced 53,891,000 tons or 15.4% of the U. S. output in 1934. (*) Under the 8-hour wage scale in the 5 months preceding April 1934, the average total cost for an average of 143 reporting (deen) mines was \$1.6443 per ton. Under the 7-hour wage scale in the 10 months beginning April 1, 1934, the average total cost of 148 reporting mines was \$1.9408 per ton, an increase of 29.65 cents per ton. The mines worked only 16.5 days per month on the average, however, as against 18.8 in the first period. The entire increase, therefore, cannot be attributed to the changed hours and wages. In fact, the 10-month average production cost projected to 18.8 days indicates that had the reporting mines been able to reach that average monthly working time, production cost would have been less by about 4.25 cents. Instead of \$1.9083 per ton the figure would have been \$1.7658, an increase of 22.94 cents over \$1.5364 in the earlier period. It would thus appear that on a comparable basis of days worked, approximate total cost increase during the second period was about 25 cents per ton.

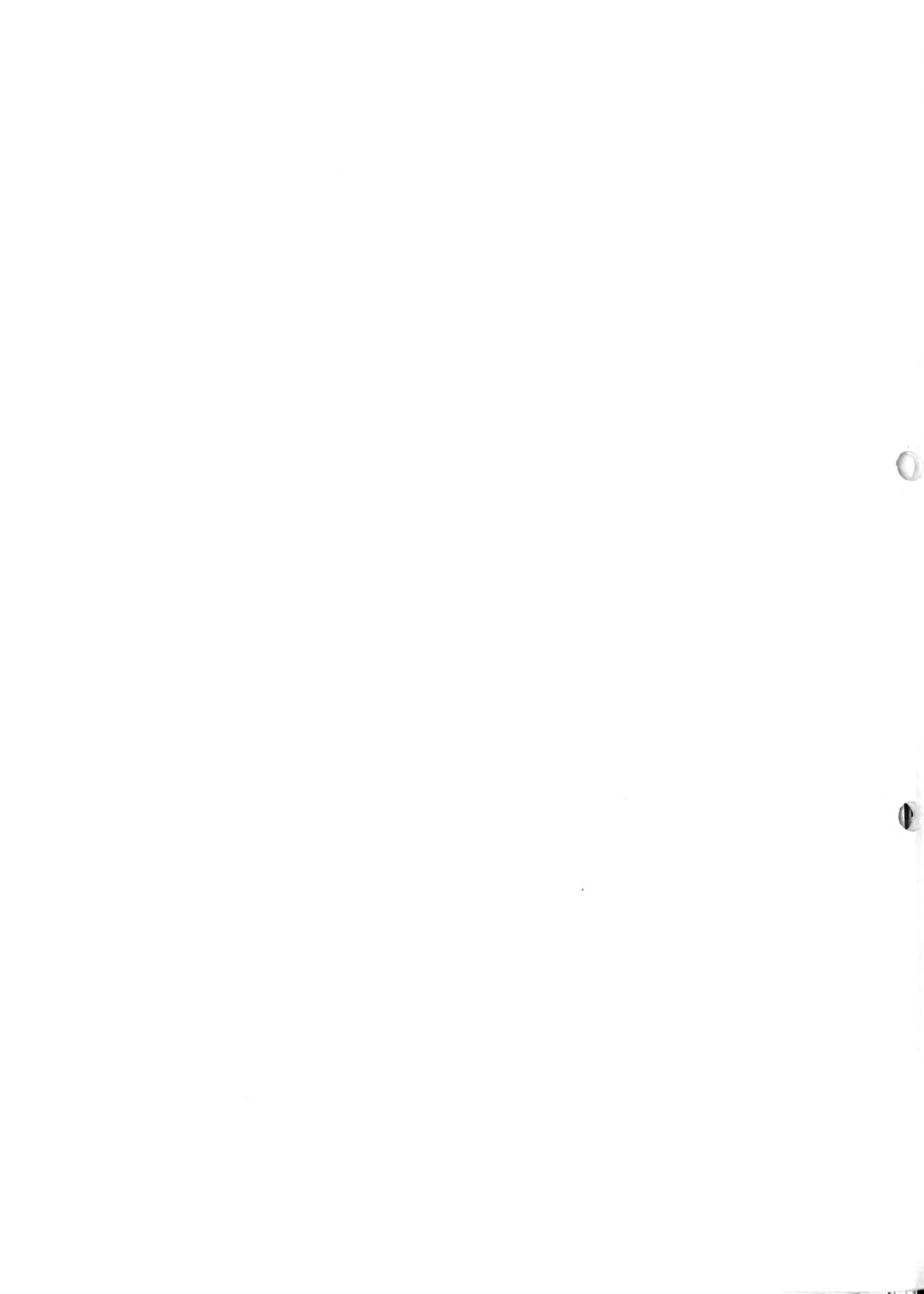
The dispersion of mines and tonnages by 10-cent intervals of costs reflects the cost relationships among the mines that make up the averages. Briefly recapitulated, these dispersions for November 1933 under the first or 8-hour-day period of the Code appear as follows:

(*) U. S. Bureau of Mines W.C.P. 919, February 15, 1935; preliminary estimate.



DAYS WORKED: 164 176 186 216 265 314 362 439 469 538 581 665 751 842





Western Subdivision of Division I - November 1933

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipples Starts	Avg. Cost Per Ton
\$1.10 - \$1.20	2	.6	664	14.9	\$ 1.172
1.20 - 1.30	7	5.2	1,230	20.6	1.251
1.30 - 1.40	14	6.6	818	19.8	1.355
1.40 - 1.50	25	17.6	1,194	20.1	1.446
1.50 - 1.60	22	15.1	1,217	19.3	1.547
1.60 - 1.70	30	32.7	1,914	20.5	1.642
1.70 - 1.80	20	8.2	732	19.1	1.752
1.80 - 1.90	6	2.2	642	19.3	1.849
1.90 - 2.00	19	10.4	1,116	16.7	1.948
2.00 - 2.10	3	.6	503	13.4	2.045
2.20 - 2.30	2	.4	695	10.3	2.216
2.40 - 2.50	2	.4	428	16.2	2.438
Total	152	100.0	1,157	19.4	1.604

The lowest cost bracket includes 2 mines which obviously must be operating under unusually advantageous conditions. In spite of their small daily output and working time 4¹ days below the average for the Subdivision (both of which circumstances tend to increase the per ton cost), their average cost per ton was almost 8 cents less than the average of the next lowest group.

Although the 30 mines whose individual costs fall between \$1.60 and \$1.70 were the largest in average daily output per mine, 1,814 tons, and enjoyed 20¹ working days, still their costs averaged \$1.642, or 47 cents per ton more than the 2 mines which, with over 5 fewer working days and only about one-third of the daily output per mine, fell in the lowest-cost group.

The \$2.40 - \$2.50 mines apparently operate normally under high cost conditions, since their costs averaged \$2.438 even with better working time than the 2 mines in the \$1.10 - \$1.20 group.

Mines producing 88.2 per cent of the total reported by these 152 Western Pennsylvania operations ranged in cost between \$1.10 and \$1.90 limits; 11.8 per cent of the total tonnage averaged over \$1.90 in cost.

A similar recapitulation for January, 1935, a typical month in the 7-hour day period, shows a somewhat different picture:

Western Subdivision of Division I - January 1935

Costs Per Ton (under)	No. of Mines	% of Total Tons	Ave. Output Per Mine Per Day (Tons)	Ave. No. of Tripole Starts	Average Cost Per Ton
\$1.40 - \$1.50	9	5.6	783	23.0	\$ 1.446
1.50 - 1.60	5	3.2	914	19.9	1.531
1.60 - 1.70	20	10.5	782	19.4	1.663
1.70 - 1.80	21	13.5	793	18.4	1.738
1.80 - 1.90	24	14.2	783	20.3	1.860
1.90 - 2.00	25	19.8	1,364	16.7	1.955
2.00 - 2.10	26	23.1	1,413	17.3	2.061
2.10 - 2.20	9	4.6	1,304	11.4	2.175
2.20 - 2.30	10	3.2	637	14.7	2.248
2.30 - 2.40	5	2.2	1,039	12.0	2.321
2.40 - 2.50	2	2.0	2,549	11.4	2.466
2.50 & over	3	0.3	515	5.6	2.516
Total	159	100.0	1,056	17.2	1.904

Here the lowest cost group of 9 mines averages \$1.446, reflecting 27.4 cents per ton increased cost over the lowest-cost group of 2 mines in November 1933 and 19.5 cents increase over the 7 mines in the second lowest-cost group of that month.

The first five lower-cost groups, with working time exceeding the average of all mines for this month by from 1.2 to 5.8 days, all average less in daily output per mine than does the entire group of 159 mines. In the succeeding higher-cost-groups the general trend of working days and daily output account to a great extent for the groupings.

The highest cost group is composed of 3 mines of comparatively small daily output and only 5.6 working days. By projection, had these 3 mines enjoyed as many as 17 days of work, their average cost would have been around \$1.90 per ton. On the other hand, had the 2 mines in the \$2.40 - \$2.50 interval had 17 working days, their average costs, by projection, would appear to be about \$2.29 per ton, still comparatively high-cost.

3. Ohio Subdivision of Division I produced in 1934 a total of 20,842,000 net tons, or 5.81 per cent of the U. S. production. (*) The 57 (deep) mines reporting during the 5 months of the 40-hour week averaged 17.5 working days a month and a total cost of \$1.5243 per ton, but in the 10 months following, under the 35-hour week, the average monthly working days was only 13.8 and the cost increased to \$1.8031 or 27.88 cents per ton.

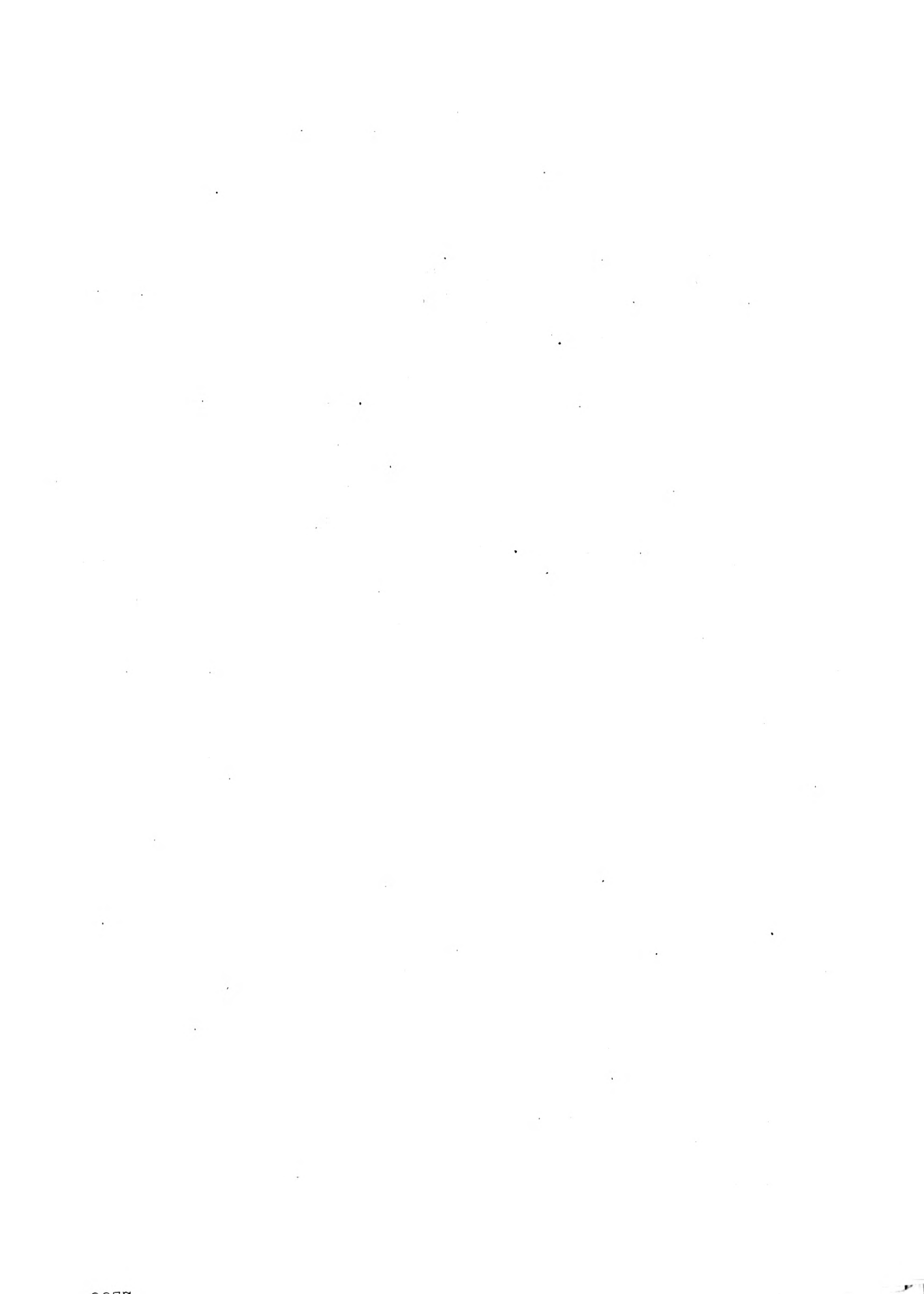
The production cost in the first period of \$1.3896, increased in the second period to \$1.6506, or 26.1 cents per ton. A projection of this latter cost to a basis of 17.6 days, however, reflects the cost after removal of the influence of fewer working days. On this more nearly comparable basis, the increase in production cost appears to be about 18.5 cents per ton. The comparable costs for similar working days indicate the increase in total cost to have been about 20.5 cents per ton in the later period, of which labor increase accounted for about 15.5 cents, supplies and fixed charges about 3 cents, and selling and administrative about 2 cents.

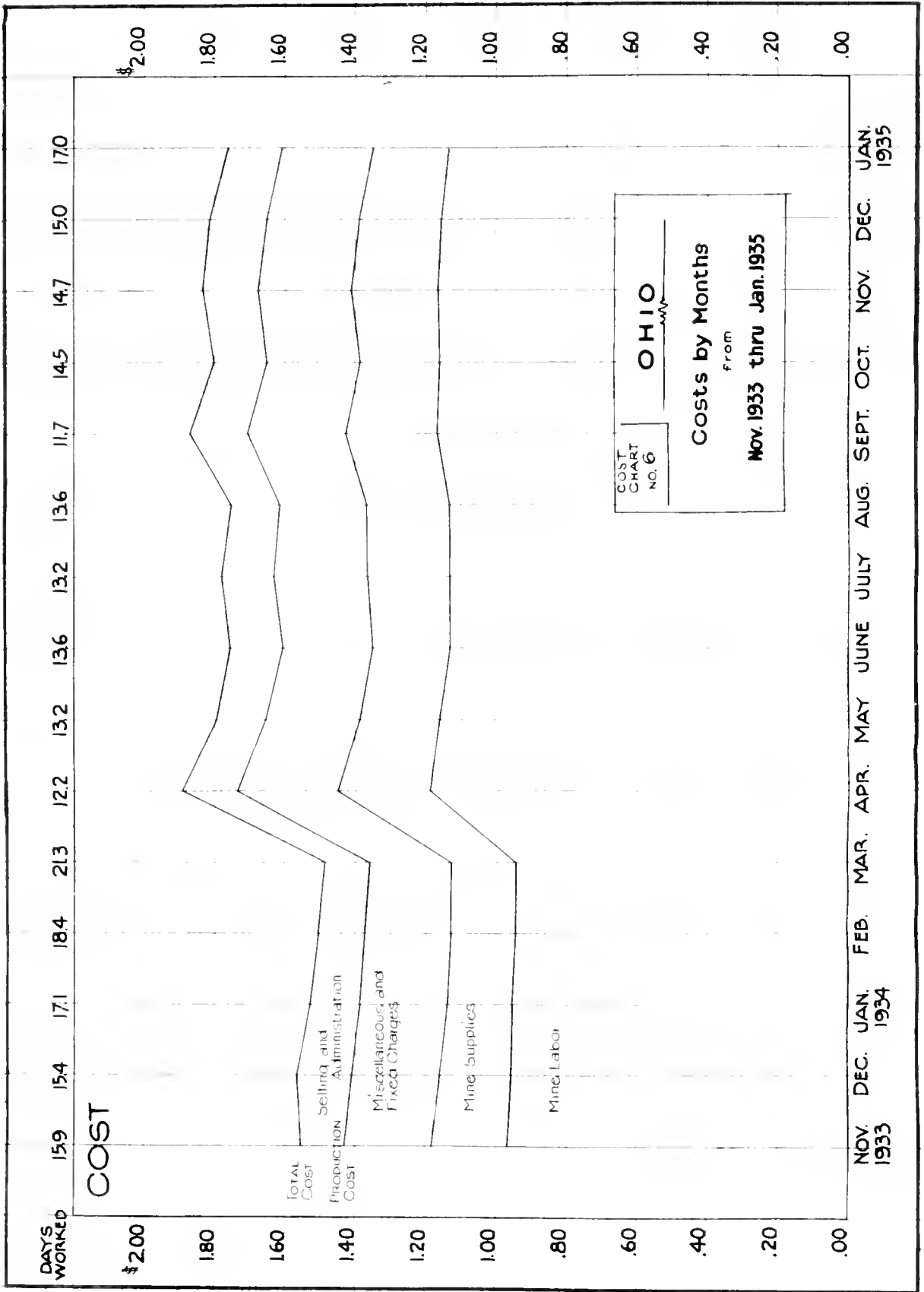
Frequency Tables show that 38 of the 60 reporting mines, producing 84.4 per cent of the reported production for November 1933, fell between \$1.20 and \$1.70 in average costs per ton. Compared with the dispersions for Eastern and Western Pennsylvania Subdivisions already discussed, this is a narrow range of costs for so large a proportion of the total. A similarly narrow range occurs in January 1935, when 43 out of 56 mines, or 84 per cent of the tonnage, fell between \$1.40 and \$1.90 in cost per ton.

4. Michigan Subdivision of Division I produced 631,000 tons or 0.18 per cent of the U. S. output in 1934. (**) In the earlier period average costs for Michigan operators appear as \$2.714 and in the succeeding period average costs increased to \$3.1843, or 47.66 cents per ton. It is interesting to note that, although cost of labor and supplies averaged decidedly higher, respectively 36 and 12.8 cents per ton (a total of 48.8 cents), the average cost per ton for fixed charges and for selling and administration were slightly reduced.

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935; preliminary estimate.

(**) U. S. Bureau of Mines, preliminary estimate, W.C.R. 919; February 15, 1935.







No projection of costs to the greater number of working days enjoyed in the earlier period can be made, the basic data being unavailable. The average costs in Michigan are higher than in the other Eastern Subdivisions principally because of the localized and limited extent of workable deposits, comparatively low average thickness of the seams, prevalence of weak roofs, and other disadvantages.

5. Panhandles Subdivision of Northern West Virginia (Division I) produced 3,982,000 tons or 1.11 per cent of the estimated U. S. total output in 1934. (*) From this relatively small Subdivision, an average of only 6 mines reported costs for the 4 months beginning November 1933 and no reports were made available for March 1934; during the next 10 months 5 mines consistently reported and in the first 3 months another mine's reports were included. The average days worked per month in the 4 months under the 8-hour day was 20.3; and in the 10 months under the 7-hour day 18.4 per month. The indicated increase in cost in the second period over the first is 14.18 cents; although the labor cost alone averaged an increase of 14.58, supplies and fixed charges actually decreased almost 2 cents per ton, with selling and administrative expenses increasing by 1.58 cents per ton.

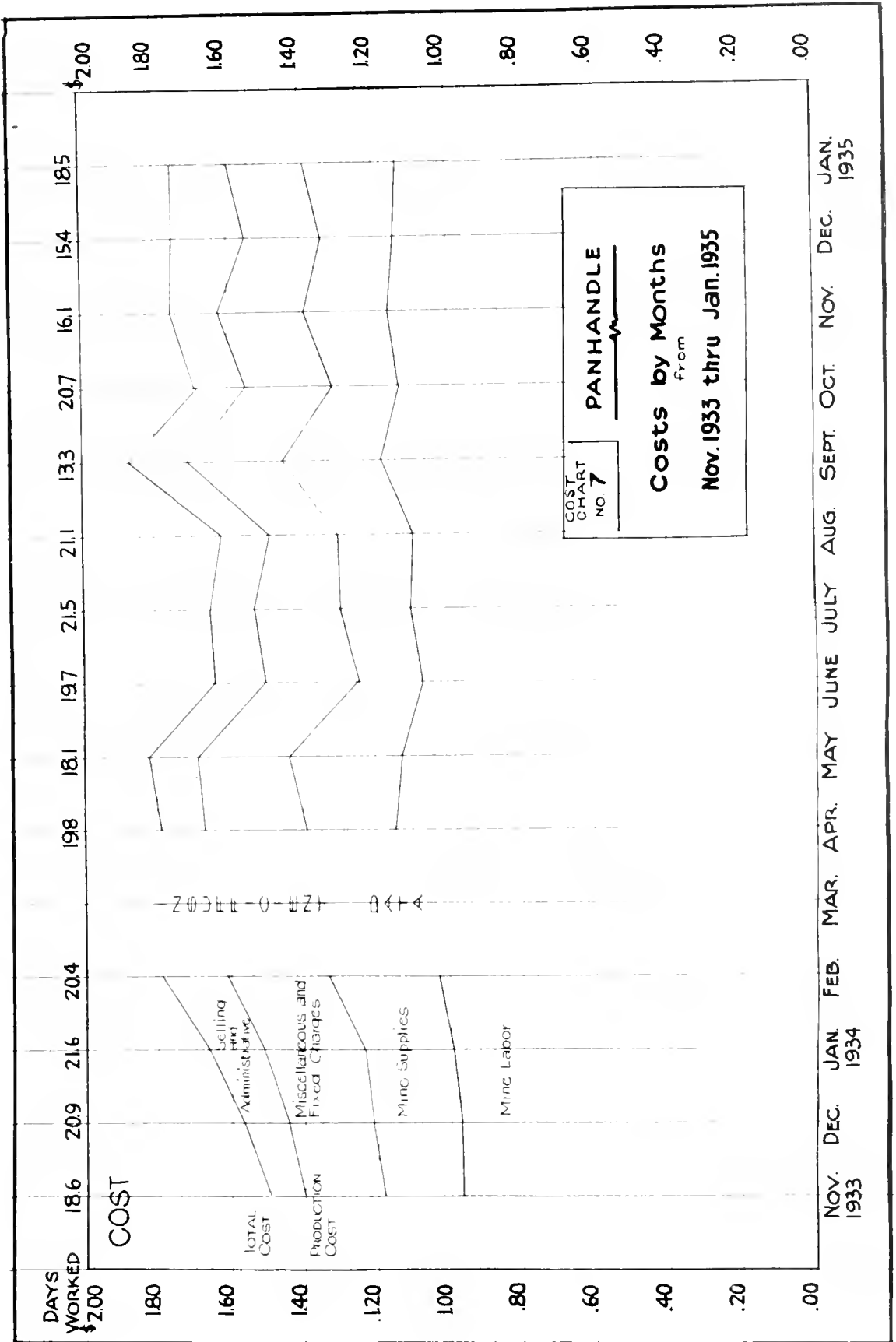
Data are not available upon which to base a projection to the greater number of working days, which would reduce the increase here shown still further. It is apparent that mines in this Subdivision were more successful than in other sections in overcoming some of the effect of reduced working hours and increased wages. It is understood that physical operating conditions, including mechanization, were very favorable to success in this direction.

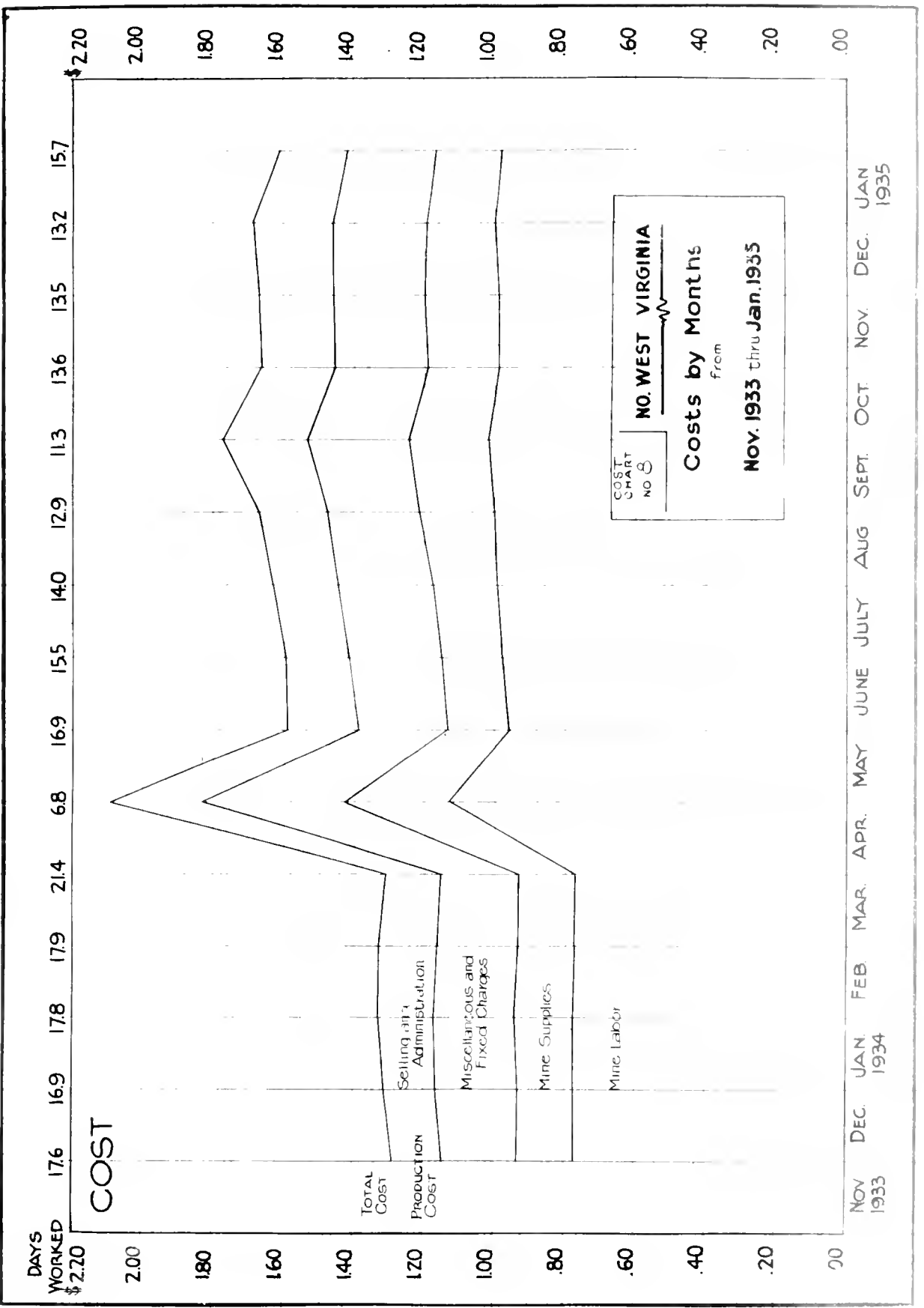
6. Northern West Virginia Subdivision of Division I: This Subdivision produced 13,114,000 tons, or 5.33 per cent of the U. S. total output in 1934. (**)

The total average cost of the 65 reporting mines for the 5 months of the first or 40-hour week period was \$1.3151, and for the 58 mines reporting for the second or 35-hour week period it was \$1.6671, an increase of 35.2 cents per ton. Some of this increase is due to the influence of fewer working days in the second period, when the average monthly days worked was 13.34 as against 17.7 in the earlier period. By the projection method previously described, an approximation can be made of the production cost per ton if the mines had worked 17.7 days in the second period; this figure is \$1.3990, which when compared with \$1.1593 production cost in the earlier period, shows an increase of 23.97 cents per ton. The increase in selling and administrative expense amounts to about 5 cents per ton. It is safe to estimate the increase in total cost on a basis of comparable working days at about 28 cents per ton.

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935.

(**) U. S. Bureau of Mines preliminary estimate, W.C.R. 919, February 15, 1935.







Data published by this Subdivisional Code Authority provide a basis for comparing the daily productivity per man under the 8-hour day with that under the 7-hour day. The average production per man per day during the six months of the 8-hour day period extending from October 1, 1933, through March 31, 1934, was 5.9 tons; and for the ensuing six months under the 7-hour day (April 1 through September 30, 1934) was 5.6 tons per day. (*)

Thus the reduction in working hours per day from 8 to 7 effected about a 5 per cent decrease in tons produced per man-day, quite disproportionate to the $12\frac{1}{2}$ per cent reduction in working time. Informal conversation with those having knowledge of this situation placed the credit upon the combined efforts of men and management: increased mechanical equipment installed, more working places provided, all operations of mining, loading, hauling studiously synchronized to a greater degree than previously.

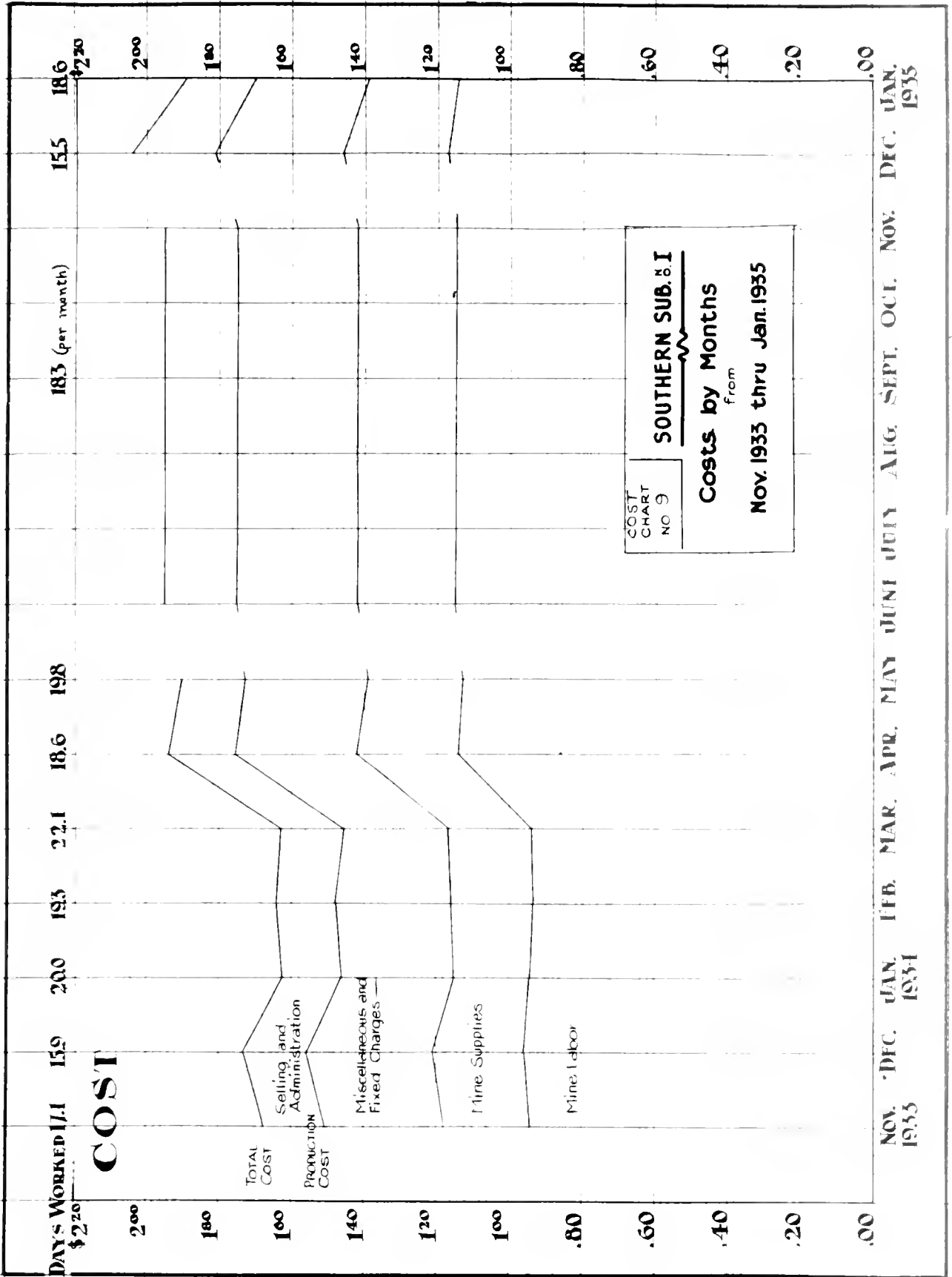
Frequency tables of mines in 10-cent cost intervals disclose the comparatively narrow cost range of the bulk of tonnage produced by the 65 mines reporting for November 1933 and January 1935. All but 16 of the 65 mines and 10.9 per cent of the total tonnage reporting in November 1933 showed costs between 90 cents and \$1.50 per ton; in January 1935, all but 11 of the 64 mines and 10.4 per cent of the total tonnage reporting showed costs between \$1.20 and \$1.80 per ton.

7. Southern (Smokeless) Subdivision No. 1 of Division I: In 1934 this Subdivision produced 12.32 per cent of the total United States output, according to preliminary estimates of the U. S. Bureau of Mines. (**) The mines producing low-volatile (commonly called "smokeless") coal in Pocahontas, New River, Greenbrier and Winding Gulf fields of West Virginia comprise this Subdivision, together with a small group of high-volatile mines in the New River district. The high volatile production in this Subdivision was minor and was not included in the summary reports.

Total cost during the five-month reporting period of 40-hour-week operation averaged \$1.657 per ton; during the succeeding 10 months under a 35-hour week, beginning April 1, 1934, the composite average for the period was \$1.9473 per ton, an increase of 29.03 cents per ton in the second period. With no slack season, due to heavy summer business over the Great Lakes, monthly working days were maintained at a steadier rate than in any other subdivision, averaging 18.9 per month in the first period and 18.2 per month in the second period. The average monthly working days were so nearly the same in both periods that it is fair to accept about 29 cents per ton as the average increase in cost.

(*) "Compilation of Statistical Data Covering Period October 1st, 1933, to March 31st, 1934", dated April 1, 1934, by Northern West Virginia Subdivisional Code Authority, p. 106; and Supplement No. 1 thereto dated October 1, 1934, p. 87; in N.R.A. Bituminous Coal Unit Files.

(**) U. S. Bureau of Mines preliminary estimate, T.C.R. 919, February 15, 1935.





The dispersion of mines in 10-cent interval groups by cost per ton shows that 118 of the 143 reporting mines and 90.4 per cent of the total tonnage was produced and sold at a cost under \$2.00 per ton in November, 1933; 105 mines out of 139 and 85.6 per cent of the tonnage at a cost under \$2.00 per ton in December, 1933; 145 out of 153 mines and 96.9 per cent of the tonnage in January, 1934; 95.8 per cent of the tonnage in February, 1934; and 93.8 per cent of the tonnage in March, 1934; all in the first or 8-hour-day period of the N.R.A. Code.

Beginning with April 1, 1934, the cost increased during the succeeding 10 months under the 7-hour day by an average of about 29 cents per ton. In these months, the proportions of total tonnage reported at a cost of under \$2.30 per ton were as follows:

April 1934	--	94.2 per cent
May 1934	--	92.3 " "
June to Nov.	--	Not available
Dec. 1934	--	85.7 per cent (a month of accounting adjustments)
Jan. 1935	--	96.9 per cent.

The frequencies briefly recapitulated are as follows:

Southern (Smokeless) Subdivision No. 1 of Division I

Cost Per Ton	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
(under)			November 1934		
\$1.10 - 1.40	3	8.0	1,193	21.0	\$1.345
1.40 - 1.50	16	19.2	1,646	18.8	1.441
1.50 - 1.60	15	11.0	1,172	16.2	1.568
1.60 - 1.70	25	21.0	1,235	16.9	1.649
1.70 - 1.80	21	14.0	996	17.7	1.745
1.80 - 1.90	13	11.2	858	18.9	1.839
1.90 - 2.00	15	6.0	643	16.0	1.942
2.00 - 2.10	10	5.8	831	11.7	2.046
2.10 - 2.20	6	2.3	692	14.2	2.133
2.20 - 2.30	4	1.9	800	14.1	2.235
2.30 - 2.50	3	1.1	622	14.5	2.444
2.50 & over	2	0.5	618	9.3	2.795
Total	143	100.0	1,054	17.1	\$1.679



Southern (Smokeless) Subdivision No. 1 of Division I

Cost Per Ton	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tumble Starts	Avg. Cost Per Ton
(under)		<u>January 1935</u>			
\$1.40 - \$1.50	2	.4	314	21.2	\$ 1.449
1.50 - 1.60	11	12.3	1,728	22.4	1.561
1.60 - 1.70	9	7.9	1,548	19.7	1.671
1.70 - 1.80	26	16.9	1,138	20.0	1.751
1.80 - 1.90	24	16.2	1,230	19.0	1.842
1.90 - 2.00	12	7.3	1,082	19.4	1.944
2.00 - 2.10	36	24.2	1,323	17.6	2.032
2.10 - 2.20	11	5.2	1,218	13.6	2.150
2.20 - 2.30	10	6.6	1,355	17.0	2.244
2.30 - 2.40	3	.9	710	13.7	2.373
2.40 - 2.50	3	.7	490	16.6	2.462
2.50 & over	6	1.5	631	13.9	2.618
Total	153	100.0	1,225	18.6	\$ 1.894

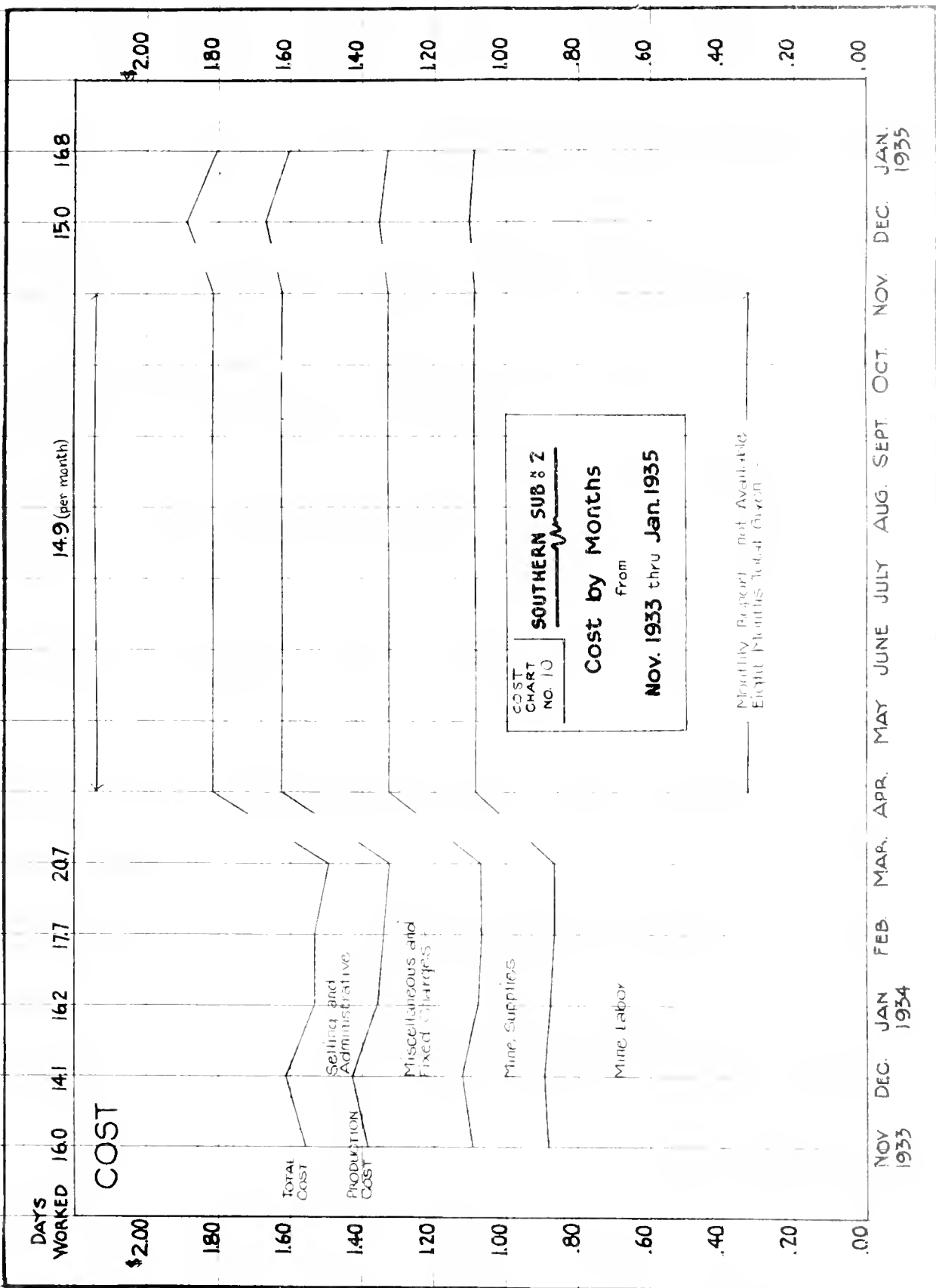
It will be noted that the November 1933 grouping shows a fairly general trend from the larger mines to the smaller, and from more to fewer working days, as average costs rise, although it must be recognized that the 10-cent intervals of cost are greater than could be attributed to these factors alone. This is plainly illustrated by the fact that in the January 1935 grouping the 2 mines composing the lowest cost group averaged only 314 tons of production per mine per day, yet with a day less of working time had an average cost 11.2 cents per ton less than the second lowest cost group of 11 mines which turned out 1,728 tons per mine per day. It is clear that the two low-cost mines were definitely enjoying comparatively advantageous conditions other than good working time.

8. Southern Subdivision No. 2 of Division I: This Subdivision produced 20.23 per cent of the total United States Output in 1934, according to preliminary estimates of the U. S. Bureau of Mines. (*)

Total cost of 256 mines, averaged over the entire 5 month period November 1933 - March 1934, was \$1,5424; for the following 10 months, April 1934 - January 1935, the composite average of 208 mines was \$1.8199. This was an apparent increase of 27.75 cents per ton in the second or 7-hour-day period over the first or 8-hour-day period. The factor of monthly average working days contributed some of this increase, however.

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.







A projection of the production costs in the second period from the (simple) average of 15.1 working days to the same average number of days available per month during the first period, 16.9, by methods previously described, approximates the increase had the reporting mines enjoyed the greater number of working days with all other conditioning factors unchanged. The production cost by this projection would have been about 3.55 cents less, or \$1.591 instead of \$1.6265 per ton. It is fair to estimate the increase in total cost in the second period over the first to have been about 24 cents per ton.

Frequency tables covering total costs for January 1934 and January, 1935, two fairly comparable months as to working days may be briefly recapitulated as follows:

Southern Subdivision No. 2 of Division I

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipples Starts	Avg. Cost Per Ton
<u>January 1934</u>					
\$1.00 - \$1.20	10	10.5	2,388	17.7	\$ 1.120
1.20 - 1.50	14	6.8	971	20.1	1.245
1.30 - 1.40	25	11.6	1,082	17.3	1.354
1.40 - 1.50	34	14.1	1,035	16.1	1.446
1.50 - 1.60	46	18.8	978	16.8	1.552
1.60 - 1.70	38	13.4	830	17.0	1.641
1.70 - 1.80	24	9.1	1,103	13.8	1.752
1.80 - 1.90	24	10.1	1,141	14.7	1.849
1.90 - 2.00	13	7.6	886	12.7	1.954
2.00 - 2.20	6	2.0	934	13.9	2.098
Total	234	100.0	1,056	16.2	\$ 1.533

Southern Subdivision No. 2 of Division I

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tumble Starts	Avg. Cost Per Ton
			<u>January 1935</u>		
\$1.20 - \$1.40	3	2.0	1,140	21.5	\$ 1.275
1.40 - 1.50	7	2.7	799	17.5	1.478
1.50 - 1.60	16	5.3	1,244	17.8	1.532
1.60 - 1.70	47	26.1	1,127	17.1	1.532
1.70 - 1.80	34	16.1	1,003	17.2	1.745
1.80 - 1.90	26	11.3	834	16.9	1.741
1.90 - 2.00	26	14.0	1,311	16.8	1.755
2.00 - 2.10	19	3.7	370	16.0	1.757
2.10 - 2.20	11	2.6	1,044	17.6	2.147
2.20 - 2.30	6	2.1	371	19.6	2.113
2.30 - 2.40	4	1.3	333	8.2	2.433
2.40 - 2.50	7	1.7	612	14.1	2.427
2.50 & over	4	.7	326	7.3	2.328
Total	210	100.0	1,177	16.8	1.505

In January, 1935 the lowest cost group logically included 16 lines showing the largest average output per mine per day and a fairly high average number of days worked; the next three lowest interval groups averaged a much lower output per mine per day and, with a correspondingly decreasing number of days worked, placed themselves generally as might be expected.

The January, 1933, figures are not so low, present a less regular alignment. Starting with the 5 group of 10 mines in the lowest-cost group, \$1.60 - \$1.40, averaging \$1.275, the next lowest group is of composite size 11 by 10 size in daily output per mine, with less working time than the four groups of usual operation, still averaging almost 9 cents lower in cost. The next five groups are normally related, but the 10-10 - \$1.60 group of 11 mines show an average cost 11 cents higher per unit, standing out as larger in size and had more working days than the next lower-cost group.

9. Western Kentucky Subdivision of Division I: Western Kentucky production in 1934 was 7.2 per cent of the total U. S. output. (*) The mines in this Subdivision reported costs to U.R.A. for November and December 1933 and January 1934. After that date no reports were made, due to the defection of that Subdivision upon the adoption of Amendment 1, April 1, 1934, and the litigation which resulted in an injunction against the enforcement of the wage scale provided in that Amendment for Western Kentucky. There are no data available, therefore, upon which to compare costs during the succeeding months. An average of 27 mines reported a composite average cost for the three months' period of \$1.2017 per ton, with average working days of 15.7 per month.

The cost figures for 1934 are not included in the Division I averages.

10. Indiana Subdivision of Division II: (In 1934 Indiana produced 4.41 per cent of the U. S. Total according to the preliminary estimate of the U. S. Bureau of Mines.) (**)

In Indiana the labor costs for all mines, both deep and strip, although increasing from 60.48 cents to 71.91 cents per ton, constituted practically the same proportion of total costs during the 5-month, 8-hour-day period beginning November 1, 1933 as in the immediately succeeding 10 month, 7-hour-day period, 47.23 per cent and 47.30 per cent respectively. During those periods, the respective average daily production of 54 and 46 mines, working and average of 17.4 days in the first and 14.9 days in the second period, were 1,272 and 1,502 tons per mine. The following tabulation shows the relative and absolute changes in the total cost per ton and in the constituents thereof during these operating periods.

(*) U. S. Bureau of Mines W.C.R. 119, February 15, 1935.

(**) U. S. Bureau of Mines W.C.R. 119, February 15, 1935.

	3-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Cost per Ton	Per Cent of Total Cost
Line Labor	\$.5049	47.23	\$.7191	47.50
Line Supplies	.2695	21.08	.3532	22.29
Miscellaneous and Fixed Charges	.2655	20.74	.2927	19.96
Production Cost	\$1.1402	89.08	\$1.5607	89.35
Selling and Administration	.1388	11.92	.1686	11.15
Total Cost	\$1.2790	100.00	\$1.5103	100.00
Average Days Worked Per Mo.	17.4		14.8	
Average No of Mines Reporting	54		46	
Average Daily Production per Mine	1,272		1,302	
Per Cent of Deep Mine Production To Total	52.1		62.7	

Although the above periods are fairly comparable as to representation of higher-cost deep and lower-cost strip mining operations, they are not comparable as to representation of higher and lower-cost seasonal operations. This first period is made up of winter months in which the mines worked uniformly close to 17 days per month at a daily average of about 1,272 tons per mine, while in the latter period the number of days worked per month varied from 11.5 in June, 1934 to 20.1 in January, 1935, with average daily productions per mine varying from 1,223 tons in April, 1934 to 1,311 tons in January, 1935. The costs of a single month may be representative of the cost of a longer period, but it is conceded that comparisons are improved by extending the samples. The following data shows the average production costs for deep and strip mine operations for seasonally comparable 3-month periods, projected to equal working time.

Indiana Subdivision of Division II

Deep and Strip Mines

Month	Average Number of Days Worked	Average Production Costs	
		Projected Nov. 1933-Jan. 1934	Actual Nov. 1934-Jan. 1935
November	16.3	\$1.2047	\$1.2846
December	16.2	1.1167	1.2585
January	10.0	1.0596	1.2107
Total of 3 Months	58.5	\$1.1331	\$1.2598

These data indicate that during the 7-hour work shift the production costs for deep and strip mines combined increased about 11-2/3 cents a ton over those of the 8-hour-day period. The reader is warned that average costs for both deep and strip mine operations are susceptible to considerable change with a shift in the relative proportions of tonnage produced over these two mining methods. Nevertheless, the coal mined by the two methods combined in the same market and thus their combined average costs are of considerable significance.

The following tabulation of the frequency distributions for two months, in 10-cent total cost intervals, shows the range of costs and the groupings of mines around the average, thus facilitating an approximation of the bulk-line costs.

Indiana Subdivision of Division II

Frequency Distribution of Total Costs

<u>November 1954</u>			<u>Deep and Strip mines</u>		
Costs per Ton	Number of Mines	Per Cent of Total Production	Average Daily Cut at per Line	Average No. of Tons Starts	Average Cost per Ton
Under					
.80 - 1.10	6	10.4	3,715	14.6	\$1.007
1.10 - 1.20	7	15.0	1,513	17.4	1.151
1.20 - 1.50	11	23.2	1,340	18.3	1.351
1.50 - 1.40	7	10.2	611	17.2	1.365
1.40 - 1.50	6	11.9	957	10.3	1.463
1.50 - 1.60	7	11.4	1,125	17.7	1.547
1.60 - 1.80	4	7.6	670	21.0	1.670
1.80 - 1.90	3	4.4	1,693	16.0	1.885
1.90 - 2.00	3	1.8	982	10.2	1.976
2.10 - 2.20	3	0.7	382	15.7	2.135
2.20 - 2.30	3	1.4	716	13.6	2.239
Totals	50	100.0	1,310	16.9	1.355
<u>November 1954</u>					
.80 - 1.00	6	10.0	3,325	15.3	.926
1.00 - 1.10	3	4.3	2,121	15.6	1.046
1.20 - 1.30	4	15.2	1,321	20.5	1.253
1.30 - 1.40	5	13.7	1,516	17.0	1.350
1.40 - 1.50	5	7.5	1,130	15.3	1.437
1.50 - 1.60	8	11.3	861	18.0	1.543
1.60 - 1.70	3	4.7	1,234	19.4	1.620
1.70 - 1.80	10	13.0	1,132	14.4	1.743
1.80 - 1.90	3	2.3	639	13.2	1.843
1.90 - 2.00	3	3.7	655	19.1	1.951
2.00 - 2.40	3	4.3	1,264	11.0	2.125
Totals	48	100.00	1,304	16.3	1.428

It may be observed from the above data that over 50 per cent (56.6%) of the total production for the month of November, 1933, was produced by approximately 41 per cent of the reporting mines at a total cost of less than \$1.50 per ton, while in November, 1934 only 35 per cent of the total production as reported by 19 per cent of the reporting mines was produced within that cost range and 56.2 per cent of the total production reported by 40 per cent of the mines cost up to \$1.50 per ton. The maximum range of costs during November 1933 was \$1.50 per ton (from \$.80 to \$2.30), while in November 1934 the range was \$1.60 per ton (from \$.80 to \$2.40). The average total cost per ton was slightly over 10 cents more in the latter than in the earlier month, about half of which is accounted for by increased labor costs.

Deep mines. During the initial 5-month period an average of 35 reporting deep mines in Indiana produced 62.6 per cent of the coal mined by all reporting mines; in the succeeding 10 months an average of 35 reporting mines produced 52.7 per cent of the total production. The average number of days worked per month was 19.0 days and 16.2 days per month, respectively, produced an average of 1,127 and 1,183 tons per day. The following is a tabulation of data with respect to deep mine operations alone.

Indiana Subdivision of Division II

Costs - Deep mines only

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Line Labor	\$.7530	54.31	\$.8625	51.73
Line Supplies	.0750	5.39	.3036	20.35
Misc. and Fixed Charges	.0231	1.60	.2602	16.21
Production Cost	\$1.2510	90.50	\$1.4491	90.29
Selling and Administration	.1527	9.50	.1559	9.71
Total Cost	\$1.5897	100.00	\$1.6052	100.00
Average Days Worked per month	19.0		16.2	
Average No. of Mines Reporting	35		35	
Average Daily Production per Mine	1,127		1,183	
Per Cent of Total Production	62.6		52.7	

These data indicate an increase in production cost of slightly more than 19 cents per ton and almost 22 cents increase in total cost, 11 cents of which is represented by increased labor costs. Undoubtedly a part of these increased costs during the 10-month period may be attributed to the summer operations which are normally higher in cost per ton, due to less continuous working time, than are peak season operations of

the winter months. The following calculation is designed to segregate roughly the increased costs due to fewer days worked, in two periods, from the increased cost due to other factors. The projection is based on variations that occurred in November 1953 costs and are not altogether applicable to costs extending over the longer period. It is believed, however, that they do serve to measure approximately the variations due to different working time.

Indiana Subdivision of Division II

Projection of Production Costs in 5-month period from 19
Days to 16.2 Days per Month

Deep Lines

	<u>Labor</u>	<u>Supplies</u>	<u>Fixed Charges</u>	<u>Production Cost</u>
Costs on 16.2 Day Basis	\$.8165	\$.2952	\$.2406	\$1.3523
Costs on 19.0 Day Basis	.7853	.2730	.2253	1.2836
Increase due to 2.8 Fewer Working Days	\$.0312	\$.0172	\$.0153	\$.0637
5-Month Costs on 19 Day Basis (1)	.7530	.2759	.2261	1.2550
Projected 5-month Costs on 16.2 Day Basis	\$.7842	\$.2931	\$.2414	\$1.3187
10-mo. Costs on 16.2 Day Basis	.8625	.3236	.2602	1.4493
Increase of 10-mo. Costs over 5-mo. Costs (2)	\$.0783	\$.0335	\$.0183	\$.1306

(1) See preceding table

(2) Attributable to other factors than fewer working days per month.

These data allocate the increased costs of the 10-month period over those of the 5-month period as follows:

	<u>Labor</u>	<u>Supplies</u>	<u>Fixed Charges</u>	<u>Production Cost</u>
To Fewer Days Worked per Month	\$.0312	\$.0172	\$.0153	\$.0637
To other Factors	.0783	.0335	.0183	.1306
Cost Increases in 10-mo. over 5-mo. Period	\$.1095	\$.0507	\$.0341	\$.1943

These data indicate that the increased production costs of the later 10-month period due to the working day factor were a little more than 6 cents per ton, of which about 3 cents were labor costs. Two factors of opposing influence are present in these costs (1) a smaller number of days worked per month normally make for higher costs per ton, (2) a larger output per day tends to result in lower costs; to what extent these tendencies offset each other it is difficult to say. Their net effect would seem to substantiate the opinion that the 11-cent increase in labor cost is primarily due to the shorter day and increased hourly rate in the later 10-month period.

For the three months of November, December, and January of these two periods the average production costs for deep mines projected to comparable working day bases, were as follows:

Indiana Subdivision of Division II

Deep Mines

Month	Average Number of Days Worked	Average Production Costs	
		Projected Nov. 1933-Jan. 1934	Actual Nov. 1934-Jan. 1935
November	17.7	\$1.3194	\$1.3917
December	30.2	1.2571	1.3734
January	31.6	1.2015	1.2771
Total 3 Months	19.8	\$1.2566	\$1.3494

On a comparable working-day basis and for seasonally comparable periods the increase in production costs under the 7-hour day over those experienced under the 3-hour day were about 3 cents per ton. These data are perhaps more representative of the two periods of the Code than any of the other data shown, and the increase of 3 cents per ton in production cost represents, in all probability, the effective increase uninfluenced by working time, seasonal differences, and random interferences experienced in single months.

The following frequency distribution is presented in order to facilitate judgment as to the representative character of the average total costs in these two months.

Indiana Subdivision of Division IIFrequency Distribution of Total CostsDeer MinesNovember 1933

<u>Costs per Ton Under</u>	<u>Number of Mines</u>	<u>Per Cent of Total Production</u>	<u>Average Daily Output per Mine</u>	<u>Average No. of Tipple Starts</u>	<u>Average Cost Per Ton</u>
1.10 - 1.20	3	11.4	1,492	20.2	\$ 1.183
1.20 - 1.30	9	31.4	1,441	19.2	1.250
1.30 - 1.40	5	6.0	539	16.1	1,352
1.40 - 1.50	8	18.7	964	19.3	1,461
1.50 - 1.60	6	17.2	1,270	17.2	1.548
1.60 - 1.80	3	6.7	842	21.0	1.675
1.80 - 1.90	2	6.6	1,696	16.0	1.355
2.10 - 2.30	2	1.8	334	20.9	2.183
Totals	33	100.0	1,115	18.8	1.426

November 1934

1.30 - 1.40	2	17.1	2,414	22.5	\$1.247
1.40 - 1.50	4	13.7	1,600	18.7	1,325
1.50 - 1.60	2	3.0	1,460	17.3	1.456
1.60 - 1.70	7	15.3	751	19.1	1.550
1.70 - 1.80	2	7.5	1,330	19.4	1.629
1.80 - 1.90	8	22.9	1,335	14.7	1,748
1.90 - 2.00	2	3.4	845	12.9	1.840
2.00 - 2.20	3	7.1	396	16.3	2.011
Totals	30	100.0	1,204	17.7	\$1.542

These data show that over two-thirds of the November 1933 tonnage was mined at a total cost of less than \$1.50 per ton while in November 1934 the cost of a like proportion of the tonnage ran as high as \$1.20 per ton. In the earlier month operations producing the greatest average volume per day fell into next to the highest cost interval while in November 1934 the largest average daily production was at the least cost.

Strip mines: Strip mining by an average of 19 operators accounted for 37.4 per cent of the coal mined in the reporting operations in Indiana during the 5-month, 8-hour-day period from November 1933 through March 1934. In the succeeding 10 months, during which the miners worked 7 hours per day, these operations, as reported by an average of 17 mines, accounted for 37.3 per cent of the total. During these periods the mines, working an average of 15.3 and 13.0 days per month respectively, produced on the average 1,542 tons and 1,506 tons per mine per day.

Indiana Subdivision of Division II

Average Costs - Strip Mines

	<u>5-month, 8-hour-day</u>		<u>10-month, 7-hour-day</u>	
	<u>Costs per</u>	<u>Per Cent</u>	<u>Costs per</u>	<u>Per Cent</u>
	<u>ton</u>	<u>of Total</u>	<u>ton</u>	<u>of Total</u>
		<u>cost.</u>		<u>Cost</u>
Mine Labor	\$.3575	32.45	\$.4785	34.73
Mine Supplies	.2596	23.56	.3593	26.08
Misc. & Fixed Charges	.5312	30.07	.3474	25.21
Production Cost	\$.9483	86.08	\$1.1852	86.02
Selling & Administration	.1534	13.92	.1926	13.93
Total Cost	\$1.1017	100.00	\$1.3778	100.00
Average Days Worked per Month	15.3		13.0	
Average No. of Mines Reporting	19		17	
Average Daily Production per Mine	1,542		1,506	
Per Cent of Total Production	37.4		37.3	

These data show an increase in production cost of nearly 24 cents per ton for the 7-hour day over the 8-hour day period while the total costs increased nearly 28 cents per ton. About half of the increase in production cost is attributable to increased labor costs. The operations during these periods appear fairly comparable except for the factor of seasonality. A portion of the increased costs of the latter period may be accounted for by the higher-cost off-peak operations of the summer months.

These unfavorable working conditions inflated labor costs about 5 cents per ton. The apparent increase of some 27 cents in total costs for the 10-month period over those of the 5-month period cannot be said to be the true change in comparable costs for the following reasons, (1) in the second period the mines worked 2.3 fewer days per month, on the average, than in the first, (2) 19 mines reported in the first period while only 17 mines reported in the second and there is no assurance that they were 17 of the 19 reporting in the earlier months. The samples may be quite different as to costs, working days, or output per day, and (3) average daily output per mine was 36 tons less in the 10-month than in the 5-month period. An approximate adjustment may be made for the fewer working days per month by projecting the 13 day production costs to a 15.3 day basis. The result of this projection, the procedure of which is 9837

outlined in this chapter, Section C-1, shows the following:

Indiana Subdivision of Division II

Projection of Production Costs in 5-Month
Period from 15.3 Days to 13.0 days per Mo.

Stripmines

	<u>Labor</u>	<u>Supplies</u>	<u>Fixed Charges</u>	<u>Production Cost</u>
13.0-Day Basis	.4024	.2973	.3840	1.0837
15.3-Day Basis	<u>.5557</u>	<u>.2737</u>	<u>.3424</u>	<u>.9748</u>
Increase due to 2.3 Fewer Working Days	.0467	.0206	.0416	.1089
5-month, 15.3 Day Costs (1)	<u>.3575</u>	<u>.2596</u>	<u>.3512</u>	<u>.9483</u>
Projected 5-month costs on 13-Day Basis	.4042	.2802	.3728	1.0572
10-month costs on 13- Day Basis	<u>.4735</u>	<u>.3593</u>	<u>.3474</u>	<u>1.1852</u>
Increase of 10-month Period (2)	.0743	.0791	.0254 (*)	.1280

(*) Decrease (1) See preceding table (2) Attributable to other factors than fewer working days

From the above projection, which furnishes a rough approximation of the costs in the 5-month period had the average number of working days been 13.0 instead of 15.3, it appears that the production cost increased about 13 cents and consequently attributes about 11 cents to 2.3 fewer days worked. On the same basis about 5 cents increase in labor costs are attributed to fewer working days and 2 cents to the fewer hours per day. Although no data are available for projecting selling and administration expenses per ton in a fewer number of days, it is certain that there are some fixed costs in these categories that become less per ton as the total tonnage increases. It is probable that had the miners worked an average of 13 days in the 5-month period instead of 15.3 days the selling and administration expenses would have been around 17 cents per ton instead of 15 cents as actually reported. Based on this assumption the total average costs for the 5-month period would have been \$1.23 per ton as compared with \$1.38 in the 10-month period, an increase of about 15 cents per ton, and the percentage that each element would have borne to the total would have provided the following comparisons.

	<u>5-Month Period</u>	<u>10-Month Period</u>
Per Cent of Labor to Total	32.94	34.73
Per Cent of Supplies to Total	32.83	26.08
Per Cent of Fixed Charges to Total	30.58	25.21
Per Cent of Production to Total	86.15	86.02
Per Cent of Selling & Administration to Total	13.85	13.98

With an equal number of working days and a relatively uniform daily average output per mine, labor costs increased, due principally to the higher hourly rate, about 7 cents per ton in November 1934 over November 1933, and at the same time because a more significant constituent of total costs. It is significant to observe, at this point, that labor costs constitute a greater proportion of total costs in deep mines than in strip mine operations, due to the relatively greater use of machine, such as steam shovels, in the latter type of mine. (For detailed discussion of relative importance of cost items, see Section D of this chapter).

Costs for single months, however, are subject to variations that are local to short periods. The following data for seasonally comparable periods of 3 months, projected to equal working time, avoids some of these difficulties and may, therefore, be considered as a truer measure of the representative increase in production costs under the 7-hour day over those of the 8-hour day period.

Indiana Subdivision of Division II

Strip Mines

<u>Month</u>	<u>Average Number of Days Worked</u>	<u>Average Production Costs</u>	
		<u>Projected Nov. 1933-Jan. 1934</u>	<u>Actual Nov. 1934-Jan. 1935</u>
November	14.3	\$1.0061 (*)	\$1.1046
December	17.7	.8941	1.0008
January	17.8	.3221	1.0862
Total 3 Months	49.8	\$.9034	\$1.0617

(*) Actual

These data attribute nearly 16 cents per ton as the average increase in production costs during the 7-hour day period over the production costs under the 8-hour day.

From the following frequency tabulation of mines operating at 10-cent cost intervals, it is observed that over half of the tonnage reported in both November 1933 and November 1934 was mined at a total cost of less than \$1.10 per ton.

November 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
\$.80 - 1.10	6	55.2	2,714	14.6	\$ 1.007
1.10 - 1.20	4	21.8	1,537	15.3	1.120
1.20 - 1.30	2	5.2	930	12.0	1.257
1.30 - 1.40	2	6.5	642	21.9	1.331
1.40 - 1.70	5	3.5	435	11.6	1.518
1.90 - 2.00	2	5.1	1,063	10.2	1.976
2.10 - 2.50	2	2.7	534	10.3	2.219
Totals	21	100.0	1,435	14.3	1.169

November 1934

\$.80 - 1.00	2	23.8	3,326	15.3	\$.926
1.00 - 1.10	3	26.2	2,121	15.6	1.046
1.20 - 1.40	3	14.5	1,292	14.2	1.239
1.40 - 1.60	4	16.6	1,142	13.8	1.457
1.70 - 1.80	2	5.1	860	11.3	1.754
1.80 - 2.00	2	6.9	606	21.7	1.900
2.20 - 2.40	2	3.9	1,036	6.8	2.296
Totals	18	100.0	1,475	14.3	1.261

11. Illinois Subdivision of Division II. (In 1934 this Subdivision produced 11.41 per cent of the U. S. total, according to the U. S. Bureau of Mines preliminary estimate.) (*)

Deep and Strip Mines. An average of 114 deep and strip mines reported total costs for the 5-months' period November 1933 through March 1934. During this period the mines worked 8 hours per day and an average of 16.5 days per month with costs averaging \$1.369 per ton. For the succeeding 10 months, during which an average of 103 mines reported, the average total cost increased to \$1.553 per ton. During this later period the miners worked only 7 hours per day and an average of 14.6 days per month. This increase in total cost may be the net result of several new factors operating in the second period with different effects, among which were: (1) a larger representative of the higher-cost deep mines in the first period (88 per cent and 85 per cent respectively) producing a smaller output per day, (2) a larger representation of high-cost off-peak seasonal operations, (3) smaller monthly

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935

output per mine which tends to increase the fixed charges per ton, and (4) an increase in the wage rate per ton. The following tabulation presents the salient data with regard to costs and the factors effecting them for the two periods.

Illinois Subdivision of Division II

Average Costs - Deep and Strip Mines

	<u>5-month, 8-hour-day period</u>		<u>10-month, 7-hour-day period</u>	
	<u>Costs per</u>	<u>Per Cent of</u>	<u>Costs per</u>	<u>Per Cent of</u>
	<u>Ton</u>	<u>Total Cost</u>	<u>Ton</u>	<u>Total Cost</u>
Mine Labor	\$.7754	56.63	\$.8663	55.78
Mine Supplies	.2383	17.45	.2793	17.98
Misc. & Fixed				
Charges	.2136	15.97	.2362	11.31
Production Cost	\$1.2328	90.05	\$1.3813	88.97
Selling & Adminis-				
tration	.1362	9.95	.1713	11.03
Total Cost	\$1.3690	100.00	\$1.5531	100.00

Average Days Worked				
Per Mine	16.5		14.6	
Average No. of Mines				
Reporting	114		103	
Average Daily Production				
per Mine	1,746		1,746	
Per Cent of Deep Mine				
Production	83.8		81.7	

The mines included in these two periods represent quite different samples of the industry in this Subdivision, the average number of mines reporting in the first period being 114 with an average number of days worked per month of 16.5 while in the second period 103 mines reported an average of 14.6 days per month. The daily rate of production per mine was the same for both samples. The average costs per ton in the second period were generally higher than those in the first; labor costs about 9 cents, supplies about 4 cents, fixed charges 3 cents, making a total of 15 cents per ton increase in production costs. Selling and administrative costs increase about 3.5 cents, making total costs approximately 18½ cents per ton higher during the 7-hour per day than in the earlier 8-hour per day period.

The following data show the average production costs of both deep and strip operations for seasonally comparable 5-month periods during which the mines operated 8 hours per day and 7 hours per day, respectively. The costs have been projected to equal working days per month and are as representative of the effective average production costs as are obtainable.

Illinois Subdivision of Division IIDecember Strip Lines

Month	Average Number of Days Worked	Average Production Costs	
		Projected Nov. 1934-Jan. 1935	Actual Nov. 1934-Jan. 1935
November	15.4	\$ 1.2533	\$ 1.4133
December	19.5	1.1957	1.3354
January	20.5	1.1774	1.3218
Total 3 Months	55.4	\$ 1.2041	\$ 1.3505

About 14.6 cents per ton are expected to have been the average increase in production costs of the 7-hour per day period over those of the 8-hour per day period.

A frequency distribution of the total costs per ton for two months is presented in the following tabulation:

Illinois Subdivision of Division II

Frequency Distribution of Total Costs—Deep and Strip Mines

December 1933

<u>Costs per Ton Under</u>	<u>Number of Mines</u>	<u>Per Cent of Total Production</u>	<u>Average Daily Output per Mine</u>	<u>Average No. of Tipple Starts</u>	<u>Average Total Cost per Ton</u>
\$.70 - .90	4	3.5	1,536	13.9	\$.803
.90 -1.00	3	2.4	1,473	13.0	.980
1.00 -1.10	6	6.0	1,526	21.7	1.066
1.10 -1.20	10	12.1	2,173	13.3	1.143
1.20 -1.30	15	9.9	1,301	16.7	1.232
1.30 -1.40	18	13.1	1,712	19.4	1.338
1.40 -1.50	19	14.4	1,527	16.4	1.454
1.50 -1.60	15	16.9	2,739	13.6	1.532
1.60 -1.70	15	8.2	1,217	14.8	1.632
1.70 -1.80	3	4.6	1,026	13.3	1.761
1.80 -2.00	7	1.0	309	11.8	1.891
2.00 -2.10	5	1.8	555	21.9	2.039
2.30 - over 2.50	4	1.1	907	9.0	2.639
Totals	125	100.0	1,582	16.7	1.336

December 1934

\$.90 -1.10	3	3.6	2,431	19.0	\$.964
1.10 -1.20	3	11.3	2,587	21.1	1.159
1.20 -1.30	11	10.5	1,616	22.8	1.245
1.30 -1.40	16	13.7	1,633	19.6	1.352
1.40 -1.50	10	18.9	2,097	13.3	1.445
1.50 -1.60	17	12.7	1,339	20.6	1.549
1.60 -1.70	3	7.0	1,935	17.5	1.639
1.70 -1.80	18	13.6	1,498	19.5	1.735
1.80 -1.90	4	1.5	650	22.3	1.855
1.90 -2.00	6	3.3	1,391	15.1	1.921
2.00 -2.10	2	0.3	304	14.4	2.072
2.10 -2.20	2	1.4	1,114	24.6	2.154
2.20 -2.40	3	1.2	1,028	15.1	2.259
2.50 and over	5	1.0	351	22.2	2.765
Totals	122	100.0	1,619	19.5	1.435

This exhibit shows that over half of the tonnage in December 1933 was produced and sold at an average total cost of less than \$1.40 per ton; in December 1934 a like proportion of the coal produced had a total cost up to nearly \$1.50. The distribution of large daily producers shows no particular tendency to center around the low cost brackets in either of the two months for which data are above presented - there does seem to be some evidence that the highest cost mines were low in daily output, especially in December 1933.

Deep Mines. During the initial 5-month, 8-hour-day period beginning November 1933, an average of 100 deep mines reported an average of 16.5 days per month at an average output of 1,672 tons per day. In the succeeding 10 months during which the 7-hour day was in effect, an average of 88 deep mines reported working time of 14.3 days per month and an average daily output of 1,710 tons. The average per ton cost data for these periods are tabulated in the following table.

Illinois Subdivision of Division II

Average Costs - Deep Mines

	5-month, Costs per Ton	8-hour-day period Per Cent of Total Cost	10-month, Costs per Ton	7-hour-day period Per Cent of Total Cost
Mine Labor	\$.8583	60.22	\$.9632	59.51
Mine Supplies	.2339	16.41	.2689	16.62
Misc. & Fixed Charges	.2018	14.16	.2197	13.57
Production Cost	\$1.2940	90.79	\$1.4518	89.70
Selling & Adminis- tration	.1312	9.21	.1666	10.30
Total Cost	\$1.4252	100.00	\$1,6184	100.00
<hr/>				
Average Days Worked				
Per Mine		16.5		14.3
Average No. of Mines				
Reporting		100.0		88
Average Daily Production				
Per Mine		1,672		1,710
Per Cent of Total Pro- duction		83.8		81.7

From these data it appears that the average production cost per ton increased about 16 cents in the later period over the earlier. Labor costs averaged about 10 cents higher, mine supplies about 3½ cents higher, and fixed production costs about 2 cents, making up the total increase in production costs of nearly 16 cents per ton; to this should

be added about 3¹/₂ cents per ton increase in selling and administration cost, making a total increase of nearly 19¹/₂ cents per ton in the cost of producing and selling coal under the 7-hour day over that of the 8-hour day period. These costs, however, were reported by quite different samples of the industry and under quite different seasonal conditions. As pointed out above, 100 mines reported in the earlier period while only 88 reported in the later one, their average daily production was not comparable, and the mines worked, on the average over two days less in the second than in the first period. Some of these variations in the samples may be partly overcome by selecting certain months or periods of like seasonal characteristics and by projecting costs to the basis of an equal number of working days for the periods to be compared. It must be emphasized, however, that those adjustments only roughly approximate comparability in certain particulars and may introduce new factors making for incomparability in other particulars. Assuming that variations in the costs for different numbers of working days in November 1933 are characteristic of like variations in costs for the entire 5-month period November 1933 - March 1934, the following tabulation shows the increases in production costs of the 7-hour-day period over that of the 8-hour-day.

Illinois Subdivision of Division II
Projection of Production Costs in 5-month Period from
16.5 Days per Month to 14.6 Days

	<u>Deep Mines</u>			
	<u>Labor</u>	<u>Supplies</u>	<u>Fixed Charges</u>	<u>Production Cost</u>
Costs on 14.6 day basis (Nov., 1933)	\$.8670	\$.2680	\$.2211	\$ 1.3561
Costs on 16.5 day basis (Nov. 1933)	.8472	.2613	.2077	1.3162
Increase due to 1.9 fewer days	.0198	.0067	.0134	.0399
Add. costs on 16.5 day basis (1)	.3523	.2339	.2018	1.2940
Projected costs on 14.6 day basis (5 months)	\$.8781	\$.2406	\$.2150	\$ 1.3339
Costs on 14.6 day basis (10 months)	.9632	.2689	.2127	1.4518
Increase of 10-month period over 5-month (2)	\$.0851	\$.0283	\$.0045	\$.1179

(1) See preceding table.

(2) Attributable to other factors than fewer working days.

The above calculations would seem to attribute about $\frac{1}{2}$ of the 16 cent increase in production cost to other factors than fewer working days, and about 13 cents of the increase to other factors.

Further illumination on the costs as reported on deep mines for these periods may be had from analyses of costs reported in seasonally comparable months in these two periods.

It is doubtful whether the influence of usually higher-cost summer operations can be even approximately segregated by comparing the costs of particular months of the two periods which are seasonally comparable. Too many other factors, such as poor mining conditions within the mines, etc., may be introduced in any one month which tend to become diffused when spread over a longer period. Only by close scrutiny of average costs in combinations over several months and in separate similar months adjusted as well as may be for factors that are not comparable, together with frequency distributions of the costs in small cost intervals, can an appreciation be had of the effect of cost changes in the two periods before and after Amendment No. 1 became effective.

A comparison of production costs on the basis of equal number of working days for 3 months of the 5-month, 8-hour-day period with those for the 3 corresponding months under the 7-hour period follows:

Illinois Subdivision of Division II

Deep Mines

Month	Average Number of Days Worked	Average Production Cost	
		Projected Nov. 1933-Jan. 1934	Actual Nov. 1934-Jan. 1935
November	15.0	\$1.3415	\$1.4779
December	19.4	1.2620	1.3869
January	20.3	1.2491	1.3739
Total 3 Months	54.7	\$1.2777	\$1.4061

These data would seem to justify the conclusion that the increase in comparable production costs of deep mine operations during the 7-hour day period over those of the 8-hour day period were almost 13 cents per ton.

The following frequency distribution of average total costs for December 1933 and December 1934 is given to complement the tabulation of average costs:

Illinois Subdivision of Division II

Frequency Distribution of Total Costs - Deep Mines

December 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipples Starts	Average Total Cost per Ton
\$.80 - 1.00	3	1.9	829	21.4	\$.944
1.00 - 1.10	5	5.9	1,496	22.1	1.063
1.10 - 1.20	6	8.3	1,578	20.4	1.165
1.20 - 1.30	12	9.4	1,226	17.8	1.227
1.30 - 1.40	17	13.5	1,616	18.7	1.344
1.40 - 1.50	18	16.2	1,483	16.8	1.453
1.50 - 1.60	15	20.1	2,739	13.6	1.532
1.60 - 1.70	15	9.7	1,217	14.8	1.632
1.70 - 1.80	8	5.4	1,026	18.3	1.761
1.80 - 2.00	3	1.1	899	11.8	1.891
2.00 - 2.10	5	2.2	555	21.9	2.039
2.30 - over 2.50	4	1.3	997	9.0	2.688
Totals	111	100.0	1,506	16.6	\$1.439

December 1934

\$1.10 - 1.20	5	8.8	2,716	21.0	\$1.165
1.20 - 1.30	9	9.9	1,580	22.3	1.247
1.30 - 1.40	13	12.1	1,534	19.7	1.350
1.40 - 1.50	17	20.3	2,140	18.2	1.443
1.50 - 1.60	17	15.0	1,399	20.6	1.549
1.60 - 1.70	8	8.3	1,935	17.5	1.639
1.70 - 1.80	17	15.2	1,515	19.3	1.735
1.80 - 1.90	4	1.8	650	22.3	1.855
1.90 - 2.00	6	3.9	1,391	15.1	1.921
2.00 - 2.10	2	0.4	392	14.4	2.072
2.10 - 2.20	2	1.7	1,114	24.6	2.154
2.20 - 2.40	3	1.4	1,028	15.1	2.259
2.50 and over	7	1.2	351	22.2	2.765
Totals	108	100.0	1,555	19.4	1.532

From this table it is to be observed that nearly half (44%) of the December 1933 tonnage was produced and sold at a total cost of less than \$1.40 per ton, while in December 1934 only 30 per cent of the tonnage was produced and sold within that cost. The entire range of costs extended from 30 cents to over \$2.50 per ton in December 1933 and in December 1934 from \$1.10 to over \$2.50 per ton. The largest group, in terms of tonnage, was produced at an average of \$1.532 in December 1933 and at \$1.443 in December 1934.

Strip Mines. During the 5-month period from November 1933 through March 1934, in which the 8-hour day was in effect, an average of 14 mines, working 16.9 days per month produced an average of 2,261 tons per month; in the succeeding 10 months, working 7 hours per day and an average of 16 days per month, 15 mines reported an average production of 2,000 tons per day. The following tabulation presents pertinent average cost and operating data for these two periods:

Illinois Subdivision of Division II

Average Costs - Strip Mines

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Mine Labor	\$.3463	32.11	\$.4332	34.36
Mine Supplies	.2642	24.50	.3256	25.82
Misc. & Fixed Charges	.3057	28.35	.3099	24.57
Production Cost	\$.9162	84.96	1,0687	84.75
Selling & Administration	.1622	15.04	.1922	15.25
Total Cost	\$1.0784	100.00	\$1,2609	100.00
Average Days Worked per Mine	16.9		16.0	
Average No. of Mines Reporting	14		15	
Average Daily Production per Mine	2,261		2,000	
Per Cent of Total Production	16.2		18.3	

These data, which are fairly comparable as to working days per month and as to number of mines reporting, show rather marked increases in the several items of cost per ton. Labor cost, for example, shows an increase of more than $8\frac{1}{2}$ cents per ton under the 7-hour day over the 8-hour day costs, over 6 cents more per ton for supplies, and less than half a cent increase in fixed production costs. These increases aggregate over 15 cents increased production costs, to which were added 3 cents increase in selling and administration costs, making total average costs $18\frac{1}{4}$ higher in the second than in the first period. Much of this, of course, was due to the shorter working day - some of it can undoubtedly be attributed to slightly fewer working days per month, some to conditions lessening the average daily output per mine, a portion to the off-season production in the latter period, while the effect of a different group of reporting mines cannot be estimated. The constituent elements of cost changed very little in their relation to the total cost.

Attention is called to the relatively small proportion of labor to total cost in strip mining as compared with deep mine operations. Here we find labor constituting a little over 30 per cent of total cost while in deep mines this item generally averages 60 per cent or more. The data presented in this table lack comparability as to average number of days worked per month.

The following tabulation shows the average production costs of strip mine operations during 3 corresponding months in the 8-hour and the 7-hour day periods. Besides being seasonally comparable, the data for November 1934-January 1935 have been projected to the same average number of working days as were reported in the November 1933-January 1934 period.

Illinois Subdivision of Division II

Strip Mines

Month	Average Number of Days Worked	Average Production Cost	
		Projected Nov.1933-Jan.1934	Actual Nov.1934- Jan.1935
November	17.5	\$.8837	\$1.1016
December	20.3	.8494	1.0426
January	21.7	.8141	1.0332
Total 3 Months	59.5	\$.8468	\$1.0564

These data indicate that during the 7-hour day period the production costs of strip mines increased nearly 21 cents over the costs reported during the 8-hour per day period. This is perhaps the best measure of the increase in operating costs that is available.

The following frequency distribution of mines and production at 10-cent cost intervals is made from average costs unadjusted for differing days worked per month.

Illinois Subdivision of Division II

Frequency Distribution of Total Costs - Strip Mines

December 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
\$.70 - .90	2	18.5	2,482	19.3	\$.792
.90 - 1.10	3	15.6	1,659	16.8	1.013
1.10 - 1.20	4	32.3	2,615	16.0	1.113
1.20 - 1.30	3	12.5	1,600	13.5	1.254
1.30 - 1.50	2	21.1	2,826	19.3	1.340
Totals	14	100.0	2,191	16.9	\$1.103

December 1934

<u>\$.90 - 1.10</u>	3	23.0	2,451	10.0	\$.964
1.10 - 1.20	3	25.1	2,372	21.2	1.148
1.20 - 1.30	2	13.5	1,779	22.8	1.239
1.30 - 1.40	3	22.3	2,330	19.2	1.360
<u>1.40 - 1.80</u>	3	16.1	1,556	20.7	1.552
Totals	14	100.0	2,116	20.3	\$1.230

From the above it is to be observed that 66.4 per cent of the December 1933 output of strip mines in Illinois was produced at a total cost of less than \$1.20 per ton, while in December 1934, 61.6 per cent of the total output was at a total cost up to \$1.20 per ton. This indicates that the principal increase in average total cost for the Subdivision occurred among the higher cost mines.

12. Iowa Subdivision of Division II. (In 1934 Iowa produced .93 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

Cost data for this Subdivision were not completely reported throughout the period of the operation of the M.R.A. Code, and for that reason Iowa is not included in the data heretofore presented in this chapter under the caption Division II. Statistics, sufficiently comprehensive for publication, were received for deep and for strip mines in November 1933 and for deep mines in December 1933. Average costs for these periods are tabulated on the following page.

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935

Iowa Subdivision of Division II

Average Costs per Ton

	November 1933				December 1933			
	Deep and Strip		Strip		Deep		Deep	
	Costs	Per Cent of Total	Costs	Per Cent of Total	Costs	Per Cent of Total	Costs	Per Cent of Total
Mine Labor	\$1.4650	35.34	.9348	46.10	\$1.5161	67.56	\$1.4473	68.53
Mine Supplies	.2607	11.72	.4710	23.23	.2404	10.71	.2267	10.73
Misc. & Fixed Charges	.3578	15.18	.4446	21.93	.3275	14.59	.2944	13.94
Prod. Cost	\$2.0635	92.73	1.8504	91.26	\$2.0840	92.86	\$1.9684	93.20
Selling & Administration	.1617	7.27	.1772	8.74	.1602	7.14	.1436	6.80
Total Cost	\$2.2252	100.00	\$2.0276	100.00	\$2.2442	100.00	\$2.1120	100.00

No. of Mines Reporting	28	3	25	25
Average Days Worked	15.4	8.4	16.1	18.0
Average Mines ¹				
Daily Production	463	698	453	476

All of these data are based on 8-hour day operations, no reports being tabulated for operations under the 7-hour day. It is of importance to note that labor costs under strip mine operations constitute a somewhat larger proportion of total costs in Iowa than in either Indiana or Illinois. Both production and total costs run higher as a rule in Iowa, partly because of more difficult mining conditions and partly because of the smaller size of typical operations.

13. Subdivisions of Division III. Division III was not subdivided for Code Administration purposes, consequently no discussion of Sub-divisional statistics is here presented. A discussion of the costs of this Division is made earlier in this chapter.

14. Southwestern Subdivision of Division IV. (In 1934 this Sub-division produced 1.62 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals mined in this Subdivision are of bituminous rank, a large proportion of which are recovered by strip-mine operations; in fact this section has been a pioneer in the development of large scale strip

(*) U.S. Bureau of Mines W.C.R. 919, February 13, 1935

mining methods and equipment. About two-thirds of all the coal produced in Division IV come from this Subdivision. Table 82 shows the average costs reported for this Subdivision during the 5 months beginning November 1933. An average of 44 mines reported working time of only 14 days per month during this period, and an average production of about 640 tons per day. The production costs, in these 5 months, ranged from an average of \$1.3757 per ton to \$1.4684, averaging \$1.4271 for the entire period. Total costs averaged \$1.6433 per ton for the 5-month period.

15. Arkansas and Eastern Oklahoma Subdivision of Division IV.

(In 1934 this Subdivision produced .63 per cent of the U.S. total according to the preliminary estimate of the U.S. Bureau of Mines.) (*)

The coals of this Subdivision are generally of a higher grade than those mined in the other sections of Division IV. Most of the coal is of bituminous rank, although some from the eastern portion is of a semi-bituminous rank. Deep mining is the principal type of operations and the daily output per mine averaged about 352 tons for the months from November 1933 through February 1934. An average of 18 mines reported about 8½ working days per month for this period, and their average production costs ranged from \$2.4175 per ton in February 1934 to \$2.7939 in November 1933, an average of \$2.5018 for the 4 months. Total costs averaged \$2.9063 per ton for the period. Table 91 presents pertinent cost and operating data for this Subdivision.

16. Northern Wyoming District of Division V. (In 1934 this District produced .22 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (**)

The coals mined in this District range from low-rank sub-bituminous to high-rank bituminous. Reports from only 4 or 5 mines were received by U.R.A. for the 5 months of November and December 1933 and January, February, and March 1934, they reported an average of as few as 9.8 working days in March and a high of 16.8 days in November - an average of about 12 days per month for the period. The average daily output per mine for the period was slightly less than 1,000 tons at an average production cost of \$1.3362, and a total cost of \$1.5392 per ton. This State is reported to contain the greatest unmined tonnage of any state in the Union, the seams running as high as 90 feet in thickness. Cost and other operating data for the commercial mines in this District are given in Table 97, appended to this Chapter.

17. Southern Wyoming District of Division V. (In 1934 this District produced .99 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (***)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

(**) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

(***) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

The coal in this District ranges from sub-bituminous to high grade bituminous, but much of it has been under such heavy cover that its future commercial development is doubtful. The seams range in thickness from less than 2 feet in the Rock Springs Field to 34 feet in the Hanna Field. During the last two months of 1933 and the first two months of 1934, 10 mines reported to M.R.A. an average of 14.4 working days per month and a daily production of about 700 tons per mine. This production cost per ton as reported averaged \$1.81 and the total cost \$2.05, of which labor constituted about 50 per cent. Operating data for this District may be found in Table 98.

18. Montana District of Division V. (In 1934 this District produced .75 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals in this District range from lignite to semi-anthracite. The poorer grades are found mostly in the Great Plains Areas while the better grades are in or near the mountains. Because of the great irregularity in the coal bearing strata many small individual coal fields exist, and the mining costs are high. Most of the mines are captive and much of the coal is used for railroad fuel. Commercial mines, for the most part, serve local markets and are in competition with natural gas. Operating data and costs for commercial mines are exhibited in Table 99, appended to this chapter. These data are from five or six mines which reported an average of 11 working days per month for the 5 months beginning November 1933. Their production costs range from \$1.56 in December 1933 to \$1.85 in March 1934, with an average of \$1.65 per ton for the period. Total costs averaged \$1.91 for the same period. Four mines reported for April 1934 while operating under the 7-hour per day schedule. No appreciable change in costs can be detected because of this change in working time. The basic day rates remained unchanged, but hourly rates were adjusted. Labor cost, nevertheless, constituted a smaller proportion of total costs than in the preceding month under an 8-hour day.

19. Central New Mexico District of Division V. (In 1934 this District produced .16 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals in this District rank from sub-bituminous to anthracite, but the seams are discontinuous and thick partings are frequent. The production costs in this District are high, for the 6 months beginning November 1933, compared to those reported by other Code areas. Labor costs increased 21 cents per ton in April 1934, over the previous 5 months' average, but averaged about the same as they were for March in spite of the fact that wage rates increased and the 7-hour day was substituted for the 8-hour day. Production costs and total costs, however, were higher after the Amendment became effective, due principally to increases in Fixed Charges and Selling and Administrative costs. Table 100 shows the per ton costs and other operating data for this District from November 1933 through April 1934.

20. Utah District of Division V. (In 1934 this District produced .67 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

Most of the coal mined in this District is of bituminous and sub-bituminous rank, and is suitable for railroad, industrial and domestic use. Reports were received for 5 months under the 8-hour day schedule and for April 1934, the first month during which the 7-hour day was in effect. No change in day rates of pay were authorized in Amendment No. 1 for this District. No appreciable increase in costs can be detected, but the reporting mines numbered only 9 in April as against an average of 16 mines for the 5 months beginning November 1933. Production cost for the 5-month period varied from an average of \$1.73 in December 1933 to \$2.11 in February 1934, with an average of \$1.82 $\frac{1}{2}$ for the period. Table 101 summarizes the cost and operating data received for months of November 1933 through April 1934.

21. Washington District of Division V. (In 1934 this District produced .39 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The commercially mined coals in this District are for the most part bituminous or sub-bituminous in rank. Most of the active operations are in the central portion of the state west of the Cascades. The coals from this District compete in the domestic market with wood and "hog-fuel" while in the industrial market electric power is an important competitor. Wage rates paid under the Code were among the highest in the country and were not changed in Amendment No. 1 except as the fewer hours per day correspondingly increased hourly rates. Labor costs constituted over 60 per cent of the total costs in contrast to around 50 per cent in other Districts of this Division. Pertinent cost and other operating data for the 6 months beginning November 1933 may be found in Table 102.

22. North Dakota Strip Lines District of Division V. (In 1934 this District produced .49 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

All of the coal mined in this District ranks as lignite. The seams range from a few inches to 40 feet in thickness; they vary greatly and may either thin out and disappear or thicken and be split into several beds by clay seams and partings. These lignites as mined contain a high percentage of moisture which if evaporated too rapidly causes the fuel to disintegrate or slack into fine sizes. The market must of necessity be largely local in character because of the unstable composition of the coal. Characteristic of striping operations, the average production cost in this District for the 4-month period beginning November 1933 is very low, ranging from \$.78 in January, 1934 to \$.91 in November 1933, an average of \$.83 for the 4 months. Selling and Administrative costs averaged about \$.16, making an average total cost of \$.99. Only 6 mines reported in each of the 4 months; their average working time was nearly 20 days per months and the average daily output was 1,046 tons per mine. Cost and operating data for this Division are found in Table 103.

23. Northern Colorado District of Division V. (In 1934 this District produced .64 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

This field is known as the Northern Colorado "Lignite" field. The coals produced are for the most part of bituminous and sub-bituminous ranks. Denver, Boulder, and other local consuming areas constitute the principal markets outside of railroad fuel. Production costs during the 5 months prior to the adoption of Amendment No. 1 averaged \$1.38 $\frac{1}{2}$ and the costs for individual months showed little variation from this average. During this period an average of 30 mines reported average working time of almost 21 days per month at a daily rate of 551 tons per mine. During the succeeding 3 months an average of about one-half this number of mines reported about 15 days worked per month. Their costs ran considerably higher, ranging from \$1.94 per ton to \$2.17. Among the items of cost that increased were labor (from \$1.12 to around \$1.37 per ton), Fixed charges (from \$.33 to about \$.40 per ton), and Selling and Administration (from \$.17 to over \$.30 per ton). Some of these increases are undoubtedly due to the higher wage rate per day that became effective with the adoption of Amendment No. 1, some to generally higher prices of supplies and a portion at least may be the result of a materially different sample of reporting mines and the fewer days worked per month. Cost and other operating data for this District may be found in Table 104.

24. Southern Colorado District of Division V. (In 1934 this Division produced .99 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

In this District are found coals ranking from anthracite to sub-bituminous; most of the coal, however, is of bituminous rank. The markets for these coals are mostly local, although the anthracite from the Crested Butte field is marketed over a wide area. Much of the coal is used for railroad fuel. The mines in this District made sufficiently complete reports to N.R.A. for publication for only 4 months' operations during the 8-hour day period. The production cost for this period averaged \$2.12 $\frac{1}{2}$ cents per ton, \$1.30 of which was mine labor. No data were reported while operating under Amendment No. 1 when the day-rates of pay were considerably increased. From 26 to 36 mines (average 33) reported an average of 10.6 working days per month for the 4 months at an average daily production of about 641 tons per mine. Other relevant cost and operating data for this District are found in Table 105.

G. Cost Increases Recapitulated.

There are shown in the opening section of this chapter estimated increases in cost brought about by the effectuation of the Code beginning October 2, 1933. The 7-hour day and 35-hour week, with the accompanying increases in wage scales under Amendment 1, effected another upswing in costs, which have been estimated throughout the preceding discussion for each Subdivision, after removing the seasonality or working-day factor.

These estimated increases may be summarized and averaged as follows on a basis which removes the unequal weighting due to various percentages of representation among the cost reports received from the different Subdivisions (see Section B of this chapter for detailed showing of these percentages of representation). To accomplish the weighting for this purpose, the increases in cost have been applied to the total commercial

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.

production of each Subdivision as reported by the Bureau of Mines and the Division averages weighted thereon. Divisions IV and V cannot be treated in this manner because their reporting did not continue beyond the first four or five months of the Code period.

Bituminous Coal. Minimum Increase in Cost Under N.R.A. Code, in 5 Months of the 8-Hour Day Period, November 1933 - March 1934; in the 10 Months of the 7-Hour Day Period April 1934 - January 1935; and Total Increase, estimated from Cost Reports covering these Months.

	Estimated Increase in Cost			Commercial Production 3/	
	8-Hour Day 7-Hour Day Total Period; Period Increase Dec. over over Under May 1933 8-Hour Day Code something Period, something more than about more than	1/ (1)	(2)	5 Mos. 10 Mos. Nov. April 1933- 1934 March Jan. 1934 1935	(5)
			Col. 1 Col. 2	Thousands of Tons	
Eastern Pennsylvania	.264	.290	.554	14,521	24,134
Western Pennsylvania	.379	.250	.629	16,813	30,687
Ohio	.305	.205	.510	8,983	14,214
Pennhandle	5/	.142	5/	1,582	2,690
Michigan	5/	5/	5/	535	473
Northern West Virginia	.293	.280	.573	2,692	12,953
DIVISION I - NORTH	.316 2/	.255 2/	.571 2/	50,931	84,606
Southern Subdiv. No. 1	5/	.290	5/	17,836	33,639
Southern Subdiv. No. 2	.322	.240	.568	27,139	54,111
Maryland & Upper Pot.	.434	.290	.724	1,242	1,927
DIVISION I - SOUTH	.333 3/	.260 3/	.593 3/	46,223	89,727
TOTAL DIVISION I	.322	.258	.580 3/	97,154	174,333
Indiana	-	.16	.16	7,613	11,725
Illinois	-	.174	.174	18,820	29,609
TOTAL DIVISION II	-	.170 4/	.170	26,433	41,424
TOTAL DIVISION III	.385	.350 6/	.733	3,262	4,701
GRAND TOTAL DIVISIONS I, II, III	5/	.243 7/	5/	126,849	220,458

1/ This is the increase in labor cost only; see Section A this chapter.

2/ Excluding those areas noted as "not available".

3/ Excluding Western Kentucky and those areas noted as "not available."

4/ Excluding Iowa. (Notes continued on following page)

This showing is inconclusive mainly due to lack of completeness in the basic measuring data for the first period. As to Division I, it is safe to say that the increase in costs during the 8-hour day period as compared, say with the first three quarters of 1933, averaged considerably more than the 32 cents shown, due to increases in other costs than labor; and by the same token the over-all increase for the entire Code period was probably at least 65 cents. There is no data available in M.R.A. for computing the right figure.

Division II generally experienced no increase directly due to wage scales and hours established by the Code in October 1933. The existing scale under contracts still in effect became the basic rates for Illinois and Indiana under the Code. The overall effect of the Code on costs in this Division is probably understated in the table, rather than overstated.

Division III costs showed almost 75 cents a ton increase during the Code period.

(Notes continued from preceding page.)

5/ Not available

6/ Cost figures in 7-hour day period cover 9 months April through December 1934.

7/ Excluding Western Kentucky, Iowa, and those areas marked "not available".

8/ From Bureau of Mines, total production minus production of 100% captive mines.

CHAPTER VI 1/

PRICES UNDER THE CODE

The stabilization of the bituminous coal industry contemplated under the Code was, to a large degree, dependent on the success of the price structure to be set up. This was clearly realized by operators and labor. One need only survey the downward trend of prices following 1923 for an explanation as to why price conditions were considered of vital importance.

Under the Code, the set-up for prices consisted of a detailed mechanism, largely experimental, since it was established upon short notice and with little precedent, and hence was subject to many changes. Records are not complete on all phases of its operation, and time prevents a thorough discussion of its detail. Therefore, part of the text may appear incomplete, though attempt is made to give a consecutive story of main events during the period of the Code. Because of the length of this section, the major parts are listed below in their proper order.

- A. Original Code Price Provisions.
- B. Administration of Prices.
- C. Factors in Bituminous Coal Prices.
- D. Establishment of Prices.
- E. The Price Structures.
- F. Problems in Price Control.
- G. The National Coal Board of Arbitration.
- H. Realization under the Code.
- I. Summary.

A. Original Code Price Provisions: Article VI contained the price and marketing provisions of the original Bituminous Coal Code. The general principles of price fixing were prescribed in Section I of Article VI, wherein it was stated that, "The selling of coal under a fair market price (necessary to carry out the purposes of the National Industrial Recovery Act, to pay the minimum rates herein established, and to furnish employment for labor) is hereby declared to be an unfair competitive practice and in violation of the Code"

No definite measures or standards were given in the Code as to what constituted a "fair market price", though the methods for establishing prices were given description. Section 2 of Article VI provided that minimum prices for the various grades and sizes may be established for future application by a marketing agency or agencies which are representative of at least two-thirds of the commercial tonnage of any coal district or groups of districts. Code Authorities were to exercise the power of establishing prices where no marketing agency existed. Marketing agencies were required to report their prices to the Code Authorities. In Section 4, it was said that the prices established should be published within 15 days after effective date of the Code, after approval by the proper Presidential Member, who in his approval might permit a reduction or increase in the prices within limits which he might specify. It was provided that prices be published when any changes were made

1/ Prepared by George A. Lamb.

therein, but not less frequently than once each month and on the first day of the month. Prices were to be submitted to the Administrator for his review and subsequent action.

By Section 5, Article VI, the records and data of marketing agencies, and of the Code Authorities, were open to inspection and investigation by any agent of the Administrator. Changes proposed by such an agent after his investigation were not to be effective until approved by the Administrator.

Sections 6 to 18, inclusive, defined unfair trade practices. Coal exported, outside of bunker fuel, was not included in the price and trade provisions.

In addition to the failure to set up standards for establishing fair market prices, it will be seen that the Code had no measure prescribing the manner in which joint action between Code Authorities was to be carried on, or as to how controversies between Code Authorities were to be handled. These three factors, particularly the joint action and settlement of controversies, became severe obstacles to the operation of the Code.

B. Administration of Prices: The original Code permitted marketing agencies to establish prices under rules and regulations of their respective Code authorities. Provision was made for the Code Authorities to establish prices for areas not represented by marketing agencies. Prices were to be approved by the Presidential Member before their publication, and also submitted to the Administrator for review and any further action. While prices originated generally with the marketing agencies, the price administrative machinery centered around the Code Authorities, with the Presidential Member and Administrator exercising review functions.

Each Code Authority had its own by-laws and these usually contained a detailed procedure in respect to prices. Specialized committees were set up, each with specified duties, such as on prices, on classification, and on marketing practices. Procedures were instituted for carrying on the work between marketing agencies and Code Authorities. Generally some provision was made for handling complaints made by Code Members on prices and classifications.

A weakness in the Code until January 1935 was in regard to relations between Code Authorities. As the Code was written, and as Code Authorities were quick to accept, prices and classifications were taken as intra-Code Authority matters. This placed a severe handicap on Code operations, and on several occasions threatened the entire Code set-up.

Division I had a Divisional Code Authority and 9 Subdivisional Code Authorities. The latter were in competition with one another in at least some markets and, as a result, disputes were bound to arise. Yet, the Code had no provision that treated such difficulties. The Divisional Code Authority, an agency that one would expect to act on controversies, was considered of secondary importance since its powers were conferred by Subdivisional Authorities, and thus it could do little

more than encourage coordination between Subdivisions. The same problem was true for other Divisions that had Subdivisions, except Division III where there were no Subdivisional Authorities. No better arrangement existed for proceedings or disputes between Divisions.

Neither did the Code make specific provisions so that the Administrator could deal effectively with Code Authority disputes. The Administrator and Presidential appointee had authority to approve or disapprove prices and practices, and the Presidential appointee could change prices within certain limits, but neither could initiate action as to settling controversies.

It was soon evident after prices were first established that some method had to be employed to smooth out the relations between Code Authorities. This resulted in committees being appointed by Code Authorities. For instance, Eastern Subdivision in its by-laws, made provision for handling inter-Code Authority disputes through a committee to be appointed by the Code Authorities, with decision by a two-thirds vote. Voluntary action of this kind was often unsuccessful since the committees, composed of members representing particular interests, found trouble in reaching a common understanding. Sometimes a committee of impartial members was set up, but such an agency, with no authority, often had its findings disregarded. One agency that had some degree of success in handling price controversies was the Joint Marketing Committee of Division I. This Committee, established in the spring of 1934, held formal meetings on price disputes, and in some cases reached a decision that was generally accepted. By the summer of 1934, the Joint Marketing Committee recognized it was unable to cope with all the price controversies, and it suggested that the Presidential Members of Division I meet as a board and render decisions to the Administrator on cases not settled by the Committee. (Letter to Administrator from Joint Marketing Committee, June 25, 1934.) The Committee and the Presidential Board of Review more or less worked together on the cases. The Board did not attain the success desired. In January 1935, the Code was amended (Amendment No. 6) to amplify the price sections and to provide for a National Coal Board of Arbitration.

C. Factors in Bituminous Coal Prices: Before entering into the actual Code prices and the problems connected therewith, it seems well to consider the various factors connected with the make-up of bituminous coal prices.

The Price Level

The physical supply of bituminous coal is unlimited for all practical purposes. In Chapter IV and elsewhere, the excess capacity of the industry has been given full description. In addition, there are several other noticeable characteristics that appear in connection with the production and disposal of coal. The coal industry has its product already existing, except for some possible preparation, and requires only mining and transportation to market. This is quite unlike other industries where the production activities include fabrication or processing. Because of this, coal can be sold "in the ground", i.e., before it is mined, and this is a customary practice. In other

industries, production is based often on anticipated sales. Coal is not stored at the mines, aside from resultant sizes that sometimes pile up; and is not sent to market to await a sale, unless one considers the relatively small amounts in the retail yards and at the docks. Neither is coal stored to any great extent by consumers, partly because of custom and partly because of costs, and again because users know their requirements can be obtained upon short notice. This is in contrast to many other commodities that are stored prior to sale. In summary, bituminous coal is an industry with an excessive capacity, with a product already existing, with production often based on sales already made, and with sales largely according to current needs.

The demand for coal is generally said to be inelastic. Several elements seem to support this contention. Bituminous coal in many cases is a necessity to the extent that other fuels cannot be easily substituted. Equipment installed to burn coal cannot be economically changed to oil and gas furnaces where the prices of the different fuels hold somewhat to past relationships. A second point favoring inelasticity is that the cost of coal is often only a small part of the consumer's production costs. Figures are not available to justify accurately this point, though some approximation may be obtained from the Fifteenth Census of the United States -- Manufactures, 1929, wherein it is shown that total "fuel and energy purchased" amounted to 2.6 per cent of the value of all manufactured products, and 5.9 per cent of value added to products. It is to be noted that "fuel and energy purchased" includes all kinds of fuel as well as energy so that the proportion of bituminous coal would be considerably less. If it can be assumed from the above that bituminous coal is but a small item in manufacturing costs, then it can be accepted that manufacturers will purchase coal as they need it since even a sizeable increase in price would change their costs but little. For other industries, bituminous coal represents a larger item in costs but, likewise, an important necessity. In 1929, coal purchased by Class I Railroads represented 6.7 per cent of their total railway operating expenses. (Statistics of Railways, 1929, I.C.C.) While a 15 or 20 per cent increase in coal prices would not affect railway operating expenses a great deal, even a larger increase would not convert all railroads to another fuel or energy because of the difficulties involved in such a substitution. Information is not complete regarding fuel substitution or the costs of fuel to total production costs, but it is apparent that these two factors influence the consumers' demand for bituminous coal and account for elasticity at least to some degree.

The effects of the various factors related to the sale of coal under conditions of free enterprise brings into consideration the history of the industry for the decade prior to the Code. With an unlimited tonnage available, the markets were potentially flooded with coal, causing the price to be determined by the interaction of factors on the supply side. This was a period in which the buyers could sit back and enjoy the cut-throat activity between producers. The object of producers was to outsell each other, and seek what economies they could so that costs would at least be covered. This meant a continual down pull on the price level and attempts to lower costs. Labor, the largest item in mining costs, and more flexible than others, was

pressured in the economy adjusting process, causing much disorder between labor and producer. (See testimony of Mr. Charles O'Neill before District Supreme Court, Carter Coal Case, Print p. 346-7.)

From 1923 to 1932, the trend of the price level was continually downward. The losses suffered by the industry during this period are indicated in Chapter I, showing that the economies effected were not sufficient to overcome the depressed price level. In other works, the level at which coal was actually sold was below the cost level.

An opposite condition will be found for earlier years. In 1920, a year of car shortage, the price level averaged \$3.75 per ton. Average monthly spot prices for this year advanced to a high of \$9.51 per ton, and instances occurred where individual prices were twice as high. See Chapter I. Experiences in high coal prices before 1923 offer much support to the inelastic nature often attributed to the demand for coal. It is to be recalled that before 1923, many outside influences, such as car shortages, war conditions and strikes, had much to do with coal prices, and it was not until after the disappearance of those influences that the factors of supply and marketing could show their full importance.

Particular Prices

The bituminous coal price problem becomes more complicated when the question of individual prices for sizes and kinds of coal are brought into consideration.

Much of the difficulty in respect to particular prices appears because the industry is largely one of joint costs. Coal is usually sold according to certain sizes but it cannot be mined by size with one exception, namely the "Mine Run" specification. Numerous sizes must be prepared by the industry to supply the requirements of the consumers. While the preparation of the coal is usually a simple process, the prices for the different sizes may vary a great deal. The joint nature of the product appears since none of the "sized" specifications can be produced without some resultant remaining. For instance 6" lump cannot be prepared without coal of lesser size resulting therefrom. This makes it impossible to allocate costs to the different kinds of preparation, and the importance given to each may vary greatly between producers.

Another complication is that what may be a resultant size to one mine may be a major product to another. Thus, a mine in one region may specialize in steam coal while a mine in another region may largely sell prepared sizes. The producer of steam coal naturally attempts to get rid of his resultant at any price, and in doing so he may directly compete with the producer of prepared sizes. An opposite situation will appear when the producer of prepared sizes attempts to sell his resultant.

Much price trouble has appeared because of the quantities of coals of particular districts. Coals may vary a great deal in make-up according to the districts where they are mined. The classification of

coals by rank starts with anthracite, and then continues through the different kinds of bituminous, the kinds of sub-bituminous; and the kinds of lignite. (See report of Sectional Committee on Classification of Coals, 37th Annual Meeting of American Society for Testing Materials, 1934.) But in addition, there are coals of numerous make-ups within each rank, and it is this variation that gives rise to complications in the market. Part of this coal variation may be determined by chemical analysis; that is, it is possible to measure moisture, sulphur, ash, fixed carbon, volatile matter, heat content and fusibility; elements that describe part of the qualities of a coal. The value of chemical analysis, of course, depends on how widely it is used, the extent to which producers accept the results of each other, and how well it is followed by consumers. Then, again, there are certain elements, such as friability, grindability, free burning, coking and caking which are related to the performance of a coal in its different uses. It is said these elements can be judged only through the experience of producers and consumers, and it is probably for that reason that they are often spoken of as intangible elements. With all these many variations existing in the character of coals, it is easy to see the complications that would arise in a common market when producers compete under terms of free enterprise.

Sales have often been made for the purpose of keeping mines in operation. It is claimed to be a better practice to run a mine by selling coal at some price as against leaving it idle and undergoing the costs of pumping together with certain overhead items. (See Testimony of Mr. Charles O'Neill, before District Supreme Court, Carter Coal Case, Print p. 347.) It is also probably true that producers have sold coal at a relatively low price rather than lose a customer. The policy of keeping a mine running regardless of price becomes of serious consequence in an industry like bituminous coal where an excess capacity prevails.

The peculiar nature of the factors related to coal prices furnish a key to the causes that depressed the industry after 1923. They clearly indicate the obstacles appearing in the marketing procedure, and suggest the handicaps of the industry in its attempts to operate under free enterprise. They point to the need of regulation in the industry but, at the same time, the complications connected with such regulation.

D. Establishment of Prices: The Code prescribed no definite standards as to how the original prices were to be established. Aside from the general provision that prices were to be fair and at the same time sufficient to carry out the purposes of the Act, Article VI 2 (c) specified that Code Authorities shall utilize the classification of coals as a basis for determining the fair market price. Classification was to be effected by marketing agencies except, in districts where agencies were not organized, the Code Authorities were instructed to classify the coals. The Code Authorities were also to classify coals not sold by marketing agencies of any district. In addition to these conditions, a fair market price and classification, the Code allowed consideration to be given to competitive fuels and energy in the determination of prices.

Although these price provisions on paper rather vague, their significance is apparent upon further consideration. In the first place, fair market price, one to carry out the intents of the Code, required that costs be covered and that protection be given against unlimited price cutting. To satisfy these conditions, the composite mine price would have to equal or exceed costs, meaning that both mine costs and sales realizations would have to be known. Also, a maximum price was necessary. In the second place, the classification rule instructed that price relationships be established for the coals of each district. This rule required that price differentials be set up for mines which would give measurement to variation in the quality of their coals.

Difficulties in Setting Up Initial Prices: The obstacles faced in the early price procedure are easily realized when it is recalled that little data were available on the subject. Uniform cost accounting had not been followed by operators, and the records available lacked uniformity and completeness. Data on costs and prices, particularly the latter, had been considered a private matter and were held as confidential. When the Code became effective, Article VII, Section 3 permitted Code Authorities to collect necessary data and, while this allowed entrance to certain files, it was not possible within the limited time to organize statistical bureaus which could collect and compile all the statistics needed.

A reason for the lack of information on costs, prices and market-in, was that the bituminous coal industry had never been organized extensively. It is true that operator associations existed in most of the producing districts, but these were concerned mostly with local matters, such as wage disputes, and their activities were seldom extended to the more general problems. (The National Coal Association, on January 27, 1936, listed 53 local operator associations, and it is said that most of these operated before the N.C.A.) The first important agency to deal directly with coal prices and marketing was organized only shortly before the Code. This was the Appalachian Coals Inc., which began operations in 1933.

In form, Appalachian Coals was a cooperative marketing agency, with its stockholders consisting of operators located within defined areas. The member operators entered into a contract whereby the agency would have exclusive right to the sale of their coal, except as to outstanding contracts, coal used at the mines, and coal sold to employees. (Appalachian Coals, Inc., et al. vs. United States, 288, U.S. 544.) Appalachian Coals, soon after organization, included the majority of producers of high volatile coal in Eastern Kentucky, Tennessee, Virginia and West Virginia, and accounted for three-fourths of the production in this territory by the early part of 1934. (Ibid) The agency at that time represented 1.5 per cent of the production east of the Mississippi River. Functions of Appalachian Coals were to seek better methods of distribution, advertise intensively, to eliminate unfair trade practices, and to carry on market research. While Appalachian Coals was in no position to dominate market prices, it was able to bring order in respect to its operators, and it did collect a large amount of market information. With the locality of Appalachian Coals confirmed by the Supreme Court in March, 1937, certain doubts were

eliminated as to the Anti-Trust laws, and cooperative marketing was stimulated generally. Northern Coals, representing various Ohio districts, began to function in June, 1933. In September, Hocking Coals, Inc., an organization for Southern Ohio fields, began operations. Greater progress in cooperative marketing would probably have been experienced in the summer of 1933 had not attention been directed to Code formulation. Of the three selling agencies organized prior to the Code, Appalachian Coals was the only one in a position to be helpful in the establishing of Code prices, since neither Ohio Coals nor Hocking Coals, Inc., had been operating long enough to assemble any great amount of information. Appalachian Coals was a valuable aid to the organization and operation of Southern Subdivision No. 2, the Code Authority for the southern high volatile region; and furnished a pattern for other Code organizations.

The most complete information available on costs and prices of the industry at the time of Code organization was published by Government agencies. These data, of course, had to be released in such a way as not to reveal information on any particular company and, in consequence, many of the important statistics on costs and prices had to be excluded. For instance, the Bureau of Mines had data on realization, i.e. the composite prices, by states and counties, and by years. This agency was unable, however, to obtain information on the actual prices for kinds and sizes, nor was it able to compile a complete summary of prices in any market. The most recent and complete information on mine costs in 1933 was the Census which, for 1929, had data by states, and by counties that produced over 100,000 tons for the year. The value of these statistics was mostly in the form of showing the importance of individual cost items rather than as a basis of a cost level, since costs had changed noticeably after 1929.

Even had more data been available on costs and prices, difficulties would still have been faced in setting up the Code prices. There was the problem of adjusting prices according to the proposed wage advances, and other cost increases that were beginning to appear. Then, again, there was the problem of contracts. A large tonnage was under contract at relatively low pre-Code prices, and the contracts were to continue through the Code until their expiration. It is said that many operators estimated after a survey of conditions, that the price level would have to be somewhere around \$2.00 per ton and, no doubt, many kept this figure in mind when establishing prices.

Classification of Coals: The classification of coals introduced additional complexities to the price fixing process. Coals within a district, or even between adjacent mines, may vary greatly in market quality. As a result, coals mined under similar conditions may take different prices in consuming markets or for certain uses. It was specified in the Code that the various coals be classified so that recognition be given to the marketability of the different kinds.

Classification implies that consideration be given to consumer demand which by nature is an evasive factor. It consists of numerous variable elements and many that are unknown. There are, however, measurements for certain characteristics of a coal which form a general basis for burning requirements. These are obtained by a chemical

analysis. Moisture, sulphur, ash, fusibility, phosphorus, fixed carbon, volatile matter and heat content may be definitely weighted through an analysis of this kind. (Material on chemical analysis is taken largely from "Keystone Coal Buyers Manual", 1935. Suggestions also obtained from "Preliminary Classification of Coal for Code Authority of Western Pennsylvania", 1934; "Price-Fixing in the Bituminous Coal Industry", Stephen P. Burke, 1935; Brief, Eastern Subdivision, Docket 13, N.C.B.A.; and "The Appalachian", Appalachian Coals Inc., June 1935.)

The characteristics measured through a chemical analysis may be described as follows:

Moisture - All coals contain moisture, varying from 1 per cent in certain parts of the Appalachians to 40 per cent in the lignite of Texas. Coals may also have some surface moisture due to washing or rain, particularly in the case of fine sizes, but much of this may disappear under favorable atmospheric conditions. Usually part of the natural moisture is lost in shipment. Moisture in coal must be evaporated before combustion can occur, requiring part of the heat liberated from the coal.

Sulphur - This may range from 0.5 to 8 per cent, and sometimes more. Sulphur has some heating value, and in some cases is a source for sulphuric acid, but is objectionable to certain uses when it combines with other bases to form clinkers.

Ash - This is the incombustible remainder after coal is burned. Ash has no fuel value, requires freight charges along with the coal, may form clinkers, and requires extra labor as to furnace cleaning.

Fusibility - This is the heat required to cause remaining ash to form clinkers. It is said that ash with a fusing temperature of 2100 deg. F., will not only become melted in most fireboxes, but will be heated beyond the melting point and run over the grate area to form a thin sheet.

Phosphorus - The amount of phosphorus in coals was important when steel was made by the Bessemer process, since it adversely affected the product, but as steel is now processed mostly by other methods the importance of low phosphorus in coal has decreased.

Fixed Carbon - Roughly this is the remainder after moisture, volatile matter and ash have been eliminated. It has a high heat value, and it is said the best chance to obtain full heat value is generally when fixed carbon represents between 77 and 81 per cent of coal.

Volatile Matter - This consists mainly of the combustible gases in the coals, some of which produce more heat than any other part of the coal. The heat obtained depends on the make-up of the gases, and the manner in which the coal is burned. For example, high volatile coal thrown in large quantities on a fire produces smoke because gases are expelled so rapidly they cannot unite with oxygen of the air, leaving carbon to issue from the stack as smoke. Much of the heat content

is lost under such conditions. The term "high volatile" is usually connected with coals having over 28 per cent in volatile matter; "medium volatile" refers to coals having from 21 to 28 per cent in volatile matter; and "low volatile" refers to coals with 30 per cent or less in volatile matter.

Heat Value - This is expressed in British thermal units, i.e., the quantity of heat required to raise one pound of water, at 62 degrees F., through 1 degree F.

The importance of the chemical make-up varies according to the type of user. For almost any consumer, coals are objectionable when they contain extreme amounts of moisture, sulphur and ash. Smoke ordinances may prompt users to give attention to volatile content. For many users, the relation of the properties of a coal to each other are highly important, and the chemical measurements are considered directly when purchases are made. Coals of a given ash or sulphur content may be useless for certain purposes, while a low fusibility may hinder burning in some furnaces. Volatile requirements for efficient burning in fireboxes are often known. Coals required by particular users may come only from a single field, and some coals are relatively scarce. The nature of the chemical properties will sometimes measure the efficiency of coals as well as their usability, and for those reasons a chemical analysis alone may be responsible for the higher price on one coal as against another. As an example of how chemical properties are given consideration, the base specifications of the United States Navy on bunker coal are shown below:

Volatile Matter	15 - 23.5
Ash	3 - 5
Sulphur, less than	1.5
Fixed Carbon	71 - 79
B.T.U. about	14,700

(Keystone Coal Buyers Manual 1935, p. 50, quoted from circular of Information, U.S.N. Paymaster General.)

Measurement through chemical analysis may furnish only one set of specifications as to the marketability of coals. There are other characteristics which are not subject to any definite measurements, and which operators often speak of as intangibles. These intangible qualities are known to exist because coals giving similar results under a chemical analysis will sometimes vary in market price. Recognized among the intangibles are friability, grindability, free burning, coking, and caking.

Friability - The extent to which a coal is subject to crumbling and breaking down. Friable coals will more easily lose their size make-up when handled, and often give large quantities of extreme fines which may contribute to clinker formation in some furnaces. Again, friable coals may lose uniformity in their size more easily, a condition that may hinder combustion in many fireboxes.

Grindability - This is how well coals are adapted to crushing.

Some coals are useless in this respect. The comparative advantages of grindable coals are related largely to the type of burning equipment and nature of plant.

Free Burning - This indicates an absence of coking qualities, indicating that free burning coals will not readily fuse together when burning, giving fine sizes little resistance as to being blown out the tubes. Stokers are used, however, which eliminate much of the trouble with free burning coals.

Coking - While volatile matter, sulphur and other qualities subject to measurement are important, the complete value of a coal to coking is often found only after experiment. This is due to certain characteristics of the gases of coals as well as the type of plant. Sometimes different coals are mixed for coking purposes.

Caking - This refers to the action of various coals, with coking properties, that fuse together when burning, and cause combustion difficulties under certain conditions.

Intangible characteristics, like the chemical properties, have an importance according to the application of coal in various uses. Few are in agreement as to how the intangibles should be measured. One authority states that, on the average, intangibles should have a weight of one-third as against a weight of two-thirds for the chemical measurements. (Brief, Eastern Subdivision, Docket 13 - F.C.B.A.) A study of market prices over a period would probably give some indication of price differentials for kinds of coal and the weight of intangibles. These data were often not available for the months prior to the Code, and even were prices obtainable they would, in many cases, be distorted because of the cut-throat competition that had prevailed in the industry.

Occasionally a special classification is established for certain types of buyers. For example, it has been the practice of railroads to pay a fixed price for coals of a given preparation of particular mines. These large buyers fail to recognize price differentials based on a chemical analysis and other consideration when coals are relatively similar in character. The railroads can obtain like results from coals that may vary some in physical make-up, whereas other users may find a noticeable change in efficiency due to slight differences in sulphur, ash, or other properties. Because of this and the fact that the railroads are large buyers, railway fuel is usually given a special classification.

The task of the marketing agencies and Code Authorities was to consider the marketability of the numerous coals in light of their chemical and intangible qualities, and to rate the individual mines accordingly. Little emphasis need be given to the magnitude of such a work. It should be stated, however, that there had been little experiences in classification, while chemical analyses were not in existence for all mines. Few operators could agree on classification standards. Much of the classification work was on an arbitrary basis, and a great deal of dissatisfaction resulted. (See Bulletin, National

Coal Association, November 10 and 20, 1933.) Mines were grouped in a few, or as many as a dozen classes, causing certain operators to object in their position on the classification schedule.

Setting up the Initial Prices: Information is meagre on the methods employed in setting up the original Code prices. A survey of early price schedules and related information suggests that the marketing agencies and Code Authorities resorted to various means in formulating the price schedules. Generally, the first step was to set up a minimum mine price. Some were not clear as to whether the price for any size or kind of coal could be quoted below the average cost. Sometimes the minimum mine prices varied according to several market zones. Maximum freight abatements were often allowed on all or certain sizes of coal. Mines were not classified in all cases. It was known that the first prices failed to conform in all cases to all the Code requirements but, at the same time, prices had to be established. This was done with the understanding that the schedules were temporary and would be improved upon, especially when price information was more complete.

An actual picture of early price methods may be obtained for one Subdivision. (Brief Eastern Subdivision, Docket 13 - N.C.B.A.) It is stated that this Subdivision, before fixing prices in September 1933, determined the average cost of producing coal for mines in its territory. The method of figuring costs is not described. Next, a study was made of market prices over a period of a year to ascertain the average differences in price of the lowest grade group of coals as compared with the highest grade group. This amounted to 50 cents per ton. Intermediate coals were then grouped in 10-cent steps between the low and high grade coal, using the average cost as the value of the lowest grade coal. The range of price was checked against a chemical analysis, and against prices filed by producers of Central Pennsylvania that had operated under the Code of Fair Trade Practices, a code that had required prices to be changed with a central authority and no change to be made without notice.

By October 14, 1933, price schedules had been approved by the Administrator for Divisions III and V. Prices for Subdivisions of Division I had been given temporary approval, but prices for Divisions II and IV were still due. (Bulletin of National Coal Association, October 14, 1933.) By the end of October, all prices were approved, except for Western Kentucky. Tentative approval was given to Illinois and Indiana prices because of the conflicts between these Subdivisions. (Bulletin of National Coal Association, November 4, 1933.)

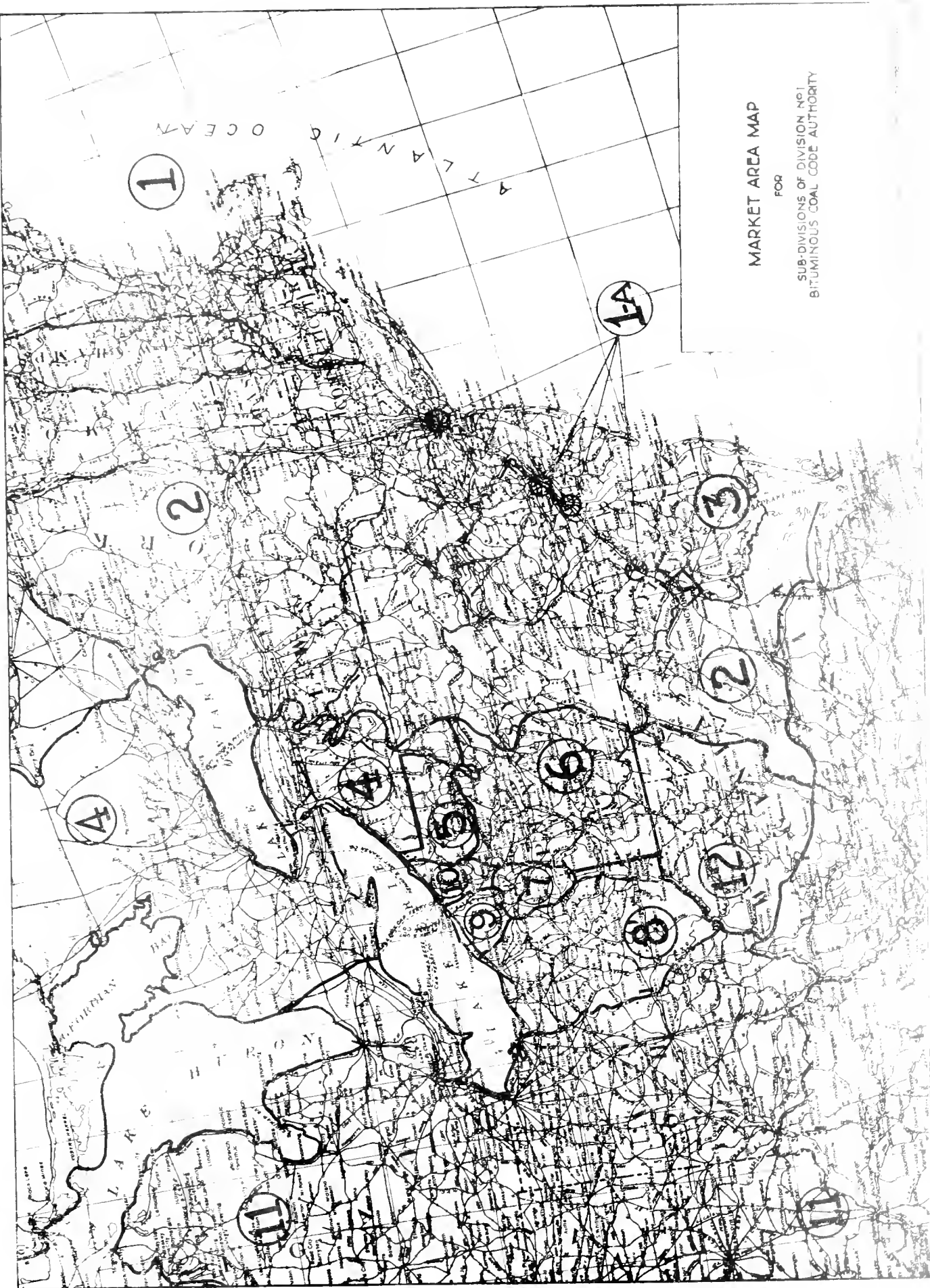
The procedure of having schedules published with minimum prices effective for the future caused a rigidity in prices not customary for the bituminous coal industry. Some operators found the minimum prices too high to permit them to continue in certain old markets,

while others were bitter as to the mine classification they received. (Black Diamond, Vol. 91, December 23, 1933, p. 34.) Freight rate absorptions were allowed sometimes to permit more flexibility. (Leaving before Presidential Member, Butler-Mercer controversy, Western Pennsylvania Code Authority, June 13, 1934.) The method of quoting early prices f.o.b. mine, and the allowance of a maximum freight absorption, generally made the actual prices in any market difficult to determine and left room for abuse in trade practices. The Administration early stated the Code meant that prices should be established for consuming markets. (See Conference of Producers of Division II, Western Kentucky, and Eastern Representatives, December 7, 1933, Washington, D. C., p. 25.) This really included two things: first, that coals have a definite price for each market, which would exclude variable freight absorptions; and second, that prices of Divisions and Subdivisions be correlated in the markets. It was also through the Administration that activity was early directed towards the establishment of common marketing areas.

E. The Price Structures: The price structures underwent considerable change during the Code period. One of the first modifications was the establishment of prices by markets as compared with early attempts at varying mine prices and maximum freight absorptions, both of which had caused a great deal of confusion. By the Spring of 1934, the majority of the price schedules had prices by markets, while maximum freight absorptions were being used less and less. Market price areas began to appear early in 1934, and became general by Summer. In the late Spring of 1934, more activity was turned towards the relationships of prices of competing Subdivisions in markets and, after this time, the price patterns showed a larger amount of correlation. The numerous price controversies appearing the Summer of 1934 were largely concerned with correlation matters, of which classification was the more important.

Price areas proved to be convenient in the setting up of market prices. A price area consisted of one or a group of consuming points for which specified prices applied as to the kinds and sizes of coal of a given district. Information is not found in regard to considerations taken into account in the establishment of the areas, but apparent in their make-up are conditions such as the customary markets of mining districts, peculiar characteristics of certain markets, and freight differentials to be absorbed. At first, the areas were set up by particular Subdivisions, but later areas were agreed upon between Subdivisions. On July 1, 1934, the Subdivisions of Division I jointly established the price areas shown in the accompanying map. Price areas were used by nearly all the Subdivisions during the second half of the Code.

Due to lack of time and other conditions, it is necessary to resort to a few simple illustrations of the price structures instead of the detailed treatment as originally planned.



MARKET AREA MAP
FOR
SUB-DIVISIONS OF DIVISION NO. 1
BITUMINOUS COAL CODE AUTHORITY

1

1-A

2

3

2

A

4

6

5

9

8

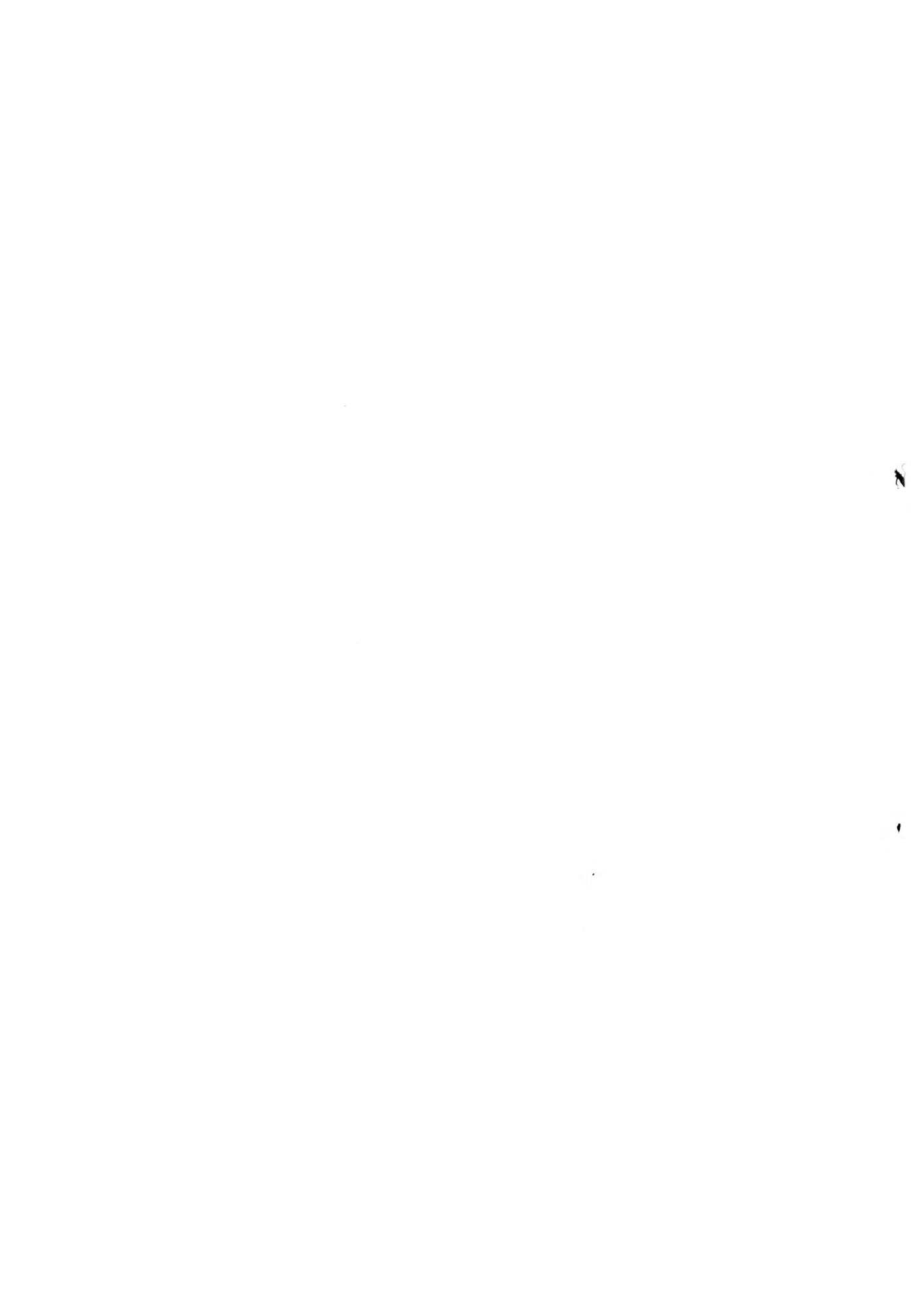
12

11

13

OCEAN

ATLANTIC



The table below is taken from a price schedule of the Ohio Sub-division, and is typical of the price set-ups found during the later half of the Code period. It is only one part of the price schedule, the other parts including prices for each of the following: railroad coal, lump coal, late coal, tract sales; and sections of rates, regulations and conditions of the application of the prices. Prices in the accompanying table are for all coal except that covered in the separate conditions described above.

Market areas, corresponding to the designations in the Market Areas table, are shown in the first column of the Ohio schedule. Classification are included under the title, "Origin Mine Groups." The other columns on the table are for the different sizes of coal. It will be seen that prices are quoted according to four designations: by market areas, by classifications, by producing districts, and by sizes.

Price variations by market areas may be measured by taking one classification and several sizes. For instance, on Mine Run, mines in Group I had a price of \$1.95 for consuming points in Areas 5, 10, and 11; \$1.00 in Areas 1 to 4 inclusive, and Area 6; and \$2.05 in Areas 7, 8 and 9. Lump 5" and larger did not have the same market differentials. Market Areas 4 and 11 had the lowest price, \$2.40, with a spread of 20 cents to Areas 8 and 9, the markets taking the highest prices.

Classification differentials varied both by Market Areas and sizes of coal. In Market Area 8, classifications B and E took the same price on Mine Run, but a differential of 10 cents between the two is noted for Market Area 11. On 5" Lump, the difference between Class B and Class F amounted to 15 cents when for Area 11. Differentials between the producing groups are readily apparent.

A larger spread is found for the differentials between the sizes of coal. In Market Area 3, for example, Group I mines had a price of \$1.60 on 5" Lump and a price of \$1.75 on Slack 3/4" and under, a difference of 85 cents.

The table: "Prices at Chicago" affords an example of comparative local prices under the Code. It is a comparison of the prices on the highest class of Mine Run of the selected districts, each of which sells in Chicago. A wide variety of coals are found between some of the districts, which is indicated in the price differentials.

Northern Illinois, which is located nearest Chicago, is used as a base in the comparisons. It will be seen that Central Illinois and the Indiana districts, with the exception of Evansville, had a delivered price of 70 cents above Northern Illinois. Southern Illinois and Western Kentucky each had a differential of \$1.20, and the districts of Southern #2 had differentials of \$2.24 and \$2.39. The low volatile coal of Southern #1 had a delivered price of \$5.38, or \$4.70 over Northern Illinois.

SUB-DIVISIONAL COAL CODE AUTHORITY FOR OHIO

Price Schedule No. 6 — "All Other Coal"

Minimum fair market prices, per net ton f. o. b. mines, from all Origin Mine Groups into all Market Areas
 (Prices in this schedule apply to all Ohio coals other than those specifically stated elsewhere in Price Schedule No. 6)

MARKET AREAS	ORIGIN MINE GROUPS	M1		M2		L1-3		E1		N5		NS6		SLACK 1/2" TO UNDER 1/4" INC.
		OVER 1" LUMP		LUMP OVER 2" TO 4" INC. AND EGG SIZES SHOWN		LUMP 2" AND UNDER AND EGG SIZES SHOWN		EGG-BTM SIZE 1 1/2" & Under-8" TOP SIZE OVER 2" TO 4" INC.		NUT AND PEA 2" & UNDER, DOUBLE SCREENED		2" & 6S 1 1/2" TO UNDER 1 1/4" INC.		
		5" PLUS	4" LUMP 25% EGG	E.G.S. 2 1/2" 2 3/4" 3"	E.G.S. 2 1/2" 2 3/4" 3"	1 1/2" 1 3/4" 2"	E.G.S. 1 1/2" 1 3/4" 2"	EGG 1 3/4" 2 1/4" 3"	STOVE 1 3/4" 2 1/4" 3"	NUT 3/4" 1 1/4" 2"	STOCKERS 3/4" 1 1/4" 2"	1 1/2" 1 3/4" 2"	1 1/2" 1 3/4" 2"	
1, 1A, 2 & 3 6*	1, 3, 4 & 5	2.00	2.45	2.35	2.35	2.25	2.25	2.25	1.95	1.95	1.75	1.75	1.65	1.55
	1W	2.10	2.55	2.45	2.45	2.35	2.35	2.25	2.05	2.05	1.95	1.95	1.85	1.65
	2	2.00	2.55	2.45	2.45	2.35	2.35	2.25	1.95	1.95	1.75	1.75	1.65	1.55
	6*	2.00	2.55	2.45	2.45	2.35	2.35	2.25	1.95	1.95	1.75	1.75	1.65	1.55
	1W	2.00	2.50	2.40	2.40	2.30	2.30	2.25	1.95	1.95	1.75	1.75	1.65	1.55
	2	2.00	2.55	2.45	2.45	2.35	2.35	2.25	1.95	1.95	1.75	1.75	1.65	1.55
4	1, 3, 4 & 5	1.95	2.50	2.40	2.40	2.30	2.30	2.25	1.90	1.90	1.75	1.75	1.60	1.50
	1W	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	2	1.95	2.50	2.40	2.40	2.30	2.30	2.25	1.90	1.90	1.75	1.75	1.60	1.50
	6*	1.95	2.50	2.40	2.40	2.30	2.30	2.25	1.90	1.90	1.75	1.75	1.60	1.50
	1W	2.00	2.45	2.35	2.35	2.25	2.25	2.20	1.95	1.95	1.80	1.80	1.65	1.55
	2	2.00	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
5 & 10	1, 3, 4 & 5	2.00	2.45	2.35	2.35	2.25	2.25	2.20	1.90	1.90	1.75	1.75	1.60	1.50
	1W	2.10	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	2	2.00	2.55	2.45	2.45	2.35	2.35	2.25	1.90	1.90	1.75	1.75	1.60	1.50
	6*	2.00	2.55	2.45	2.45	2.35	2.35	2.25	1.90	1.90	1.75	1.75	1.60	1.50
	1W	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	2	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
6	1, 3, 4 & 5	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.15	2.65	2.55	2.55	2.45	2.45	2.35	2.10	2.10	1.95	1.95	1.80	1.70
	2	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	6*	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
	2	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
7	1, 3, 4 & 5	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.15	2.65	2.55	2.55	2.45	2.45	2.35	2.10	2.10	1.95	1.95	1.80	1.70
	2	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	6*	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
	2	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
8	1, 3, 4 & 5	2.05	2.60	2.50	2.50	2.40	2.40	2.30	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.15	2.65	2.55	2.55	2.45	2.45	2.35	2.10	2.10	1.95	1.95	1.80	1.70
	2	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	6*	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
	2	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
9	1, 3, 4 & 5	2.05	2.60	2.50	2.50	2.40	2.40	2.30	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.15	2.65	2.55	2.55	2.45	2.45	2.35	2.10	2.10	1.95	1.95	1.80	1.70
	2	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	6*	2.05	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60
	1W	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
	2	2.10	2.60	2.50	2.50	2.40	2.40	2.30	2.05	2.05	1.90	1.90	1.75	1.65
11	1, 3, 4 & 5	1.95	2.40	2.30	2.30	2.20	2.20	2.15	1.90	1.90	1.75	1.75	1.65	1.55
	1W	2.00	2.40	2.30	2.30	2.20	2.20	2.15	1.90	1.90	1.75	1.75	1.65	1.55
	2	1.95	2.40	2.30	2.30	2.20	2.20	2.15	1.90	1.90	1.75	1.75	1.65	1.55
	6*	1.95	2.40	2.30	2.30	2.20	2.20	2.15	1.90	1.90	1.75	1.75	1.65	1.55
	1W	2.00	2.45	2.35	2.35	2.25	2.25	2.20	1.95	1.95	1.80	1.80	1.65	1.55
	2	2.00	2.55	2.45	2.45	2.35	2.35	2.25	2.00	2.00	1.85	1.85	1.70	1.60

(Note A) Includes all resultant and modified resultant above 2"; also modified mine run.
 (Note B) Prices shown in Market Area 11 will apply into Market Area 8 west of the western boundaries of the Ohio counties of Lorain, Medina, Wayne, Holmes, Coshocton, Muskingum, and Adams.
 (Note C) Except as otherwise specifically indicated, the prices from Origin Mine Group 6 into Market Area 11 also apply for that Group into all other Market Areas.
 (Note D) Prices for long haul coals, from both strip and steep mines, producing coal from the No. 8 seam but included in the Middle District Freight Rate Zone, to any specific destination, shall be the effective No. 8 District price applicable to the specific size to be sold, plus an amount equal to the difference between the freight rates from the No. 8 and Middle Districts to the same destination.
 * Same prices as apply to Market Area 8.
 † Minimum fair market prices on respective sizes indicated, per net ton less when deducted to points within Medina, Lorain and Cuyahoga Counties, Ohio, also to all points on the Erie Railroad between Painesville and Cleveland, inclusive.
 ‡ Washed egg and nut coal from Valley No. 1 (Eclipse) Mine of Hosking Valley Mining Company take same prices as shown for raw or hand-clamped coal.

MARKET AREAS

For detailed description of the various uniform Market Areas, see Pages 19 to 22 inclusive of Price Schedule No. 6

- OHIO MINE GROUPS**
- Group 1. Includes all mines in No. 8 and Cambridge Districts, exclusive of Group 2 and 3.
 - Group 1W. Applies to coal washed or partially washed from the No. 8 District.
 - Group 2. Applies to Pinery Fork No. 2 Mine, (No. 8 District), Jefferson Coal Company.
 - Group 3. Nelson Mine (No. 8 District)—O. & P. Coal Company, when consigned to retail yards. When not so consigned, Group 1 will apply.
 - Group 4. All mines in Beulah District, including Wainwright Mine of Ohio Block Coal Company, when consigned to retail yards for domestic use (for steam use, see Group 5).
 - Group 5. All mines north of the No. 8 and Cambridge Districts, generally known as the Middle and Coshocton Districts, for domestic and steam use.
 - Group 6. All Beulah District mines, including Wainwright Mine of Ohio Block Coal Company, for steam use (for domestic use, see Group 4).
 - Group 7. All mines in the entire coal fields of Southern Ohio, generally known as the Hosking, Pomeroy, Jackson, Crooksville and Shawnee Districts. Mines in these districts are further classified as follows:
 - 6A (Class A) —All mines other than those hereinafter enumerated as "6B", "6BB", "6C", "6D" and "6E", including Mine No. 75, Syracuse, Ohio.
 - 6AW (Class AW) —Covers washed or partially washed coal from mines in "6A" group.
 - 6B (Class B) —All mines in Gallia, Lawrence, Meigs and Scioto Counties, except Mine No. 75, Syracuse, Ohio.
 - Also all mines in the No. 4 Seam in Vinton and Jackson Counties, operated by John L. Lawler & Son, in Vinton County.
 - 6BB (Class B) —Mines No. 7 and No. 11, operated by John L. Lawler & Son, in Vinton County.
 - 6C (Class C) —All mines in the No. 8 Seam in Athens County.
 - 6D (Class D) —All strip coal mines, except in Jackson No. 2 Seam.
 - 6E (Class E) —All strip coal mines in Jackson No. 2 Seam.

Prices of the Illinois and Indiana districts, and of Western Kentucky, furnish good examples of correlation. The delivered prices for Central Illinois, Brazil-Clinton, Linton-Sullivan, and Princeton-Ayershire were the same, \$4.00. This was made possible through an adjustment of the mine prices since there was a variation in the freight rates on shipments from these districts to Chicago. It was necessary for Central Illinois and Linton-Sullivan to absorb 10 cents in freight because of the rate of \$1.55 effective from Brazil-Clinton. Likewise, Princeton-Ayershire had to absorb 22 cents. Both Southern Illinois and Western Kentucky had a delivered price of \$4.00, obtained by having Western Kentucky absorb 30 cents.

PRICES AT CHICAGO

Comparison of delivered price on Run of Mine Coal
originating in selected areas, per net ton,
December 20, 1934.

Subdivision and Principal District	Mine Price	Railroad Freight Rate	F.O.B. Chicago	Difference above Northern Illinois
<u>Illinois</u>				
Northern Illinois	\$ 1.70	\$ 1.10	\$ 2.80	\$
Central Illinois	1.35	1.05	3.50	.70
Southern Illinois	2.05	1.95	4.00	1.20
<u>Indiana</u>				
Brazil-Clinton	1.95	1.55	3.50	.70
Linton-Sullivan	1.85	1.65	3.50	.70
Princeton-Ayershire	1.73	1.77	3.50	.70
Evansville	1.55	1.30	3.35	.55
<u>Western Kentucky</u>	1.70	2.30	4.00	1.20
<u>Southern Subdivision #2</u>				
Eastern Kentucky:				
Walters Creek	2.10	3.09	5.19	2.39
Hazard	1.95	3.09	5.04	2.34
Ellettsburg	1.95	3.09	5.04	2.34
Harlan	2.10	3.09	5.19	2.39
West Virginia:				
Williamson	1.95	3.09	5.04	2.34
Manwila	1.95	3.09	5.04	2.34
Ligon	1.95	3.09	5.04	2.34
<u>Southern Subdivision #1</u>				
Piedmont and New River	2.30	3.28	5.59	2.79

Source: "Minimum Costs of Products and Services", Divisional
Code Authority 26, Retail Solid Fuel Industry.

F. Problems in Price Control

Problems in price control developed quickly and increased rapidly soon after the Code was put in operation. Important among the problems were the controversies between Code Authorities traced largely to the lack of standards as to prices, and the absence of a definite procedure for handling and settling disputes. Each Code Authority and marketing agency had its own ideas on price establishment, and conflicts were in evidence when price schedules for common markets were first compared. No central board existed to adjudicate the disputes, while the Code Authorities showed little desire to delegate any effective power to a general agency. Compliance was another phase responsible for difficulties. It was not easy to police price compliance, nor was it a simple matter to obtain evidence on price evasions. There was always the fear of sudden price cutting and the crumbling of the price structure.

Examples of several of the more important controversies will illustrate the nature of the price problems.

Division II and Western Kentucky: One of the earliest price difficulties was the controversy between Illinois, Indiana and Iowa, the Subdivisions of Division II. Western Kentucky, which despite its geographical and geological location was part of Division I, was an interested party in the sense that its action on prices was dependent on the outcome of the dispute. The conflict between these Subdivisions, which reached its height during the first four or five months of the Code, seemed at times to be beyond the settlement, and many feared the effects would become widespread and endanger the general Code set-up.

A record of the early events that formed the background of the controversy are found in the transcript of a December meeting. (Conference, Division II, Western Kentucky and Eastern Representatives; Washington, D. C., December 7, 1933.) A number of issues are involved, but they all center around the question of how the prices of the Subdivisions of Division II, and Western Kentucky, were to be correlated in common markets.

It seems that the producing districts in Division II looked to the Southern Illinois district for leadership in price matters. Southern Illinois had been the largest producing district of Division II territory, and had been well organized. Apparently it was generally accepted, when the Code prices were first being set up, that Southern Illinois was to have a base price of \$2.75 per ton on 6" lump, and that other districts were to adjust their prices accordingly. Protests were soon entered that \$2.75 was too high, and the base price was reduced to \$2.45. Activity was then directed to the relationship of prices between the Illinois. It appears that Indiana was not active with Illinois when the latter's schedules were being formulated, and the early price work of the Indiana districts was largely local to the Indiana Subdivision. Illinois and Indiana representatives had met on various dates between the middle of September and the middle of October, but no agreements were reached on market correlation. Both Illinois and Indiana received temporary approval of their prices in Washington, on October 18, but Illinois immediately found its districts in disagreement, largely because

of the Indiana prices, and later withdrew its price schedules to operate under non-Code prices. Iowa and Western Kentucky were awaiting developments.

The Indiana price schedules, as temporarily approved, permitted a maximum freight absorption of 30 cents per ton, and lower prices in one market zone as against the other. This was disturbing to the Illinois districts as they were setting up prices without freight absorptions or zones, and generally confusing since the applications of the absorptions and zones of the Indiana schedules were not clearly understood without a great deal of figuring. Districts outside of Indiana recognized that drastic price adjustments were necessary if customary markets were to be maintained. By the end of October, it was evident that a price war was brewing, and by the middle of November the war was in full progress. Indiana withdrew its temporary approved prices on November 11, as it agreed to do if a satisfactory arrangement could not be reached with Illinois. On November 13, approval was given to Illinois prices which had a freight absorption clause the same as for Indiana. The latter Subdivision also then got approval to use again the zone market system. Subsequently, freight absorptions were used widely and in varying ways by all the districts of Division II, and Western Kentucky, and the price structure was in a jumble. The situation was irritating to Division I, which is a competitor of Division II, and its representatives indicated a desire to enter the warfare if settlement was not brought about in the near future.

The price difficulties of Division II may be related to two factors: lack of understanding as to the Code organization; and varied ideas as to how prices should be set up. Operators were in disagreement as to the functions of the Divisional and Subdivisional Authorities, and they were not sure of the powers of the Presidential Members. As to prices, some operators supported the principle that a mine price, varying according to several market zones and freight absorptions, formed the best kind of price structure. Others favored a mine price with no allowances. It appears that, in either case, emphasis was given to prices at the mine, and little attention was directed to the establishment of prices in markets as was intended by the Code.

As a result of the meeting at Washington on December 7, 1933, a definite plan was drawn up that the several issues be treated. Among other things it was specified that the sixth vein of Franklin County, Illinois, be used as a basis of correlation for prices to be submitted December 15, and that no contracts be made until these prices were approved. Maximum freight absorptions were to be eliminated. On December 9, representatives met to correlate prices, but classification problems were encountered and little success was met. (See Coal Prices, Indiana v. Illinois, prepared by Illinois Coal Bureau, January 3, 1934.) Meetings were continued throughout the winter with never a general price agreement in view. The records are not clear as to the degree and time of settlement of the Division II issues, but it is known that difficulties were experienced in the spring of 1934 as the contract moratoriums and complaints of districts indicate, and the effects of the conflict were never entirely removed during the Code period.

Price Controversy between Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions: Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions had trouble in correlation from the first. By December 1933, price disagreements had developed into price cutting, and soon a price war was under way. (Saward's Journal, Vol. 16, January 20, 1934, p. 589.) This situation, along with the Illinois and Indiana dispute, made many feel that the price structure was due for a complete breakdown. (See Transcript N.B.C.I.B., January 1934.) Active warfare disappeared in the middle of January, 1934, when some agreements were reached between the Subdivisions, but the matter had become complex with numerous conflicts, and the controversy was to require treatment throughout the Code months.

Classification difficulties seemed to be at the bottom of the matter. Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions were highly competitive in leading markets, and each was quick to oppose any measure or action that appeared to give disadvantages. Each had separate ideas as to classification and, when attempts were made to relate the coals, disagreement arose as to what constituted a common basis. It seems that as between the classifications and correlations proposed, the acceptance of any one would have required a revamping of existing prices. As a result of a meeting between these Subdivisions on March 9, 1934, it was decided that a technical board would be appointed to study the classification problem; and temporary price adjustments were agreed upon as well as a contract moratorium to extend from March 12 to April 10, 1934. (Decision, N.C.B.A. - Docket 27, April 26, 1935.)

On June 15, 1934, the technical board submitted its final report on classification. (An excellent summary of this report is found in "The Problem of 'Minimum Fair Competitive Prices' in the Bituminous Coal Industry", by Stephen P. Burke.) The technical board proceeded along impartial and scientific lines, and its findings were contributions of value. It made a thorough study of a consumer class which, it estimated, represented the most probable destination of any ton of steam coal. The board was concerned solely with a basis for measuring the relative value of coals to the consumer, and not with the actual price of any coal. Findings of the technical board were not acceptable by all parties, however, and the controversy continued, being given much attention during the time of the National Coal Board of Arbitration. (See, Brief Eastern Subdivision, Docket 13, N.C.B.A.)

Prices on Railroad Coal: The selling of railroad coal below Code prices was a subject of much discussion during the first half of 1934. A great deal of the discussion was directed to the relations between the Louisville and Nashville Railroad and various operators, and the prices this carrier was obtaining on coal. The climax of the matter was the Bledsoe Coal Company Case which was heard and decided by the National Compliance Board on May 15, 1934. Since compliance was the main issue, the Bledsoe case throws some light on the early price evasions.

The Bledsoe Company owned, controlled, or acted as sales agency for a number of mines located in Tennessee, Kentucky, Indiana, and Illinois. These included 6 mines in the territory of Southern Subdivision No. 2, and served by the Louisville and Nashville Railroad. On April 23, 1934, the Bledsoe Company entered into a contract with the Louisville and

Nashville for the sale of 75,000 tons of 4" screenings at \$1.70 per ton when the approved minimum price for this specified coal was \$1.80.

Statements of the Bledsoe Company suggest the price evasions current at that time. In a letter to the Deputy Administrator, dated May 7, 1934, the Company contended that, during the first months of the code, certain operators actually cut prices and thereby obtained the business of the L & N. The action of these operators was covered up when their prices were subsequently approved. Probably a better description is contained in the memorandum of the N.R.A. Legal Division, May 4, 1934, wherein evidence was given of much coal being sold below the approved minimum prices in Southern Subdivision No. 2, and to the extent that the Code structure was threatened. Another memorandum noted that the L & N was more active in price fixing than the Code Authorities. (To Compliance Division from Deputy Administrator, May 10, 1934.)

A condition that contributed towards price disorder in Southern No. 2 was that representatives of Appalachian Coals Inc., made up the larger part and control of the Code Authority, and some operators who were not members of this sales agency felt they were at a disadvantage. The Bledsoe Company, for instance, held that Appalachian Coals was in a position to get price information from 24 to 48 hours before operators outside its fold; and that classifications and prices were often made to fit market conditions as they affected the Appalachian group. (Hearing, National Compliance Board, May 15, 1934, pp. 35, 43.) It was claimed that a rumor of another decrease in price, soon after prices had been reduced 5 cents to \$1.80 by the Code Authority on April 28, was disturbing in that the Bledsoe Company feared a return of the condition where prices would be cut by certain operators and then later approved. It was said this condition, along with the threat that the L & N would buy coal in Western Kentucky at \$1.55 rather than pay \$1.80, prompted the Bledsoe interests to offer their coal at \$1.70. (Ibid p. 44.)

Denials were presented at the compliance hearing that Appalachian Coals took advantage of its position to give favors to its membership. A feature of the hearing was the attitude of the United Mine Workers. Mr. Van A. Bittner, President District 17 of the United Mine Workers, stated that prices and wages are so closely interrelated that his organization must take an active interest in price matters. He claimed that members of the United Mine Workers would not produce coal for any operator that engaged in selling coal below Code prices. (Transcript p. 26.) This was more than a forceful statement since miners actually refused to work for certain operators involved in the case. (Coal Age, Vol. 39, June, 1934, p. 254.) The National Compliance Board found that the Bledsoe Company had violated Section 1 of Article VI of the Code, and the case was referred to the Litigation Division for submission to the Department of Justice. Federal prosecution was not necessary, however, as a compromise was effected between the operators wherein the Code minima on railway fuel was increased slightly above the \$1.70 figure, and the L & N announced it would buy at the new prices. (Coal Age, Vol. 39, July 1934, p. 291.)

Other Price Problems: The price controversies under the Code were numerous. Some are considered in detail in the next section of this Chapter, (see The National Coal Board of Arbitration) and others will be mentioned here as a matter of reference. Long term contracts caused no end of trouble. Little information was available on the pre-Code con-

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tracts, and it was never definitely known whether they were permitted to expire as provided in the original agreements, or whether conditions in the agreements were applied so as to permit extensions in certain cases. Another difficulty arose when certain operators entered contracts for the delivery of coal after the expiration of the Code, June 16, 1935, without regard to Code prices. This resulted finally in the adoption of Amendment 5, January 3, 1935, which prohibited the making of a contract at a price below the fair market price effective on date of contract. Administrative Order X-48, June 12, 1934, granted exemptions to any members of industry, subject to Code of Fair Competition, who bid on contracts to be awarded by government agencies that specify conditions which fail to correspond with Code provisions. The Order really placed governmental agencies in the most favorable buyer classification. As applied to the bituminous coal industry, operators were quick to attack the Order as they saw it contained parts that would destroy the price control that had been established. The N.R.A. Legal Division admitted that the Order constituted an Amendment to the Bituminous Coal Code, and an amendment made without granting to the members of the industry an opportunity for a hearing. (Memorandum, To Administrator, June 21, 1934.) On June 27, 1934, the Administration declared the Order inoperative in respect to the bituminous coal industry, the coal dock industry, the wholesale coal industry, and the retail solid fuel industry. A somewhat similar experience was in connection with Executive Order #6767, June 29, 1934, which permitted members of industry to quote reduced prices to Government agencies, the reductions not to exceed 15 per cent of the approved Code prices. This Order modified Executive Order #6646, March 14, 1934, which required Federal agencies to purchase from companies complying with their Codes. Before operators had a chance to make formal protests, it was decided that Executive Order #6767 did not apply to bituminous coal because it referred to codes which required the open filing of prices. No such requirement was in the Bituminous Coal Code. (Memorandum, to The Comptroller General, from Frank Healy, Chief, Government Contracts Branch.) Besides difficulties due to correlation and contracts, a number of important cases were in connection with price compliance, while wholesale discounts caused much trouble.

A general price disturbance was felt in October, 1934, when it was indicated that the Administration was going to oppose price-fixing. (Developed from informal remarks by Mr. Donald Richberg.) The statement was received with alarm by coal operators, especially since many interpreted it to mean that all price fixing would be abolished. A buyers' strike resulted. (Bulletin, National Coal Association, October 13, 1934.) Following protests from operators, the Administration definitely held that the price provisions of the Bituminous Coal Code would be continued and no changes would be made except as permitted by the Code. (N.R.A., October 10, 1934.)

Developments in Price Control: Early efforts were made to organize an administrative machinery to centralize the activities between Divisions, Subdivisions, and marketing agencies. The early organization proposals, however, received little support, and no formal organization was set up until the summer of 1934. At the meetings of the National Bituminous Coal Industrial Board, January, 1934, plans were

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The work of the Presidential Members of Division I was soon to be extended to the settling of controversies. It cannot be determined from the records as to the origin of the new duties of the Presidential Members, though it appears that the Joint Marketing Committee had a part in their establishment. On June 25, 1934, the Joint Marketing Committee passed a motion that the Presidential Members of Division I (excepting Western Kentucky) organize as a Board, establish a procedure for hearing cases, and present decisions to the Deputy Administrator. (Letter to W. P. Ellis from Joint Marketing Committee, June 25, 1934.) It seems that the Joint Marketing Committee had been unable to settle a number of important controversies, and believed a greater degree of success was possible through the concentrated action of the Presidential Members. The new organization became known as the Presidential Board of Review, and later as the Board of Review. Its functions were primarily to treat the cases which the Joint Marketing Committee was unable to settle. The Board faced obstacles from the first. It had no definite authority; while its members were unable to separate themselves entirely from the interests of their respective Code Authorities, the latter a particular weakness since its decisions on price controversies required a unanimous vote. (Definite rules and regulations of the Board, established at meetings of October 10 and 11, also included the unanimous vote provision.) The Board was unable to add much to the work of the Joint Marketing Committee. (See Hearings of the Presidential Members of Division I, and Transcript of Meeting N.B.C.I.B., January 3, 1935, p. 239.) Western Pennsylvania indicated its opposition to the Board of Review in the late part of 1934, and withdrew from the procedure on December 31. (Letter to Administrator from Western Pennsylvania Code Authority, December 14, 1934, and Coal Age, Vol. 40, January 1935, p. 45.) Amendment 6, January 25, 1935, provided for a general board of arbitration, the functions of which superseded and made unnecessary the work of the Board of Review.

Tonnage Allocation: Production control between competing districts as an aid to price stabilization had been considered for some time in the bituminous coal industry. For instance, the Lewis Bill on bituminous coal regulation, introduced in June 1933, made specific provision for tonnage allocation as between 30 coal districts in the United States (H.R. 6040, 73 Cong. 1st Ses.) Allocation was given attention in the meetings of the National Bituminous Coal Industrial Board, held in January, 1934. (Transcript of meeting, January 16, p. 5.) In May 1934, J. L. Steinbugler made a plea for tonnage allocation, citing as examples the method of production control used in Germany and England. (Meeting of U. S. Chamber of Commerce reported in Coal Age, Vol. 39, June 1934.)

A form of tonnage allocation was established on July 12, 1934, when Subdivisions in Division I, excepting Ohio and Western Kentucky, signed an agreement whereby each agreed as to what their tonnage proportions should be. The allocation was eventually known as the Adams' Plan, in relation to C. E. Adams, who took an active part in making the agreement possible. Ohio was not agreeable to the plan, while Western Kentucky was not interested because of its separation from other Subdivisions on production and marketing matters. Ohio's objection was that its allotment was too low as compared with its past performance. (Brief Ohio Subdivision, Docket 6-N.C.B.A.) The effective date of the allocation was from July 12 to December 31, 1934, and the proportions assigned to the Subdivisions were as shown below. (Discussion of set-up of plan in transcripts of meetings of Chairmen of Subdivision, Di-9837

vision I, July 11 and 13, 1934.)

Southern Subdivision No. 1	18.25 Per Cent
Southern Subdivision No. 2	30.10
Western Pennsylvania	17.75
Eastern Subdivision	15.30
Northern West Virginia	8.50
Ohio Subdivision	8.40
Panhandle of West Virginia	1.70
	<u>100.00</u>

The purpose of the allocation was to establish a basis to aid in the measuring of the price relationships between the Subdivisions. It was provided that each Subdivision was to file with the Deputy Administrator, on or before the 25th of each month, a statement of its tonnage produced in the preceding month, showing captive tonnage separately. These tonnage statements were to be checked against the Bureau of Mines reports. The connection of the tonnage figures to prices was that if any significant departures from the proportions were evident (aside from seasonal variations) and which indicated a diversion from a Subdivision, the price structures were subject to adjustment so that the share of each Subdivision would be maintained.

The per cent that actual commercial production in 1934 was of the "Adams allotment":

Southern Subdivision No. 1	104.7
Southern Subdivision No. 2	101.3
Western Pennsylvania	97.4
Eastern Subdivision	99.3
Northern West Virginia	91.5
Ohio Subdivision	100.5
Panhandle of West Virginia	91.3

(See "The Problem of Minimum Fair Competitive Prices in the Bituminous Coal Industry" by Stephen P. Burke, p. 25.)

A new allocation was not established with the expiration of the tonnage agreement on December 31, 1934. The records do not disclose that the tonnage agreement had been used effectively in the adjusting of prices. Its value seems to have been primarily in the restricting of unlimited price cutting. With the opening of the new year, interest was concentrated on the revamping of the price provisions of the Code, but with little attention directed to tonnage allocation.

Code Amendments: By the later part of 1934, it was recognized that drastic changes were necessary to strengthen the price structure. Every means had been attempted to operate with the autonomy of Code Authorities preserved, but each effort was followed with failure. The last resort was to amend the Code so that greater centralized action would be possible. Until this time, price amendments to the Code had been avoided. Amendment 2, April 22, 1934, and Amendment 3, June 4, 1934, contained provisions to protect the normal consuming markets of producing districts against lower prices than might be quoted by certain other districts enjoying favorable wage differentials. These amendments, how-

ever, made no reference to price methods or price administration. (The application of Amendment 2 is found in the next section under Docket 38.) Amendment 4, November 5, 1934, was concerned with the collection of statistics, and only related to prices insofar as the data were to be used in price determinations. Amendment 5, January 8, 1935, was directly connected with prices in the sense that it dealt with contracts. It was a protection against price cutting on coal to be delivered after the expiration date of the Code, June 16, 1935, but it did not extend to general price phases. A general revision of price methods did not appear until Amendment 6, January 25, 1935.

Amendment 6, as written, resulted from the meetings of the National Bituminous Coal Industrial Board held in January 1935. Discussions during the meetings form a summary of operations under the Code, particularly in regard to the breakdown of compliance; the inability to settle disputes; and the lack of coordinated action; subjects illustrated by actual cases in the first part of this section. (See especially the transcript of January 4, pp. 8-9, 80-95.) Many representatives recognized that Government control was the only solution unless a workable scheme of centralized action between the Code Authorities could be established. Opposition to centralization was now in the minority, led by Western Pennsylvania, which favored a return to the ideas of localization found in the original Code (Ibid p. 35). It was generally agreed by all, however, that the price structure was rapidly weakening.

Articles VI and VII of the Code were changed completely by Amendment 6. Additional conditions were prescribed for price establishment. It was specified that Code Authorities and marketing agencies, in determining fair market prices, should take into consideration, among other factors, the purposes of the N.I.R.A., wage rates, competition of other fuels, consumer needs and requirements for kinds and sizes of coal, and the necessity for giving to consumers reasonable opportunity to buy and to producers reasonable opportunity to sell their coal in usual and normal markets. Provision was made that classification, based on all factors considered in connection with physical structure, chemical analyses and salability, should be considered by the Code Authorities and marketing agencies when fixing prices. Competition was to be preserved but dumping prices were to be prohibited. (Article VI, 2b.) Prices were to be effective after approval by the Presidential Member (acting under direction of Administrator), were to be published by the Code Authority, with reference made to changes, and submitted to the Administrator for his review and subsequent action. (Article VI 2f). It will be noted that no date of fair price publication was named, a difference as compared with the original Code.

Another addition of Amendment 6 was the procedure entitling an operator to make objections to the Code Authority or marketing agency establishing his prices. The Code Authority or marketing agency was instructed to hold a hearing within 5 days after receipt of written complaint, unless an extension of time was agreed to by the operator. The operator was given the right to appeal to an impartial Board of Arbitrators if he was dissatisfied with the decision of the Code Authority or marketing agency. (Article VI, 3.)

It was further provided that agreements could be entered into between Code Authorities, between marketing agencies, or between both, as to a basis for market prices. The agreements were to be submitted to the Administrator and were to become effective within 10 days after receipt by him unless he disapproved them. Where a Code Authority or marketing agency was of an opinion that its producers might be affected by the failure to reach an agreement, or that unfair prices or practices result from any agreement, it could make an appeal to the National Board of Arbitration. (Article VI, 4.)

The administrative machinery for the new price set-up was contained in Article VII. Provisions were made for arbitration boards for Code Authorities and marketing agencies active in the establishing of prices, and for the National Bituminous Coal Industrial Board. The former, designed to handle local matters, were to consist of not more than 5 members, who were not to be connected directly or indirectly with the coal industry. The National Board represented the new means by which to obtain centralized action between the Code Authorities and marketing agencies.

Western Pennsylvania opposed Amendment 6, and failed to recognize the proceedings and decisions of the National Coal Board of Arbitration. This Subdivision disliked the method of electing members of the Board, holding that it was not promotive of impartiality. It also believed that, in view of the Federal legislation pending at the time, it was impractical to set up a temporary board involving a large expense. (Telegram to Chr. S. Clay Williams from Code Authority of Western Pennsylvania, February 6, 1935.)

G. The National Coal Board of Arbitration: Article VII of the Code, as revised by Amendment 6, provided that the Board was "... to settle disputes and controversies between or among marketing agencies or Code Authorities representing different Divisions or Subdivisions with respect to fair competitive prices and practices relating thereto.. .." The Board was designated as an impartial agency of 5 members who were to be elected members of the National Bituminous Coal Industrial Board (the nine members named by the Divisional Code Authorities) and subject to approval of the Administrator. Election was by majority vote and the term of office was two years. A maximum salary of \$10,000 was specified, with the salaries of each member of the Arbitration Board to be decided by the electors. A vote of at least six of the electors was required for removal of a member of the Bituminous Board. Salaries and expenses of the Board were to be paid by the Divisional Code Authorities on a tonnage basis.

A skeleton of procedure was also contained in the provision of Article VII. Complaints were to be in writing, and made only by a marketing agency or a Code Authority. The Arbitration Board was to establish all necessary rules and regulations for its operation, and was instructed to keep a record of its actions. Complaints were ordinarily to be heard within 10 days. Copies of the complaints were to be sent to other interested marketing agencies and Code Authorities and to the Administrator in accordance with the rules of the Arbitration Board. It was prescribed that the Arbitration Board be governed by the same principle and standards in respect to prices and practices as contained in the Code. Decisions were to be transmitted to the Administrator for approval or disapproval, and when approved were to take effect within 10 days after receipt. Appropriate publication was to be made by the Code Authority of any change in price required by a decision.

It will be seen from the above that the National Coal Board of Arbitration was an agent for the bituminous coal industry and, while it was supposed to be impartial, its work was at disadvantage since its members were dependent on the industry for their appointments, tenures, and salaries; and decisions of the Board were subject to the approval or disapproval of the Administrator.

Members of the Arbitration Board, elected February 1, 1935, were Dr. A. W. Gauger, Director of the School of Mineralogy, Pennsylvania State College; Godfrey N. S. Tait, Technical Assistant, Coal Section, N. R. A., and former engineer; J. R. Henderson, Executive Secretary, Illinois Subdivisional Coal Code Authority; John A. Sargent, Kansas City, Missouri, former executive of the Central Coal and Coke Company; and T. H. Sadler, Jr., an attorney of Birmingham, Alabama. (Bulletin, National Coal Association, February 2, 1935.) Captain Tait was named as Chairman; Mr. Sadler as Vice-Chairman; and Mr. Henderson as Secretary.

The first duties of the Arbitration Board were to formulate rules for the hearing of complaints. These were mailed to members of the industry on February 9, 1935, slightly more than a week after the appointment of the Board. The rules gave full description to the new price provisions of Amendment 6, and prescribed additional regulations necessary to expedite the handling of complaints. Among other things,

it was provided that "no complaint shall be sustained except upon concurrence therein by a majority of the total number of members of the Board".(*) Stress was given to the provision in Amendment 6 which specified that no marketing agency or Code Authority might submit any complaint to the Board unless the complainant should have, in good faith, endeavored to settle the matter with the marketing agency or Code Authority complained against.

From the time the Arbitration Board was appointed, February 1, 1935, until May 27, less than four months, records show that 50 complaints were made and assigned to the Board's docket. Of the total complaints, 33 decisions were rendered; 12 complaints were dismissed or withdrawn, and 5 were still to be decided. In a number of instances, petitions or Administrative orders were made for rehearings and, where these were granted or required, 9 decisions were made, bringing the total decisions to 42. Five cases are found in the files where the Board's decisions were disapproved or modified by the Administrator. (See Dockets 20, 27, 28, 29, and 30 of the Board) The large amount of work covered within a short time indicates the efficiency with which the Board performed its duties.

The Arbitration Board made possible the formal treatment of many questions that had been prominent in the industry, particularly since the beginning of the Code. Below will be found descriptions of a few important cases heard and decided by the Board.

DOCKET I

Subdivision No. 1 vs. Eastern Subdivision. Competitive conditions in New England: Docket #1 of the National Coal Board of Arbitration involved the complaint of the Smokeless Coal Code Authority -- Subdivision No. 1 of Division I, concerning competitive conditions in New England; Eastern Subdivision of Division I was the respondent. The case centered around the competition of coal shipped all-rail from Eastern Subdivision with coal originating in the Smokeless fields and moved by rail and water to the New England destinations. The complaint was received by the Arbitration Board on February 16, 1935.

Brief of Southern Subdivision #1: Southern Subdivision #1 presented a lengthy brief to support the complaint. It was contended that the complaint was in connection with a long drawn-out controversy that originated with these two subdivisions when certain price changes were made in January, 1934. The claim was that these price changes had given advantages to Eastern Subdivision at the expense of the complainant. Diversions were estimated from $1\frac{1}{2}$ million to 2 million tons. Three factors were considered by the complainant as controlling in the case; the setting of Market Area #1, consisting of the eastern part of New England, by which the price spread between Smokeless and Eastern Subdivision was reduced 11 cents per gross ton; second, the unequalities of Eastern Subdivisions classification between Barnesboro and Somerset County coals and Nanty-Glo Class "A" coals, which further

* "Rules and Regulations for the Operation and Procedure of the National Coal Board of Arbitration". - N.C.B.A., February 9, 1935.

reduced the price spread between the two Subdivisions; and third, reductions in all-rail rates to certain New England points which disturbed the previous price set-up.

The Smokeless group held that, in the latter part of December, 1933, it had accepted the arrangements of Deputy Administrator Ellis to sit in conference with Eastern Subdivision to discuss correlation. A meeting was planned for January 4, which was later changed to January 9. It was stated that Smokeless found, upon entering the meeting, that Eastern Subdivision had made a drastic reduction in their prices January 2, by setting up a schedule of prices for a new market territory called Area #1, which was formerly part of Market Area #2. Eastern Subdivision was asked to cancel the new prices. This resulted in various negotiations, and no semblance of correlation appeared between these two Subdivisions until February 6, 1934, when an agreement was reached whereby Eastern Subdivision was to publish certain prices until a study of the coal freight rate and traffic situation in New England was made, which would furnish a basis for further consideration of the price set-up. These prices, which were from 10 to 15 cents higher than the prices in January 2 schedule, were said to be, per net ton:

	<u>R.O.I.</u>	<u>2" Stoker</u>	<u>3" Slack</u>
Nanty-Glo	\$2.05	\$ 1.90	\$ 1.75
South Fork	2.10	1.94	1.75

In April, Nanty-Glo prices were advanced 25 cents due to wage increases.

Southern Subdivision #1 appointed its traffic committee on June 4, 1934. It was claimed the work of this committee was soon brought to a halt when the New Haven Railway refused to furnish certain data on shipments because of objections from Eastern Subdivision. In December 1934, an agreement was made between the two Subdivisions as to what traffic information should be obtained, but it is said that little success resulted in the traffic project because of the inability to get effective cooperation from Eastern Subdivision. By January 21, 1935 the Subdivision #1 Code Authority decided it was useless to reach a solution to the problem through attempted cooperation with Eastern Subdivision, and thereupon proposed a maximum freight absorption of 30 cents to certain New England points, the amount to be graduated according to the sum required to set up delivered prices on a parity with Nanty-Glo Class "A" coals.

Southern Subdivision #1 emphasized the point that the various subdivisions, in assuming the responsibility of price fixing, were to do so on the promise that all retained their right to maintain pre-Code tonnage flow to their accustomed markets, and where adjustments with competing coals of other subdivisions was necessary, these prices should be adjusted grade for grade, and size for size, on a delivered basis. It was stated that though water transportation enters the New England picture, the shipping facilities are limited and of such a character as to permit a sound annual cost per ton on the shipments. A total of \$5.70 per gross ton was presented as the minimum transportation and handling charge on coal moving from the Smokeless fields by rail to Hamton Roads and thence

to New England ports, including the amounts for discharge, storage and re-load.

By adding to the mine price the \$3.70 basic and the ex-tide rate from port to destinations, Southern Subdivision presented its various delivered prices at a number of New England points, and compared these prices with those on Eastern Subdivision coal which consisted of mine price plus the all-rail freight rates. Nanty-Glo Class "A" coals are given the same basis as Smokeless Class "D" coals, and "run of mine" is used as a common size since it was said to be the size basis for Eastern Subdivisions. It is shown, for instance, that the delivered price to Cheshire, Connecticut, which is in New Market Area #2 and located 16 miles from New Haven, gives Smokeless a 7 cents advantage over Eastern Subdivision. At Wallingford, Connecticut, located 13 miles from New Haven, the Market Area #1 prices apply, which gives Smokeless coal a disadvantage of 16 cents. Examples are given of the delivered prices that applied in the different freight rate destination groups, and the advantages or disadvantages given the smokeless fields in those territories. Attention is also directed to the effects of the freight rate changes both in Market Area #1 and Market Area #2. In summary, it is stated that for a total of 374 destinations, nearly all of which were located in Market Area #1, a price adjustment was necessary. It was further said that Eastern Subdivision never had a great deal of tonnage in Market Area #1, and never enough to justify the special low prices.

Appeal was made by Southern Subdivision for a price adjustment in New England, with a maximum absorption of 30 cents which shall be graduated downward where necessary. Also asked that Market Area #1 prices be supplemented by Area #2 prices, and that Eastern Subdivisions be required to reclassify mines in Barnesboro, Clearfield and Somerset districts so they will properly relate to their Nanty-Glo "A" mines to which Smokeless coals are correlated.

Reply of Eastern Subdivision, February 26, 1935: Eastern subdivision took exception to the complainant as to the price changes in January, 1934, claiming that Southern Subdivision #1 prices were not properly correlated until February 1935, and that Eastern Subdivision had complained for some time on Southern Subdivision's mine prices as a basis of correlation to tidewater markets. It was stated that the diverted tonnage estimated by Southern Subdivision could in no way be substantiated.

The three factors put forth by Southern Subdivision were criticized in the following way:

1. Establishment of Market Area #1 - Prices for this area were published at the request of the complainant that its policy of a single price for given price areas could be maintained.
2. Classification of coals - said to be an intra-subdivisional matter by Eastern Subdivision.
3. Reduction in all-rail rates to New England - made at direction of Interstate Commerce Commission to correct the then existing inequities.

Eastern Subdivision asserted that following the inception of the Code, October 1933, it had attempted to secure a meeting with the complainant but without success until January 9, 1934. Prior to this time, it was said, Southern Subdivision had a wide price advantage and for that reason refused to meet for correlation purposes. Southern Subdivision's statement that it became aware of price changes when entering the meeting of January 9, is misleading since the price list was known and published several days prior.

The prices published by the complainant were said to be correct, except that no correlation was effected on mine run coals since Southern Subdivision claimed this size of coal would not be shipped into the market.

A protest was made to the New Haven Railroad in respect to furnishing information on shipments since it was believed that such data would be used to the advantage of the complainant. The agreement on the traffic study was that it should be made jointly by both Subdivisions, but Southern Subdivision acted independently and attempted to secure the information in advance. The reason that Eastern Subdivision representatives could not become actively engaged in the study after the meeting with the New Haven Railroad, on December 28, was because of other hearings and meetings that required immediate attention.

Complainant admitted that it proposed a maximum freight absorption of 30 cents without complete information of the New England situation, and contended that representatives of the complainant had often supported the principle that absorptions should not exceed 25 cents per ton.

Eastern Subdivision failed to agree with the promise that the pre-Code tonnage flow to accustomed markets should not be hindered by the N.R.A. price set-up.

It was said that water transportation, and the intangibles involved, would not permit a correlation with coals which move all-rail. Again though the 3.70 would represent a fair minimum transportation charge, the customer may not be charged that amount since many producers in the Southern Subdivision own their own vessels and can add to the mine price any amount they wish. It is pointed out that the \$3.70 is arbitrarily used by the complainant in the illustrations of delivered prices at certain New England points.

Eastern subdivisions claimed that it had given the classification of coals a long and intensive study. Southern Subdivision, on the other hand, had only classed its mine run coals on a basis of coarseness.

It was held that if Southern Subdivision's appeal is granted it will have an absorbing privilege in the boating and handling charges, and an additional privilege of 30 cents. Again stated that the classification of coals was entirely within the province of the Subdivision.

Reply by Southern Subdivision No. 1, February 28, 1935: This reply was to Eastern Subdivision's second answer entitled "General Statement of Position of Issues Involved", of which there is no record. The fact, however, that the first answer of Eastern Subdivision was February 26, and the points in that answer are closely related to this reply, suggests that little is lost by not having the second answer.

Southern Subdivision denied that the issues involved in the New England case were the same as found for all tidewater movements. The tidewater market between New York and Hampton Roads was said to be one dealing with tidewater coal, while the New England market is definitely affected by the all-rail movements.

It was claimed that Southern Subdivision has no desire to correlate on a f.o.b. mine basis, but supported a delivered basis. Eastern Subdivision's contention that Smokeless producers largely own the vessels and facilities by which their coal is shipped was denied, and information was included to show the ownership and control of water facilities. Held that only 30 per cent of Southern Subdivision's producers' coal is carried in their own vessels and handled over their own docks.

Summary of Contentions Covered in Briefs of Southern Subdivision No. 1, March 6, 1935: At the request of the Chairman of the U.C.B.A. a summary of the various contentions presented by Southern Subdivision was presented. Nothing new was presented in the summary except proposed regulations for controlling the \$3.70 arbitrary.

It was suggested that freight absorptions would be allowed on the exact tonnage shipped to the listed destinations at the rate per ton stipulated for the destinations involved only when the following requirements were met and certified by the Smokeless Code Authority Bureau:

1. When the delivering agent sells and bills the tonnage involved to a permitted destination at Code prices plus the arbitrary of \$3.70, plus the published inland rate.
2. The producer or his New England agent shall submit to the Bureau a copy of invoice and freight bill of each shipment.
3. Invoices and freight bills must contain full description as to kind and size of coal, and freight absorption.

Southern Subdivision again gave attention to two questions which it emphasized previously:

- a. Is Eastern Subdivision justified in the prices set up in Market Area #1, or should Market Area #2 prices be restored for the entire territory?
- b. Is Southern Subdivision entitled to a 30 cent maximum absorption to destinations which cannot now be reached on a parity with Nanty-Glo Class "A" coals?

Memorandum from Eastern Subdivision, March 14, 1935: Eastern Subdivision contended that if Southern Subdivision believed prices in Market Area #1 were not proper, facts should be presented to show that prices are too low, something that has not yet been done except through general statement. These prices were said to have been made

after a good deal of study; were accepted in a correlation agreement with Southern Subdivision No. 1, according to which no change was to be made until a traffic study on the New England situation had been completed.

With respect to the 30 cent maximum freight absorption, it was claimed that no means of policing destination prices existed because of the varying nature of boat and dock charges. Reference was made to a statement of a representative of the Southern Subdivision who admitted that a great portion of the tonnage going to New England is laid down on the dock and picked up afterward. It was further claimed that much of the tonnage lost its identity when reloaded at the docks.

Reply by Southern Subdivision No. 1, March 15, 1935: It was said that Southern Subdivision had protested Market Area #1 prices for a year, and had given a great deal of attention to this matter in its brief. No cooperation had been received from Eastern Subdivision in compiling data on the traffic situation in New England.

Decision and Opinions of the National Coal Board of Arbitration, March 18, 1935: The Board said the complaint averred that the unfair competitive conditions in New England result from the lowered prices established by the respondent for the territory known as Market Area #1, early in 1934; and since that date freight rate reductions to New England have taken place. Complainant asks that Market Area #1 be abolished and Market Area #2 prices apply, and that a maximum absorption of 30 cents be allowed.

The Board recognized the 30 cent absorption as of primary importance. Admitted there was a good reason for such a practice since competition between producers is in consuming markets. The fair competition contemplated by the Code must exist in respect to the delivered price to the consumer, and to deny the privilege of equalizing to a proper extent would lessen competition in many cases. Purpose of Code is not to lessen competition but to make it fair. But equalization must be confined to proper limits; the absorptions should not make the transaction uneconomical, either in the sense of burdening producers as to minimum wages, or preventing the sale of coal by others in their usual and normal markets.

The Board believed that Market Area #1 caused certain unreasonable and unjustifiable inequities in respect to consumers situated near the border line as well as the complainant. Again, freight rates have been reduced since Market #1 was established.

The Board held that coal shipped by the respondent moves by railroad and has definite freight charges. Freight charges paid by the complainant are indefinite because of the water and dock factors. Insufficient evidence was presented on the \$3.70 arbitrary, it was said, and this demanded further study.

Findings

1. A maximum absorption of 25 cents per net ton allowed.
2. Respondent shall put into effect in Market Area #1 the same prices as are in effect in Market Area #2.

3. That both parties should, within 10 days of this date, agree upon a figure which would be fair and reasonable as to water and dock charges; and failing to do so the matter will be submitted to the Board for decision.

4. When the water and dock charges are fixed, the delivered cost of coal from the subdivisions shall be the published price plus transportation costs.

5. The 25 cents absorption shall not be allowed until proof is furnished of the actual payment of the cost of transportation in the manner proposed to be established, to wit: the parties hereto shall within the next 10 days agree upon a method of supervising transportation charges.

(One dissent was registered among the full Board of five members that took part in the case.)

Petition of Eastern Subdivision for Postponement, Rehearing, and Reconsideration, March 29, 1935: Eastern Subdivision said it did not establish lower prices for Market Area #1, when as a matter of fact, in its correlation agreement, February 1934, the prices were increased, resulting in an absorption of 35 cents for Southern Subdivision on nut and slack, and slack coals, said to be the bulk of the southern tonnage.

From the statistics compiled by Research and Planning, H.R.A., a comparison of costs and prices was given. The complainant had costs of \$1.66 per ton, and Eastern Subdivision had costs of \$1.73 per ton. Shown that Southern Subdivision Class F slack coals had a price 26 cents below costs, while Nanty-Glo Class A slack coal was 2 cents above costs. Prices of other coals above or below costs:

	<u>Eastern Subdivision</u>	<u>Southern Subdivision</u>
N. & S.	+ 17 cents	- 11 cents
R. O. M.	+ 32 cents	+ 9 cents

Said it was clear that Southern Subdivision lost on the New England trade since the larger part of its tonnage was nut and slack, and slack.

It was said that Western Pennsylvania and Northern West Virginia had correlated their prices with Eastern Subdivision, and any change in the New England prices would disturb the price set up of all three Subdivisions. It would be unfair to raise Eastern Subdivision's prices without changing the prices in these other two Subdivisions.

Again Eastern Subdivision protested the water and dock charges in the absorption basis. In reference to the reduction on New England freight rates, it was stated that their effect was much less than had been asserted.

Eastern subdivision contended that prices published by Southern Subdivision constitute dumping prices. The complainant was said to already enjoy a 35 cent absorption on nut and slack, and slack coals,

and the additional 25 cents would make the total absorption amount to 60 cents.

Reply by Southern Subdivision No. 1, in Respect to Eastern Subdivision's Petition for Rehearing, April 4, 1935: Southern Subdivision said it had no objection to a rehearing on the \$3.70 arbitrary, but objected to covering other matters that had been previously decided. Claimed that even if Eastern Subdivision did not lower prices as alleged, the date on which these prices were made would not justify them because no normal tonnage flow was to be protested in Market Area #1. A summary of Nanty-Glo, Class A, R.O.'s. prices was given.

<u>Date</u>	<u>Area # 1 Prices</u>	<u>Area # 2 Prices</u>
10/3/33	\$2.15	\$2.15
10/29/33	2.15	2.15
December	2.15	2.15
1/1/34	1.90	1.90
1/15/34	1.90	2.15
2/6/34	2.05	2.15
4/1/35	2.30	2.40

The above prices were presented to show that Eastern Subdivision did lower prices for Market Area #1.

Notice of Postponement of Rehearing, April 17, 1935: A notice from the N.C.B.A. stated that the rehearing, scheduled for April 15, had been postponed until April 23.

Closing Out of Docket #1: The N.C.B.A., through a notice, May 20, 1935, stated that Docket #1 would be closed out as of May 27, 1935, provided that any additional written briefs may be filed by any interested party on or before that date.

DOCKETS 4, 5, 6 AND 7

Prices for Market Area #11, Lake Cargo Coal and By-Product Coal: These four dockets cover a controversy regarding prices for Market Area #11, lake cargo coal, and by-product coal. Southern Subdivision No. 2 is the complainant in each case, while the respondents are Southern Subdivision No. 1, for Docket 4; Northern West Virginia for Docket 5; Ohio for Docket 6; and Western Pennsylvania for Docket 7. The four dockets will be considered in relation to each other because of the similarity of issues, while Docket 4 will be covered more in detail in order to bring out the different questions involved in the controversy.

General Brief of Southern Subdivision No. 2, February 25, 1935: This brief, while of later date than the briefs presented for the var-

ticular dockets, has a short history of the case, and provides information on the origin of the controversy between Subdivision No. 2 and the other Subdivisions. Part of brief contains the complaint against Southern Subdivision No. 1, but much of the same material is contained under an earlier brief which will be summarized in a later part.

It was said that when the Code was established, the producing territory of Southern Subdivision No. 2 was represented by a marketing agency, Appalachian Coals, Inc., and was able to publish prices within a short time. The northern Subdivisions were highly competitive and experienced difficulty in setting up prices, and finally in May 1934, met in New York to work out a definite program, which resulted in an agreeable plan for Market Area #11. Southern Subdivision No. 2 had not participated in the negotiations, and was accused of refusing to correlate prices in this Area. The part taken by Southern Subdivision No. 1, however, is not clear either as to the negotiations carried on by the northern Subdivision or its relations with southern Subdivision No. 2.

Southern Subdivision No. 2 presented a base coal and its price in a meeting with other Subdivisions at Washington, D. C., September 8, 1934. With the exception of Ohio, other Subdivisions were said to have failed to name a base coal. These other Subdivisions were said to have favored a correlation of prices based on certain seam designations or coal from indicated mines, a procedure not favored by Southern Subdivision No. 2.

The complainant claimed that prices published by other Subdivisions in Market Area #11 are at least 15 cents too low, and an adjustment should be made.

The base coal used by Southern Subdivision had the following analysis:

Volatile Matter	34.00	Sulphur	1.00
Fixed Carbon	59.00	B.T.U. Dry	14,000
Ash	7.00	A.S.T.	2,750
Moisture	8.00	Price f.o.b.	
		mine	\$1.80

Allowance was made for differences in fusion:

2750 and up	Base	2300 - 2449	Minus 15¢
2600 - 2749	Minus 5¢	Under 2300	" 20¢
2450 - 2599	" 10¢		

The allowance for fusion was also to take care of sulphur content as in nearly all cases high sulphur coal was said to be low in fusion.

Adjustment was made for size in the following manner:

3" to 2 $\frac{1}{4}$ " N.& S.	Plus 5¢	5" to 1 $\frac{1}{2}$ " Slack	Minus 10¢
2" to 1 $\frac{1}{2}$ " N.& S.	Base	3/8" to 0" Slack	Minus 15¢
1 $\frac{1}{2}$ " to 7/8" N.& S.	Minus 5¢		

DOCKET 4

Southern Subdivision No. 2, Complainant, vs. Southern Subdivision No. 1, Respondent, in the latter of their All-Rail Prices in Market Area #11; their Lake Cargo Prices, and their All-Rail, Tidewater and

Lake Cargo By-Product Prices.

Complaint was received by the National Coal Board of Arbitration on February 18, 1935, consisting of a protest by Southern Subdivision No. 2 as to General Price Schedule # 14, effective December 1, 1934, and supplements thereto quoting (a) Market Area #11 all-rail prices; (b) Lake Cargo prices; (c) By-product prices -- all-rail, tidewater and lake.

Market Area #11 Prices: It was contended by the complainant, Subdivision No. 2, that it had a price disadvantage in Market Area #11, because of the relatively low prices published for this territory by Subdivision No. 1. Prices and analyses were shown on 5/8" and under slack as compared with the complainant's 2" nut and slack, the former said to make up the major portion of the slack shipments moved from Subdivision No. 1, and it was said that these prices were 25 to 30 cents lower than the prices of Subdivision No. 2, on a comparable coal. It was stated that the respondent had freight differentials ranging from 10 to 25 cents to destinations in Market Area #11, north of the Ohio River and, where the 10 and 15 cent differentials applied, prices were from 15 to 20 cents too low. Also noted that Southern Subdivision No. 1 has freight advantages on tidewater and eastbound coal and southbound coal with some exceptions.

Lake Cargo Coal: Through tonnage data for the year 1932 to 1934, inclusive, it was shown that Southern Subdivision No. 1 had bettered its position in the lake trade to a greater extent than the complainant. Said to have been caused by higher prices in high volatile territory, i.e., Southern Subdivision No. 2, after the marketing agency was established there in April 1933.

By-Product Prices: It was claimed that the major part of the by-product shipped from Southern Subdivision No. 1 took a mine price of \$1.80. The same coal takes a price of \$2.10 in Subdivision No. 2, and the latter price should apply for the respondent's coal that took the \$1.60 price.

Replies of Southern Subdivision No. 1, February 26, 1935, and February 28, 1935: Southern Subdivision No. 1 claimed that the complainant was not against present price relationships, but made an actual appeal to establish a new level of prices. The analyses of coals cited by the complainant were said to be incorrect. Data were given to show that 5/8" slack amounted to 45 per cent of the steam coal production of Subdivision No. 1. Into the market in question, it was indicated that the following shipments were made:

1 - 1/2" stoker	-- 23,000 tons
1 1/2 - 3/4" screenings	-- 84,000 tons
5/8" slack	-- 91,000 tons

It was said the assertion that a friable coal of 5/8" size from Subdivision No. 1 was competitive to a hard structured coal of 2" size was wrong, since the minimum size relation cannot be less than size for size. The formula used by the complainant was said to prove that the \$2.00 price for 2" stoker, as quoted by the respondent in its "F" classification, is 10 cents too high. This, in addition to unfavorable freight differentials, places Southern Subdivision at a large disadvantage. At Chicago, Southern Subdivision No. 2 allows a freight absorption of 20 cents on stoker

coals, which was claimed to place a price disadvantage of 65 cents on the respondent. Held that Southern Subdivision No. 1 was able to secure only 200,000 tons of steam stoker business in 1934 in an area to which it shipped 11 million tons of coal. Stated that the respondent's freight advantages to the south and east were not as great as had been contended by the complainant. It was further stated that Southern Subdivision No. 1 had been losing tonnage in Area 11 and, hence, no complaint on prices could be made for that territory.

Lake Cargo Coal: Southern Subdivision No. 1 said it had a price disadvantage ranging from 50 to 90 cents on steam coal at Duluth and Superior.

By-Product Coal: Said that the price of the respondent's by-product coal was between \$1.75 and \$2.00, with approximately half being sold at the \$2.00 price. Reference was made to the oral hearing where it was stated that Class A by-product of coals of Southern Subdivision No. 2 sold at prices 25 to 60 cents higher than Beckley and Pocahontas coals during the years 1928 - 1950 inclusive.

Supplemental Brief of Southern Subdivision No. 2: It was said that the "base coal" of Southern Subdivision No. 2 applied to 10 per cent of the mines in that Subdivision since April 17, 1933 when the marketing agency, Appalachian Coals, published its first price list. At the same time, it was admitted that certain coals could be classified on a higher level than the base coal providing that the \$1.80 coals could be properly correlated with comparable coals in Southern Subdivision No. 1. But it claimed that Southern Subdivision No. 1, and other Subdivisions, with coals sold at favorable differentials as against the complainant's prices, should not insist that the prices on nut and slack be increased in Southern No.2. It was stated that the prices in question had been objected to since the Subdivisions of Division 1 had been meeting together.

The 5/8" slack produced in Southern Subdivision No. 1 was held to be of vital concern to the complainant because of the favorable differential, and its comparability with 1 1/2" and 2" nut and slack of Subdivision No. 2. Respondent's contention that "the minimum size relation cannot in common sense be less than size for size" was opposed on the grounds that the relative value of the coals would be overlooked. It was also claimed that the freight rate situation described by the respondent was incomplete.

For a number of years, it was said, Southern Subdivision No.2 has had a good market in the Southeast, but is now threatened by the low prices of its competitor, Southern Subdivision No. 1. Reference was made to tonnage figures for other parts of Market Area #11 as an illustration of how the respondent increased its tonnage volume more than Southern Subdivision No.2.

Lake Cargo Coal: Again the larger increase of Southern Subdivision No. 1 in the lake trade is given attention. It was further said that the prices used by the respondent were contract prices effective on and after the dates claimed. The respondent was said to have

refused to meet with other Subdivisions in the Spring of 1934 to establish prices, making its prices voluntary and subject to complaint in event other Subdivisions can show losses in movement. It was asked that lake prices for Southern Subdivision No.1 be increased. Suggestion was made that prices quoted ex-Northwestern Docks be dropped because of the various factors that affect the northwest market and destroy the mine differentials.

By-Product Coals: Low volatile coals used in the by-product coal mixture were held to result in a larger coke yield as compared with high volatile coals, though the yield on by-products, such as gas, is reduced. The larger portion of coke result in a net gain, making it desirable to use low volatile coals. Thus, by-product coal Subdivision No. 1, with a price of \$1.65, was said to have an advantage in the market. That by-product prices were higher on high volatile coals, 1928-1930, was due to the fact that Southern Subdivision No. 1 had a surplus of slack which was moved at a relatively low price.

Decision on Docket 4, March 22, 1935

Prices in Market Area #11: The National Coal Board of Arbitration considered the complaint on prices in Market Area #11 from (a) price advantage of the respondent, and (b) the comparison of quality of respondent's coals with a theoretical base coal priced by the complainant at an arbitrary figure.

In respect to (a), the Board was unable to interpret the statistics of the respondent as indicating any shift of tonnage from Southern No. 2 to Southern No. 1.

As to (b), the comparative quality of the coals in question, the Board held that correlation was still indefinite and unsatisfactory. In addition, it was said that the complainant had not presented any analysis of actual coals, while other facts to substantiate the various claims were not in evidence.

The Board dismissed the complaint.

Lake Cargo Coal: Here again the Board held that the evidence failed to show any shift in tonnage at the expense of Southern Division No. 2, and the complaint was dismissed.

By-Product Coal: This complaint was dismissed on authority of decision rendered on by-product prices in Dockets 8, 9, and 14.

Docket 8 was concerned with the proposed elimination by Eastern Subdivision of a differential in the price of coal as between users of such coal for steam raising purposes and users of such coal by the manufacturer of by-products therefrom. Complaint was entered by Southern Subdivision No. 2, which stated that the custom had been for by-product coals to be priced at a premium over steam quality coals. The Board, in a 3 to 2 decision, held that if the classification of coals is based on the inherent quality of the coals and reflects in the price structure the marketability of the coals, it is neither

logical nor proper to charge a premium for one class of consumer as against another unless there are other factors which must be taken into consideration. The complaint was thus dismissed. Dockets 9 and 14 were similar and decided on the same basis.

Summary of Dockets 5, 6, and 7

The issues in Docket 5 were the same as in Docket 4; prices for Market Area #11, lake cargo coal, and by-product, but with the Northern West Virginia Subdivisions as respondent. Docket 5 was a complaint on the all-rail prices established by the Ohio Subdivision in Market Area #11; while Docket 7 was in connection with the prices established by Western Pennsylvania in Market Area #11, prices on lake cargo coal and the additional phase, namely, vessel fuel, and prices on by-product coal. The Board dismissed the complaints with the same reasoning contained in the decision on Docket 4.

A short description of the respondent's brief submitted for Docket 6 will be given below for general purposes of information. The files appear incomplete for Docket 5, and for that reason it will not be given treatment. The detailed complaint filed by Southern Subdivision No. 2 on Western Pennsylvania's prices was not answered by the respondent.

DOCKET 6

Ohio Subdivision as Respondent

Prices in Market Area #11: The respondent claimed that it was not in competition with the theoretical coal presented by the complainant, Southern Subdivision No. 2. That it had one price on screenings 2" and down, whereas the complainant had various prices for these screenings. It was suggested that Subdivision No. 2 submit proper analytical data on its various coals. The respondent said it was not familiar with the analyses of the various Ohio coals given by the complainant, or did it know the formula employed in arriving at the suggested differentials. Allotments under the Adams Plan were given reference, and it was shown that for the last 9 months of 1934, Southern Subdivision No. 2 had exceeded its quota, while Ohio fell below the amount proposed for it.

On March 4, 1935, the Ohio Subdivision submitted a detailed compilation to supplement and support the arguments contained in its briefs of February 25, and March 1, which have been summarized above. The following includes many of the points given in the supplemental brief:

1. Over 90 per cent of the Ohio tonnage is sold in Market Area #8, #11 and Lake. Various Subdivisions were said to use these markets as a dumping ground. Asked that a maximum spread of 25 cents be established on each individual classification as between the different marketing areas for each size and grade of coal, f.o.b. mine, in order to limit dumping in unnatural markets. A greater limitation on freight absorptions was also asked. A protest was made of the practice of permitting differentials on off-time railroad fuel.

2. Contended that the producing field nearest the consuming market should set the base price to which the more distant fields should correlate. The Hocking District, it was said, depends for its domestic market on the area comprising Ohio, half of the lower peninsula of Michigan, and the Northeastern quarter of Indiana; a market that will quickly disappear for Hocking if prices are not properly correlated. In this respect, it was suggested that domestic prices in Subdivision No. 2 be raised 20 cents per ton. As to steam prices, it was the practice, prior to the Code, to make mine prices on Ohio coal the same as for coal of a like size in Subdivision No. 2. This practice has been ignored since the Code, and a new correlation is necessary to protect the Ohio steam coals. Argument was advanced for a new correlation of prices in Market Area #8, for which Ohio #8 was suggested as a base.

It may be noted that the main answer made by the complainant to Ohio's argument was that the price formula used by Southern Subdivision No. 2 has worked satisfactorily and can be applied by other Subdivisions for Market Area #11. (See Answer, by Southern Subdivisional Code Authority, March 4, 1935.)

Docket 38

Division III vs. Southern Subdivision No. 2
of Division I

Price Reductions in Southern Appalachian Price List No. 6: The complaint of Division III was directed at certain price reductions published by the respondent in Southern Appalachian Price List No. 6, as detailed in proposed correction sheets to Price Circular No. 15, effective February 11 and 23, and March 5, 1935. This is the only docket on the recorded calendar wherein there is a controversy between parties of different Divisions.

Brief of Complainant, April 4, 1935: Division III developed the following points:

1. Reasonable effort had been made to settle the controversy. Meetings between the two parties had taken place in April, August, September, and December, 1934. Nothing resulted from the last three meetings, while in the first certain agreements were reached as to a proper basis of correlation.
2. Complaint has come, in the first instance, from the Tennessee-Georgia District of Division III. The basis between the coals in this District and coals in Southern Subdivision No. 2, according to the meeting of April 1934, was to place the lowest priced coals of the Southern Appalachian territory of the respondent on the same level as coals of the Sewanee seam of Division III. Coals of the Ravenscroft and Soddy seams, located in Division III, were to be 10 cents lower.
3. The above relationship has been continually disturbed by the appearance of coals from Southern Subdivision No. 2 in the agreed price level though they had been taking a higher quality rating. Recently, prices in the Chattanooga market have been disturbed by attempts

to reduce prices on certain Appalachian coals below the Dean seam coals of Subdivision No. 2, which in turn are related to Southern Tennessee coals. These proposed reductions are found for coals from Stearns Coal and Lumber Co., seams One and Two of the Kentucky field, the prices for which now equal or are lower than the prices of Dean seam coals.

4. In April of last year, there were 3 coals in the price list of Southern Subdivision No. 2 which had a price below the Dean seam coals, and at present date there are 14 coals. Recently an application was made to reduce the price of Dean seam coals by 15 cents per ton, a procedure that would disturb all the price relationships.

5. Since 75 per cent of the coal produced in the Tennessee-Georgia District runs 2 x 0" and smaller, any reduction of price of the respondent's nut and slack would reduce the District's realization to the extent of 10 cents per ton.

6. Request entered that the Board discontinue any prices entered by the respondent on coal moving to the Georgia and Chattanooga markets, which are lower than the prices effective January 1, 1935.

Response of Southern Subdivision No. 2, April 20, 1935:

Southern Subdivision No. 2 emphasized the points below in its answer to the brief of Division III:

1. Paragraphs 3 of Amendment 2 of the Code prohibits the destructive selling by a district with a lower wage scale in the normal consuming markets of any district which is subject to higher rates of pay. This provision gives to Southern Subdivision No. 2 the duty of establishing base prices on coals which compete with coals of Division III. Amendment 2 gave a base rate on inside skilled labor at 80 cents per day less for Division III as against Southern Subdivision No. 2, a wage differential that requires protection for Southern Appalachian operators.

2. In the meeting of April, 1934, it was recommended that Southern Tennessee producers of Division III, "x x shall not make prices in any competitive territories less than the delivered prices of comparable domestic and steam coals from Southern Subdivision No. 2 of Division I". Another recommendation was that a permanent committee be appointed, "x x to consider any inequalities that may develop from the application of these general rules". The committee was necessary because of the meagre information on coals of either Southern No. 2 or Division III. A tentative correlation was set up as a starting point. Later meetings showed that the correlation needed adjustment, but little success was had in making the necessary changes.

3. The price adjustments and changes proposed by Southern Subdivision No. 2 are warranted according to an analysis of the different coals. One of the proposed changes is to give Clinchmore 3/8" x 0" coal, which is now delivered into Chattanooga at \$2.30, a 10 cent lower price. This coal now has only a differential of 1 cent under 3/4" x 0" nut-slack produced in the Tennessee-Georgia district; a differential

not reasonable due to the size differences. Reduction in prices of coals produced in the Dean seam is required because of the low quality of those coals, which prevents them from competing with other Southern Appalachian coals.

4. The Stearns coal in question is of very low quality, which requires a price as low as proposed.

5. At the time of the tentative correlation agreement, there was no understanding that the Sewanee seam coals were to be priced on an equal delivered basis with the lowest priced coals of the Southern Appalachian district of Division I. Rather the understanding was that the Sewanee coals were to have the same basis as the Dean seam coals, and that Southern No. 2 would have the right to classify other coals in its district above or below the Dean seam prices to enable them to compete on a fair basis with other districts.

6. Believed that the Tennessee-Georgia District will not suffer losses if proposed prices are established since its prices will not be lowered. This district has relatively lower prices to other markets, some of which appear to be in violation with Amendment 2.

7. Tonnage data show that the Tennessee-Georgia district has bettered its position considerably in the Chattanooga market in the years 1932 - 1934.

8. An analysis of 2" nut and slack from a mine in the Tennessee-Georgia district shows the superiority of that coal as compared with a like size coal from the Dean seam.

Decision of the National Coal Board of Arbitration, May 1, 1935:

In reference to Amendment 2 of the Code, the Board held that the respondent overlooked the fact that provision was made to prevent coals from Division III invading markets of other Divisions or Subdivisions at a known competitively low price. In this case, the situation was said to be reversed as Southern No. 2 seeks to invade the home market of Division III through a price reduction prompted by a losing tonnage said to be caused by an improper correlation.

It was stated that the comparison of Division III and Southern No. 2 coals used by the respondent was questioned by the complainant on good grounds. The latter also showed that, as between these coals, the Southern No. 2 coals already had a favorable differential of 11 cents instead of 1 cent as indicated by the respondent.

The "sluggishness" and "heavy coking" behavior of Sewanee seam coals as against Dean seam coals, as cited by the complainant, were considered by the Board as properties not subject to measure. If these properties did exist as described, however, it was stated they would probable be offset by the ash softening temperature claimed by respondent to be in favor of Sewanee coals.

The Board concluded that the competition from which the lowest grade of Southern Appalachian mines are suffering came not from Division III but from mines in their own Subdivision. This contribution was attributed to the fact that a reduction had been made on higher grade coals of Southern Appalachian territory which affected the markets of the lower grade coals of the same Subdivision and, to effect an adjustment, the proposal was to lower by 15 cents the price of the inferior coals under the prices correlated with Division III.

Shipment figures submitted by the respondent to show that Division III had been bettering its position in the Chattanooga market as compared with the Southern Appalachian fields were criticized by the Board as tons were used in one instance and cars in another.

By a four to one vote, the Board sustained the complaint of Division III which protested the proposed price circulars.

Petition Made by Southern Subdivision for a Rehearing of Docket 38: Southern Subdivision No. 2 accepted the Board's decision with disapproval, and on May 5, 1935 petitioned for a rehearing of the case. The Docket was reopened on May 8.

Southern No. 2 made reference to price schedules in order to show that prices had not been generally lowered after April, 1934. It was said that prices of only 17 of 101 Southern Appalachian mines had been reduced, while prices of 2 mines were increased, the changes applying to low grade as well as high grade mines.

Other points developed by Southern Subdivision No. 2 were:

1. That the tonnage figures formerly presented show that the market of Division III has not been invaded by Southern Appalachian coals.
2. That the analyses of coals presented were representative.
3. That the Board must have confused another size of coal in believing that the differential on 2" nut and slack was 11 cents instead of 1 cent.
4. That the low volatile content and other qualities of Sewanee coals are subject to measure since these features bring higher prices.
5. That the competition of Dean seam coals is also with coals of Division III.
6. That the figures on cars can be made comparable with the tonnage figures by using 50 tons to a car as a conversion factor. This will clearly indicate that the Dean seam mines have been losing tonnage.

Brief of Southern Subdivision No. 2 in Response to Oral Testimony, May 15, 1935: This brief, though submitted in the rehearing proceedings, was in reference to the oral argument presented by complainant on April 24, 1935. It was said in this brief:

1. That the Dean seam coals did not have the lowest prices as a result of the correlation in April 1934.

2. That the Dean seam mines did not ship to the Chattanooga market before 1929, as claimed by the respondent, is incorrect.

Other argument gave in detail the points already covered in the petition for rehearing of May 3, 1935.

Reply by Division III, May 20, 1935: Division III entered further detail to support its former position. Among other things, it also claimed:

1. That witnesses testified that Dean seam coal was not shipped into the Chattanooga market prior to 1929.

2. That the prices referred to by the respondent did not include the proposed reductions.

3. That the National Coal Board of Arbitration was not wrong in assuming that a 11 cent differential already existed on the 2" nut and slack Dean seam coals in the Chattanooga market.

Supplemental Decision of The National Coal Board of Arbitration, May 24, 1935: The Board reaffirmed the original decision of May 1, 1935, holding that the complaint of Division III should be sustained.

H. Realization Under The Code

The larger part of price discussion in the previous sections of this chapter has been in connection with the price relationship between sizes and kinds of coal, between Divisions, and between Subdivisions. Another phase of much importance under price-fixing is that of realization, i. e., the composite of prices or the price level. This phase directs attention to the ratio of price to cost, and the degree of stabilization in the price structure.

Brief reference only need be given here on realization for the years prior to the Code (See Chapter I, section on Mine Realization). The downward trend of realization, particularly between 1925 and 1933, is one of the significant factors in connection with the long depression of the industry.

Monthly realization data are not available for the months prior to the Code, but it is generally accepted that the lowest level for realization, since the War and probably for several decades, was reached during the first half of 1933. Realization for 1933 amounted to \$1.34 per ton as compared with \$1.31 for 1932 but, of course, Code prices were in effect for the last quarter of 1933. For 1934, the only full year under the Code, realization advanced to \$1.75 per ton, an amount nearly as great as the \$1.73 for 1933.

The statistical system made possible under the NRA provided a means to obtain and publish realization data in greater detail. (The statistical methods for obtaining information on the industry are described in Appendix I). Thus, realization figures are found not only for territorial designations but by months. These data are presented in detail in charts (in Appendix), and briefly in the table below, with both presentations in such form as to be readily comparable with the cost data in Chapter V. The NRA realization figures do not include tonnage of captive mines, which is a variation in method as compared with the Bureau of Mines' figures that include captive coal.

Realizations, Costs and Margins,
Divisions I, II and III

5-Month Period, November-March 1934 (1)
10-Month Period, April-January 1935

Division and Subdivision (L)	November 1933-March 1934 (5-Month Period)			April 1934-January 1935 (10-Month Period)		
	Reali- zation	Cost	Margin	Reali- zation	Cost	Margin
Division I	1.6387	1.5989	.0398	1.9194	1.9053	.0136
Division I --						
North	1.6338	1.6023	.0310	1.9004	1.9296	-.0292
Division I --						
South	1.6440	1.5947	.0493	1.9377	1.8829	.0548
Eastern Sub- division	1.7230	1.7323	-.0093	2.0603	2.1182	-.0579
Western Penn- sylvania	1.6675	1.6443	.0232	1.9035	1.9408	-.0373
Ohio	1.6785	1.5243	.1542	1.8584	1.8031	.0553
Panhandle	1.5668*	1.5854*	-.0186	1.7542	1.7272	.0270
Michigan	2.9209	2.7140	.2069	3.1625	3.1848	-.0223
Northern West Virginia	1.3320	1.3151	.0169	1.6214	1.6671	-.0457
Southern # 1	1.7387	1.6570	.0817	2.0569	1.9473	.0896
Southern # 2	1.5684	1.5424	.0260	1.8447	1.8199	.0248

* 4-Months period; March data not available

(a) Exclusive of Western Kentucky

(1) Data from "Bituminous Coal Statistics," NRA

Realizations, Costs and Margins,
Divisions I, II and III
(continued)

5-Month Period, November-March 1934 (1)
10-Month Period, April-January 1935

Division and Subdivision	November 1933-March 1934 (5-Month Period)			April 1934-January 1935 (10-Month Period)		
	Realization	Cost	Margin	Realization	Cost	Margin
Division II (a)	1.5091	1.3453	.1638	1.6292	1.5448	.0844
Illinois	1.5337	1.3690	.1647	1.6396	1.5531	.0865
Indiana	1.4417	1.2800	.1617	1.5985	1.5203	.0782
Division III	1.9103	1.9483	-.0380	2.2539	2.2983	-.0444
Divisions I, II, and III	1.6171	1.5522	.0649	1.8701	1.8439	.0262

- (1) Data from "Bituminous Coal Statistics," NRA
(a) Exclusive of Iowa
(b) 9-month period; January not available

One noticeable feature of the price level under the Code was that it corresponded closely to the cost level. This is a remarkable showing for several reasons. It is to be remembered that the individual prices were established with little cost and price data on hand, and with wage increases and other cost increases in view. In addition, there was that troublesome factor of pre-code contract tonnage. Divisions I, II, and III, combined, had a realization of 1.62 for the 5-month period, which afforded a margin of 6.5 cents over costs. Division II was largely responsible for the size of the margin, since the realization for Division I was 4 cents above costs while the realization for Division III was below costs to the extent of 4 cents. For the 10-month period, April-January 1935, the margins narrow considerably. Divisions I, II, and III, together, had a realization that was only 2.6 cents over costs; Division I had a margin of 1.4 cents; the margin of Division II decreased to 7.8 cents; and the realization of Division III was still below costs. Data for Divisions IV and V were not complete enough to be included in the comparisons.

Differences in margins are found for the Subdivisions. For the 5-month period, Ohio and Southern # 1 enjoyed the largest margins in Division I, while Eastern Subdivision and Panhandle had realizations under costs. For Division II, Illinois and Indiana both had substantial margins; 16.5 cents and 16.2 cents respectively. For the 10-month period, Southern # 1 maintained its margin but Ohio's margin decreased to 5.5 cents, while the realizations for Eastern Subdivision, Western Pennsylvania, Michigan and Northern West Virginia, fell below costs. Illinois and Indiana had smaller margins for the 10-month period.

The charts give month by month comparisons of realizations and costs, November 1933-January 1935, with separate showings of realizations from coal sold under Code prices and coal sold under contracts made prior to the Code. Margins above costs are shown by black areas, and the margins below costs by the cross-hatched areas. The proportions of sales made under Code prices are presented on the lower part of the charts.

Little explanation need be given to the charts, except to point out several interesting features. For Divisions I, II, and III, combined, the margin between realization and costs remains small and uniform for the 10-month period, April to January 1935, aside from some variation in January. The margin is more irregular for the 5-month period ending in March 1934. The latter result may be related largely to the decrease in pre-code contract coal which had occurred in large amounts over the 5-month period. Similar tendencies will be found in the chart of Division I. The chart for Division II is quite irregular. Margins below costs are found between May and August, with plus margins for the other months. The decrease in pre-code contract tonnage is more gradual as against the above charts. Division III has more variation than either Division I or II. The charts clearly illustrate how price adjustments were made in April 1934 to meet the wage advances of that time.

Although prices were increased noticeably under the Code, there is no evidence that the Code price level was unreasonably high. It is true that realization advanced from \$1.34 in 1933 to \$1.75 in 1934, an increase of 30 per cent. A still larger increase would be found, no doubt, if realization for the first half of 1933 could be compared with the original Code prices. At the same time, it is to be remembered that the industry was operating at a loss for a number of years before the Code. This was true in spite of low wages and forced economies. In other words, an increase in price would have been necessary to cover the previously low costs. Under the Code, wages advanced sharply and other costs increased. These two sets of conditions, a relatively low price before the Code and large increases in costs due to the Code, meant that a marked increase in realization was necessary if costs were to be met. While an increase in price was necessary, it does not appear that unreasonable advances were made. The margins between cost and realization were small in most cases, amounting to only 2.6 cents per ton for Divisions I, II, and III, combined. Some criticism may be entered as to the price level because Code prices had to make up for the relatively low priced coal sold under pre-code contracts. This was true during the first few months of the Code, but during most of the Code period the proportion of pre-code contract tonnage was too small to affect realization to any degree.

The extent of price stabilization under the Code is apparent in the realization charts. For instance, the curve on realization for Divisions I, II, and III, combined, is practically flat for the 10 months, April-January 1935. The same is true for Division I. For certain Sub-divisions, such as Illinois and Alabama, the price level fluctuates noticeably. Information is not available to verify contentions that stabilization was breaking down rapidly during the last four or five months of the Code.

1. Summary: An absence of uniformity and standards in price fixing was a weakness early apparent in the Code. Methods of price fixing varies between Code Authorities. This was especially true as to classification. Disputes were quick to arise between the Code Authorities regarding the relationships of prices in common markets.

Another weakness of the early Code was the absence of provision for a central agency to adjudicate disputes. Many of the disputes arising during the first months of the Code were due to confusion and misunderstanding and could have been settled or reduced in importance through a central authority. In time, these disputes became more complex and involved, their effects became more widespread, while settlement became more difficult. The principle that price fixing was a Subdivisional matter was guarded closely, and it was only with reluctance that the industry slowly turned to a more central action. With the failure of voluntary agreement as a method of settlement, a procedure was established in June 1934, whereby advance notice was to be given on price changes, and the price changes were open to review of representatives of Code Authorities, marketing agencies, and the Administration. This tended to coordinate price activity and eliminate the confusion often following unexpected changes, but it did not provide a method for handling controversies already in existence. The latter was given attention when the Presidential Members of Division I (excoring Western Kentucky) were organized as a board, also in June 1934, to hear and render opinions on disputes. This board, without any definite authority, had little success in smoothing out the price difficulties.

Little information is obtainable on price compliance under the Code. It is generally known that price evasions took place, and failure in compliance was always a serious subject. Price evasions appear to have been mostly sporadic, and more common to some producing districts than others. The failure to specify a definite and effective means to police prices seems to have been one of the handicaps in respect to compliance.

It was not until the addition of Amendment 6, January 25, 1935, that major changes were made in the price provisions of the Code. This Amendment clarified and amplified price fixing, added a more definite price basis, and gave a procedure for handling controversies through a central agency, the National Coal Board of Arbitration. Amendment 6 became effective only 4 months before the end of the Code, and for that reason cannot be evaluated in terms of results. It is clear, however, that it was a great improvement. At the same time, it represented about the extreme limits in code organization with the problem of bituminous coal regulation still unsettled. Already progress had been made towards permanent legislation for the industry and, the day before Amendment 6 became effective, the Guffey Bill had been introduced in the Senate.

Bituminous coal price fixing was one of the major experiments under the N.I.R.A., and the results were extraordinary in certain aspects. A complex price system was established both upon short notice and with little precedent. The prices so established gave a realization that approximated costs. Stabilization appears to have been effected over the Code months. These were accomplishments in an industry that previously had no semblance of a price structure, that had suffered losses over a decade, and that had enjoyed no degree of stabilization.

APPENDIX I 1/

Statistical Reporting Under W.R.A.

It was early recognized that current factual data would be indispensable to intelligent administration of the Code. Although the Code, as submitted to the President for approval, did not make provision for statistical reporting, the President's formal approval, signed September 18, 1933, imposed a condition that:

"(1) There shall be added to the first paragraph of Section 3 of Article VII of the Code the following sentence:

All coal producers subject to the Code shall furnish to any governmental agency or agencies designated by the Administration such statistical information as the Administration may, from time to time, deem necessary for the purposes recited in Section 3(a) of the National Industrial Recovery Act and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies as the Administration may direct."

Pursuant to this provision, a Bituminous Coal Section was set up in the Division of Research and Planning under the direction of F.E. Berquist. This unit numbered as many as 85 people at its maximum. One of the first assignments was to devise suitable forms on which individual mines were to report operating data required by this Section.

Form A provided for monthly statements of costs in detail, with a section for summarized total realization from shipments against contracts made prior to the Code, shipments on orders taken subsequent to effectuation of the Code, and certain other classes of shipments or disposition of the period's production.

Form B called for selling and administration costs broken down in detail, to be submitted by each operating company and covering the operation of whatever number of mines it operated.

Form C was designed to show the details of employment and earnings per pay-period, for each mine.

Form D called for monthly details of income from sales by sizes and grades of coal, use classes, and price zones, separated as to pre-Code contract shipments and Code-price sales; with inventory adjust to account for total production during the month of reporting.

1/ Prepared by Ellery B. Gordon

Form T was a greatly simplified blank for the use of small mines (under 150 tons output per month), and embraced a simple cost statement, employment data, and realization from sales. The scattering returns on these forms were very inadequate and incomplete; no summaries were prepared.

This statistical program developed not only the most elaborate body of first-hand data collected by N.R.A. from any industry, but admittedly the most representative (nearly 70 per cent of total production) and extensive accumulation of vital factual information ever provided for bituminous coal over a continuous period of equal extent.

Forms A and B served to establish a basis of cost relationships among constituent items and among mines in the same producing field; averages of cost by months by fields throughout a full cycle of seasons; basic average cost relationships among the larger groups of fields represented by subdivisions under the Code; and finally the average cost comparisons between the 8-hour day and the 7-hour day periods. The breakdown of operating data called for on Form A also provided a basis for projecting costs as reported for the number of days actually worked in any month to an estimated or approximate cost if the mines in the group had worked different numbers of days during the month.

Value of Employment and Earnings Data and Cause of Form C

Discontinuance: The prime purpose of N.I.R.A. was to increase purchasing power by increasing payrolls. This purpose was unquestionably realized under the Bituminous Code. Coincident with this purpose was a decrease in the number of unemployed. The bituminous coal industry showed an increase in number of employees of about 40,000 in 1934 over 1933. The number of days worked by the mines also increased, as did the average annual earnings per man. (For details of these improvements see Chapter IV. of this study.)

Form C provided details of employment and earnings by principal occupations during a pay period; a frequency distribution of the number of men who worked various numbers of hours per period; another frequency distribution of the number of men who fell in each of eight earnings groups per period. It provided a basis for establishing average relationships among occupational groups, for the first time available to a wage conference committee negotiating a new agreement. Form C perhaps performed its most valuable function in this manner in the early 1934 wage conferences which eventuated in Amendment 1 and the 7-hour day. The occupational relationships thus once established are continuously useful. Many objections to the basic form of the report in some particulars were the subject of long continued conferences. The main point of argument centered around the basis for reporting a "man-start". The form carried the following instruction with respect to column 26 - "Total man-starts":

"Under 'mining, cutting, and loading labor' (item 107) use the following rule for determining the number of starts for employees on a tonnage basis: when a tonnage worker has been credited with two or more cars on the bulletin for any day it should be con-

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INFORMATION FOR SMALL MINES
(TO BE REPORTED FOR EACH MINE)
FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM

1. Number of days mine worked during month _____
2. Total tons produced during month _____
3. Number of men working during month _____
4. Average output of mine per working day [(2) divided by (1)] _____

ITEM	TOTAL COST	
	AMOUNT	PER TON
5. TOTAL WAGES PAID DURING MONTH (see instructions) _____	\$ _____	\$ _____
6. TOTAL EXPENSES FOR MINE SUPPLIES USED DURING MONTH (see instructions) _____	_____	_____
7. OTHER MINE EXPENSE INCURRED DURING MONTH: (See instructions)		
(a) Royalties, paid or accrued _____		
(b) Taxes _____		
(c) Compensation insurance, paid or accrued _____		
(d) Sales expense _____		
(e) Miscellaneous _____		
(f) TOTAL OTHER EXPENSES (7a to 7e inclusive) _____		
8. TOTAL COST (sum of 5, 6, and 7f) _____	\$ _____	\$ _____

	TONS	AMOUNT	PER TON	CODE PRICE PER TON	
9 INCOME FROM COAL SALES:					
(a) Lump (including forked coal) _____		\$ _____	\$ _____	\$ _____	
(b) Egg _____					
(c) Nut _____					
(d) Screenings (slack) _____					
(e) Run of mine _____					
(f) TOTAL SALES (9a to 9e inclusive) _____		\$ _____	\$ _____	\$ _____	

10. If members of producer's family work in mine, specify number so employed _____
11. If mine is worked by producers on a share basis, state total income earned by producers this month, \$ _____
12. Are you selling coal at the code price? _____
(Yes or no)
13. Are you paying wages established under code? _____
(Yes or no)

INSTRUCTIONS

The instruction numbers specified below correspond with above item numbers

1. Number of men working during month.—Report only the men who have earnings during this month. Any man who was on the pay roll but who had no earnings should not be included.
2. Total wages paid during month.—Under this item report gross wages paid to employees, whether paid by the hour, day, or ton (or on other piecework basis). Do not include the earnings of married employees such as clerks, stenographers, bookkeepers, supervisors, etc. (See instructions 7d and 7e)
3. Total expense for mine supplies used during month.—Report supplies used and property chargeable to mine expense during this period (power purchases) during month and/or direct fuel used at mine for power. If exact figures are not available, an estimate of these expenses should be reported.
4. Royalties paid or accrued.—Report royalties due, accrued, or paid for this month.
5. Taxes on mine property and equipment.—Report under this heading all real estate, personal property, and other taxes in lieu thereof levied on mine property and equipment. This should represent the month's share of taxes based on previous year's actual tax bills.
6. Compensation insurance paid or accrued.—Report the month's proportion of compensation insurance paid or accrued.
7. Sales expense.—Includes such items as salaries and expenses of salesmen, commissions paid or accrued, selling office expense, mine taxes, etc.
8. Miscellaneous.—Include here salaries of clerical and supervisory employees, operators' association dues and assessments, code authority expense, insurance other than compensation, depreciation, depletion (use income tax basis for calculation), etc.

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(ANSWER WAGE AND EMPLOYMENT DATA ON REVERSE SIDE)

DO NOT FILL IN
Key Code No.
Classification

Report for mine.
Name of reporting company
Address

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for period of 193

..... (Signature) (Official Title) For (Name of Company)

DO NOT FILL IN
Key Code No.
Classification

For period 193 to 1933
Location of mine: State County Field
Code Authority No. Subdivision code authority letter Name of mining district
Name and/or number of seams worked
Tonnage disposed of by: 1. Trucks or wagons 2. Railroads 3. Waterways
Type of mine: 1. Deep (shaft, slope, or drift) 2. Strip pit
Class of mine: 1. Commercial; 2. Part commercial, part captive; 3. All captive; Captive to (a) Public utility; (b) Steel and by-product coking plants; (c) Railroad; (d) Industrial; (e) Other (specify)
Average output per working day (whether one or more shifts are worked) net tons (total tonnage for period divided by number of days tippable started)
State any special local condition that affects production cost or market value for this period
If this form is used to report on unassigned or reserve acreage, note here
Number days tippable started Tonnage produced in this period
Approximate percent coal mined by: Scraper loaders Mobile loading machines
Duckbills Hand loading face conveyors
Pit-car loaders Hand loading
Total average thickness of seam inches; draw slate inches; total partings inches

INSTRUCTIONS

The instructions numbered 1 to 11 correspond with item numbers on reverse side of this form

This form should be used to report each mine whether working or idle (except abandoned mines). Where a company holds unassigned or reserve acreage that is not attached to a particular mine, all acreages of such acreage should be reported for each subdivision area separately on other copies of Form A. These forms should be especially marked "unassigned or reserve acreage" and should show taxes, insurance, and other carrying charges except interest on investment.
1. Number of days tippable started.—Report the number of starts made by tippable whether operated longer than at least 8 hours per day.
2. Number of working days tippable idle.—The number of days, other than Sundays and holidays, the tippable was idle.
3. Number of holidays and Sundays.—Report under this item the number of Sundays on the month plus holidays recognized by the labor contract, or set aside by proclamation of the President of the United States or Governor of the State.
4. Total net tonnage produced.—Report on a short-ton (2,000 lb) basis. Figure should represent all coal disposed of plus or minus changes in inventory (filled cars, stock piles, etc.) at beginning and end of month.
5a. Day men.—Report all day men except those included under 5b, 5c, and 5d.
5b. Mining (piece or day workers).—Report all workers engaged in cutting or loading coal, whether on tonnage or daily or hourly basis.
5c. Yardage and deadwork.—Report all yardage paid for narrow work, also all other deficiency work commonly known as deadwork.
5d. Supervisory and clerical.—Report managers, superintendents, and other responsible administrative mine employees, technical employees, clerks, stenographers, book keepers, and other clerical employees on salary.
6a. Total mine labor.—Total of 5a, 5b, 5c, and 5d.
6b. Supplies all supplies except power and fuel.—Report supplies used and properly chargeable to mine expense, during this period. Supplies used for company house repairs should be reported under 6c.
6c. Power purchased.—This should include power purchased from utility companies and others, as well as power produced by central power plant owned by the company and making a prorated charge to the mine for the power it uses.
6d. Mine fuel.—Report mine fuel used by individual mine power plants as well as fuel used for heating and drying purposes.
6e. Total of items 6a, 6b, and 6c.
7. Total mine labor and mine supplies.—This should include the total of 6a and 6d, 6b, salaries and expense of other employees discharged to the mine.—This should include pro rata of salary and expense of division superintendents, general superintendents, division engineers, traveling auditors, mechanical engineers, and production of expenses of any central office serving more than one mine, all of which are not included in the totals of 6a. The usual practice of the company should be followed in distributing these charges on either a tonnage or time or "other" basis. Include in this account technical expenses contracted for with outside agencies.
General instructions.—Companies having central preparation plants, briquetting plants, and other company-owned units (except central power plants) serving more than one mine should prorate labor and supply costs to each individual mine and report under items 6a and 6b.
8a. Taxes on mine property and equipment (except unassigned acreage).—Report under this item the capital oil real estate, personal property, and other taxes in lieu thereof (ad valorem, etc.) levied on mine property and equipment. This should include the monthly accrued amount based on previous year's actual tax bills.
8b. Insurance (all classes except compensation).—Report the monthly proportion of all insurance premiums for fire, tornado, and other classes of insurance but excluding amounts representing compensation insurance.
8c. Company house expense (including fixed charges thereon) less income.—Report all company house expense for repairs, maintenance, and fixed charges, including taxes, insurance, and depreciation. All income from rentals should be credited to the amount so the net amount reported for each mine is a net result from operation of company houses. Report net income in red and deduct from total of other expenses.
8d. Depreciation (less income tax basis for depletion).—Report 1. monthly proportion of the depreciation used in reporting the income to the Treasury Department on their Form No. 1120. This is done to get the cost of depreciation on as uniform a basis as possible. If the company is using rates during the year other than those they use for reporting to the Treasury Department, these should not be used in this caption, but indicate the monthly proportion of the amount so calculated for the annual Treasury Department income-tax return.
9a. Royalties paid or accrued.—Report royalties due, accrued, or paid for this month on leases of all lands connected with the mine for which this report is made.
9b. Operators' association dues and assessments.—Report assessments and dues for this month.

10. Compensation insurance paid or accrued.—Report monthly proportion of compensation insurance paid or accrued. Companies carrying outside insurance will report the monthly proportion which they will have to pay, or have paid, and those carrying their own insurance should report the amount they secure in actual practice, not to exceed the rate of actual required for the year 1933.
11. Code authority expenses.—Report code authority expenses incurred for this month and if a definite rate per ton has been established by the end of this month accrue the amount based upon this rate of assessment.
12. Depletion.—Instructions given under 9d will apply to this item.
13. Total selling expenses.—Bring forward from Form B the rate per ton for selling expenses as determined on that report. This rate per ton should be multiplied by tonnage produced (item 4) to arrive at the amount to be included on this mine's report. It is quite necessary that this extension be made in this manner in order to work out the studies required by NRA under the Coal Code.
14. Total administrative expenses.—Instructions for reporting are the same as above to 14.
15. Total cost per ton.—Carefully check all totals in the "Amount" column, as well as the "per ton" totals. In arriving at the per ton cost the calculation should be carried four places beyond the decimal.
16a. Sales from orders and contracts taken prior to effective date of code prices.—Care should be taken to segregate sales of coal contracted or sold prior to this date as it becomes an important item in the study required by NRA. Report only coal loaded on railroad cars, barges, or locomotive tenders.
16b. Sales from orders taken under code schedule of prices.—Follow instructions given in 17a above for sales made at prices established under the Code.
17. Shipments to storage (rail yards and docks).—Report (a) number coal, (b) coal tonnage, (c) tonnage, (d) cost for storage, (e) days in railroad cars, (f) freight by the producer of this agent, (g) of which has not actually been sold but assigned to the producer or his agent at rail or truck yards, tidewater ports, river ports, or lake ports and/or at docks beyond such ports.
18. Coal to beecher ovens and briquetting plants.—Report coal transferred to these plants and include the amount at which this tonnage was valued. If in the practice used by the company no value was assigned to this tonnage use the minimum code price for the coal transferred.
19. Sales at mine to dealers and retail customers (including beecher coal).—Report under this item all tonnage delivered to trucks at the mine regardless of whether the orders were before or after the Code "as set out in 17a and 17b, which is to be used exclusively for car- or barge shipments; also include local retail coal and house coal.
20. Net change in inventory for this period (plus or minus).—Report in red if the inventory at the end of the period is less than the inventory at the first of the period, and in blue if the tonnage and amount is in red this item should be subtracted from the other items 17a to 17g in reporting the 18.
21. Average tons produced per period.—It is desired to know the average daily tonnage produced, and if for any reason the division of item 4 by item 1 does not result in a normal average daily producing figure, note at the bottom of this report what is considered the present normal working-day tonnage.
22. Labor expense for working days.—In those cases in which daily labor costs are not compiled as a part of the normal accounting practice for the mine, the following method for arriving at labor costs for working days is suggested:
Subtract the total of labor costs for idle days and Sundays and holidays (item 20b) from item 20c (less total labor cost—item 8e).
Care should be taken that earnings of supervisory and clerical employees (item 6d) as well as item 20b, 20c, and 8e are properly allocated under items 20a, 20b, and 20c.
23. Labor expense for idle days.—Summarize total expense for idle days as shown on the pay roll or cost sheet for reporting under this item.
24. Labor expense for Sundays and holidays.—Use same instructions as under 20b in the column headed "Number of Days" insert the number of working days, number of idle days, number of Sundays and holidays which should equal on line 20d the total days in the month for which this report is made. This "Number of Days" should be divided into the "Total Amount" to give the "Average per Day."
25a, 21b, and 21c.—Instructions under 20a, 20b, and 20c will apply to these items. Where a company does not keep daily supply cost the total supply cost for the month should be reported. An effort should be made to arrive at the amount of power cost and mine fuel separately for idle days and Sundays and holidays, which amount should be set on as the amounts for 21b and 21c. After arriving at the cost for power and mine fuel on idle days and Sundays, estimate these amounts from usual supply expense to arrive at total working-day supply cost. This will assist the master mines that do not keep daily cost on supplies and will not disturb in any great extent the studies on supply expense. The companies that keep accurate daily supply records should report the supply expense for working days, idle days, and Sundays and holidays.

PRODUCTION AND DISTRIBUTION COSTS (For Individual Mines)

For period 193 , to 193
FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM (See reverse side of this form)

1. Number of days tippie started	
2. Number of working days tippie idle	
3. Number of holidays and Sundays	
4. Total net tons produced	

	TOTAL COST (For month or period)	
	AMOUNT	Per Ton
5. MINE LABOR		
5a. Day men (paid by hour, day, or month)	\$	\$
5b. Mining (piece- and day-workers)
5c. Yardage and deadwork
5d. Mine supervisory and clerical employees
5e. TOTAL MINE LABOR	\$	\$
6. MINE SUPPLIES		
6a. All supplies (except power and fuel)	\$	\$
6b. Power purchased
6c. Mine fuel at previous month's cost
6d. TOTAL MINE SUPPLIES	\$	\$
7. TOTAL MINE LABOR AND MINE SUPPLIES	\$	\$
8. OTHER MINE EXPENSES:		
8a. Salaries and expenses of other employees distributed to this mine	\$	\$
8b. Mine office expense (not included under 5d above or reported on Form B)
9. CHARGES USUALLY ON A FIXED LUMP-SUM BASIS:		
9a. Taxes on mine property and equipment and other taxes in lieu thereof (except on unassigned acreage)
9b. Insurance (all classes except compensation)
9c. Company house expense—including fixed charges thereon, less income
9d. Depreciation (use income-tax basis for calculation)
10. TOTAL OF ITEMS 8 AND 9	\$	\$
11. CHARGES USUALLY ON A PER TON BASIS:		
11a. Royalties paid or accrued	\$	\$
11b. Operators' association dues and assessments
11c. Compensation insurance paid or accrued
11d. Code authority expense
11e. Depletion (use income-tax basis for calculation)
12. TOTAL OF ITEMS UNDER ITEM 11	\$	\$
13. TOTAL PRODUCTION COST (total of items 5 to 12, inclusive)	\$	\$
14. TOTAL SELLING EXPENSES—PER TON FROM ITEM 5d (applied to tonnage produced from this mine)	\$	\$
15. TOTAL ADMINISTRATIVE EXPENSES—PER TON FROM ITEM 5e (applied to tonnage produced from this mine)	\$	\$
16. TOTAL COST PER TON (sum of per ton costs of items 7, 10, 12, 14, and 15)	\$	\$
17. INCOME FROM COAL SALES—FROM THIS MINE:		
17a. Sales from orders and contracts taken prior to effective date of code prices	\$	\$
17b. Sales from orders taken under code schedule of prices
17c. Shipments to storage—rall yards and docks (see 6, art. 6, Coal Code)
17d. Coal to beehive ovens and briquetting plants
17e. Sales at mines to dealers and retail customers—including house coal
17f. Net change in inventory (coal on hand and in transit to scales) for this period (plus or minus)
17g. Used at mine for power or heat
18. TOTAL INCOME FROM COAL SALES (total of 17a to 17g) Tons, same as item 4	\$	\$

OPERATING DATA

	OPERATING DATA			
	TOTAL AMOUNT	PER TON	Number of Days	AVERAGE PER DAY
19. AVERAGE DAILY TONS PRODUCED FOR PERIOD (item 4 divided by item 1)				
20. ANALYSIS OF TOTAL MINE LABOR (see instructions):				
20a. Labor expense for working days	\$	\$		\$
20b. Labor expense for idle days	\$	X X X X		\$
20c. Labor expense for Sundays and holidays	\$	X X X X		\$
20d. TOTAL ALL MINE LABOR (item 5e)	\$	X X X X		X X X X X
31. ANALYSIS OF TOTAL MINE SUPPLIES:				
31a. Supply expense for working days	\$	\$		\$
31b. Supply expense for idle days	\$	X X X X		\$
31c. Supply expense for Sundays and holidays	\$	X X X X		\$
31d. TOTAL ALL MINE SUPPLIES (item 6d)	\$	X X X X		X X X X X

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Form B
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

Report for _____ mine.

Name of reporting company _____

Address _____

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for month of _____, 193...

(Signature) (Official title) For _____ (Name of company) 10-1223

Form B
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

SUMMARY OF COSTS FOR EACH OPERATING COMPANY
Covering Operations for all Mines

(MUST BE FURNISHED TO ALL SUBDIVISIONAL COGE AUTHORITIES IN WHICH MINES ARE LOCATED)

		TONS	
		AMOUNT	PER TON
50. TOTAL TONS PRODUCED—ALL MINES (sum of item 4).....	net tons.....		
51. TOTAL TONS PURCHASED COAL SOLD, AND JOBBER COAL HANDLED			
52. TOTAL TONS HANDLED—THIS PERIOD BY THIS COMPANY.....			
53. SELLING COSTS:			
53a. Salaries and expenses—salesmen.....		\$	
53b. Commissions paid or accrued.....			
53c. Salaries and expenses—selling officers.....			
53d. Salaries and expenses—clerical.....			
53e. Rent and office expenses.....			
53f. Advertising.....			
53g. Sales taxes.....			
53h. Depreciation—office equipment and automobiles.....			
53i. All other selling expenses.....			
54. TOTAL SELLING EXPENSES (items 53a to 53i). Use tonnage item 52 as divisor.....		\$	\$
55. ADMINISTRATIVE EXPENSES:			
55a. Salaries and expenses—officers.....			
55b. Salaries and expenses—clerical and others.....			
55c. Office expenses and rent.....			
55d. Legal.....			
55e. General.....			
55f. Depreciation—office equipment.....			
55g. Corporate taxes.....			
55h.....			
55i. All other administrative expenses.....			
56. TOTAL ADMINISTRATIVE EXPENSES (items 55a to 55i). Use tonnage item 52 as divisor.....		\$	\$
57. TOTAL PRODUCING EXPENSES—ALL MINES (total of items 18). Use tonnage item 50 as divisor.....		\$	\$
58. TOTAL COST PER TON—EACH OPERATING COMPANY (sum of per ton items 54, 56, 57).....		XXXXX	\$

INSTRUCTIONS

The instructions numbered 50 to 58 correspond with the item numbers on Form B, above.

General instructions.—This form should be prepared by all companies or firms operating bituminous coal mines. Where a company operates a mine or mines in more than one subdivisional code area, copies of this return will be necessary for each subdivisional code authority. Do not include any amount for interest or other capital charges.

50 Total tons produced—All mines.—Report the total tonnage produced by each company regardless of subdivisional authority boundaries. This will be the sum of items 4 on Form A for all mines of each company.

51 Total tons purchased coal sold.—Report all the purchased coal sold during this month for which the expense of selling and handling is included in items 53 and 54.

52 Total tons handled.—This is the sum of items 50 and 51 and is to be used to arrive at the per-ton cost of selling and administrative expenses.

53a Salaries and expenses—Salesmen.—Include in this item only the salaries and expenses of salesmen directly connected with sale of coal.

53b Commissions paid or accrued.—If operating company engages a selling company to sell its coal, the commission paid, together with any commission paid to a supervisory selling agency, should be reported under this item. This will also include commissions paid to company salesmen who are on a commission basis of compensation.

53c Salaries and expenses—Selling officers.—This should include the salaries and expenses of the principal executive sales officers, general sales agents, sales managers, but not salesmen directly selling coal.

53d Salaries and expenses—Clerical.—Report only the clerical expense connected with the running and managing of sales offices.

53e Rent and office expenses.—This should only include rent and office expense directly connected to selling efforts.

53f Advertising.—This includes advertising expenses, paid or accrued, in connection with the sale of coal or coal products by each company.

53g Sales taxes.—Where State sales tax laws provide that they shall be treated as an item of cost, this expense should be reported under this item.

53i All other selling expenses.—Report all other selling expenses not specifically provided for in item 53a to 53g.

54 Total selling expenses.—Divide total of item 54 by item 52 to arrive at the per-ton cost of selling. The per-ton cost should be carried to four places past the decimal.

55a Salaries and expenses—Officers.—Report the salaries of all officers of the company, except as provided for in item 53c.

55b Salaries and expenses—Clerical and others.—Report clerical and other expenses, except as provided for in 53d and 53e of Form A.

55c Office expense and rent.—Report all office expenses and rent, except as provided for in 53e.

55d Legal.—Report all legal expenses, paid or accrued, for the month.

55e General.—Report under this item expenses of a recurring nature and not specifically classified under 55a, b, c, d, f, and g. This category should not include sundry administrative expenses of a nonrecurring nature, which should be reported under 55i.

55f Depreciation—Office equipment.—Report depreciation on income-tax basis for all general office and sales office equipment.

55g Corporate taxes.—Report capital-stock tax and other State corporate taxes, including severance, tonnage, and net-proceeds taxes.

55h Blank.—Report any special administrative expenses which may have occurred in this month, which should be set out distinctly from other general classifications under this heading.

55i All other administrative expenses.—Report sundry nonrecurring expenses.

56 Total administrative expenses.—Divide the total of item 56 by the total of item 52 to arrive at the cost per ton, which should be carried to four places past the decimal.

57 Total producing expenses—All mines.—This should be the sum of items 18 on Form A and, when divided by the total from item 50, should represent the total cost per ton for producing coal by each company in this month. The per-ton cost should be carried four places past the decimal.

58 Total cost per ton.—Blank operating company.—This is to be carried as a total per-ton cost and should be the sum of the per-ton cost of items 54, 56, and 57.

Report for _____ mine.
Name of reporting company _____
Address _____
I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for period of _____ 193

For _____ (Signature) _____ (Name of company)

For period _____ 193, to _____ 193

Location of mine: State _____ County _____ Field _____
Code Authority No. _____ Subdivision code authority letter _____ Name of mining district _____
Name and/or number of seam(s) worked _____
Tonnage disposed of by: 1 Trucks or wagons _____ 2 Railroads _____ 3 Waterways _____
Type of mine: 1 Deep (shaft, slope, or drift) _____ 2 Strip pit _____
Class of mine: 1 All commercial ; 2 Part commercial, part captive ; 3 All captive .
Captive-owned or controlled by: (a) Public utility ; (b) Steel and by-product rolling plants (other than public utilities) ; (c) Railroad ; (d) Industrial ; (e) Other (specify) _____
Average output per working day (whether one or more shifts are worked) _____ net tons (total tonnage for period divided by number of days tipples started)
State any special local condition that affects production cost or market value for this period _____
If the form is used to report on unassigned or reserve seams, note here _____
Number days tipples started _____ Tonnage produced in this period _____
Approximate percent coal mined by: Scraper loaders _____% Mobile loading machines _____%
Duckbills _____% Hand loading face conveyors _____%
Pit-car loaders _____% Hand loading _____%
Total average thickness of seam _____ inches, draw slate _____ inches; total partings _____ inches

DATA ON MAN-HOURS OF PIECE WORKERS

If the company maintains at this mine a record of actual hours spent at the face by mining, cutting, and loading labor paid on a piece-work basis, report the total man-hours worked by these employees in either column (1) or (2) of following schedule. If the data on man-hours spent at the face are not available, report the time taken out for lunch in column (1), if the time for lunch is included in the total man-hours figures report in column (2).

In those cases in which a company does not keep a record of time spent at the face by mining, cutting, and loading employees on a piece-work basis but does maintain a record of time spent in the mine, report the total man-hours of these employees in column (3). Give in detail under column 4, the method used in collecting the data as reported below. If the statement of method is not complete, the data supplied cannot be used. If data reported are for man-hours spent in mine, the statement of method should specify whether the total man-hours figures were computed on a mine entrance to mine entrance basis, shaft bottom to shaft bottom basis, or some other basis.

OCCUPATION	TOTAL MAN-HOURS SPENT AT FACE		TOTAL MAN-HOURS SPENT IN MINE	METHOD USED IN RECORDING TIME
	1 Inside day men	2 Outside day men		
Pick miners				
Machine loaders				
Mechanical loading men				
Cutters and helpers				
Total				

INSTRUCTIONS

General instructions—The occupations for which data are requested under items 101, 103, 107, and 109 are the ones for which a particular study is desired at this time. The list of occupations (day men) for which data are to be reported on this form has been prepared by your Code Authority in cooperative with the Administration.

The earnings and employment information for employees in unspecified inside day occupations (including supervisory, technical, or clerical workers or tonnage workers paid by the day) should be reported under items (a) and (b), and the data for employees in unspecified outside day occupations (including supervisory, technical, or clerical) should be reported under items (c) and (d). In classifying as between outside day occupations, place all employees not reported in specified occupations who receive a rate equal to or higher than the driver or brakeman rate in the "other skilled" classification and all other unspecified employees in the "other unskilled" classification. In the case of outside day men, place all employees not reported in specified occupations who receive a rate equal to or higher than dumpers, car droppers, or car preparers in the "other skilled" classification and all other employees not reported in the "other unskilled" classification.

In those instances in which day men are intermittently shifted from one day group to another day group, report those day men in the occupation in which they worked the greater number of days. In the case of pieceworkers who are intermittently shifted to day work, the hours and total earnings of these employees should be reported in their normal tonnage occupation.

Columns 1, 24, and 46—"Number of men earning pay during period."—Report in this column only the men who have earnings during pay period reported. Any men who were on the pay roll but who had no earnings should not be included.

Column 2 and 47—"Rate per day."—Report the rate per 8-hour day paid the men under the various classifications. If more than one rate is in effect specify the rate paid to the majority of the employees in the occupation.

Columns 3 and 48—"Total man-days worked."—Report in this column for inside and outside day men the actual man-days worked. Convert fractional days into equivalent full-time days.

Columns 4 and 49—"Total man-hours worked."—Report in this column for inside and outside day men the total man-hours actually worked.

Columns 5, 25, and 50—"Total earnings."—The sum of the figures in these columns should equal the total pay roll.

Columns 6 to 11 and 51 to 56—"Number of men who worked in this pay period."—The information reported in these columns should be carefully compiled and a cross addition should equal the total men on pay roll under each occupational classification.

Columns 12, 13, 14, 35, and 57—"Average working force."—In reporting the working force on a normal working day, the day, Sunday, or holiday, do not include any men who were employed on special jobs.

Item 105—"Supervisory and clerical."—Under this designation report managers, superintendents, and other responsible administrative mine employees, technical employees, clerks, stenographers, bookkeepers, and other clerical employees on salary.

Column 26—"Total man-starts."—Under "Mining, cutting, and loading labor" (Item 107) use the following rule for determining the number of starts for employees on a tonnage basis: When a tonnage worker has been credited with two or more cars on the bulletin for any day it should be considered as a start. To these starts should be added the shifts performed at day labor by these men.

Columns 28 and 58—"Total all earnings, including yardage and deadwork."—In these columns should be reported the total amount of earnings of the miners either on a day or piecework basis, and for the purpose of this study it is desired to have the earnings for yardage and deadwork included in the total earnings. The "yardage and deadwork earnings", however, should be reported separately in columns 29 and 59.

Column 37 to 44—"Number of men whose earnings in this pay period were."—This should be arrived at from the total earnings of the men and not what they drew after deductions. In other words, gross-earning basis should be used.

Item 107—"Mining, cutting, and loading labor."—In those cases in which machine loaders do intermittent piecework, classify them as machine loaders and report employees who both cut and load coal under the occupation in which they get their greater earnings.

Item 107—"Mechanical loading men."—Under this designation report all pieceworkers who normally comprise a mechanical loading crew. Do not report those employees elsewhere.

Item 107—"Cutters and helpers' rate" (piece-work basis).—In column 36 report the combined basic rates for cutters and cutters' helpers at this mine.

Item 109—"Mechanical loading men."—Under this designation report all men paid by the day who normally comprise a mechanical loading crew. Do not report these employees elsewhere.

Columns 21 and 37—"Total absenteeism" (day men).—For the pay roll period count each employee absent who, for any reason whatever, failed to report for work when work was available to him, and assign to each employee the number of hours he could have worked had he been present. Report in this column the total man-hours absenteeism for each occupational classification.

Column 45—"Total absenteeism" (pieceworkers).—Count each employee in this group absent who, for any reason whatever, failed to report for work when work was available to him. Consider each absence as a start and report the total of such man-starts for each occupational classification.

sidered as a start. To these starts should be added the shifts performed at any labor by these men."

This basis for man-starts was not entirely satisfactory, in part because of the difference in the size of mine-cars in use among the many mines, ranging all the way from slightly under a ton up to 4 tons. No figure of average capacity of mine cars was available, though reporting over a period could have developed such a figure, which could have been applied to the man-start measurement so as to bring about substantial uniformity.

A struggle ensued to reconcile the different viewpoints and produce a man-start basis acceptable to the industry, so that the reporting of Form C data could continue through a period of months sufficient to establish sound relationships.

On July 5, 1934, Dr. Willard E. Hotchkiss was appointed to direct a special study of wage differentials existing among the various bituminous coal fields. Dr. Hotchkiss rendered a report as of November 30, 1934, which clearly set forth the history of the attempt to adjust Form C to meet the divergent attitudes toward the man-start basis; the following is quoted from his report:

"During the time immediately following my appointment a review was made of previous studies of wage rates and differentials. Later on efforts to assist in removing obstacles in the way of carrying out the current statistical program have given frequent occasion to consider existing differentials; but in the absence of comparable operating figures under existing wage scales it has not been possible to proceed with the study which I was scheduled to direct.

"Those who hoped for direct benefits from the study were naturally disappointed that no study was made. But even if a study had established a theoretical case for adjustments on October first, it is doubtful to what extent it would have been possible to make such adjustments; revising an unexpired wage agreement presents serious difficulties.

"Viewing the Bituminous Code in the large, the harm resulting from failure to secure facts upon which to base a study of differentials consists chiefly in delaying the time when improved procedure in meeting issues, whether by negotiations or otherwise, can become effective. While some of the Code Authorities have collected operating data for their particular subdivisions, these are without official sanction, and doubtless it is now too late to secure data from the whole industry on any approved schedule so as to permit checking and comparison between fields in time to be available for the forthcoming negotiations. From the standpoint of the interest which U.R.A. obviously has in the Bituminous Code, lack of official statistics to guide these negotiations is unfortunate.

"Failure to set a schedule for securing current operating statistic was brought about by disagreement between operators and was confined to Schedule C (Earnings) and specifically to the definition of man-start within that schedule.

"Since the number of hours worked by piece workers is not universally recorded, it is impossible to secure accurate figures of hourly earnings of piece workers throughout the industry. Lacking a record of the hours worked, the nearest practicable approach to accuracy has been sought by dividing the total piece work earnings for each mine and class of piece workers into the total number of starts made by the workers in question. Literally, a man-start is a case in which a man begins work on any day, irrespective of the number of hours he actually works."

The Bituminous Coal Section suggested a basis of 3 tons of coal or one car of coal on the tippie sheet. "This definition was seriously challenged by some of the operators on the ground that mixing cars and tons introduced an incongruous element into the statistics and also on the ground that cars were of different sizes in different mines and fields," says the report, which proceeds:

"Controversy over the definition of a man-start was confined in the main to the Eastern fields which constitute Division Number One under the Bituminous Code. This Code has no national code authority, but operates through divisional and sub-divisional code authorities. Division Number One, comprising the important fields of Ohio, Pennsylvania and West Virginia, and also the other Eastern fields to the south of Ohio and Pennsylvania, has by far the largest tonnage of all the divisions, and is itself divided into several subdivisions with subdivisional code authorities. Issues which extend beyond the jurisdiction of the subdivisional code authorities in Division Number One have been dealt with in an organization known as the North-South Commission, made up of operators and representatives of the United Mine Workers.

"At the time the issues concerning Schedule C developed, the Fairmont and Smokeless fields had withdrawn from the North-South Commission and were therefore not represented in the deliberations of that body. At a meeting of the North-South Commission held in Washington in the middle of July, prolonged discussion was given to Schedule C and unanimous decision was made to eliminate the one-car item from the definition of a man-start, leaving the definition merely as three tons on the tippie sheet.

"During this meeting, in which Mr. Berquist and I participated, Mr. Berquist made it very clear that the definition was likely to meet with opposition on the part of the Fairmont and Smokeless fields. Not only did this

prove to be the case, but certain members of the North-South Commission who were at the meeting and voted for the definition later found that it was not acceptable to the operators of their districts.

"In an effort to compose differences, Mr. Berquist suggested that the column in the schedule showing man-starts under the three-ton definition be paralleled by a column showing man-starts on a so-called 'man-at-work' basis. Such a column would have shown for each mine and type of work the number of cases in which a man actually went into the mine to work' on any day, regardless of the length of time he worked. To provide for checking, it was proposed that each mine should post a list of all its piece workers upon a sheet on which there would be a square for each working day, in which he checked off each time the man went into the mine and worked on the day in question. By posting this list in a conspicuous place where workers and representatives of the union could inspect it and suggest necessary corrections, it was hoped that substantial accuracy might be attained. However, operators quite generally rejected the proposal on the ground that the procedure would be unfamiliar, that the necessary provisions for checking would have to be improvised rather hurriedly, and that results would be highly unsatisfactory.

"At this stage of the proceedings representatives of all the subdivisions in Division Number One were called to meet at Washington with the hope that they would either reach an agreement or receive an order from the Administrator to proceed in accordance with a schedule which he might designate as the one to be used. The meeting did not have this result, but it was possible during the discussion to bring about an agreement on the part of those fields that had objected to the three-ton definition to accept that definition, provided it was paralleled in the schedule by columns showing (1) the number of starts and corresponding earnings eliminated under the three-ton definition, and (2) the number of one-car starts.

"In a conference which Messrs. Berquist, Ellis and Hitchcock held with representatives of the operators in Central and Western Pennsylvania and Ohio on August 22, 1934, the solution of the man-start problem, just mentioned, was acknowledged to be statistically sound, but the possibility that previous commitments might prevent the data from being used impartially as between the several fields was given as a reason for declining to proceed on the basis indicated.

"I took the position at that time, which I still hold, that no agent of the Government could have intentionally promised to make adjustments following statistical studies, except such as the findings indicated to be fair and just between all interested parties. As for the future, the

force which authenticated statistical data may have upon adjustments between fields will rest upon the merits of the case, as shown by the facts when they become available.

"Any one familiar with the setting in which this issue of a man-start developed could scarcely believe that a simple statistical item of this sort, even with the ghost of a vague commitment in the background, would hold up the program of a whole industry and an important arm of the United States Government. Historically, the question may perhaps be dismissed with the statement that it was doubtless an item in the 'horse trading' frequently incident to important negotiations. In case N.R.A. had decided upon a schedule that was statistically defensible and embodied it in an order to the industry it seems probable that the special study and the regular work of the bituminous coal unit would have gone ahead as planned.

"Looking ahead it is unthinkable that an industry confronted with the hazards that surround bituminous coal mining will continue to throw over a constructive program of fact finding because of a single item on one schedule, even were the issue as contentious as the extraordinary proceedings of the past summer have made the definition of a man-start appear. The questions which the industry and the Recovery Administration have to face in respect to research must certainly be answered on their merits. If the results of research are to be used as a guide for industrial policy and the settlement of contentious issues in this industry, it is highly essential that prompt means be found for advancing a suitable research program.

"Considering the fact that coal is an exhaustible natural resource concerning which there was a strong urge for a definite national policy long before N.R.A., it appears reasonable to suppose that the Bituminous Code will be near the top of the list of those likely to be continued beyond June 15, 1935. It also appears improbable that current misgivings about price fixing and regulation of production will lead to any sudden abandonment of governmental efforts to cooperate with members of the industry- employers and workers -- to safeguard the approaches to stability which the Code has developed.

"Although the necessity of a national policy in respect to coal is almost universally recognized, there is available no adequate body of information upon which to base more than the general outlines of such a policy.

"The tentative character of the suggestions made by members of the industry in recent conferences indicates that they are by no means in agreement concerning the lines along which future policy should be drawn. The subject is one to which a great deal of study will need to be given, and facts that have already come to light

in the analysis of data collected last year show conclusively that the Government on its part can scarcely commit itself for any considerable period, in respect at least to price and production control, except on the basis of reasonably complete and continuous statistical information.

"The fact that the industry is almost completely unionized makes it especially important that the Government should be at all times in the possession of data to justify any policy it may underwrite in which the consumers of coal have any significant interest. Obviously, there are few policies connected with any program of stabilization in which consumers are not interested.

"With the Government facing problems of the magnitude and importance of those here under discussion, it is unfortunate that the statistical work upon which the whole program was intended to rest, should have been interrupted during the crucial six months period just ended. The members of the industry who have expressed solicitude for continuing the Bituminous Code have greater direct interests in the statistical program than any other group. They are in general as intelligent a group of leaders as will be found in any of the industries with which the Recovery Administration has maintained contacts during the past year and a half. It is very doubtful whether any responsible leaders in the industry will expect the Government to continue present policies or embark upon new policies which involve the underwriting of price structures and distribution quotas without resting action upon the most complete statistical information.

"These leaders should be equally ready to recognize that information concerning the earnings of workers is absolutely indispensable as a basis for any program of stabilization. This is especially the case because of the high percentage of total value of product represented by the cost of labor. Also it is important because of the wide geographical distribution of the industry and the consequent importance of adjusting wage differentials, if any, so that employment and earnings, as well as profitable operation will be distributed in some fair way between the different local groups who are entitled to share the opportunities that this industry affords.

"From all these points of view, it would appear that one of the first questions to be raised in any conference with operators looking toward the continuance of the Bituminous Code should be the question of proceeding at the earliest possible date with the work of collecting authentic current statistics.

"Obviously, it is pertinent to the drafting of any new policy to go over the whole statistical program, item by item,

to determine whether there are any points at which it can be simplified and made less expensive. Any such scrutiny, however, should proceed entirely on the merits of the items scrutinized in relation to the whole program and without reference to the question whether one item or another would reveal facts favorable or unfavorable to particular areas in connection with negotiations or administrative decisions. There can be no sound argument against basing policy and administration upon the best possible basis of factual information."

Form D - Analysis of Income from All Coal Sales: The price-fixing provisions of the U.R.A. Code for Bituminous Coal suggested naturally a means for checking realization from sales against average costs as reflected by Forms A and B. Form D was to furnish this means. The tons shipped during each month, to each different price zone, of each different size and preparation of coals, was reported separately, with separate columns for the tonnage shipped against contracts made prior to the Code, tonnage shipped against orders received after the Code became effective, and the average realization from all. In order to balance the report against total tonnage produced during the month, items for inventory tons and valuation were also provided, with the same separation between that part reserved against pre-Code contracts and that available for application on Code-price business.

By projecting all the tonnage shipped to a Code-price basis, the influence of the pre-Code contract shipments could be ascertained.

This report form quickly became inadequate as the items multiplied on the Code-price lists. Especially did the early adoption of "market areas" by some of the important subdivisional code authorities, with a schedule of prices on the same coals set at different levels for the different markets, necessitate the addition of many items beyond the line capacity of this already very detailed form. This market-area idea spread rapidly and after the November and December 1933 reports had been made the industry representatives voted their disapproval of continuing Form D.

Such detailed reporting by items, under the exceedingly complicated price-list structure that grew until the January 1935 Code price list of the Division I subdivisions listed some 28,000 price items, is admittedly very burdensome. Nevertheless it is highly desirable that the industry and government know currently during any price-fixing period the details of all shipments and prices.

Form D was discontinued after December 1933. Its possibilities were perhaps not fairly examined. Obviously any regulated price fixing under Governmental auspices must be surrounded with every precaution against abuse. Besides serving as a check on violations or subterfuge as to price, however, the form offered other vitally important analytical data, such as:

- (1) Breakdown of total tonnage by sizes.
- (2) Breakdown of shipments by market zones.

Both of these types of data are vital to a sound estimate of the average return per ton on all coal when it is by law or regulation required to be related to or approximate a definite standard, such as cost.

- (3) Prompt reflexion of shifts in demand for respective sizes and types of preparations; within a market zone or among such zones.

Form D
NRA Bit Coal

ANALYSIS OF INCOME FROM ALL COAL SALES INDIVIDUAL MINE REPORT

Include railroad, river, and truck shipments, transfer to company plants manufacturing products of coal, local sales and mine fuel—Exclude purchased coal

For period, 193 , to, 193

FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM (See reverse side of this form)

1 ITEM	2 If a sale of any coal made by the mine reporting to the Bureau of Mines, or if a sale of coal made by the mine reporting to the Bureau of Mines, prior to the date of the report.	3 Quantity—Net tons	4 Amount of royalties, royalties, and other income received from the sale of coal	5 APPROXIMATE INVENTORY DECREASES OR INCREASES								13 Total actual production (Net tons)	14 Minimum price per ton (See instructions)	15 Estimated value of coal sold (See instructions)		
				6 Disposals on orders made and contracts made prior to effective date of Code prices			7 Disposals on orders made and contracts made subsequent to effective date of Code schedule of prices								8 Total actual production (Net tons)	
				9 Net tons	10 Amount	11 Per ton	12 Net tons	13 Amount	14 Per ton	15 Amount	16 Per ton				17 Amount	18 Per ton
A. Lump																
B. Egg or Stove																
C. Nut or Range																
D. Screening slack																
E. Rescreened sizes, Dry																
F. Special treated sizes (such as metal or crushed or wet sizes)																
G. Modified Mine Run																
H. Total All Screened Coal and Slacks (Items A through G)																
I. Straight Mine Run																
K. Total Invoiced																
L. Add Inventory at End of Period (Less)																
M. Total Inventory End of Period																
N. Total K plus M																
O. Less Inventory at Beginning of Period (Less)																
P. Total Inventory at Beginning of Period																
Q. Net Production This Period (N minus P)																

An adaptation of this form in such manner as to grow items and minimize the detail could and should, it is believed, be a regular requirement. It fills or can be revised to fill a very noticeable lack in available bituminous coal data. Assuming a continued interest in if not actual regulation of bituminous coal mining, one of the outstanding gaps in current data has been that of distribution details. It is suggested that the following data should be currently provided to the proper governmental agency by all bituminous coal mines:

- (1) Tons shipped, by sizes, by market areas, and by special use classes which represent customary price classifications.
- (2) Total realization in dollars received for each such separate item, inclusive of commissions to selling agents and/or wholesalers;
- (3) Showing of commissions allowed each selling agent, wholesaler, etc., listing tons shipped on each commission basis.
- (4) Breakdown of shipments between "contract" and "spot", with realization on each.

A. System of Handling Reports: The 24 headquarter offices of Subdivisional Code Authorities functioned as field statistical units at the outset. Later, by Code Amendment 4, approved November 5, 1934, each Code Authority was directed to set up a statistical bureau, under a manager, to receive and summarize the monthly reports.

All reporting forms were submitted to the various Code Authorities and others for criticism and suggestions. The forms were then printed and distributed in quantity to each Subdivisional Code Authority, for distribution in quadruplicate to each known mining operation in their respective territories. One of the 4 copies was for the mine to use as a worksheet, one was to be retained by the reporting mine in its submitted form, and two to be filed with the Code Authority. The Code Authority was to retain one copy and forward a complete set of all reports to the Bituminous Coal Section of Research and Planning, N.R.A.

Mine identification on all forms and tabulations therefrom was by a code number, the key to which was held confidential without exception so far as the Bituminous Coal Section of N.R.A. was concerned. Positive identification by name and address was provided on each form by a perforated tab which was detached by the Code Authority before mailing to N.R.A.

Accompanying the set of mine reports for each reporting period the Code Authority submitted a columnar listing of the data (on standard tabular forms called "plates") item by item and mine by mine, with totals and averages for each subarea within the subdivision.

The editing and statistical staff of the Bituminous Coal Section verified all computations on these plates, edited the detailed items and entries for mistakes, eliminated obvious distortions and recapitulated the



subarea totals by Subdivisions and Divisions, from which recapitulation summaries were prepared for publication.

Uniformity of statistical treatment in the Code Authority offices was insured by circularized bulletin service, augmented by several regional meetings called and attended by F. E. Berquist, who explained every step and, by question and answer method, unified the understanding of statistical bureau heads.

B. Editing, Recapitulation and Summarizing:

A trained staff was established in the Bituminous Coal Section, under the immediate direction of qualified project supervisors: Production and Distribution data (Forms A and B) under Lewis F. Bond; Employment and Earning data (Form C) under Waldo E. Fisher; and Sales Realization data under Ellery B. Gordon.

The work naturally divided itself into editing, tabulation, recapitulating, and summarizing. Competent assistants under the project supervisors were responsible for the orderly, accurate, and speedy handling of the flow of work: Production and Distribution costs, Mrs. Eva A. Pugh; Employment and Earnings data, Miss Charlotte Garner and Mrs. Hazel Davies; Sales Realization data, Carl Gnam. Every posting, every computation, every correction was checked for accuracy before passing on to the next step.

C. Editing the Individual Mine Figures

1. Atypical Operations Excluded from final Summaries:

Distorting elements were carefully avoided. It was necessary to edit the individual mine figures very carefully, under detailed instructions furnished the editorial staffs for their guidance with respect to each of the reporting forms. The bases for exclusion from summaries were generally as follows, with special cases decided by the supervisor in charge:

(a) Captive mines (those owned by and producing for consumers of coal, such as a steel plant, public utility, or larger manufacturer). It is obvious that some normal factors in costs may be either altogether eliminated (such as selling expense) or be on a basis that destroys their strict comparability with commercial operations (such as the administrative expense). Such mines as reported part of their production "captive" and part commercial were included if as much as 40 per cent of output was sold commercially, unless the costs themselves were such as to materially distort the averages. It should be noted that many of the most important captive operations made no reports on Form A, but, under a special agreement, reported their respective coal operations individually by companies. The reports so made were generally not on conventional Form A and would not have been usable in the summaries; they also were often submitted as consolidated reports for all the mines operated by the same consuming interest without segregation as between Code districts or Subdivisions.

(b) Small mines reporting an average output less than 150 tons a day for the days operated during the month, were excluded. Many such mines submitted very unsatisfactory reports, incomplete and ob-

viously made up from inadequate records. A few exceptions were made in cases where, by including a small mine whose report was otherwise usable, a group of 3 mines could be completed and thus avoid disclosing the identity of particular mines.

(c) Disclosures avoided: In order to avoid disclosure of individual mine figures, in no case were figures published for a group of less than 3 mines.

(d) Insufficient Data: Reports incomplete as to essential items or lacking in a whole group of items (for example, on Form A, items 5d - Mine Supervisory and Clerical; 5a - All Supplies except power and heat; 8a and 8b - Mine office rent and salaries; 9d - Depreciation; 11a and 11e - Royalties and Depletion; 14 - Selling; 15 - Administration) were excluded from summaries. The absence of any one of these items was not necessarily decisive; if comparison of all items indicated that one or more of those missing was probably included in another item, and the tonnage influence of the mine on the average of the group was not distorting, the report was tabulated. Example, on Form C, mines were eliminated which did not report data for all the major occupational groupings of 102, 104, 108 or 110. When dealing with individual mine reports schedules had to be eliminated if essential information such as man-days and man-hours and distribution had been omitted. Similar practice was followed in editing all the Forms.

(e) Distorting Factors: When a mine reported on Form A such extremely high costs or extremely low costs, as obviously to represent a definitely distorting influence in the averages for the group, it was excluded. For example, if a reducing cost of 38.00 or \$10.00 per ton appeared in a group which ranged from \$1.25 to \$3.00 per ton for varying numbers of tibble starts, such mine was excluded from the summary. A truck mine (or one which reported shipping by truck more than 50 per cent of its production) was excluded if its realization from sales appeared to include cost of trucking as well as the cost of production, since the average realization shown on summaries represents f.o.b. mine sales. Similar practice was followed in editing Form C.

(f) Strip mines were excluded from the tabulations for deep mines, but were included in Special Strip Mine Summaries when a sufficient number reported to make it possible without disclosure of individual figures (3 or more mines). Beginning with the Summaries for April, 1934, through January, 1935, deep and strip mines were combined in the summaries released covering the Illinois and Indiana Subdivisions.

2. Editing Forms A and B: Immediately after the receipt from the Subdivisional Code Authority office and "check-in" of a month's mine schedules or tabulations on plates, they were examined for "eliminations". The basis for eliminating or excluding certain mines from tabulations was as above described. The remaining mine figures on Form A were then edited by checking the Selling and Administrative Expense costs per ton against those shown on Form B for the same mine.

In editing Form A, the total costs reported for selling and for administration were reconciled with the corresponding Form B items;

thus, the total amount shown for selling expense on Form 3 for a company operating 3 mines must represent the total of these items as shown on the 3 mine reports. Ordinarily, the Form 3 selling expense per ton was found to have been applied to the tonnage produced by each of the 3 mines to arrive at the mine's selling expense; in some cases, where Form B indicated a sale of coal purchased, in addition to that produced in the 3 mines, the Form B expense per ton was applied to each mine's report on the tonnage produced. In such cases, of course, the total selling expense of the 3 mines would be less than Form B, Item 5-, by the amount of expense incurred in selling the "purchased" coal at the same per ton cost. Some exceptions occurred, where the accounting system of the reporting company made a fine distribution of the actual amount of costs incurred in selling purchased coal. Sometimes also the actual amount of costs for selling the output of one mine appeared at a different rate from that allocated to another mine operated by the same company. In such cases, the total of the amounts of selling costs shown on the individual Form A mine reports was checked as correct if it equaled the Form B item for total selling cost.

The next editing step involved a mine-for-mine comparison of costs per ton with those of the preceding month, to detect unusual costs and account for them. The following items were especially scrutinized:

- | | |
|--------------------------|-------------------------------|
| * 5d - Mine Supervisory | 10 - Total Fixed Charges |
| 5e - Total Mine Labor | 11a - Royalties |
| 6d - Total Mine Supplies | 11e - Depletion |
| * 9a - Taxes | 14 - Selling Expenses |
| * 9d - Depreciation | * 15 - Administrative Expense |

* These might reasonably run about the same from month to month as to amount, differing in cost per ton dependent on the tons produced.

Checking for Inconsistencies: Other normal agreements and relationships among items were carefully verified as were subtotal postings, computations and totals.

In some cases serious inconsistencies could be accounted for by correspondence; a very few were found which proved to be atypical with distorting influence on the group totals and averages, and these mines were excluded from tabulation. Notes were made of any marked changes in the average per ton of any important item; each book or volume of published summaries contains pages of such explanatory notes.

The last step in editing a month's material for one Subdivision was to submit to the chief editor all

1. Plates (itemized by mines, in tabular form).
2. Mine reports.
3. List of mine reports excluded, with reasons in each case. As to those excluded on account of essential data missing, schedule of item or items missing in each case.

- Special notes explaining unusual divergence from previous month's figures.

This edited material was examined by the chief editor, and on being found in order, proceeded through the stages of recapitulation by "areas" and Subdivisions, from which the final Summaries by Subdivisions and Divisions were posted, verified, lettered in final form, reverified, and sent to the Government Printing Office for printing and binding preliminary to public release.

Editing Form C: Upon receipt of the individual mine reports or tabulated plates they were examined, item by item, for those schedules which had to be eliminated. (See previous discussion for eliminations.) The following checks were then made:

1. All items under each occupational grouping (102, 104, 106, 108 and 110) were checked for arithmetic accuracy and totaled to get item 111. The number of men reported in the two frequency distributions of hours and/or starts and earnings were checked to the men earning pay during the period.

2. The next step consisted of various checks to determine the internal consistency of items reported -

- a. For each occupation total man-hours were divided by total man-days to find the hours worked per day.
- b. For each occupation, total earnings were divided by man-days or man-starts and this figure of average earnings per day or start was checked, against the hours worked (in the case of day men) and the rate per day or start reported on the schedule.
- c. The distribution of men in the frequency tables under hours and earnings were also checked for consistency in relation to the total man-hours and total earnings reported.

The last steps in editing were similar to those described under Editing Forms A and B.

4. Editing Form D consisted of examination for incompleteness and for eliminations of mine reports made on an improper basis or operating as distortions in the averages. Eliminations followed generally the lines of those enumerated in prior treatment of "Editing Forms A and B", with application to the realization per ton in place of cost per ton.

D. The summaries were published in four volumes, released as completed. November 1933 data were first completed and released to be available to the wage conference of January - March 1934. This volume included more detail, especially as to the labor data, or Form C summaries, than the volume prepared for general distribution and released October 16, 1934; which contained the November and December 1933 Statistics. After December 1933, Forms C and D were discontinued and data

was available on Forms A and B only; succeeding releases included therefore the cost and realization data from these forms only. The monthly January-February-March 1934 cost summaries were released on October 30, 1934. Although on January 9, 1935, a volume was published releasing the monthly cost summaries for April-May-June 1934, these data were later made much more representative by the inclusion of more mine reports, and this volume should not be used, since revisions appear in the final volume covering April, 1934, through January, 1935, released in May, 1935. This 10-month volume was prepared in record time (about five weeks) in the spring of 1935, particularly to make the data available to the wage conference which finally negotiated an agreement after five successive strike postponements and a strike lasting from Monday September 23 through Monday September 30.

Iowa reporting discontinued after December 1933, Western Kentucky after January 1934, and in the final 10-months volume Divisions IV and V were not available. The record is complete from November 1933 through January 1935 for Divisions I, II and III, exclusive of Western Kentucky and Iowa; representing about 90 per cent of the U. S. annual production.

From these monthly and period summaries have been computed the charts and tables on cost and realization used in this study; also much of the material used in the discussion of wages and earnings during the Code period.

The adoption of Amendment 1, with increased wages and a 7-hour day, 35-hour week, beginning April 1, 1934, established a natural dividing line. All considerations and comparisons split as of that date.

E. Frequency Distribution Tables

Averages are frequently misleading and in any event do not disclose the full picture. To discover the composition of average figures an analysis of each Subdivisional monthly summary was made as to cost of Production, as to Total Cost (including Selling and Administration) and as to the margins between Realization and Total Cost. The result has been set up in such form as to show on all three types of frequency tables, the number of reporting mines which fall in each 10-cent interval, the tons produced by the interval-group, and its per cent of the total production of the Subdivision. In the frequency tables on production cost and total cost, there are shown in addition the average output for each interval-group in tons per day, and its weighted average number of days tipples started. In the tables showing margins per ton (difference between total cost and realization) the additional columns for interval groups cover weighted average number of days tipples started, average output per day, average margin (plus or minus) per ton, percentage sold under pre-Code contracts and their average per ton realization, percentage sold under the Code of schedules of prices and their average per ton realization.

In all cases, the totals are shown for the Subdivision at the foot of the Table.

Samples of these frequency tables appear for a selected month for each Subdivision as published in the April 1934 through January 1935 book.

As an example, take October 1934 production cost in Eastern Subdivision. An examination of summaries discloses that the 160 mines reporting in this month produced 2,74,250 tons in an average of 16.9 tippie starts, at an average producing cost of \$1.8738. But the analyst wants to know between what ranges of cost these mines fell; in what narrower ranges the majority of the mines fell - also the majority of the tonnage, and along what points the bulk-line would run. Per contra, there may be little definite showing of bulk - a fairly even distribution of mines through a wide range of frequency groups - and if so, is the weight in tonnage also widely distributed, or narrowly confined? To help answer these and many other questions pertinent to a thoughtful analysis of averages, these frequency tables have been prepared for every Subdivision and every month covered by published Form A summaries.

Below is reproduced the frequency table on Production Cost for Eastern Subdivision, October 1934. An examination makes clear that a more vivid picture may be drawn of what happened among the mines as to production cost than could possibly be drawn from the summary averages alone.

While only a few of these frequency tables have been released in published form (see "Bituminous Coal Statistics for the period April 1934 through January 1935"), they have all been available and carefully considered in this study.

BITUMINOUS COAL

Frequency Table of PRODUCTION
Costs per ton.
(Item 13 from Form A)

Division I
Subdivision Eastern
Period Covered Oct-
ber 1934

DEEP LINES

Costs Per Ton (under)	No. of mines	Tons Produced	% of Total Tons	Amount	Per Ton	Avg. Out- put per day	Avg. No. Tipple Starts
.70							
.70							
.80							
.80							
.90							
.90							
1.00							
1.00							
1.10							
1.10							
1.20							
1.20							
1.30	2	95,566	4.1	\$132,664	1.388	4,851	19.7
1.40	9	142,490	6.1	206,503	1.448	7,772	18.3
1.50	11	125,245	5.4	196,062	1.566	6,898	18.2
1.60	17	221,007	9.5	365,184	1.652	13,276	16.6
1.70	21	371,928	15.9	651,929	1.753	20,664	18.0
1.80	29	478,849	20.5	862,496	1.843	29,197	16.4
1.90	17	172,591	7.4	337,210	1.954	10,864	15.9
2.00	14	215,915	9.2	441,653	2.045	13,949	15.5
2.10	14	215,989	9.3	459,160	2.126	13,556	17.2
2.20	8	148,169	6.3	329,170	2.222	8,995	16.5
2.30	3	15,590	.7	37,061	2.377	1,009	15.3
2.40	5	43,249	1.9	106,119	2.454	2,766	15.6
2.50 & Over	10	87,602	3.7	228,896	2.613	5,258	16.7
Total	160	2,334,250	100.0	\$4,573,927	1.874	138,055	16.9

F. Operating Costs Projected to Different Working Days Per Month

a. Method of Arriving at Cost Per Day: In addition to the actual mine costs, the operator was requested to report a breakdown of labor expense and supply expense between working days, idle days and Sundays and holidays. This breakdown made it possible to get an average cost per day of labor and supplies for each working day, idle day, and Sunday and holiday. The total production in net tons was also put on per day basis.

b. Projection to Various Numbers of Work-days in Month: It was desired to discover the best approximation possible to show the effect on costs had more or fewer working days been available during the period, assuming that all conditioning factors remained the same as in the actual cost data. Although the resulting projections to bases of 12, 14, 16, 18, 20 and 21 days represent the theoretical costs, a test projection to the actual days worked indicated in most cases a sufficiently close approximation to the actual costs to make these projections at least reasonably indicative of the effect of days worked on Production Costs. (*)

(*) Per day Items: the output per day in tons, labor costs per day and supply cost per day as reported were projected to the desired number of days by multiplication. As the days worked in a period increase, production increases accordingly, so that idle day expense per ton drops. Sundays and holidays, of course, remain the same in number but, as production increases, the cost per ton drops.

Lump Sum Items: "Items Usually on a Fixed Amount Basis" are divided on Form A as follows:

- Item 9a - Taxes on Mine Property & Equipment
- 9b - Insurance (all Classes except compensation)
- 9c - Company House Expenses
- 9d - Depreciation

These items are not affected as to their amount by either high or low production but stay on practically the same basis for each month. The total amount of these items is carried throughout the projection without change, the cost per ton decreasing as the days worked and, therefore, production increases.

Charges Usually on a Per-Ton Basis:

- Item 11a - Royalties paid or accrued
- 11b - Operators' association dues and assessments
- 11c - Compensation Insurance (paid or accrued)
- 11d - Code Authority Expense
- 11e - Depletion

All of these items are usually increased in amount by the tons produced, but the cost per ton is not changed. The projection, therefore, is first to a one-day total amount, by multiplication on the day's tonnage production and from one day's cost the projection is extended again by multiplication to the various days worked.

c. Months Selected for Projections and Reasons: The months of November and December, 1933, May, 1934, and January, 1935, were used as sample months for projections. These three months are very representative as to number of mines reporting and the number of days worked considering the conditions prevailing in the industry during the 15 months period covered by the cost Forms A and B. The projections appear in the appropriate volumes as published.

G. Basic Data Recommended as Essential to full Factual Knowledge: At the time the Bituminous Coal Conservation Act of 1935 was under consideration before its passage, the Bituminous Coal Section, on request, submitted through the Director of Research and Planning, comments on its various provisions. These comments closed with the following recommended studies: (1) costs of production, selling and administration; (2) realization from sales; (3) profits and capital investment; (4) distribution of coal geographically by both consuming and producing districts; (5) wage earnings.

It is the reasoned judgment of the Bituminous Coal Unit that these studies, conducted concurrently, form the minimum factual basis for any economic program involving bituminous coal, when taken in conjunction with the statistics of production, men employed, productivity per man-day, earnings and other enlightening data embraced in the continuing records of the Bureau of Mines and Bureau of Labor Statistics. The minutiae of the necessary forms and the periodicity of reporting may well be left to those who may in good time be charged with such studies.

One closing comment cannot be omitted: public interest, to say nothing of fairness to those operators who so faithfully cooperate by submitting their reports without compulsion, would seem to suggest that any factual reporting seriously undertaken along lines such as those mentioned should be industry-wide. Omission of a considerable percentage of the total tonnage representation in any producing area detracts from the conclusiveness of over-all averages and their relationships.

APPENDIX II - SECTION A

Wage Rates - Bituminous Coal Industry

Any attempt to deal with the wage problems in an industry requires a comprehensive and accurate knowledge of the existing wage structure. The great number of occupations covered in the mining of coal; the geological factors and conditions such as thickness of seam, the character of the coal seam, presence of impurities in the coal; geographical location; the economic condition of the industry; the seasonal demand for coal; the story of unionization, etc., have all made the wage problem particularly acute in this industry. The wage negotiations occupied a prominent place in the formulation of the Coal Code and the problem of finding a solution to the many conflicting interests immediately arose. The historical data on wages which were necessary and essential in reviewing this problem were not immediately at hand.

For the years 1912 to 1922 Professor Fisher and Dr. Bozanson have presented the story of wage rates in their book, "Wage Rates and Working Time in the Bituminous Coal Industry". Their analysis of the Coal Commission data gives a detailed picture of the rate structure in union, non-union, and irregular fields. (*) However, in some cases, in the union fields, their tables present weighted average rates for districts and fields which conceal the number of actual rates in effect. In the irregular fields weighted rates only have been reported and no segregation was made of the rates under union contract as separate from non-union.

Prior to 1912 and since 1922 no summarization of the wage rate data has been available. (**) Unfortunately, there can be no way to tell the story for the non-union fields. In this 11 year interval between 1922 and 1933 the union lost much of its power and for this period the scale of wages paid to the majority of men in the coal industry is not available.

(*) See Appendix tables, Fisher, W.E. and Bozanson, A., "Wage Rates and Working Time in the Bituminous Coal Industry, 1912 to 1922".

Union areas -- fields in which the great majority of operators have maintained affiliations with the union throughout the entire period.

Non-union areas -- fields which for practical purposes have resisted all efforts towards unionization.

Irregular areas -- fields which have operated part of the time on a union and part on a non-union basis.

(**) The Bureau of Labor Statistics has made biennial surveys of daily and hourly earnings by states since 1919.

The purpose of this study has been to bring together some of the more important data on wage rates for those fields which had a history of union affiliation prior to the period of the Bituminous Coal Code. A complete history of wage rates for fields which worked under contract with the United Mine Workers was not possible. For the states of Illinois, Indiana, Ohio and Western Pennsylvania, it was possible to project the data back to 1898. For all the other areas, 1912 was chosen as the starting point. No data are presented for those fields which have come under union contract since the inauguration of the Coal Code.

A comprehensive statistical presentation of wage rates and their analysis and evaluation, with the accompanying problems of wage movements and trends, differentials and employment opportunity was too tremendous in scope and magnitude to be undertaken. This study must necessarily be presented in the form of reference and work material.

The presentation of tables fall into three parts:

1. Illinois, Indiana, Ohio, and Western Pennsylvania, (*) 1898 to 1937.
2. The Southwestern Interstate Field -- Kansas, Missouri, Arkansas and Oklahoma, 1912 to 1937.
3. Outlying Districts -- Central Pennsylvania, Michigan, Northern West Virginia, Kanawha, West Virginia, Western Kentucky, Iowa, Colorado, Northern and Southern Wyoming, and Montana, (**) 1912 to 1937.

There are other districts and fields which have worked under union contract at some time or other during the period 1912 to 1933. These fields have been omitted from the study for various reasons but their omission, with the exception of Washington, does not detract from the general picture, since in all cases, in terms of men involved who were under contract, they represent a relatively small portion of the industry. These fields were:

1. Western Maryland and Upper Potomac. This area was under contract from November 1, 1917 to March 31, 1922. The contract did not specify a wage scale but was merely a working agreement dealing with employee rights and settlement of disputes and grievances.

2. New River, West Virginia. In 1913 a contract was negotiated in this field and by 1915 operators representing a large portion of the field were under union contract. The union extended its sphere of influ-

(*) Western Pennsylvania includes Allegheny, Armstrong, Beaver, Butler, Greene, Lawrence, Mercer and Washington Counties.

(**) Washington was not included as time did not permit the finishing of this table.

ence during the war and able to maintain contractual relations until 1921. The omission of this field was necessitated because the rates reported in the contracts were too sketchy to form a continuous story.

3. Panhandle, West Virginia. The union had established wage contracts with a considerable number of operators by 1912. Data on wage rates, however, were not available.

4. Cabin Creek, Kanawha District, West Virginia. A group of operators had a contract from 1913 to 1922.

5. Coal River, West Virginia. Union gained recognition in 1913 and maintained contracts until 1922.

6. Southeastern Kentucky and Tennessee. An operator's association in this area had a contract from November 1, 1917 to March 31, 1922. Outside this association were several companies, the Falls Branch Coal Company and the Woolbridge-Jellico Coal Company, which operated under union contract from 1912 to 1922; and the Tracy City Branch of the Nashville, Chattanooga and St. Louis Railroad, which had a contract from 1920 to 1922.

7. Alabama. A large part of this field was under contract for the period May 15, 1918 to March 31, 1920. The wage rates reported could not be used as they were in terms of a flat increase over the previous scale which was unknown.

8. Texas. A few mines in this field were under union contract.

9. North Dakota. A coal operator's association in this area had a contract in 1919 and 1920.

It was also found necessary to limit the study to certain basic occupations in an attempt to reduce the work of collecting and tabulating. The occupations selected were:

Day Wage Rates

1. Trachmen -- representing the skilled inside day wage scale. (*)
2. Outside Common Labor -- representing unskilled labor outside the mine.

Tonnage Rates

1. Pickmining
2. Loading after machines
3. Machine cutting

(*) The rates for trachmen in some instances are slightly higher than other occupations but only known as the inside skilled group. This is true in Michigan, Montana and for the earlier years in the Central Competitive field.

In addition to the above occupations, rates for machine cutters and helpers were also reported for those areas where the practice of paying machine cutters by the day instead of the ton was prevalent and since 1928 the scale for mechanical loading occupations was shown for those areas which reported these data.

In Illinois and Ohio it was necessary to further limit the study to just those rates for the basing points, Danville, and Hocking Valley, respectively. It was impossible to show all the rates in effect in the many subdistricts. For example, the Illinois contract for the years 1920 to 1922 reports 39 rates for pick mining in the nine subdistricts and Ohio had approximately 15 subdistricts with as many rates. The same problem of selecting essential data was also true for the Southwestern Inter-State Field. Here it was the practice to report not only rates for fields but rates for individual mines which in some instances might mean as many as 50 different rates for one occupation. The procedure followed was to report only those rates which would be applied generally to an entire field.

The story of collective bargaining, wage negotiations and labor disputes, a necessary corollary to these tables, has already been covered in great detail in Chapter IV, Section A. Reference to this section will set the background and give the detailed picture necessary in following the wage rate tables.

APPENDIX III

BITUMINOUS COAL INDUSTRY REPORT

The material in this appendix relates to

"Costs, Realization and Margins" by months, from November 1933 through January 1935. It comprises basic material covered in Chapter 6.

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TABLE 1
BITUMINOUS COAL INDUSTRY - ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA
Hourly and Daily Wage Rates for Trackmen¹ 1898 to 1937

SECTION A

YEAR	PERIOD OF WAGE AGREEMENT	CITY OF JOINT INTER-STATE CONFERENCE	ILLINOIS		INDIANA ² INDIANA BRASS BLOCK		OHIO		WESTERN PENNSYLVANIA ³				
			HOURS WORKED per day	ALL DISTRICTS HOURLY DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	ALL DISTRICTS HOURLY DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	HOCKING VALLEY HOURLY DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	ALL DISTRICTS HOURLY DAILY RATE
1898	Apr. 1, 1898 - Mar. 31, 1899	COLUMBUS	8	238 1/90	1898	Apr. 1, 1898 - Mar. 31, 1899	238 1/90	1898	Apr. 1, 1898 - Mar. 31, 1899	238 1/90	1898	Apr. 1, 1898 - Mar. 31, 1899	238 1/90
1899	Apr. 1, 1899 - Mar. 31, 1900	PITTSBURGH	8	238 1/90	1899	Apr. 1, 1899 - Mar. 31, 1900	238 1/90	1899	Apr. 1, 1899 - Mar. 31, 1900	238 1/90	1899	Apr. 1, 1899 - Mar. 31, 1900	238 1/90
1900	Apr. 1, 1900 - Mar. 31, 1901	INDIANAPOLIS	8	285 2/28	1900	Apr. 1, 1900 - Mar. 31, 1901	285 2/28	1900	Apr. 1, 1900 - Mar. 31, 1901	285 2/28	1900	Apr. 1, 1900 - Mar. 31, 1901	285 2/28
1901	Apr. 1, 1901 - Mar. 31, 1902	COLUMBUS	8	285 2/28	1901	Apr. 1, 1901 - Mar. 31, 1902	288 2/30	1901	Apr. 1, 1901 - Mar. 31, 1902	285 2/28	1901	Apr. 1, 1901 - Mar. 31, 1902	285 2/28
1902	Apr. 1, 1902 - Mar. 31, 1903	INDIANAPOLIS	8	285 2/28	1902	Apr. 1, 1902 - Mar. 31, 1903	288 2/30	1902	Apr. 1, 1902 - Mar. 31, 1903	285 2/28	1902	Apr. 1, 1902 - Mar. 31, 1903	285 2/28
1903	Apr. 1, 1903 - Mar. 31, 1904	INDIANAPOLIS	8	320 2/56	1903	Apr. 1, 1903 - Mar. 31, 1904	320 2/56	1903	Apr. 1, 1903 - Mar. 31, 1904	320 2/56	1903	Apr. 1, 1903 - Mar. 31, 1904	320 2/56
1904	Apr. 1, 1904 - Mar. 31, 1906	INDIANAPOLIS	8	303 2/42	1904	Apr. 1, 1904 - Mar. 31, 1906	303 2/42	1904	Apr. 1, 1904 - Mar. 31, 1906	303 2/42	1904	Apr. 1, 1904 - Mar. 31, 1906	303 2/42
1906	Apr. 1, 1906 - Mar. 31, 1908	INDIANAPOLIS INDIVIDUAL STATE AGREEMENT	8	320 2/56	1906	Apr. 1, 1906 - Mar. 31, 1908	320 2/56	1906	Apr. 1, 1906 - Mar. 31, 1908	320 2/56	1906	Apr. 1, 1906 - Mar. 31, 1908	320 2/56
1908	Apr. 1, 1908 - Mar. 31, 1910	TOLEDO INDIVIDUAL STATE AGREEMENT	8	320 2/56	1908	Apr. 1, 1908 - Mar. 31, 1910	320 2/56	1908	Apr. 1, 1908 - Mar. 31, 1910	320 2/56	1908	Apr. 1, 1908 - Mar. 31, 1910	320 2/56
1910	Apr. 1, 1910 - Mar. 31, 1912	TOLEDO INDIVIDUAL STATE AGREEMENT	8	338 2/70	1910	Aug. 1, 1910 - Mar. 31, 1912	338 2/70	1910	Apr. 1, 1910 - Mar. 31, 1912	338 2/70	1910	Apr. 1, 1910 - Mar. 31, 1912	338 2/70
1912	Apr. 1, 1912 - Mar. 31, 1914	INDIANAPOLIS	8	355 2/84	1912	Apr. 1, 1912 - Mar. 31, 1914	355 2/84	1912	Apr. 1, 1912 - Mar. 31, 1914	355 2/84	1912	Apr. 1, 1912 - Mar. 31, 1914	355 2/84
1914	Apr. 1, 1914 - Mar. 31, 1916	CHICAGO INDIVIDUAL STATE AGREEMENT	8	355 2/84	1914	Apr. 1, 1914 - Mar. 31, 1916	355 2/84	1914	July 15, 1914 - Mar. 31, 1916	355 2/84	1914	Apr. 1, 1914 - Mar. 31, 1916	355 2/84
1916	Apr. 1, 1916 - Mar. 31, 1918	NEW YORK	8	372 2/98	1916	Apr. 1, 1916 - Mar. 31, 1918	372 2/98	1916	Apr. 1, 1916 - Mar. 31, 1918	372 2/98	1916	Apr. 1, 1916 - Mar. 31, 1918	372 2/98
1917	Apr. 16, 1917 - Mar. 31, 1918	NEW YORK	8	450 3/60	1917	Apr. 16, 1917 - Mar. 31, 1918	450 3/60	1917	Apr. 16, 1917 - Mar. 31, 1918	450 3/60	1917	Apr. 16, 1917 - Mar. 31, 1918	450 3/60
1917	Nov. 1, 1917 ⁴ for one year and not to exceed two years from Apr. 1, 1918	WASHINGTON	8	625 5/00	1917	Nov. 1, 1917 ⁴ for one year and not to exceed two years from Apr. 1, 1918	625 5/00	1917	Nov. 1, 1917 ⁴ for one year and not to exceed two years from Jan. 1, 1918	625 5/00	1917	Nov. 1, 1917 - Mar. 31, 1920	625 5/00
1919	Dec. 10, 1919 ⁵ - Mar. 31, 1920	GARFIELD AWARD	8	712 5/70	1919	Dec. 15, 1919 ⁵ - Mar. 31, 1920	712 5/70	1919	Dec. 10, 1919 ⁵ - Mar. 31, 1920	712 5/70	1919	Dec. 15, 1919 - Mar. 31, 1920	712 5/70
1920	Apr. 1, 1920 - Mar. 31, 1922	NEW YORK	8	750 6/00	1920	Apr. 1, 1920 - Mar. 31, 1922	750 6/00	1920	Apr. 1, 1920 - Mar. 31, 1922	750 6/00	1920	Apr. 1, 1920 - Mar. 31, 1922	750 6/00
1920	Aug. 16, 1920 - Mar. 31, 1922	COLUMBUS	8	938 7/50	1920	Aug. 16, 1920 - Mar. 31, 1922	938 7/50	1920	Aug. 16, 1920 - Mar. 31, 1922	938 7/50	1920	Aug. 16, 1920 - Mar. 31, 1922	938 7/50
1922	Aug. 16, 1922 - Mar. 31, 1923	CLEVELAND STATE AGREEMENT	8	938 7/50	1922	Aug. 16, 1922 - Mar. 31, 1923	938 7/50	1922	Aug. 16, 1922 - Mar. 31, 1923	938 7/50	1922	Aug. 16, 1922 - Mar. 31, 1923	938 7/50
1923	Apr. 1, 1923 - Mar. 31, 1924	NEW YORK	8	938 7/50	1923	Apr. 1, 1923 - Mar. 31, 1924	938 7/50	1923	Apr. 1, 1923 - Mar. 31, 1924	938 7/50	1923	Apr. 1, 1923 - Mar. 31, 1924	938 7/50
1924	Apr. 1, 1924 - Mar. 31, 1927	JACKSONVILLE	8	938 7/50	1924	Apr. 1, 1924 - Mar. 31, 1927	938 7/50	1924	July 16, 1924 - Mar. 31, 1927	938 7/50	1924	Apr. 1, 1924 - Mar. 31, 1927	938 7/50
1928	Sept. 15, 1928 - Mar. 31, 1930		8	763 6/10	1928	Nov. 1, 1928 - Mar. 31, 1930	763 6/10	1928	Sept. 1, 1928 - Mar. 31, 1930	625 5/00	1928		
1930			8	763 6/10	1930	Apr. 1, 1930 - Mar. 31, 1931	763 6/10	1930			1930		
1931			8	763 6/10	1931	Apr. 1, 1931 - Mar. 31, 1932	763 6/10	1931			1931		
1932	Aug. 10, 1932 - Mar. 31, 1933		8	625 5/00	1932	Sept. 10, 1932 - Mar. 31, 1933	572 4/575	1932			1932		
1933	Apr. 1, 1933 - Mar. 31, 1935		8	625 5/00	1933		572 4/575	1933	June 15, 1933 - "UNTIL STATE AGREEMENT MADE"	440 3/28	1933		
BITUMINOUS COAL CODE					BITUMINOUS COAL CODE					BITUMINOUS COAL CODE			
1933	Oct. 2, 1933 - Mar. 31, 1934		8	625 5/00	1933	Oct. 2, 1933 - Mar. 31, 1934	572 4/575	1933	Oct. 2, 1933 - Mar. 31, 1934	575 4/60	1933	Oct. 2, 1933 - Mar. 31, 1934	575 4/60
AMENDMENT I					AMENDMENT I					AMENDMENT I			
1934	Apr. 1, 1934 - Mar. 31, 1935		7	714 5/00	1934	Apr. 1, 1934 - Mar. 31, 1935	655 4/575	1934	Apr. 1, 1934 - Mar. 31, 1935	714 5/00	1934	Apr. 1, 1934 - Mar. 31, 1935	714 5/00
1935	Oct. 1, 1935 - Mar. 31, 1937		7	766 5/50	1935	Oct. 1, 1935 - Mar. 31, 1937	725 5/075	1935	Oct. 1, 1935 - Mar. 31, 1937	786 5/50	1935	Oct. 1, 1935 - Mar. 31, 1937	786 5/50

1/ Source: Wage Contracts of United Mine Workers of America.
 2/ The strike was officially discontinued December 17, 1933. Just when the mines were opened in certain fields is not known - probably not until December 19 or 20.
 3/ This contract for a small group of operators -- Central Ohio Coal Operators Association. The rest of Ohio was operating non-union.
 4/ This contract for a small group of operators in Southern Ohio.
 5/ The Pittsburgh Terminal Coal Corporation had a contract with the following rates:
 June 25, 1931 to June 30, 1932 \$4.25 per day
 July 1, 1932 to June 30, 1933 3.90
 July 1, 1933 to Code 3.66

a/ Brassil Block rate was \$2.28 from April 1, 1901 to October 1, 1901 and \$2.30 from October 1, 1901 to March 31, 1902.
 b/ No contracts could be located in this period for Brassil Block. This district had become almost entirely a strip mining field.
 c/ Brassil Block had a contract from July 1, 1933 - March 31, 1935 at \$4.575 per day.
 d/ Strike in Ohio from April 1, 1906 to July 15, 1906 but some mines paying demands and working.

BITUMINOUS COAL INDUSTRY - ILLINOIS, INDIANA, OHIO AND WESTERN PENNSYLVANIA

Hourly and Daily Wage Rates for Outside Common Labor¹ 1896 to 1937

YEAR	PERIOD OF WAGE AGREEMENT	CITY OF JOINT INTERSTATE DISTRICT	HOURS WORKED PER DAY	ILLINOIS		INDIANA AND INDIANA BRASS BLOCK		OHIO		WESTERN PENNSYLVANIA			
				ALL DISTRICTS HOURLY DAILY RATE	HOURLY DAILY RATE	ALL DISTRICTS HOURLY DAILY RATE	HOURLY DAILY RATE	HOURLY DAILY RATE	ALL DISTRICTS HOURLY DAILY RATE				
1898	Apr 1, 1898 - Mar 31, 1899	COLUMBUS	8	2/	1898	Apr 1, 1898 - Mar 31, 1899	2/	1898	Apr 1, 1898 - Mar 31, 1899	2/	1898	Apr 1, 1898 - Mar 31, 1899	2/
1899	Apr 1, 1899 - Mar 31, 1900	PITTSBURGH	8	2/	1899	Apr 1, 1899 - Mar 31, 1900	2/	1899	Apr 1, 1899 - Mar 31, 1900	2/	1899	Apr 1, 1899 - Mar 31, 1900	2/
1900	Apr 1, 1900 - Mar 31, 1901	INDIANAPOLIS	8	2/	1900	Apr 1, 1900 - Mar 31, 1901	2/	1900	Apr 1, 1900 - Mar 31, 1901	2/	1900	Apr 1, 1900 - Mar 31, 1901	2/
1901	Apr 1, 1901 - Mar 31, 1902	COLUMBUS	8	2.25	1901	Apr 1, 1901 - Mar 31, 1902	2/	1901	Apr 1, 1901 - Mar 31, 1902	2/	1901	Apr 1, 1901 - Mar 31, 1902	2/
1902	Apr 1, 1902 - Mar 31, 1903	INDIANAPOLIS	8	2.25	1902	Apr 1, 1902 - Mar 31, 1903	2.25	1902	Apr 1, 1902 - Mar 31, 1903	2.25	1902	Apr 1, 1902 - Mar 31, 1903	2.25
1903	Apr 1, 1903 - Mar 31, 1904	INDIANAPOLIS	8	2.53	1903	Apr 1, 1903 - Mar 31, 1904	2.53	1903	Apr 1, 1903 - Mar 31, 1904	2.53	1903	Apr 1, 1903 - Mar 31, 1904	2.53
1904	Apr 1, 1904 - Mar 31, 1906	INDIANAPOLIS	8	2.39	1904	Apr 1, 1904 - Mar 31, 1906	2.39	1904	Apr 1, 1904 - Mar 31, 1906	2.39	1904	Apr 1, 1904 - Mar 31, 1906	2.39
1906	Apr 1, 1906 - Mar 31, 1908	INDIANAPOLIS	8	2.53	1906	Apr 1, 1906 - Mar 31, 1908	2.53	1906	Apr 1, 1906 - Mar 31, 1908	2.53	1906	Apr 1, 1906 - Mar 31, 1908	2.53
1908	Apr 1, 1908 - Mar 31, 1910	INDIANAPOLIS	8	2.53	1908	Apr 1, 1908 - Mar 31, 1910	2.53	1908	Apr 1, 1908 - Mar 31, 1910	2.53	1908	Apr 1, 1908 - Mar 31, 1910	2.53
1910	Apr 1, 1910 - Mar 31, 1912	INDIANAPOLIS	8	2.6	1910	Apr 1, 1910 - Mar 31, 1912	2.6	1910	Apr 1, 1910 - Mar 31, 1912	2.6	1910	Apr 1, 1910 - Mar 31, 1912	2.6
1912	Apr 1, 1912 - Mar 31, 1914	INDIANAPOLIS	8	2.81	1912	Apr 1, 1912 - Mar 31, 1914	2.81	1912	Apr 1, 1912 - Mar 31, 1914	2.81	1912	Apr 1, 1912 - Mar 31, 1914	2.81
1914	Apr 1, 1914 - Mar 31, 1916	CHICAGO	8	2.81	1914	Apr 1, 1914 - Mar 31, 1916	2.81	1914	Apr 1, 1914 - Mar 31, 1916	2.81	1914	Apr 1, 1914 - Mar 31, 1916	2.81
1916	Apr 1, 1916 - Mar 31, 1918	NEW YORK	8	2.95	1916	Apr 1, 1916 - Mar 31, 1918	2.95	1916	Apr 1, 1916 - Mar 31, 1918	2.95	1916	Apr 1, 1916 - Mar 31, 1918	2.95
1917	Apr 16, 1917 - Mar 31, 1918	NEW YORK	8	3.70	1917	Apr 16, 1917 - Mar 31, 1918	3.70	1917	Apr 16, 1917 - Mar 31, 1918	3.70	1917	Apr 16, 1917 - Mar 31, 1918	3.70
1917	Nov 1, 1917 - Mar 31, 1920	WASHINGTON	8	5.45	1917	Nov 1, 1917 - Mar 31, 1920	5.45	1917	Nov 1, 1917 - Mar 31, 1920	5.45	1917	Nov 1, 1917 - Mar 31, 1920	5.45
1919	Dec 15, 1919 - Mar 31, 1920	CARFIELD	8	6.21	1919	Dec 15, 1919 - Mar 31, 1920	6.21	1919	Dec 15, 1919 - Mar 31, 1920	6.21	1919	Dec 15, 1919 - Mar 31, 1920	6.21
1920	Apr 1, 1920 - Mar 31, 1922	NEW YORK	8	6.70	1920	Apr 1, 1920 - Mar 31, 1922	6.70	1920	Apr 1, 1920 - Mar 31, 1922	6.70	1920	Apr 1, 1920 - Mar 31, 1922	6.70
1920	Aug 16, 1920 - Mar 31, 1922	COLUMBUS	8	8.58	1920	Aug 16, 1920 - Mar 31, 1922	8.58	1920	Aug 16, 1920 - Mar 31, 1922	8.58	1920	Aug 16, 1920 - Mar 31, 1922	8.58
1922	Aug 16, 1922 - Mar 31, 1923	CLEVELAND	8	8.58	1922	Aug 16, 1922 - Mar 31, 1923	8.58	1922	Aug 16, 1922 - Mar 31, 1923	8.58	1922	Aug 16, 1922 - Mar 31, 1923	8.58
1923	Apr 1, 1923 - Mar 31, 1924	NEW YORK	8	8.58	1923	Apr 1, 1923 - Mar 31, 1924	8.58	1923	Apr 1, 1923 - Mar 31, 1924	8.58	1923	Apr 1, 1923 - Mar 31, 1924	8.58
1924	Apr 1, 1924 - Mar 31, 1927	JACKSONVILLE	8	8.58	1924	Apr 1, 1924 - Mar 31, 1927	8.58	1924	Apr 1, 1924 - Mar 31, 1927	8.58	1924	Apr 1, 1924 - Mar 31, 1927	8.58
1928	Sept 16, 1928 - Mar 31, 1930		8	7.01	1928	Sept 16, 1928 - Mar 31, 1930	7.01	1928	Sept 16, 1928 - Mar 31, 1930	7.01	1928	Sept 16, 1928 - Mar 31, 1930	7.01
1930			8	7.01	1930	Apr 1, 1930 - Mar 31, 1931	7.01	1930			1930		
1931			8	7.01	1931	Apr 1, 1931 - Mar 31, 1932	7.01	1931			1931		
1932	Aug 10, 1932 - Mar 31, 1933		8	5.00	1932	Sept 10, 1932 - Mar 31, 1933	5.25	1932			1932		
1933	Apr 1, 1933 - Mar 31, 1935		8	5.00	1933		5.25	1933			1933		
1933	Oct 2, 1933 - Mar 31, 1934		8	5.00	1933	Oct 2, 1933 - Mar 31, 1934	5.25	1933			1933		
1934	Apr 1, 1934 - Mar 31, 1935		7	5.71	1934	Apr 1, 1934 - Mar 31, 1935	6.00	1934			1934		
1935	Oct 1, 1935 - Mar 31, 1937		7	4.43	1935	Oct 1, 1935 - Mar 31, 1937	4.71	1935			1935		

1 Source Wage contracts of the United Mine Workers of America
 2 The strike was officially discontinued December 10, 1919. Just when the mine work opened in certain fields is not known -- probably not until December 15 or 16.
 3 This contract for a small group of operators -- Central Ohio Coal Operators Association. The rest of Ohio was operating non-union.
 4 This contract for a small group of operators in Southern Ohio.
 5 The Pittsburgh Terminal Coal Corporation had a contract with the following rates:
 June 23, 1931 to June 30, 1932 2.20 Dollars per day
 July 1, 1932 to June 30, 1933 2.50 " " "
 July 1, 1933 to Code 2.80 " " "
 6 South of the B & O S. W. Brass Block did not report.
 7 South of the B & O S. W. the wages shall be \$1.83 per day with 10¢ cents per day in addition thereto commencing April 1, 1911 and each year thereafter until the scale shall equal that north of the B & O S. W.
 8 No contracts could be located in this period for Brass Block. This district had become almost entirely a strip mining field.
 9 The rate for Brass Block was \$5.00.
 10 Brass Block had a contract from July 1, 1933 to March 31, 1935 at \$4.20.
 11 Special prices according to nature of work.
 12 Data not available.
 13 Strike in Ohio from April 1, 1906 to July 15, 1906 but some mines paying demands and working.
 14 On and north of the B & O S. W. Brass Block did not report.

TABLE 5

BITUMINOUS COAL INDUSTRY -- ILLINOIS, INDIANA, OHIO, EASTERN PENNSYLVANIA

SECTION A

Daily Wage Scale for Mechanical Loading Occupations 1/ 1928 to 1937

	ILLINOIS				INDIANA				OHIO				EASTERN PENNSYLVANIA			
	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	BITUMINOUS COAL CODE	
MECHANICAL	June 16, 1928	Aug 10, 1932	Apr 1, 1933	Apr 1, 1934	Nov 1, 1928	Apr 1, 1930	Apr 1, 1931	Sept 1, 1931	Sept 1, 1930	Oct 2, 1933	Apr 1, 1934	Oct 1, 1935	Oct 2, 1933	Apr 1, 1934	Oct 1, 1935	
LOADING OCCUPATIONS	5.70	5.70	5.70	5.70	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CONVEYORS	8.04	5.70	5.70	5.70	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
LOADERS OPERATORS	10.07	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CUTTING MACHINE	10.07	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CUTTING MACHINE OPERATOR	10.07	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CUTTING MACHINE HELPER	6.00	6.00	6.00	6.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
SHEARING MACHINE OPERATOR	6.00	6.00	6.00	6.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
SHEARING MACHINE HELPER	6.00	6.00	6.00	6.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CUTTING & SHEARING OPERATOR	7.00	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
CUTTING & SHEARING HELPER	7.00	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
DRILLER OPERATOR	7.00	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
DRILLER HELPER	7.00	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
ENTRY DRIVER OPERATOR	7.00	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
MECHANICAL LOADERS	10.07	7.00	7.00	7.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
OPERATOR, COAL	9.00	6.25	6.25	6.25	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
HELPER, COAL	6.00	6.00	6.00	6.00	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
OPERATOR, ROCK	5.70	5.70	5.70	5.70	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
PIT CAR LOADERS	5.70	5.70	5.70	5.70	9.00	9.00	9.00	7.45	7.45	6.00	6.86	7.56	1928	1933	1934	
44 C LOADER OPERATOR	8.20	5.75	5.75	5.75	8.20	8.20	8.20	6.85	6.85	6.00	6.15	6.15	5.80	6.20	6.90	
44 C LOADER HELPER	5.70	5.70	5.70	5.70	8.20	8.20	8.20	6.85	6.85	6.00	6.15	6.15	4.76	5.16	5.86	
DRILLERS, SNUBBERS, & SHOOTERS	8.20	5.75	5.75	5.75	8.20	8.20	8.20	6.85	6.85	6.00	6.15	6.15	5.52	5.92	6.62	
CLEAN-UP MEN AT FACE	5.70	5.70	5.70	5.70	8.20	8.20	8.20	6.85	6.85	6.00	6.15	6.15	4.76	5.16	5.86	

1/ Source: Wage Contracts of United Mine Workers of America
 a/ This contract for a small group of operators -- Central Ohio Coal Operators Association
 The rest of Ohio was operating non-union
 b/ This scale for Eastern Ohio and Pennsylvania, in Ohio, the Rocking Valley agreement did not report a scale for mechanical loading occupations
 c/ Track mounted drilling machine

d/ Pit car loading on a tonnage basis--
 Drilling by hand & loading in rooms
 when 12 inches of draw slate hauled..... .593
 Draw slate exported by top coal..... .585

INDIANIA (Grand Jurors) - INDIANA (Grand Jurors) - OHIO

Year	Grand Jurors	Indiana (Grand Jurors)	Ohio	Indiana (Grand Jurors)	Ohio	Indiana (Grand Jurors)	Ohio
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TABLE 7
BITUMINOUS COAL INDUSTRY--ARKANSAS, OKLAHOMA, MISSOURI, KANSAS
Bounty and Daily Wage Rates for Trappers, 1912 to 1937

HOURS WORKED PER DAY	ARKANSAS			OKLAHOMA			MISSOURI			KANSAS		
	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE
8	1912	Apr. 1, 1912-July 31, 1914	2.84	1912	Apr. 1, 1912-July 31, 1914	2.84	1912	Apr. 1, 1912-July 31, 1914	2.84	1912	Apr. 1, 1912-July 31, 1914	2.84
8	1914	Aug. 1, 1914-July 31, 1916	2.84	1914	Aug. 1, 1914-July 31, 1916	2.84	1914	Aug. 1, 1914-July 31, 1916	2.84	1914	Sept. 4, 1914-July 31, 1916	2.84
8	1916	Aug. 1, 1916-July 31, 1918	2.98	1916	Aug. 1, 1916-July 31, 1918	2.98	1916	Aug. 1, 1916-July 31, 1918	2.98	1916	Aug. 1, 1916-July 31, 1918	2.98
8	1917	May 1, 1917-July 31, 1918	3.60	1917	May 1, 1917-July 31, 1918	3.60	1917	May 1, 1917-July 31, 1918	3.60	1917	May 1, 1917-July 31, 1918	3.60
8	1917	Nov. 1, 1917-Apr. 1, 1918	5.00	1917	Nov. 1, 1917-July 31, 1920	5.00	1917	Nov. 1, 1917-July 31, 1920	5.00	1917	Nov. 1, 1917-July 31, 1920	5.00
8	1919	Dec. 16, 1919-Mar. 31, 1920	5.70	1919	Dec. 16, 1919-Mar. 31, 1920	5.70	1919	Dec. 16, 1919-Mar. 31, 1920	5.70	1919	Dec. 16, 1919-Mar. 31, 1920	5.70
8	1920	Apr. 1, 1920-Mar. 31, 1922	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	6.00
8	1920	Aug. 16, 1920-Mar. 31, 1922	7.50	1920	Aug. 16, 1920-Mar. 31, 1922	7.50	1920	Aug. 16, 1920-Mar. 31, 1922	7.50	1920	Aug. 16, 1920-Mar. 31, 1922	7.50
8	1922	Aug. 23, 1922-Mar. 31, 1923	7.50	1922	Aug. 23, 1922-Mar. 31, 1923	7.50	1922	Aug. 23, 1922-Mar. 31, 1923	7.50	1922	Aug. 23, 1922-Mar. 31, 1923	7.50
8	1923	Apr. 1, 1923-Mar. 31, 1924	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	7.50
8	1924	Apr. 1, 1924-Mar. 31, 1927	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	7.50
8	1928	NON-UNION	NON-UNION	1928	NON-UNION	NON-UNION	1928	Sept. 1, 1928-Apr. 1, 1931	5.00	1928	Sept. 1, 1928-Apr. 1, 1931	5.00
8	1930	NON-UNION	NON-UNION	1930	NON-UNION	NON-UNION	1930	1930	5.00	1930	1930	5.00
8	1931	NON-UNION	NON-UNION	1931	NON-UNION	NON-UNION	1931	Apr. 1, 1931-Mar. 31, 1935	5.00	1931	Apr. 1, 1931-Apr. 1, 1935	5.10
8	1932	Aug. 16, 1932-Mar. 31, 1935	3.75	1932	Aug. 16, 1932-Mar. 31, 1935	3.75	1932	June 6, 1932-Apr. 1, 1935	3.75	1932	July 1, 1932-Apr. 1, 1935	3.75
8	BITUMINOUS COAL CODE	1933 Oct. 2, 1933-Mar. 31, 1934	3.75	1933	BITUMINOUS COAL CODE	3.75	1933	BITUMINOUS COAL CODE	3.75	1933	BITUMINOUS COAL CODE	3.75
8	AMENDMENT 1	1934 Apr. 1, 1934-Mar. 31, 1935	4.69	1934	AMENDMENT 1	4.69	1934	AMENDMENT 1	4.69	1934	AMENDMENT 1	4.69
8	AMENDMENT 2	1934 Apr. 1, 1934-Mar. 31, 1935	4.60	1934	AMENDMENT 2	4.60	1934	AMENDMENT 2	4.60	1934	AMENDMENT 2	4.60
8	AMENDMENT 3	1934 Apr. 1, 1934-Mar. 31, 1935	4.35	1934	AMENDMENT 3	4.35	1934	AMENDMENT 3	4.35	1934	AMENDMENT 3	4.35
8	AMENDMENT 4	1934 June 1, 1934-Mar. 31, 1935	4.00	1934	AMENDMENT 4	4.00	1934	AMENDMENT 4	4.00	1934	AMENDMENT 4	4.00
8	1935	Oct. 1, 1935-Mar. 31, 1937	4.50	1935	Oct. 1, 1935-Mar. 31, 1937	4.50	1935	Oct. 1, 1935-Mar. 31, 1937	4.50	1935	Oct. 1, 1935-Mar. 31, 1937	4.50

1/ Source: Wage contracts of United Mine Workers of America
 2/ Actual date of contract was May 29, 1912, but it was effective as of April 1, 1912
 3/ Extended to April 1, 1920
 4/ Contract between Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America.
 5/ Contract between Ray and Clay County Operators Association and United Mine Workers of America
 6/ Fisher, F. B., and Besanson, A. A. *Wage Rates and Working Conditions in the Bituminous Coal Industry*, appendix table.
 7/ This was the code rate for the Missouri field but only Ray and Clay Counties were under contract with the United Mine Workers of America.

SECTION A

TABLE 6
BITUMINOUS COAL INDUSTRY—ARKANSAS, OKLAHOMA, MISSOURI, KANSAS

Hourly and Daily Wage Rates for Common Labor Outside, 1912 to 1937

HOURS WORKED PER DAY	ARKANSAS			OKLAHOMA			MISSOURI			KANSAS		
	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	DAILY RATE
1	1912	Apr. 1, 1912-July 31, 1912	2.25	1912	Apr. 1, 1912-July 31, 1912	2.25	1912	Apr. 1, 1912-July 31, 1912	2.25	1912	Apr. 1, 1912-July 31, 1912	2.25
1	1914	Aug. 1, 1914-July 31, 1916	2.25	1914	Aug. 1, 1914-July 31, 1916	2.25	1914	Aug. 1, 1914-July 31, 1916	2.25	1914	Sept. 1, 1914-July 31, 1916	2.25
1	1916	Aug. 1, 1916-July 31, 1918	2.36	1916	Aug. 1, 1916-July 31, 1918	2.36	1916	Aug. 1, 1916-July 31, 1918	2.36	1916	Aug. 1, 1916-July 31, 1918	2.36
1	1917	May 1, 1917-July 31, 1918	2.96	1917	May 1, 1917-July 31, 1918	2.96	1917	May 1, 1917-July 31, 1918	2.96	1917	May 1, 1917-July 31, 1918	2.96
1	1917	Nov. 1, 1917-Apr. 1, 1919	4.36	1917	Nov. 1, 1917-July 31, 1920	4.36	1917	Nov. 1, 1917-July 31, 1920	4.36	1917	Nov. 1, 1917-July 31, 1920	4.36
1	1919	Dec. 1, 1919-Mar. 31, 1920	4.97	1919	Dec. 1, 1919-Mar. 31, 1920	4.97	1919	Dec. 1, 1919-Mar. 31, 1920	4.97	1919	Dec. 1, 1919-Mar. 31, 1920	4.97
1	1920	Apr. 1, 1920-Mar. 31, 1922	5.36	1920	Apr. 1, 1920-Mar. 31, 1922	5.36	1920	Apr. 1, 1920-Mar. 31, 1922	5.36	1920	Apr. 1, 1920-Mar. 31, 1922	5.36
1	1920	Aug. 16, 1920-Nov. 31, 1922	6.86	1920	Aug. 16, 1920-Nov. 31, 1922	6.86	1920	Aug. 16, 1920-Nov. 31, 1922	6.86	1920	Aug. 16, 1920-Nov. 31, 1922	6.86
1	1922	Aug. 23, 1922-Mar. 31, 1923	6.86	1922	Aug. 23, 1922-Mar. 31, 1923	6.86	1922	Aug. 23, 1922-Mar. 31, 1923	6.86	1922	Aug. 23, 1922-Mar. 31, 1923	6.86
1	1923	Apr. 1, 1923-Mar. 31, 1924	6.86	1923	Apr. 1, 1923-Mar. 31, 1924	6.86	1923	Apr. 1, 1923-Mar. 31, 1924	6.86	1923	Apr. 1, 1923-Mar. 31, 1924	6.86
1	1924	Apr. 1, 1924-Mar. 31, 1927	6.86	1924	Apr. 1, 1924-Mar. 31, 1927	6.86	1924	Apr. 1, 1924-Mar. 31, 1927	6.86	1924	Apr. 1, 1924-Mar. 31, 1927	6.86
1	1927	Non-Union	Non-Union	1927	Non-Union	Non-Union	1927	Non-Union	Non-Union	1927	Non-Union	Non-Union
1	1928	Aug. 16, 1928-Mar. 31, 1935	3.11	1928	Aug. 16, 1928-Mar. 31, 1935	3.11	1928	Aug. 16, 1928-Mar. 31, 1935	3.11	1928	Aug. 16, 1928-Mar. 31, 1935	3.11
1	1930	Aug. 16, 1930-Mar. 31, 1935	3.11	1930	Aug. 16, 1930-Mar. 31, 1935	3.11	1930	Aug. 16, 1930-Mar. 31, 1935	3.11	1930	Aug. 16, 1930-Mar. 31, 1935	3.11
1	1933	Aug. 16, 1933-Mar. 31, 1935	3.11	1933	Aug. 16, 1933-Mar. 31, 1935	3.11	1933	Aug. 16, 1933-Mar. 31, 1935	3.11	1933	Aug. 16, 1933-Mar. 31, 1935	3.11
1	1933	Oct. 2, 1933-Mar. 31, 1934	4.10	1933	Oct. 2, 1933-Mar. 31, 1934	4.10	1933	Oct. 2, 1933-Mar. 31, 1934	4.10	1933	Oct. 2, 1933-Mar. 31, 1934	4.10
1	1934	Apr. 1, 1934-Mar. 31, 1935	4.00	1934	Apr. 1, 1934-Mar. 31, 1935	4.00	1934	Apr. 1, 1934-Mar. 31, 1935	4.00	1934	Apr. 1, 1934-Mar. 31, 1935	4.00
1	1934	Apr. 1, 1934-Mar. 31, 1935	3.75	1934	Apr. 1, 1934-Mar. 31, 1935	3.75	1934	Apr. 1, 1934-Mar. 31, 1935	3.75	1934	Apr. 1, 1934-Mar. 31, 1935	3.75
1	1934	June 1, 1934-Mar. 31, 1935	5.04	1934	June 1, 1934-Mar. 31, 1935	5.04	1934	June 1, 1934-Mar. 31, 1935	5.04	1934	June 1, 1934-Mar. 31, 1935	5.04
1	1935	Oct. 1, 1935-Mar. 31, 1937	4.03	1935	Oct. 1, 1935-Mar. 31, 1937	4.03	1935	Oct. 1, 1935-Mar. 31, 1937	4.03	1935	Oct. 1, 1935-Mar. 31, 1937	4.03

1/ Source: Wage contracts of United Mine Workers of America.
 2/ Actual date of contract was May 25, 1912 but it was effective as of April 1, 1912.
 3/ Contract between Superior Smelters Coal and Mining Company, the Kurba Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America.
 4/ Contract between Ray and Clay County Operators Association and United Mine Workers of America.
 5/ Fisher, E. I., and Bessemer, A. L. *Iron, Steel and Working Time in the Bituminous Coal Industry*, appendix tables.
 6/ This was the Code rate for the Missouri field but only Ray and Clay Counties were under contract with the United Mine Workers of America.

BITUMINOUS COAL INDUSTRY--ARKANSAS, OKLAHOMA, MISSOURI AND KANSAS

Hourly and Daily Wage Rates for Machine Cutters and Helpers, 1912 to 1937

ARKANSAS				OKLAHOMA				MISSOURI				KANSAS				
Hours Worked per Day	Year	Period of Agreement	Cutters hourly daily rate	Helpers hourly daily rate	Year	Period of Agreement	Cutters hourly daily rate	Helpers hourly daily rate	Year	Period of Agreement	Cutters hourly daily rate	Helpers hourly daily rate	Year	Period of Agreement	Cutters hourly daily rate	Helpers hourly daily rate
8	1912	Apr. 1, 1912-July 31, 1912	4.18	3.34	1912	Apr. 1, 1912-July 31, 1912	4.18	3.34	1912	Apr. 1, 1912-July 31, 1912	3.83	3.06	1912	Apr. 1, 1912-July 31, 1912	4.18	3.34
8	1914	Aug. 1, 1914-July 31, 1916	4.18	3.34	1914	Aug. 1, 1914-July 31, 1916	4.18	3.34	1914	Aug. 1, 1914-July 31, 1916	3.83	3.06	1914	Sept. 4, 1914-July 31, 1916	4.18	3.34
8	1916	Aug. 1, 1916-July 31, 1918	4.38	3.50	1916	Aug. 1, 1916-July 31, 1918	4.38	3.50	1916	Aug. 1, 1916-July 31, 1918	4.61	3.21	1916	Aug. 1, 1916-July 31, 1918	4.38	3.51
8	1917	May 1, 1917-July 31, 1918	5.14	4.11	1917	May 1, 1917-July 31, 1918	5.14	4.11	1917	May 1, 1917-July 31, 1918	4.78	3.81	1917	May 1, 1917-July 31, 1918	5.14	4.11
8	1917	Nov. 1, 1917-Apr. 1, 1918	6.89	5.51	1917	Nov. 1, 1917-Apr. 1, 1918	6.89	5.51	1917	Nov. 1, 1917-Apr. 1, 1918	6.51	5.21	1917	Nov. 1, 1917-Apr. 1, 1918	6.89	5.51
8	1919	Dec. 16, 1919-Mar. 31, 1920	7.65	6.28	1919	Dec. 16, 1919-Mar. 31, 1920	7.65	6.28	1919	Dec. 16, 1919-Mar. 31, 1920	7.42	5.94	1919	Dec. 16, 1919-Mar. 31, 1920	7.65	6.28
8	1920	Apr. 1, 1920-Mar. 31, 1922	8.14	6.50	1920	Apr. 1, 1920-Mar. 31, 1922	8.14	6.50	1920	Apr. 1, 1920-Mar. 31, 1922	7.76	6.21	1920	Apr. 1, 1920-Mar. 31, 1922	8.14	6.51
8	1920	Aug. 16, 1920-Mar. 31, 1922	1.001	8.007	1920	Aug. 16, 1920-Mar. 31, 1922	1.001	8.007	1920	Aug. 16, 1920-Mar. 31, 1922	9.64	7.71	1920	Aug. 16, 1920-Mar. 31, 1922	1.001	8.01
8	1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.007	1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.007	1922	Aug. 23, 1922-Mar. 31, 1923	9.64	7.71	1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.01
8	1923	Apr. 1, 1923-Mar. 31, 1924	1.001	8.007	1923	Apr. 1, 1923-Mar. 31, 1924	1.001	8.007	1923	Apr. 1, 1923-Mar. 31, 1924	9.64	7.71	1923	Apr. 1, 1923-Mar. 31, 1924	1.001	8.01
8	1924	Apr. 1, 1924-Mar. 31, 1925	1.001	8.007	1924	Apr. 1, 1924-Mar. 31, 1925	1.001	8.007	1924	Apr. 1, 1924-Mar. 31, 1925	9.64	7.71	1924	Apr. 1, 1924-Mar. 31, 1925	1.001	8.01
8	1928	Sept. 1, 1928-Apr. 1, 1931	NON-UNION	NON-UNION	1928	Sept. 1, 1928-Apr. 1, 1931	NON-UNION	NON-UNION	1928	Sept. 1, 1928-Apr. 1, 1931	6.51	5.21	1928	Sept. 1, 1928-Apr. 1, 1931	6.89	5.51
8	1930	NON-UNION	NON-UNION	NON-UNION	1930	NON-UNION	NON-UNION	NON-UNION	1930	NON-UNION	6.51	5.21	1930	NON-UNION	6.89	5.51
8	1931	NON-UNION	NON-UNION	NON-UNION	1931	NON-UNION	NON-UNION	NON-UNION	1931	NON-UNION	6.51	5.21	1931	NON-UNION	6.89	5.51
8	1932	Aug. 16, 1932-Mar. 31, 1935	5.33	4.26	1932	Aug. 16, 1932-Mar. 31, 1935	5.33	4.26	1932	Aug. 16, 1932-Mar. 31, 1935	4.89	3.91	1932	Aug. 16, 1932-Mar. 31, 1935	5.16	4.13
8	1933	NON-UNION	NON-UNION	NON-UNION	1933	NON-UNION	NON-UNION	NON-UNION	1933	NON-UNION	5.33	4.26	1933	NON-UNION	5.16	4.13
8	BITUMINOUS COAL CODE	1933 Oct. 2, 1933-Mar. 31, 1934	5.33	4.26	BITUMINOUS COAL CODE	1933 Oct. 2, 1933-Mar. 31, 1934	5.33	4.26	BITUMINOUS COAL CODE	1933 Oct. 2, 1933-Mar. 31, 1934	4.69	3.75	BITUMINOUS COAL CODE	1933 Oct. 2, 1933-Mar. 31, 1934	5.16	4.13
7	BITUMINOUS COAL CODE	1934 Apr. 1, 1934-Mar. 31, 1935	6.44	4.51	BITUMINOUS COAL CODE	1934 Apr. 1, 1934-Mar. 31, 1935	6.44	4.51	BITUMINOUS COAL CODE	1934 Apr. 1, 1934-Mar. 31, 1935	5.71	4.61	BITUMINOUS COAL CODE	1934 Apr. 1, 1934-Mar. 31, 1935	6.36	4.38
7	1935	Oct. 1, 1935-Nov. 31, 1937	7.16	5.01	1935	Oct. 1, 1935-Nov. 31, 1937	7.16	5.01	1935	Oct. 1, 1935-Nov. 31, 1937	6.71	4.70	1935	Oct. 1, 1935-Nov. 31, 1937	6.97	4.88

1/ Source: Wage contracts of United Mine Workers of America.
 2/ Actual date to April 1, 1920 but it was effective as of April 1, 1912.
 3/ Estimated date to April 1, 1920.
 4/ Contract between Superior Gambles Coal and Mining Company, the Bureau Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America.
 5/ Contract between Bay and Clay County Operators Association and United Mine Workers of America.
 6/ Fisher, W. E., and Beeson, A., *Wage Rates and Working Time in the Bituminous Coal Industry*, appendix tables.
 7/ This rate was in effect in Bay and Clay Counties.
 8/ Estimated - 14 per cent increase.
 9/ Date not available from contracts - have used Kansas rate.
 10/ Data not available.

TABLE II
 THROUGH RATES FOR LINDSAY AFTER NOVEMBER 1, 1932 TO 1937
 (Manufacture - 44¢ Rate)

Year	Period of Wage Agreement	ARKANSAS			OKLAHOMA			MISSOURI			KANSAS		
		Longwall Scale 1927-28 1928-29 1929-30	Trick-vein Chain Machine	Paris 1927-28 1928-29 1929-30	Tulsa Electric Machinery Scale	Henrieville Electric Machinery Scale	Eastern Tulsa Scale	Adair Scale	Waverly Scale	Morelli Scale	Parceline Scale	Leavitt Scale	Deer Scale
1927	Apr. 1, 1927 - Mar. 31, 1928	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1928	Apr. 1, 1928 - Mar. 31, 1929	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1929	Apr. 1, 1929 - Mar. 31, 1930	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1930	Apr. 1, 1930 - Mar. 31, 1931	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1931	Apr. 1, 1931 - Mar. 31, 1932	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1932	Apr. 1, 1932 - Mar. 31, 1933	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1933	Apr. 1, 1933 - Mar. 31, 1934	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1934	Apr. 1, 1934 - Mar. 31, 1935	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1935	Apr. 1, 1935 - Mar. 31, 1936	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1936	Apr. 1, 1936 - Mar. 31, 1937	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2
1937	Apr. 1, 1937 - Mar. 31, 1938	74	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2	52 1/2

1. The specific coal had no machine used coal.
 2. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1932 to April 1, 1933.
 3. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1933 to April 1, 1934.
 4. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1934 to April 1, 1935.
 5. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1935 to April 1, 1936.
 6. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1936 to April 1, 1937.
 7. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1937 to April 1, 1938.

1. The specific coal had no machine used coal.
 2. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1932 to April 1, 1933.
 3. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1933 to April 1, 1934.
 4. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1934 to April 1, 1935.
 5. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1935 to April 1, 1936.
 6. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1936 to April 1, 1937.
 7. The contract between the Superior and the Superior Coal Co. was in effect from April 1, 1937 to April 1, 1938.

TABLE 13
BITUMINOUS COAL INDUSTRY - PENNSYLVANIA

1912 to 1924
1933 to 1937

Hourly and Daily Wage Rates for Trobman and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting.
(Tonnage Rates -- B.O.M.)

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED per day	TRUCKMEN INSIDE		COMMON LABOR OUTSIDE		PICK MINING	LOADING (AFTER MACHINE)		MACHINE CUTTING	
			Hourly Daily Rate	Rate	Hourly Daily Rate	Rate		NET GROSS TONS	NET GROSS TONS	NET GROSS TONS	NET GROSS TONS
1912	Apr 1, 1912 - Mar 31, 1914	8	325	2.60	.226	1.81	6429	7200	3750	4200	+ 4.17%
1914	Apr 1, 1914 - Mar 31, 1916	8	335	2.60	.226	1.81	6429	7200	3750	4200	+ 8.1% or .103%
1916	Apr 1, 1916 - Mar 31, 1918	8	341	2.73	.241	1.93	6696	7500	3967	4443	+ 5.5%
1917	Apr 16, 1917 - Mar 31, 1918	8	450	3.60	.326	2.60	6601	8995	4975	5572	+ 0.215 + 0.19
1917	Nov 1, 1917 - for war period Apr 1, 1918 signed after from	8	625	5.00	.500	4.00	9001	10115	5785	6479	+ 0.213 + 0.19
1919	Dec. 16, 1919 - Mar 31, 1920 "Garfield Award"	8	713	5.70	.570	4.56	10128	11343	6678	7479	+ 0.235 + 0.21
1920	Apr 1, 1920 - Apr 1, 1922	8	750	6.00	.625	5.00	11431	12803	7729	8656	+ 27%
1920	Aug 16, 1920 - Apr 1, 1922	8	938	7.50	.813	6.50	11431	12803	7729	8656	+ 0.811 + 0.456
1922	Aug 15, 1922 - Mar 31, 1923	8	938	7.50	.813	6.50	11431	12803	7729	8656	
1923	Apr 1, 1923 - Mar 31, 1924	8	938	7.50	.813	6.50	11481	12803	7729	8656	
1924	Apr 1, 1924 - Mar 31, 1927	8	938	7.50	.813	6.50	11431	12803	7729	8656	
1926											
1928	NON-UNION										
1930											
1932											
BITUMINOUS COAL CODE											
1933	Oct. 2, 1933 - Mar 31, 1934	8	575	4.60	.450	3.60	7000	7840	3200	5024	0.860 - Shiftwork MACHINE 0.880 - 0.62 - Arcwall MACHINE
AMENDMENT 1											
1934	Apr 1, 1934 - Mar 31, 1935	7	714	5.00	.571	4.00	8000	8960	6000	6920	0.920 - Shiftwork MACHINE 0.830 - Arcwall MACHINE
1935	Oct. 1, 1935 - Mar 31, 1937	7	786	5.50	.643	4.50	8900	9968	6800	7616	0.800 - Shiftwork MACHINE 0.760 - Arcwall MACHINE

By W. E. Piper Company, Lilly, Pennsylvania, had union contract

Source: Wage contracts of United Mine Workers of America
The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16

Approximate date when agreement went into effect

Pipher, W. E. and Betancourt, A. Wage Rates and Working Time in the Bituminous Coal Industry. appendix tables

TRUCK men	Common labor Outside	Pick Mining (B.O.M.)	Load- ing (B.O.M.)	Out- ting
3.80	Reported	0.800	Not Reported	
3.12	2.80	.460		

April 1, 1932-April 1, 1934
Jan. 1, 1935-April 1, 1934

Conveyor loading 51 cents per net ton and 5712 cents per gross ton
Conveyor loading \$ -5763 p r net ton and \$9,045 per gross ton

SITUMIBOUS COAL INDUSTRY - MICHIGAN

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting, 1912 to 1937
(Tonnage Rates - Per Tons)

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED PER DAY	TRACKMEN INSIDE		COMMON LABOR OUTSIDE		PICK MINING		LOADING AND DRILLING		MACHINE CUTTING	
			HOURLY DAILY RATE	HOURLY DAILY RATE	HOURLY DAILY RATE	HOURLY DAILY RATE	CHAIN MACHINE SCREED RUN OF PINE	AFTER (IN ROOMS) CHAIN MACHINE SCREED RUN OF PINE	CHAIN MACHINE SCREED RUN OF PINE	(IN ROOMS) CHAIN MACHINE SCREED RUN OF PINE	GENERAL RATE	GENERAL RATE
1912	Apr. 1, 1912 - Mar. 31, 1914	8	365	284	281	225	144/114	678 ^a	62	62	20	20
1914	Apr. 1, 1914 - Mar. 31, 1916	8	355	284	281	225	144/114	678 ^a	62	62	20	20
1916	Apr. 1, 1916 - Mar. 31, 1918	8	373	298	295	236	842/1	864	987	505	1975	1975
1917	Apr. 16, 1917 - Mar. 31, 1918	8	450	360	370	294	942/1	984	1087	605	1625	1625
1917	Nov. 1, 1917 - Mar. 31, 1920	8	625	500	545	436	1042/1	1064	1187	690	1775	1775
1918	Aug. 16, 1918 - Mar. 31, 1920	8	625	500	545	436	1142/1	1164	1217	775	1925	1925
1919	Dec. 10, 1919 - Mar. 31, 1920 "Garfield Award"	8	713	570	621	497	1257/1	1316	1373	872	2173	2173
1920	Apr. 1, 1920 - Mar. 31, 1922	8	781	625	670	536	1382/1	1424	1457	985	2225	2225
1920	Aug. 16, 1920 - Mar. 31, 1922	8	949	775	858	686	1382/1	1424	1457	985	2225	2225
1922	Aug. 14, 1922 - Mar. 31, 1923	8	949	775	858	686	1382/1	1424	1457	985	2225	2225
1923	Apr. 1, 1923 - Mar. 31, 1924	8	969	775	858	686	1382/1	1424	1457	985	2225	2225
1924	Apr. 1, 1924 - Mar. 31, 1927	8	969	775	858	686	1382/1	1424	1457	985	2225	2225
1927	Apr. 1, 1927 - Mar. 31, 1927 and estimated to Nov. 15, 1928	8	949	775	858	686	1382/1	1424	1457	985	2225	2225
1928	Nov. 16, 1928 - Mar. 31, 1930	8	765	612	678	542	1174/1	1229	1252	830 ^c	1700 ^d	1700 ^d
1930	Apr. 1, 1930 - May. 31, 1931	8	765	612	678	542	1174/1	1229	1252	830 ^c	1700 ^d	1700 ^d
1931	Sept. 1931 - May. 31, 1932	8	446	517	573	458	994/1	1027	1080	75 ^e	1435 ^f	1435 ^f
1932	Apr. 1, 1932 - May. 31, 1933	8	446	517	573	458	994/1	1027	1080	75 ^e	1435 ^f	1435 ^f
BITUMINOUS COAL COOP.												
1933	Oct. 2, 1933 - Mar. 31, 1934	8	596	477	523	418	920	953	986	690 ^g	1520 ^h	1520 ^h
ANTRACITE												
1934	Apr. 1, 1934 - Mar. 31, 1935	7	739	517	654	458	1012	1053	1089	770 ^g	1420 ^h	1420 ^h
1935	Oct. 1, 1935 - May. 31, 1937	7	810	567	726	508	1102	1102	851 ⁱ	851 ⁱ	151 ^j	151 ^j

The Michigan contract was not available but the increases are set forth in the Appalachian agreement here being added.

1/ Source: Wage contracts of United Mine Workers of America.
 2/ Contract dated May 20, 1912 effective April 1, 1912.
 3/ Contract dated November 23, 1917, effective as of November 1, 1917.
 4/ Increase for tonnage men only.
 5/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16.
 6/ Fisher, W. F. and Heronson, A., *Iron, Steel and Lignite in the Michigan Coal Industry*, Appendix Tables.
 7/ Data not available.
 8/ Loading cost, 24 to 30 inches \$1.65/3
 9/ Cutting, chain machine, to 30 inches \$1.76/3
 10/ Per coal 30 inches

ALLEGEDLY... SECURITY AND... 1914

Main data table with columns for Year, Name, Address, and various financial figures. Includes sub-sections for 'LADDERING', 'RECKONING', and 'GENERAL NOTES'.

1. In 1914... 2. In 1915... 3. In the first quarter of 1917... 4. In the second quarter of 1917... 5. In the third quarter of 1917...

GENERAL NOTES... 1. In 1914... 2. In 1915... 3. In the first quarter of 1917... 4. In the second quarter of 1917... 5. In the third quarter of 1917...

TABLE 16
BIRMINGHAM COAL FIELD - KANAWHA, WEST VIRGINIA
 Daily and Daily Rate Rates for Trackmen and Material Handlers, Loading and Machine Cutting, 1912 to 1937

Year	Period of Wage Agreement	Hours Worked per Day	TRACKMEN INSIDE		COMMON LABOR		KAWAWHA TRICK VENT		PICK MIMING		LOADING - IN ROOMS (AFTER MACHINING)		MACHINE CUTTING - IN ROOMS		600
			Hours Worked	Rate	Hours Worked	Rate	Hours Worked	Rate	Hours Worked	Rate	Hours Worked	Rate	Hours Worked	Rate	
1912	Apr. 1, 1912 - Mar. 31, 1914	9	270	2.40	85	1.10	50	1.20	50	1.20	50	1.20	50	1.20	600
1914	Apr. 1, 1914 - Mar. 31, 1917	9	270	2.48	85	1.15	50	1.25	50	1.25	50	1.25	50	1.25	600
1917	Apr. 1, 1917 - Dec. 31, 1918	8	355	2.80	274	1.10	225	1.10	430	1.10	430	1.10	430	1.10	600
1917	July 1, 1917 - Mar. 31, 1918	8	348	3.10	80	1.10	400	1.10	430	1.10	430	1.10	430	1.10	600
1917	Apr. 1, 1917 - Mar. 31, 1918	8	368	2.50	470	1.10	420	1.10	430	1.10	430	1.10	430	1.10	600
1917	Apr. 1, 1917 - Mar. 31, 1918	8	650	5.40	580	1.10	580	1.10	580	1.10	580	1.10	580	1.10	600
1917	Apr. 1, 1917 - Mar. 31, 1918	8	603	5.50	450	1.10	580	1.10	580	1.10	580	1.10	580	1.10	600
1918	Dec. 1, 1918 - Mar. 31, 1919	8	800	7.40	813	1.10	785	1.10	785	1.10	785	1.10	785	1.10	600
1920	July 27, 1920 - Mar. 31, 1922	8	860	7.40	813	1.10	785	1.10	785	1.10	785	1.10	785	1.10	600
1920	Apr. 16, 1920 - Mar. 31, 1922	8	860	7.40	813	1.10	785	1.10	785	1.10	785	1.10	785	1.10	600
1922	Aug. 15, 1922 - Mar. 31, 1923	8	880	7.00											600
1923	Apr. 1, 1923 - Mar. 31, 1924	8	880	7.00											600
1924															600
1926															600
1928															600
1930															600
1932															600
1933	Oct. 2, 1933 - Mar. 31, 1934	8	595	4.20	400	3.20									600
1934	Apr. 1, 1934 - Mar. 31, 1935	7	657	4.60	540	3.60									600
1935	Oct. 1, 1935 - Mar. 31, 1937	7	729	5.10	586	4.10									600

1/ Source: The contracts of United Mine Workers of America
 2/ Inclusive of United Mine Workers of America, Kanawha was not under union contract
 3/ Fisher, V. J., and Benson, A. J. **East-West and Working Time in the Bituminous Coal Industry**, appendix tables
 4/ Fisher, V. J., and Benson, A. J. **East-West and Working Time in the Bituminous Coal Industry**, appendix tables
 5/ Same rates as from the Coal Commission data and are for one mine only
 6/ Same rates for Kanawha, Kanawha, Elk River and Saniford Spoken. Daily rates to be based on Kanawha rates
 7/ Same rates for pillar work
 8/ Same rates for pillar work
 9/ Same rates for pillar work
 10/ Same rates for pillar work

BITUMINOUS COAL INDUSTRY - IOWA

Hourly and Daily Wage Rates for Trappers and Outside Common Labor and Daily Rates for Machine Cutters and Helpers
1912 to 1937

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED per DAY	TRAPPERS INSIDE		COMMON LABOR OUTSIDE		MACHINE CUTTERS AND HELPERS			
			ALL DIST. a/	hours/daily RATE	ALL DIST. a/	hours/daily RATE	# 2 and 3	CUTTER/HELPER d/		
1912	Apr. 1, 1912 - Mar. 31, 1914	8	3.55	2.84	2.65	2.12	3.28	3.00	2.25	2.84
1914	Apr. 1, 1914 - Mar. 31, 1916	8	3.55	2.84	2.65	2.12	3.25	3.00	2.25	2.84
1916	Apr. 1, 1916 - Mar. 31, 1918	8	3.73	2.98	2.70	2.23	3.41	3.15	2.44	2.98
1917	Apr. 16, 1917 - Mar. 31, 1918	8	4.50	3.60	3.64	2.83	4.01	3.70	4.00	3.60
1917	Nov. 1, 1917 - Apr. 1, 1920	8	6.25	5.00	5.29	4.23	5.41	5.15	5.41	5.00
1919	Dec. 10, 1919 - Mar. 31, 1923 "Garfield Award"	8	7.18	5.70	6.16	4.93	6.17	5.84	6.17	5.70
1920	Apr. 1, 1920 - Mar. 31, 1924	8	7.56	6.00	6.54	5.23	6.44	6.15	6.44	6.00
1920	Aug. 16, 1920 - Mar. 31, 1922	8	9.38	7.50	8.41	6.73	7.91	7.65	7.91	7.50
1920	Sept. 1, 1920 - Mar. 31, 1922	8	9.38	7.50	8.41	6.73	7.91	7.65	7.91	7.50
1922	Aug. 15, 1922 - Mar. 31, 1923	8	9.38	7.50	8.41	6.73	7.91	7.65	7.91	7.50
1923	Apr. 1, 1923 - Mar. 31, 1924	8	9.38	7.50	8.41	6.73	7.91	7.65	7.91	7.50
1924	Apr. 1, 1924 - Mar. 31, 1927	8	9.38	7.50	8.41	6.73	7.91	7.65	7.91	7.50
1928	Oct. 1, 1928 - Mar. 31, 1930	8	7.25	5.80	6.48	5.18	6.21	5.95	6.21	5.80
1930	Apr. 1, 1930 - Mar. 31, 1931	8	7.25	5.80	6.48	5.18	6.21	5.95	6.21	5.80
1931	Apr. 1, 1931 - Mar. 31, 1933	8	6.25	5.00	5.29	4.23	6.21	5.95	6.21	5.80
1933	Apr. 1, 1933 - Mar. 31, 1935	8	NON-UNION	5.87	NON-UNION	5.00	5.11	4.85	5.11	4.70
BITUMINOUS COAL CODE										
1933	Oct. 20, 1933 - Mar. 31, 1934	8	5.70	4.56	4.82	3.86	5.00	4.85	5.11	4.70
AMENDMENT 1										
1934	Apr. 1, 1934 - Mar. 31, 1935	7	6.57	4.56	5.71	4.00	5.71	4.85	5.11	4.70
1935	Oct. 1, 1935 - Mar. 31, 1937	7	7.23	5.06	5.63	4.50	5.63	5.61	5.55	5.61

Note:

Districts include following counties:

‡ 1 - Wayne and Appanoose, Iowa and Putnam, Missouri

‡ 2 - All shooting coal mines in Wapello, Marion, Monroe, Davis, Warren, Lucas, Mahaska and Keokuk Counties.

‡ 3 - Shooting Mines in Polk, Jasper, Dallas and Boone.

‡ 4 - All mining coal mines in Boone and Webster.

1/ Source: Wage contracts of United Mine Workers of America
2/ The strike was officially discontinued December 10, 1915. Just when the mines were opened in certain fields is not known - probably not until December 15 or 16.
3/ Approximate date when agreement went into effect.

4/ District No. 1 (Wayne and Appanoose) was non-union from Mar. 31, 1927 to Sept. 1931 and from Apr. 1, 1933 to Coal Code.
5/ Labor, W. E., and Benjamin, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.

6/ Estimated - 14 per cent increase.

SECTION A

TABLE 19
BITUMINOUS COAL INDUSTRY - IOWA
Tonnage Rates for Pick Mining, Larding and Machine Cutting, 1912 to 1937
(Est. Tons)

YEAR	PERIOD OF WAGE AGREEMENT	PICK MINING				LARDING (AFTER MACHINE)				MACHINE CUTTING			
		Sub-District #1	Sub-District #2	Sub-District #3	Sub-District #4	Sub-District #1	Sub-District #2	Sub-District #3	Sub-District #4	Sub-District #1	Sub-District #2	Sub-District #3	Sub-District #4
1912	Apr. 1, 1912 - Mar. 31, 1916	960	1,050	757	1,000	765	1,100	670	575	690	575	670	575
1914	Apr. 1, 1914 - Mar. 31, 1916	1,010	1,150	727	1,050	765	1,100	675	575	700	490	725	505
1916	Apr. 1, 1916 - Mar. 31, 1918	500	200	770	250	745	250	725	620	600	600	600	600
1917	Apr. 1, 1917 - Mar. 31, 1918	1,311	1,811	870	2,020	895	1,925	746	690	746	690	746	690
1917	Nov. 1, 1917 - Apr. 1, 1920	477	1,178	770	1,315	995	1,435	920	770	920	770	920	770
1919	Dec. 1, 1919 ³ - Mar. 31, 1920 ⁴ George W. Howard	600	1,400	681	1,574	1,061	1,321	1,201	1,201	1,201	1,201	1,201	1,201
1920	Apr. 1, 1920 - Mar. 31, 1922	550	744	744	1,210	1,235	1,150	1,150	794	1,235	794	1,235	794
1920	Aug. 16, 1920 - Mar. 31, 1922	580	744	744	1,210	1,235	1,150	1,150	794	1,235	794	1,235	794
1920	Sept. 1, 1920 - Mar. 31, 1922	800	200	200	200	235	1,845	1,328	970	970	970	970	970
1920	Aug. 15, 1920 - Mar. 31, 1923	800	200	200	200	235	1,845	1,328	970	970	970	970	970
1920	Apr. 1, 1920 - Mar. 31, 1924	820	200	200	200	235	1,845	1,328	970	970	970	970	970
1924	Apr. 1, 1924 - Mar. 31, 1927	800	200	200	200	235	1,845	1,328	970	970	970	970	970
1928	Oct. 1, 1928 - Mar. 31, 1930	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION
1930	Apr. 1, 1930 - Mar. 31, 1931	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION
1931	Apr. 1, 1931 - Mar. 31, 1933	820	1,478	1,478	1,478	1,478	1,478	820	820	820	820	820	820
1933	Apr. 1, 1933 - Mar. 31, 1935	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION	NON-UNION

Source: Wage contracts of United Mine Workers of America. The strike was officially discontinued December 1, 1919. Just when the rates were opened in certain fields is not known -- probably not until December 1, or 15.

¹ Increases granted to tonnage men in Sub-districts #1 and #4 only.

² Approximate date when agreement sent into effect.

³ Mines on a mine run basis only.

⁴ Fraser screened lump, Upper Vein.

⁵ "on operation" on a screened coal.

⁶ Operator -- only Putnam County, Miss. Arl. to operate on mine run basis.

⁷ "on" to operate on a mine-run basis, approximately 1 unit, reduce "on" be made, act later than November 1, 1914 if mine is abandoned by April 1, 1917.

⁸ Centerville machine.

⁹ Fisher, W. F. and Brennan, A. Eagle Machine Co. - Bituminous Coal Industry, approximately 1920. Estimated -- 14 per cent increase.

¹⁰ This rate is reported by the coal combination as a "wild" rate.

¹¹ Rates for larding, machine cutting, and machine cutting.

¹² This is the first reported machine cutting rate.

¹³ Value effective since 1, 1914 and entire year.

¹⁴ Rates for larding, machine cutting, and machine cutting.

¹⁵ Rates for larding, machine cutting, and machine cutting.

¹⁶ Rates for larding, machine cutting, and machine cutting.

¹⁷ Rates for larding, machine cutting, and machine cutting.

¹⁸ Rates for larding, machine cutting, and machine cutting.

¹⁹ Rates for larding, machine cutting, and machine cutting.

²⁰ Rates for larding, machine cutting, and machine cutting.

²¹ Rates for larding, machine cutting, and machine cutting.

²² Rates for larding, machine cutting, and machine cutting.

²³ Rates for larding, machine cutting, and machine cutting.

²⁴ Rates for larding, machine cutting, and machine cutting.

²⁵ Rates for larding, machine cutting, and machine cutting.

²⁶ Rates for larding, machine cutting, and machine cutting.

²⁷ Rates for larding, machine cutting, and machine cutting.

²⁸ Rates for larding, machine cutting, and machine cutting.

²⁹ Rates for larding, machine cutting, and machine cutting.

³⁰ Rates for larding, machine cutting, and machine cutting.

³¹ Rates for larding, machine cutting, and machine cutting.

³² Rates for larding, machine cutting, and machine cutting.

³³ Rates for larding, machine cutting, and machine cutting.

³⁴ Rates for larding, machine cutting, and machine cutting.

³⁵ Rates for larding, machine cutting, and machine cutting.

³⁶ Rates for larding, machine cutting, and machine cutting.

³⁷ Rates for larding, machine cutting, and machine cutting.

³⁸ Rates for larding, machine cutting, and machine cutting.

³⁹ Rates for larding, machine cutting, and machine cutting.

⁴⁰ Rates for larding, machine cutting, and machine cutting.

⁴¹ Rates for larding, machine cutting, and machine cutting.

⁴² Rates for larding, machine cutting, and machine cutting.

⁴³ Rates for larding, machine cutting, and machine cutting.

⁴⁴ Rates for larding, machine cutting, and machine cutting.

⁴⁵ Rates for larding, machine cutting, and machine cutting.

⁴⁶ Rates for larding, machine cutting, and machine cutting.

⁴⁷ Rates for larding, machine cutting, and machine cutting.

⁴⁸ Rates for larding, machine cutting, and machine cutting.

⁴⁹ Rates for larding, machine cutting, and machine cutting.

⁵⁰ Rates for larding, machine cutting, and machine cutting.

⁵¹ Rates for larding, machine cutting, and machine cutting.

⁵² Rates for larding, machine cutting, and machine cutting.

⁵³ Rates for larding, machine cutting, and machine cutting.

⁵⁴ Rates for larding, machine cutting, and machine cutting.

⁵⁵ Rates for larding, machine cutting, and machine cutting.

⁵⁶ Rates for larding, machine cutting, and machine cutting.

⁵⁷ Rates for larding, machine cutting, and machine cutting.

⁵⁸ Rates for larding, machine cutting, and machine cutting.

⁵⁹ Rates for larding, machine cutting, and machine cutting.

⁶⁰ Rates for larding, machine cutting, and machine cutting.

⁶¹ Rates for larding, machine cutting, and machine cutting.

⁶² Rates for larding, machine cutting, and machine cutting.

⁶³ Rates for larding, machine cutting, and machine cutting.

⁶⁴ Rates for larding, machine cutting, and machine cutting.

⁶⁵ Rates for larding, machine cutting, and machine cutting.

⁶⁶ Rates for larding, machine cutting, and machine cutting.

⁶⁷ Rates for larding, machine cutting, and machine cutting.

⁶⁸ Rates for larding, machine cutting, and machine cutting.

⁶⁹ Rates for larding, machine cutting, and machine cutting.

⁷⁰ Rates for larding, machine cutting, and machine cutting.

⁷¹ Rates for larding, machine cutting, and machine cutting.

⁷² Rates for larding, machine cutting, and machine cutting.

⁷³ Rates for larding, machine cutting, and machine cutting.

⁷⁴ Rates for larding, machine cutting, and machine cutting.

⁷⁵ Rates for larding, machine cutting, and machine cutting.

⁷⁶ Rates for larding, machine cutting, and machine cutting.

⁷⁷ Rates for larding, machine cutting, and machine cutting.

⁷⁸ Rates for larding, machine cutting, and machine cutting.

⁷⁹ Rates for larding, machine cutting, and machine cutting.

⁸⁰ Rates for larding, machine cutting, and machine cutting.

⁸¹ Rates for larding, machine cutting, and machine cutting.

⁸² Rates for larding, machine cutting, and machine cutting.

⁸³ Rates for larding, machine cutting, and machine cutting.

⁸⁴ Rates for larding, machine cutting, and machine cutting.

⁸⁵ Rates for larding, machine cutting, and machine cutting.

⁸⁶ Rates for larding, machine cutting, and machine cutting.

⁸⁷ Rates for larding, machine cutting, and machine cutting.

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⁸⁹ Rates for larding, machine cutting, and machine cutting.

⁹⁰ Rates for larding, machine cutting, and machine cutting.

⁹¹ Rates for larding, machine cutting, and machine cutting.

⁹² Rates for larding, machine cutting, and machine cutting.

⁹³ Rates for larding, machine cutting, and machine cutting.

⁹⁴ Rates for larding, machine cutting, and machine cutting.

⁹⁵ Rates for larding, machine cutting, and machine cutting.

⁹⁶ Rates for larding, machine cutting, and machine cutting.

⁹⁷ Rates for larding, machine cutting, and machine cutting.

⁹⁸ Rates for larding, machine cutting, and machine cutting.

⁹⁹ Rates for larding, machine cutting, and machine cutting.

¹⁰⁰ Rates for larding, machine cutting, and machine cutting.

TABLE 20
 PUEBLO COAL INDUSTRY -- HOELY MOUNTAIN FUEL COMPANY--COLORADO
 Hourly and Daily Wage Rates for Trappers and Outside Common Labor, Daily Rates for Machine Runners and
 Helpers and Tonnage Rates for Pick Mining, Loading and Machine Cutting λ 1928 to 1937
 (B.O.M. -- Wet Tons)

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED PER DAY	TRUCKMEN INSIDE	COMMON LABOR OUTSIDE	MACHINE RUNNERS AND HELPERS	PICK MINING				LOADING (CONTRACT)				MACHINE CUTTING				
						Hourly Daily Rate	Hourly Daily Rate	Daily Rate	Hourly Rate	Hourly Rate	Hourly Rate	Hourly Rate	Hourly Rate	Per Face Foot	Per Face Foot	Per Face Foot	Per Face Foot	Per Face Foot
1912																		
1914																		
1916	NON-UNION																	
1918	NON-UNION																	
1920																		
1922																		
1924																		
1926																		
1928	SEPT. 1, 1928 - AUG. 31, 1930	8	875 7.00	.569 4.55	7.36 7.00	1.01	1.02	.88	.99	-.71	.71	.745	1.065	.765	.770	.71	-.71	-.71
1930	SEPT. 1, 1930 - AUG. 31, 1932	8	875 7.00	.569 4.55	7.36 7.00	1.01	1.02	.88	.99	.985	.71	.745	1.065	.765	.770	.71	.620	.620
1932	SEPT. 1, 1932 - AUG. 31, 1934	8	656 5.25	.531 4.00	5.50 5.25	.75	.76	.70	.72	.67	.54	.585	.795	.585	.550	.54	.440	.440
1933	BUTTE COAL CODE OCT. 2, 1933 - AUG. 31, 1934	8	656 5.25	.531 4.25	5.50 5.25	.75	.76	.70	.72	.67	.54	.585	.795	.585	.550	.54	.440	.440
1934	AMENDMENT I JULY 1, 1934 - MAR. 31, 1935	7	750 5.25	.607 4.25	5.50 5.25	.85	.86	.80	.82	.77	.62	.665	.875	.665	.630	.62	.570	.570
1935	LATEST CONTRACT	NOT AVAILABLE																

* **EXCISE - Day Wage Scale**
 The wages set forth in this agreement are contingent upon competitive conditions affecting the Company's mines. In consideration thereof it is agreed:
 1. That the Company will advance the basic day wage of \$6.77 to \$7.00 and other corresponding advances shall be made in other existing classifications of the general wage scale according to the preceding month by the production records in the office of the Chief Coal Mining Inspector of the State of Colorado) of the producers of \$1 per cent over of the tonnage in Boulder and Weld Counties, not including the tonnage of the Company, is reduced below the scale of \$6.77, the basic and general wage scale fixed by this agreement shall be likewise reduced forthwith, except that the Company will maintain a higher differential of 23 cents on such reduced scale, which is the advance in the basic day wage given under this agreement.
 2. If the present basic day wage of \$6.77 now paid by operators other than the Company is increased, the Company shall only be required to pay so much of the differential as is necessary to make a basic day wage of \$7.00. No payment of differential shall be required if the basic day wage equals or exceeds \$7.00.
 3. No such differential shall be paid when operators, including the Company, producing 65 per cent of the tonnage in such district, are operating under union contracts.

λ Source: Wage Contracts of United Mine Workers of America
 λ The tonnage occupations were increased as of April 1, 1934 to agree to the amendment to the code
 λ Rate for machine loading \$0.445 per ton
 λ To depth of 5 feet
 λ To depth of 7 feet. Breast machine rate \$0.181 per face foot cut to full length of cutter bar
 λ Alpline Mine, \$ 7.95 and \$ 6.82
 λ Rate for rooms, entries or pillars
 λ Rate for cutting, loading, hauling to parting, laying straight track and timbering
 λ Rate for loading
 λ To depth of 4 1/2 feet
 λ Alpline Mine, \$ 4.72
 λ To depth of 7 feet. Breast machine rate \$ 0.135 cut to full length of cutter bar

TABLE 22
BITUMINOUS COAL INDUSTRY -- COLORADO
Tonnage Rates for Pick Mining 1/
1917 to 1922 and 1933 to 1937
(B.O.M. -- Rat. Tons)

YEAR	PERIOD OF WAGE AGREEMENT	SEE NOTE	EVANS FUEL CO.		VICTOR AMERICAN FUEL CO.		GIBSON LUMBER & FUEL CO.		VICTOR AMERICAN FUEL CO.		CANNON RELIANCE COAL CO.		UNITED COLLIERIES CO.		PALISADE COAL AND SUPPLY CO.		COLORADO COAL SHIPPERS CO.		CHAMPION COAL CO.	
			FIREFSTONE MINE	ALIANCE (M) CO.	RAVEN WOOD	SHANOLD	RAVEN WOOD	SHANOLD	ROYAL GEORGE	AMERICAN FUEL CO.	RAVISON	BASIC U.G.	RELIANCE COAL CO.	MONAGHE	UPPER 3 FT.	LOWER 4 FT.	OVER 4 FT.	SHIPPERS CO.	CHAMPION COAL CO.	STAR COAL CO.
1912																				
1914																				
1916																				
1917	Nov. 1, 1917 - April, 1920	75	.85	.78	1.18	1.13	975	NOT REP.	.90	100 1/2	NOT REPORTED									
1919	1919 - Max. 31, 1920 "Garfield award"	85 1/2	9.69 1/2	.88 1/2	1.345	1.288	1,112 1/2	102 1/4 127 1/2	.980 1/2											
1920	April 1, 1920 - Nov. 31, 1922	.99	1.09 1/2	1.02 1/2	1.42	1.37	1.21	1.49	NOT REP.	1.20	1.09	1.14	1.02 1/2	1.59	1.34	1.13	1.00	1.115	1.12	1.19
1922																				
1924																				
1926																				
1928																				
1930																				
1932																				

SOUTHERN COLO. (COLORADO FUEL & IRON CO.) 1/

MONTH	FRED. CAMERON	NEWLEIGH	NON-AC	CRESTED BUTTE
Nov. 1, 1933 - Nov. 31, 1934	.68	.68	.68	.62
April, 1934 - March 31, 1935	.78	.78	.78	.72
Oct. 1, 1935 - Nov. 31, 1937	.87	.87	.87	.84

NORTHERN COLORADO		ERIE -- FREDERICK DISTRICT	
LOUISVILLE BLACK DIAMOND MINE	.75	LOUISVILLE DIST. (EXCEPTIONS)	.70 1/2
BLACK CROWN MINE	.78	ERIE DISTRICT	.80
DIAMOND MINE	.85		.89
	.94		

1/ Source Wage contracts of United Mine Workers of America

- 2/ Peas Fuel Company only
- 3/ Rate for Delagua, Hastings, Bowen, and Gray Creek Mines
- 4/ Under Black Diamond Coal Company, \$1.05
- 5/ Price of coal, including hauling to parting, laying straight track and timbering, 64 cents per ton
- 6/ Picking, loading, hauling to parting, laying straight track and timbering, 17 cents per ton
- 7/ Estimated -- 14 per cent increase
- 8/ No specific tonnage rates are included in the Southern Colorado - New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies in this area

Mines Reporting in 1917 and 1920	Mines Reporting only in November 1917	Mines Reporting only in April 1920
✓		
✓		
✓		
✓		1.04 High Vein 1.10 Low Vein
✓		
✓		
✓		
✓		

- These rates are for the following mines:
- Victor American Fuel Company
- Flinnville Mine
- Colorado and Utah Coal Company
- St. Harris Mine
- International Fuel Company
- Wolf Creek Mine
- Rear River Coal Company
- Bear River Mine
- Elk Creek Mining Company
- Scott-Pinnacel Company
- Allen Coal Mine
- Amalgamated Development Company
- Elk Creek
- Lindian Coal Mining Company

SECTION

TABLE 23 BITUMINOUS COAL INDUSTRY -- COLORADO

Tonnage Rates for Loading 1/ 1917 to 1922 and 1933 to 1937 (B.O.M. -- Net Tons)

YEAR	PERIOD OF WAGE AGREEMENT	★ (SEE NOTE)	COLORADO UTAH COAL CO. AND ELK CREEK MINING CO.		VICTOR AMERICAN FUEL CO.		MCCALLY THOMPSON		BLACK CANNON COAL & FUEL CO.		ALLIANCE COAL CO.		MONROE COAL MINING CO.		WOLFE PARK LEASING CO.		CANNON RELIANCE CO.		EVANS UNITED COAL CO.		POULDER BLACK COAL CO.		FALLS COAL CO.		COLORADO SPRING FUEL CO.		CHAMBERLAIN FUEL CO.		
			DELAWARE MINING	HASTINGS MINING	RAVENHAWD MINING	WOOD MINE	WANTON MINE	SON MINE	MAITLAND	NEW JOELL	MAITLAND	NEW JOELL	OSO	COAL	MINING	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.	CO.
1912																													
1914																													
1916																													
1917	Nov. 1, 1917 - Apr. 1, 1920	.58	.56	.535	.75	.66	.59	.686	.68	.73	.675	.80	.67	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP
1919	DECEMBER, 1919 - MARCH, 1920 "GARFIELD AWARD"	.661	.638	.610	.610	.855	.752	.673	.775	.832	.770	.912	.764	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP
1920	APR. 1, 1920 - MARCH, 1922	.765	.765	.73	.75	NOT REP	NOT REP	.85	.90	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	
1922																													
1924																													
1926																													
1928																													
1930																													
1932																													
			NORTHERN COLORADO																										
			LOUISVILLE DISTRICT												ERIE - FREDERICK														
			MACHINE LOADING						SHOVELING TRACK AND LAYING						LOADING ONLY						LOADING WITH SHOVING TRACK AND LAYING ONLY								
1933			.585	.800	.38	.42	.585	.55	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71	.38	.71
AMENDMENT 1																													
1934			.665	.880	.460	.50	.665	.63	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79	.46	.79
1935			.745	.995	.595	.660	.745	.71	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908	.57	.908

SOUTHERN COLORADO (COLORADO FUEL & IRON CO.)

CAMERON REBLER AND CHESTED BUTTE TRACK	SHORT WALL OVER UNDER MACH	NOV. 1, 1933 - MAR. 31, 1934	455	.50	.51	.55
TRACK	SHORT WALL OVER UNDER MACH	APR. 1, 1934 - MAR. 31, 1935	535	.58	.59	.63
TRACK	SHORT WALL OVER UNDER MACH	OCT. 1, 1935 - MAR. 31, 1937	615	.66	.67	.71

• NOTE: LOADING

- 1/ Source Wage contracts of United Mine Workers of America. These rates are for the following mines:-
- 2/ Rate for Colorado, Utah Coal Company only.
- 3/ Same Rate for Bowen and Gray Creek Mines.
- 4/ Same Rate for Cass Mine, Gray Creek Mine.
- 5/ Same Rate for Chandler Mine.
- 6/ The loader of machine coal is to pay the machine operator the 20 per cent increase in wages created said machine operator.
- 7/ Estimated - 14 per cent increase.
- 8/ No specific tonnage rates are included in the Southern Colorado - New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies in this area.

SECTION A

TABLE 24
BITUMINOUS COAL INDUSTRY - COLORADO

Tonnage Rate for Machine Cutting
1917 to 1922 and 1935 to 1937
(B.O.M. - Net Tons)

YEAR	PERIOD OF WAGE AGREEMENT	★ (SEE NOTE) CUTTER HELPER	COLORADO AND UTAH COAL CO		VICTOR AMERICAN FUEL COMPANY		MC NALLY AND THOMPSON		ELK RIVER MINING CO		ROUTT ALLEN		JEWELL		CANNON RELIANCE		CANNON RELIANCE		UNITED COLLIERIES
			CUT-ERS	HELP-ERS	DELAGUA HASTINGS	RAVENWOOD RADLENT	THOMPSON	MAILLAND	CUT-ERS	HELP-ERS	CUT-ERS	HELP-ERS	ALLEN	RAVENWOOD	JEWELL	CANNON	RELIANCE	CANNON	
1912		NON-UNION																	
1914																			
1916																			
1917	Nov 1, 1917 - April 1, 1920	.06 NOT REP	.07	.06	.11	.09	.065	.055	.20	.18	.09	.07	.06	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP
1919	Oct 1, 1919 - Mar 31, 1920 "Garfield award"	.14	.10	.09	.195	.165	.09	.08	.24	.26	.12	.10	.08	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP	NOT REP
1920	April 1, 1920 - Mar 31, 1922	.0675	.0575	.0675	.0575														.23
1922																			
1924		NON-UNION																	
1926																			
1928																			
1930																			
1932																			
BITUMINOUS COAL CODE																			
1933	Oct 9, 1933 - Aug 31, 1934	.13	.16	.09	.097	.15	.065		1933 Nov 1, 1933 - Mar 31, 1934	.058	.116	.106	.095	.148	.127	.09	.085	.074	
AMENDMENT 1																			
1934	April 1, 1934 - Mar 31, 1935	.14	.17	.10	.107	.16	.075		1934 April 1, 1934 - Mar 31, 1935	.068	.126	.116	.105	.158	.148	.10	.095	.084	
1935	Oct 1, 1935 - Mar 31, 1937	.15	.18	.11	.117	.17	.085		1935 Oct 1, 1935 - Mar 31, 1937	.078	.136	.126	.115	.168	.147	.11	.105	.094	

Source: Wage Contracts of United Mine Workers of America

- 1/ Same rate for Boreo and Gray Creek Mines
- 2/ Same rate for Case Mine and Gray Creek Mines
- 3/ Cutting in slate
- 4/ Same rate for Chandler Mine
- 5/ Top seam
- 6/ Lennox seam
- 7/ Shortwall machine
- 8/ No specific tonnage rates are included in the Southern Colorado-New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies in this area
- 9/ Cutting and shearing
- 10/ Cutting on light pitch is \$0.032 less per ton
- 11/ The increase received by the cutters is not known

NOTE: CUTTERS and HELPERS

- These rates are for the following mines: -
- Victor American Fuel Company
- Ridge Mine
- Pinnacle Mine
- Amalgamated Development Corporation
- Elk Creek Mine
- Holts Park Lignite Company
- Holts Mine

SOUTHERN COLORADO - (COLORADO FUEL AND IRON CO.)

CAMERON AND MONAC		KEBLER		CRESTED BUTTE	
TRACK	UNDERCUTTING	SHORTWALL	SHORTWALL	SHORTWALL	SHORTWALL
UNDER 4' 6" OVER 6'	UNDER 4' 6" OVER 6'	UNDER 5' 6" OVER 6'	UNDER 5' 6" OVER 6'	UNDER 6' 8" OVER 8'	UNDER 6' 8" OVER 8'
.116	.116	.106	.095	.148	.127
.116	.116	.106	.095	.148	.127
.126	.126	.116	.105	.158	.148
.136	.136	.126	.115	.168	.147

Mines Reporting November 1917 and 1920	Mines Reporting only in 1917	Mines Reporting only in 1920
✓		
✓		
		✓

TABLE 25
BITUMINOUS COAL INDUSTRY -- SOUTHERN WYOMING

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Daily Rates for Machine Cutters and Helpers and Mechanical Loading, 1912 to 1937

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED per day	TRACKMEN INSIDE		COMMON LABOR OUTSIDE		MACHINE CUTTERS HELPERS		MECHANICAL LOADING			SCALE		
			DAILY RATE	DAILY RATE	DAILY RATE	DAILY RATE	JOY, THEM, GOODMAN SHOVEL AND SIMILAR LOADING MACHINES	SCRAPER LOADER	DUCKBILL OPERATORS	SHOVELING ONTO CONVEYOR AND LOADER	DAILY RATE	DAILY RATE		
1912	Sept. 1, 1912 - Sept. 1, 1914	8	431 5.45	318 2.60										
1914	Sept. 1, 1914 - Sept. 1, 1916	8	431 5.45	318 2.60										
1916	Sept. 1, 1916 - Sept. 1, 1918	8	440 5.62	340 2.76										
1917	May 1, 1917 - Aug. 31, 1918	8	508 6.2	380 3.04										
1917	Nov. 1, 1917 - Mar. 31, 1920	8	478 5.72	368 2.88										
1919	Dec. 10, 1918 - Mar. 31, 1920 "Dayfield mine"	8	773 6.18	511 4.18										
1920	Apr. 1, 1920 - Mar. 31, 1922	8	803 6.42	568 4.44										
1920	Aug. 16, 1920 - Mar. 31, 1922	8	990 7.92	668 5.04										
1922	Aug. 15, 1920 - Mar. 31, 1923	8	990 7.92	668 5.04										
1923	Apr. 1, 1923 - Mar. 31, 1924	8	990 7.92	668 5.04										
1924	Apr. 1, 1924 - Mar. 31, 1927	8	990 7.92	668 5.04										
1925	Oct. 16, 1925 - June 30, 1925	8	840 6.72	736 5.89										
1925	July 1, 1925 - Dec. 31, 1925	8	675 5.40	585 4.44										
1925	May 1, 1925 - Apr. 30, 1925	8	675 5.40	585 4.44										
BITUMINOUS COAL CODE														
1935	Oct. 2, 1935 - Mar. 31, 1936	8	675 5.40	585 4.44										
AMENDMENT 1														
1936	Apr. 1, 1936 - Mar. 31, 1935	7	776 5.42	685 4.44										
1936	Oct. 1, 1935 - Mar. 31, 1937	7	845 5.92	705 4.94										

1/ Source: Wage contracts of United Mine Workers of America
 2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16
 3/ Approximate date when agreement went into effect
 4/ Fisher, W. E., and Besancon, A., Wage Rates and Working Times in the Bituminous Coal Industry, appendix tables
 5/ Estimated -- using same differential as always held between Northern and Southern Wyoming
 6/ Estimated -- 14 per cent increase

TABLE 27
BITUMINOUS COAL INDUSTRY -- MONTANA, WYOMING

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Daily Rates for Machine Cutters and Helpers and Mechanical Loading, 1912 to 1937

YEAR	PERIOD OF WAGE AGREEMENT	HOURS WORKED per DAY	TRACKMEN INSIDE		COMMON LABOR OUTSIDE		MACHINE CUTTERS		MACHINE HELPERS		MECHANICAL LOADING				SCALE	
			ALL DISTRICTS	HOURLY DAILY RATE	ALL DISTRICTS	HOURLY DAILY RATE	ALL DISTRICTS	DAILY RATE	JOY TRAY, GOODMAN, SHOVEL AND SIMILAR LOADING MACHINES	OPERATOR	HELPER	OPERATOR	HELPER	DUCK BILL OPERATOR	SHOVELING, ONTO CONVEYOR, LOADER	
1912	Sept. 1, 1912 - Sept. 1, 1914	8	431 3 45	325 2 60	390	3 45										
1914	Sept. 1, 1914 - Sept. 1, 1916	8	451 3 45	325 2 60	390	3 45										
1916	Sept. 1, 1916 - Sept. 1, 1918	8	440 3 52	358 2 86	390	3 52										
1917	May 1, 1917 - Aug. 31, 1918	8	503 4 02	393 3 14	440	4 02										
1917	Nov. 1, 1917 - Sept. 1, 1920	8	678 5 42	568 4 54	580	5 42										
1919	Dec. 10, 1919 - Mar. 31, 1920 "Contract Award"	8	775 6 18	647 5 18	661	6 18										
1920	Apr. 1, 1920 - Mar. 31, 1922	8	803 4 42	692 5 54	686	6 42 3/4										
1920	Aug. 16, 1920 - Mar. 31, 1922	8	990 7 92	880 7 04	830	7 92										
1922	Aug. 21, 1922 - Mar. 31, 1928	8	990 7 92	880 7 04	830	7 92										
1923	Apr. 1, 1923 - Mar. 31, 1924	8	990 7 92	880 7 04	830	7 92										
1924	Mar. 19, 1924 - Mar. 31, 1927	8	990 7 92	880 7 04	830	7 92										
1928	Dec. 1, 1928 - June 30, 1932	8	840 6 72	749 5 99	850	8 00										
1932	Aug. 4, 1932 - Apr. 30, 1933	8	678 5 42	568 4 54	680	6 00										
1933	May 1, 1933 - Apr. 30, 1934	8	678 5 42	568 4 54	680	6 00										
BITUMINOUS COAL CODE AMENDMENT 1																
1934	Apr. 1, 1934 - Mar. 31, 1935	7	775 5 42	649 4 54	680	6 00										
1935	Oct. 1, 1935 - Mar. 31, 1937	7	845 5 92	705 5 04	750	6 70										

1/ Source: Wage Contracts of United Mine Workers of America
 2/ The strike was officially discontinued December 10, 1919. Just what the mines were opened in certain fields is not known -- probably not until December 15 or 16
 a/ Fisher, W. E., and Beaman, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
 b/ Estimated

TABLE 26
 BATHINGHOUSE COAL INDUSTRY - PORTERFIELD TOWNSHIP
 Tompage Rates for Pick Mining, Loading, and Bases per square foot for Machine Cutting V 1912 to 1937
 (Bathinghouse - Bat. Tom)

YEAR	PERIOD OF WAGE AGREEMENT	PICK MINING				LOADING (LAFFER MACHINE)				MACHINE CUTTING (PEA SQUARE FOOT)							
		Big Horn Collieries Co.	Cambridge Fuel Co.	One Creek Coal Co.	Sheridan County	Big Horn Collieries Co.	Cambridge Fuel Co.	One Creek Coal Co.	Sheridan County	Big Horn Collieries Co.	Cambridge Fuel Co.	One Creek Coal Co.	Sheridan County				
1912	Sept. 1, 1912 - Sept. 1, 1914	700	590	680	770	550	580	650	740	06	05	08	06	025	0195	025	025
1914	Sept. 1, 1914 - Sept. 1, 1916	740	590	680	770	550	580	650	740	03	05	08	06	025	0195	025	025
1916	Sept. 1, 1916 - Sept. 1, 1918	760	600	700	780	570	600	680	770	03	05	08	06	025	0195	025	025
1917	May 1, 1917 - Aug 31, 1918	800	660	760	850	600	660	740	830	03	05	08	06	025	0195	025	025
1918	Nov. 1, 1917 - Sept. 1, 1920	940	770	860	950	700	770	850	940	03	05	08	06	025	0195	025	025
1919	Dec. 1, 1918 - Mar. 31, 1920	900	740	830	920	680	740	820	910	03	05	08	06	025	0195	025	025
1920	Apr. 1, 1920 - Mar. 31, 1922	1100	930	1020	1110	880	930	1020	1110	03	05	08	06	025	0195	025	025
1922	Apr. 21, 1922 - Mar. 31, 1923	1180	1010	1100	1190	960	1010	1100	1190	03	05	08	06	025	0195	025	025
1923	Apr. 1, 1923 - Mar. 31, 1924	1160	1000	1090	1180	940	990	1080	1170	03	05	08	06	025	0195	025	025
1924	Mar. 19, 1924 - Mar. 31, 1924	1180	1020	1110	1200	960	1010	1100	1190	03	05	08	06	025	0195	025	025
1925	Dec. 1, 1925 - June 30, 1925	1250	1090	1180	1270	1030	1080	1170	1260	03	05	08	06	025	0195	025	025
1926	Apr. 4, 1926 - Apr. 30, 1926	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1927	Apr. 1, 1927 - Apr. 30, 1927	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1928	Apr. 2, 1928 - Mar. 31, 1928	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1929	Apr. 1, 1929 - Mar. 31, 1929	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1930	Apr. 1, 1930 - Mar. 31, 1930	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1931	Apr. 1, 1931 - Mar. 31, 1931	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1932	Apr. 1, 1932 - Mar. 31, 1932	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1933	Apr. 1, 1933 - Mar. 31, 1933	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1934	Apr. 1, 1934 - Mar. 31, 1934	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1935	Apr. 1, 1935 - Mar. 31, 1935	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1936	Apr. 1, 1936 - Mar. 31, 1936	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025
1937	Apr. 1, 1937 - Mar. 31, 1937	1400	1240	1330	1420	1180	1230	1320	1410	03	05	08	06	025	0195	025	025

1) Source: Wage contracts of United Mine Workers of America.
 2) The strike was officially discontinued December 10, 1919. Just when the rates were opened to certain fields is not known - probably not until December 14 or 15.

3) Includes Atlas Mgmt., Garney, Monarch, Kool and Anco.
 4) Contract for 3 companies - Sheridan Peaking Coal Company, Hotchkiss Coal Company, Sheridan Coal Company.
 5) Pick pillar coal same rate.
 6) Includes Atlas Mgmt., Garney, Monarch, Kool and Anco.
 7) Coal 4 to 5 feet - 4 cents per ton additional.
 8) Coal 4 to 5 feet - 5 cents per ton additional.
 9) Under 3 feet - deficit work.
 10) Coal 4 to 5 feet - 4 cents per ton additional.
 11) Under 3 feet - deficit work.
 12) Rates for rooms (47) - Not work 2 cents more per ton.

13) Cutting - electric Chain Machine.
 14) Rates for rooms (47) - Not work 4 cents more per ton.
 15) Rates for wide work - Narrow work 12 and 16 cents per ton.
 16) Rates for wide work - Narrow work 12 cents more per ton.
 17) Rates for wide work - Narrow work 3 cents more per ton.
 18) Estimated - 14 per cent increase.
 19) Rates for wide work - Narrow work 2 cents more per ton.
 20) Cannot estimate increase.

TABLE 30

MINING STOCKS - LISTED IN THE NEW YORK STOCK EXCHANGE

Name (Symbol or Writ.)	MINE MINING		COPPER		IRON		STEEL		OTHER		MACHINERY		OTHER		Range	Lowest	High
	Price	Div.	Price	Div.	Price	Div.	Price	Div.	Price	Div.	Price	Div.	Price	Div.			
93	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
94	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
95	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
96	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
97	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
98	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
99	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100
100	100	10	100	10	100	10	100	10	100	10	100	10	100	10	100	100	100

1. Name of the company of which the shares are owned.
 2. In certain fields it is not known whether the shares were owned by the company or by an individual.
 3. Approximate date when the shares were first offered.
 4. Price per share and company name.
 5. Name of the company, the name of the stock, and the date when the shares were first offered.
 6. For the mining and iron fields, the price for which the stock was sold is given in actual dollars per cent for holding.
 7. For the steel fields, the price for which the stock was sold is given in actual dollars per cent for holding.
 8. For the other fields, the price for which the stock was sold is given in actual dollars per cent for holding.
 9. For the other fields, the price for which the stock was sold is given in actual dollars per cent for holding.
 10. For the other fields, the price for which the stock was sold is given in actual dollars per cent for holding.

COMPARISON OF AVERAGE WORKING DAYS, MINE LABOR COST, TOTAL COST, AND REALIZATION FOR JANUARY THRU MARCH 1934 AND APRIL 1934 THRU JANUARY 1935

	3 MONTHS JAN-FEB- MARCH '34		10 MONTHS APRIL 1934 -JAN 1935		INCREASE UNDER PER CENT		3 MONTHS JAN-FEB- MARCH '34		10 MONTHS APRIL 1934 -JAN 1935		INCREASE UNDER PER CENT	
	PER TON	PER TON	PER TON	PER TON	PER TON	PER CENT	PER TON	PER TON	PER TON	PER TON	PER CENT	PER CENT
DIVISION I												
EASTERN SUBDIVISION												
Avg. Working Days	19.3	15.2	18.3	14.9	17.7	14.9	17.7	14.9	14.9	14.9	14.9	14.9
Mine Labor Costs	57.9	151.7	142.6	148.5	53.2	148.5	53.2	148.5	148.5	148.5	148.5	148.5
Total Cost	106.50	129.50	93.99	114.59	29.06	114.59	29.06	114.59	114.59	114.59	114.59	114.59
Realization	171.34	212.18	163.15	194.73	31.58	194	31.58	194	152.03	152.03	152.03	152.03
	172.68	205.70	177.54	203.69	26.15	187	26.15	187	159.85	159.85	159.85	159.85
WESTERN PENNA.												
Avg. Working Days	19.4	16.5	15.1	15.1	16.8	15.1	16.8	15.1	14.9	14.9	14.9	14.9
Mine Labor Costs	57.8	164.7	54.7	150.9	8.98	150.9	8.98	150.9	142.5	142.5	142.5	142.5
Total Cost	98.99	119.01	86.98	108.84	21.86	108.84	21.86	108.84	86.63	86.63	86.63	86.63
Realization	164.13	194.08	151.73	181.99	30.26	199	30.26	199	152.31	152.31	152.31	152.31
	167.32	190.85	158.09	184.47	26.38	167	26.38	167	163.96	163.96	163.96	163.96
OHIO												
Avg. Working Days	19.0	18.9	16.8	16.8	17.1	16.8	17.1	16.8	14.9	14.9	14.9	14.9
Mine Labor Costs	56.8	138.0	51.2	124.5	51.2	124.5	51.2	124.5	86.4	86.4	86.4	86.4
Total Cost	94.83	115.17	76.65	107.1	18.18	107.1	18.18	107.1	82.91	82.91	82.91	82.91
Realization	150.49	180.31	117.09	144.7	32.35	144.7	32.35	144.7	154.48	154.48	154.48	154.48
	168.92	185.84	119.98	149.8	26.74	160	26.74	160	162.92	162.92	162.92	162.92
MICHIGAN												
Avg. Working Days	20.7	16.4	20.2	14.6	16.8	14.6	16.8	14.6	14.8	14.8	14.8	14.8
Mine Labor Costs	42.0	164.3	60.5	145.8	18.5	145.8	18.5	145.8	132.0	132.0	132.0	132.0
Total Cost	155.04	193.68	170.49	206.72	36.23	206.72	36.23	206.72	232.02	232.02	232.02	232.02
Realization	271.58	315.48	178.41	210.76	32.35	210.76	32.35	210.76	228.67	228.67	228.67	228.67
	291.12	316.25	184.1	210.76	32.35	210.76	32.35	210.76	195.33	195.33	195.33	195.33
DANHANDLE												
Avg. Working Days	21.0	18.4	19.2	16.4	16.4	16.4	16.4	16.4	16.2	16.2	16.2	16.2
Mine Labor Costs	42.0	184.2	57.5	63.6	57.5	63.6	57.5	63.6	125.5	125.5	125.5	125.5
Total Cost	101.0	112.81	90.53	111.92	21.39	111.92	21.39	111.92	142.61	142.61	142.61	142.61
Realization	172.26	172.72	157.13	188.29	31.16	198	31.16	198	215.45	215.45	215.45	215.45
	161.03	175.42	167.03	193.77	26.74	160	26.74	160	203.76	203.76	203.76	203.76
NORTHERN W. VIRGINIA												
Avg. Working Days	19.0	3.5	19.2	15.8	15.8	15.8	15.8	15.8	14.9	14.9	14.9	14.9
Mine Labor Costs	55.5	23.6	57.3	15.78	21.22	22.6	21.22	22.6	41.30	41.30	41.30	41.30
Total Cost	77.48	99.57	92.97	115.19	32.16	20.3	32.16	20.3	229.83	229.83	229.83	229.83
Realization	132.48	166.71	158.42	190.58	32.16	20.3	32.16	20.3	225.39	225.39	225.39	225.39
	134.47	162.14	165.69	191.94	26.25	15.8	26.25	15.8	156.4	156.4	156.4	156.4
TOTAL DIV. I-NORTH												
Avg. Working Days	19.3	16.5	18.3	14.9	17.7	14.9	17.7	14.9	14.9	14.9	14.9	14.9
Mine Labor Costs	57.9	151.7	142.6	148.5	53.2	148.5	53.2	148.5	148.5	148.5	148.5	148.5
Total Cost	106.50	129.50	93.99	114.59	29.06	114.59	29.06	114.59	114.59	114.59	114.59	114.59
Realization	171.34	212.18	163.15	194.73	31.58	194	31.58	194	152.03	152.03	152.03	152.03
	172.68	205.70	177.54	203.69	26.15	187	26.15	187	159.85	159.85	159.85	159.85
TOTAL DIVISION II												
INDIANA												
Avg. Working Days	19.0	18.9	16.8	16.8	17.1	16.8	17.1	16.8	14.9	14.9	14.9	14.9
Mine Labor Costs	56.8	138.0	51.2	124.5	51.2	124.5	51.2	124.5	86.4	86.4	86.4	86.4
Total Cost	94.83	115.17	76.65	107.1	18.18	107.1	18.18	107.1	82.91	82.91	82.91	82.91
Realization	150.49	180.31	117.09	144.7	32.35	144.7	32.35	144.7	154.48	154.48	154.48	154.48
	168.92	185.84	119.98	149.8	26.74	160	26.74	160	162.92	162.92	162.92	162.92
ILLINOIS												
Avg. Working Days	19.0	18.9	16.8	16.8	17.1	16.8	17.1	16.8	14.9	14.9	14.9	14.9
Mine Labor Costs	56.8	138.0	51.2	124.5	51.2	124.5	51.2	124.5	86.4	86.4	86.4	86.4
Total Cost	94.83	115.17	76.65	107.1	18.18	107.1	18.18	107.1	82.91	82.91	82.91	82.91
Realization	150.49	180.31	117.09	144.7	32.35	144.7	32.35	144.7	154.48	154.48	154.48	154.48
	168.92	185.84	119.98	149.8	26.74	160	26.74	160	162.92	162.92	162.92	162.92
TOTAL DIVISION III												
ALABAMA												
Avg. Working Days	20.7	16.4	20.2	14.6	16.8	14.6	16.8	14.6	14.8	14.8	14.8	14.8
Mine Labor Costs	42.0	164.3	60.5	145.8	18.5	145.8	18.5	145.8	132.0	132.0	132.0	132.0
Total Cost	155.04	193.68	170.49	206.72	36.23	206.72	36.23	206.72	232.02	232.02	232.02	232.02
Realization	271.58	315.48	178.41	210.76	32.35	210.76	32.35	210.76	228.67	228.67	228.67	228.67
	291.12	316.25	184.1	210.76	32.35	210.76	32.35	210.76	195.33	195.33	195.33	195.33
SO. TENNESSEE AND GEORGIA												
Avg. Working Days	21.0	18.4	19.2	16.4	16.4	16.4	16.4	16.4	16.2	16.2	16.2	16.2
Mine Labor Costs	42.0	184.2	57.5	63.6	57.5	63.6	57.5	63.6	125.5	125.5	125.5	125.5
Total Cost	101.0	112.81	90.53	111.92	21.39	111.92	21.39	111.92	142.61	142.61	142.61	142.61
Realization	172.26	172.72	157.13	188.29	31.16	198	31.16	198	215.45	215.45	215.45	215.45
	161.03	175.42	167.03	193.77	26.74	160	26.74	160	203.76	203.76	203.76	203.76
TOTAL DIVISION III												
Avg. Working Days	19.0	3.5	19.2	15.8	15.8	15.8	15.8	15.8	14.9	14.9	14.9	14.9
Mine Labor Costs	55.5	23.6	57.3	15.78	21.22	22.6	21.22	22.6	41.30	41.30	41.30	41.30
Total Cost	77.48	99.57	92.97	115.19	32.16	20.3	32.16	20.3	229.83	229.83	229.83	229.83
Realization	132.48	166.71	158.42	190.58	32.16	20.3	32.16	20.3	225.39	225.39	225.39	225.39
	134.47	162.14	165.69	191.94	26.25	15.8	26.25	15.8	156.4	156.4	156.4	156.4

1. Exclusive of Maryland and Upper Potomac.
 2. Includes Grant, Mineral and Duckett Counties, West Virginia.
 3. Two-month total. Data not available for March 1934.
 4. Increase 10 months over two months.
 5. W. Kentucky is shown only for January. Not available for succeeding months.
 6. Does not include eastern Kentucky.
 7. Deep and strip combined.
 8. Does not include Iowa.
 9. Nine-month total. Data not available for January, 1935.
 10. So. Tennessee & Georgia - Dist. 1 covers only 8 months and Dist. 2 only 4 months due to Unaffiliated data.
 11. Increase 4 months over 1 month.
 12. Increase 4 months over 1 month.
 13. Eastern Kentucky

TABLE 30--SECTION B

LABOR COSTS PER TON BEFORE AND AFTER APRIL, 1934 -- BITUMINOUS COAL

Prepared by Bituminous Coal Section
U. S. DEPARTMENT OF COMMERCE

FORM A ITEM NO	DIVISION AND SUBDIVISION	NO MONTH												TOTAL 3 MONTHS JAN FEB MAR 1934	NO MONTH TOTAL APRIL 1934 JAN 1934 APRIL 1934	NUMBER OF MINES OPERATING JAN 1934 APRIL 1934
		NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934			
EASTERN SUBDIVISION 1/																
58	DAYMEN	2711	2922	2823	2869	2445	3571	3524	3593	3576	3644	3552	3552	3552	3637	2741
5D	MINING(PIECE % DAY WORKERS)	4221	4031	4103	4120	4245	4174	4167	4144	4150	4148	4150	4150	4150	4150	1659
5C	YARDAGE % DEADWORK	0439	0499	0420	0410	0492	0407	0413	0430	0425	0425	0444	0444	0455	0457	2483
5D	MINE SUPER % CLERICAL	0273	0283	0229	0231	0443	0205	0206	0256	0260	0265	0289	0289	0289	0289	2787
5E	TOTAL MINE LABOR	10597	10735	10490	10734	10955	10656	10656	10772	10655	10655	10922	10922	10955	10955	2766
NO OF MINES REPORTING		139	152	159	157	145	138	140	136	130	139	138	137	137	135	
NO OF DAYS TIPPLE STARTED		163	170	89	181	209	145	143	134	124	124	143	143	143	151	
TOTAL TONS PRODUCED		2032449	2150492	2406246	2400051	2421567	1700097	1714023	1663473	1673311	1673311	2063925	2063925	2063925	1942474	
WESTERN PENNSYLVANIA																
58	DAYMEN	3169	3235	3238	3239	3499	4179	4186	4000	4025	4000	3879	3879	3879	3992	2308
5D	MINING(PIECE % DAY WORKERS)	5125	5100	5240	5240	5133	4821	4821	4821	4821	4821	4821	4821	4821	4821	867
5C	YARDAGE % DEADWORK	0472	0480	0441	0471	0489	0395	0384	0377	0361	0366	0361	0361	0361	0361	2090
5D	MINE SUPER % CLERICAL	0528	0429	0599	0578	0489	0718	0629	0468	0468	0468	0468	0468	0468	0468	2091
5E	TOTAL MINE LABOR	9874	10048	9946	9934	9784	10072	10100	11891	12063	12063	11770	11770	11950	11901	20497
NO OF MINES REPORTING		152	150	138	133	154	150	134	142	138	149	149	149	149	148	
NO OF DAYS TIPPLE STARTED		184	169	176	186	214	163	174	142	159	158	181	181	181	172	
TOTAL TONS PRODUCED		3475121	2750423	2531166	2406286	3774273	2467433	2430471	2404872	2302245	2302245	3082625	2745793	2369995	2986979	2645230
OHIO																
58	DAYMEN	2768	2778	2446	2689	2463	3154	3129	3028	3041	3046	3045	3045	3045	3051	3369
5D	MINING(PIECE % DAY WORKERS)	5464	5364	6169	5871	5852	6264	6239	6239	6277	6276	6276	6276	6276	6276	1428
5C	YARDAGE % DEADWORK	0423	0372	0335	0402	0414	0395	0395	0429	0429	0429	0429	0429	0429	0429	3507
5D	MINE SUPER % CLERICAL	0851	0879	0877	0880	0807	0880	0880	0880	0880	0880	0880	0880	0880	0880	3208
5E	TOTAL MINE LABOR	7456	7593	9867	9452	9466	11832	11609	11307	11276	11332	11668	11557	11557	11517	2145
NO OF MINES REPORTING		60	56	54	52	63	53	52	55	54	52	65	65	65	57	
NO OF DAYS TIPPLE STARTED		159	154	171	184	213	152	152	136	132	117	147	150	170	138	
TOTAL TONS PRODUCED		1065055	1023459	1106128	1155700	1326200	703872	763609	824565	887007	1010993	1130498	1140012	1227876	9494871	
MICHIGAN																
58	DAYMEN	3222	3408	2807	3111	4134	3989	4091	4091	4091	4091	4091	4091	4091	4091	1459
5D	MINING(PIECE % DAY WORKERS)	4903	4925	4648	4576	4898	4898	4898	4898	4898	4898	4898	4898	4898	4898	2264
5C	YARDAGE % DEADWORK	2026	2589	2311	2322	2325	2316	2316	2316	2316	2316	2316	2316	2316	2316	2452
5D	MINE SUPER % CLERICAL	0711	0726	0436	0714	0842	0842	0842	0842	0842	0842	0842	0842	0842	0842	3338
5E	TOTAL MINE LABOR	15777	16738	15452	15765	15429	15520	15520	15520	15520	15520	15520	15520	15520	15520	2430
NO OF MINES REPORTING		5	6	6	5	4	5	4	4	3	4	5	5	5	5	
NO OF DAYS TIPPLE STARTED		86	186	217	183	220	120	120	72	123	198	213	213	213	202	
TOTAL TONS PRODUCED		59352	62644	71004	51924	57651	180589	150653	24035	12272	23922	48330	53199	58199	63656	247185

1/ EXCLUDING MARYLAND AND UPPER POTOMAC

TABLE 33—SECTION B

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 — BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS			AUGUST 1934	SEPTEMBER 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER 1934	TOTAL 12 MONTHS APRIL 1934 THROUGH APRIL 1935	PERCENTAGE OF TOTAL APRIL 1934 THROUGH APRIL 1935
							JAN FEB MAR	1934	1934							
PANHANDLE																
5A	DAYMEN	2493	2452	2619	2800	2800	2710	2600	2710	2710	2710	2710	2710	2710	2710	2710
5B	MINNIPICE ¹ % DAY WORKERS	6099	6081	6070	6104	6116	6090	6080	6070	6060	6050	6040	6030	6020	6010	6000
5C	YARDAGE ² % DEADWORK	0033	0038	0040	0047	0051	0050	0049	0048	0047	0046	0045	0044	0043	0042	0041
5D	MINE SUPER ³ % CLERICAL	9698	9713	9829	10007	10110	10110	10110	10110	10110	10110	10110	10110	10110	10110	10110
5E	TOTAL MINE LABOR	7	8	5	5	5	5	5	5	5	5	5	5	5	5	5
5F	NO OF MINES REPORTING	186	209	216	202	202	202	202	202	202	202	202	202	202	202	202
5G	NO OF DAYS TIPPLE STARTED	245761	242358	247436	25763	25763	25763	25763	25763	25763	25763	25763	25763	25763	25763	25763
5H	TOTAL TONS PRODUCED	2519	2398	2493	2405	2405	2405	2405	2405	2405	2405	2405	2405	2405	2405	2405
NORTHERN WEST VIRGINIA																
5A	DAYMEN	4586	4590	4578	4577	4590	4588	4588	4588	4588	4588	4588	4588	4588	4588	4588
5B	MINNIPICE ¹ % DAY WORKERS	0141	0152	0164	0182	0171	0176	0176	0176	0176	0176	0176	0176	0176	0176	0176
5C	YARDAGE ² % DEADWORK	0046	0042	0040	0038	0038	0038	0038	0038	0038	0038	0038	0038	0038	0038	0038
5D	MINE SUPER ³ % CLERICAL	7760	7756	7785	7703	7703	7703	7703	7703	7703	7703	7703	7703	7703	7703	7703
5E	TOTAL MINE LABOR	65	69	59	64	65	64	64	64	64	64	64	64	64	64	64
5F	NO OF MINES REPORTING	176	169	178	179	179	179	179	179	179	179	179	179	179	179	179
5G	NO OF DAYS TIPPLE STARTED	1352338	1351948	1361156	1467013	1594625	1594625	1594625	1594625	1594625	1594625	1594625	1594625	1594625	1594625	1594625
5H	TOTAL TONS PRODUCED	2866	2915	2887	2890	2900	2871	2871	2871	2871	2871	2871	2871	2871	2871	2871
AVERAGE DIV. I.—NORTH																
5A	DAYMEN	5730	5620	5712	5649	5704	5670	5670	5670	5670	5670	5670	5670	5670	5670	5670
5B	MINNIPICE ¹ % DAY WORKERS	0531	0570	0599	0571	0579	0579	0579	0579	0579	0579	0579	0579	0579	0579	0579
5C	YARDAGE ² % DEADWORK	0665	0660	0648	0647	0632	0632	0632	0632	0632	0632	0632	0632	0632	0632	0632
5D	MINE SUPER ³ % CLERICAL	9692	9799	9876	9757	9666	9757	9757	9757	9757	9757	9757	9757	9757	9757	9757
5E	TOTAL MINE LABOR	48	44	41	41	41	41	41	41	41	41	41	41	41	41	41
5F	NO OF MINES REPORTING	177	168	181	183	183	183	183	183	183	183	183	183	183	183	183
5G	NO OF DAYS TIPPLE STARTED	8143483	851743	851070	843691	843691	843691	843691	843691	843691	843691	843691	843691	843691	843691	843691
5H	TOTAL TONS PRODUCED	2786	2787	2787	2786	2786	2786	2786	2786	2786	2786	2786	2786	2786	2786	2786
SOUTHERN NO. 1																
5A	DAYMEN	4339	4418	4409	4322	4356	4330	4330	4330	4330	4330	4330	4330	4330	4330	4330
5B	MINNIPICE ¹ % DAY WORKERS	0563	0589	0638	0628	0622	0622	0622	0622	0622	0622	0622	0622	0622	0622	0622
5C	YARDAGE ² % DEADWORK	0893	0905	0897	0866	0840	0840	0840	0840	0840	0840	0840	0840	0840	0840	0840
5D	MINE SUPER ³ % CLERICAL	9411	9571	9473	9352	9200	9200	9200	9200	9200	9200	9200	9200	9200	9200	9200
5E	TOTAL MINE LABOR	143	139	153	156	160	156	156	156	156	156	156	156	156	156	156
5F	NO OF MINES REPORTING	232390	261208	263920	263865	263865	263865	263865	263865	263865	263865	263865	263865	263865	263865	263865
5G	NO OF DAYS TIPPLE STARTED	171	159	200	183	201	201	201	201	201	201	201	201	201	201	201
5H	TOTAL TONS PRODUCED	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000	2000000

¹ A month's average is shown for December 1933 for the month of June through November, 1933. Data not available for separate months.

² Total for two months the 1st.

³ Figures in parentheses denote increases.

Source: Bituminous Coal Labor Statistics, Bureau of Mines, Washington, D. C.

TABLE 30—SECTION B

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1 1934—BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	TOTAL 3 MONTHS JAN-FEB-MAR												10 MONTH SUMMARY APRIL 1934 THROUGH JAN. 1935	12 MONTH SUMMARY APRIL 1934 THROUGH APRIL 1935	
		NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934			NOVEMBER 1934
SOUTHERN NO. 2																
53	DAYMEN	2776	2193	3446	3099	2232	3171	4155	4070	4151	4096	4111	4172	4111	4111	2544
54	MINING(PIECE % DAY WORKERS)	4577	4269	4564	4213	4489	4561	5373	5447	5409	5209	5461	5328	5308	5461	2133
55	YARDAGE % DEADWORK	6277	6245	6271	6308	6283	6382	6484	6513	6543	6521	6576	6513	6516	6516	5700
56	MINE SUPER % CLERICAL	4482	4804	4765	4641	4577	4642	4783	4729	4785	4736	4777	4777	4785	4746	1446
56	TOTAL MINE LABOR	8820	8911	8745	8471	8441	8498	10826	10779	10888	10615	10894	10642	10922	10894	2512
NO OF MINE REPORTING		296	244	234	235	248	239	241	213	92	205	208	210	208	208	
NO OF DAYS TIDPLE STARTED		160	141	142	177	207	241	159	171	148	119	150	169	150	169	
TOTAL TONS PRODUCED		4510893	3455408	4013956	4104491	5093913	3321236	3653029	3504492	2955329	3094877	3225534	3443254	34835445		
MARYLAND																
53	DAYMEN	4164	4064	3337	3223	2246	3245	3245	3438	4535	4314	4277	3925	3077	4111	2596
54	MINING(PIECE % DAY WORKERS)	6080	5613	6456	6245	6166	6226	7039	7005	6772	6758	6844	6894	7527	7297	1804
55	YARDAGE % DEADWORK	6451	6240	6257	6209	6166	6167	5988	5961	6351	6351	6771	6419	6759	6759	1056
56	MINE SUPER % CLERICAL	6029	6239	6717	6929	6744	6741	4433	4181	4827	4546	4354	4116	4060	4064	5048
56	TOTAL MINE LABOR	11574	11296	11190	11116	10941	11089	13934	13660	14043	13440	13355	13102	12997	13338	2620
NO OF MINE REPORTING		14	16	16	12	11	13	10	10	13	13	12	13	13	12	
NO OF DAYS TIDPLE STARTED		143	203	206	189	212	607	520	477	510	424	424	460	460	424	
TOTAL TONS PRODUCED		92408	24074	30391	106574	115481	344426	474253	474364	45164	43476	43402	87162	89204	103281	72025
UPPER POTOMAC																
53	DAYMEN	3884	3857	3332	3333	3476	3388	4071	4045	3972	3991	4613	4211	4159	4471	4167
54	MINING(PIECE % DAY WORKERS)	5381	4628	4025	5315	4662	5042	4877	4490	4735	4710	4772	4922	4889	4969	4607
55	YARDAGE % DEADWORK	7042	1088	1066	1191	1126	1102	1255	1124	1229	1234	1324	1442	1463	1424	4452
56	MINE SUPER % CLERICAL	6545	6726	6489	6571	6529	6586	6864	6816	6771	6819	6744	6644	6496	6684	2446
56	TOTAL MINE LABOR	11352	11699	11022	10921	11124	11046	13012	13014	12718	12516	12643	13300	13280	13288	8335
NO OF MINE REPORTING		11	10	11	6	11	9	8	10	5	10	8	10	9	10	
NO OF DAYS TIDPLE STARTED		174	169	194	187	220	401	141	144	132	170	143	184	179	179	
TOTAL TONS PRODUCED		42550	57279	70729	41151	81351	200837	48325	52201	43161	34715	44822	71422	62522	73212	60216
WESTERN KENTUCKY																
53	DAYMEN	2789	2582													
54	MINING(PIECE % DAY WORKERS)	4019	3972													
55	YARDAGE % DEADWORK	6034	6038													
56	MINE SUPER % CLERICAL	6087	6088													
56	TOTAL MINE LABOR	7461	7082													
NO OF MINE REPORTING		27	29													
NO OF DAYS TIDPLE STARTED		39	451													
TOTAL TONS PRODUCED		41152	40584													

U. S. BUREAU OF MINING AND GEOLOGY
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 WASHINGTON, D. C.

1/ An annual average is shown for Southern No. 2, Upper Potomac and Western Kentucky. Data are not available for separate months.
 2/ Figures Kentucky is not shown for 1934.
 3/ 1931 reported only to January.

TABLE 35--SECTION B

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 - BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	TOTAL	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCTOBER	NOVEMBER	DECEMBER	JANUARY	TOTAL	
		1933	1933	1934	1934	1934	3 MONTHS MARCH 1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934
AVERAGE DIV I - SOUTH ^{1/2}																			
58 DAYMEN		4506	4256	3397	3349	3076	10178	1000	9316	9274	9114	8729	8220	7944	7450	7000	6500	6000	5500
58 MININGPIECE % DAY WORKERS		4522	4272	3414	3366	3093	10178	1000	9316	9274	9114	8729	8220	7944	7450	7000	6500	6000	5500
58 YARDAGE % DEADWORK		6026	5776	4620	4572	4300	14270	14100	13940	13780	13620	13460	13300	13140	12980	12820	12660	12500	12340
58 MINE SUPER % CLERICAL		8926	8676	6920	6872	6600	20370	20200	19940	19780	19620	19460	19300	19140	18980	18820	18660	18500	18340
58 TOTAL MINE LABOR		19980	19080	15537	15159	14270	55016	54300	53320	52560	51800	51040	50280	49520	48760	48000	47240	46480	45720
NO OF MINES REPORTING		40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
NO OF DAYS TRIPPLE STARTED		162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162
TOTAL TONS PRODUCED		660487	673793	622050	792523	914228	3060768	682635	102400	102400	102400	102400	102400	102400	102400	102400	102400	102400	102400
TOTAL-DIVISION I ^{3/4}																			
58 DAYMEN		6069	5819	4961	4913	4640	15362	15200	15040	14880	14720	14560	14400	14240	14080	13920	13760	13600	13440
58 MININGPIECE % DAY WORKERS		5704	5454	4596	4548	4275	14580	14420	14260	14100	13940	13780	13620	13460	13300	13140	12980	12820	12660
58 YARDAGE % DEADWORK		6093	5843	4985	4937	4664	15362	15200	15040	14880	14720	14560	14400	14240	14080	13920	13760	13600	13440
58 MINE SUPER % CLERICAL		6069	5819	4961	4913	4640	15362	15200	15040	14880	14720	14560	14400	14240	14080	13920	13760	13600	13440
58 TOTAL MINE LABOR		9350	9066	7642	7563	7204	24920	24760	24600	24440	24280	24120	23960	23800	23640	23480	23320	23160	23000
NO OF MINES REPORTING		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
NO OF DAYS TRIPPLE STARTED		170	158	79	183	213	603	150	164	178	192	206	220	234	248	262	276	290	304
TOTAL TONS PRODUCED		280780	425826	58020	200022	100022	100022	230022	340022	450022	560022	670022	780022	890022	100022	111022	122022	133022	144022
TOTAL-DIVISION II (DEEP % STRIP) ^{1/4}																			
58 DAYMEN		2460	2405	2350	2295	2240	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
58 MININGPIECE % DAY WORKERS		2387	2332	2277	2222	2167	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
58 YARDAGE % DEADWORK		2040	1985	1930	1875	1820	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
58 MINE SUPER % CLERICAL		2572	2517	2462	2407	2352	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
58 TOTAL MINE LABOR		7652	7487	7322	7157	6992	28000	27900	27800	27700	27600	27500	27400	27300	27200	27100	27000	26900	26800
NO OF MINES REPORTING		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
NO OF DAYS TRIPPLE STARTED		59	68	77	86	95	480	100	100	100	100	100	100	100	100	100	100	100	100
TOTAL TONS PRODUCED		430101	467780	495459	523138	550817	2000000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000
ILLINOIS (DEEP % STRIP)																			
58 DAYMEN		3539	3484	3429	3374	3319	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000
58 MININGPIECE % DAY WORKERS		3466	3411	3356	3301	3246	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000	13000
58 YARDAGE % DEADWORK		3189	3134	3079	3024	2969	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
58 MINE SUPER % CLERICAL		6525	6470	6415	6360	6305	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000
58 TOTAL MINE LABOR		7714	7659	7604	7549	7494	29000	29000	29000	29000	29000	29000	29000	29000	29000	29000	29000	29000	29000
NO OF MINES REPORTING		62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
NO OF DAYS TRIPPLE STARTED		55	67	79	91	103	400	100	100	100	100	100	100	100	100	100	100	100	100
TOTAL TONS PRODUCED		294358	329811	365264	399717	434170	1600000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000

NOTE: 1/ Total Division I does not include Western Anthracite from January 1934 through January 1935.
2/ Total Division II does not include Illinois reporting April through November, 1934, as length totals.
3/ Western Anthracite (data not available)

6/ DIVISION I - SOUTH includes Southern Subdivision No. 2 from January 1934 through January 1935. Upper Potomac, West Virginia Eastern Kentucky (data not available)

7/ Total Division I does not include Western Anthracite from January 1934 through January 1935.
8/ Total Division II does not include Illinois reporting April through November, 1934, as length totals.

9/ Total Division I does not include Western Anthracite from January 1934 through January 1935.
10/ Total Division II does not include Illinois reporting April through November, 1934, as length totals.

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1954 — BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1953	DECEMBER 1953	JANUARY 1954	FEBRUARY 1954	MARCH 1954	TOTAL 3 MONTHS NOV-FEB-MAR 1954	APRIL 1954	MAY 1954	JUNE 1954	JULY 1954	AUGUST 1954	SEPT 1954	OCTOBER 1954	NOVEMBER 1954	DECEMBER 1954	JANUARY 1955	TOTAL APRIL 1954 THROUGH JAN 1955	PERCENTAGE CHANGE APRIL 1954 OVER JAN 1955
INDIANA (DEEP^a, STRIP)																			
58	DAYMEN	3.64	3.33	3.29	3.03	3.21	3.56	4.04	4.16	4.32	4.50	4.70	4.60	3.97	3.66	3.76	3.56	3.92	2.7
59	MINGSPIECE ^b % DAY WORKERS	2.60	2.74	2.48	2.45	2.57	2.89	2.75	2.73	2.57	2.59	2.59	2.30	2.34	2.70	2.79	2.79	2.52	2.9
5C	YARDAGE ^c % DEADWORK	0.091	0.067	0.067	0.059	0.057	0.059	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
5D	MINE SUPER ^d % CLERICAL	0.82	0.63	0.64	0.64	0.76	0.69	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
5E	TOTAL MINE LABOR	4.99	4.35	4.05	3.77	3.94	3.76	4.26	4.26	4.32	4.50	4.70	4.60	3.97	3.66	3.76	3.56	3.92	2.7
NO OF MINES REPORTING																			
NO OF DAYS TIPPLE STARTED																			
TOTAL TONS PRODUCED																			
1,225,794 1,159,240 1,187,205 1,069,547 1,246,721 3,598,433 8,144,331 6,631,114 4,725,735 4,608,712 7,152,227 9,946,879 10,177,823 11,770,110 12,465,240 11,770,110 12,465,240 11,770,110 12,465,240 892.4																			
IOWA (DEEP^a, STRIP)																			
58	DAYMEN	4.11	3.62	3.76	3.42	4.06	3.76	4.22	4.37	4.54	4.72	4.90	4.80	4.17	3.86	3.96	3.76	4.11	43.2
59	MINGSPIECE ^b % DAY WORKERS	2.58	2.65	2.48	2.45	2.57	2.89	2.75	2.73	2.57	2.59	2.59	2.30	2.34	2.70	2.79	2.79	2.52	2.9
5C	YARDAGE ^c % DEADWORK	0.091	0.067	0.067	0.059	0.057	0.059	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
5D	MINE SUPER ^d % CLERICAL	0.82	0.63	0.64	0.64	0.76	0.69	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
5E	TOTAL MINE LABOR	4.85	4.07	3.88	3.77	3.94	3.76	4.26	4.26	4.32	4.50	4.70	4.60	3.97	3.66	3.76	3.56	4.11	43.2
NO OF MINES REPORTING																			
NO OF DAYS TIPPLE STARTED																			
TOTAL TONS PRODUCED																			
1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 23.3																			
ALABAMA																			
58	DAYMEN	4.11	3.62	3.76	3.42	4.06	3.76	4.22	4.37	4.54	4.72	4.90	4.80	4.17	3.86	3.96	3.76	4.11	43.2
59	MINGSPIECE ^b % DAY WORKERS	2.58	2.65	2.48	2.45	2.57	2.89	2.75	2.73	2.57	2.59	2.59	2.30	2.34	2.70	2.79	2.79	2.52	2.9
5C	YARDAGE ^c % DEADWORK	0.091	0.067	0.067	0.059	0.057	0.059	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
5D	MINE SUPER ^d % CLERICAL	0.82	0.63	0.64	0.64	0.76	0.69	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
5E	TOTAL MINE LABOR	4.85	4.07	3.88	3.77	3.94	3.76	4.26	4.26	4.32	4.50	4.70	4.60	3.97	3.66	3.76	3.56	4.11	43.2
NO OF MINES REPORTING																			
NO OF DAYS TIPPLE STARTED																			
TOTAL TONS PRODUCED																			
1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 1,992,344 2,142,110 23.3																			
SO TENNESSEE^e % GEORGIA																			
58	DAYMEN	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87
59	MINGSPIECE ^b % DAY WORKERS	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
5C	YARDAGE ^c % DEADWORK	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
5D	MINE SUPER ^d % CLERICAL	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
5E	TOTAL MINE LABOR	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
NO OF MINES REPORTING																			
NO OF DAYS TIPPLE STARTED																			
TOTAL TONS PRODUCED																			
6,924 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043 7,043																			
TOTAL DIVISION III																			
58	DAYMEN	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44
59	MINGSPIECE ^b % DAY WORKERS	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
5C	YARDAGE ^c % DEADWORK	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
5D	MINE SUPER ^d % CLERICAL	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
5E	TOTAL MINE LABOR	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
NO OF MINES REPORTING																			
NO OF DAYS TIPPLE STARTED																			
TOTAL TONS PRODUCED																			
4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742 4,742																			

Prepared by Statistical and Question Statistics of Bureau - B-33-1. Under the Supervision of F. R. Barnhart

a/ No very close reporting. b/ Due to insufficient data. c/ Data for District 2 not available. d/ Total for nine months only. e/ Total for eight months only. f/ Increase of one month over three months. g/ Increase of six months over three months. Figure in parentheses denotes increase.

TABLE 37 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
 (Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. G. Geological Survey, as Published in Mineral Resources of the United States)

	1899			1900			1901			1902		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	1,135	68,925	61	1,056	50,620	48	1,170	14,071	12	6,059	139,783	23
Arkansas	2,041	216,265	106	47	5,040	107	1,527	86,045	56	14	140	10
Colorado	504	31,520	62	17	935	55	—	—	—	444	20,845	47
Georgia	7,133	267,171	37	3,909	134,433	34	3,740	79,245	21	—	65,231	17
Illinois	3,272	132,825	40	3,583	71,282	20	1,027	40,812	39	3,916	23,693	13
Iowa	2,623	72,710	28	1,322	62,333	47	401	16,171	40	1,824	6,480	18
Kansas	1,986	88,798	45	157	3,590	23	60	300	5	374	17,256	52
Kentucky	837	24,598	29	2,946	90,095	31	933	32,707	35	1,248	22,184	18
Maryland	35	420	12	4,787	504,544	105	—	—	—	—	—	—
Michigan	487	9,547	20	81	1,514	19	1,042	31,318	30	1,935	239,146	124
Missouri	2,197	117,076	53	632	34,970	55	285	14,175	49	1,364	61,273	45
Montana	650	33,800	52	40	1,640	41	766	32,949	43	686	7,636	11
New Mexico	—	—	—	—	—	—	—	—	—	470	9,820	21
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Ohio	877	26,394	30	2,035	45,547	22	32	224	7	8	8	1
Oklahoma	1,825	281,256	154	110	31,100	283	2,724	105,177	38	3,769	70,534	19
Pennsylvania	15,131	636,160	42	7,574	223,093	29	2,541	125,116	49	12,580	9,000	60
South Dakota	—	—	—	—	—	—	—	—	—	—	264,862	21
Tennessee	1,595	37,085	23	1,559	67,308	43	1,705	82,730	49	1,904	136,347	72
Texas	185	2,775	15	135	2,740	20	113	226	2	50	50	1
Utah	—	—	—	—	—	—	754	23,055	30	205	5,875	29
Virginia	—	—	—	—	—	—	175	3,200	18	—	—	—
Washington	—	—	—	100	3,000	30	1,438	45,161	31	18,129	1,362,054	75
West Virginia	3,468	76,829	22	1,883	44,318	24	160	1,120	7	—	—	—
Wyoming	—	—	—	—	—	—	—	—	—	—	—	—
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total	45,981	2,124,154	46	31,973	1,378,102	43	20,593	733,802	35	55,452	2,462,217	44

NOTE: These figures are based upon replies of operators to the question "Were there any strikes at the mine during the year? If so, give number of men on strike and duration in days (Sundays and holidays excluded)." As the answer is supplied by one party to a controversy, the operators' statements in the case of major strikes have been checked as far as possible against evidence from other sources, such as weekly reports of carloadings by the railroads, accounts in newspapers and trade journals, and during the suspension of 1922 by questioning representatives of the miners' union in certain districts.

The operator is not asked to state the cause of the stoppage, a subject on which his opinion might differ from that of his employees, and it is evident that some stoppages have been reported as "strikes" which the employees would have considered as "lockouts." By far the most important stoppages have been those occurring at the expiration of the wage contracts when the two parties were unable to agree upon the terms of a new contract. Such a stoppage may properly be termed as a "suspension" rather than either a strike or a lockout. For these reasons all stoppages are grouped together under the headings, "Strikes, suspensions, and lockouts."

Among the most important "suspensions" were those attending the expiration of the wage contracts in 1906, 1908, 1910, 1912, 1914, 1922, 1927, 1928, and 1932.

Regarding the large number of days lost on account of labor disputes, it does not follow that if there had been no strike the number of days worked would have been larger, for some other cause of non-operation might have intervened to keep the mines idle.

TABLE 38 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
 (Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 0 3			1 9 0 4			1 9 0 5			1 9 0 6		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	7,319	231,112	32	9,518	762,032	80	667	33,262	50	549	6,576	12
Arkansas	798	2,078	5	76	1,424	19	625	7,806	12	3,828	291,095	76
Colorado	7,103	407,909	57	3,865	481,482	125	—	—	—	—	—	—
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	3,772	70,731	19	16,983	156,528	9	15,289	321,967	21	49,792	2,900,525	58
Indiana	2,680	46,566	17	1,061	22,963	18	981	12,528	13	15,875	995,217	63
Iowa	1,143	11,365	99	8,303	173,781	21	1,774	10,353	6	7,969	204,860	28
Kansas	328	2,516	8	186	1,214	7	1,482	14,686	10	11,827	709,422	59
Kentucky	599	13,717	22	3,781	144,245	39	923	62,651	68	1,242	44,812	36
Maryland	120	6,045	5	564	2,402	4	—	—	—	30	300	10
Michigan	75	825	11	1,604	26,312	14	435	6,788	16	3,740	294,630	88
Missouri	1,306	13,892	11	792	37,140	47	200	36,000	180	6,212	463,790	78
Montana	—	—	—	556	73,090	131	—	—	—	230	7,030	31
New Mexico	54	710	13	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	35	340	10	175	6,300	36	—	—	—	37	92	2
Ohio	4,115	65,149	16	11,412	514,656	45	3,250	49,495	15	37,636	2,687,288	71
Oklahoma	448	3,928	4	488	5,175	11	397	3,509	9	7,372	535,504	72
Pennsylvania	12,805	321,925	25	9,336	576,353	62	5,686	186,250	33	59,593	3,941,835	66
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	1,639	36,021	22	2,391	170,680	71	150	4,770	32	180	1,185	7
Texas	1,055	24,460	23	55	585	11	25	375	15	1,260	9,245	7
Utah	350	9,800	28	—	—	—	6	6	1	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	200	6,600	33	365	25,020	69	—	—	—	—	—	—
West Virginia	1,524	63,212	41	3,682	167,343	45	462	12,111	26	4,101	123,724	30
Wyoming	413	4,130	10	—	—	—	192	192	1	231	5,775	25
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total	47,481	1,341,031	28	75,433	3,348,727	44	32,544	762,749	234	211,304	13,242,905	63

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TABLE 39 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933.
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States).

	1907			1908			1909			1910		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	80	3,600	45	8,397	373,513	44	—	—	—	25	1,250	50
Arkansas	1,185	35,835	30	4,037	387,841	96	—	41,836	29	4,873	713,210	146
Colorado	215	6,378	30	768	16,646	22	—	1,250	23	2,044	195,558	96
Georgia	—	—	—	—	—	—	—	—	—	270	2,370	11
Illinois	5,255	35,191	7	47,456	1,737,611	37	—	90,720	38	67,218	9,133,953	136
Indiana	3,176	42,842	13	7,076	157,899	22	—	720	20	12,638	423,894	34
Iowa	1,621	8,265	5	5,245	121,087	23	—	12,504	6	9,209	408,563	44
Kansas	923	16,957	18	11,155	665,224	60	—	71,566	15	10,346	1,578,027	153
Kentucky	1,325	53,916	41	1,002	26,941	27	—	16,500	60	1,475	15,197	10
Maryland	510	13,770	27	—	—	—	—	175	7	—	—	—
Michigan	265	1,325	5	300	4,800	16	—	23,002	44	1,663	86,789	52
Missouri	777	8,222	11	6,350	355,138	56	—	6,593	7	7,774	1,218,599	157
Montana	30	600	20	556	9,201	17	—	1,100	10	345	38,260	111
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	82	736	9	104	1,620	16	—	—	—	—	—	—
Ohio	6,367	110,324	17	21,084	567,450	27	—	525	7	—	—	—
Oklahoma	669	17,092	26	6,929	398,251	57	—	13,434	59	24,746	1,334,631	54
Pennsylvania	6,447	59,834	9	18,780	375,569	20	—	11,368	15	8,213	1,247,828	152
South Dakota	—	—	—	—	—	—	—	260,381	45	60,098	2,700,746	45
Tennessee	284	4,725	17	349	11,441	33	—	9,295	34	—	—	—
Texas	270	1,610	6	169	338	2	—	4,800	60	1,776	108,230	61
Utah	148	592	4	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	484	8,544	18	226	67,800	300	—	2,300	19	101	303	3
West Virginia	617	9,749	16	501	71,992	144	—	29,565	15	1,630	13,985	9
Wyoming	1,785	22,060	12	4,658	99,576	21	—	—	—	1,196	12,752	11
Other small States 1/	25	225	9	—	—	—	—	—	—	—	—	—
Total	32,540	462,392	14	145,145	5,449,938	38	—	723,634	29	215,640	19,234,785	89

1/ Oregon.

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TABLE 40 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933.
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 1 1			1 9 1 2			1 9 1 3			1 9 1 4		
	Number of men on strike, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike
Alabama	210	1,260	6	384	12,323	32	1,046	27,041	26	320	3,940	12
Arkansas	665	4,615	7	493	37,685	94	1,221	32,481	27	1,415	159,854	113
Colorado	150	32,375	216	—	—	—	7,324	552,082	75	4,418	1,090,025	247
Georgia	5,543	100,588	18	60,505	2,026,526	33	11,861	655,622	55	21,506	970,466	41
Illinois	4,577	146,636	32	15,400	795,887	52	2,657	44,143	17	8,952	302,855	38
Indiana	1,622	31,870	20	8,455	370,449	44	3,178	13,538	19	76,791	2,642	29
Iowa	984	8,507	9	2,088	17,487	65	3,178	28,976	9	2,673	45,919	17
Kansas	1,080	34,008	32	2,759	79,685	29	1,029	18,636	18	2,250	82,919	37
Kentucky	—	—	—	347	5,228	9	200	400	2	91	1,347	17
Maryland	—	—	—	2,028	101,424	50	180	1,260	7	1,162	56,536	49
Michigan	504	24,216	48	952	55,022	58	918	31,251	34	171	1,271	7
Missouri	529	8,114	15	869	8,445	10	1,094	6,682	6	—	—	—
Montana	—	—	—	—	—	—	8	1,040	130	—	—	—
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	34	69	2	—	—	—	—	—	—	—	—	—
North Dakota	9,570	350,079	37	27,200	895,777	32	10,029	267,274	26	40,577	6,452,762	159
Ohio	444	15,106	34	860	12,109	14	1,696	125,274	80	1,286	39,500	31
Oklahoma	5,601	148,124	26	22,538	538,248	24	17,244	274,296	16	36,613	1,092,005	29
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—
South Dakota	163	1,670	10	670	20,011	30	857	42,966	50	221	693	3
Tennessee	60	300	5	236	1,724	7	—	—	—	150	1,800	12
Utah	208	624	3	—	—	—	5	1,300	260	—	—	—
Virginia	2,099	22,215	10	807	31,347	39	1,239	60,145	49	459	25,410	55
West Virginia	1,510	16,483	11	12,165	606,588	50	8,600	377,405	43	9,330	466,768	50
Wyoming	—	—	—	360	3,425	10	—	—	—	248	2,727	11
Other small States 1/	—	—	—	60	420	7	—	—	—	21	798	38
	35,513	946,779	27	159,098	5,613,830	35	71,309	2,567,734	36	135,605	10,833,924	80

1/ Oregon.

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TABLE 41 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
 (Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 1 5			1 9 1 6			1 9 1 7			1 9 1 8		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	175	1,290	7	300	920	3	1,835	10,220	6	1,952	3,259	2
Arkansas	925	20,304	22	1,009	30,847	31	2,417	27,315	11	1,207	4,292	4
Colorado	90	13,500	150	38	82	2	1,664	7,292	4	464	2,318	5
Georgia	5,251	276,458	53	5,043	55,416	11	38,781	464,511	12	10,291	1,610	7
Illinois	1,472	21,361	15	8,154	154,974	19	11,914	74,695	6	8,083	51,015	6
Indiana	1,067	5,229	5	2,204	32,587	15	3,275	18,407	6	997	4,774	5
Iowa	1,716	17,425	10	6,306	152,838	24	7,312	128,514	18	4,675	25,047	5
Kansas	1,045	15,455	16	4,830	269,859	56	9,348	425,725	46	1,226	15,218	12
Kentucky				181	6,546	36	1,523	24,605	16	2,517	18,194	13
Maryland				1,416	18,189	13	163	1,964	12	1,367	18,194	5
Michigan	939	4,597	5	2,331	14,837	6	2,175	31,767	15	1,191	5,800	1
Missouri	183	1,084	6	396	1,430	4	1,067	23,680	22	218	218	1
Montana							85	775	9			
New Mexico												
North Carolina												
North Dakota												
Ohio	15,048	1,722,013	114	36	78	3	82	811	10	22	166	8
Oklahoma	1,013	4,485	4	7,594	156,689	21	7,710	56,875	7	4,993	44,837	9
Pennsylvania	5,587	78,446	14	6,240	136,452	20	1,668	37,301	22	670	12,294	20
South Dakota				36,276	1,200,479	33	23,655	544,322	23	12,852	112,929	9
Tennessee				350	3,784	11	4,448	192,730	43	835	2,454	3
Texas	230	760	3	2,218	62,905	28	75	260	7	55	550	10
Utah				181	543	3	212	818	4	30	70	1
Virginia	7		1				232	2,283	10	523	10,241	20
Washington	1,902	66,698	35	1,203	13,304	11	192	840	4	75	1,275	17
West Virginia	213	2,628	12	4,540	86,352	19	6,166	111,479	18	5,712	42,009	7
Wyoming				276	308	1						
Other small States.....							25	25	1			
Total	36,865	2,252,740	61	91,152	2,399,519	26	126,020	2,187,244	17	60,105	436,882	7

TABLE 42 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933.
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, Formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 1 9			1 9 2 0			1 9 2 1			1 9 2 2		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	13,471	269,242	20	8,490	800,519	94	2,729	157,401	68	46	167	4
Arkansas	3,681	161,069	44	956	28,015	29	1,677	17,400	10	3,591	435,507	118
Colorado	6,186	89,392	14	2,012	18,240	9	2,497	72,830	29	6,672	527,250	79
Georgia	168	2,016	12	68,441	948,408	14	18,088	226,112	13	93,584	11,547,829	123
Illinois	81,600	3,552,094	44	19,068	411,991	22	17,634	321,593	18	31,721	3,954,396	124
Indiana	28,431	1,135,013	40	4,966	24,766	5	897	1,840	2	12,192	1,479,497	121
Iowa	11,750	433,884	38	5,461	161,485	30	7,285	578,811	74	6,215	847,075	130
Kansas	9,104	531,791	58	9,192	312,460	34	1,789	64,448	36	10,270	605,441	59
Kentucky	22,598	696,165	31	1,733	25,514	15	123	4,463	4	4,446	688,206	155
Maryland	5,337	143,523	27	1,659	24,993	15	780	2,826	36	2,062	247,919	120
Michigan	2,087	153,351	73	1,841	36,015	20	2,089	50,108	24	7,575	939,192	125
Missouri	8,315	458,588	55	377	6,952	18	92	2,035	22	3,361	428,678	128
Montana	3,833	153,159	40	1,183	18,307	15	425	1,700	4	585	75,135	128
New Mexico	576	18,307	15	49	473	9	15	225	15	578	49,238	85
North Carolina	4,281	4,281	7	17,323	245,314	14	17,682	176,605	10	46,283	5,502,885	118
North Dakota	42,724	1,717,426	40	2,267	24,053	11	1,520	12,231	8	5,872	773,127	132
Ohio	7,963	317,538	40	27,728	479,708	17	14,895	302,525	20	155,604	18,388,895	118
Oklahoma	97,089	3,765,144	39	202	1,478	7	638	17,350	27	5,864	482,231	82
Pennsylvania	10,199	324,315	33	824	9,737	12	100	200	2	2,111	212,896	20
South Dakota	1,747	52,858	30	113	1,736	7	100	200	2	240	2,200	101
Tennessee	317	4,866	15	48	1,736	7	100	200	2	240	2,200	9
Texas	947	22,956	24	201	22,962	114	802	139,126	173	2,225	299,861	135
Virginia	4,369	186,942	43	12,340	511,225	41	7,198	170,017	24	49,832	5,348,298	107
Washington	48,062	1,158,094	24	238	2,722	11	591	2,978	5	8,667	1,054,227	122
West Virginia	6,982	157,843	23	---	---	---	---	---	---	---	---	---
Wyoming	---	---	---	---	---	---	---	---	---	---	---	---
Other small States	---	---	---	---	---	---	---	---	---	---	---	---
Total	418,279	15,525,857	37	185,579	4,099,157	22	99,146	2,282,824	23	460,589	53,874,017	117

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TABLE 43 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
 (Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Minor Resources of the United States)

	1 9 2 3			1 9 2 4			1 9 2 5			1 9 2 6		
	Number of men on strikes, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strikes, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strikes, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike	Number of men on strikes, etc.	Total man-days lost on account of strikes, etc.	Average days lost per man on strike
Alabama	324	9,009	28	1,076	29,272	27	560	41,928	75	205	1,635	8
Arkansas	—	—	—	120	840	7	595	6,943	12	—	—	—
Colorado	7,474	95,458	13	4,217	50,101	12	4,870	25,180	5	987	12,609	13
Illinois	10,765	104,604	10	7,659	159,743	21	7,919	96,963	12	10,450	179,375	17
Indiana	1,946	19,874	10	986	16,445	17	1,267	3,740	3	932	19,510	21
Iowa	949	24,741	26	2,706	118,918	44	530	8,080	15	118	1,560	13
Kansas	2,699	92,035	34	8,938	1,735,739	194	1,954	162,534	83	688	13,170	19
Kentucky	2,686	359,920	134	168	504	3	—	—	—	603	3,269	5
Maryland	786	3,992	5	425	1,525	4	725	5,575	8	225	3,225	1
Michigan	312	10,857	35	1,580	76,660	49	110	1,287	12	84	760	12
Missouri	25	25	1	17	53	3	—	—	—	225	450	2
Montana	—	—	—	—	—	—	—	—	—	—	—	—
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	85	6,933	82	—	—	—	—	—	—	—	—	—
North Dakota	16,486	203,161	12	10,256	217,752	21	6,572	170,208	26	6,857	85,118	12
Ohio	1,020	8,211	8	1,318	144,607	110	352	16,773	48	20	20	1
Oklahoma	10,984	157,130	14	8,793	361,226	41	7,414	234,389	32	4,922	272,918	55
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—
South Dakota	572	24,766	43	2,134	244,945	115	250	2,350	9	300	300	1
Tennessee	137	18,141	132	—	—	—	87	261	3	—	—	—
Texas	—	—	—	58	310	5	280	10,920	39	—	—	—
Utah	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	1,754	50,681	29	—	—	—	—	—	—	—	—	—
West Virginia	2,625	49,587	19	7,688	1,060,478	138	4,956	376,399	76	2,692	126,242	47
Wyoming	—	—	—	—	—	—	—	—	—	—	—	—
Other small States 2/	—	—	—	—	—	—	—	—	—	60	120	2
Total	61,629	1,239,125	20	58,179	4,219,118	73	38,441	1,163,530	30	29,348	717,301	24

1/ One-half day or less.

2/ The State affected in 1926 was not designated in the published report.

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TABLE 44 - SECTION B

STATISTICS ON STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 2 7			1 9 2 8			1 9 2 9			1 9 3 0		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	—	41,810	107	—	—	—	—	—	—	—	—	—
Arkansas	389	267,210	49	1,594	57,184	36	95	2,177	—	—	—	—
Colorado	5,429	—	—	—	—	—	—	—	23	—	—	—
Georgia	66,992	10,018,566	150	21,815	1,467,409	67	10,162	68,155	—	—	348,779	37
Illinois	17,707	2,745,279	136	3,216	91,842	29	3,851	58,553	7	15	32,003	16
Indiana	5,624	815,764	145	1,986	68,623	35	810	2,434	15	2,008	3,754	6
Iowa	3,014	390,711	130	1,525	168,766	111	106	3,341	3	591	—	—
Kansas	1,824	24,756	14	1,130	14,124	12	561	4,286	8	6,436	562,067	87
Kentucky	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	470	1,510	3	430	6,320	15	762	3,894	5	670	2,560	4
Michigan	2,662	336,972	127	941	67,585	72	211	633	3	50	700	14
Missouri	—	—	—	1,219	9,178	8	—	—	—	—	—	—
Montana	—	—	—	—	—	—	—	—	—	—	—	—
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Ohio	26,250	5,605,443	214	9,222	1,576,760	171	943	46,165	49	1,143	12,583	11
Oklahoma	163	25,428	156	5,999	658,111	110	713	4,073	13	924	14,689	16
Pennsylvania	41,692	6,591,870	158	—	—	—	—	—	—	—	—	—
South Dakota	50	3,000	60	265	795	3	200	1,200	6	—	—	—
Tennessee	—	—	—	—	—	—	—	—	—	—	—	—
Texas	—	—	—	—	—	—	—	—	—	—	—	—
Utah	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	110	880	8	—	—	—
Washington	—	—	—	—	—	—	—	—	—	—	—	—
West Virginia	982	47,548	48	210	18,650	89	—	—	—	1,523	13,215	9
Wyoming	—	—	—	1,190	3,057	3	151	151	1	10	10	1
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total	172,844	26,515,867	153	50,742	4,204,404	83	18,275	195,942	11	22,798	990,360	43

✓ This table is based on statements from the operators. The figures are compiled in the same way as in previous reports, but owing to the unusual conditions attending the strike of 1927, they tend to understate the extent of the strike, and the number of coal miners who were idle during the year primarily because of the strike. This is especially true of Pennsylvania, and Ohio. For example, men evicted from company houses and replaced in the mines by other men would not be counted by the operator as striking his mine, even though living in tents or barracks erected by the union. Many mines reopened after three or four months, operating with smaller working forces than before, but considering the strike over as far as they were concerned. In the Pennsylvania bituminous fields the number of men on the pay rolls in January was 152,527 and the number in December was 126,239.

TABLE 45 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1 9 3 1		1 9 3 2		1 9 3 3	
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	860	21,153	25	1,964	103,522	53
Arkansas	---	---	---	---	---	---
Colorado	---	---	---	---	---	---
Georgia	9,400	397,263	42	32,961	4,397,006	133
Illinois	883	14,181	16	3,820	507,051	133
Indiana	824	24,500	30	389	7,503	19
Iowa	38	570	15	58	350	6
Kansas	2,920	59,240	20	721	30,725	43
Kentucky	---	---	---	67	402	6
Maryland	---	---	---	---	---	---
Michigan	597	26,185	44	301	48,590	161
Missouri	679	34,671	51	748	28,100	38
Montana	---	---	---	---	---	---
New Mexico	---	---	---	---	---	---
North Carolina	---	---	---	---	---	---
North Dakota	---	---	---	---	---	---
Ohio	5,991	138,155	25	15,290	2,130,282	139
Oklahoma	501	19,812	40	970	46,903	48
Pennsylvania	12,783	398,932	31	2,021	113,696	56
South Dakota	---	---	---	---	---	---
Tennessee	1,133	28,767	25	550	35,967	65
Texas	---	---	---	---	---	---
Utah	---	---	---	---	---	---
Virginia	---	---	---	140	140	1
Washington	---	---	---	958	42,266	44
West Virginia	8,441	393,863	47	1,510	44,307	29
Wyoming	8	8	1	399	15,648	39
Other small States	---	---	---	---	---	---
Total	44,658	1,557,320	35	62,867	7,552,158	120
				125,503	3,726,612	30

✓ Does not include men laid idle at certain mines through labor factional trouble, the to jurisdictional claims of a rival union, which was reported by the operator, as responsible for tonnage losses, ranging from 15 to 88 percent.

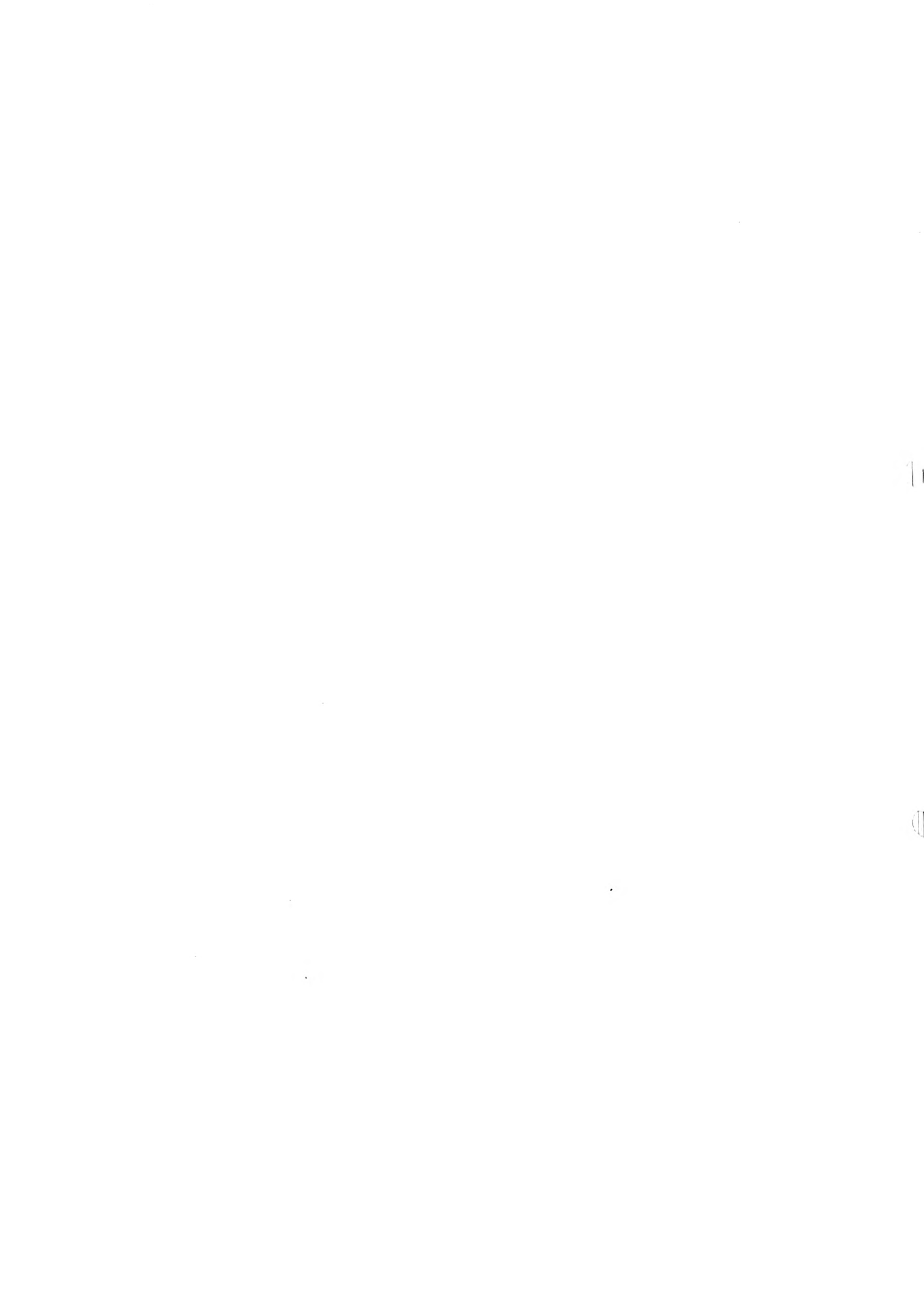
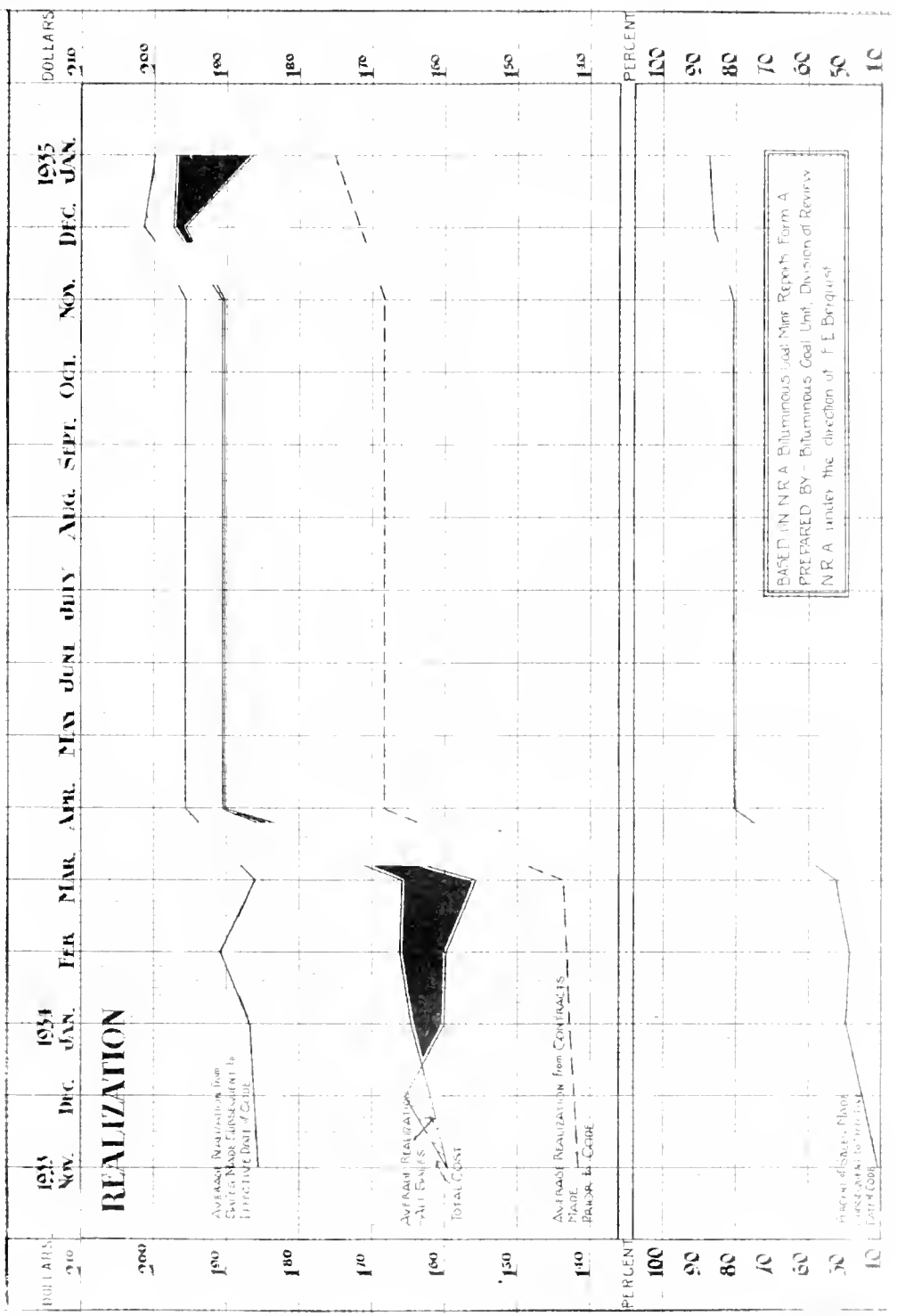


CHART NO. I DIVISION I

BITUMINOUS COAL - COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU DEC. 1934



BASED IN N.R.A. Bituminous Coal Mfrs. Reports Form A
 PREPARED BY - Bituminous Coal Unit, Division of Review
 N.R.A. under the direction of F. E. Brinkquist



Chart No. 2 Division I North

Bituminous Coal - Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

APPENDIX III

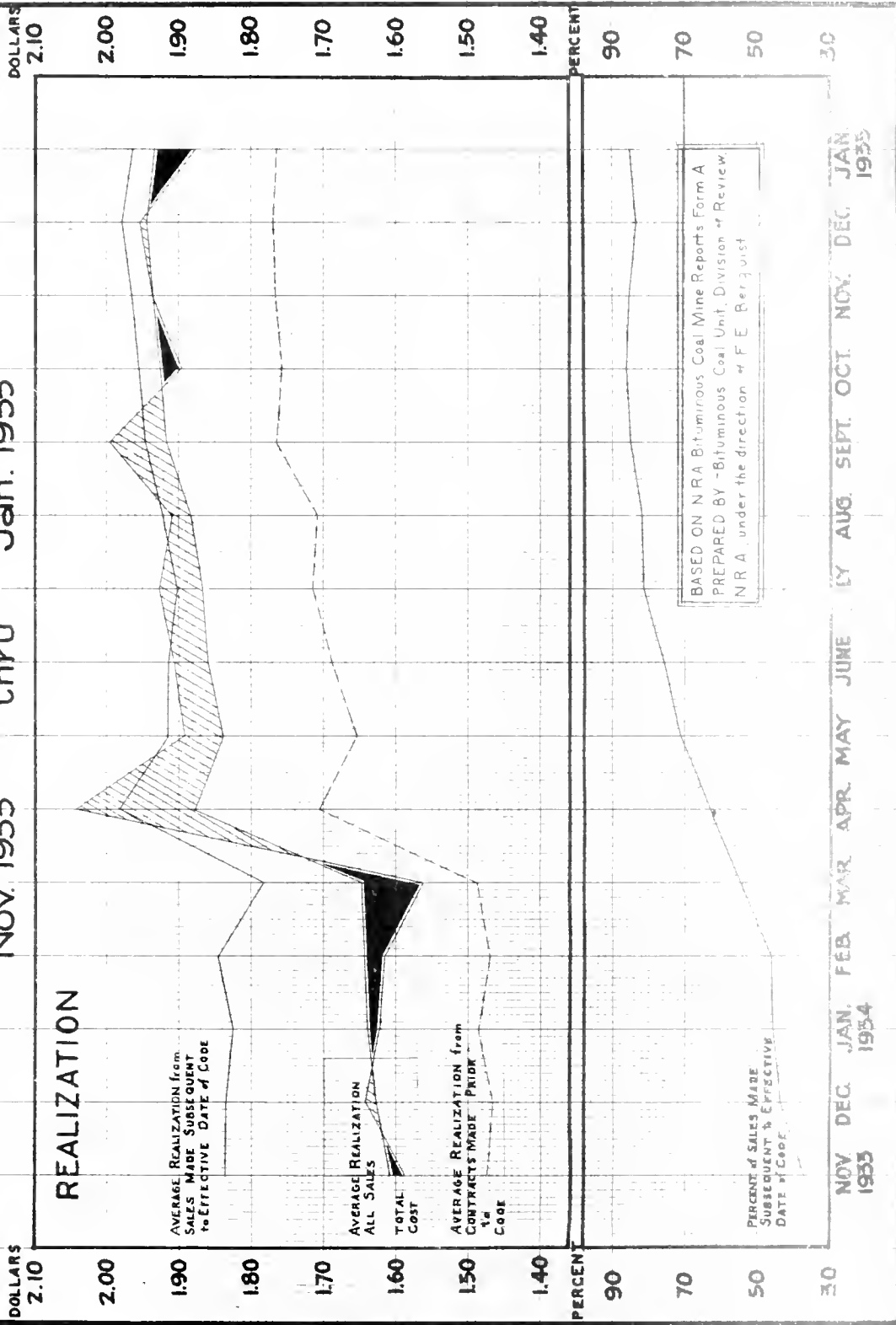


CHART NO. 3 DIVISION I SOUTH BITUMINOUS COAL - COST, REALIZATION, AND MARGINS, BY MONTHS NOV 1933 THRU JAN. 1935

APPENDIX III

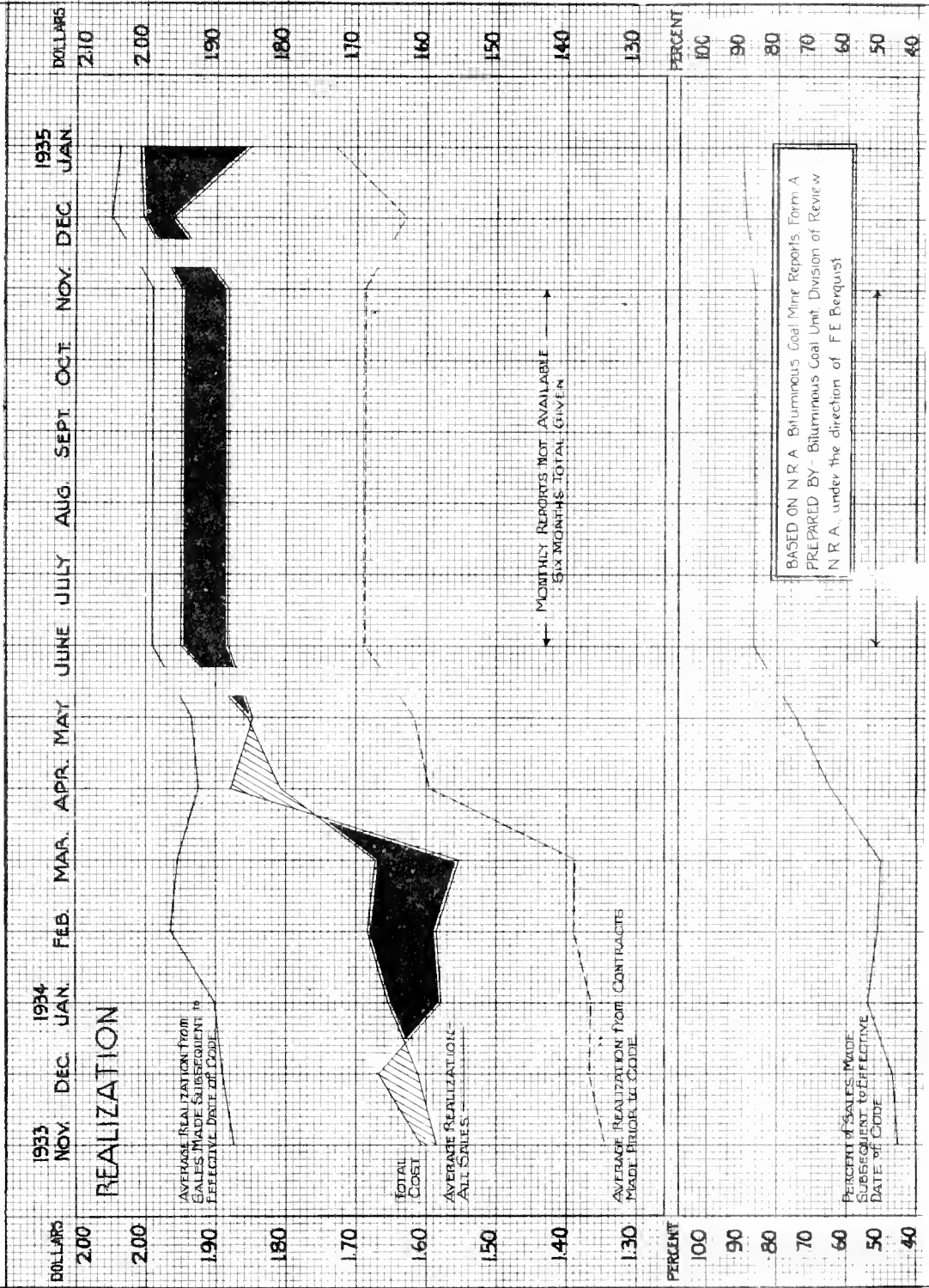
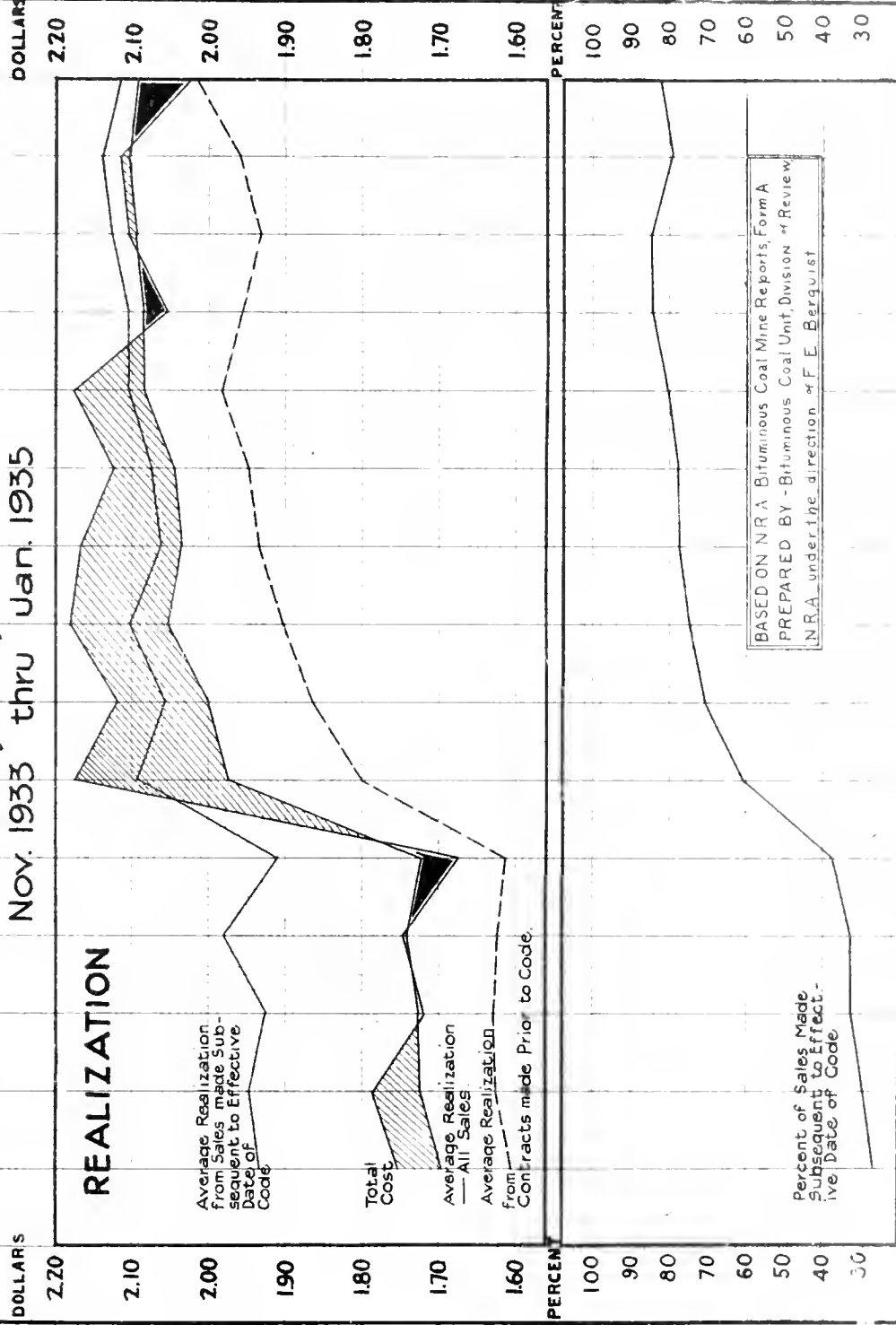


Chart No. 4 Eastern Sub-Division

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935



BASED ON N.R.A. Bituminous Coal Mine Reports, Form A
 PREPARED BY - Bituminous Coal Unit, Division of Review
 N.R.A. under the direction of F. E. Bergquist

NOV. 1933 DEC. 1933 JAN. 1934 FEB. 1934 MAR. 1934 APR. 1934 MAY 1934 JUNE 1934 JULY 1934 AUG. 1934 SEPT. 1934 OCT. 1934 NOV. 1934 DEC. 1934 JAN. 1935

Bituminous Coal — Cost, Realization, and Margins by Months Nov 1933 thru Jan. 1935

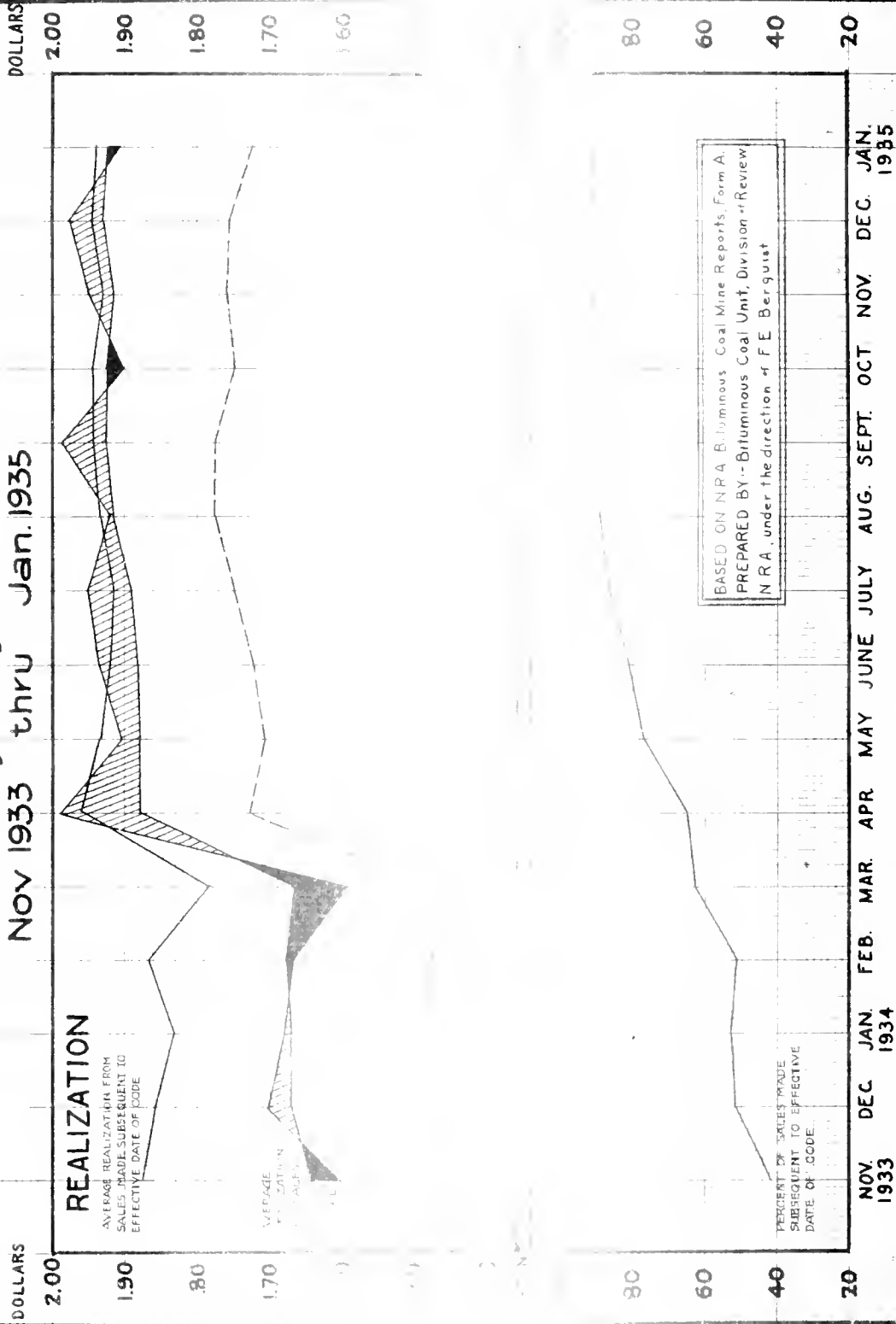
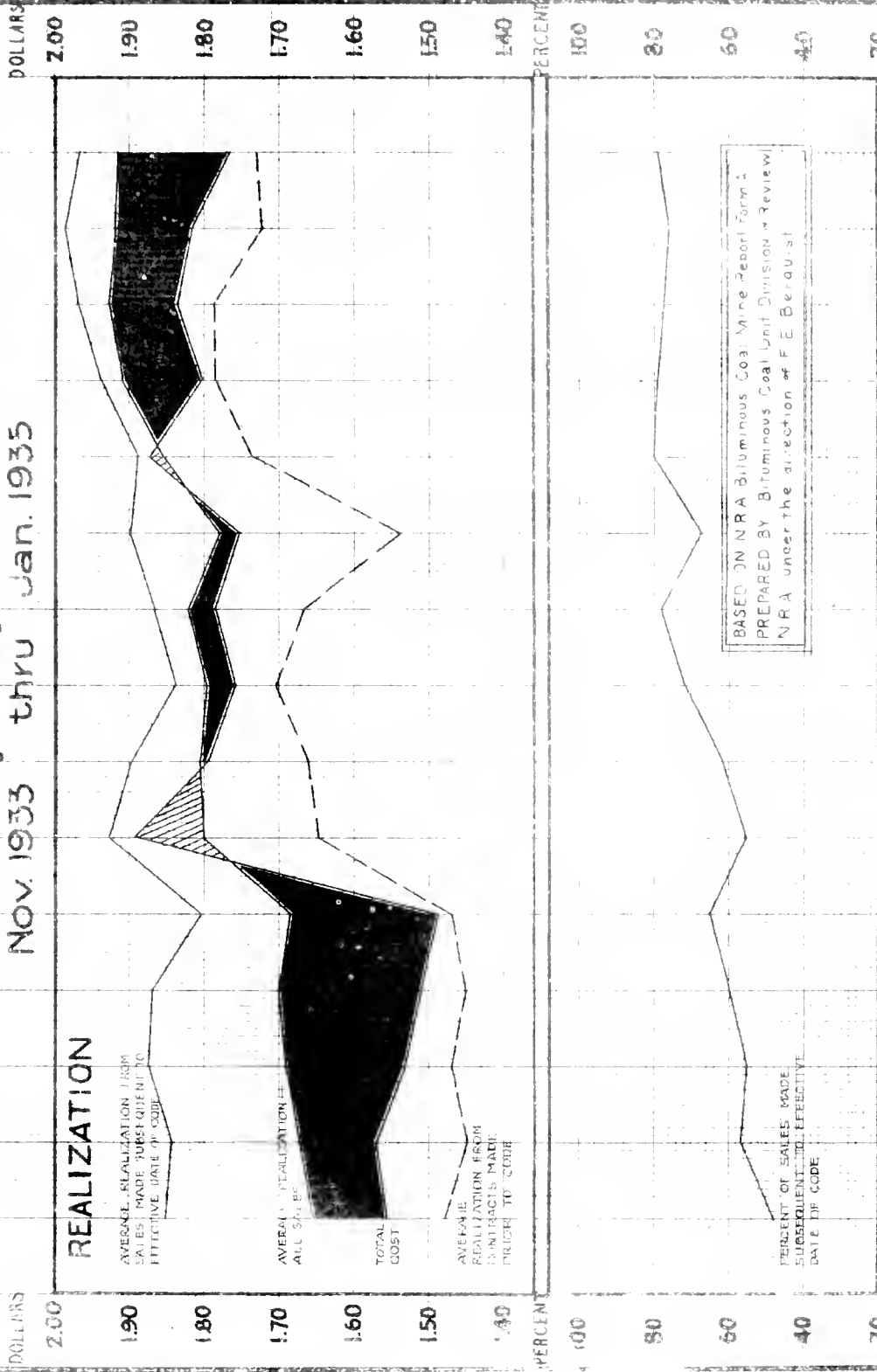


Chart No. 6 Ohio

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

APPENDIX III

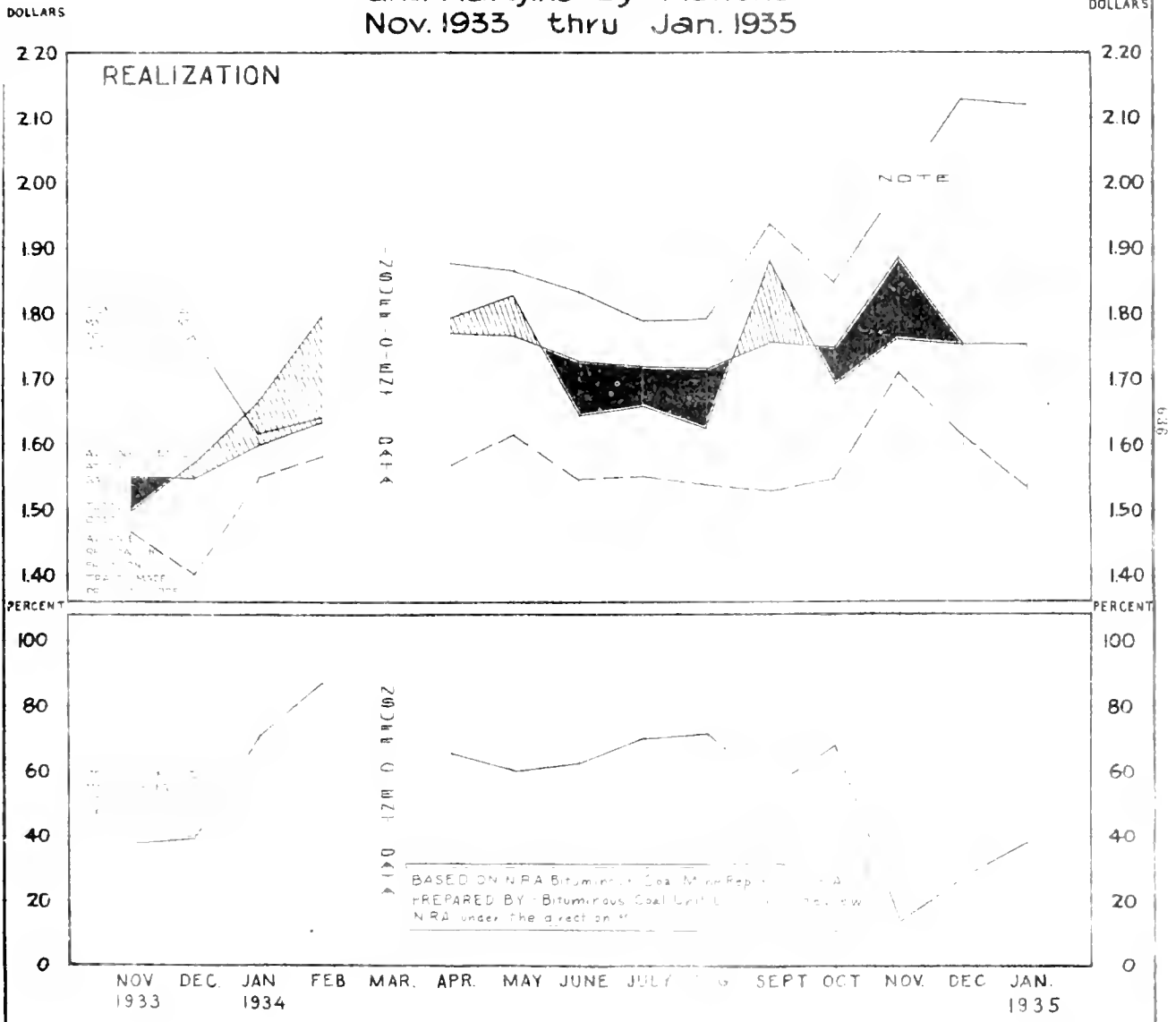


NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. 1933 1934 1935

Chart No. 7 Panhandle

APPENDIX III

Bituminous Coal - Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935



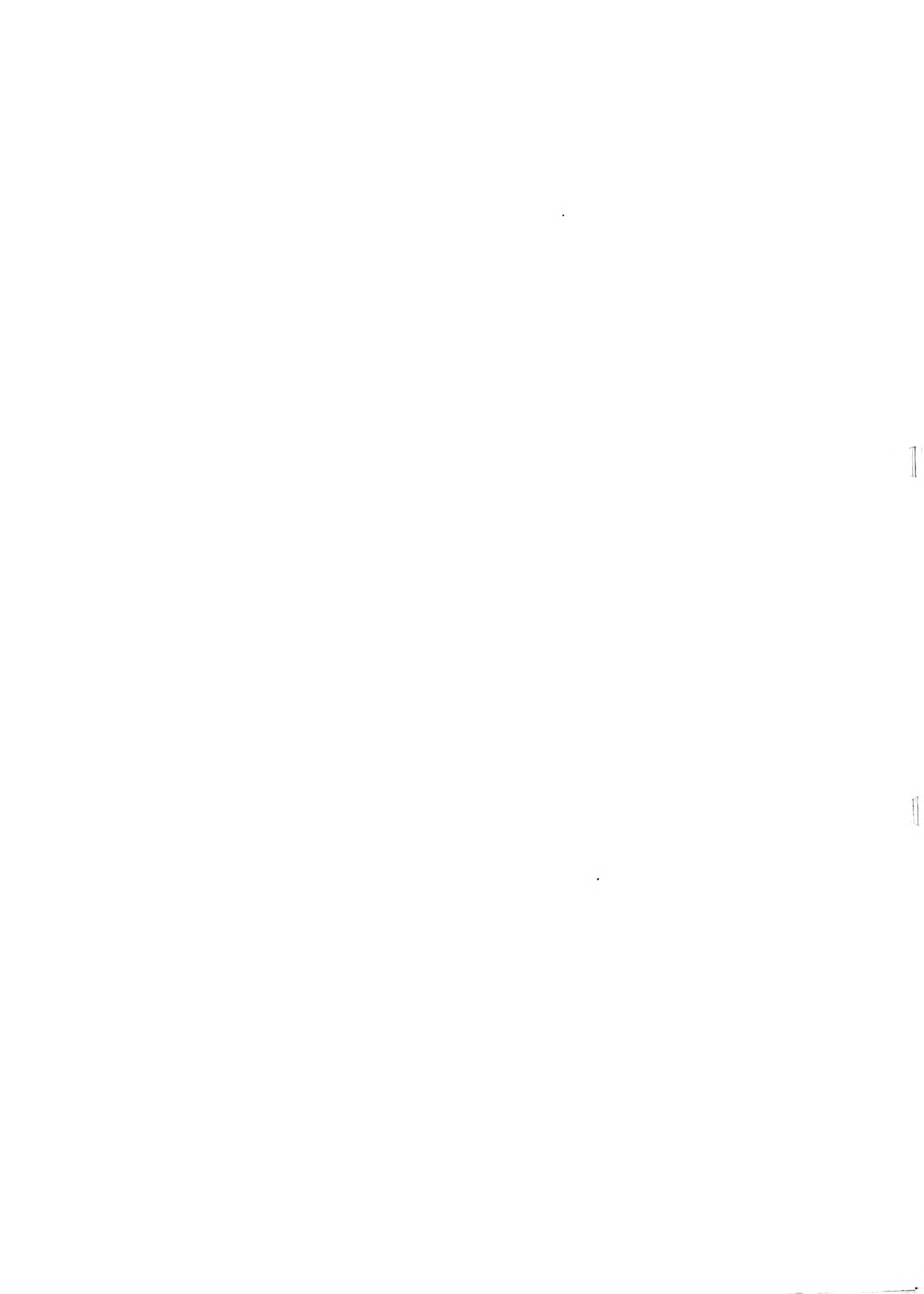


Chart No. 8 Northern West Virginia

APPENDIX III

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

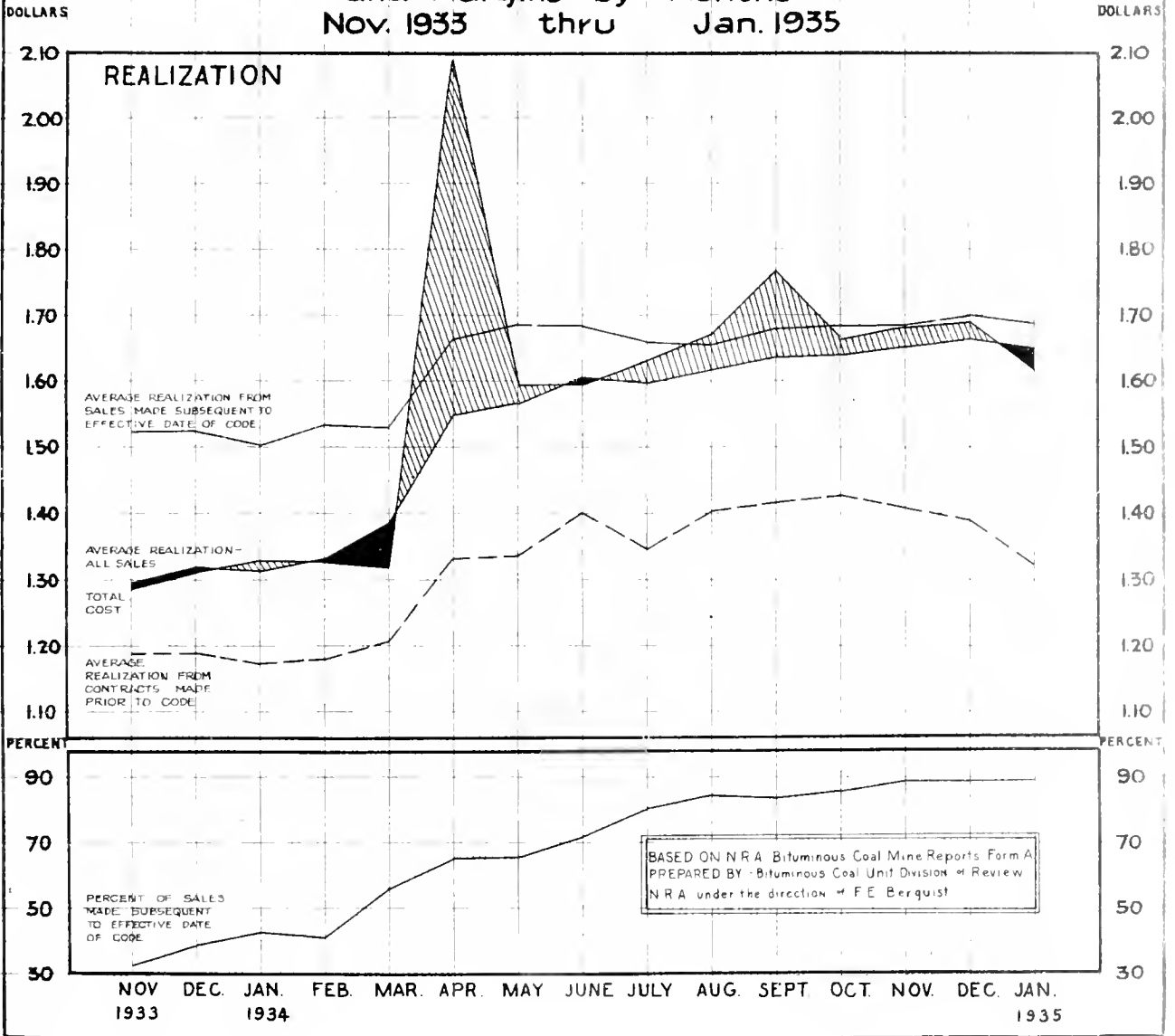


Chart No. 9

Southern Sub. No. I

APPENDIX III

Bituminous Coal — Cost, Realization, and Margins by Months — Nov. 1933 thru Jan. 1935

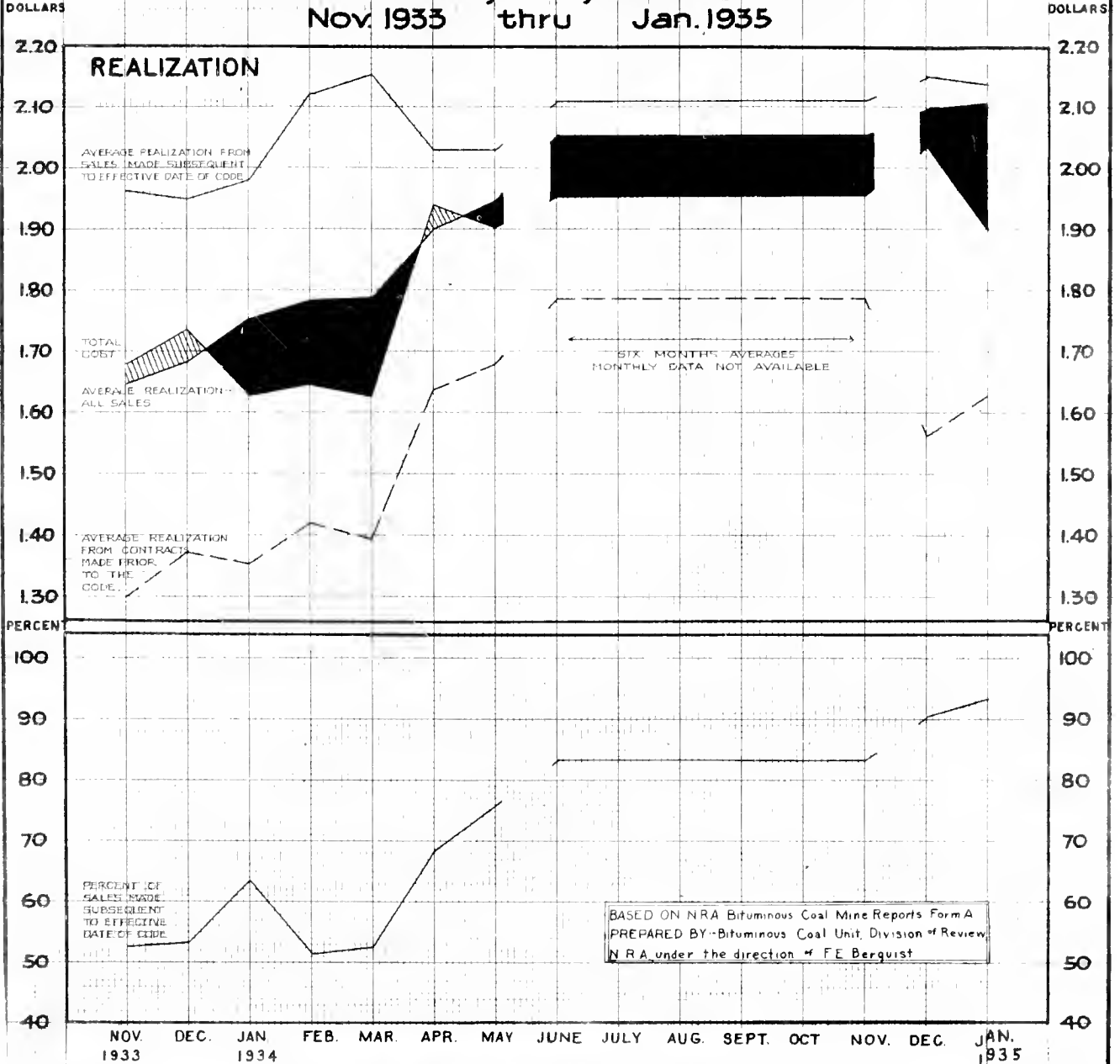
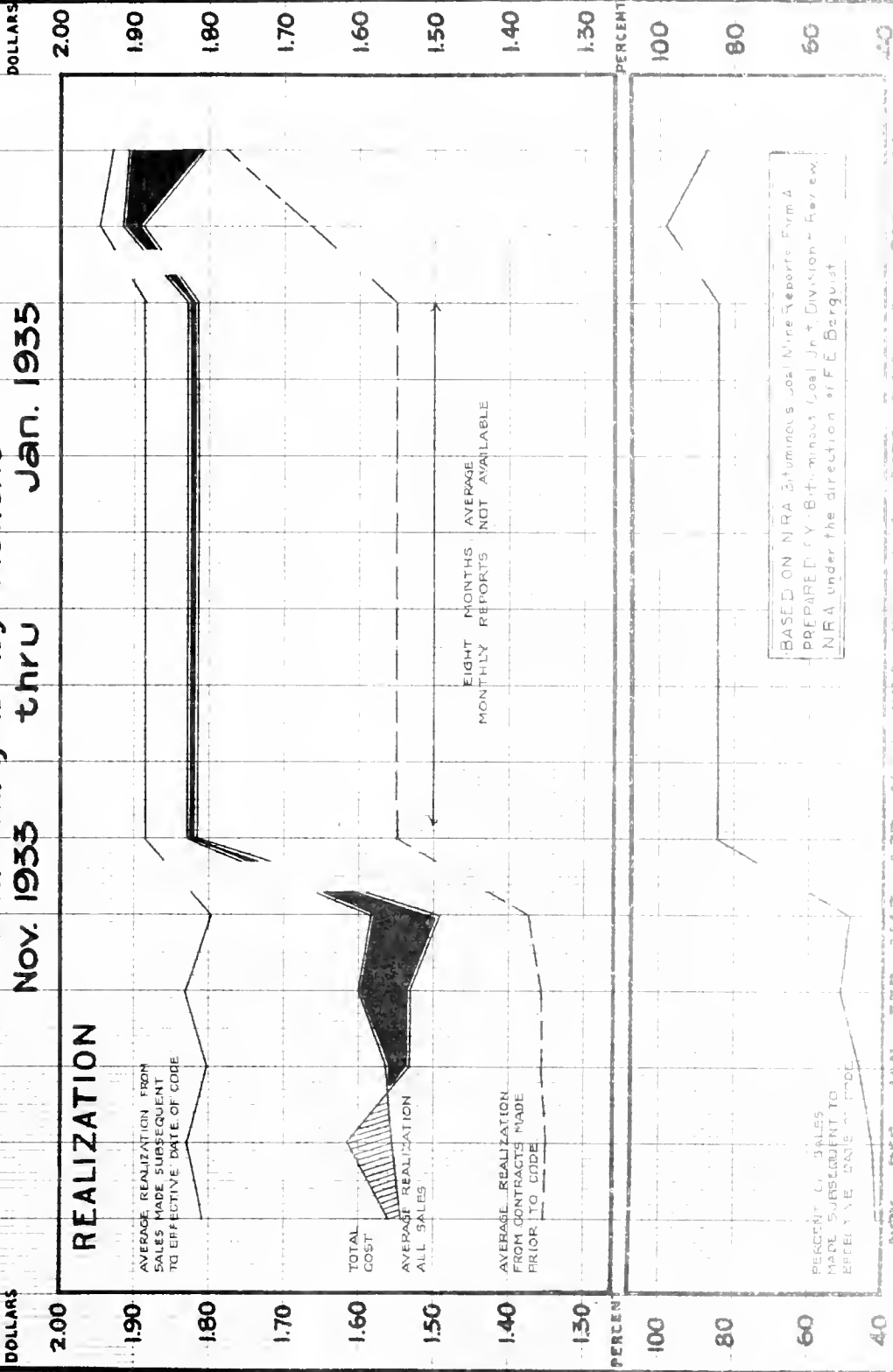


Chart No. 10 Southern Sub. No. 2

Bituminous Coal - Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935



BASED ON NIRA Bituminous Coal Mine Reports Form A
 PREPARED BY Bituminous Coal Joint Division - Review
 NIRA under the direction of F. C. Bergquist

NOV. DEC. JAN. FEB. MAR. APR. MAY. JUNE. JULY. AUG. SEPT. OCT. NOV. DEC. JAN. 1935

CHART NO. II, DIVISION II DEEP AND STRIP MINES COMBINED (EXCEPTING IOWA)

APPENDIX III

BITUMINOUS COAL - COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU JAN. 1935

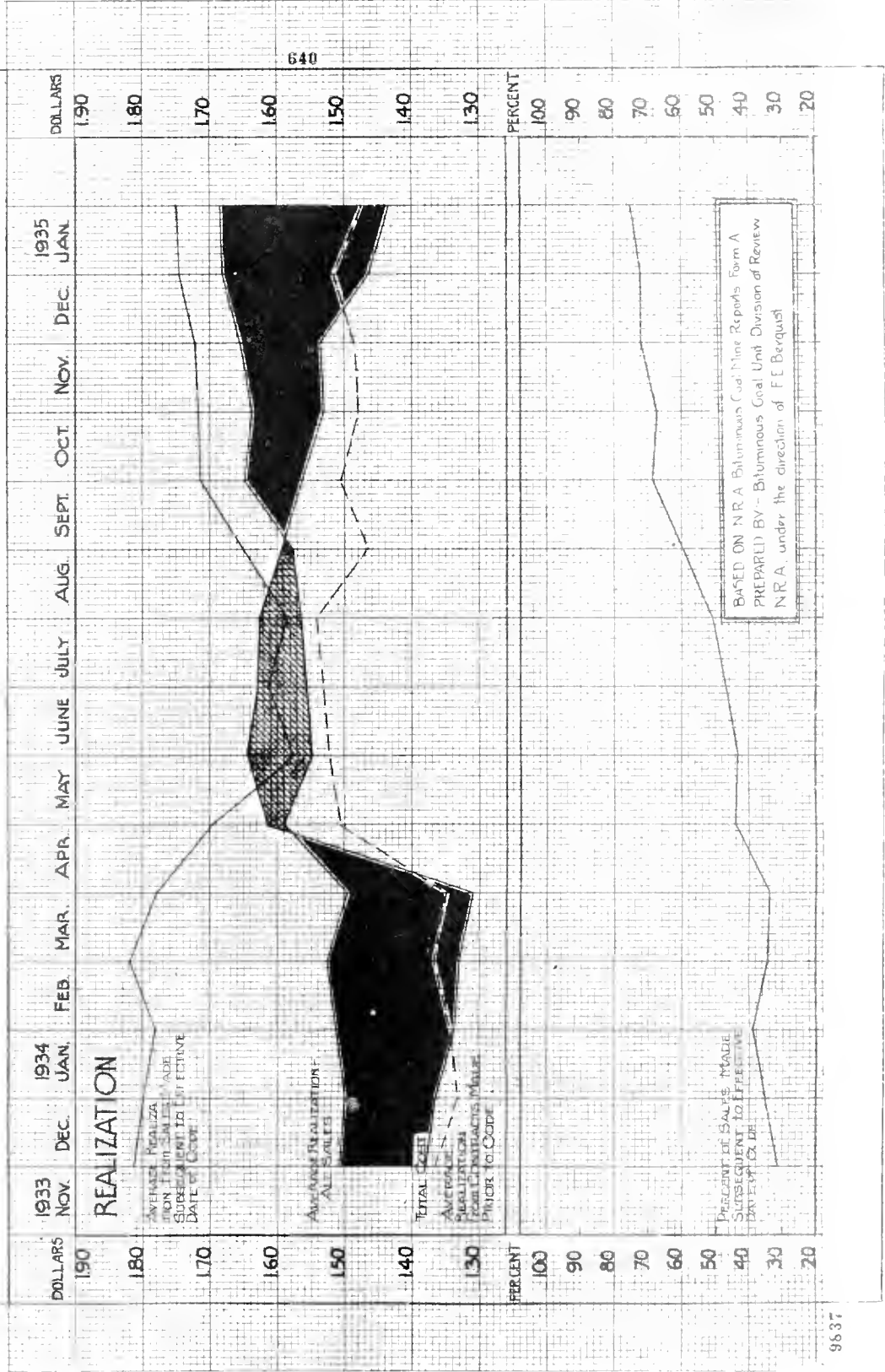
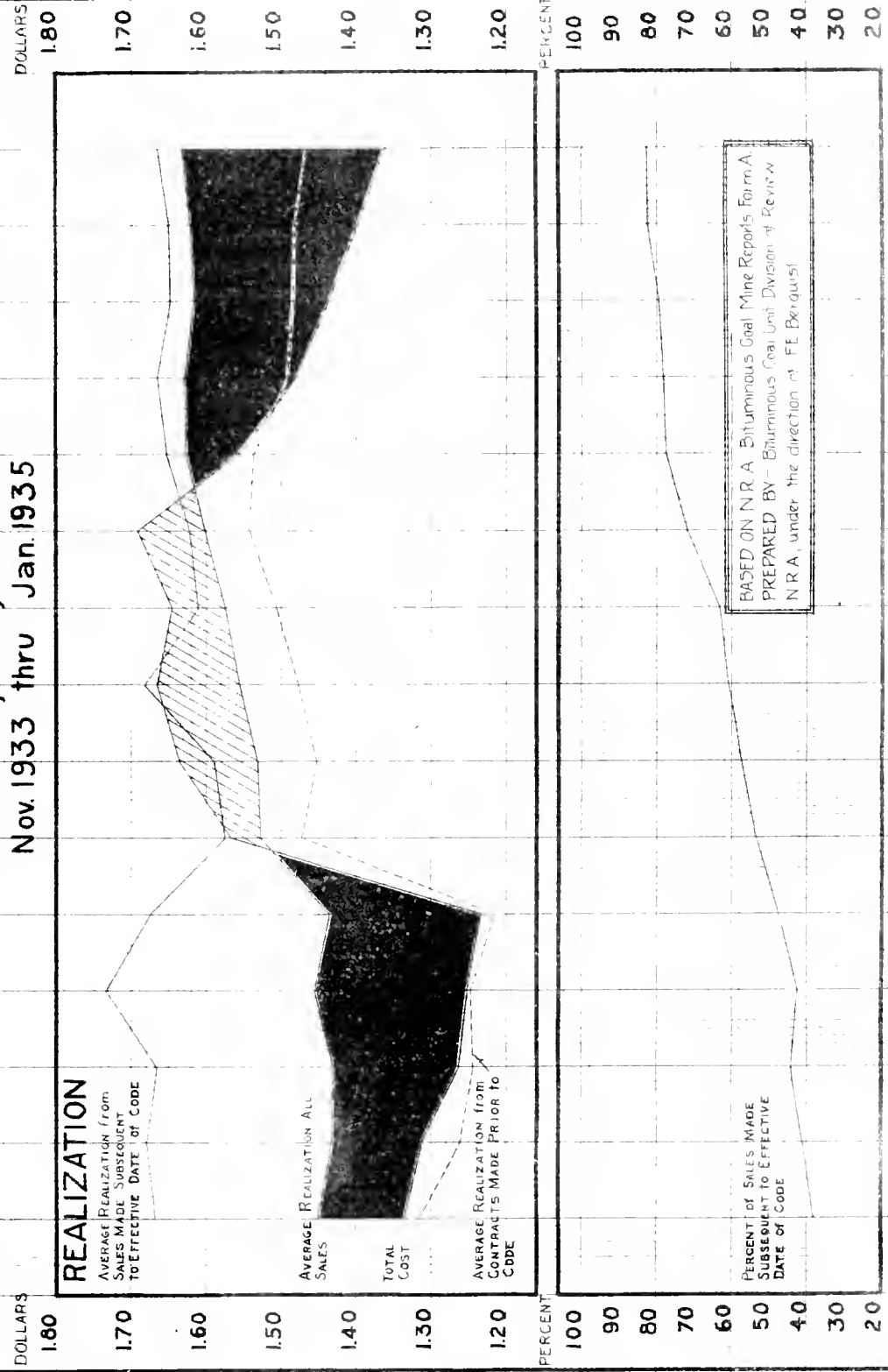


Chart No. 12 Division II Indiana - Deep and Strip Mines Combined

Bituminous Coal - Cost, Realization and Margins by Months Nov. 1933 thru Jan. 1935



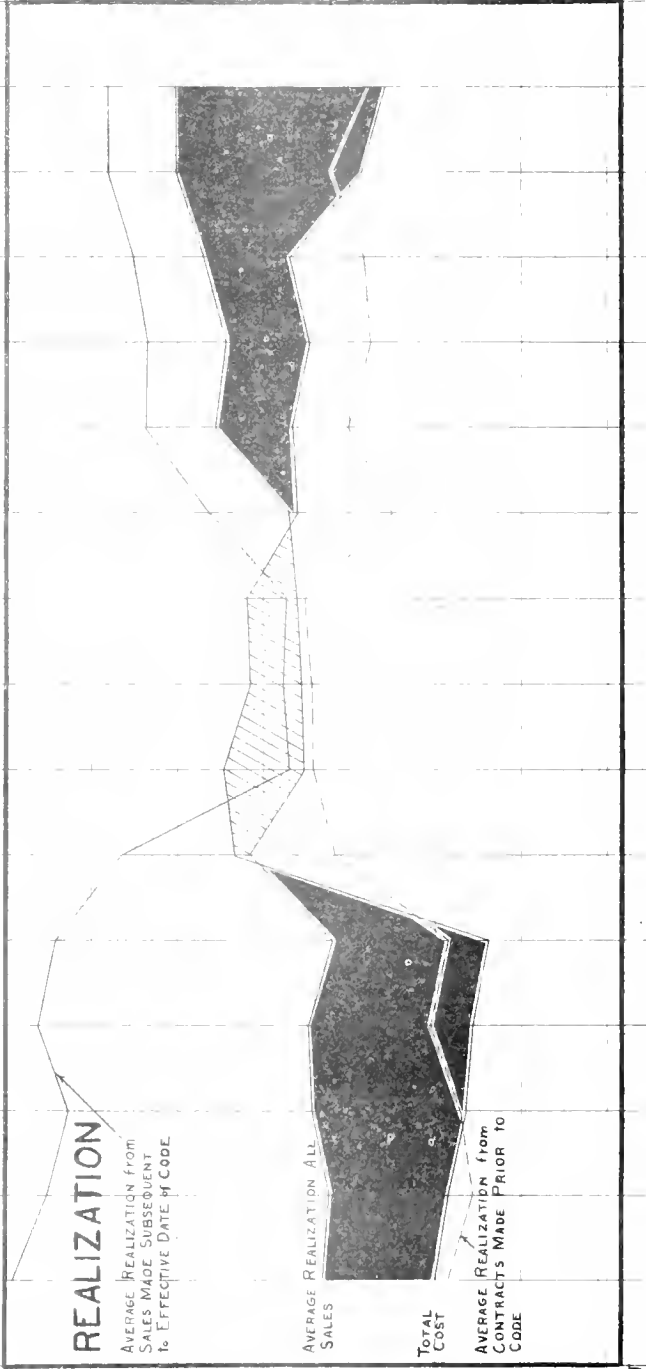
NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN.
1933 1934 1935

Chart No.13 Division II Illinois - Deep and Strip Mines Combined

Bituminous Coal - Cost, Realization, and Margins by Months
Nov. 1933 thru Jan. 1935

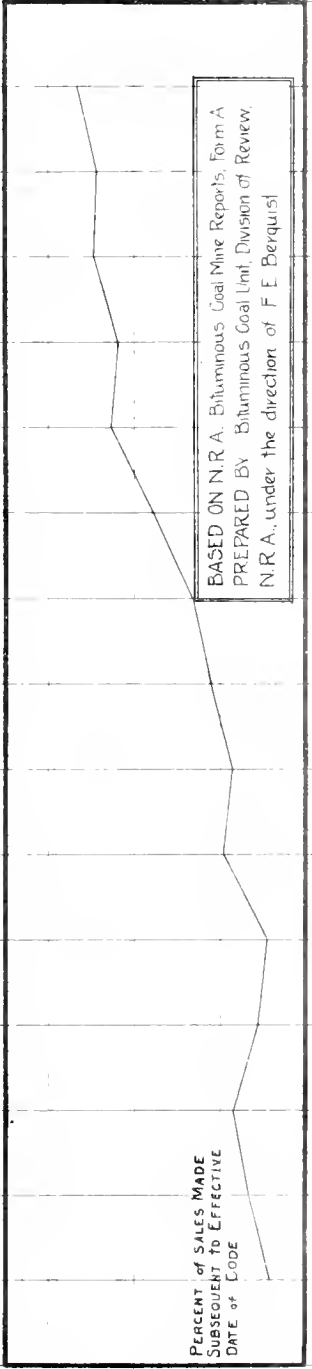
DOLLARS
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20

DOLLARS
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20



PERCENT
80
70
60
50
40
30
20

PERCENT
80
70
60
50
40
30
20



BASED ON N.R.A. Bituminous Coal Mine Reports, Form A
PREPARED BY Bituminous Coal Unit, Division of Review,
N.R.A., under the direction of F. E. Berquist

NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN.
1933 1934 1935

Chart No. 14 *ym* Division III

APPENDIX

Bituminous Coal — Cost, Realization,
and Margins by Months
Nov. 1933 thru Dec. 1934

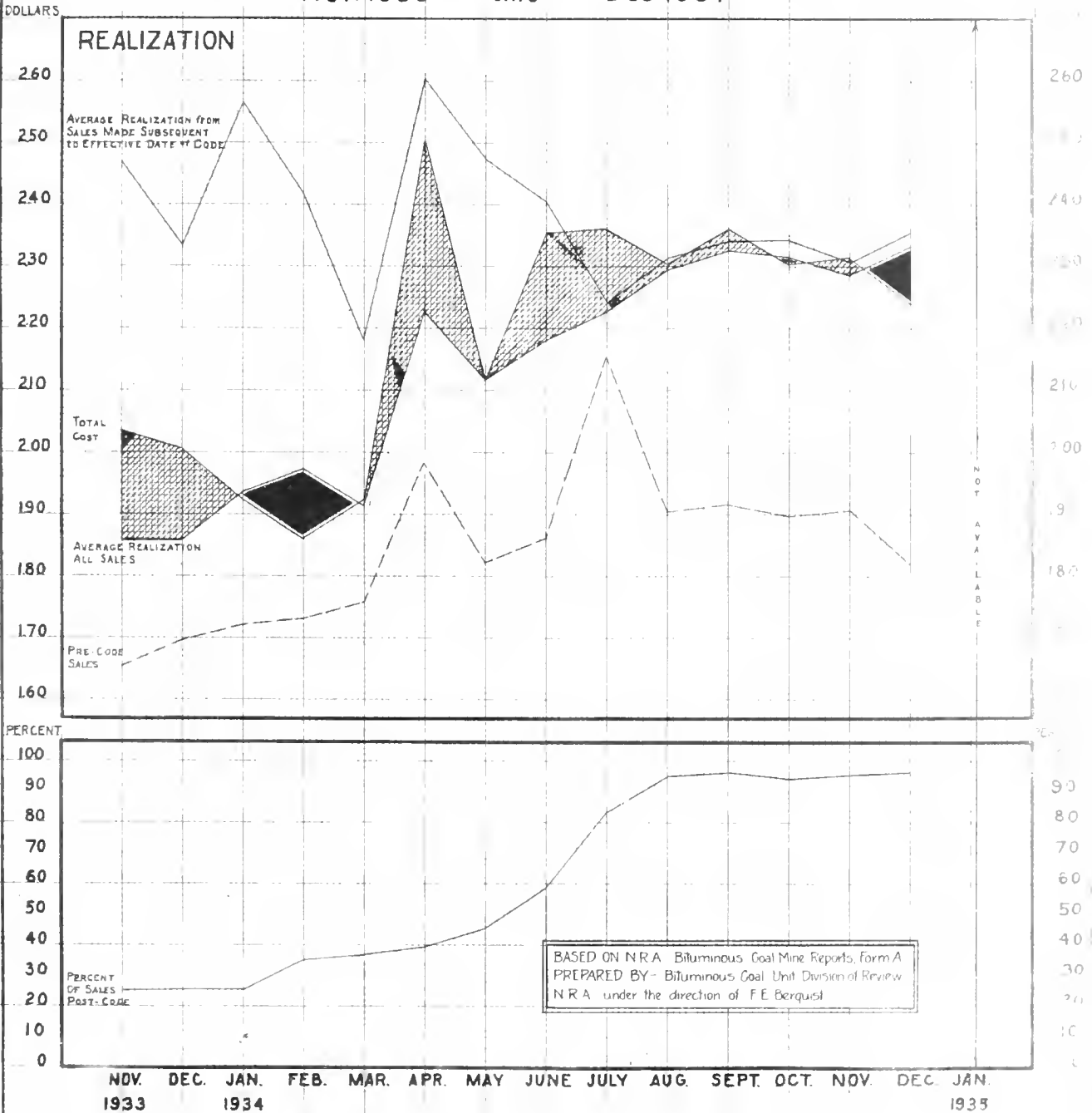


Chart No 15 Division III Alabama

Bituminous Coal—Cost Realization and Margins by Months Nov. 1933 thru Dec. 1934

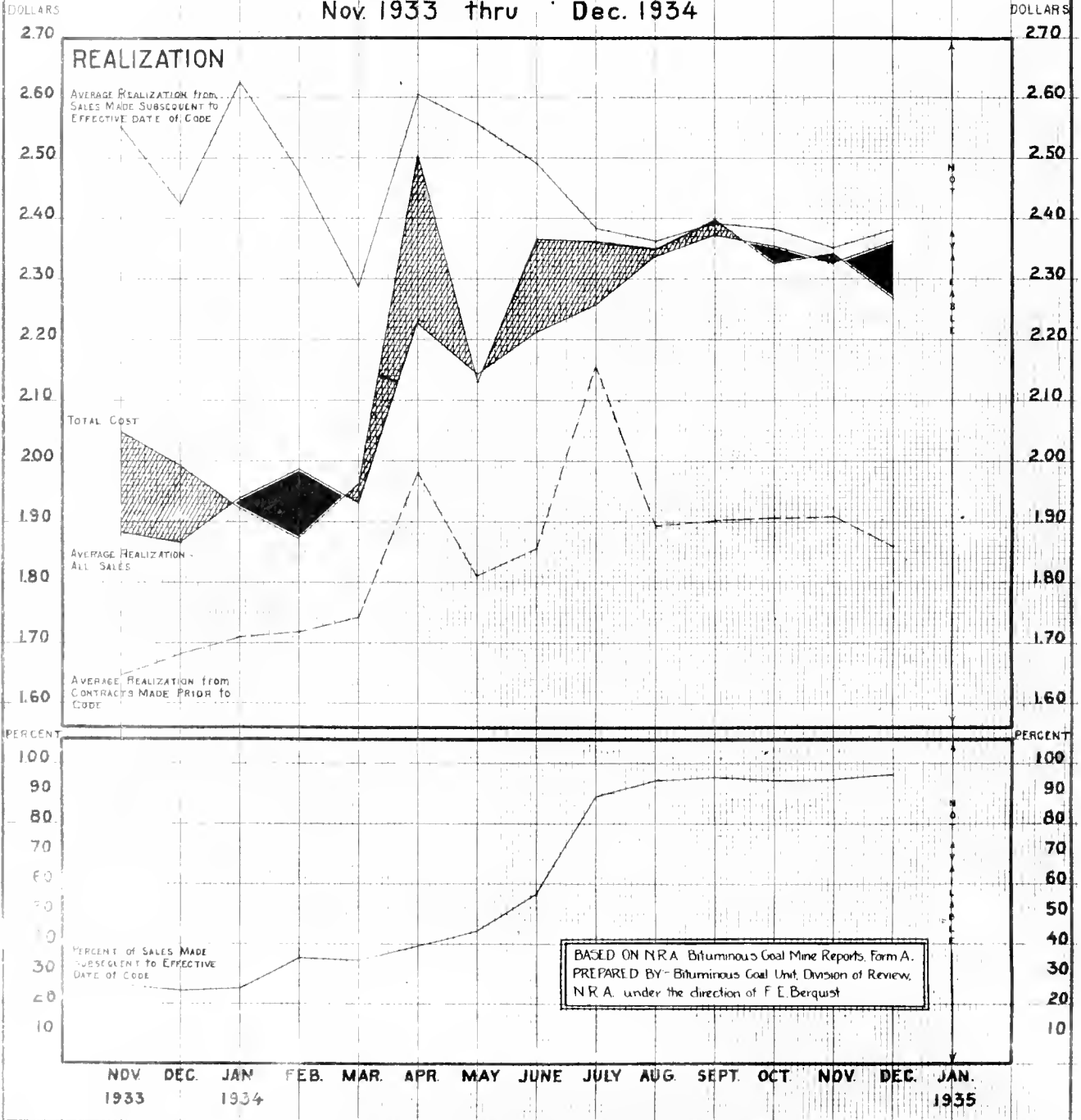
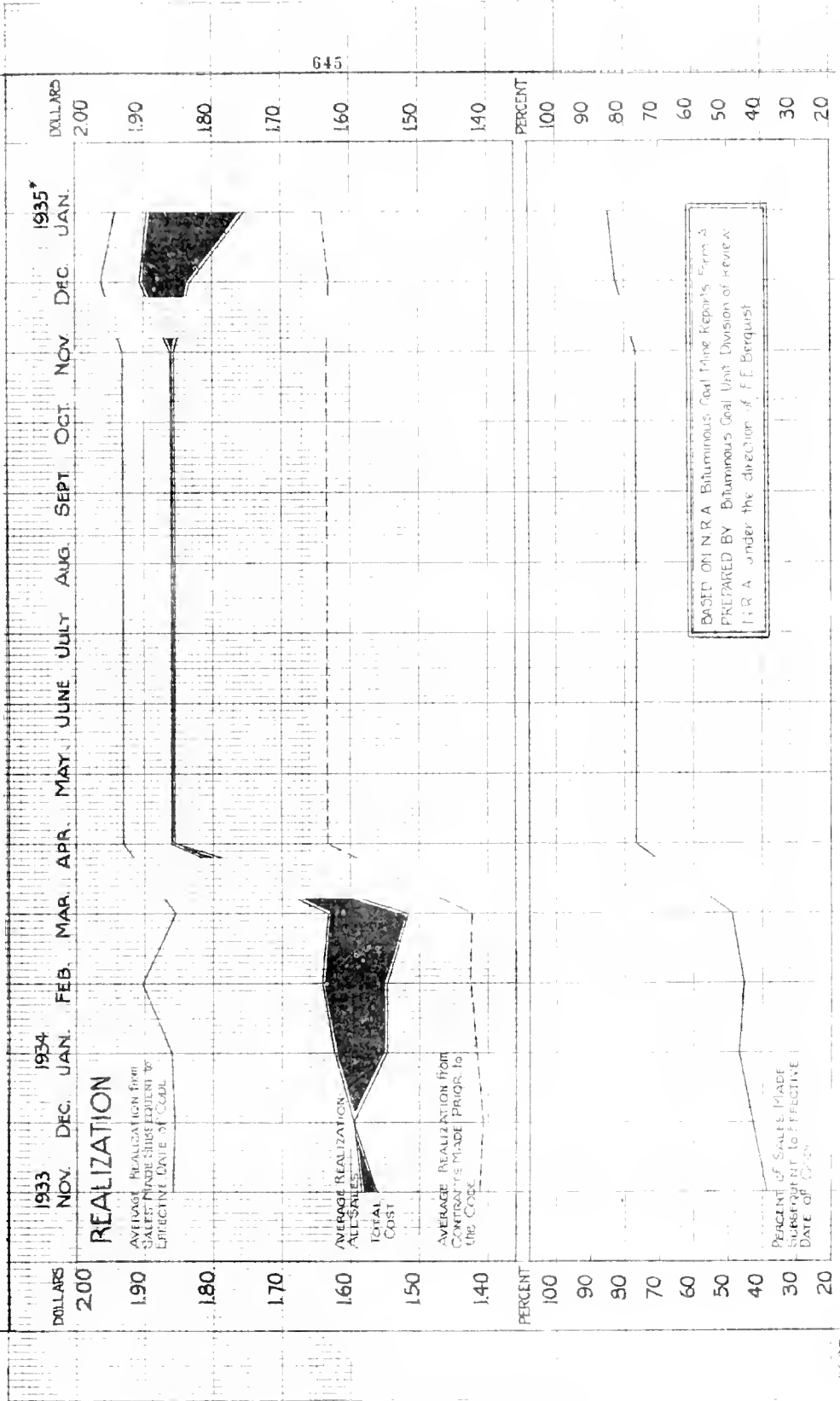


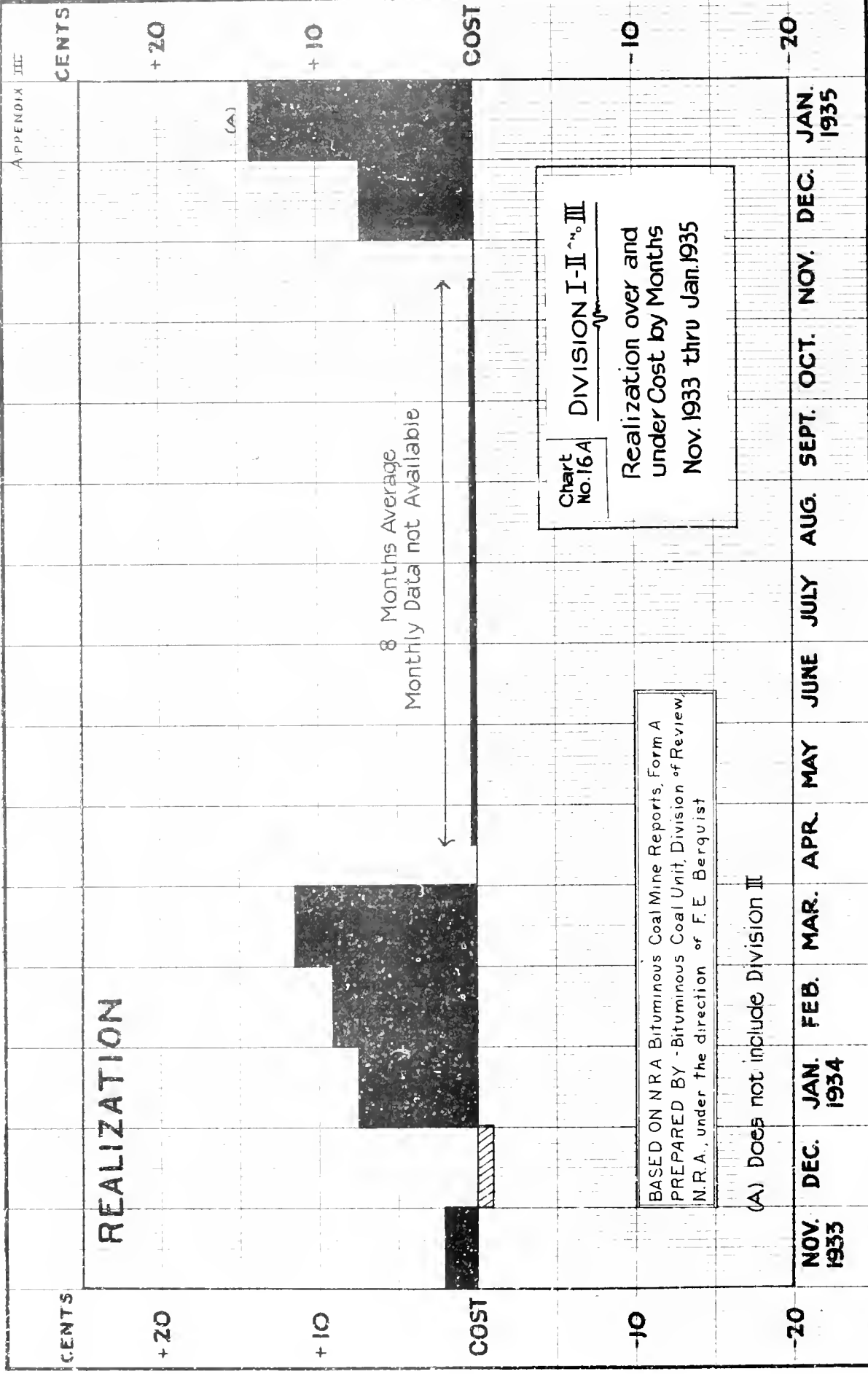
CHART NO. 16 DIVISION I, II, III

BITUMINOUS COAL - COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU JAN. 1935

APPENDIX III





REALIZATION

CENTS

+20

+10

COST

-10

-20

NOV. 1933

DEC. 1933

JAN. 1934

FEB. 1934

MAR. 1934

APR. 1934

MAY 1934

JUNE 1934

JULY 1934

AUG. 1934

SEPT. 1934

OCT. 1934

NOV. 1934

DEC. 1934

JAN. 1935

8 Months Average Monthly Data not Available

(A)

Chart No. 16A

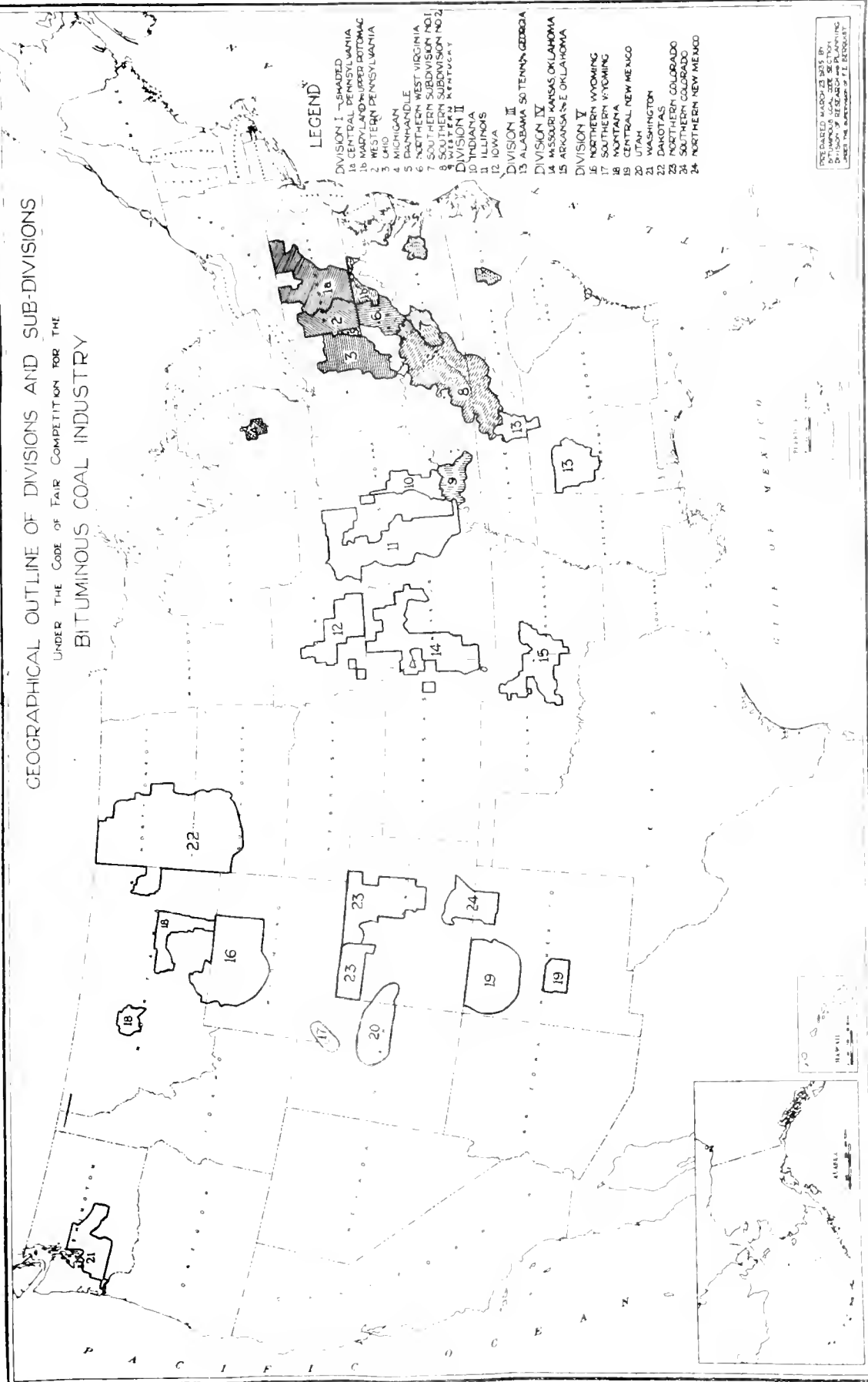
DIVISION I-II & III

Realization over and under Cost by Months Nov. 1933 thru Jan. 1935

BASED ON NRA Bituminous Coal Mine Reports, Form A PREPARED BY Bituminous Coal Unit, Division of Review, N.R.A., under the direction of F. E. Berquist

(A) Does not include DIVISION II

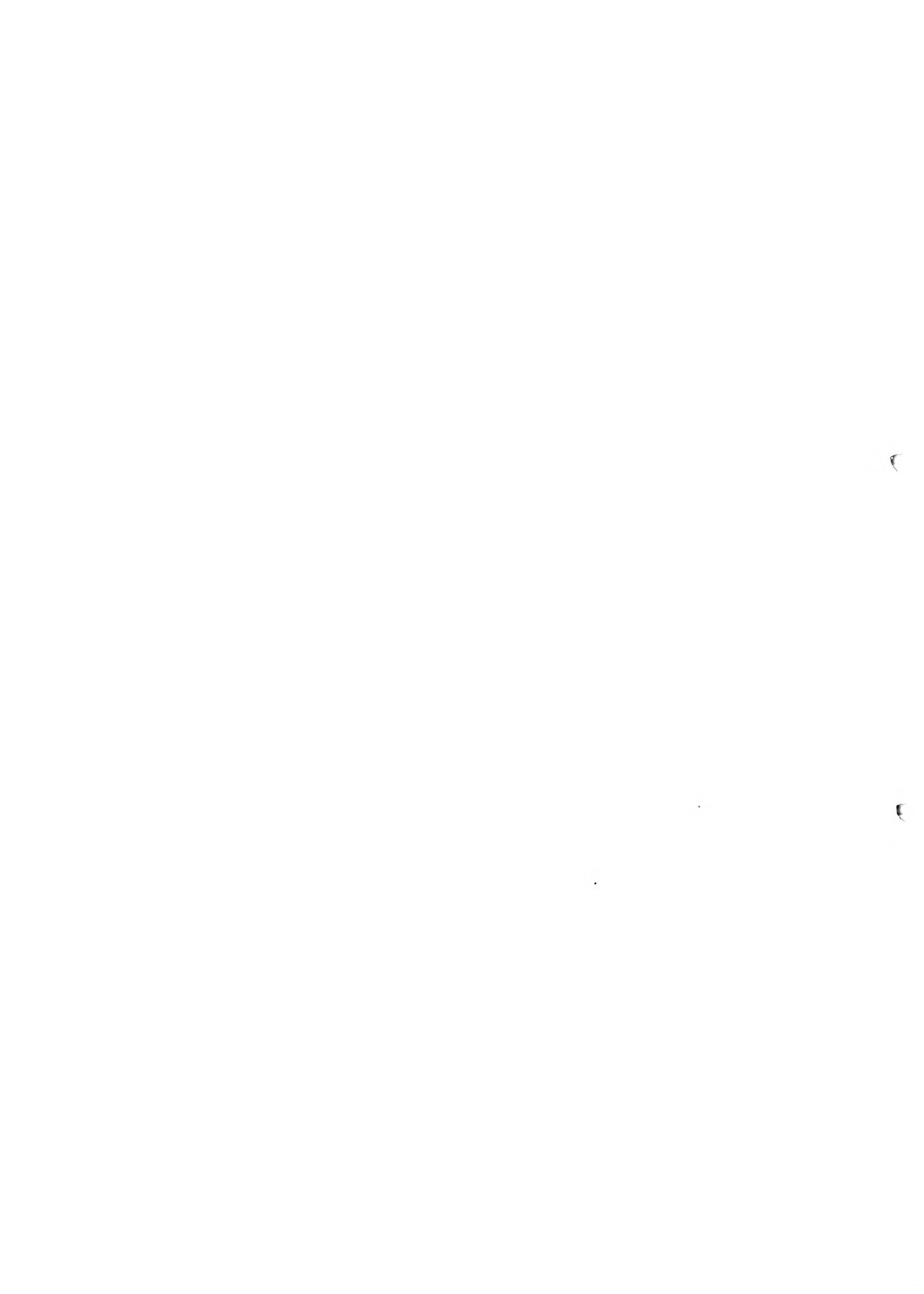
GEOGRAPHICAL OUTLINE OF DIVISIONS AND SUB-DIVISIONS
 UNDER THE CODE OF FAIR COMPETITION FOR THE
 BITUMINOUS COAL INDUSTRY



LEGEND

- DIVISION I - SHADED
 - 1. CENTRAL PENNSYLVANIA
 - 2. MADYLAND-UPPER POTOMAC
 - 3. WESTERN PENNSYLVANIA
 - 4. OHIO
 - 5. MICHIGAN
 - 6. PANHANDLE
 - 7. NORTHERN WEST VIRGINIA
 - 8. SOUTHERN SUBDIVISION NO. 1
 - 9. SOUTHERN SUBDIVISION NO. 2
- DIVISION II
 - 10. INDIANA
 - 11. ILLINOIS
 - 12. IOWA
- DIVISION III
 - 13. ALABAMA
 - 14. TENN.
 - 15. MISSISSIPPI
- DIVISION IV
 - 16. MISSOURI
 - 17. KANSAS
 - 18. OKLAHOMA
 - 19. ARKANSAS
 - 20. E. OKLAHOMA
- DIVISION V
 - 21. NORTHERN WYOMING
 - 22. SOUTHERN WYOMING
 - 23. MONTANA
 - 24. NEBRASKA
 - 25. CENTRAL NEW MEXICO
 - 26. UTAH
 - 27. WASHINGTON
 - 28. DAKOTAS
 - 29. NORTHERN COLORADO
 - 30. SOUTHERN COLORADO
 - 31. NORTHERN NEW MEXICO

PREPARED MAPS BY
 BITUMINOUS COAL CODE SECTION
 FEDERAL TRADE COMMISSION
 UNDER THE AUTHORITY OF T. ROBERTS



APPENDIX TO

CHAPTER III.

PRODUCTION AND DISTRIBUTION

ECONOMIC SURVEY

OF THE

BITUMINOUS COAL INDUSTRY

UNDER FREE COMPETITION AND CODE REGULATION

BITUMINOUS COAL PRODUCTION, REALIZATION AND MINE
CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons)		Average Value Per Net Ton
			at 308 days	at 280 days	
1899	193	254	254	230	\$0.87
1900	212	274	279	255	1.04
1901	226	225	309	281	1.05
1902	260	250	348	316	1.12
1903	235	225	337	350	1.24
1904	279	202	425	386	1.10
1905	315	211	430	417	1.06
1906	343	213	436	451	1.11
1907	391	254	520	475	1.14
1908	333	193	551	482	1.12
1909	330	209	500	510	1.07
1910	417	217	592	538	1.12
1911	401	211	593	538	1.11
1912	450	225	622	536	1.15
1913	473	232	635	577	1.18
1914	423	133	638	603	1.17
1915	443	203	572	610	1.13
1916	507	210	375	613	1.32
1917	552	243	399	636	2.26
1918	579	249	717	650	2.58
1919	466	193	736	669	2.49
1920	569	220	736	725	3.75
1921	413	149	330	781	2.89
1922	422	142	916	832	3.02
1923	535	179	970	825	2.68
1924	484	171	871	792	2.20
1925	520	195	822	746	2.04
1926	573	215	821	747	2.06
1927	518	191	835	759	1.99
1928	501	203	760	691	1.86
1929	535	219	752	679	1.78
1930	436	187	770	700	1.70
1931	382	130	736	639	1.54
1932	310	146	653	594	1.31
1933	334	167	615	559	1.34
1934*	358	173	622	565	1.75

* Capacity under MRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, MRA
under direction of F. E. Berquist

BITUMINOUS COAL PRODUCTION, REALIZATION AND MINE
CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons)		Average Value Per Net Ton
			at 308 days	at 280 days	
1899	193	234	254	230	\$0.87
1900	212	234	279	255	1.04
1901	226	225	309	281	1.05
1902	260	230	348	316	1.12
1903	283	225	387	350	1.24
1904	279	202	425	336	1.10
1905	315	211	460	417	1.03
1906	343	213	496	451	1.11
1907	385	234	520	473	1.14
1908	353	193	531	482	1.12
1909	380	209	560	510	1.07
1910	417	217	592	538	1.12
1911	406	211	593	538	1.11
1912	450	223	622	566	1.15
1913	478	232	635	577	1.18
1914	423	195	668	603	1.17
1915	443	203	672	610	1.13
1916	503	230	673	613	1.32
1917	552	243	699	636	2.26
1918	579	249	717	650	2.58
1919	466	195	736	669	2.49
1920	569	220	796	725	3.75
1921	416	149	860	731	2.89
1922	422	142	916	832	3.02
1923	565	179	970	885	2.68
1924	484	171	871	792	2.20
1925	520	195	822	743	2.04
1926	573	215	821	747	2.06
1927	518	191	835	759	1.99
1928	501	203	730	691	1.86
1929	535	219	752	679	1.78
1930	468	187	770	700	1.70
1931	382	160	736	669	1.54
1932	310	146	653	594	1.31
1933	334	167	615	559	1.34
1934*	358	178	622	565	1.75

* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
under direction of F. E. Berquist

BITUMINOUS COAL PRODUCTION, REALIZATION AND MINE
CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons)		Average Value Per Net Ton
			at 308 days	at 280 days	
1899	195	234	254	230	\$0.87
1900	212	234	279	255	1.04
1901	226	225	309	281	1.05
1902	260	230	343	316	1.12
1903	233	225	387	350	1.24
1904	279	202	425	386	1.10
1905	315	211	460	417	1.06
1906	343	213	496	451	1.11
1907	395	234	520	473	1.14
1908	333	195	531	482	1.12
1909	380	209	560	510	1.07
1910	417	217	592	538	1.12
1911	406	211	593	538	1.11
1912	450	223	622	566	1.15
1913	478	232	635	577	1.18
1914	423	195	638	603	1.17
1915	443	203	672	610	1.13
1916	505	230	673	613	1.32
1917	552	243	699	636	2.26
1918	579	249	717	650	2.58
1919	466	195	736	639	2.49
1920	569	230	796	725	3.75
1921	416	149	860	781	2.89
1922	422	142	916	832	3.02
1923	565	179	970	885	2.68
1924	484	171	871	792	2.20
1925	520	195	822	748	2.04
1926	573	215	821	747	2.06
1927	518	191	833	759	1.99
1928	501	203	760	691	1.86
1929	535	212	752	679	1.78
1930	463	137	770	700	1.70
1931	382	160	736	669	1.54
1932	310	146	655	594	1.31
1933	334	137	615	559	1.34
1934*	338	173	622	565	1.75

* Capacity under MRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, MRA
under direction of F. E. Berquist

BITUMINOUS COAL PRODUCTION, REALIZATION AND MINE
CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons)		Average Value Per Net Ton
			at 308 days	at 280 days	
1899	193	234	234	250	\$0.87
1900	212	234	279	255	1.04
1901	226	225	309	281	1.05
1902	260	230	348	316	1.12
1903	263	225	327	350	1.24
1904	279	202	425	366	1.10
1905	315	211	460	417	1.06
1906	343	213	496	451	1.11
1907	395	234	520	473	1.14
1908	355	193	531	482	1.12
1909	350	209	500	510	1.07
1910	417	217	592	538	1.12
1911	406	211	593	538	1.11
1912	450	223	622	566	1.15
1913	473	232	635	577	1.18
1914	423	195	668	606	1.17
1915	443	203	672	610	1.15
1916	503	260	673	613	1.32
1917	552	243	699	636	2.26
1918	579	249	717	650	2.53
1919	466	195	736	669	2.49
1920	569	220	736	725	3.75
1921	416	149	830	731	2.89
1922	422	142	916	832	3.02
1923	565	179	970	885	2.63
1924	484	171	871	792	2.20
1925	520	193	922	743	2.04
1926	573	215	821	747	2.06
1927	618	191	855	759	1.99
1928	501	203	730	691	1.86
1929	635	219	752	679	1.73
1930	463	187	770	700	1.70
1931	382	160	736	669	1.54
1932	310	146	653	594	1.31
1933	334	167	615	359	1.34
1934*	358	178	632	565	1.75

* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
under direction of F. K. Berquist

ANNUAL BITUMINOUS COAL PRODUCTION, SHALES, STEAM AND HEAVY FUELS OILS, AND TOTAL UNITED STATES, 1913 - 1934.

Table with columns for years 1913-1934 and rows for various states including Alabama, Arkansas, Colorado, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wyoming, and Total. Each row contains production values for each year.

1. U. S. Bureau of Mines. 2. Includes District. 3. Includes Utah. 4. Includes California, Oregon, Idaho, Nevada, Arizona, New Mexico, and South Dakota. 5. Includes Oklahoma. 6. Includes North Carolina. 7. Includes West Virginia. 8. Includes Wyoming.

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	<u>1913</u>	<u>1930</u>	<u>% of in- crease or decrease</u>	<u>% 1930 is of 1913</u>
Alabama.....	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas.....	2,234,107	1,533,434	- 31.4	68.6
Colorado.....	9,232,510	8,196,910	- 11.2	88.8
Georgia.....	255,626	7,092	- 97.2	2.8
Illinois.....	61,618,744	53,731,230	- 12.8	87.2
Indiana.....	17,165,671	16,489,962	- 3.9	96.1
Iowa.....	7,525,936	3,892,571	- 48.3	51.7
Kansas.....	7,202,210	2,429,929	- 66.3	33.7
Kentucky.....	19,616,600	51,208,995	+161.0	261.0
Maryland.....	4,779,839	2,270,593	- 52.5	47.5
Michigan.....	1,231,786	661,113	- 46.3	53.7
Missouri.....	4,318,125	3,853,150	- 10.8	89.2
Montana.....	3,240,973	3,022,004	- 6.8	93.2
New Mexico.....	3,708,806	1,969,433	- 46.9	53.1
North Dakota.....	495,320	1,700,157	+243.2	343.2
Ohio.....	36,200,527	22,551,978	- 37.7	62.3
Oklahoma.....	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania.....	173,781,217	124,462,787	- 28.4	71.6
South Dakota.....	10,540	12,810	+ 21.5	121.5
Tennessee.....	6,860,184	5,130,428	- 25.2	74.8
Texas.....	2,429,144	833,872	- 65.7	34.3
Utah.....	3,254,828	4,257,541	+ 30.8	130.8
Virginia.....	8,828,068	10,907,377	+ 23.6	123.6
Washington.....	3,877,891	2,301,928	- 40.6	59.4
West Virginia.....	71,254,136	121,472,638	+ 70.5	170.5
Wyoming.....	7,393,066	6,088,133	- 17.7	82.3
Other States.....	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	<u>1913</u>	<u>1930</u>	<u>% of in- crease or decrease</u>	<u>% 1930 is of 1913</u>
Alabama.....	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas.....	2,234,107	1,533,434	- 31.4	68.6
Colorado.....	9,232,510	8,196,910	- 11.2	88.8
Georgia.....	255,626	7,092	- 97.2	2.8
Illinois.....	61,618,744	53,731,230	- 12.8	87.2
Indiana.....	17,165,671	16,489,962	- 3.9	96.1
Iowa.....	7,525,936	3,892,571	- 48.3	51.7
Kansas.....	7,202,310	2,429,929	- 66.3	33.7
Kentucky.....	19,616,600	51,208,995	+161.0	261.0
Maryland.....	4,779,839	2,270,593	- 52.5	47.5
Michigan.....	1,231,786	661,113	- 46.3	53.7
Missouri.....	4,318,125	3,853,150	- 10.8	89.2
Montana.....	3,240,973	3,022,004	- 6.8	93.2
New Mexico.....	3,708,806	1,969,433	- 46.9	53.1
North Dakota.....	495,520	1,700,157	+243.2	343.2
Ohio.....	36,200,527	22,551,978	- 37.7	62.3
Oklahoma.....	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania.....	173,781,217	124,462,787	- 28.4	71.6
South Dakota.....	10,540	12,810	+21.5	121.5
Tennessee.....	6,860,184	5,130,428	- 25.2	74.8
Texas.....	2,429,144	833,872	- 65.7	34.3
Utah.....	3,254,828	4,257,341	+30.8	130.8
Virginia.....	8,328,068	10,907,377	+25.6	123.6
Washington.....	3,877,891	2,301,928	- 40.6	59.4
West Virginia.....	71,254,136	121,472,638	+70.5	170.5
Wyoming.....	7,393,066	6,038,133	- 17.7	82.3
Other States.....	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%.

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Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	<u>1913</u>	<u>1930</u>	<u>% of in- crease or decrease</u>	<u>% 1930 is of 1913</u>
Alabama.....	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas.....	2,234,107	1,533,434	- 31.4	68.6
Colorado.....	9,232,510	8,196,910	- 11.2	88.8
Georgia.....	255,626	7,092	- 97.2	2.8
Illinois.....	61,618,744	53,731,230	- 12.8	87.2
Indiana.....	17,165,671	16,489,962	- 3.9	96.1
Iowa.....	7,525,936	3,892,571	- 48.3	51.7
Kansas.....	7,202,210	2,429,929	- 66.3	33.7
Kentucky.....	19,616,600	51,208,995	+161.0	261.0
Maryland.....	4,779,839	2,270,593	- 52.5	47.5
Michigan.....	1,231,786	661,113	- 46.3	53.7
Missouri.....	4,318,125	3,853,150	- 10.8	89.2
Montana.....	3,240,973	3,022,004	- 6.8	93.2
New Mexico.....	3,708,806	1,969,433	- 46.9	53.1
North Dakota.....	495,520	1,700,157	+243.2	343.2
Ohio.....	36,200,527	22,551,978	- 37.7	62.3
Oklahoma.....	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania.....	173,781,217	124,462,787	- 28.4	71.6
South Dakota.....	10,540	12,810	+ 21.5	121.5
Tennessee.....	6,860,184	5,130,428	- 25.2	74.8
Texas.....	2,429,144	833,872	- 65.7	34.3
Utah.....	3,254,823	4,257,541	+ 30.8	130.8
Virginia.....	8,828,068	10,907,377	+ 23.6	123.6
Washington.....	3,877,891	2,301,928	- 40.6	59.4
West Virginia.....	71,254,136	121,472,638	+ 70.5	170.5
Wyoming.....	7,393,066	6,088,133	- 17.7	82.3
Other States.....	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	<u>1913</u>	<u>1930</u>	<u>% of in- crease or decrease</u>	<u>% 1930 is of 1913</u>
Alabama.....	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas.....	2,234,107	1,533,434	- 31.4	68.6
Colorado.....	9,232,510	8,196,910	- 11.2	88.8
Georgia.....	255,626	7,092	- 97.2	2.8
Illinois.....	61,618,744	53,731,230	- 12.8	87.2
Indiana.....	17,165,671	16,489,962	- 3.9	96.1
Iowa.....	7,525,936	3,892,571	- 48.3	51.7
Kansas.....	7,202,210	2,429,929	- 66.3	33.7
Kentucky.....	19,616,600	51,208,995	+161.0	261.0
Maryland.....	4,779,839	2,270,593	- 52.5	47.5
Michigan.....	1,231,786	661,113	- 46.3	53.7
Missouri.....	4,318,125	3,853,150	- 10.8	89.2
Montana.....	3,240,973	3,022,004	- 6.8	93.2
New Mexico.....	3,708,806	1,969,433	- 46.9	53.1
North Dakota.....	495,520	1,700,157	+243.2	343.2
Ohio.....	36,200,527	22,551,978	- 37.7	62.3
Oklahoma.....	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania.....	173,781,217	124,462,787	- 28.4	71.6
South Dakota.....	10,540	12,810	+ 31.5	121.5
Tennessee.....	6,860,184	5,130,428	- 25.2	74.8
Texas.....	2,429,144	833,872	- 65.7	34.5
Utah.....	3,254,828	4,257,341	+ 30.8	130.8
Virginia.....	8,828,068	10,907,377	+ 23.6	123.6
Washington.....	3,877,091	2,301,928	- 40.6	59.4
West Virginia.....	71,254,136	121,472,638	+ 70.5	170.5
Wyoming.....	7,393,066	6,038,133	- 17.7	82.3
Other States.....	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%.

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	<u>1913</u>	<u>1930</u>	<u>% of in- crease or decrease</u>	<u>% 1930 is of 1913</u>
Alabama.....	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas.....	2,234,107	1,533,434	- 31.4	68.6
Colorado.....	9,232,510	8,196,910	- 11.2	88.8
Georgia.....	255,626	7,092	- 97.2	2.8
Illinois.....	61,618,744	53,731,230	- 12.8	87.2
Indiana.....	17,165,671	16,489,962	- 3.9	96.1
Iowa.....	7,525,936	3,892,571	- 48.3	51.7
Kansas.....	7,202,210	2,429,929	- 66.3	33.7
Kentucky.....	19,616,600	51,208,995	+161.0	261.0
Maryland.....	4,779,839	2,270,593	- 52.5	47.5
Michigan.....	1,331,786	661,113	- 46.3	53.7
Missouri.....	4,318,125	3,853,150	- 10.8	89.2
Montana.....	3,240,973	3,022,004	- 6.8	93.2
New Mexico.....	3,708,806	1,969,433	- 46.9	53.1
North Dakota.....	495,520	1,700,157	+243.2	343.2
Ohio.....	36,200,527	22,551,978	- 37.7	62.3
Oklahoma.....	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania.....	173,781,217	124,462,787	- 28.4	71.6
South Dakota.....	10,540	12,810	+ 21.5	121.5
Tennessee.....	6,860,184	5,130,428	- 25.2	74.8
Texas.....	2,429,144	833,872	- 65.7	34.3
Utah.....	3,254,828	4,257,541	+ 30.8	130.8
Virginia.....	8,828,068	10,907,377	+ 23.6	123.6
Washington.....	3,877,891	2,301,928	- 40.6	59.4
West Virginia.....	71,254,136	121,472,638	+ 70.5	170.5
Wyoming.....	7,393,066	6,088,133	- 17.7	82.3
Other States.....	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN
AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S. Bureau of Mines)

Year	Tidewater shipments to NEW ENGLAND ^b				GRAND TOTAL
	All-rail receipts in:	From		From	
	NEW ENGLAND:	New York	Philadelphia	Hampton Roads	Total
	^a	and Baltimore:	and Charleston:	Tidewater:	
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,358,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Per Cent of Total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	31.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

^a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

^b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

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BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN
AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S. Bureau of Mines)

Year	Tidewater shipments to NEW ENGLAND ^b				GRAND TOTAL
	All-rail receipts in:	From New York	From Philadelphia and Baltimore:	From Hampton Roads and Charleston:	
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134

Year	Per Cent of Total	From New York	From Philadelphia and Baltimore:	From Hampton Roads and Charleston:	Total Tidewater
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	31.9	51.4	100.0
1922	34.8	10.3	51.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	52.0	67.2	100.0
1928	32.5	8.3	50.2	67.5	100.0
1929	31.9	7.4	50.7	68.1	100.0
1930	30.5	8.2	51.3	69.5	100.0
1931	30.7	6.0	53.3	69.3	100.0
1932	30.0	4.6	55.4	70.0	100.0
1933	29.7	4.9	55.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

^a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

^b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

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November 4, 1935.

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN
AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S. Bureau of Mines)

Year	Tidewater shipments to NEW ENGLAND ^b				GRAND TOTAL
	All-rail receipts in: NEW ENGLAND: ^a	From New York Philadelphia and Baltimore:	From Hampton Roads and Charlestor:	Total Tidewater:	
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,871,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Per Cent of Total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

^a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

^b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

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BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN
AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U. S. Bureau of Mines)

Year:	All-rail receipts in NEW ENGLAND a	Tidewater shipments to NEW ENGLAND b			GRAND TOTAL
		From New York Philadelphia and Baltimore	From Hampton Roads and Charleston	Total Tidewater	
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,323	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,903	11,438,230	18,423,230
1925	7,756,000	2,257,249	11,208,213	13,465,462	21,221,462
1926	8,045,000	2,443,082	10,505,356	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,523	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,645,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134

Year	Percent of total				
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	55.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	63.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

b Cargo coal dumped into vessels consigned to New England as reported by the rail roads operating tidewater piers.

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United States Bureau of Mines.

November 4, 1935.

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN
AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U. S. Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND	Tidewater shipments to NEW ENGLAND ^b				GRAND TOTAL
		From New York and Baltimore	From Philadelphia and Charleston	Hampton Roads	Total Tidewater	
Net tons:						
1919	9,655,000	3,152,213	5,253,169	8,385,382	18,040,382	
1920	13,225,000	4,308,085	6,148,559	10,456,444	22,679,444	
1921	8,574,000	2,840,707	6,017,934	8,858,631	17,232,631	
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458	
1923	9,654,000	3,702,907	9,671,413	13,374,320	23,008,330	
1924	6,985,000	2,108,525	9,379,905	11,488,230	18,473,230	
1925	7,756,000	2,257,249	11,306,213	13,463,462	21,219,462	
1926	8,045,000	2,445,082	10,505,356	12,948,938	20,993,938	
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981	
1928	6,473,000	1,645,656	11,793,964	13,444,620	19,917,620	
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885	
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424	
1931	5,611,000	1,098,673	11,347,464	12,646,137	18,257,137	
1932	4,544,000	703,976	9,915,663	10,617,639	15,161,639	
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526	
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134	
Percent of total						
1919	53.5	17.4	29.1	46.5	100.0	
1920	53.9	19.0	27.1	46.1	100.0	
1921	48.6	16.5	34.9	51.4	100.0	
1922	34.8	10.3	54.9	65.2	100.0	
1923	41.9	16.1	42.0	58.1	100.0	
1924	37.8	11.4	50.8	62.2	100.0	
1925	36.6	10.6	52.8	63.4	100.0	
1926	38.3	11.6	50.1	61.7	100.0	
1927	32.8	10.2	57.0	67.2	100.0	
1928	32.5	8.3	59.2	67.5	100.0	
1929	31.9	7.4	60.7	68.1	100.0	
1930	30.5	8.2	61.3	69.5	100.0	
1931	30.7	6.0	63.3	69.3	100.0	
1932	30.0	4.6	65.4	70.0	100.0	
1933	29.7	4.9	65.4	70.3	100.0	
1934	31.6	6.3	62.1	68.4	100.0	

^a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

^b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

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November 4, 1935.

PRODUCTION OF BITUMINOUS COAL, 1920 TO 1933, IN THOUSANDS OF NET TONS (Continued)
 (Prepared from operators' reports to the United States Bureau of Mines - exclusive of wash mines producing less than 1,000 tons annually)

Code Authority Districts	1927		1928		1929		1930		1931		1932		1933 (Preliminary)	
	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total
DIVISION NO. I														
Eastern Sub-Division:														
Central Pennsylvania 1/	43,345	8.37	40,577	8.10	43,686	8.20	39,409	8.43	44,092	8.92	28,051	9.06	24,347	8.66
Southern 2/	7,157	1.38	6,651	1.33	6,340	1.19	5,950	1.27	5,406	1.42	3,547	1.15	4,746	1.71
Maryland-Potomac 3/	4,388	.84	4,950	.79	4,073	.76	3,507	.75	2,953	.77	2,174	.70	1,874	.67
Total, Eastern Sub-Division	54,890	10.59	52,178	10.22	54,099	10.15	48,866	10.45	52,453	11.11	33,772	10.90	31,067	10.43
Western Pennsylvania Sub-Division 4/														
Ohio - all	62,462	15.93	63,975	16.77	93,291	17.44	79,104	16.92	58,161	18.27	43,178	13.94	40,681	14.33
Ohio - all	19,800	3.05	15,641	3.13	23,689	4.43	22,552	4.83	20,411	5.34	13,910	4.49	13,227	4.70
Panhandle of West Virginia 5/	7,137	1.38	7,212	1.44	6,335	1.12	5,114	1.09	4,054	1.06	3,645	1.18	3,246	1.11
Michigan - all	757	.15	617	.12	805	.15	661	.14	359	.10	446	.14	346	.11
Total, Ohio Sub-Division	27,694	4.58	23,470	4.69	30,829	5.72	28,327	5.96	24,824	6.50	18,001	5.63	17,267	6.19
Northern West Virginia 6/														
Southern Low Volatile 7/	35,723	6.90	30,892	6.17	30,810	5.65	25,752	5.51	20,819	5.45	16,772	5.44	16,298	5.68
Southern High Volatile 8/	51,432	9.93	51,068	10.20	56,695	10.60	50,511	10.80	42,888	11.22	36,229	11.70	41,092	14.53
Northern High Volatile 9/	114,799	22.17	104,454	20.86	106,846	19.97	94,109	20.15	77,594	20.31	64,368	20.79	67,668	20.63
Eastern Kentucky 9/	21,805	4.10	16,277	3.25	14,837	2.70	10,915	2.34	5,579	2.27	3,540	3.08	7,775	2.81
GRAND TOTAL - DIVISION NO. I	142,141	24.20	131,114	22.16	136,607	22.27	117,584	22.23	87,519	22.66	62,540	17.64	58,991	17.82
DIVISION NO. II														
Illinois Sub-Division														
Illinois Sub-Division	46,462	9.05	55,948	11.17	60,658	11.34	53,731	11.49	44,303	11.59	33,474	10.61	36,110	11.01
Iowa Sub-Division:	17,936	3.46	16,378	3.27	16,344	3.43	16,490	3.53	14,295	3.74	13,324	4.30	13,600	4.12
Iowa Sub-Division:	334	.07	466	.10	585	.11	606	.13	564	.15	643	.21	720	.26
West of Mississippi Counties	2,612	.50	3,138	.64	3,656	.68	3,287	.70	2,825	.74	3,214	1.04	3,230	.98
East of State	2,950	.57	3,544	.74	4,241	.79	3,893	.83	3,369	.89	3,262	1.02	3,230	.96
Total Iowa Sub-Division	2,950	.57	3,544	.74	4,241	.79	3,893	.83	3,369	.89	3,262	1.02	3,230	.96
GRAND TOTAL - DIVISION NO. II	67,774	13.08	75,010	15.16	81,243	15.56	74,114	15.85	61,967	16.62	50,060	16.36	52,940	16.11
DIVISION NO. III														
Alabama - all														
Alabama - all	19,766	3.82	17,621	3.52	17,944	3.35	15,570	3.33	11,999	3.14	7,457	2.31	8,775	2.68
Georgia - all	77	.01	59	.01	45	.01	7	.00	7	.01	27	.01	66	.02
Southern Tennessee 10/	1,132	.23	1,213	.24	1,240	.23	1,111	.24	978	.25	821	.26	806	.24
GRAND TOTAL - DIVISION NO. III	21,075	4.06	18,939	3.77	19,229	3.59	16,688	3.57	12,998	3.50	8,704	2.53	9,647	2.94
DIVISION NO. IV														
Southwestern Coals Sub-Division:														
Kansas - all	3,444	.67	2,810	.56	2,976	.56	2,430	.52	1,987	.52	1,955	.63	1,940	.56
Missouri - all	3,054	.59	3,732	.74	4,030	.75	3,853	.82	3,580	.95	4,070	1.31	3,131	.91
Oklahoma - High Volatile 11/	1,211	.23	2,763	.56	2,940	.55	2,135	.47	1,389	.36	844	.27	877	.26
Total, Southwestern Coals Sub-Div.	7,709	1.49	9,305	1.86	9,946	1.86	8,418	1.81	6,956	1.83	6,869	2.21	5,948	1.73
Ark.-Okla. Smokeless Sub-Division:														
Arkansas - all	1,549	.30	1,661	.33	1,695	.31	1,533	.33	1,154	.30	1,034	.34	1,014	.33
Oklahoma - Low Volatile 12/	607	.12	718	.14	834	.16	599	.13	519	.14	411	.13	411	.13
Total, Ark.-Okla. Smokeless Sub-Div.	2,156	.42	2,379	.47	2,529	.47	2,132	.46	1,673	.44	1,445	.47	1,425	.46
Texas - all														
Texas - all	1,385	.27	1,162	.24	1,101	.21	834	.18	716	.19	536	.17	510	.15
GRAND TOTAL - DIVISION NO. IV	13,801	2.55	12,667	2.47	13,576	2.54	11,444	2.44	9,385	2.45	8,344	2.61	8,170	2.49
DIVISION NO. V														
Southern Cal. and Southern N. Mex. 13/														
Central and Southern New Mexico 14/	9,133	1.77	8,615	1.72	8,179	1.53	6,350	1.36	4,646	1.22	3,677	1.18	3,671	1.14
Northern Colorado 15/	1,085	.21	1,049	.21	1,171	.22	977	.21	785	.21	637	.21	637	.21
Utah - all	2,441	.47	2,896	.58	3,194	.60	2,837	.61	2,727	.71	2,546	.82	2,546	.82
Wyoming:	4,782	.93	4,643	.97	5,161	.96	4,257	.91	3,350	.88	2,852	.92	2,610	.80
Southern 16/	4,505	.87	4,573	.91	4,747	.88	4,324	.92	3,567	.93	2,915	.94	2,915	.94
Northern 17/	7,289	1.41	7,229	1.40	8,134	1.52	7,368	1.57	6,427	1.71	5,256	1.61	5,256	1.61
Total, Wyoming	6,794	1.30	6,572	1.31	6,705	1.25	6,085	1.30	4,994	1.30	4,171	1.35	3,985	1.21
Montana - all	3,144	.60	3,384	.66	3,707	.69	3,022	.65	2,378	.62	2,130	.69	2,130	.69
Washington - all	8,635	.51	8,519	.50	8,521	.47	8,302	.46	8,186	.48	7,592	.51	7,460	.46
North Dakota and South Dakota:														
North Dakota - all	1,288	.29	1,650	.33	1,868	.35	1,700	.36	1,519	.40	1,740	.56	1,739	.53
South Dakota - all	32	.00	34	.00	13	.00	13	.00	8	.00	4	.00	4	.00
Total, So. Dakota and So. Dakota	1,320	.29	1,684	.33	1,881	.35	1,713	.36	1,527	.40	1,744	.56	1,743	.53
All Other Southern States 18/	38	.01	27	.01	20	.00	28	.01	25	.01	23	.01	23	.01
GRAND TOTAL - DIVISION NO. V	31,296	6.02	31,509	6.23	32,233	6.02	27,576	5.90	22,297	5.84	19,414	6.27	18,891	5.94
Alaska - all														
Alaska - all	104	.02	126	.03	101	.02	120	.03	106	.03	103	.03	-	-
UNITED STATES														
	517,763	100.00	500,745	100.00	534,989	100.00	467,586	100.00	382,089	100.00	309,710	100.00	287,940	100.00

1/Includes U. S. Coal Commission Field No. 6 Allegheny; 7 Broad Top; 9 also Central Pennsylvania.
 2/Includes U. S. Coal Commission Field No. 3 Somerset.
 3/Includes U. S. Coal Commission Field No. 10 Maryland-Potomac (or Maryland plus Grant, Mineral, and Tucker counties, West Virginia).
 4/Includes U. S. Coal Commission Fields No. 1 Pittsburgh; 2 Cumberlandville; 3 Westerlo-Walton; 4 ab Prosper; 5 Butler-Mercer.
 5/Includes Boone, Hancock, Marshall and Ohio counties in West Virginia.
 6/Includes Hancock, Precote, Harlow, Harrison, Taylor, Lewis, Barbour, Elmer, Upshur, Randolph, Braxton, and Webster counties, and Nicholas County on Baltimore and Ohio Railroad (or U. S. Coal Commission Fields No. 11 Fairmont and No. 14 also, except City and Kanawha counties).
 7/Includes U. S. Coal Commission Fields No. 17 Fog River; 18 Peachblow; 19 Fishing Gull; 20 New River; 21 Virginia Anthonite; 22 Richmond Basin; 23 North Carolina.
 8/Includes mines in City and Kanawha counties in U. S. Coal Commission Field No. 24 also; 13 Mason County; 14 Putnam County; 15 Logan; 16 Boone; 17 Kanawha; 18 Coal River; 19 Logan; 20 Southwestern Virginia; 21 Clinch Valley; 22 Northwestern Kentucky; 23 Hazard; 24 Harlan; 25 Southern Appalachian; 26 Jellico; 27 Putnam; and northern part of No. 28, namely, mines in Anderson, Morgan, and Boone counties and Cumberland County except on the Nashville, Chattanooga and St. Louis Railroad. (This includes all high volatile districts of Southern West Virginia, Western Kentucky, Virginia, and Northern Tennessee).
 9/Includes U. S. Coal Commission Field No. 41 Western Kentucky.
 10/Includes Boone, Grand, Hamilton, Harlow, Elmer, Seelye, Van Buren, Warren, White counties, and mine in Cumberland County on the Nashville, Chattanooga and St. Louis R.R.
 11/Includes all counties in Oklahoma except LeFlore, Nowata, and Sequoyah.
 12/Includes LeFlore, Nowata, and Sequoyah counties.
 13/Includes mines in Colorado except those included in Northern Colorado. Also, Colfax County, New Mexico.
 14/Includes all counties in New Mexico except Colfax.
 15/Includes Adams, Arapahoe, Boulder, Douglas, Elbert, El Paso, Jackson, Jefferson, Larimer, and Weld counties.
 16/Includes Lincoln, Sweetwater, and Uinta counties.
 17/Includes all counties in Wyoming except those in Southern Wyoming.
 18/Includes Arizona, California, Idaho, Nebraska, Nevada, and Oregon.

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SOURCES OF COAL USED FOR RAILROAD FUEL, 1929

A REPORT IN COOPERATION WITH THE BROOKINGS INSTITUTION

The following tables analyze the sources of railroad fuel coal received by Class I railroads in 1929. They are based on reports courteously supplied to the Bureau of Mines by the fuel agents of the individual roads. The Institute of Economics of the Brookings Institution has collaborated in the planning of the investigation and the analysis of the results. The year 1929 was selected for analysis, because comparable figures have been obtained for other classes of consumers, so as to give for the first time a fairly complete picture of the sources of coal used in each part of the country. It is believed that the results will be useful both to railroad fuel agents and to sales managers and distributors of coal.

The striking changes in the sources of railroad fuel since the war are summarized in the diagram on page 1 of the accompanying Monthly Distribution Report.

FUEL COAL DELIVERED TO CLASS I RAILROADS, BY MINING DISTRICTS,
1917, 1928, AND 1929, IN NET TONS

Mining district	1917	1928	1929	Per cent 1929 was of 1917
Central Pennsylvania	16,163,708	9,508,886	9,462,326	52.1
Somerset-Meyersdale	2,575,647	876,148	901,978	35.0
Cumberland-Piedmont	524,462	413,023	646,614	123.3
Western Pennsylvania ^a	14,482,014	16,362,752	17,707,478	122.3
Nor. and East. Ohio; Panhandle	8,478,019	6,660,919	6,913,745	105.1
Southern Ohio	4,432,057	895,294	1,675,608	37.8
Northern West Virginia	5,839,967	10,660,372	11,150,408	190.9
Kanawha, Logan, Kenova-Thacker New River	6,322,007	11,578,976	10,622,769	168.0
Pocahontas	^b 2,224,395	126,287	102,807	31.9
Virginia	2,909,893	2,919,513	3,086,804	106.0
North Carolina	- - -	47,320	42,187	-
Northeastern Kentucky ^c	470,069	501,207	642,307	136.6
Hazard	250,000	752,207	797,810	319.1
Southeastern Kentucky	1,071,971	2,086,270	2,010,373	187.5
Tennessee	2,377,884	2,538,581	2,335,956	98.2
Alabama	5,311,857	4,572,705	5,135,611	96.7
Michigan	345,415	398,316	482,212	139.6
Illinois	33,696,513	18,761,214	19,910,681	59.1
Indiana	7,038,408	5,487,397	6,111,030	86.8
Western Kentucky	2,756,025	4,196,625	4,203,264	150.2
Iowa	4,369,482	1,401,595	1,563,547	35.8
Kansas and Missouri	5,102,966	1,706,840	1,858,327	36.4
Arkansas	65,069	534,267	431,750	65.1
Oklahoma	2,233,022	1,406,155	1,487,285	66.6
Texas	910,311	1,109,589	106,457	11.7
North Dakota	26,355	30,840	28,911	109.7
Montana	2,109,728	2,147,352	2,183,590	103.5
Wyoming	5,259,437	4,232,365	4,407,795	83.8
Colorado	2,967,819	2,290,481	2,189,776	73.8
New Mexico	1,979,673	1,449,444	1,368,296	69.0
Utah	912,500	726,139	730,461	80.1
Washington	1,963,818	659,647	881,491	44.9
Oregon	2,101	1,140	5,743	273.3
Canada	585,139	254,820	267,863	45.8
Confiscated and unknown	1,685,746	263,109	101,838	6.0
Total bituminous	150,083,327	118,070,039	124,159,938	82.7
Anthracite	5,293,301	3,569,530	3,162,727	59.7
Grand total	155,376,628	121,639,569	127,322,665	81.9

(a) Includes Pittsburgh, Westmoreland, Connellsville, Freeport, and Northwestern Pennsylvania. (b) There is a possibility that about 400,000 tons of coal in the New River district in 1917 was high volatile coal from Kanawha district. If so, the percentage for 1929 as compared with 1917 for New River and Pocahontas combined would amount to about 39 per cent instead of 31.9 per cent as shown in the table. (c) Includes tonnages derived from the McRoberts district on the Louisville and Nashville Railroad which amounted to 313,046 tons in 1917; 246,136 in 1928; and 264,903 in 1929.

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These figures include coal used by Class I railroads at shops, round-houses, and stations as well as for locomotive fuel. They do not include Class II railroads, whose consumption is about 1,177,000 tons, or switching and terminal companies, whose consumption is about 3,233,000 tons. The figures represent receipts, which is not exactly the same as consumption.

The following table shows that there are wide variations in the percentages of total railroad fuel coal moving from the different mining districts on which freight was paid and on which no freight was paid. Where the percentage of the tonnage on which no freight was paid was high, the indications are that the mining district has an advantage in marketing coal to the railroads. Ninety per cent or more of the railroad tonnage from the following mining districts paid no freight in 1929: West Virginia Panhandle, Michigan, Iowa, Kansas-Missouri, Arkansas, Oklahoma, Texas, North Dakota, Montana, Northern Wyoming, New Mexico, Washington, North Carolina, and Oregon.

RAILROAD FUEL COAL ON WHICH FREIGHT WAS PAID AND ON WHICH
NO FREIGHT WAS PAID, BY MINING DISTRICTS, 1929, IN NET TONS

Mining district	Freight paid		No freight paid		Total Net tons
	Net tons	Per cent	Net tons	Per cent	
Central Pennsylvania	3,822,090	40.4	5,640,236	59.6	9,462,326
Scmerset-Meyersdale	516,928	57.3	385,050	42.7	901,978
Cumberland-Piedmont	237,593	36.7	409,021	63.3	646,614
Connellsville and Westmoreland	803,731	14.1	4,880,990	85.9	5,684,721
Pittsburgh	3,344,289	48.7	3,516,211	51.3	6,860,500
Northern Pennsylvania	1,316,166	25.5	3,846,091	74.5	5,162,257
Northern and Eastern Ohio	3,197,697	49.5	3,261,367	50.5	6,459,064
Southern Ohio	469,043	28.0	1,206,565	72.0	1,675,608
Panhandle	185,220	7.5	2,269,461	92.5	2,454,681
Northern West Virginia	7,428,787	66.6	3,721,621	33.4	11,150,408
Kanawha	1,323,867	40.6	1,940,655	59.4	3,264,522
Logan	3,006,912	70.7	1,244,383	29.3	4,251,295
Kenova-Thacker	701,429	22.6	2,405,553	77.4	3,106,982
New River	47,905	46.6	54,902	53.4	102,807
Focahontas	85,980	14.1	521,810	85.9	607,790
Virginia	1,192,639	38.6	1,893,165	61.4	3,085,804
North Carolina	- - -	- -	42,187	100.0	42,187
Northeastern Kentucky	218,029	33.9	424,278	66.1	642,307
Hazard	298,925	37.5	498,885	62.5	797,810
Southeastern Kentucky	485,935	24.2	1,524,438	75.8	2,010,373
Tennessee	471,276	20.2	1,864,680	79.8	2,335,956
Alabama	1,266,567	24.7	3,869,044	75.3	5,135,611
Michigan	198	0.1	482,014	99.9	482,212
Illinois	3,940,939	19.8	15,969,742	80.2	19,910,681
Indiana	991,077	16.2	5,119,953	83.8	6,111,030
Western Kentucky	987,878	23.5	3,215,386	76.5	4,203,264
Iowa	46	- -	1,563,501	100.0	1,563,547
Kansas and Missouri	90,063	4.8	1,768,264	95.2	1,858,327
Arkansas	6,230	1.4	425,520	98.6	431,750
Oklahoma	126,274	8.5	1,361,011	91.5	1,487,285
Texas	7,636	7.2	98,821	92.8	106,457
North Dakota	1,481	5.1	27,430	94.9	28,911
Montana	- - -	- -	2,183,590	100.0	2,183,590
Northern Wyoming	- - -	- -	434,006	100.0	434,006
Southern Wyoming	409,017	10.3	3,564,770	89.7	3,973,787
Colorado	871,898	39.6	1,317,878	60.2	2,189,776
New Mexico	142	- -	1,366,154	100.0	1,366,296
Utah	359,352	49.2	371,129	50.8	730,481
Washington	18,041	2.0	863,450	98.0	881,491
Oregon	- - -	- -	5,743	100.0	5,743
Canada	61,983	23.1	205,880	76.9	267,863
Confiscated and Unknown	93,176	91.5	8,662	8.5	101,838
Total Bituminous	38,386,439	30.9	85,773,499	69.1	124,159,938
Anthracite	254,643	8.1	2,908,084	91.9	3,162,727
Grand total	38,641,082	30.3	88,681,583	69.7	127,322,665

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M.C.D. No. 8 FUEL COAL DELIVERED TO CLASS I RAILROADS, BY PRODUCING DISTRICTS AND BY CONSUMING REGIONS, IN 1927, IN NET TONS 10556

Mining district	New England region	Great Lakes region	Central Eastern region	Pocahontas region	Southern region	Northwestern region	Central Western region	Southwestern region	Total
Central Pennsylvania	850,379	6,567,047	2,014,730	-	-	170	-	-	9,462,326
Somerset-Meyersdale	-	155	901,823	-	-	-	-	-	901,978
Cumberland-Piedmont	-	5,715	640,899	-	-	-	-	-	646,614
Connellsville and Westmoreland	780,265	285,267	5,019,189	-	-	-	-	-	5,684,721
Pittsburgh	-	2,573,845	2,958,297	-	-	1,328,358	-	-	6,860,500
Northern Pennsylvania	-	1,326,002	3,836,255	-	-	-	-	-	5,162,257
Northern and Eastern Ohio	-	2,037,792	2,847,966	-	-	1,513,706	-	-	6,449,064
Northern Ohio	-	1,049,876	612,636	-	-	13,096	-	-	1,675,608
Southern Ohio	-	43,593	2,320,088	-	-	95,000	-	-	2,464,681
Panhandle	-	-	-	-	-	-	-	-	-
Northern West Virginia	1,303,704	3,070,192	5,303,809	1,788,888	323,982	1,472,703	-	-	11,180,408
Kanawha	-	1,107,536	43,965	1,244,383	194,232	44,405	-	151	3,264,522
Logan	1,360,935	1,153,267	224,073	2,465,553	418,276	-	-	-	4,251,295
Kenova-Thacker	154	88,508	194,296	57,105	-	195	-	-	3,106,982
New River	40,189	2,249	747	522,535	-	397	-	-	102,807
Pocahontas	59,697	4,570	10,113	201,018	-	10,875	-	-	607,790
Virginia	-	-	47	-	-	311	-	-	3,085,504
North Carolina	-	-	-	187,617	-	-	-	-	42,187
Northeastern Kentucky	-	-	156,262	-	-	-	-	-	642,307
Hazard	-	8,549	236,661	-	-	53,218	-	-	797,810
Hazard	-	55,449	247,576	-	-	-	-	-	2,010,373
Southeastern Kentucky	-	25,522	202,712	-	-	-	-	-	2,335,956
Tennessee	-	-	-	-	1,782,139	-	-	-	5,145,611
Alabama	-	-	-	-	2,334,241	-	-	1,715	2,010,373
Michigan	-	-	-	-	4,517,884	-	-	617,727	5,145,611
Illinois	-	482,212	-	-	-	-	-	-	482,212
Indiana	-	2,595,432	1,820,332	-	3,276,008	4,576,962	5,615,924	2,025,903	19,910,681
Western Kentucky	-	303,573	2,316,289	-	443,323	2,969,052	18,793	-	6,111,030
Iowa	-	247,695	173,902	-	3,454,709	52,713	53,962	202,283	4,293,264
Kansas and Missouri	-	39,809	-	-	-	515,015	1,048,726	-	1,563,547
Arkansas	-	35,267	-	-	-	11,879	1,048,726	1,364,385	1,858,327
Oklahoma	-	-	-	-	-	95	-	-	431,655
Texas	-	-	-	-	-	-	816,197	671,088	1,487,285
North Dakota	-	-	-	-	-	-	45,439	61,018	106,457
Montana	-	-	-	-	-	28,911	-	-	28,911
Northern Wyoming	-	-	-	-	-	2,183,530	-	-	2,183,530
Southern Wyoming	-	-	-	-	-	25,213	408,795	-	434,008
Colorado	-	-	-	-	-	184,419	3,789,368	-	3,973,787
New Mexico	-	-	-	-	-	410	1,072,008	217,358	2,182,776
Utah	-	-	-	-	-	-	1,765,238	58	1,765,296
	-	-	-	-	-	88	730,393	-	730,481

M.C.D. FUEL COAL DELIVERED TO CLASS I RAILROADS, BY PRODUCING DISTRICTS AND BY CONSUMING REGIONS, IN 1929, IN NET TONS (Cont'd) 19866

Mining district	New England region	Great Lakes region	Central eastern region	Pocahontas region	Southern region	North-western region	Central Western region	South-western region	Total
Washington	-	-	-	-	-	881,491	-	-	881,491
Oregon	-	-	-	-	-	24,863	5,743	-	5,743
Canada	43,000	-	-	-	-	52,846	-	-	267,863
Confiscated and Unknown	-	-	-	6,858	223	-	11,774	30	101,838
Total bituminous	4,088,323	23,242,329	31,870,863	6,413,957	20,407,178	16,236,581	16,307,336	5,593,371	124,159,938
Anthracite	10,479	1,851,157	1,206,931	133	1,728	2,262	-	37	3,162,727
Grand total	4,098,802	25,093,486	33,167,794	5,414,090	20,408,906	16,238,843	15,307,336	5,593,408	127,322,665

Comparability of reports from fuel agents and from traffic managers:- Because of differences in coal trade terminology the fuel agents did not always use the same district names in reporting their purchases but every effort has been made to keep the district classification as constant as the records of the carriers permit. The figures are as reported by the fuel agents of the consuming railroads and therefore differ slightly from the shipments of railroad fuel out of each mining district, as reported by the traffic managers of the originating carriers. See Supplement to Monthly Coal Distribution Report No. 1, pages 1-2. In a few cases the differences are rather large due to the fact that the purchasing agents defined the boundaries of the district differently from the traffic managers. It should be noted, also, that the figures shown here represent all coal received by railroad including all-rail, tide-water, and lake cargo while the traffic managers reported only the all-rail railroad fuel.

Origin by districts, 1917, 1928 and 1929:- The first table shows the quantity originating in each mining district, and for purposes of comparison the corresponding figures for 1917 are given. In 1917 the Class I roads purchased 150,037,527 tons of bituminous coal. The 1929 purchases were thus only 82.7 per cent of those in 1917. The decrease in comparison with 1917, however, was not uniformly distributed among the mining districts. In general, the high-volatile fields of West Virginia and Kentucky show a large increase in sales to the railroads, while the low-volatile fields and many of the northern and western high-volatile fields show a very sharp decline.

Railroad fuel coal delivered to Class I railroads, by all-rail, by tide-water, and by Great Lakes:- In 1929, 120,923,932 tons or 94.9 per cent of the coal delivered to Class I railroads, moved all-rail, 1.4 per cent by tide-water, and 3.7 per cent by way of the Great Lakes. The railroads of the New England Region received 41.8 per cent of their fuel coal by tide-water while the railroads of the Northwestern Region received 27.8 per cent of their tonnage by way of the Great Lakes.

Source of coal by railroad regions, 1929:- The last table shows the source of coal received by the Class I railroads in the eight railroad regions established by the Interstate Commerce Commission. The railroads in the various regions, generally speaking, drew fuel coal from many mining districts, yet the greater percentage of their tonnage was obtained from a few mining districts. Usually, the districts from which the bulk of the tonnage was obtained were in close proximity to the railroad region, there being exceptions, however. The railroads in the New England region drew their coal chiefly from Central Pennsylvania, Northern West Virginia, and Logan. The railroads of the Northwest obtained fuel coal from mining districts in the Northwest, the Middle West, and from the Appalachian area, by way of the Great Lakes.

By W. H. Young and F. G. Tryon,
 Statistics Section, Coal Division.
 C. P. WHITE, HEAD, COAL DIVISION.

March 21, 1932.

DISTRIBUTION OF THE TOTAL NATIONAL SUPPLY OF MINING COAL IN 1929.
DIVIDED BETWEEN INTERSTATE, INTRASTATE, AND RAILROAD FUEL.

(Compiled from the reports and original records of the Bureau of Mines so as to segregate interstate from intrastate tonnage as accurately as possible.
Railroad fuel has to be shown separately since there is no possible way of telling just where it is consumed, although it is known that the great bulk of it moves across State lines or is burned in locomotives hauling trains that cross State lines. Only the fuel delivered to railroads subject to the jurisdiction of the Interstate Commerce Commission has been included (Classes I, II, and III, switching and terminal).
To include the fuel interstate delivered to other carriers, the reports permit accurate separation of shipments to the Great Lakes and to other ports, in order to complete the picture, in view of the fact that the reports are given by States on the basis of all available data. The possible error in such estimates can be no significant effect on the result.
Figure includes, for convenience, Minita and the small production of anthracite and semi-anthracite outside of Pennsylvania. Alaska, however, is not included.)

Item	Net tons	Percent of balance available for sale (Item 3)
1. Total supply accounted for <u>A</u>	536,605,000	X X
2. Deduct coal-mine fuel, not available for sale <u>B</u>	4,660,000	X X
3. Balance, available for sale	531,945,000	100.00
4. Local sales by truck and wagon, used by employees, or taken by railroads (exclusive of <u>B</u>)	23,253,000	4.37
5. Coal equivalent of beehive coke shipped from mines <u>C</u>		
6. INTRASTATE destinations	4,255,000	0.81
7. INTRASTATE destinations	4,833,000	0.91
8. RAILROAD FUEL delivered to carriers subject to jurisdiction of the Interstate Commerce Commission <u>D</u>		
9. All-rail (or river) deliveries <u>E</u>	130,046,000	22.57
10. Via tidewater <u>F</u>	1,677,000	0.31
11. Via Great Lakes <u>G</u>	4,678,000	0.88
12. INTRASTATE (and foreign) shipments to OTHER consumers (including steamship fuel <u>H</u>)		
13. All-rail (or river) <u>I</u>	184,466,000	36.56
14. Via tidewater <u>J</u>	23,916,000	6.16
15. Via Great Lakes <u>K</u>	24,427,000	6.47
16. INTRASTATE shipments to OTHER consumers (including steamship fuel <u>L</u>)		
17. All-rail (or river) <u>M</u>	106,750,000	20.64
18. Via tidewater <u>N</u>	1,482,000	0.28
19. Via Great Lakes <u>O</u>	95,000	0.02
20. RECEIPTS		
21. INTRASTATE (and foreign) shipments plus railroad fuel delivered to carriers subject to jurisdiction of the Interstate Commerce Commission <u>P</u>	362,615,000	72.79
22. INTRASTATE shipments plus local mine <u>Q</u>	133,433,000	26.21
23. Great total, available for sale	531,945,000	100.00

DISTRIBUTION OF THE TOTAL NATIONAL SUPPLY OF BITUMINOUS COAL IN 1929.
DIVIDED BETWEEN INTERSTATE, INTRASTATE, AND RAILROAD FUEL.

As the figures represent distribution, involve changes in stocks, and are taken from several sources, they differ slightly from the production, which was reported by the mine operators as 536,867,982 tons in 1929, not including Alaska.
Total as reported by mine operators.
Number of operators market part of their coal in the form of coke, made in heating areas at the mines. In 1929, they reported shipping 3,003,112 tons of coke to interstate destinations and 3,406,137 tons to interstate destinations, and the total tonnage of raw coal charges in the areas has been reported and accordingly.
About 5 percent of the railroad fuel coal is used by the carriers in shops, round-houses, and stations.
The other 95 percent is used as locomotive or all-weathering carriers to the Bureau of Mines, supplemented by records from the Bureau of Class I roads, includes all-rail (or all-river) deliveries to Class I, II, and III, switching and terminal railroads, so far as records of reporting companies could identify the same.
Reported to the Bureau of Mines by the fuel agents of all Class I roads.
The trifling amount of steamship fuel used by river vessels are credited to the States in which the coal was delivered to the vessel. In the more important Great Lakes and tidewater tanker trades, nearly all coal supplied for steamship fuel is known to be shipped across State lines before delivery to the vessel or else to be burned on voyages to foreign countries or on coastwise voyages between more than one State. At some ports, such as Cleveland, Ohio, coal from mines within the State is delivered to tug, ferris, or other local vessels that do not coast to ports in another State, and such coal, as far as it can be estimated, is counted as intrastate.
From U. S. Bureau of Mines, Supplements to Monthly Distribution Reports Numbers 1, 2, 4, and 6. A small portion of the tonnage which is originated in coal fields that lie in two adjoining States and shipped to distant points within these two States has been apportioned between appropriate and intrastate, partly by estimate. The possible effect of such estimates upon the total tonnage of distribution (Supplements to Monthly Distribution Reports Numbers 1, 2, 4, and 6) is negligible.
In the case of the total tonnage accounted for as shipped on the basis of the following information: Baltimore, Hamton Roads, and Charleston allow the tonnage handled by field of origin and by destination. This permits positive identification of nearly all the interstate movement. A few items which are partly interstate and partly intrastate have been apportioned by estimate, but the possible effect of such estimate upon the total is not significant. The total tonnage traced back to each field of origin in this way has been adjusted to agree with the total quantity reported by the traffic managers of the originating railroads as having left the mines in the field of origin and consigned to tidewater piers. A smaller apportionment, using various local sources of information, has been made for the small tonnage handled over tidewater piers on the Gulf and the Pacific Coast.

This method secured 1,462,000 tons of intrastate business and 27,487,000 tons of interstate business. Out of the latter figure, 1,677,000 tons is shown to have been railroad fuel, covered in item (10). Subtracting this leaves 3,936,000 tons of interstate tidewater business, and the total fuel available for interstate use is 3,936,000 tons.
Based upon detailed records of these docks, classified by railroad of origin and destination.
Partly interstate and partly intrastate movement have been apportioned by estimate, but the possible effect of such estimates upon the total is not significant. A slight adjustment has been made by deducting 86,000 tons from the indicated interstate shipments to consumers other than railroads, in order to make the final total agree with the quantity reported by the traffic managers of the originating railroads as leaving the mines and consigned to lake ports.
Note that these figures represent movement by vessel only. Shipments by car ferry are counted as all-rail.

$\frac{K}{I}$ Items (17) + (14) + (15) + (6) + (9) + (10) + (11).
 $\frac{L}{I}$ Items (17) + (16) + (19) + (4) + (7).

By F. G. Taylor and F. E. Young,
Coal Economics Division,
U. S. Bureau of Mines,
October 16, 1935.

HOW INTERSTATE RAIL SHIPMENTS OF BITUMINOUS COAL TO OTHER LARGE CITIES OF INDIANA, ILLINOIS AND OHIO WERE
COMPETED FROM INTERSTATE RAIL SHIPMENTS (1929 data)

(The analysis of INTER- and INTERSTATE competition shown in detail for Indianapolis in the preceding table is continued in summary form below. This table lists all destination cities which are shown in separate and comparable form in the records of the Ohio Bureau of Coal Statistics and the Illinois Freight Association in these 3 States characterized by large INTERSTATE shipments. Details can be supplied if desired.)

Destination city	Origin fields	Net tons shipped in by rail during 1929		
		INTERSTATE	INTERSTATE	Total
AKRON, Ohio	From same State - all Ohio fields	1,297,158	—	2,676,189
	From 6 other States - 19 fields	—	1,379,031	
	Percent of total	46.5%	51.5%	
ALKAL and PALMYRAVILLE, Ohio	From same State - all Ohio fields	7,023	—	742,663
	From 6 other States - 18 fields	—	735,640	
	Percent of total	0.9%	99.1%	
ALLIANCE, Ohio	From same State - all Ohio fields	164,503	—	252,385
	From 4 other States - 13 fields	—	87,822	
	Percent of total	65.2%	34.8%	
CANTON, Ohio	From same State - all Ohio fields	361,592	—	1,077,925
	From 5 other States - 16 fields	—	716,333	
	Percent of total	33.5%	66.5%	
CLEVELAND, Ohio	From Ohio fields	3,512	—	1,914,244
	From 6 other States - 19 fields	1,910,732	—	
	Percent of total	1/	1/	
CLEVELAND, Ohio	From same State - all Ohio fields	1,395,922	—	7,914,892
	From 6 other States - 20 fields	—	6,518,970	
	Percent of total	17.6%	82.4%	
COLUMBUS, Ohio	From same State - all Ohio fields	397,616	—	1,248,112
	From 6 other States - 18 fields	—	850,496	
	Percent of total	31.9%	68.1%	
DAYTON, Ohio	From same State - all Ohio fields	29,907	—	951,657
	From 6 other States - 16 fields	—	921,750	
	Percent of total	3.1%	96.9%	
DECATUR, Ohio	From same State - all Ohio fields	17,935	—	46,140
	From 4 other States - 13 fields	—	28,205	
	Percent of total	38.9%	61.1%	
FINDLAY, Ohio	From same State - all Ohio fields	50,025	—	147,841
	From 5 other States - 14 fields	—	97,816	
	Percent of total	33.8%	66.2%	
FOSTERIA, Ohio	From same State - all Ohio fields	21,963	—	72,093
	From 6 other States - 14 fields	—	50,130	
	Percent of total	30.5%	69.5%	
LEMA, Ohio	From same State - all Ohio fields	73,315	—	346,949
	From 5 other States - 15 fields	—	273,634	
	Percent of total	21.1%	78.9%	
LOREAIN and SOUTH LOREAIN, Ohio	From same State - all Ohio fields	114,474	—	2,344,530
	From 6 other States - 18 fields	—	2,230,056	
	Percent of total	4.9%	95.1%	
MANSFIELD, Ohio	From same State - all Ohio fields	118,701	—	226,572
	From 6 other States - 17 fields	—	107,871	
	Percent of total	52.4%	47.6%	
MARION, Ohio	From same State - all Ohio fields	27,237	—	172,428
	From 6 other States - 16 fields	—	145,191	
	Percent of total	15.8%	84.2%	
MARIETTA, Ohio	From same State - all Ohio fields	145,569	—	585,147
	From 4 other States - 12 fields	—	439,578	
	Percent of total	24.9%	75.1%	
MIAMI VALLEY, Ohio	From same State - all Ohio fields	5,624	—	1,852,418
	From 6 other States - 17 fields	—	1,846,794	
	Percent of total	0.3%	99.7%	
MARIETTA, Ohio	From same State - all Ohio fields	62,206	—	190,405
	From 6 other States - 17 fields	—	128,199	
	Percent of total	32.7%	67.3%	
SPRINGFIELD, Ohio	From same State - all Ohio fields	11,218	—	265,999
	From 6 other States - 16 fields	—	254,781	
	Percent of total	4.2%	95.8%	
TOLEDO, Ohio	From same State - all Ohio fields	344,869	—	2,044,753
	From 6 other States - 18 fields	—	1,699,884	
	Percent of total	16.9%	83.1%	
YOUNGSTOWN and MARIETTA VALLEY, Ohio	From same State - all Ohio fields	134,364	—	8,120,887
	From 6 other States - 20 fields	—	7,986,523	
	Percent of total	1.7%	98.3%	
PURE WAYS, Indiana	From same State - all Indiana fields	19,393	—	661,536
	From 8 other States - 22 fields	—	662,143	
	Percent of total	2.8%	97.2%	
GAS BELL, Indiana	From same State - all Indiana fields	600,441	—	2,268,667
	From 8 other States - 26 fields	—	1,668,226	
	Percent of total	26.5%	73.5%	
INDIANAPOLIS, Indiana	From same State - all Indiana fields	1,811,688	—	3,424,065
	From 8 other States - 25 fields	—	1,612,377	
	Percent of total	52.9%	47.1%	
SOUTH BEND, Indiana	From same State - all Indiana fields	112,576	—	614,986
	From 8 other States - 25 fields	—	502,410	
	Percent of total	18.3%	81.7%	
PEORIA, Illinois	From same State - all Illinois fields	960,353	—	1,131,731
	From 6 other States - 17 fields	—	171,378	
	Percent of total	84.9%	15.1%	
CHICAGO DISTRICT ^c (Illinois and Indiana)	From Illinois fields	8,478,000	1,615,000	10,093,000
	(To Illinois side)	—	(To Indiana side)	
	From Indiana fields	448,000	2,950,000	2,798,000
	(To Indiana side)	—	(To Illinois side)	
	From 7 other States - 25 fields	—	19,413,000	19,413,000
Total tonnage, Chicago district	8,926,000	23,378,000	32,304,000	
Percent of total	27.6%	72.4%	100.0%	

a/ 1930 data.

b/ The Cincinnati district includes Covington, Kentucky, and several adjacent small towns immediately south of the Ohio River. The entire movement from Ohio fields to the Cincinnati district was only 3,512 tons, all of which may be counted as interstate. Some part of the 1,910,732 tons shipped in from other States was doubtless Kentucky coal consigned to points south of the river and is also intrastate. It is clear, however, that the great bulk of the rail shipments consigned to the Cincinnati district are interstate. The Chicago district extends across the State line into Indiana. The total quantities shipped into the district as a whole are known accurately, but not the quantities coming into the Indiana as opposed to the Illinois portion. In order to complete the picture of intrastate and interstate movement, a rough apportionment has been made of the tonnages originating in these two States, based on known consumption. Shipments originating outside the two States of Illinois and Indiana are obviously interstate.

HOW INTRASTATE RAIL SHIPMENTS OF BITUMINOUS COAL TO INDIANAPOLIS
MEET COMPETITION FROM INTERSTATE RAIL SHIPMENTS (1929 data)

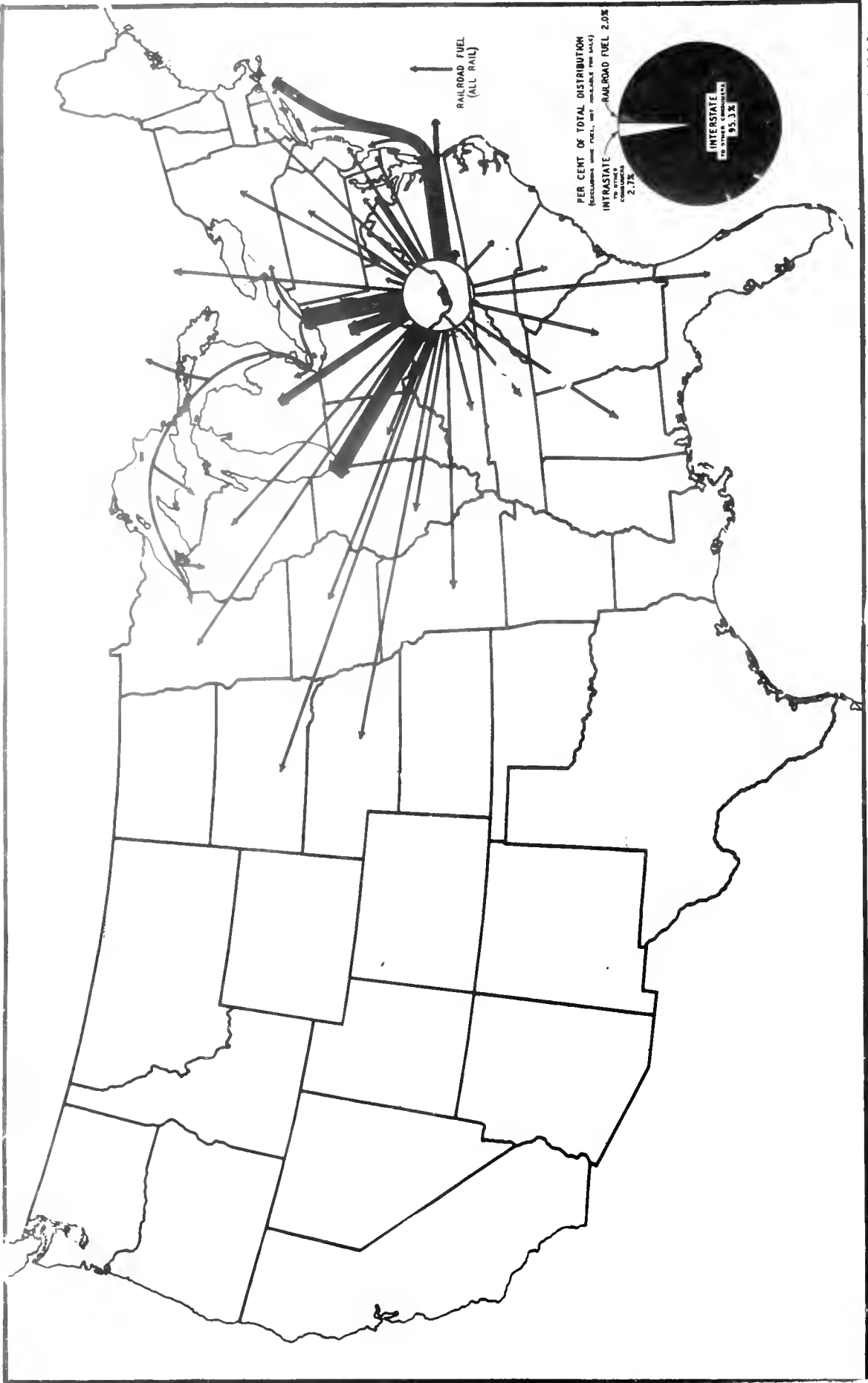
(Indianapolis is fairly representative of other cities in the large coal-producing States of Illinois, Indiana, and Ohio, where much of the local output is consumed INTRASTATE. In 1929 the city received 52.9 percent of its all-rail coal deliveries INTRASTATE from Indiana mines and 47.1 percent INTERSTATE from mines in 25 districts in 8 other States. The sources are shown in detail below.

The supplies of a number of other cities are summarized in the succeeding table. Source: Records of Ohio Bureau of Coal Statistics and Illinois Freight Association.)

Destination city	Origin fields	Net tons shipped in by rail during 1929		
		INTRASTATE	INTERSTATE	Total
INDIANAPOLIS, Indiana	In <u>same</u> State			
	All Indiana fields.....	1,811,688	—	1,811,688
	In <u>other</u> States			
	Big Sandy Ky.	—	24,222)	
	Kanawha-Logan W. Va.	—	732,111)	
	Kenova-Thacker W. Va.-Ky.	—	95,288)	
	McRoberts Ky.	—	17,025)	
	Hazard Ky.	—	79,831)	
	Harlan Ky.	—	32,810)	
	Southern Appalachian Ky.-Tenn.-Va.	—	1,288)	
	Southwest Virginia Va.	—	37,183)	
	Ex-river coal W. Va.-Ky.	—	145,240)	1,612,377
	Cumberland-Piedmont Md.-W. Va.	—	153)	
	New River W. Va.	—	39,360)	
	Winding Gulf W. Va.	—	52,363)	
	Pocahontas W. Va.-Va.	—	300,111)	
	Tug River W. Va.	—	42,708)	
	Fairmont W. Va.	—	8,036)	
	Western Pennsylvania Pa.	—	837)	
	Ohio (six fields) Ohio	—	1,261)	
	Southern (two fields) Ill.	—	2,091)	
Western Kentucky Ky.	—	459)		
Total Tons.....	1,811,688	1,612,377	3,424,065	
Percent.....	52.9%	47.1%	100.0%	

By F. G. Tryon and W. H. Young,
Coal Economics Division,
U. S. Bureau of Mines,
October 22, 1935.

DISTRIBUTION OF POCAHONTAS - TUG RIVER COAL, 1929



Map by J. A. Ryan and L. A. Shaw
Coal Resources of the United States
U. S. Geological Survey
Washington, D. C.

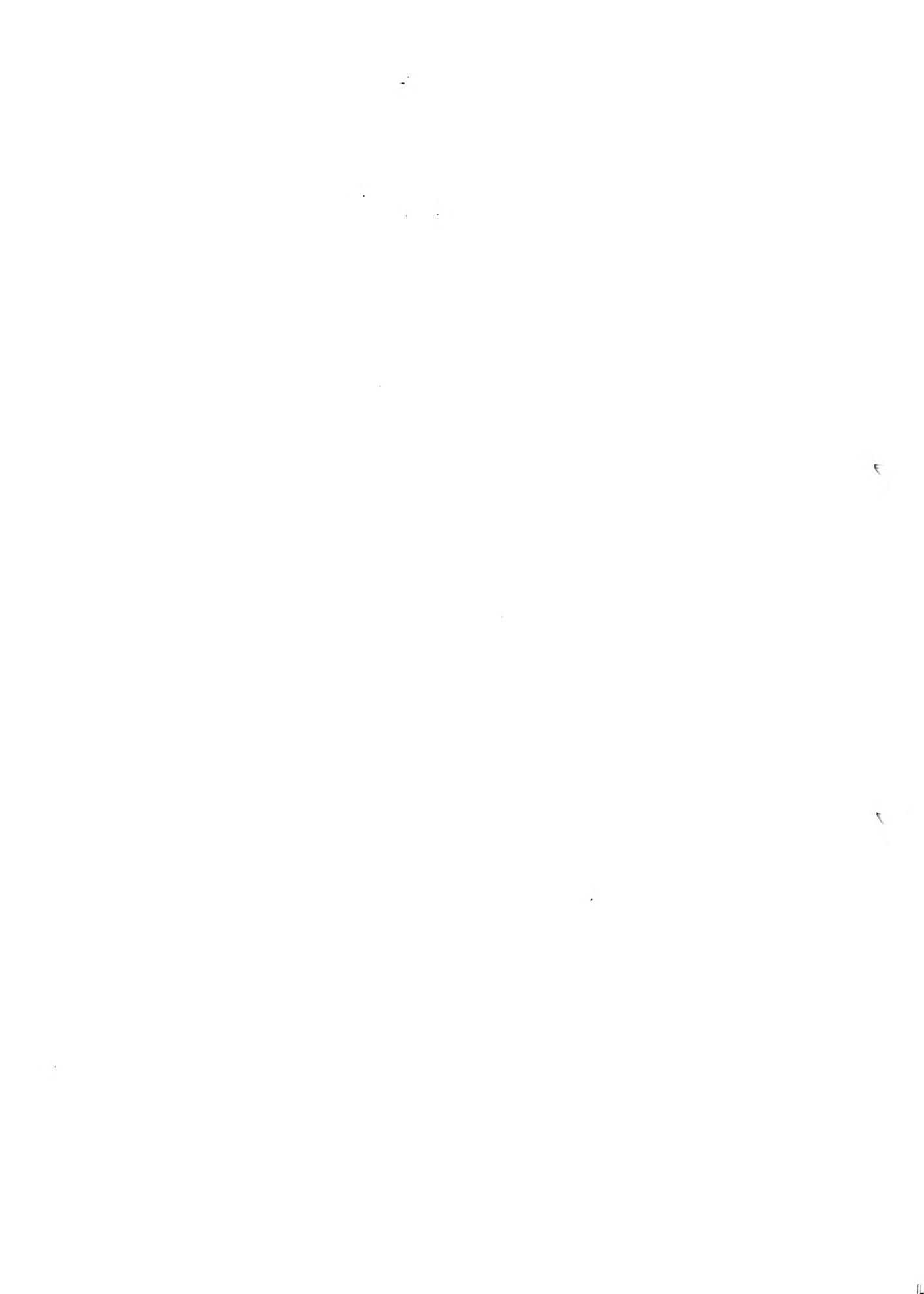
THIS MAP WAS PREPARED BY THE UNITED STATES GEOLOGICAL SURVEY UNDER THE SUPERVISION OF THE DIRECTOR OF THE BUREAU OF COAL AND MINERAL RESOURCES.

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APPENDIX TO
CHAPTER V.

COST TABLES

ECONOMIC SURVEY
OF THE
BITUMINOUS COAL INDUSTRY



Bituminous Coal

Cost Table 1.

Average Costs of Divisions I B/ and II B/ combined, including deep and strip mines, by months, November 1933 through January 1935.

	(Average Costs per Ton)				5 Mos. Total Average Cost	No. Composite April - Nov. '34	10 Mos. Total Average Cost	No. Composite April - Nov. '35
	1933	1934	1934	1935				
	Jan.	Feb.	March	April	Jan.	Feb.	March	April
Mine Labor	\$ 8968	\$ 9043	\$ 8972	\$ 8915	\$ 8901	\$ 8958	\$ 8811	\$ 1,0825
Mine Supplies	2301	2379	2482	2186	2105	2215	2164	2676
Miscellaneous & Fixed Charges	1,860	1,886	1,733	1,761	1,665	1,718	1,714	2,050
Production Cost	1,407	1,428	1,387	1,372	1,349	1,389	1,389	1,650
Selling & Administration	1,827	1,860	1,897	1,836	1,819	1,878	1,876	2,177
Total Cost	1,5904	1,5988	1,5384	1,5911	1,5690	1,5426	1,5426	1,8347
Average No. of Days Worked	16.8	16.1	17.8	17.8	20.4	18.9	18.2	15.2
No. of Mines Reporting	1053	1050	1006	992	1039	1033	993	969
Production (000 omitted) Tons	19,335	18,487	19,901	19,798	23,798	19,152	20,698	18,284

* A simple average of the total number of mines reporting for the several months.

B/ Excluding Western Kentucky for all months in order to have comparable data. Preamble did not report for March 1934.

C/ Excluding Iowa in order to have comparable data. Available for Nov. & Dec. '33 only.

D/ So. Sub. No. 1 & 2 reported April to Nov. 1934 as 8-month totals. These months not separately available.

Bituminous Coal

Cost Table 2.

Average Costs of Divisions I B/ and II B/ combined, deep mines only, by months, November 1933 through January 1935.

	(Average Costs per Ton)				5 Mos. Total Average Cost	No. Composite April - Nov. '34	10 Mos. Total Average Cost	No. Composite April - Nov. '35
	1933	1934	1934	1935				
	Jan.	Feb.	March	April	Jan.	Feb.	March	April
Mine Labor	\$ 9331	\$ 9337	\$ 9193	\$ 9185	\$ 9233	\$ 9100	\$ 9128	\$ 1,1091
Mine Supplies	2276	2359	2185	2180	2215	2164	2164	2620
Miscellaneous & Fixed Charges	1,821	1,848	1,716	1,746	1,687	1,718	1,714	2,087
Production Cost	1,428	1,454	1,411	1,411	1,417	1,417	1,417	1,698
Selling & Administration	1,818	1,854	1,886	1,845	1,858	1,878	1,876	2,177
Total Cost	1,5709	1,6099	1,5827	1,5508	1,5690	1,5426	1,5426	1,8347
Average No. of Days Worked	16.9	16.1	17.9	17.9	20.6	18.4	18.2	15.2
No. of Mines Reporting	1048	1018	972	945	1005	989	942	910
Production (000 omitted) Tons	18,622	17,538	18,896	18,831	22,717	18,610	19,629	17,197

* A simple average of the total number of mines reporting for the several months.

B/ Excluding Western Kentucky for all months in order to have comparable data. Preamble did not report for March 1934.

C/ Excluding Iowa in order to have comparable data. Available for Nov. & Dec. '33 only.

D/ So. Sub. No. 1 & 2 reported April to Nov. 1934 as 8-month totals. These months not separately available.

Bituminous Coal

Cost Table 3.

Average Costs of Division I, by months, November 1933 through January 1935.

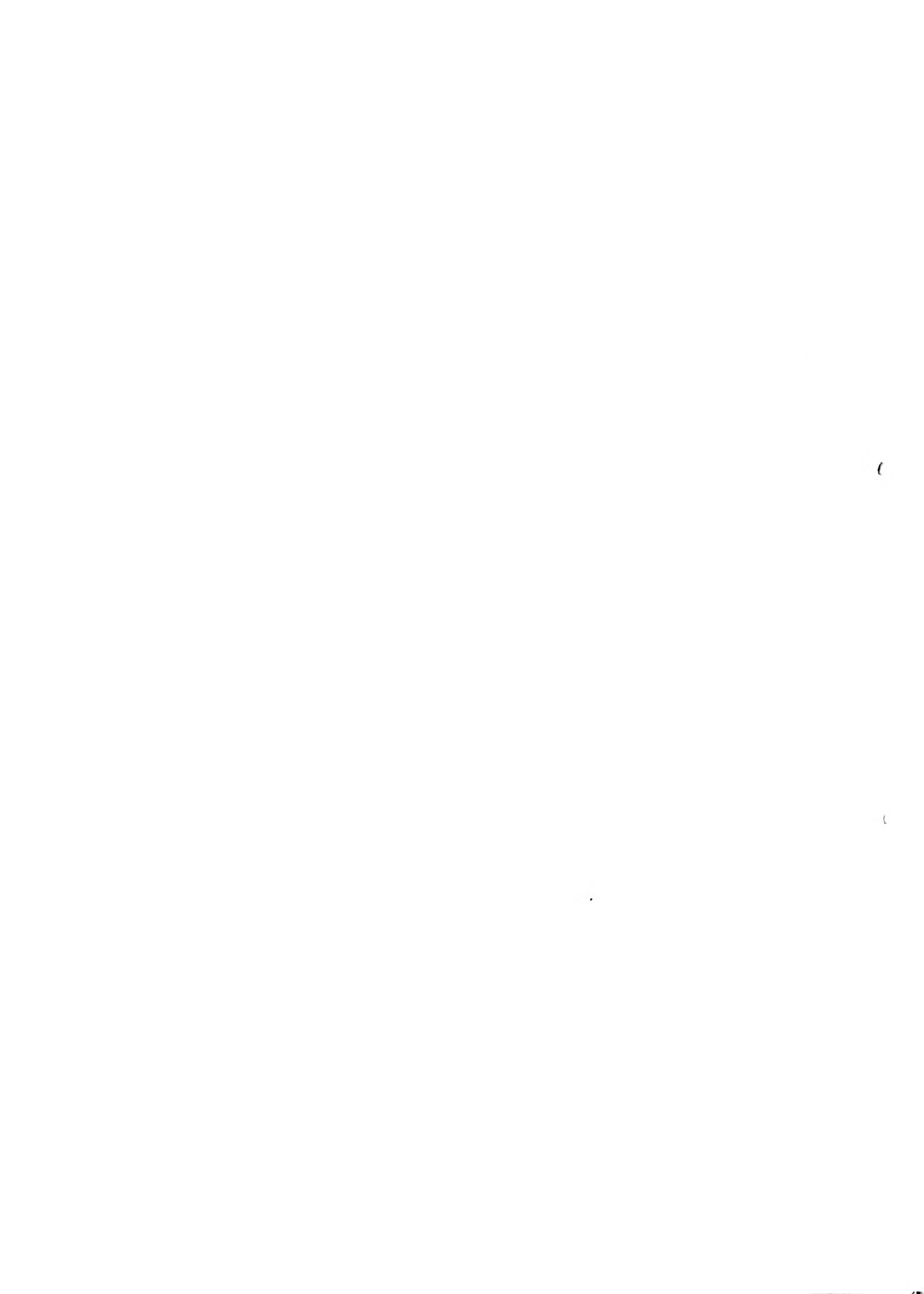
	(Average Costs per Ton)				5 Mos. Total Average Cost	No. Composite April - Nov. '34	10 Mos. Total Average Cost	No. Composite April - Nov. '35
	1933	1934	1934	1935				
	Jan.	Feb.	March	April	Jan.	Feb.	March	April
Mine Labor	\$ 9411	\$ 9551	\$ 9480	\$ 9383	\$ 9359	\$ 9427	\$ 9386	\$ 1,1503
Mine Supplies	2195	2330	2183	2186	2078	2158	2156	2657
Miscellaneous & Fixed Charges	1,821	1,848	1,716	1,746	1,687	1,718	1,714	2,087
Production Cost	1,428	1,454	1,411	1,411	1,417	1,417	1,417	1,698
Selling & Administration	1,818	1,854	1,886	1,845	1,858	1,878	1,876	2,177
Total Cost	1,5860	1,6519	1,6002	1,6004	1,5883	1,5883	1,5883	1,9568
Average No. of Days Worked	17.1	15.9	17.9	18.3	21.3	19.9	18.2	15.2
No. of Mines Reporting	892	872	835	828	872	865	818	805
Production (000 omitted) Tons	18,393	14,030	15,180	15,429	19,080	14,872	16,321	13,259

* A simple average of the total number of mines reporting for the several months.

B/ 8-month total including April through Nov. '34, Southern Subdivisions Nov. 1, and 2 are not separately available for these months, which necessitates showing the entire Division on the same basis on this Table

C/ See tables Subdivisional tables for monthly averages.

D/ Excluding Western Kentucky for the sake of comparability as it reported for Nov., Dec. 1933 and Jan. 1934, only. Also excluding Preamble for March, 1934.



Cost Table 4. Bituminous Coal - North M., by months, November 1933 through January 1935.

	Average Costs per Ton																
	1933		1934		1934		1934		1934		1935		10 Mos. Total				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Average Cost	% of Total Cost
Mine Labor	\$.9692	\$.9799	\$.9816	\$.9137	\$.9659	\$.9753	\$.9166	\$ 1.1713	\$ 1.1601	\$ 1.1197	\$ 1.2042	\$ 1.1807	\$ 1.1874	\$ 1.1917	\$ 1.1754	\$ 1.1898	61.46
Mine Supplies	.2157	.2262	.2160	.2170	.2039	.2155	.2536	.2916	.2869	.2761	.2466	.2674	.2674	.2622	.2429	.2601	13.48
Miscellaneous & Fixed Charges	1.2818	1.2988	1.2864	1.2875	1.2872	1.2822	1.3164	1.3255	1.3275	1.3182	1.3403	1.3131	1.3151	1.3176	1.2993	1.3212	16.04
Production Cost	1.4667	1.5007	1.4890	1.4782	1.4570	1.4712	1.7360	1.7464	1.7548	1.7404	1.8206	1.7404	1.7699	1.7715	1.7176	1.7671	91.58
Selling & Administration	1.1195	1.1405	1.1373	1.1372	1.1259	1.1316	1.1529	1.1561	1.1626	1.1554	1.1745	1.1564	1.1654	1.1609	1.1585	1.1625	8.42
Total Cost	1.5862	1.6412	1.6213	1.6154	1.5829	1.6028	1.8893	1.9065	1.9271	1.9102	1.9951	1.8968	1.9353	1.9524	1.8761	1.9296	100.00
Average No. of Days Worked	17.7	16.8	18.0	18.3	21.3	21.3	15.8	14.9	14.7	15.1	13.6	16.5	15.6	15.1	17.3	15.9	
No. of Mines Reporting	428	441	411	421	448	402	398	376	399	399	403	427	421	417	433	408	
Production (000 omitted) Tons	6,143	7,552	7,528	7,837	9,871	40,337	5,985	6,716	6,401	6,228	6,915	7,730	7,233	6,895	8,020	67,856	

* A simple average of the total number of mines reported for the several months.

1/ Divisions 1 - North includes: Eastern Sub. (cont. Md. & Upper Pot.); Western Penna.; Ohio, Michigan, Pennsylvania, No. West Virginia

2/ Excluding Pennsylvania for March, 1934.

Cost Table 5. Bituminous Coal - Average Costs of Division 1 - North M., by months, November 1933 through January 1935.

	Average Costs per Ton																
	1933		1934		1934		1934		1934		1935		10 Mos. Total				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Average Cost	% of Total Cost
Mine Labor	\$.9094	\$.9262	\$.9110	\$.9017	\$.9035	\$.9096	\$.9096	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1165	\$ 1.1191	59.44
Mine Supplies	.2238	.2385	.2085	.2122	.2122	.2161	.2553	.2571	.2571	.2571	.2571	.2571	.2571	.2571	.2571	.2571	13.54
Miscellaneous & Fixed Charges	1.3020	1.2901	1.2903	1.2899	1.2700	1.2927	1.3140	1.3140	1.3140	1.3140	1.3140	1.3140	1.3140	1.3140	1.3140	1.3132	16.65
Production Cost	1.4352	1.4688	1.4098	1.4058	1.3857	1.4204	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	89.61
Selling & Administration	1.1717	1.1890	1.1611	1.1611	1.1676	1.1743	1.1925	1.1925	1.1925	1.1925	1.1925	1.1925	1.1925	1.1925	1.1925	1.1925	10.39
Total Cost	1.6069	1.6648	1.5794	1.5689	1.5533	1.5947	1.6783	1.6783	1.6783	1.6783	1.6783	1.6783	1.6783	1.6783	1.6783	1.6829	100.00
Average No. of Days Worked	16.4	14.9	17.8	18.4	21.3	21.3	130.8	130.8	130.8	130.8	130.8	130.8	130.8	130.8	130.8	130.8	165.6
No. of Mines Reporting	468	431	414	407	430	430	385	385	385	385	385	385	385	385	385	385	345
Production (000 omitted) Tons	7,850	6,478	7,652	7,592	9,165	36,139	56,890	56,890	56,890	56,890	56,890	56,890	56,890	56,890	56,890	56,890	70,453

* A simple average of the total number of mines reported for the several months.

1/ Divisions 1 - South includes: Southern No. 1, Southern No. 2, Maryland, Upper Potomac, West Virginia. (Western Kentucky reported only for November, Dec. 1933 and January 1934; for sake of comparability was not included in these summaries; with Western Kentucky included, the averages would be as follows:
 Mine Labor \$.8996
 Mine Supplies .2220
 Miscellaneous & Fixed Charges 1.2945
 Production Cost 1.4464
 Selling & Administration 1.1703
 Total Cost 1.6663

2/ 6-month total including April through November 1934. Southern Subdivisions Nos. 1 and 2 are not separately available for these months, which necessitate showing the entire Division on the same basis on this table.

See tables, Subdivisional Tables for monthly averages.

3/ Excluding Western Kentucky for the sake of comparability as it reported for November, December, 1933 and January 1934, only. Also excluding Pennsylvania for March, 1934.

Bituminous Coal

Average costs of Eastern subdivision of Division I, by months, November 1933 through January 1935.

1933	1934												1935		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		Nov.	1934
Gov.	Do.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Jan.
Mine Labor	\$1,065	\$1,078	\$1,072	\$1,075	\$1,069	\$1,072	\$1,075	\$1,075	\$1,096	\$1,091	\$1,107	\$1,263	\$1,291	\$1,294	\$1,287
Mine Supplies	277	271	282	282	282	282	282	282	282	282	282	282	282	282	282
Miscellaneous & Fixed Charges	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290
Production Cost	1,632	1,639	1,644	1,647	1,641	1,644	1,647	1,647	1,668	1,663	1,679	1,945	1,945	1,945	1,945
Selling & Administration	1,710	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705	1,705
Total Cost	5,377	5,389	5,396	5,404	5,395	5,396	5,396	5,396	5,437	5,437	5,437	5,847	5,847	5,847	5,847
Average No. of Days Worked	16.4	17.1	19.0	18.1	20.9	18.4	14.1	13.0	13.7	14.4	13.4	16.9	16.3	16.5	16.2
No. of Mines Reporting	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Production (000 omitted) Tons	2,166	2,102	2,822	2,590	3,113	1,877	1,691	1,732	1,792	1,943	1,785	2,334	2,177	2,234	2,944

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Average Costs of Barmore area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

1933	1934												1935		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		Nov.	1934
Gov.	Do.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Jan.
Mine Labor	\$1,055	\$1,176	\$1,109	\$1,078	\$1,074	\$1,097	\$1,074	\$1,070	\$1,270	\$1,243	\$1,272	\$1,258	\$1,202	\$1,274	\$1,258
Mine Supplies	322	463	296	280	295	302	295	295	294	294	295	295	295	295	295
Miscellaneous & Fixed Charges	387	393	326	328	328	327	327	327	327	327	327	327	327	327	327
Production Cost	1,764	2,332	1,729	1,681	1,696	1,726	1,726	1,726	1,924	1,924	1,924	1,880	1,880	1,880	1,880
Selling & Administration	1,973	1,892	1,701	1,679	1,675	1,727	1,675	1,675	1,675	1,675	1,675	1,675	1,675	1,675	1,675
Total Cost	5,899	6,992	5,457	5,365	5,374	5,577	5,374	5,374	5,374	5,374	5,374	5,374	5,374	5,374	5,374
Average No. of Days Worked	14.5	14.2	15.4	16.1	18.3	18.5	12.4	13.5	16.2	14.8	13.1	17.1	16.4	17.3	19.4
No. of Mines Reporting	21	20	21	23	24	20	18	16	16	17	16	16	18	17	17
Production (000 omitted) Tons	205	185	208	252	292	1,142	153	158	174	194	163	222	219	230	259

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Average Costs of Blacklick area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

1933	1934												1935		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		Nov.	1934
Gov.	Do.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Jan.
Mine Labor	\$1,228	\$1,181	\$1,181	\$1,182	\$1,151	\$1,157	\$1,149	\$1,142	\$1,349	\$1,351	\$1,355	\$1,309	\$1,276	\$1,294	\$1,321
Mine Supplies	250	251	251	251	251	251	251	251	251	251	251	251	251	251	251
Miscellaneous & Fixed Charges	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282
Production Cost	1,760	1,714	1,714	1,714	1,684	1,689	1,681	1,681	1,922	1,922	1,922	1,862	1,862	1,862	1,862
Selling & Administration	2,123	2,152	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284
Total Cost	5,937	5,980	5,980	5,980	5,980	5,980	5,980	5,980	6,272	6,272	6,272	6,272	6,272	6,272	6,272
Average No. of Days Worked	13.3	16.7	17.6	17.6	22.0	19.6	14.2	12.6	15.4	15.0	11.8	16.0	16.2	18.3	16.6
No. of Mines Reporting	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4
Production (000 omitted) Tons	40	47	64	64	81	232	42	43	47	56	44	60	40	72	69

* A simple average of the total number of mines reported for the several months.

Average Costs of Broadtop area of Eastern subdivision, (Division 1) by month, November 1933 through January 1935

	1934												10 Mo. Total Average Cost	1934 Total % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October			Nov.	
(Average Cost, per ton)																
5 Mo. Total Average Cost																
Mine Labor	\$1.3589	\$1.3665	\$1.3562	\$1.3675	\$1.3528	\$1.3535	\$1.3663	\$1.3668	\$1.3689	\$1.3661	\$1.3636	\$1.3699	\$1.3699	\$1.3676	\$1.3703	\$1.3682
Mine Supplies	.4522	.3683	.4186	.4171	.3775	.3918	.4175	.4627	.4529	.4738	.4610	.4430	.4277	.4826	.4757	.4697
Miscellaneous & Fixed Charges	.1827	.2079	.2941	.2927	.2371	.3039	.3177	.3438	.3566	.3501	.3458	.3349	.3283	.3126	.3253	.3287
Production Cost	2.1538	2.0427	2.0709	2.0733	1.9390	2.0492	2.3447	2.4358	2.4774	2.4100	2.4637	2.3692	2.3480	2.3888	2.3082	2.4632
Selling & Administration	.1934	.1653	.1385	.1390	.1180	.1587	.1719	.1937	.2008	.2326	.1902	.2130	.2084	.2104	.2027	.2017
Total Cost	2.3472	2.2080	2.2094	2.2469	2.0780	2.2079	2.5354	2.6107	2.6782	2.6426	2.6539	2.5899	2.5584	2.5809	2.5109	2.6049
Average No. of Days Worked	13.4	20.3	20.6	19.3	21.1	19.4	17.6	16.2	14.0	14.9	14.5	11.9	16.1	17.2	20.0	104.6
No. of Mines Reporting	7	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Production, (000 omitted) Tons	46	56	60	59	68	68	52	44	42	42	45	37	50	55	64	488

* A simple average of the total number of mines reporting for the several months

Average Costs of Clearfield area of Eastern subdivision, (Division I) by month, November 1933 through January 1935

	1934												10 Mo. Total Average Cost	1934 Total % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October			Nov.	
(Average Cost, per ton)																
5 Mo. Total Average Cost																
Mine Labor	\$1.0990	\$1.0822	\$1.0729	\$1.0719	\$1.0653	\$1.0751	\$1.3112	\$1.3385	\$1.3496	\$1.3052	\$1.3245	\$1.3195	\$1.2931	\$1.2756	\$1.2557	\$1.3029
Mine Supplies	.2815	.2665	.2477	.2678	.2407	.2561	.2798	.3178	.2951	.2618	.2722	.2855	.2910	.2872	.2849	.2833
Miscellaneous & Fixed Charges	.2975	.2393	.2411	.2634	.2333	.2460	.3184	.3247	.3123	.2944	.2846	.2991	.2610	.2785	.2846	.2836
Production Cost	1.5181	1.6066	1.5799	1.6502	1.5610	1.6007	1.9143	1.9672	1.9195	1.8689	1.8518	1.9062	1.8259	1.8322	1.7333	1.8726
Selling & Administration	.1891	.1860	.1775	.1990	.1825	.1868	.1821	.1794	.2095	.1890	.1912	.2001	.2027	.1720	.1947	.1975
Total Cost	1.8072	1.7946	1.7514	1.8492	1.7436	1.7875	2.2908	2.1937	2.1767	2.1035	2.0888	2.1300	2.0149	2.0618	2.0067	2.1050
Average No. of Days Worked	15.6	21.4	21.4	18.6	21.6	21.6	13.2	14.2	14.7	15.9	17.4	14.6	16.7	17.0	17.6	162.6
No. of Mines Reporting	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	7
Production, (000 omitted) Tons	291	275	285	248	310	310	182	195	208	226	247	216	281	258	285	2,350

* A simple average of the total number of mines reporting for the several months.

Average Costs of Hanby-Olo area of Eastern subdivision, (Division I) by month, November 1933 through January 1935

	1934												10 Mo. Total Average Cost	1934 Total % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October			Nov.	
(Average Cost, per ton)																
5 Mo. Total Average Cost																
Mine Labor	\$1.0991	\$1.1008	\$1.0911	\$1.1190	\$1.0870	\$1.0986	\$1.3146	\$1.3718	\$1.3598	\$1.3234	\$1.3245	\$1.3234	\$1.2762	\$1.3144	\$1.3155	\$1.3220
Mine Supplies	.2815	.2665	.2477	.2678	.2407	.2561	.2798	.3178	.2951	.2618	.2722	.2855	.2910	.2872	.2849	.2833
Miscellaneous & Fixed Charges	.2975	.2393	.2411	.2634	.2333	.2460	.3184	.3247	.3123	.2944	.2846	.2991	.2610	.2785	.2846	.2836
Production Cost	1.5181	1.6066	1.5799	1.6502	1.5610	1.6007	1.9143	1.9672	1.9195	1.8689	1.8518	1.9062	1.8259	1.8322	1.7333	1.8726
Selling & Administration	.1891	.1860	.1775	.1990	.1825	.1868	.1821	.1794	.2095	.1890	.1912	.2001	.2027	.1720	.1947	.1975
Total Cost	1.8072	1.7946	1.7514	1.8492	1.7436	1.7875	2.2908	2.1937	2.1767	2.1035	2.0888	2.1300	2.0149	2.0618	2.0067	2.1050
Average No. of Days Worked	15.6	21.4	21.4	18.6	21.6	21.6	13.2	14.2	14.7	15.9	17.4	14.6	16.7	17.0	17.6	162.6
No. of Mines Reporting	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	7
Production, (000 omitted) Tons	291	275	285	248	310	310	182	195	208	226	247	216	281	258	285	2,350

* A simple average of the total number of mines reporting for the several months

Average Costs of Maryland area of Eastern subdivision, (Division 1)
by months, November 1935 through January 1935.

Cost Table 15

Bituminous Coal

1935 Nov.	1934		1934		1934		1934		1934		1935		1935		1935		10 Mos. Total Average Cost	Avr. % of Total Cost
	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	Mar.		
\$1,1514	\$1,1296	\$1,1199	\$1,1116	\$1,0941	\$1,1205	\$1,13934	\$1,12549	\$1,14013	\$1,15648	\$1,14917	\$1,13335	\$1,13092	\$1,13102	\$1,12122	\$1,12987	\$1,12338	63.15	
.2289	.2046	.1873	.1901	.1681	.1994	.2604	.2614	.2558	.2627	.2485	.2300	.2417	.2520	.2166	.2205	.2417	11.45	
.2228	.2491	.2324	.2260	.2561	.2511	.3109	.3377	.4106	.3752	.3457	.3053	.3570	.2916	.2631	.2631	.3314	15.70	
1.6629	1.5933	1.5406	1.5617	1.5789	1.5710	1.9560	2.0677	2.0027	1.9902	1.9509	1.8562	1.9192	1.8204	1.7833	1.9069	1.9069	90.34	
.1759	.1771	.1937	.1767	.1430	.2261	.2284	.2025	.2221	.1986	.2153	.1936	.2084	.1984	.1761	.2038	.2038	9.66	
1.8388	1.7684	1.7403	1.7394	1.5613	1.7447	2.2688	2.1684	2.2702	2.2248	2.1495	2.1245	2.0498	2.1276	2.0188	1.9614	2.1107	100.00	
Average No. of Days Worked	15.3	20.2	18.9	21.2	97.2	12.0	9.7	7.9	11.0	11.2	12.4	15.3	16.0	12.9	19.9	134.3		
No. of Mines Reporting	61	16	12	11	14*	10	10	12	13	13	12	12	13	13	12	12*		
Production, (000 omitted) Tons	93	124	130	101	564	48	48	46	64	64	65	87	89	103	106	720		

* A simple average of the total number of mines reporting for the several months.

Average Costs of Upper Potomac area of Eastern subdivision, (Division 1)
by months, November 1935 through January 1935.

Cost Table 16

Bituminous Coal

1935 Nov.	1934		1934		1934		1934		1934		1934		1934		1935		1935		10 Mos. Total Average Cost	Avr. % of Total Cost
	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	Mar.				
\$1,1152	\$1,1609	\$1,1022	\$1,0921	\$1,1126	\$1,1218	\$1,13412	\$1,1016	\$1,2718	\$1,2856	\$1,2516	\$1,3463	\$1,2859	\$1,3300	\$1,3590	\$1,3288	\$1,3066	64.84			
.2285	.2202	.1880	.2156	.2158	.2331	.2333	.2426	.2841	.2607	.2622	.2768	.2513	.2553	.2693	.2617	.2637	13.09			
.2685	.2494	.2443	.2603	.2255	.2495	.1443	.2821	.2708	.2080	.2080	.2420	.2097	.2135	.2063	.2111	.2336	11.59			
1.6182	1.6498	1.5784	1.5680	1.5539	1.5644	91.84	1.9116	1.8767	1.8043	1.7218	1.8651	1.7469	1.7988	1.8066	1.8016	1.8039	89.52			
.1391	.1677	.1504	.1290	.1353	.1442	8.34	.2332	.2362	.2189	.2662	.1913	.2070	.2192	.1856	.2112	.2112	10.48			
1.7717	1.8372	1.6858	1.6970	1.6892	1.7286	100.00	2.1248	2.0629	2.0532	1.9114	2.1313	1.9382	2.0058	2.0258	1.9852	2.0151	100.00			
Average No. of Days Worked	17.6	16.9	19.4	18.7	94.6	16.6	14.4	13.2	13.8	17.0	14.3	18.6	17.9	17.9	18.9	162.6				
No. of Mines Reporting	11	10	11	11	10*	8	10	8	10	9	8	9	10	9	10	9*				
Production, (000 omitted) Tons	63	57	71	49	321	48	52	43	57	70	47	75	71	67	73	603				

* A simple average of the total number of mines reporting for the several months.

	1934												1935	10 Mos. Total	Average	% of Total Cost	
	Nov.	Dec.	Jan.	Feb.	March	April		May	June	July	August	Sept.					October
(Average Costs per Ton)																	
Mine Labor	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048	1.0048
Mine Supplies	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076	0.2076
Miscellaneous & Fixed Charges	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556	0.3556
Production at	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687	1.5687
Selling & Administration	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956	0.0956
Total Cost	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003	1.6003
Average No. of Days Worked	19.4	16.9	17.6	16.5	21.6	15.3	16.3	17.4	16.2	15.9	16.9	15.8	16.9	15.3	16.1	17.2	16.5
No. of Mines Reporting	152	130	128	133	148	113	125	124	142	149	149	155	159	149	149	159	148
Production (thousands of tons)	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445	1,445

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Average Costs of Districts 1 - 2 - 3, Thick Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Cost Table 18.

	1934												1935	10 Mos. Total	Average	% of Total Cost	
	Nov.	Dec.	Jan.	Feb.	March	April		May	June	July	August	Sept.					October
(Average Costs per Ton)																	
Mine Labor	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735	0.9735
Mine Supplies	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948	0.1948
Miscellaneous & Fixed Charges	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447	0.3447
Production at	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870	1.4870
Selling & Administration	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943	0.0943
Total Cost	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773	1.5773
Average No. of Days Worked	18.6	17.6	17.2	18.1	21.4	17.0	18.0	16.6	16.4	17.7	17.1	19.0	16.2	15.2	17.3	17.3	17.0
No. of Mines Reporting	36	30	33	34	44	34	38	35	37	38	36	37	36	39	40	39	37
Production (thousands of tons)	1,065	862	901	893	1,312	882	957	918	873	963	893	1,037	882	781	888	888	868

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Average Costs of District 4, Avella, Thin Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Cost Table 19.

	1934												1935	10 Mos. Total	Average	% of Total Cost	
	Nov.	Dec.	Jan.	Feb.	March	April		May	June	July	August	Sept.					October
(Average Costs per Ton)																	
Mine Labor	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440
Mine Supplies	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622	0.1622
Miscellaneous & Fixed Charges	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985	0.1985
Production at	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047	1.3047
Selling & Administration	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026	0.1026
Total Cost	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073	1.4073
Average No. of Days Worked	18.7	16.2	20.1	20.0	20.3	15.1	15.1	11.0	11.0	13.2	10.2	14.0	14.6	16.7	18.4	18.4	17.0
No. of Mines Reporting	3	3	3	3	4	5	5	3	3	5	4	6	5	5	4	5	3
Production (thousands of tons)	36	31	38	38	50	33	34	23	24	45	26	56	69	33	33	33	27

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Average Costs of District 5, Pombard, Thin Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Cost Table 20.

	1934												1935	10 Mos. Total	Average	% of Total Cost	
	Nov.	Dec.	Jan.	Feb.	March	April		May	June	July	August	Sept.					October
(Average Costs per Ton)																	
Mine Labor	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075	1.0075
Mine Supplies	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444	0.2444
Miscellaneous & Fixed Charges	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192	0.3192
Production at	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411	1.5411
Selling & Administration	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974	0.0974
Total Cost	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385	1.6385
Average No. of Days Worked	20.0	15.7	16.6	16.9	21.7	14.9	14.9	16.2	16.2	18.1	17.9	19.3	17.0	17.1	17.1	16.9	17.2
No. of Mines Reporting	27	25	25	25	25	26	26	24	24	31	31	31	27	27	32	32	27
Production (thousands of tons)	215	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162

* A simple average of the total number of mines reported for the several months.

Bituminous Coal
Average Costs of District 6, Youngslippery, Thin Vein Area, of Western Pennsylvania
Subdivision (Division I), by months, November 1933 through January 1935.

	1934												1935		10 Mos. Total Average Cost	% of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	November	December		
Mine Labor	\$ 9825	\$ 9864	\$ 10008	\$ 10276	\$ 10156	\$ 10041	\$ 10204	\$ 10172	\$ 10177	\$ 10195	\$ 10189	\$ 10194	\$ 10205	\$ 10274	\$ 10294	\$ 10199
Mine Supplies	1756	2149	2268	2233	2120	2096	1174	2945	2824	2858	2497	2418	2983	2999	2818	2613
Miscellaneous & Fixed Charges	4594	4777	5194	5347	4590	4811	2695	5944	5105	5150	5377	4658	5451	6038	5601	5281
Production Cost	16075	16790	17470	17755	16866	16948	9492	20953	19306	19953	19146	20609	19111	20569	20113	19863
Selling & Administration	0767	0931	1072	0997	0834	0907	508	1150	0930	1105	1121	1059	1158	1357	1022	1089
Total Cost	16842	17721	18542	18753	17660	17855	10000	22173	19741	21093	20163	21730	21667	22866	21135	20952
Average No. of Days Worked	21.0	21.2	19.5	19.3	22.0	103.0	18.2	18.2	21.2	21.1	18.4	21.3	18.0	18.5	17.3	189.3
No. of Mines Reporting	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Production (thousands of tons)	170	162	150	137	184	803	128	128	149	146	127	164	125	89	121	1333

Bituminous Coal
Average Costs of District 7, Pittsburgh Seam Area, of Western Pennsylvania
Subdivision (Division I), by months, November 1933 through January 1935.

	1934												1935		10 Mos. Total Average Cost	% of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	November	December		
Mine Labor	\$ 8390	\$ 8922	\$ 9174	\$ 8927	\$ 8866	\$ 8938	\$ 9051	\$ 9050	\$ 9084	\$ 9050	\$ 9030	\$ 9587	\$ 9964	\$ 10530	\$ 9657	\$ 10315
Mine Supplies	1748	2043	1738	1607	1671	1793	1214	2114	1859	2020	2232	1688	1744	2012	1822	1888
Miscellaneous & Fixed Charges	2568	2849	3102	2920	2956	2818	1908	3255	2931	3040	3288	4048	3323	2993	2398	3105
Production Cost	12706	13814	14674	13904	13819	13549	9173	15059	15179	15698	17297	14492	14678	15535	13877	15308
Selling & Administration	1075	1092	1195	1136	1145	1121	627	1878	2041	2212	2293	2007	2401	1800	2034	2064
Total Cost	13781	14866	15869	14939	14961	14770	10000	18097	17100	17291	19847	16701	17279	17335	15911	17392
Average No. of Days Worked	17.6	17.0	14.6	17.6	17.1	84.1	13.5	17.1	13.5	10.5	8.1	13.1	10.5	11.8	16.5	125.1
No. of Mines Reporting	7	9	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Production (thousands of tons)	54	61	41	41	50	230	40	40	36	26	22	19	25	31	46	286

Bituminous Coal
Average Costs of Districts 8 and 12, Sewickley and Runners Areas, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

	1934												1935		10 Mos. Total Average Cost	% of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	November	December		
Mine Labor	\$ 8668	\$ 9430	\$ 9234	\$ 8487	\$ 8683	\$ 8872	\$ 9274	\$ 10091	\$ 10779	\$ 10600	\$ 9834	\$ 10419	\$ 10320	\$ 10787	\$ 10665	\$ 10616
Mine Supplies	1904	2004	1801	1930	1972	1862	1175	1972	1827	1740	1933	1478	1749	1840	1912	1771
Miscellaneous & Fixed Charges	2254	2823	2223	2004	1936	2183	1543	2474	2485	2345	2389	2158	2263	2221	2247	2317
Production Cost	13026	14251	13258	12021	11991	12717	8932	15537	15031	14665	14186	13818	14610	14790	14285	14770
Selling & Administration	1092	1518	1288	1518	1594	1142	1008	1724	1839	2030	1830	1830	1998	1804	2037	1897
Total Cost	14118	15769	14556	13595	13585	14142	10000	17261	16870	16504	16186	15848	16257	16594	17416	16667
Average No. of Days Worked	11.6	8.7	11.2	13.1	12.3	65.9	16.1	16.1	15.6	13.7	10.4	12.9	14.1	14.0	17.6	138.3
No. of Mines Reporting	5	5	4	5	6	5	5	5	5	5	5	5	5	5	5	5
Production (thousands of tons)	36	26	24	31	57	174	40	40	48	37	29	36	33	32	43	362

Bituminous Coal
Average Costs of District 9, Connellsville Coking Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

	1934												1935		10 Mos. Total Average Cost	% of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	November	December		
Mine Labor	\$ 9858	\$ 10260	\$ 9405	\$ 8978	\$ 9368	\$ 9666	\$ 9636	\$ 10254	\$ 11050	\$ 10950	\$ 10971	\$ 11854	\$ 11338	\$ 10809	\$ 11024	\$ 11182
Mine Supplies	2146	2499	2042	1958	1787	2066	1217	2584	2353	2083	2443	2296	2275	2400	2307	2346
Miscellaneous & Fixed Charges	4607	4756	4083	4054	3840	4436	3437	4379	4183	4360	4914	4734	4428	4653	4428	4386
Production Cost	16087	17517	15530	14950	14995	15768	9292	16948	17851	17987	19328	18033	17587	17989	17299	17386
Selling & Administration	1128	1284	1171	1121	1281	1120	708	1387	1285	1311	1383	1173	1347	1286	1353	1298
Total Cost	17215	18791	16701	16201	16256	16998	10000	19875	19146	18627	19326	20919	19948	18807	19428	19375
Average No. of Days Worked	18.9	14.4	18.6	20.3	22.5	94.7	15.7	16.9	17.9	17.1	17.1	13.9	17.3	17.1	18.0	169.6
No. of Mines Reporting	24	22	14	16	16	116	16	16	12	16	16	16	16	16	17	16
Production (thousands of tons)	375	278	244	304	396	1577	230	240	223	224	261	285	277	261	324	2513

* A simple average of the total number of mines reported for the several months.

	1934												1935	10 Mos. Total Average Cost	10 Mos. Total Average Cost % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				November	December
(Average Costs per Ton)																	
Mine Labor	\$.9934	\$.9862	\$.9736	\$.9766	\$.9704	\$.9805	\$ 66.47	\$ 1.2864	\$ 1.7031	\$ 1.3116	\$ 1.3206	\$ 1.3423	\$ 1.3634	\$ 1.2657	\$ 1.2600	\$ 1.2475	\$ 1.2932
Mine Supplies	.1634	.1646	.1428	.1744	.1750	.1712	11.61	.2431	.2371	.2445	.2330	.2606	.2446	.2373	.2191	.2204	.2374
Miscellaneous & Fixed Charges	.2319	.2379	.2395	.2386	.2284	.2345	15.90	.3372	.3562	.3694	.3902	.3704	.3901	.3192	.3417	.2768	.3502
Production Cost	1.3687	1.3687	1.3999	1.2696	1.3738	1.2655	91.98	1.6984	1.6493	1.6756	1.7753	1.7280	1.7812	1.7055	1.6892	1.6447	1.7504
Selling & Administration	.1017	.0916	.0857	.0718	.1000	.0889	6.02	.1450	.1409	.1514	.1800	.1948	.1678	.1520	.1586	.1520	.1582
Total Cost	1.4904	1.4403	1.4616	1.4738	1.4738	1.4751	100.00	2.0117	2.0433	2.0769	2.1238	2.1507	2.2928	1.9780	1.9994	1.8967	2.0390
Average No. of Days Worked	19.3	19.5	19.1	18.2	20.6	19.7	96.7	11.3	9.3	9.7	8.1	8.1	7.0	9.2	9.9	12.0	94.6
No. of Mines Reporting	18	15	12	14	18	15	60	17	16	16	16	16	16	17	17	16	16
Production Tons ('000 omitted)	182	170	119	135	201	167	607	94	77	79	71	71	62	86	91	107	830

Bituminous Coal

	1934												1935	10 Mos. Total Average Cost	10 Mos. Total Average Cost % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				November	December
Mine Labor	\$.9504	\$.9701	\$.9677	\$.9705	\$.9464	\$.9606	62.26	1.1492	1.1610	1.2079	1.2165	1.1815	1.2090	1.1690	1.2013	1.2207	1.1861
Mine Supplies	.2648	.2733	.2853	.2931	.2513	.2716	17.61	.3004	.2913	.3142	.2876	.2869	.3077	.2921	.3290	.3328	.3013
Miscellaneous & Fixed Charges	1.2106	1.2400	1.2592	1.2536	1.2445	1.2334	15.13	1.2493	1.2479	1.2535	1.2712	1.2576	1.2705	1.2534	1.2489	1.2089	1.2850
Production Cost	1.4282	1.4434	1.5122	1.5192	1.4422	1.4656	95.00	1.6989	1.7022	1.7756	1.7753	1.7280	1.7812	1.7165	1.6892	1.6447	1.7504
Selling & Administration	.0842	.0828	.0827	.0871	.0873	.0772	5.00	.0885	.0943	.0961	.1163	.0985	.1038	.0922	.1024	.1049	.1049
Total Cost	1.4940	1.5262	1.6049	1.6049	1.4795	1.5428	100.00	1.7874	1.7945	1.8717	1.8916	1.8267	1.8911	1.8087	1.7912	1.7535	1.8553
Average No. of Days Worked	21.2	19.0	17.3	16.2	22.1	19.5	96.4	19.5	20.9	17.9	18.2	19.0	17.4	20.6	19.0	14.5	180.8
No. of Mines Reporting	37	36	36	36	40	37	167	31	33	26	26	30	29	30	24	26	10
Production Tons ('000 omitted)	376	336	296	284	405	337	1297	197	339	286	296	330	296	360	247	261	3,087

Bituminous Coal

	1934												1935	10 Mos. Total Average Cost	10 Mos. Total Average Cost % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				November	December
Mine Labor	\$ 1.0770	\$ 1.1278	\$ 1.1226	\$ 1.0913	\$ 1.0782	\$ 1.0973	65.44	1.4473	1.2787	1.3532	1.3097	1.3347	1.3315	1.2946	1.2706	1.2343	1.3212
Mine Supplies	.2044	.2274	.2316	.2416	.2115	.2229	14.45	.4044	.3975	.4271	.4236	.4153	.4215	.4215	.4299	.4417	.2895
Miscellaneous & Fixed Charges	1.5448	1.6084	1.5916	1.5510	1.5313	1.5626	13.28	1.8616	1.8222	1.8739	1.8593	1.8779	1.8748	1.8748	1.8748	1.8748	1.8748
Production Cost	1.8266	1.9576	1.9457	1.8839	1.8210	1.8825	93.18	2.1143	1.8222	1.8739	1.8593	1.8779	1.8748	1.8748	1.8748	1.8748	1.8748
Selling & Administration	.0891	.1080	.1198	.1328	.1227	.1143	6.82	.1397	.0985	.1231	.1244	.1425	.1417	.1163	.1154	.1103	.1234
Total Cost	1.6339	1.7164	1.7114	1.6838	1.6540	1.6759	100.00	2.2540	1.9207	1.9950	1.9160	2.0186	2.0236	1.8911	1.8709	1.7925	1.9705
Average No. of Days Worked	19.6	16.7	18.2	18.2	21.3	19.4	94.0	12.2	16.7	13.9	14.1	11.5	12.1	15.4	15.3	17.6	144.8
No. of Mines Reporting	9	8	8	9	9	9	60	11	8	10	9	11	10	10	12	11	10
Production Tons ('000 omitted)	50	41	41	45	53	53	230	32	33	42	31	33	33	44	46	52	392

Bituminous Coal

	1934												1935	10 Mos. Total Average Cost	10 Mos. Total Average Cost % of Total Cost		
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				November	December
Mine Labor	\$ 1.1127	\$ 1.1223	\$ 1.1143	\$ 1.1146	\$ 1.1096	\$ 1.1144	61.62	1.2699	1.4159	1.3882	1.3992	1.3939	1.4163	1.3444	1.3397	1.2843	1.3668
Mine Supplies	.2167	.1793	.1856	.1785	.1828	.1891	10.46	.2953	.2611	.2809	.2902	.2907	.2966	.2966	.2974	.2974	.2974
Miscellaneous & Fixed Charges	1.3647	1.3875	1.3675	1.3675	1.3675	1.3684	20.26	1.3704	1.4173	1.4268	1.4034	1.4150	1.4502	1.4273	1.4135	1.3741	1.4094
Production Cost	1.6941	1.6691	1.6674	1.6607	1.6417	1.6699	92.34	1.9706	2.0943	2.0959	2.0488	2.0488	2.1572	2.0123	1.9689	1.8817	2.0233
Selling & Administration	.1236	.1502	.1428	.1286	.1286	.1385	7.66	.1784	.1899	.1823	1.9999	.2295	.1777	1.7199	1.2009	.1613	1.1870
Total Cost	1.8177	1.8193	1.8102	1.8125	1.8125	1.8064	100.00	2.1690	2.2862	2.2869	2.2821	2.2397	2.3687	2.1922	2.1666	2.0430	2.2103
Average No. of Days Worked	21.4	18.1	21.0	21.0	24.2	19.5	96.7	19.5	14.9	14.0	15.3	16.1	13.6	16.0	15.7	16.0	158.7
No. of Mines Reporting	6	6	5	4	5	5	30	6	6	6	6	6	6	6	6	6	6
Production Tons ('000 omitted)	148	128	137	124	161	124	698	124	104	99	107	113	96	118	114	150	1,118

* A sample average of the total number of mines reporting for the several months.

Bituminous Coal

Cost Table 29

Average Costs of District 15, Latrobe Area, of Eastern Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

	(Average Costs per Ton)												1935 January	10 Mos. Total Average Costs	Apr. - Jun. 1935 % of Total Cost			
	1933 Nov.	Dec.	Jan.	Feb.	March	1934 April		May	June	July	August	September				October	November	December
Mine Labor	\$1.0327	\$1.0791	\$.9834	\$.9834	\$.9848	\$1.0167	59.97	\$1.2280	\$1.2566	\$1.2460	\$1.2534	\$1.2225	\$1.2253	\$1.2135	\$1.1955	\$1.1825	\$1.2187	61.00
Mine Supplies	.2139	.2862	.1953	.1953	.1929	.2185	12.89	.3165	.2388	.2442	.2604	.2787	.2586	.2158	.2549	.2619	.2600	13.01
Miscellaneous & Fixed Charges	.3051	.3061	.2819	.2819	.2890	.2865	16.91	.3109	.3395	.3306	.3238	.3385	.3043	.3109	.3052	.3006	.3150	15.77
Production Cost	1.5517	1.6714	1.4646	1.4646	1.4667	1.5217	89.77	1.8594	1.6049	1.8108	1.8376	1.8397	1.7884	1.7432	1.7666	1.7450	1.7937	89.78
Selling & Administration	1.1757	1.1523	1.1793	1.1793	1.1809	1.1735	10.23	1.2153	1.2062	1.2101	1.2136	1.2376	1.2200	1.1882	1.1802	1.1723	1.2042	10.22
Total Cost	1.7274	1.8237	1.6439	1.6439	1.6576	1.6952	100.00	2.0707	2.0111	2.0409	2.0512	2.0773	2.0084	1.9314	1.9468	1.9173	1.9979	100.00
Average No. of Days Worked	12.5	14.5	17.5	17.5	19.1	17.5	63.6	12.0	10.4	11.6	11.0	8.8	12.4	13.4	13.4	14.1	107.1	
No. of Mines Reporting	5	4	4	4	5	4	4	4	5	4	4	4	5	4	4	5	5	
Production Tons (000 omitted)	29	38	46	46	60	173	173	27	25	25	24	20	33	30	31	36	253	

Includes Latrobe district, for concealment.

Includes Latrobe for April.

A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 30

Average Costs of District 16, Ligonier Area, of Eastern Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

	(Average Costs per Ton)												1935 January	10 Mos. Total Average Costs	Apr. - Jun. 1935 % of Total Cost			
	1933 Nov.	Dec.	Jan.	Feb.	March	1934 April		May	June	July	August	September				October	November	December
Mine Labor	.8981	.9067	.9067	.9067	.9031	.9055	59.67	1.1258	1.1401	1.2017	1.2518	1.1712	1.0845	1.0565	1.0628	1.0500	1.1296	59.61
Mine Supplies	.1432	.1384	.1384	.1384	.1624	.1506	9.91	.3165	.2792	.2824	.2465	.2129	.1947	.2145	.2116	.1764	.2217	11.72
Miscellaneous & Fixed Charges	.2350	.2332	.2332	.2332	.2327	.2430	16.02	.3080	.2792	.3193	.3714	.2756	.2569	.2274	.2279	.2696	.2746	14.80
Production Cost	1.2407	1.2975	1.3103	1.3103	1.2984	1.2931	85.62	1.4819	1.6103	1.7453	1.6689	1.6517	1.5401	1.4944	1.4423	1.4980	1.6249	85.86
Selling & Administration	1.2040	1.2356	1.2332	1.2332	1.1860	1.2343	14.38	1.2342	1.2964	1.3387	1.3987	1.3218	1.2625	1.2499	1.2561	1.2096	1.2678	14.15
Total Cost	1.4947	1.5331	1.5435	1.5435	1.4894	1.5174	100.00	2.1161	1.9067	2.1212	2.2686	2.0328	1.8026	1.7433	1.7384	1.7076	1.8927	100.00
Average No. of Days Worked	13.8	13.2	13.7	12.3	17.7	12.5	70.7	13.2	11.9	10.4	12.1	13.8	17.8	17.4	15.0	18.6	82.7	
No. of Mines Reporting	3	3	4	4	3	5	5	3	3	3	3	3	4	3	3	4	4	
Production Tons (000 omitted)	24	24	26	26	29	128	128	35	12	9	13	15	27	29	24	35	210	

Includes Latrobe district, for concealment.

Includes Latrobe for April.

A simple average of the total number of mines reported for the several months.

Cost Table 31
Bituminous Coal

Average Costs of Ohio subdivision of Division I.
by months, November 1934 through January 1935

	1934												1935 Jan.	10 Mos. Total Average Cost	% of Total Cost				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				Nov.	Dec.		
Mine Labor	\$ 9656	\$ 9593	\$ 9567	\$ 9452	\$ 9446	\$ 9534	62.55	\$ 11852	\$ 11605	\$ 11307	\$ 11296	\$ 11333	\$ 11648	\$ 11616	\$ 11668	\$ 11547	\$ 11363	\$ 11517	61.87
Mine Supplies	2151	2011	1817	1835	1798	2018	1910	2018	2082	2304	2335	2320	2575	2207	2034	2323	2185	2135	12.95
Miscellaneous & Fixed Charges	2473	2494	2478	2464	2580	2452	16.05	2893	2892	2941	2924	2960	2708	2941	2670	2645	2645	2645	14.72
Production Cost	14280	14098	13862	13751	13854	13996	91.46	17513	17513	17513	17513	17513	17513	17513	17513	17513	17513	17513	91.46
Selling & Administration	1257	1394	1352	1314	1354	1384	8.64	1453	1453	1453	1453	1453	1453	1453	1453	1453	1453	1453	8.64
Total Cost	19537	19092	18694	18665	18698	19384	100.00	19384	19384	19384	19384	19384	19384	19384	19384	19384	19384	19384	100.00
Average No. of Days Worked	15.9	15.4	17.1	18.4	21.3	82.0	13.2	13.2	13.2	13.6	13.6	13.6	11.7	14.5	14.7	15.4	17.0	134.0	
No. of Mines Reporting	60	56	54	52	55	57*	53	54	54	55	54	58	64	64	65	57	56	57*	
Production, (000 omitted) Tons	1,065	1,024	1,106	1,126	1,524	5,845	744	764	838	888	1,015	855	1,096	1,131	1,144	1,128	1,228	9,895	

* A simple average of the total number of mines reported for the several months.

Cost Table 32
Bituminous Coal

Average Costs of Area 1 of Ohio subdivision (Division I).
by months, November 1934 through January 1935

	1934												1935 Jan.	10 Mos. Total Average Cost	% of Total Cost				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				Nov.	Dec.		
Mine Labor	\$ 1,0099	\$ 9933	\$ 9734	\$ 9722	\$ 9722	\$ 9868	61.35	\$ 13165	\$ 12979	\$ 13144	\$ 13074	\$ 13006	\$ 13158	\$ 12945	\$ 12078	\$ 11743	\$ 11470	\$ 12001	61.81
Mine Supplies	2166	1860	1764	1771	1804	2018	1910	2018	2082	2304	2335	2320	2575	2207	2034	2323	2185	2135	12.84
Miscellaneous & Fixed Charges	2473	2494	2478	2464	2580	2452	16.05	2893	2892	2941	2924	2960	2708	2941	2670	2645	2645	2645	15.88
Production Cost	15217	15138	14809	14721	14815	14868	90.67	17513	17513	17513	17513	17513	17513	17513	17513	17513	17513	17513	90.67
Selling & Administration	1311	1619	1549	1519	1569	1645	9.33	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	9.33
Total Cost	16528	16657	16353	16340	16384	16513	100.00	16513	16513	16513	16513	16513	16513	16513	16513	16513	16513	16513	100.00
Average No. of Days Worked	12.7	13.8	16.5	18.6	21.6	83.2	9.5	9.5	9.5	9.3	9.3	9.3	8.4	8.4	8.4	14.7	17.6	111.7	
No. of Mines Reporting	24	25	23	24	25	24*	17	19	20	19	20	23	23	23	23	20	21	21*	
Production, (000 omitted) Tons	292	362	418	469	570	2,111	175	195	174	184	207	216	338	371	426	449	469	2,131	

Cost Table 33
Bituminous Coal

Average Costs of Area 2 of Ohio subdivision (Division I).
by months, November 1934 through January 1935

	1934												1935 Jan.	10 Mos. Total Average Cost	% of Total Cost				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				Nov.	Dec.		
Mine Labor	\$ 1,0550	\$ 1,0449	\$ 1,0714	\$ 1,0726	\$ 1,0513	\$ 1,0597	64.19	\$ 13102	\$ 12755	\$ 12898	\$ 12806	\$ 12840	\$ 13319	\$ 12851	\$ 12894	\$ 12575	\$ 12036	\$ 12773	64.72
Mine Supplies	2281	2453	2178	2599	2416	2713	14.38	2824	2814	2910	2955	2821	2746	2508	2749	2186	2226	2250	13.93
Miscellaneous & Fixed Charges	2109	2088	2034	1932	2123	2076	12.58	2181	2066	2292	1944	2233	2457	2227	2482	2672	2487	2358	15.95
Production Cost	14940	14990	14926	15257	15122	15046	91.15	18107	17640	18100	17805	18334	18522	17586	18125	18433	16852	17881	90.60
Selling & Administration	9589	10270	10471	10501	10569	10462	8.85	10885	10885	10885	10885	10885	10885	10885	10885	10885	10885	10885	9.40
Total Cost	15529	15810	15673	16758	16682	16513	100.00	19992	19652	19789	19689	20101	20132	19923	20034	20095	18867	19737	100.00
Average No. of Days Worked	20.8	20.9	22.6	19.9	22.0	106.2	15.2	15.2	15.2	15.6	15.6	15.6	12.6	18.0	17.8	19.4	23.3	161.6	
No. of Mines Reporting	7	5	7	6	6	6*	6	6	6	6	6	6	6	6	6	6	6	6*	
Production, (000 omitted) Tons	74	52	95	68	89	368	51	54	65	37	38	40	84	77	82	90	90	618	

Cost Table 34
Bituminous Coal

Average Costs of Area 3 of Ohio subdivision (Division I).
by months, November 1934 through January 1935

	1934												1935 Jan.	10 Mos. Total Average Cost	% of Total Cost				
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				Nov.	Dec.		
Mine Labor	\$ 9378	\$ 9219	\$ 9157	\$ 9081	\$ 9154	\$ 9199	63.17	\$ 11260	\$ 10960	\$ 10592	\$ 10734	\$ 10787	\$ 11019	\$ 11145	\$ 11307	\$ 11281	\$ 11072	\$ 11012	64.82
Mine Supplies	2093	1890	1757	1804	1752	1907	12.12	2326	2094	1907	2159	2174	2399	2131	2416	2344	2163	2206	12.99
Miscellaneous & Fixed Charges	2342	2269	2306	2271	2194	2273	15.61	2696	2352	2213	2436	2230	2621	2601	2870	2845	2430	2453	14.44
Production Cost	13813	13368	13196	13156	13100	13325	91.50	16282	15366	15161	15329	15191	16039	15777	16293	16140	15665	15671	92.25
Selling & Administration	1306	1493	1423	1330	1463	1573	8.50	1277	1284	1334	1340	1333	1486	1307	1398	1347	1296	1317	7.75
Total Cost	15125	14861	14649	14486	14513	14968	100.00	17559	16694	16516	16669	16624	17535	17084	17691	17607	16961	16888	100.00
Average No. of Days Worked	17.3	16.2	17.0	18.1	21.0	89.6	13.2	13.2	15.8	15.9	16.2	13.6	15.3	14.8	14.7	16.1	16.1	151.2	
No. of Mines Reporting	29	26	26	22	33	27*	30	27	29	29	30	29	31	33	29	28	30*	30*	
Production, (000 omitted) Tons	699	609	604	589	865	3,166	514	594	667	770	599	673	683	683	683	683	683	6,340	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 35

Average Costs of Michigan subdivision of Division 1 by month, November 1934 through January 1935.

	(Average Costs per Ton)												10 Mos. Total Avg. Price - Jan. 1935	Average Cost % of Total Cost	
	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.
Mine Labor	\$1.5717	\$1.6178	\$1.5452	\$1.5765	\$1.5429	\$2.0413	\$2.0413	\$2.1129	\$2.1059	\$2.1119	\$2.0572	\$1.8668	\$1.8318	\$1.8237	\$1.8043
Mine Supplies	.3464	.4225	.4384	.4201	.4748	.4299	.4706	.4749	.5054	.5683	.5687	.5942	.4800	.4713	.4827
Miscellaneous & Fixed Charges	.4632	.4798	.4612	.4688	.4686	.4512	.3426	.3555	.4701	.3522	.4737	.4113	.4060	.4920	.4812
Production Cost	2.4213	2.4701	2.4248	2.5054	2.4463	2.4614	3.1843	3.0433	3.1814	3.0924	2.7823	2.7278	2.7866	2.8142	2.8143
Selling & Administration	.2684	.2619	.2434	.2647	.2614	.2626	.2781	.2671	.2785	.2617	.2441	.1454	.1348	.2337	.2257
Total Cost	2.6897	2.7320	2.6682	2.7901	2.7077	2.7140	3.5124	3.3599	3.4599	3.3591	3.0277	2.8635	2.9200	3.0390	3.0390
Average No. of Days Worked	18.6	18.6	21.7	18.3	22.0	13.9	7.6	7.2	12.3	19.8	18.3	21.3	20.7	21.0	22.2
No. of Mines Reporting	5	6	6	5	4	6	4	4	3	4	4	5	5	5	5
Production, Tons (000 omitted)	59	63	71	52	58	35	15	12	12	24	27	48	52	58	64

* A simple average of the total number of mines reported for the several months

Bituminous Coal

Cost Table 36

Average Costs of Panhandle subdivision of Northern West Virginia, (Division I) by month, November 1934 through January 1935

	(Average Costs per Ton)												10 Mos. Total Avg. Price - Jan. 1935	Average Cost % of Total Cost	
	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.
Mine Labor	\$.9698	\$.9713	\$.9939	\$ 1.0307	\$.9823	\$ 1.1460	\$ 1.1324	\$ 1.0769	\$ 1.1025	\$ 1.0932	\$ 1.1848	\$ 1.1351	\$ 1.1620	\$ 1.1452	\$ 1.1374
Mine Supplies	.2114	.2409	.2448	.3001	.2447	.2447	.3069	.1663	.1908	.2100	.2683	.1839	.2280	.1975	.2520
Miscellaneous & Fixed Charges	.2192	.2301	.2750	.2805	.2398	.2532	.2072	.2610	.2377	.1795	.2618	.2366	.2347	.2101	.2084
Production Cost	1.4004	1.4423	1.5137	1.6113	1.4668	1.6719	1.6855	1.5032	1.5310	1.4827	1.7149	1.5556	1.6227	1.5628	1.5978
Selling & Administration	.0961	.1262	.1482	.1809	.1264	.1170	.1370	.1360	.1246	.1318	.1517	.1342	.1359	.1573	.1568
Total Cost	1.4965	1.5685	1.6619	1.7922	1.5954	1.8930	1.8225	1.6412	1.6555	1.6295	1.8766	1.6898	1.7586	1.7501	1.7535
Average No. of Days Worked	18.6	20.9	21.6	20.4	18.1	19.8	18.1	19.7	21.5	21.1	13.3	20.7	16.1	15.4	18.5
No. of Mines Reporting	7	8	5	5	6	6	6	6	5	5	5	5	5	5	5
Production, Tons (000 omitted)	246	202	98	86	63	215	213	226	220	225	122	203	171	169	200

* A simple average of the total number of mines reported for the several months
 a/ Panhandle not available for March. Total for 4 months only.

Bituminous Coal Cost Table 40

Average Costs of Preston County area, of Northern West Virginia sub-division (Division I) by months, November, 1934 through January 1935.

	1934												10 Mos. Total	Average Cost	% of Total Cost		
	1933 Gov.	Dec	Jan.	Feb	March	April	May	June	July	August	Sept.	October				Nov.	Dec
(Average Costs - per Ton)																	
Mine Labor	\$.9149	\$.9145	\$.9056	\$.9155	\$.9191	\$.9140	\$.9103	\$.92219	\$.9337	\$.91699	\$.91836	\$.91123	\$.91185	\$.910950	\$.911204	\$.911441	\$.911441
Mine Supplies	.1533	.1604	.2037	.2201	.2286	.1968	.2449	.2645	.2564	.2982	.3231	.2515	.2563	.2841	.1893	.2794	.2794
Miscellaneous & Fixed Charges	.2035	.1877	.1787	.2134	.2053	.1945	.2173	.2450	.2852	.2935	.2645	.2117	.2162	.1977	.2060	.2307	.2307
Production Cost	1.2747	1.2868	1.2662	1.3490	1.3530	1.3053	1.3705	1.4734	1.5153	1.47616	1.47714	1.5795	1.5930	1.57668	1.5177	1.6562	1.6562
Selling Administration	.1285	.0805	.0739	.0985	.0738	.0894	.0968	.1973	.2175	.2358	.2880	.2875	.2859	.2222	.1627	.1924	.1924
Total Cost	1.3982	1.3231	1.3621	1.4475	1.4268	1.3947	1.4693	1.6707	1.7328	1.7124	1.7654	1.8670	1.8789	1.7490	1.6954	1.8486	1.8486
Average No. of Days Worked	13.5	13.7	17.7	16.7	20.2	11.9	15.1	7.2	6.0	8.7	7.9	10.9	11.4	16.1	13.4	108.6	108.6
No. of Mines Reporting	8	8	7	9	6	8	7	6	4	5	5	6	5	7	6	8	8
Production, Tons (000 omitted)	40	42	50	54	52	26	35	15	10	25	23	33	29	40	24	260	260

* A simple average of the total number of mines reported for the several months.

Bituminous Coal Cost Table 41

Average Costs of Sewall area of Northern West Virginia sub-division (Division I) by months, November 1934 through January 1935.

	1934												10 Mos. Total	Average Cost	% of Total Cost		
	1933 Gov.	Dec	Jan.	Feb	March	April	May	June	July	August	Sept.	October				Nov.	Dec
(Average Costs - per Ton)																	
Mine Labor	\$1.0429	\$1.0438	\$1.0040	\$1.0715	\$1.0855	\$1.0657	\$1.0653	\$1.2616	\$1.2222	\$1.2914	\$1.2584	\$1.3061	\$1.3292	\$1.3142	\$1.5479	\$1.2939	\$1.2939
Mine Supplies	.1560	.1526	.1421	.1725	.1803	.1771	.1953	.1918	.2216	.2048	.1913	.2666	.2169	.2744	.2744	.2028	.2028
Miscellaneous & Fixed Charges	.2709	.1592	.1333	.1869	.1770	.1672	.1672	.1960	.1413	.1413	.1413	.1413	.1413	.1413	.1413	.1413	.1413
Production Cost	1.4718	1.3566	1.2694	1.4353	1.4426	1.4006	1.4353	1.6534	1.5137	1.6146	1.5252	1.8503	1.8238	1.8503	1.9780	1.8036	1.8036
Selling Administration	.1445	.1354	.1431	.1720	.1849	.1762	.1862	.2034	.2010	.2010	.2010	.2010	.2010	.1627	.1627	.2031	.2031
Total Cost	1.6163	1.7370	1.7525	1.8204	1.8275	1.7959	1.9540	2.0368	2.1192	2.1175	2.1101	2.1989	2.1314	2.0860	2.1100	2.1107	2.1107
Average No. of Days Worked	20.2	21.2	22.2	20.1	21.3	105.0	21.8	20.0	17.8	14.8	15.9	14.3	19.6	19.3	21.5	176.2	176.2
No. of Mines Reporting	8	7	8	7	8	7	6	7	4	6	6	7	7	8	7	8	8
Production, Tons (000 omitted)	83	83	85	81	99	431	88	66	55	61	66	82	64	92	85	726	726

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 42.

Average Costs of Southern Subdivision 1 of Division I, by months November 1933 through January 1935.

	1933		1934		1935		10 Mos. Total, Apr. 1 to Oct. 1, 1935	Average Cost % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April		
Mine Labor	8271	9957	8413	9352	9400	\$ 9427	\$1,1436	\$1,1859
Mine Supplies	2416	2531	2415	2506	2359	2323	2713	2484
Miscellaneous & Fixed Charges	5282	3465	5073	3189	3579	3184	3790	3590
Production Cost	1,3119	1,5872	1,4628	1,4783	1,4659	1,4371	1,5336	1,5284
Selling & Administration	1,6733	1,7384	1,6285	1,6436	1,6262	1,6570	1,6731	1,7496
Total Cost	17,131	17,384	16,285	16,436	16,262	16,570	16,731	17,496
Average No. of Days Worked	143	15.9	20.0	19.3	22.1	20.4	18.6	16.6
No. of Mines Reporting	7	139	153	154	150	150	155	153
Production Tons (000 omitted)	2,583	2,641	3,437	3,339	3,472	3,472	3,404	3,479

* A simple average of the total number of mines reporting for the several months.
 † Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal

Cost Table 43.

Average Costs of Pocahontas area of Southern Subdivision 1 (Division I), by months November 1933 through January 1935.

	1933		1934		1935		10 Mos. Total, Apr. 1 to Oct. 1, 1935	Average Cost % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April		
Mine Labor	8846	9153	8684	9700	8774	8659	10,786	1,1113
Mine Supplies	1408	1665	1395	1101	1201	1106	1217	1263
Miscellaneous & Fixed Charges	1,4624	1,5380	1,4285	1,3466	1,2646	1,3139	1,262	1,263
Production Cost	1,617	1,775	1,553	1,375	1,582	1,526	1,687	1,693
Selling & Administration	1,5301	1,7141	1,5810	1,5541	1,5428	1,5985	1,6223	1,873
Total Cost	16,1	13,7	17,7	18,9	22,2	20,9	18,6	17,1
Average No. of Days Worked	67	66	67	67	70	67	65	66
No. of Mines Reporting	1,321	1,253	1,803	1,731	2,033	1,941	1,585	1,699
Production Tons (000 omitted)	1,321	1,253	1,803	1,731	2,033	1,941	1,585	1,699

* A simple average of the total number of mines reporting for the several months.
 † Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal

Cost Table 44.

Average Costs of Greenbrier area of Southern Subdivision 1 (Division I), by months November 1933 through January 1935.

	1933		1934		1935		10 Mos. Total, Apr. 1 to Oct. 1, 1935	Average Cost % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April		
Mine Labor	8271	9953	8945	9074	9003	8935	10,786	1,1113
Mine Supplies	2340	2123	2015	2364	2090	2162	2366	2340
Miscellaneous & Fixed Charges	3270	3356	2895	3198	2807	3069	3399	3088
Production Cost	1,3681	1,4532	1,3895	1,4636	1,3900	1,4166	1,7835	1,788
Selling & Administration	1,3444	1,5558	1,1624	1,800	1,1732	1,647	1,709	1,6817
Total Cost	1,5225	1,6090	1,5519	1,6436	1,5632	1,5813	1,9622	1,740
Average No. of Days Worked	16,3	20.1	22.6	19.5	22.2	20.9	18.7	21.6
No. of Mines Reporting	7	10	9	10	9	9	10	9
Production Tons (000 omitted)	84	139	159	169	198	189	167	182

* A simple average of the total number of mines reporting for the several months.
 † Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal

Cost Table 47.

Average Costs of Southern Subdivision 2 of Division I, by months November 1933 through January 1935.

	1933 Gov.		1934 Jan.		Feb.		March		5 Mos. Total Average Cost		6 Mos. Composite April - Nov. 1934		1935 Jan.		10 Mos. Total Apr. - Jan. 1935	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Mine Labor	.8832	89.11	.8746	86.71	.8671	86.61	.8765	86.82	.8765	86.82	.8665	86.82	.8765	86.82	.8665	86.82
Mine Supplies	.2134	21.07	.2047	20.29	.2038	20.38	.2104	21.04	.2104	21.04	.2041	20.41	.2104	21.04	.2041	20.41
Miscellaneous & Fixed Charges	.2872	28.72	.2782	27.82	.2700	27.00	.2733	27.33	.2733	27.33	.2719	27.19	.2733	27.33	.2719	27.19
Production Cost	1.3838	138.38	1.3577	135.77	1.3400	134.00	1.3598	135.98	1.3598	135.98	1.3485	134.85	1.3598	135.98	1.3485	134.85
Selling & Administration	.1746	17.46	.1750	17.50	.1921	19.21	.1675	16.75	.1675	16.75	.1897	18.97	.1675	16.75	.1897	18.97
Total Cost	1.5584	155.84	1.5327	153.27	1.5321	153.21	1.5284	152.84	1.5284	152.84	1.5382	153.82	1.5284	152.84	1.5382	153.82
Average No. of Days Worked	16.0	16.0	14.1	14.1	17.7	17.7	20.7	20.7	20.7	20.7	19.5	19.5	19.0	19.0	19.5	19.5
No. of Mines Reporting	206	206	224	224	257	257	246	246	246	246	205	205	206	206	206	206
Production Tons (000 omitted)	4,511	4,511	3,655	3,655	4,034	4,034	5,094	5,094	5,094	5,094	29,967	29,967	3,226	3,226	3,643	3,643

* A simple average of the total number of mines reported for the several months.
 † Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

Cost Table 48.

Average Costs of Big Sandy - Elkhorn area of Southern Subdivision 2 (Division 1) by months November 1933 through January 1935.

	1933 Gov.		1934 Jan.		Feb.		March		5 Mos. Total Average Cost		6 Mos. Composite April - Nov. 1934		1935 Jan.		10 Mos. Total Apr. - Jan. 1935	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Mine Labor	1.0107	101.07	1.0414	104.14	1.0716	107.16	1.0629	106.29	1.0340	103.40	1.0595	105.95	1.0629	106.29	1.0595	105.95
Mine Supplies	.1874	18.74	.2169	21.69	.1787	17.87	.1800	18.00	.1884	18.84	.2034	20.34	.2169	21.69	.2034	20.34
Miscellaneous & Fixed Charges	.2848	28.48	.3315	33.15	.2945	29.45	.2317	23.17	.2701	27.01	.2601	26.01	.2732	27.32	.2601	26.01
Production Cost	1.4829	148.29	1.5898	158.98	1.4468	144.68	1.4746	147.46	1.4925	149.25	1.4777	147.77	1.4925	149.25	1.4777	147.77
Selling & Administration	.1762	17.62	.2017	20.17	.2024	20.24	.1762	17.62	.1888	18.88	.1896	18.96	.1762	17.62	.1896	18.96
Total Cost	1.6591	165.91	1.7915	179.15	1.6492	164.92	1.6508	165.08	1.6813	168.13	1.6673	166.73	1.6508	165.08	1.6673	166.73
Average No. of Days Worked	17.5	17.5	13.6	13.6	17.4	17.4	20.3	20.3	20.3	20.3	18.0	18.0	18.8	18.8	17.7	17.7
No. of Mines Reporting	17	17	30	30	30	30	35	35	35	35	28	28	23	23	24	24
Production Tons (000 omitted)	673	673	438	438	473	473	549	549	549	549	528	528	441	441	523	523

* A simple average of the total number of mines reported for the several months.
 † Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

Cost Table 49.

Average Costs of Harlan area of Southern Subdivision 2 (Division 1) by months November 1933 through January 1935.

	1933 Gov.		1934 Jan.		Feb.		March		5 Mos. Total Average Cost		6 Mos. Composite April - Nov. 1934		1935 Jan.		10 Mos. Total Apr. - Jan. 1935	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Mine Labor	.8512	85.12	.8413	84.13	.8236	82.36	.8103	81.03	.8307	83.07	.8236	82.36	.8307	83.07	.8236	82.36
Mine Supplies	.2134	21.34	.2236	22.36	.2284	22.84	.2043	20.43	.2187	21.87	.2108	21.08	.2236	22.36	.2108	21.08
Miscellaneous & Fixed Charges	.3350	33.50	.3483	34.83	.3157	31.57	.2933	29.33	.3134	31.34	.3060	30.60	.3221	32.21	.3060	30.60
Production Cost	1.3996	139.96	1.4192	141.92	1.3677	136.77	1.3079	130.79	1.3362	133.62	1.3628	136.28	1.3628	136.28	1.3628	136.28
Selling & Administration	.2034	20.34	.2308	23.08	.2170	21.70	.2307	23.07	.2180	21.80	.1924	19.24	.2067	20.67	.1924	19.24
Total Cost	1.6030	160.30	1.6500	165.00	1.5847	158.47	1.5386	153.86	1.5788	157.88	1.5652	156.52	1.5652	156.52	1.5652	156.52
Average No. of Days Worked	16.0	16.0	13.5	13.5	15.5	15.5	18.7	18.7	18.4	18.4	16.8	16.8	16.2	16.2	16.8	16.8
No. of Mines Reporting	28	28	24	24	22	22	23	23	24	24	28	28	28	28	28	28
Production Tons (000 omitted)	448	448	346	346	465	465	568	568	568	568	1,900	1,900	161	161	190	190

* A simple average of the total number of mines reported for the several months.
 † Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

Cost Table 50.

Average Costs of Hazard area of Southern Subdivision 2 (Division 1) by months November 1933 through January 1935.

	Average Costs per Ton				5 Mos. Total		8 Mos. Composite		1935	
	1933 Nov.	1933 Dec.	1934 Jan.	1934 Feb.	1934 March	Average % of Total Cost	April - Nov. 1934	Dec.	Jan.	Average % of Total Cost
Mine Labor	\$.9121	\$.9340	\$.6990	\$.6669	\$.9198	\$.9194	\$.8137	\$ 1.1966	\$ 1.1066	\$ 1.1661
Mine Supplies	.2496	.2120	.1970	.1979	.2054	.2583	.2868	.2534	.2194	.2513
Miscellaneous & Fixed Charges	1.1670	1.1560	1.3065	1.3294	1.3681	1.3135	1.3025	.2947	.2525	.2971
Production Cost	1.1696	1.2008	1.2032	1.2127	1.2823	1.3042	1.3027	1.6847	1.5767	1.7165
Selling & Administration	1.6586	1.5368	1.5527	1.5371	1.5514	1.5318	1.5287	.6011	.5953	.6291
Total Cost	14.0	14.1	14.9	14.9	19.3	19.0	19.6	14.5	17.5	18.4
Average No. of Days Worked	34	30	22	23	26	27	28	24	25	26
No. of Mines Reporting	335	298	227	245	334	1,439	1,796	260	324	2,300
Production Tons (000 omitted)										

* A simple average of the total number of mines reported for the several months.
 A/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

Cost Table 51.

Average Costs of Kanawha area of Southern Subdivision 2 (Division 1) by months November 1933 through January 1935.

	Average Costs per Ton				5 Mos. Total		8 Mos. Composite		1935	
	1933 Nov.	1933 Dec.	1934 Jan.	1934 Feb.	1934 March	Average % of Total Cost	April - Nov. 1934	Dec.	Jan.	Average % of Total Cost
Mine Labor	\$.8887	\$.9245	\$.9152	\$.8952	\$.8855	\$.9002	\$ 1.1234	\$ 1.1204	\$ 1.0943	\$ 1.1201
Mine Supplies	.2077	.2192	.2185	.2200	.2213	.2214	.2609	.2593	.2330	.2572
Miscellaneous & Fixed Charges	1.3487	1.4245	1.3691	1.3703	1.3747	1.3725	1.6510	1.6606	1.5849	1.6530
Production Cost	1.5284	1.6163	1.5798	1.5798	1.5996	1.6040	1.7104	1.7147	1.6989	1.7175
Selling & Administration	1.5011	1.5928	1.5524	1.5501	1.5504	1.5365	1.6057	1.6753	1.7648	1.6078
Total Cost	17.1	15.5	15.6	17.9	20.7	19.0	19.3	16.2	18.3	17.6
Average No. of Days Worked	46	44	36	38	36	40	44	48	47	47
No. of Mines Reporting	507	708	679	755	891	3,958	6,122	933	1,059	10,114
Production Tons (000 omitted)										

* A simple average of the total number of mines reported for the several months.
 A/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

Cost Table 52.

Average Costs of Logan area of Southern Subdivision 2 (Division 1) by months November 1933 through January 1935.

	Average Costs per Ton				5 Mos. Total		8 Mos. Composite		1935	
	1933 Nov.	1933 Dec.	1934 Jan.	1934 Feb.	1934 March	Average % of Total Cost	April - Nov. 1934	Dec.	Jan.	Average % of Total Cost
Mine Labor	\$.7016	\$.6944	\$.6877	\$.6693	\$.6705	\$.6839	\$.8285	\$.6659	\$.6959	\$.6372
Mine Supplies	.1995	.2217	.1784	.1753	.1697	.1870	.2037	.2166	.2574	.2093
Miscellaneous & Fixed Charges	1.1762	1.2129	1.1358	1.1237	1.0876	1.1421	1.3175	1.2333	1.2846	1.3150
Production Cost	1.1724	1.1815	1.1620	1.1765	1.1671	1.1715	1.3497	1.4068	1.4379	1.3615
Selling & Administration	1.3466	1.3944	1.2978	1.3022	1.2547	1.3136	1.5551	1.2831	1.2327	1.2106
Total Cost	16.9	14.6	16.9	17.4	21.7	19.0	19.7	16.9	16.706	15.721
Average No. of Days Worked	40	38	37	34	40	38	34	36	38	36
No. of Mines Reporting	939	775	928	830	1,210	4,642	6,363	564	696	7,583
Production Tons (000 omitted)										

* A simple average of the total number of mines reported for the several months.
 A/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

	1933		1934		1935		10 Mos. Total		Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	
Mine Labor	\$1.0698	\$1.0757	\$1.0456	\$1.0178	\$1.0485	\$1.0495	\$1.0495	\$1.0495	61.50
Mine Supplies	.2517	.2566	.2213	.2273	.2520	.2409	.2412	.2412	14.06
Miscellaneous & Fixed Charges	.2401	.2576	.2280	.2257	.2197	.2327	13.63	.2327	14.04
Production Cost	1.5616	1.5909	1.4949	1.4708	1.5208	1.5231	89.25	1.5231	12.62
Selling & Administration	.1295	.1379	.1267	.1206	.1600	.1534	10.75	.1534	9.72
Total Cost	1.7601	1.7888	1.6666	1.6714	1.7855	1.7855	100.00	1.7855	9.28
Average No. of Days Worked	11.8	12.2	15.7	18.4	20.8	19.9		19.9	138.4
No. of Mines Reporting	45	40	34	36	32	33		33	14
Production Tons (000 omitted)	288	284	324	339	366	1,601		1,601	1,460

* A simple average of the total number of mines reported for the several months.
 B/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

	1933		1934		1935		10 Mos. Total		Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	
Mine Labor	.9504	.9446	.9490	.9466	.9492	.9474	57.66	.9474	58.85
Mine Supplies	.2151	.2241	.2169	.2189	.2186	.2186	13.31	.2186	12.64
Miscellaneous & Fixed Charges	.3408	.3342	.3089	.2948	.2740	.2700	18.69	.2700	17.55
Production Cost	1.5063	1.5029	1.4688	1.4605	1.4418	1.4730	89.68	1.4730	89.04
Selling & Administration	.1647	.1802	.1665	.1617	.1484	.1484	10.32	.1484	10.96
Total Cost	1.6910	1.6831	1.6311	1.6322	1.5642	1.6425	100.00	1.6425	100.00
Average No. of Days Worked	17.0	15.8	16.3	19.3	22.1	22.1		22.1	161.1
No. of Mines Reporting	23	21	27	28	30	29		29	23
Production Tons (000 omitted)	520	470	527	532	657	2,706		2,706	3,174

* A simple average of the total number of mines reported for the several months.
 B/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal

	1933		1934		1935		10 Mos. Total		Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	
Mine Labor	.8473	.8727	.8585	.8266	.8353	.8471	54.49	.8471	56.11
Mine Supplies	.2460	.2568	.2121	.2156	.2149	.2279	14.67	.2279	14.61
Miscellaneous & Fixed Charges	.3466	.3422	.2965	.3124	.2970	.3163	20.34	.3163	19.97
Production Cost	1.4399	1.4717	1.3669	1.3546	1.3472	1.3913	89.50	1.3913	90.69
Selling & Administration	.1596	.1599	.1586	.1776	.1640	.1631	10.50	.1631	9.31
Total Cost	1.5995	1.6316	1.5255	1.5322	1.5112	1.5544	100.00	1.5544	100.00
Average No. of Days Worked	14.2	12.1	14.8	15.6	18.8	17.5		17.5	130.7
No. of Mines Reporting	35	33	27	28	29	32		32	30
Production Tons (000 omitted)	400	394	391	382	501	2,028		2,028	3,442

* A simple average of the total number of mines reported for the several months.
 B/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Cost
Table 56.

Bituminous Coal. Average Costs of Eastern Kentucky Subdivision of Division 1, s/ by months November 1933 through January 1934.

	(Average Costs per Ton)					3 Mo. Total Average % of Total Cost
	1933	1934				
	Nov.	Dec.	Jan.	Feb.	March	
Mine Labor	.7266	.7082	.7055	H		.7132 59.3
Mine Supplies	.1200	.1783	.1639	o		.1761 14.7
Mine Expenses & Fixed Charges	.0804	.0693	.0693	t		.0693 5.7
Production Cost	1.0914	1.0571	1.0297	A		1.0642 87.7
Selling & Administration	.1850	.1519	.1422	v		.1475 12.3
Total Cost	1.2284	1.2110	1.1709	s		1.2017 100.0
Average No. of Days Worked	13.9	15.1	15.8	l		15.8
No. of Mines Reporting	27	29	24	a		27
Production Tons (000 omitted)	415	456	440	b		431

s/ Reports were submitted from Eastern Kentucky for only the months shown.

Cost Table 57
Average Costs of Division II, deep and stripping mines combined
by month, November 1933 through January 1935

1933	Average Costs per Ton																	
	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	1934	1935	12 Mo. Total	Average Cost	% of Total Cost	
	\$ 1,252 1/2	\$ 1,244 1/2	\$ 1,254	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	\$ 1,258	53.87
Mine Labor	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	17.34
Mine Supplies	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	16.21
Miscellaneous & Fixed Charges	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	86.94
Production Cost	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	1,244 1/2	11.06
Selling & Administration	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	100.00
Total Cost	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	1,311 1/2	146.8
Average No. of Days Worked	15.9	16.7	17.5	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	20.4
No. of Mines Reporting	161	178	181	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Promotion, Tons (000 omitted)	4,182 1/2	4,456 1/2	4,721	4,388	4,758	22,447	2,698	2,393	2,431	2,563	3,099	3,599	3,993	3,957	5,036	5,376	5,376	35.155

* A simple average of the total number of mines reported for the several months.
 † Including Indiana and Illinois both deep and strip mines.
 ‡ Excluding Iowa whose reports are available for November and December only. With Iowa included, the averages for these two months appear as follows:

November 1933		December 1933	
Mine Labor	\$ 282 1/2	\$ 282 1/2	\$ 282 1/2
Mine Supplies	22 1/2	22 1/2	22 1/2
Miscellaneous & Fixed Charges	1,244 1/2	1,244 1/2	1,244 1/2
Production Cost	1,244 1/2	1,244 1/2	1,244 1/2
Selling & Administration	1,311 1/2	1,311 1/2	1,311 1/2
Total Cost	1,311 1/2	1,311 1/2	1,311 1/2

Cost Table 58
Average Costs of Division II, deep mines only
by month, November 1933 through January 1935

1933	Average Costs per Ton																	
	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	1934	1935	12 Mo. Total	Average Cost	% of Total Cost	
	\$ 675 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	\$ 682 1/2	58.33
Mine Labor	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	17.34
Mine Supplies	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	16.21
Miscellaneous & Fixed Charges	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	89.42
Production Cost	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	10.18
Selling & Administration	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	100.00
Total Cost	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	1,469 1/2	186.2
Average No. of Days Worked	12.6	13.4	14.2	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	20.4
No. of Mines Reporting	126	146	147	152	152	152	152	152	152	152	152	152	152	152	152	152	152	184
Promotion, Tons (000 omitted)	3,229 1/2	3,598 1/2	3,716	3,407	3,878	17,538	1,968	1,732	1,746	1,905	2,410	2,653	3,111	3,073	3,990	4,308	4,308	27.025

* A simple average of the total number of mines reported for the several months.
 † Including Iowa in the total of deep mines for December 1933. The averages for November and December appear as follows:

November 1933		December 1933	
Mine Labor	\$ 282 1/2	\$ 282 1/2	\$ 282 1/2
Mine Supplies	22 1/2	22 1/2	22 1/2
Miscellaneous & Fixed Charges	1,168 1/2	1,168 1/2	1,168 1/2
Production Cost	1,168 1/2	1,168 1/2	1,168 1/2
Selling & Administration	1,321	1,321	1,321
Total Cost	1,491 1/2	1,491 1/2	1,491 1/2

Cost Table 59
Average Costs of Division II, stripping mines only
by month, November 1933 through January 1935

1933	Average Costs per Ton																	
	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	1934	1935	12 Mo. Total	Average Cost	% of Total Cost	
	\$ 361 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	\$ 369 1/2	28.52
Mine Labor	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	282 1/2	17.34
Mine Supplies	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	16.21
Miscellaneous & Fixed Charges	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	65.30
Production Cost	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	316 1/2	18.70
Selling & Administration	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	100.00
Total Cost	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	1,168 1/2	147.2
Average No. of Days Worked	14.7	15.0	15.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	33.2
No. of Mines Reporting	35	32	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	33
Promotion, Tons (000 omitted)	913 1/2	950	1,005	981	1,080	4,909	789	661	696	657	669	662	662	661	1,046	1,069	1,069	8.119

* A simple average of the total number of mines reported for the several months.
 † Iowa reported strip mines in November only. If they were included in the November total for the averages would appear as follows:

November 1933	
Mine Labor	\$ 282 1/2
Mine Supplies	22 1/2
Miscellaneous & Fixed Charges	316 1/2
Production Cost	316 1/2
Selling & Administration	1,168 1/2
Total Cost	1,511 1/2

Bituminous Coal
 Average costs of Indiana subdivisions of Division II, deep and stripping mines combined
 by months, November 1933 through January 1935.

1933	1934		1934		1934		1934		1934		1934		1935		10 Mo. Total Ayr. 11th-Jan-1935	% of Total Cost	
	Nov	Dec.	Jan.	Feb.	March	Average % of Total Cost	April	May	June	July	August	Sept.	October	Nov.			Dec.
Mine Labor	\$.6398	\$.6125	\$.6075	\$.5971	\$.5690	\$.6049	\$.7266	\$.7675	\$.7600	\$.7987	\$.7788	\$.7409	\$.7074	\$.6876	\$.6583	\$.6335	\$.7191
Mine Supplies	.2868	.2894	.2938	.2953	.2660	.2698	.21.08	.3618	.3677	.3686	.3621	.3668	.3497	.3269	.3136	.2866	.3186
Miscellaneous & Fixed Charges	.2659	.2661	.2642	.2676	.2667	.2695	20.74	.3078	.3165	.3319	.3231	.3032	.2859	.2838	.2674	.2666	.2928
Promotion Cost	1.1325	1.1640	1.1225	1.1210	1.1017	1.1402	69.08	1.3962	1.4717	1.4945	1.4683	1.3538	1.3162	1.2086	1.2373	1.2107	1.3501
Selling & Administration	.1427	.1490	.1416	.1330	.1328	.1396	10.92	.1730	.1670	.1617	.1780	.2253	.1634	.1529	.1673	.1512	.1696
Total Cost	1.3352	1.3130	1.2643	1.2540	1.2345	1.2800	100.00	1.5692	1.6387	1.6682	1.6284	1.5561	1.4816	1.3996	1.3619	1.2800	1.4610
Average No. of Days Worked	16.9	16.9	17.1	16.9	19.2	17.1	13.6	14.6	14.6	14.5	14.1	13.5	12.5	12.5	12.5	12.1	14.5
No. of Mines Reporting	59	53	55	54	51	54	49	49	44	42	46	47	46	48	47	48	46
Production, Tons (000 omitted)	1,226	1,159	1,167	1,145	1,267	1,194	615	653	673	561	775	644	999	1,017	1,177	1,268	8,892

* A simple average of the total number of mines reported for the several months

Bituminous Coal
 Average costs of Indiana subdivision of Division II, deep mines only.
 by months, November 1933 through January 1935.

1933	1934		1934		1934		1934		1934		1934		1935		10 Mo. Total Ayr. 11th-Jan-1935	% of Total Cost	
	Nov	Dec.	Jan.	Feb.	March	Average % of Total Cost	April	May	June	July	August	Sept.	October	Nov.			Dec.
Mine Labor	\$.7685	\$.7628	\$.7511	\$.7400	\$.7228	\$.7530	\$.8945	\$.9264	\$.9538	\$.9360	\$.9103	\$.8702	\$.8373	\$.8160	\$.7854	\$.7625	\$.8273
Mine Supplies	.2836	.2869	.2883	.2836	.2772	.2759	19.89	.3763	.3904	.4284	.3860	.3360	.3168	.2970	.3161	.2587	.3266
Miscellaneous & Fixed Charges	.2939	.2915	.2876	.2936	.2828	.2861	16.30	.2860	.2839	.2870	.2736	.2665	.2675	.2587	.2493	.2330	.2562
Promotion Cost	1.1219	1.1770	1.2400	1.2394	1.2228	1.2590	90.50	1.5368	1.6087	1.6692	1.4969	1.4737	1.4980	1.3917	1.3734	1.2771	1.4493
Selling & Administration	.1425	.1412	.1365	.1312	.1312	.1317	9.50	.1572	.1619	.1586	.1564	.1571	.1596	.1507	.1444	.1444	.1559
Total Cost	1.4256	1.4142	1.3685	1.3705	1.3549	1.3687	100.00	1.6940	1.7646	1.8278	1.7040	1.6398	1.5676	1.4924	1.5363	1.4215	1.5652
Average No. of Days Worked	16.6	16.3	16.6	16.4	20.7	16.9	14.7	12.8	12.7	13.8	15.1	15.4	18.5	17.7	20.2	21.6	162.4
No. of Mines Reporting	79	77	77	76	71	75	31	29	29	27	31	30	29	30	29	30	29*
Production, Tons (000 omitted)	794	727	747	716	757	745	412	412	390	416	505	541	641	638	731	827	5,571

* A simple average of the total number of mines reported for the several months.

Bituminous Coal
 Average costs of Indiana subdivision of Division II, stripping mines only.
 by months, November 1933 through January 1935.

1933	1934		1934		1934		1934		1934		1934		1935		10 Mo. Total Ayr. 11th-Jan-1935	% of Total Cost	
	Nov	Dec.	Jan.	Feb.	March	Average % of Total Cost	April	May	June	July	August	Sept.	October	Nov.			Dec.
Mine Labor	\$.3688	\$.3594	\$.3638	\$.3565	\$.3408	\$.3575	\$.3645	\$.3980	\$.5035	\$.5022	\$.5654	\$.5315	\$.4756	\$.4368	\$.4124	\$.3349	\$.4785
Mine Supplies	.2026	.2277	.2316	.2436	.2496	.2596	23.56	.3419	.3532	.3536	.4064	.4768	.3741	.3349	.3345	.3216	.3595
Miscellaneous & Fixed Charges	.3438	.3477	.3372	.3214	.3318	.3312	30.07	.3648	.3701	.3939	.3617	.4299	.3375	.3259	.2539	.2597	.3474
Promotion Cost	1.0022	.9715	.9272	.9222	.9485	.86.08	1.2937	1.2968	1.2297	1.2575	1.4373	1.2808	1.1580	1.1046	1.0068	1.0862	1.1652
Selling & Administration	.1627	.1680	.1674	.1594	.1594	.1534	13.92	.1944	.1754	.2137	.2002	.3577	.1718	.1702	.1587	.1639	.1956
Total Cost	1.1089	1.1326	1.0897	1.0579	1.0562	1.1017	100.00	1.3591	1.4322	1.4434	1.5937	1.7950	1.4229	1.3582	1.1753	1.2501	1.3778
Average No. of Days Worked	14.3	15.1	14.8	14.9	17.3	16.5	12.3	10.0	10.0	10.0	11.4	12.3	13.9	14.3	17.7	17.6	129.7
No. of Mines Reporting	21	18	20	19	20	17	15	15	15	15	15	17	17	18	16	18	17*
Production, Tons (000 omitted)	432	432	440	427	510	2,284	345	283	285	270	302	389	379	446	446	441	3,321

* A simple average of the total number of mines reported for the several months

Bituminous Coal

Cost Table 63
Average costs of Brazil-Clinton area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

Average Costs per Ton	1934												10 Mos. Total	Average Cost	% of Total Cost	
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October				Nov.
Mine Labor	\$.6077	\$.7189	\$.7117	\$.7642	\$.7331	\$.9146	\$.8686	\$.9259	\$.9270	\$.9234	\$.5151	\$.6803	\$.8794	\$.8664	\$.6712	\$.6966
Mine Supplies	.2705	.2901	.2557	.2426	.2667	.3195	.3419	.3166	.3441	.3023	.3217	.3096	.2914	.2843	.2548	.3056
Miscellaneous & Fixed Charges	.2981	.3155	.3064	.3184	.3431	.3154	.3620	.3699	.3791	.3730	.3519	.3587	.3709	.3648	.3576	.3576
Production Cost	1.3763	1.3845	1.3338	1.3752	1.3419	1.5261	1.6006	1.6245	1.6656	1.5998	1.6038	1.5818	1.6216	1.4908	1.5598	1.5598
Selling & Administration	.1491	.1366	.1353	.1415	.1334	.1583	.1563	.1687	.1622	.1616	.1596	.1642	.1634	.1534	.1608	.1608
Total Cost	1.5254	1.5211	1.4691	1.4667	1.4753	1.7944	1.7569	1.7932	1.8478	1.7614	1.7694	1.6960	1.6878	1.5850	1.6442	1.7206
Average No. of Days Worked	17.5	17.9	16.5	16.2	17.2	14.5	13.4	12.4	13.0	15.2	14.3	16.8	15.4	18.0	20.0	151.0
No. of Mines Reporting	22	18	19	18	18	16	15	15	13	15	15	14	14	14	12	14*
Production, Tons (000 omitted)	359	321	318	290	293	223	206	196	175	228	220	244	247	265	288	2,292

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 64
Average costs of Linton-Sullivan area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

Mine Labor	\$.8471	\$.6138	\$.5930	\$.5960	\$.5782	\$.6059	\$ 47.61	\$.6680	\$.7395	\$.7681	\$.7743	\$.7594	\$.7382	\$.6988	\$.7040	\$.6810	\$.6854	\$.7182
Mine Supplies	.2765	.2898	.2401	.2519	.2462	.3486	.3020	.3486	.3776	.4020	.3657	.4189	.3555	.3314	.3336	.3530	.2963	.3506
Miscellaneous & Fixed Charges	.2613	.2547	.2539	.2545	.2928	.2528	.2861	.20.12	.3072	.3308	.2894	.2894	.2877	.2714	.2714	.2993	.2193	.2789
Production Cost	1.1869	1.1663	1.0870	1.1024	1.0772	1.1223	88.18	1.3365	1.4149	1.5164	1.4472	1.5061	1.3681	1.2979	1.3090	1.2933	1.2010	1.3457
Selling & Administration	.1406	.1565	.1680	.1397	.1468	.1629	.1503	.11.82	.1879	.1841	.1841	.3208	.1758	.1852	.1779	.1650	.1650	.1866
Total Cost	1.3275	1.3252	1.2550	1.2421	1.2240	1.2726	100.00	1.5194	1.6028	1.7087	1.6313	1.8269	1.5439	1.4831	1.4713	1.4712	1.3846	1.5323
Average No. of Days Worked	16.6	16.0	18.0	17.6	19.8	48.0	88.0	13.1	11.0	10.2	11.6	12.8	14.5	16.7	15.9	18.7	19.6	144.1
No. of Mines Reporting	29	27	28	28	25	27*	27*	330	21	20	21	23	24	24	25	25	26	28*
Production, Tons (000 omitted)	536	489	558	541	593	271	2,717	330	270	234	287	331	391	475	482	531	589	3,908

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 65
Average costs of Princeton-Lybraire area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

Mine Labor	\$.4459	\$.4490	\$.4465	\$.4444	\$.4284	\$.4461	\$ 40.82	\$.6157	\$.6099	\$.7210	\$.6586	\$.5800	\$.5102	\$.4790	\$.4777	\$.5723
Mine Supplies	.3177	.2758	.2765	.2760	.2973	.4141	26.44	.4137	.4529	.4337	.3728	.3582	.3142	.3076	.2759	.3501
Miscellaneous & Fixed Charges	1.0021	.9548	.9708	.9442	.9954	.9869	88.65	1.3017	1.3404	1.3452	1.2710	1.2070	1.1579	1.0117	1.0192	1.1802
Production Cost	1.4475	1.4495	1.0118	1.1337	1.1195	1.2400	11.35	1.7129	1.8465	1.821	1.521	1.423	1.1865	1.1317	1.1524	1.4524
Selling & Administration	.11956	.11043	.10726	.10779	.10659	1.0929	100.00	1.4746	1.5579	1.4973	1.4170	1.3493	1.3284	1.1865	1.1509	1.3328
Average No. of Days Worked	16.8	17.5	16.2	16.5	20.0	87.0	87.0	13.6	10.6	12.2	12.1	13.1	16.1	17.1	20.9	21.1
No. of Mines Reporting	31	31	31	31	31	31	31	9	9	9	8	8	8	8	8	8
Production, Tons (000 omitted)	331	349	312	314	381	1,587	1,587	262	167	242	199	216	233	308	375	392

* A simple average of the total number of mines reported for the several months.

Average costs of Illinois subdivisions of Division II, deep and striping mines compiled, by months, November 1933 through January 1935.

	(Average Costs per Ton)																	
	1934 Nov.	1934 Dec.	1934 Jan.	1934 Feb.	1934 March	1934 April	1934 May	1934 June	1934 July	1934 August	1934 Sept.	1934 October	1934 Nov.	1934 Dec.	1935 Jan.	10 Mos. Average Cost	Total No. of Total Cost	
Mine Labor	\$ 7714	\$ 7908	\$ 7846	\$ 7723	\$ 7571	\$ 7754	\$ 8593	\$ 8738	\$ 8320	\$ 8687	\$ 8754	\$ 8796	\$ 8721	\$ 8922	\$ 8811	\$ 8609	\$ 6663	55.78
Mine Supplies	2619	2420	2317	2302	2317	2368	2985	3049	3065	2799	2969	2924	2828	2828	2841	2904	2793	17.98
Miscellaneous & Fixed Charges	2320	2345	2129	2192	2167	2186	2118	2626	2682	2510	2640	2325	2292	2363	2162	2105	2362	15.21
Production Cost	1,2653	1,2945	1,2294	1,2212	1,2095	1,2328	1,4286	1,4413	1,3987	1,4166	1,3773	1,3924	1,3537	1,4133	1,3534	1,3218	1,3818	86.97
Selling & Administration	1,351	1,386	1,356	1,378	1,341	1,362	1,939	2,074	2,136	2,035	1,858	1,744	1,556	1,572	1,516	1,379	1,713	11.03
Total Cost	1,4004	1,3861	1,3650	1,3595	1,3596	1,3690	1,9335	1,6487	1,6163	1,6201	1,5611	1,5668	1,5473	1,5705	1,4850	1,4597	1,5531	100.00
Average No. of Days Worked	15.5	16.7	17.6	16.1	16.9	16.2	11.1	11.0	11.9	12.4	13.7	14.8	15.7	15.4	19.5	20.5	146.0	
No. of Mines Reporting	101	125	126	110	110	114	59	67	77	82	93	111	115	118	122	129	103*	
Production, Tons (000 omitted)	2,916	3,298	3,534	3,223	3,491	16,462	1,683	1,730	1,768	1,902	2,323	2,755	2,993	2,940	3,860	4,108	26,262	

* A simple average of the total number of mines reported for the several months.

Average costs of Illinois subdivisions of Division II, deep mines only, by months, November 1933 through January 1935.

	(Average Costs per Ton)																	
	1934 Nov.	1934 Dec.	1934 Jan.	1934 Feb.	1934 March	1934 April	1934 May	1934 June	1934 July	1934 August	1934 Sept.	1934 October	1934 Nov.	1934 Dec.	1935 Jan.	10 Mos. Average Cost	Total No. of Total Cost	
Mine Labor	\$ 8590	\$ 8707	\$ 8678	\$ 8585	\$ 8403	\$ 8683	\$ 10,078	\$ 10,095	\$ 9475	\$ 9712	\$ 9402	\$ 9816	\$ 9850	\$ 9827	\$ 9430	\$ 9411	\$ 9632	59.51
Mine Supplies	2606	2558	2269	2256	2247	2339	2994	3021	3036	2742	2742	2750	2742	2717	2798	2772	2689	16.62
Miscellaneous & Fixed Charges	2320	2345	2129	2192	2167	2186	2118	2626	2682	2510	2640	2325	2292	2363	2162	2105	2362	13.57
Production Cost	1,3266	1,3649	1,2984	1,2866	1,2658	1,2940	1,5690	1,5709	1,4900	1,4987	1,4411	1,4635	1,4608	1,4779	1,3869	1,3739	1,4518	89.70
Selling & Administration	1,300	1,339	1,293	1,336	1,295	1,312	2,102	2,252	2,262	2,065	1,795	1,634	1,466	1,502	1,450	1,120	1,666	10.30
Total Cost	1,4566	1,4388	1,4208	1,4208	1,3953	1,4252	1,7792	1,7764	1,7152	1,7002	1,6206	1,6189	1,5974	1,6281	1,5319	1,5059	1,6164	100.00
Average No. of Days Worked	15.6	16.6	17.5	15.9	16.8	16.5	10.4	11.4	11.9	13.5	14.7	15.5	15.0	15.0	19.4	20.3	142.6	
No. of Mines Reporting	86	111	112	97	96	86	74	83	66	79	96	100	103	108	112	112	88*	
Production, Tons (000 omitted)	2,435	2,780	2,969	2,689	2,921	13,794	1,439	1,320	1,355	1,469	1,905	2,312	2,470	2,435	3,259	3,480	21,664	

* A simple average of the total number of mines reported for the several months.

Average costs of Illinois subdivisions of Division II, striping mines only, by months, November 1933 through January 1935.

	(Average Costs per Ton)																	
	1934 Nov.	1934 Dec.	1934 Jan.	1934 Feb.	1934 March	1934 April	1934 May	1934 June	1934 July	1934 August	1934 Sept.	1934 October	1934 Nov.	1934 Dec.	1935 Jan.	10 Mos. Average Cost	Total No. of Total Cost	
Mine Labor	\$ 3537	\$ 3615	\$ 3463	\$ 3388	\$ 3312	\$ 3463	\$ 3784	\$ 4043	\$ 4534	\$ 4773	\$ 4588	\$ 4519	\$ 4438	\$ 4953	\$ 4164	\$ 4160	\$ 4332	34.36
Mine Supplies	2668	2762	2570	2533	2676	2642	2956	3140	3168	3105	3057	3078	3182	3163	3331	3237	3256	25.82
Miscellaneous & Fixed Charges	3333	3010	2974	3025	2983	3044	3058	3215	3370	3224	3241	3241	3120	3100	2931	2935	3099	24.57
Production Cost	9556	9377	9027	8946	8971	9162	8496	9784	1,0939	1,0907	1,0889	1,0838	1,1240	1,1016	1,0426	1,0332	1,0687	84.75
Selling & Administration	1,602	1,657	1,601	1,589	1,567	1,622	15,04	1,675	2,013	1,934	2,036	2,112	1,885	1,908	1,876	1,702	1,922	15.25
Total Cost	1,1160	1,1034	1,0718	1,0535	1,0538	1,0784	1,6169	1,2706	1,2920	1,3312	1,2965	1,3105	1,2950	1,2924	1,2302	1,2034	1,2609	100.00
Average No. of Days Worked	15.1	16.9	18.0	16.9	17.5	16.3	14.5	13.7	13.9	14.5	14.5	15.0	16.7	17.5	20.3	21.7	159.9	
No. of Mines Reporting	13	14	14	13	14	13	13	14	14	14	14	15	15	15	14	15	15*	
Production, Tons (000 omitted)	622	518	564	534	570	2,668	444	410	413	417	419	413	523	505	601	627	4,798	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 69 Average costs of Northern Illinois area of Illinois subdivision (Division II), deep and stripping mines combined, by month, November 1933 through January 1935.

	Average Costs per Ton														
	1933 Nov	1934 Jan.	Feb.	March	April	May	June	July	August	Sept.	October	1934 Nov.	1935 Jan.	10 Mo. Average Cost	Total % of Total Cost
Mine Labor	\$.6422	\$.6407	\$.6322	\$.5821	\$.5879	\$.6079	\$.6457	\$.6280	\$.7101	\$.7508	\$.6916	\$.9406	\$.9362	\$.6001	46.39
Mine Supplies	.3053	.3344	.2529	.2760	.3465	.3650	.3559	.4081	.4373	.3649	.5295	.3908	.3502	.3669	22.43
Miscellaneous & Fixed Charges	.3422	.3444	.3231	.3249	.3539	.3560	.3593	.3623	.3677	.3533	.3538	.3440	.3349	.3460	20.05
Production Cost	1.2897	1.3195	1.2294	1.2901	1.3529	1.3669	1.3984	1.5151	1.4690	1.4609	1.6794	1.6322	1.5730	1.5130	84.87
Selling & Administration	.1411	.1421	.1316	.1323	.1367	.1424	.1424	.1424	.1424	.1424	.1424	.1424	.1424	.1424	11.13
Total Cost	1.4308	1.4616	1.3613	1.4253	1.5378	1.5452	1.5413	1.7714	1.7056	1.6551	1.9367	1.8710	1.7650	1.7249	100.00
Average No. of Days Worked	22.2	23.9	23.5	26.3	21.2	17.2	20.2	22.5	20.2	21.6	25.1	22.9	25.1	22.4	
No. of Mines Reporting	9	8	7	7	6	5	3	3	5	7	10	10	12	7*	
Production, Tons ('000 omitted)	179	167	188	184	140	113	108	116	121	142	199	186	231	1,568	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 70 Average costs of Central-Peoria area of Illinois subdivision (Division II), deep and stripping mines combined, by month, November 1933 through January 1935.

	Average Costs per Ton														
	1933 Nov	1934 Jan.	Feb.	March	April	May	June	July	August	Sept.	October	1934 Nov.	1935 Jan.	10 Mo. Average Cost	Total % of Total Cost
Mine Labor	\$.6478	\$.6721	\$.6535	\$.6009	\$.6430	\$.6559	\$.6921	\$.9101	\$.9426	\$.9650	\$.6642	\$.6538	\$.6376	\$.6919	56.14
Mine Supplies	.2823	.2691	.2051	.2169	.2794	.2717	.2723	.2547	.2462	.2629	.2630	.2602	.2501	.2577	16.22
Miscellaneous & Fixed Charges	.2339	.2231	.2264	.2277	.2267	.2267	.2267	.2267	.2267	.2267	.2267	.2267	.2267	.2267	15.59
Production Cost	1.3240	1.3043	1.2680	1.2395	1.2791	1.2943	1.3946	1.4270	1.4440	1.4847	1.3628	1.3444	1.3350	1.3972	87.95
Selling & Administration	.2065	.2189	.1794	.1866	.1933	.2019	.2001	.1895	.1976	.1899	.2426	.1800	.1827	.1915	12.05
Total Cost	1.5306	1.5192	1.4474	1.4465	1.4724	1.4944	1.6841	1.6246	1.6319	1.7271	1.6428	1.5293	1.5177	1.5667	100.00
Average No. of Days Worked	17.2	18.5	17.6	19.5	13.9	12.4	15.2	15.5	15.3	16.1	16.4	18.6	22.1	23.5	171.0
No. of Mines Reporting	15	18	14	14	14	8	8	8	11	13	14	16	15	15*	
Production, Tons ('000 omitted)	289	327	353	307	220	199	170	168	212	234	279	279	331	365	2,477

* A simple average of the total number of mines reported for the several months.

Bituminous Coal

Cost Table 71 Average costs of Central-All Others area of Illinois subdivision (Division II), deep and stripping mines combined, by month, November 1933 through January 1935.

	Average Costs per Ton														
	1933 Nov	1934 Jan.	Feb.	March	April	May	June	July	August	Sept.	October	1934 Nov.	1935 Jan.	10 Mo. Average Cost	Total % of Total Cost
Mine Labor	\$.7840	\$.8108	\$.8139	\$.7887	\$.9382	\$.8857	\$.8721	\$.6499	\$.8105	\$.6608	\$.6600	\$.6930	\$.6049	\$.6868	57.40
Mine Supplies	.2895	.2579	.2645	.2512	.2492	.2621	.3115	.2824	.2653	.3103	.2916	.2654	.2662	.2656	19.06
Miscellaneous & Fixed Charges	.2052	.1823	.1857	.1936	.1869	.1903	.1934	.2262	.2262	.2034	.1897	.1935	.1768	.1761	13.34
Production Cost	1.2767	1.2510	1.2619	1.2315	1.2166	1.2495	1.3391	1.3104	1.3104	1.3945	1.3413	1.3719	1.3127	1.3066	89.80
Selling & Administration	.1117	.1117	.1150	.1292	.1196	.1164	.8.53	.2110	.2132	.1516	.1289	.1335	.1127	.1184	10.20
Total Cost	1.3904	1.3627	1.3769	1.3567	1.3364	1.3649	1.5330	1.4636	1.4636	1.5461	1.4702	1.5058	1.4314	1.4210	100.00
Average No. of Days Worked	17.7	19.7	20.1	17.6	12.3	12.4	13.6	14.9	15.5	15.6	17.1	16.6	20.6	21.5	
No. of Mines Reporting	26	30	30	25	25	16	19	20	27	27	28	28	24*	24*	
Production, Tons ('000 omitted)	671	1,029	1,062	896	954	485	471	485	522	536	650	625	1,036	1,067	7,115

* A simple average of the total number of mines reported for the several months.

Cost Table 77.
Bituminous Coal.

Average Costs of Alabama area #3 of Division III,
by months November 1933 through January 1935.

Average Costs per Ton	1934												9 Mos. Total Average Costs % of Total Cost			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		November	December	
Mine Labor	1.1111	1.1216	1.1352	1.1650	1.1939	1.2466	1.4450	1.5421	1.4145	1.3979	1.4134	1.3650	1.3427	1.3565	1.4117	59.11
Mine Supplies	.9339	.9207	.9067	.9289	.9239	.9233	1.0151	1.0161	1.0161	1.0161	1.0161	1.0161	1.0161	1.0161	1.0161	76.09
Miscellaneous & Fixed Charges	.4217	.4307	.4348	.4369	.4378	.4378	.4378	.4378	.4378	.4378	.4378	.4378	.4378	.4378	.4378	14.09
Production Cost	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	1.9800	89.29
Selling & Administration	2.1967	2.0745	2.0452	2.0998	2.0489	2.0990	2.0990	2.0990	2.0990	2.0990	2.0990	2.0990	2.0990	2.0990	2.0990	10.71
Total Cost	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	100.00
Average No. of Days Worked	10	15	11	11	11	11	11	11	11	11	11	11	11	11	11	151.0
No. of Mines Reporting	69	84	82	81	88	67	100	77	84	91	80	98	98	102	793	
Production, Tons (000 omitted)																

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal.

Cost Table 78.

Average Costs of Alabama area #4 of Division III,
by months November 1933 through January 1935.

Average Costs per Ton	1934												9 Mos. Total Average Costs % of Total Cost			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		November	December	
Mine Labor	1.5614	1.5504	1.5056	1.5414	1.4959	1.5856	1.7917	1.8504	1.6994	1.6566	1.9710	1.9766	2.0719	1.9847	1.9840	64.37
Mine Supplies	.5939	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	.5928	19.13
Miscellaneous & Fixed Charges	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	.4178	9.42
Production Cost	2.5931	2.5146	2.5042	2.4120	2.5922	2.5959	2.6520	2.7070	2.5966	2.5966	2.8710	2.8920	3.0467	2.8546	2.8207	92.92
Selling & Administration	2.2251	2.0495	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	2.0295	7.08
Total Cost	2.8166	2.7641	2.7359	2.7409	2.7328	2.7657	2.7198	2.8321	2.8996	2.8996	3.1431	3.0880	3.2769	3.0586	3.0357	100.00
Average No. of Days Worked	17.1	15.0	17.6	15.1	10.0	74.8	20.9	19.8	18.2	16.7	17.5	17.5	15.8	17.7	15.2	155.2
No. of Mines Reporting	5	4	4	4	5	3	5	5	5	5	5	5	5	4	5	275
Production, Tons (000 omitted)	34	25	25	23	17	124	37	37	35	32	31	34	30	33	275	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal.

Cost Table 79.

Average Costs of Alabama areas of Division III,
by months November 1933 through January 1935.

Average Costs per Ton	1934												9 Mos. Total Average Costs % of Total Cost			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October		November	December	
Mine Labor	1.1295	1.1116	1.1133	1.0712	1.1212	1.1088	1.4139	1.3945	1.4407	1.4259	1.4370	1.4295	1.4093	1.3775	1.4110	60.62
Mine Supplies	.3504	.3320	.3193	.3087	.3239	.3265	.4053	.3270	.3906	.3920	.3759	.3900	.4090	.3628	.3813	13.86
Miscellaneous & Fixed Charges	.3554	.3309	.3014	.3040	.3207	.3219	.4194	.3261	.3284	.3366	.3272	.3251	.3180	.2992	.3135	13.86
Production Cost	1.8353	1.7745	1.7340	1.6839	1.7658	1.7572	2.1597	2.1578	2.1597	2.1597	2.1401	2.1111	2.1281	2.1281	2.1315	91.69
Selling & Administration	2.2141	2.1999	2.1886	2.1901	2.1976	2.2017	2.2062	2.2062	2.2062	2.2062	2.2062	2.2062	2.2062	2.2062	2.2062	8.31
Total Cost	2.0494	1.9944	1.9226	1.8740	1.9594	1.9595	2.5047	2.1306	2.3665	2.3665	2.3665	2.3665	2.3665	2.3665	2.3665	100.00
Average No. of Days Worked	12.5	12.9	14.9	15.3	15.0	70.6	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	132.0
No. of Mines Reporting	43	42	41	39	39	41	36	45	43	43	43	43	43	42	42	42
Production, Tons (000 omitted)	410	393	437	437	389	2,066	554	382	434	418	377	435	418	473	3,716	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Average Costs of Southern Tennessee and Georgia area of Division III, by months November 1933 through January 1935.

Cost Table 80.

	1934												Average Cost	% of Total Cost			
	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	October			November	December	Average Cost
Mine Labor	\$1.1921	\$1.2349	\$1.2612	\$1.1508	\$1.1792	\$1.1984	63.64	\$1.4218	\$1.4913	\$1.5006	\$1.4142	\$1.4571	\$1.4284	\$1.4153	\$1.2511	\$/	66.19
Mine Supplies	.2286	.2069	.1845	.1809	.1847	.1970	10.45	.1915	.3344	.3178	.2116	.2415	.2798	.2527	.2732	\$/	12.04
Miscellaneous & Fixed Charges	.3091	.3400	.3690	.2928	.2989	.3013	15.37	.2854	.2164	.2869	.2490	.2770	.2597	.2728	.2714	\$/	12.26
Production Cost	1.7298	1.7618	1.7747	1.6285	1.6228	1.6967	89.46	1.8667	2.0721	2.1053	1.8748	1.9756	1.9679	1.9408	1.7957	\$/	90.49
Selling & Administration	.2135	.2897	.1610	.1905	.1931	.1894	10.00	1.1798	.2134	.2406	.1883	.2011	.2078	.2017	.2207	\$/	54.51
Total Cost	1.9433	2.0715	1.9357	1.7750	1.7625	1.8881	100.00	2.0485	2.2855	2.3459	2.0629	2.1767	2.1757	2.1425	2.0164	\$/	100.00
Average No. of Days Worked	14.6	14.9	17.2	18.7	20.8	86.2		19.9	17.2	15.0	17.3	14.9	15.5	14.2	16.0	\$/	125.5
No. of Mines Reporting	7	8	4	6	7	64		8	7	8	8	8	7	7	4	\$/	86.5
Production, Tons (000 omitted)	69	71	47	69	95	351		86	71	65	77	70	70	68	56	\$/	563

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

\$/ District 2 of the Tennessee - Georgia area not available for December - Data shown is for District 1 only in this month.

Situamious Coal. Cost Table 81.

Average Costs of Division IV¹ deep and strip mines combined, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	\$.4079	\$.4817	\$.5170	\$.5126	\$.5011
Mine Supplies	.3750	.2945	.2415	.2014	.2691
Miscellaneous & Fixed Charge	.1558	.1469	.1600	.1614	.1534
Production Cost	1.6947	1.4645	1.5713	1.3851	1.5034
Selling & Administration	.2158	.2511	.2434	.2018	.2296
Total Cost	1.8295	1.8705	1.8147	1.5875	1.7710
Average No. of Days Worked	11.5	14.0	12.3	13.1	67.3
No. of Mines Reporting	60	68	58	34	59
Production, Tons (000 omitted)	458	488	371	298	2,171

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

1/ Division IV includes Southwestern, deep and strip and Arkansas and Eastern Oklahoma. Data after February 1934 were not available for the latter subdivision. Southwestern Subdivision reported for March 1934 but reported only a small sample for April 1934, therefore it is not shown.

2/ Southwestern Subdivision, deep and strip only; Arkansas and Eastern Oklahoma not available for March, 1934.

Situamious Coal. Cost Table 84.

Average Costs of Northern Missouri area, of Southwestern Subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	\$ 1.1481	\$ 1.5971	\$ 1.3651	\$ 1.4460	\$ 1.4683
Mine Supplies	.8923	.3848	.2922	.3196	.2947
Miscellaneous & Fixed Charge	.1631	.2115	.1920	.2863	.2093
Production Cost	1.9415	2.0434	1.8163	1.9719	1.9421
Selling & Administration	2.027	2.2461	1.791	2.317	2.035
Total Cost	2.1138	2.2461	1.9594	2.2036	2.1434
Average No. of Days Worked	14.6	15.9	13.9	16.9	80.2
No. of Mines Reporting	5	24	7	14	6
Production, Tons (000 omitted)	17	35	23	19	118

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Situamious Coal. Cost Table 82.

Average Costs of Southwestern Subdivision of Division IV, deep and strip mines combined, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	.6816	.7403	.7163	.6726	.7141
Mine Supplies	.2355	.2364	.2254	.2174	.2314
Miscellaneous & Fixed Charge	1.4214	1.4115	1.3740	1.4014	1.3976
Production Cost	1.4882	1.3757	1.4892	1.3878	1.4271
Selling & Administration	1.2121	1.2380	1.2129	1.2081	1.2192
Total Cost	1.6335	1.7282	1.5886	1.5875	1.6863
Average No. of Days Worked	15.0	14.7	14.9	13.1	69.5
No. of Mines Reporting	39	43	46	34	44
Production, Tons (000 omitted)	336	432	439	298	1,596

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

2/ Excluding McAlester, Oklahoma.

Situamious Coal. Cost Table 83.

Average Costs of Missouri Black area, of Southwestern Subdivision (Division IV), deep mines, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	1.5170	1.5144	1.4709	1.5147	1.5021
Mine Supplies	.1919	.1732	.2559	.2172	.2013
Miscellaneous & Fixed Charge	.2423	.2423	.2411	.2403	.2447
Production Cost	1.9605	2.0126	1.8852	1.9334	1.9475
Selling & Administration	1.1224	1.0846	1.1846	1.2288	1.1870
Total Cost	2.0829	2.2166	2.0698	2.1622	2.1354
Average No. of Days Worked	12.1	11.8	15.2	13.6	64.9
No. of Mines Reporting	4	6	5	6	5
Production, Tons (000 omitted)	21	26	35	31	139

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Situamious Coal. Cost Table 85.

Average Costs of Henryetta Oklahoma area, of Southwestern Subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	1.2467	1.2573	1.2388	1.1752	1.2592
Mine Supplies	.2136	.2629	.2305	.3158	.2832
Miscellaneous & Fixed Charge	1.3889	1.3886	1.3600	1.4040	1.4056
Production Cost	1.8421	1.8811	1.8233	2.0050	1.8999
Selling & Administration	1.3485	1.3657	1.3924	1.537	1.4145
Total Cost	2.2074	2.2449	2.1950	2.3974	2.2739
Average No. of Days Worked	10.6	12.2	11.1	9.4	47.3
No. of Mines Reporting	7	9	9	6	5
Production, Tons (000 omitted)	21	30	28	16	100

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Situamious Coal. Cost Table 86.

Average Costs of McAlester Oklahoma area, of Southwestern Subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

	(Average Costs per Ton)				
	1933 Nov.	1934 Jan.	Feb.	March	5 Mo. Total Average % of Total Cost
Mine Labor	1.5577	1.7024	1.6193	2.0538	1.7087
Mine Supplies	.5624	.4621	.3501	.6826	.4499
Miscellaneous & Fixed Charge	2.6662	2.4139	2.4419	3.1544	2.6124
Production Cost	4.428	3.645	3.734	5.294	4.234
Selling & Administration	3.1490	2.763	2.8153	3.9338	3.0348
Total Cost	13.627	13.627	13.627	13.627	13.627
Average No. of Days Worked	23.8	18.5	19.1	8.0	59.4
No. of Mines Reporting	3	1	3	3	3
Production, Tons (000 omitted)	16	14	14	5	49

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Average Costs of Southern Missouri area of Southwestern Subdivision (Division IV) stripping mines, by months, November 1933 through March 1934.

	1934					5 Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	
Mine Labor	\$ 4,576	\$ 4,337	\$ 4,326	\$ 5,160	\$ 5,191	\$ 4,572
Mine Supplies	3,681	3,268	3,112	3,634	4,202	3,423
Miscellaneous & Fixed Charges	4,277	4,422	4,185	5,221	5,935	4,519
Production Cost	1,2534	1,2107	1,1823	1,4201	1,5322	1,2544
Selling & Administration	1,356	2,111	1,990	1,423	1,029	1,877
Total Cost	1,1470	1,4218	1,3613	1,5438	1,6257	1,4421
Average No. of Days Worked	17.3	16.8	19.4	13.6	13.0	82.1
No. of Mines Reporting	5	5	6	4	3	44
Production, Tons (000 omitted)	110	126	142	42	35	445

* A simple average of the total number of mines reported for the several months.

Average Costs of Southern Missouri area of Southwestern Subdivision (Division IV) stripping mines, by months, November 1933 through March 1934.

	1933					5 Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	
Mine Labor	\$ 1,2086	\$ 1,3251	\$ 1,2451	\$ 1,2449	\$ 1,2679	\$ 1,2569
Mine Supplies	1,616	2,220	1,691	1,465	1,637	1,732
Miscellaneous & Fixed Charges	1,828	3,114	3,805	3,957	3,751	3,463
Production Cost	1,090	1,153	1,1391	1,8047	1,8047	1,7705
Selling & Administration	1,800	1,505	1,684	1,080	1,086	1,0960
Total Cost	1,8029	1,9732	1,8367	1,9013	1,9013	1,8665
Average No. of Days Worked	6.9	9.3	10.9	9.4	9.5	48.0
No. of Mines Reporting	4	5	4	5	3	17
Production, Tons (000 omitted)	31	36	42	37	31	177

* A simple average of the total number of mines reported for the several months.

Average Costs of Southeastern Kansas area of Southwestern Subdivision (Division IV) stripping mines only, by months, November 1933 through March 1934.

	1934					5 Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	
Mine Labor	\$ 5,114	\$ 6,055	\$ 5,653	\$ 5,946	\$ 5,071	\$ 5,498
Mine Supplies	3,359	3,575	2,806	3,120	3,078	3,182
Miscellaneous & Fixed Charges	4,156	4,475	3,907	4,116	3,982	4,221
Production Cost	1,2689	1,4105	1,2566	1,2782	1,2131	1,2801
Selling & Administration	2,022	2,762	2,027	2,229	2,114	2,248
Total Cost	1,4711	1,8467	1,4393	1,5011	1,4245	1,4949
Average No. of Days Worked	14.6	13.5	13.1	12.9	13.7	67.8
No. of Mines Reporting	15	21	22	21	17	19
Production, Tons (000 omitted)	210	212	244	214	213	1,093

* A simple average of the total number of mines reported for the several months.

Average Costs of Southeastern Kansas area of Southwestern Subdivision (Division IV) stripping mines only, by months, November 1933 through March 1934.

	1933					5 Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	
Mine Labor	\$ 3,932	\$ 4,592	\$ 4,231	\$ 4,120	\$ 3,748	\$ 4,125
Mine Supplies	3,699	3,650	3,019	3,457	3,128	3,463
Miscellaneous & Fixed Charges	4,318	4,752	4,012	4,253	4,026	4,263
Production Cost	1,1949	1,3194	1,1282	1,1830	1,1102	1,1651
Selling & Administration	2,145	2,809	2,275	2,503	2,314	2,374
Total Cost	1,4134	1,5603	1,3557	1,4333	1,3416	1,4225
Average No. of Days Worked	16.4	14.8	13.6	14.0	14.8	73.6
No. of Mines Reporting	11	16	17	16	14	15
Production, Tons (000 omitted)	179	176	201	178	182	916

* A simple average of the total number of mines reported for the several months.

Average Costs of Arkansas and Eastern Oklahoma Subdivisions of Division IV 1/2, by months, November 1933 through February 1934.

Bituminous Coal.	1933		1934		4 Mos. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	
Mine Labor	\$1.6276	\$1.6187	\$1.5715	\$1.5326	54.80
Mine Supplies	.5940	.4274	.3768	.4277	15.84
Miscellaneous & Fixed Charges	.5723	.5782	.4807	.4622	18.20
Production Cost	2.7939	2.6243	2.4290	2.4175	88.84
Selling & Administration	2.2399	2.3522	2.3545	2.3710	11.16
Total Cost	3.0338	2.9765	2.7838	2.7885	100.00
Average No. of Days Worked	8.3	10.1	11.4	9.4	33.9
No. of Mines Reporting	21	19	16	12	18*
Production, Tons (000 omitted)	61	56	58	40	215

* A simple average of the total number of mines reporting for the several months.
 1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Average Costs of Pacific Area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/2, by months, November 1933 through February 1934.

Bituminous Coal.	1933		1934		4 Mos. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	
Mine Labor	\$2.2335	\$1.7801	\$1.6794	\$1.6593	51.15
Mine Supplies	1.1723	.5656	.4538	.7043	18.88
Miscellaneous & Fixed Charges	.8985	.6723	.5883	.4218	17.95
Production Cost	4.3043	3.0220	2.7275	2.7874	87.98
Selling & Administration	4.7208	4.1888	4.2445	4.4303	12.02
Total Cost	9.0246	7.2002	7.4020	7.4227	100.00
Average No. of Days Worked	6.7	12.8	17.9	14.3	51.7
No. of Mines Reporting	5	5	4	3	16
Production, Tons (000 omitted)	8	13	16	5	46

* A simple average of the total number of mines reporting for the several months.
 1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Average Costs of Arkansas Smokeless High Coal Area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/2, by months, November 1933 through February 1934.

Bituminous Coal.	1933		1934		4 Mos. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	
Mine Labor	1.4782	1.5941	1.6037	1.5058	60.85
Mine Supplies	.4672	.3918	.3775	.2540	16.23
Miscellaneous & Fixed Charges	.2076	.4206	.4275	.3400	13.87
Production Cost	2.2530	2.3865	2.4087	2.0998	90.86
Selling & Administration	.1459	.2334	.2079	.3398	9.35
Total Cost	2.3989	2.6989	2.7166	2.4796	100.00
Average No. of Days Worked	8.3	5.8	5.3	6.3	25.7
No. of Mines Reporting	5	5	3	4	16*
Production, Tons (000 omitted)	26	10	6	9	51

* A simple average of the total number of mines reporting for the several months.
 1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Average Costs of Eastern Oklahoma High Coal Area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/2, by months, November 1933 through February 1934.

Bituminous Coal.	1933		1934		4 Mos. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	
Mine Labor	1.7765	1.5518	1.4365	1.4873	53.07
Mine Supplies	.5844	.4081	.3582	.3641	14.28
Miscellaneous & Fixed Charges	.8852	.6505	.4758	.5262	14.10
Production Cost	3.2461	2.6104	2.2711	2.3778	82.45
Selling & Administration	2.2978	2.3370	2.3420	2.5741	11.25
Total Cost	3.5439	2.9474	2.6131	2.7348	100.00
Average No. of Days Worked	6.9	11.1	11.5	9.9	39.4
No. of Mines Reporting	6	6	5	5	26*
Production, Tons (000 omitted)	17	28	26	22	93

* A simple average of the total number of mines reporting for the several months.
 1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Average Costs of Arkansas Smokeless Low Coal Area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/2, by months, December 1933 and January 1934.

Bituminous Coal.	1933		1934		4 Mos. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	
Mine Labor	1.7022	1.7482	1.7312	1.7312	66.04
Mine Supplies	.2529	.2839	.2794	.2794	10.39
Miscellaneous & Fixed Charges	.2610	.3442	.3115	.3115	11.82
Production Cost	2.2151	2.3763	2.3171	2.3171	88.79
Selling & Administration	.3086	.3020	.3044	.3044	11.61
Total Cost	2.5242	2.6245	2.6245	2.6245	100.00
Average No. of Days Worked	14.7	12.6	14.7	14.7	27.32/
No. of Mines Reporting	3	3	3	3	15 1/2/
Production, Tons (000 omitted)	4	4	4	4	15 1/2/

* A simple average of the total number of mines reporting for the several months.
 1/ Other months not available.
 2/ Two months' average.

Simultaneous Coal Cost Table 36
Average costs of Division V, by months
November 1933 through March 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$1.0884	\$1.0397	\$1.0522	\$1.0184	\$1.1828 ^{1/2}	\$1.0758	52.70
Mine Supplies	.3179	.3118	.3094	.3150	.2986 ^{1/2}	.3111	15.24
Miscellaneous & Fixed Charges	.1284	.1279	.1283	.1285	.1282	.1282	20.19
Production Cost	1.5347	1.4794	1.4899	1.4619	1.6096 ^{1/2}	1.5351	68.13
Selling & Administration	.2329	.2404	.2384	.2384	.2375 ^{1/2}	.2384	11.67
Total Cost	2.0002	1.9982	1.9948	2.1028	2.2111 ^{1/2}	2.0014	100.00
Average No. of Days Worked	15.6	15.3	14.3	11.5	12.46 ^{1/2}	15.7	
No. of Mines Reporting	120	103	111	97	52 ^{1/2}	109 ^{1/2}	
Production, Tons (000 omitted)	1,318	1,258	1,194	884	508 ^{1/2}	5,134	

* A simple average of the total number of mines reporting for the several months.
 1/ Division V includes the following districts: Northern Wyoming, Southern Wyoming, Montana, Central New Mexico, Utah, Washington, North Dakota - Strip Mines, Northern Colorado, Southern Colorado.
 Complete data not available after March, 1934.
 2/ Includes North Wyoming, Montana, Central New Mexico, Utah, Washington, Northern Colorado.

Simultaneous Coal Cost Table 37
Average costs of Northern Wyoming (Division V)
by months November 1933 through March 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$.7079	\$.7982	\$.7685	\$.5589	\$.7934	\$.7373	47.90
Mine Supplies	.2828	.3198	.3211	.3139	.3217	.3091	20.08
Miscellaneous & Fixed Charges	.1279	.1460	.1495	.1495	.1521	.1518	22.08
Production Cost	1.1174	1.2640	1.2180	1.2204	1.5072	1.3882	90.06
Selling & Administration	.1270	.1831	.1950	.1499	.1875	.1530	9.94
Total Cost	1.4034	1.6271	1.5680	1.4309	1.6947	1.5392	100.00
Average No. of Days Worked	16.8	13.9	12.2	8.3	9.6	10.0	
No. of Mines Reporting	8	5	5	4	5	5	
Production, Tons (000 omitted)	86	65	66	35	51	303	

* A simple average of the total numbers of mines reporting for the several months.
 1/ Not available after March, 1934.

Simultaneous Coal Cost Table 38
Average costs of Southern Wyoming (Division V), by months
November 1933 through February 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$1.0515	\$1.0105	\$1.0140	\$1.0705	\$	\$1.0335 ^{1/2}	50.35
Mine Supplies	.3483	.3640	.3724	.4137	.4682	.4011 ^{1/2}	19.64
Miscellaneous & Fixed Charges	.1503	.1409	.1491	.1467	.1471 ^{1/2}	.1471 ^{1/2}	14.25
Production Cost	1.5501	1.5154	1.5355	1.6710	1.9834	1.6133 ^{1/2}	84.25
Selling & Administration	.2342	.2440	.2228	.2412 ^{1/2}	.2667	.2412 ^{1/2}	11.75
Total Cost	2.4183	2.3984	2.3950	2.3374		2.0955 ^{1/2}	100.00
Average No. of Days Worked	15.6	16.7	14.6	10.7		15.6	
No. of Mines Reporting	10	10	10	9		10 ^{1/2}	
Production, Tons (000 omitted)	105	115	107	77		404 ^{1/2}	

* A simple average of the total number of mines reporting for the several months.
 2/ Total 6 months only. Not available after February 1934.

Simultaneous Coal Cost Table 39
Average costs of Montana (Division V)
November 1933 through April 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$.8727	\$.8948	\$.8891	\$.8752	\$.9088	\$.8777	45.93
Mine Supplies	.3413	.3468	.3440	.3403	.3952	.3570	16.99
Miscellaneous & Fixed Charges	.1586	.1599	.1597	.1485	.1506	.1473	21.84
Production Cost	1.3769	1.3571	1.3688	1.3240	1.4966	1.3520	68.46
Selling & Administration	.2094	.2352	.2768	.2829	.3385	.2869	13.54
Total Cost	1.7660	1.7923	1.9495	2.0069	2.1891	1.9109	100.00
Average No. of Days Worked	13.9	12.6	10.8	9.0	7.9	10.2	
No. of Mines Reporting	57	5	5	40	37	257	
Production, Tons (000 omitted)	57	93	50	40	37	257	

* A simple average of the total number of mines reporting for the several months.
 1/ Not available after April 1934.

Simultaneous Coal Cost Table 40
Average costs of Central New Mexico (Division V), by months
November 1933 through April 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$1.5585	\$1.5823	\$1.5447	\$1.7109	\$1.6709	\$1.6435	50.93
Mine Supplies	.5945	.5955	.5830	.6884	.6227	.6475	13.86
Miscellaneous & Fixed Charges	.2859	.2869	.2874	.2842	.2842	.2842	21.45
Production Cost	2.4299	2.4657	2.4151	2.7035	2.5718	2.4671	91.94
Selling & Administration	.3113	.2893	.2895	.2943	.3274	.2860	8.06
Total Cost	3.1118	3.2698	3.2669	3.5778	3.5601	3.2271	100.00
Average No. of Days Worked	21.0	17.9	17.3	11.4	10.5	18.1	
No. of Mines Reporting	4	4	4	5	5	5 ^{1/2}	
Production, Tons (000 omitted)	39	41	50	33	36	199	

* A simple average of the total number of mines reporting for the several months.
 1/ Not available after April, 1934.

Simultaneous Coal Cost Table 41
Average costs of Utah (Division V), by months
November 1933 through April 1934

Average Costs per Ton	1933			1934			5-Mon. Total Average % of Total Cost
	Nov.	Dec.	Jan.	Feb.	March	Total Cost	
Mine Labor	\$1.0319	\$1.0224	\$1.0502	\$1.1211	\$1.0486	\$1.0485	44.50
Mine Supplies	.3182	.3094	.3266	.4570	.3870	.3845	15.04
Miscellaneous & Fixed Charges	.1910	.1655	.1894	.2139	.2077	.1929	20.78
Production Cost	1.5410	1.4974	1.4812	1.8189	1.5634	1.4929	66.12
Selling & Administration	.2719	.3071	.3282	.3185	.3474	.3247	15.48
Total Cost	2.0160	2.0374	2.1364	2.4535	2.4561	2.1706	100.00
Average No. of Days Worked	13.4	13.8	11.4	7.7	8.9	9.6	
No. of Mines Reporting	28	18	17	15	11	16	
Production, Tons (000 omitted)	268	274	229	118	106	995	

* A simple average of the total number of mines reporting for the several months.
 1/ Not available after April, 1934.

Average costs of Washington (Division V), by months
November 1933 through April 1934

	1933				1934		Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	
Mine Labor	\$1,521.7	\$1,478.2	\$1,445.3	\$1,517.6	\$1,495.7	\$1,495.5	\$8,764.2
Mine Supplies	.2952	.2758	.2730	.3157	.2504	.2862	12.20
Miscellaneous & Fixed Charges	3,715	4,959	3,786	4,761	4,485	4,153	17,499
Production Cost	2,198.4	2,205.9	2,095.9	2,309.4	2,198.6	2,198.0	13,465
Selling & Administration	1,187	1,214	1,180	1,194	1,189	1,190	6,355
Total Cost	2,311.1	2,420.8	2,285.9	2,465.5	2,385.5	2,347.0	10,000
Average No. of Days Worked	21.1	19.8	19.3	12.7	14.2	14.2	87.1
No. of Mines Reporting	16	5	7	6	6	4	64
Production, Tons (000 omitted)	145	61	80	75	75	436	26

* A simple average of the total number of mines reporting for the several months.
 † Total for 4 months only. Not available after February 1934.

Average costs of North Dakota stripping mines. (Division V)
November 1933 through February 1934

	1933				1934		Total Cost
	Nov.	Dec.	Jan.	Feb.	March	April	
Mine Labor	\$ 3080	\$ 3464	\$ 3309	\$ 3269	\$ 3269	\$ 3519.6	\$ 18,455
Mine Supplies	.1951	.1735	.1727	.2026	.1801	.1801	14.54
Miscellaneous & Fixed Charges	3086	2996	2754	3178	2904	2904	15,006
Production Cost	9117	8194	7790	8473	8473	8344	40,006
Selling & Administration	1781	1544	1414	1660	1660	1560	8,196
Total Cost	1,0896	9738	9204	1,0133	9924	9924	40,000
Average No. of Days Worked	16.4	22.4	23.3	16.3	16.3	16.4	86.4
No. of Mines Reporting	6	6	6	6	6	6	36
Production, Tons (000 omitted)	112	137	143	100	100	492	492

* A simple average of the total number of mines reporting for the several months.
 † Total for 4 months only. Not available after February 1934.

Bituminous Coal
Cost Table 104

Average costs of Northern Colorado (Division V), by months
November 1933 through June 1934

	1933						1934		1934 April	1934 May	1934 June
	Nov.	Dec.	Jan.	Feb.	March	5 Mo. Average Cost	% of Total Cost				
Mine Labor	\$1.1256	\$1.1147	\$1.1273	\$1.1025	\$1.1547	\$1.1254	59.64	\$1.1275	\$1.1775	\$1.1349	
Mine Supplies	.2730	.2752	.2763	.2225	.2604	.2520	17.94	.2092	.2125	.2113	
Miscellaneous & Fixed Charges	.3209	.3334	.3329	.3746	.3365	.3318	17.40	.3702	.4029	.4243	
Production Cost	1.7195	1.7253	1.7363	1.6616	1.7342	1.7163	91.02	1.9429	2.0926	2.1703	
Selling & Administration	.1787	.1564	.1586	.1693	.1502	.1693	8.98	.2502	.3560	.3317	
Total Cost	1.8982	1.8817	1.8949	1.8312	1.9244	1.8856	100.00	2.1931	2.4586	2.5060	
Average No. of Days Worked	21.1	21.8	20.5	20.7	20.4	20.4	104.1	18.0	14.3	13.1	
No. of Mines Reporting	20	21	20	19	19	20*	14	14	8	8	
Production, Tons (000 omitted)	229	271	231	221	195	221	1,147	100	55	47	

* A simple average of the total number of mines reporting for the several months.

† Northern Colorado received through September, 1934. Due to the fact that it was the only subdivision of Division V that reported after May, the schedules were not tabulated after June.

Bituminous Coal
Cost Table 105

Average costs of Southern Colorado (Division V), by months
November 1933 through February 1934

	1933			1934			1934 Feb.	1934 March	1934 April	1934 May	1934 June
	Nov.	Dec.	Jan.	Jan.	Feb.	March					
Mine Labor	\$1.2271	\$1.3039	\$1.2956	\$1.3111	\$1.2981	\$2.77					
Mine Supplies	.2515	.2672	.2496	.2671	.2275	18.96					
Miscellaneous & Fixed Charges	.2094	.2175	.2116	.2326	.2275	19.10					
Production Cost	1.6880	1.7886	1.7668	1.7813	1.7531	48.14					
Selling & Administration	.1370	.1234	.1340	.1382	.1322	13.59					
Total Cost	2.1111	2.3424	2.3466	2.3626	2.3537	100.00					
Average No. of Days Worked	12.5	10.4	10.7	9.0	12.6						
No. of Mines Reporting	35	34	36	26	33*						
Production, Tons (000 omitted)	266	231	241	163	201						

* A simple average of the total number of mines reporting for the several months.

† Not available after February, 1934.

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Labor Cost Per Ton May 1933, compared with Labor Cost Per Ton 10 Months April 1934 through January 1935. Realization Per Ton January through September 1933 compared with Realization Per Ton - April 1934 through January 1935.

DIVISION and SUB-DIVISION	LABOR COST		REALIZATION		INCREASE DUE TO CODE		LABOR COST		REALIZATION		INCREASE DUE TO ADJUSTMENT NO. 1		AVERAGE INCREASE		UNDER CODE	
	MAY 1933		OCT. DEC. '33		DEC. OVER MAY 1933		10 MONTHS APR '34 THRU JAN 1935		10 MONTHS APR '34 THRU JAN 1935		10 MONTHS APR '34 THRU JAN 1935		10 MONTHS APR '34 THRU JAN 1935		10 MONTHS APR '34 THRU JAN 1935	
	Per Ton	No. Tons	Per Ton	No. Tons	Per Ton	% Increase	Per Ton	% Increase	Per Ton	% Increase	Per Ton	% Increase	Per Ton	% Increase	Per Ton	% Increase
DIVISION I																
Eastern Pa.	810	1,074	1,230	1,700	264	33.6	1,046	1,295	1,719	2,057	338	19.7	485	59.9	827	67.2
Western Pa.	626	2,065	1,120	1,450	379	64.5	990	1,190	1,668	1,909	241	14.4	544	90.1	799	70.2
Ohio	424	789	1,010	1,660	365	46.6	453	644	1,079	1,858	179	10.7	498	76.1	649	64.0
Michigan	—	—	2,820	28,600	—	—	1,570	1,931	2,921	3,763	362	9.3	—	—	243	13.2
Panhandle	—	—	1,000	1,550	—	—	982	1,128	1,567	1,754	146	14.9	—	—	784	75.2
No. W. Va.	473	774	780	13,100	293	60.7	712	996	1,332	1,621	289	21.7	513	104.2	841	177.8
TOTAL DIV. I NORTH	2/	981	1,690	16,100	—	—	974	1,184	1,432	1,900	246	16.3	—	—	820	75.9
Southern No. 1	—	460	1,020	1,700	—	—	943	1,146	1,739	2,007	203	21.5	—	—	1,017	99.7
Southern No. 2	563	891	590	1,540	—	—	874	1,088	1,549	1,845	212	24.2	525	93.3	865	89.3
No. W. Va. (Polk)	708	1,123	1,230	1,760	432	60.3	1,121	1,321	1,773	2,108	355	19.9	613	86.6	878	71.4
Western Kentucky	2/	711	750	1,180	—	—	2/	—	2/	2/	—	—	—	—	—	—
TOTAL DIV. I SOUTH	2/	711	916	1,580	—	—	910	1,119	1,444	1,818	209	23.0	—	—	938	97.8
TOTAL DIV. I	2/	1,692	16,680	4,600	—	—	943	1,152	1,629	1,919	209	22.2	—	—	899	86.3
DIVISION II (heap & strip)																
Illinois	—	—	1360	1,520	—	—	775	166	1,536	1,660	106	6.9	—	—	280	20.6
Indiana	—	—	1,180	1,440	—	—	605	719	1,442	1,899	157	10.9	—	—	419	35.5
Iowa	—	—	2,270	2,360	—	—	2/	2/	2/	2/	—	—	—	—	—	—
TOTAL DIVISION II	—	—	2,360	1,520	—	—	730	129	1,509	1,629	120	8.0	—	—	249	19.8
DIVISION III																
Alabama	877	2,112	1,480	1,870	435	64.3	1,099	1,141	1,923	2,287	362	19.9	736	108.4	807	56.5
TOTAL DIVISION III	747	1,130	1,490	1,850	383	51.3	1,122	1,143	1,910	2,254	291	18.0	666	89.2	764	51.3

NOTES:
 1/ Does not include March, 1934.
 2/ Incomplete data.
 3/ Data for period April 1934 through December 1934 only.
 4/ Averages for Total Division II are not statistically significant because of the small tonnage included in 1933 data, but are not available for 1934.

NOTES:
 U.S. Bureau of Mines.
 Bituminous Coal Division.
 Bituminous Coal Division, Division of Mines,
 U.S. Bureau of Mines, under the direction of F.S. Reynolds.

THE DIVISION OF REVIEW

THE WORK OF THE DIVISION OF REVIEW

Executive Order No. 7075, dated June 15, 1935, established the Division of Review of the National Recovery Administration. The pertinent part of the Executive Order reads thus:

The Division of Review shall assemble, analyze, and report upon the statistical information and records of experience of the operations of the various trades and industries heretofore subject to codes of fair competition, shall study the effects of such codes upon trade, industrial and labor conditions in general, and other related matters, shall make available for the protection and promotion of the public interest an adequate review of the effects of the Administration of Title I of the National Industrial Recovery Act, and the principles and policies put into effect thereunder, and shall otherwise aid the President in carrying out his functions under the said Title. I hereby appoint Leon C. Marshall, Director of the Division of Review.

The study sections set up in the Division of Review covered these areas: industry studies, foreign trade studies, labor studies, trade practice studies, statistical studies, legal studies, administration studies, miscellaneous studies, and the writing of code histories. The materials which were produced by these sections are indicated below.

Except for the Code Histories, all items mentioned below are scheduled to be in mimeographed form by April 1, 1936.

THE CODE HISTORIES

The Code Histories are documented accounts of the formation and administration of the codes. They contain the definition of the industry and the principal products thereof; the classes of members in the industry; the history of code formation including an account of the sponsoring organizations, the conferences, negotiations and hearings which were held, and the activities in connection with obtaining approval of the code; the history of the administration of the code, covering the organization and operation of the code authority, the difficulties encountered in administration, the extent of compliance or non-compliance, and the general success or lack of success of the code; and an analysis of the operation of code provisions dealing with wages, hours, trade practices, and other provisions. These and other matters are canvassed not only in terms of the materials to be found in the files, but also in terms of the experiences of the deputies and others concerned with code formation and administration.

The Code Histories, (including histories of certain NRA units or agencies) are not mimeographed. They are to be turned over to the Department of Commerce in type-written form. All told, approximately eight hundred and fifty (850) histories will be completed. This number includes all of the approved codes and some of the unapproved codes. (In Work Materials No. 18, Contents of Code Histories, will be found the outline which governed the preparation of Code Histories.)

(In the case of all approved codes and also in the case of some codes not carried to final approval, there are in NRA files further materials on industries. Particularly worthy of mention are the Volumes I, II and III which constitute the material officially submitted to the President in support of the recommendation for approval of each code. These volumes 9768--1.

set forth the origination of the codes, the sponsoring group, the evidence advanced to support the proposal, the report of the Division of Research and Planning on the industry, the recommendations of the various Advisory Boards, certain types of official correspondence, the transcript of the formal hearing, and other pertinent matter. There is also much official information relating to amendments, interpretations, exemptions, and other rulings. The materials mentioned in this paragraph were of course not a part of the work of the Division of Review.)

THE WORK MATERIALS SERIES

In the work of the Division of Review a considerable number of studies and compilations of data (other than those noted below in the Evidence Studies Series and the Statistical Material Series) have been made. These are listed below, grouped according to the character of the material. (In Work Materials No. 17, Tentative Outlines and Summaries of Studies in Process, the materials are fully described).

Industry Studies

Automobile Industry, An Economic Survey of
Bituminous Coal Industry under Free Competition and Code Regulation, Economic Survey of
Electrical Manufacturing Industry, The
Fertilizer Industry, The
Fishery Industry and the Fishery Codes
Fishermen and Fishing Craft, Earnings of
Foreign Trade under the National Industrial Recovery Act
Part A - Competitive Position of the United States in International Trade 1927-29 through 1934.
Part B - Section 3 (e) of NIRA and its administration.
Part C - Imports and Importing under NRA Codes.
Part D - Exports and Exporting under NRA Codes.
Forest Products Industries, Foreign Trade Study of the
Iron and Steel Industry, The
Knitting Industries, The
Leather and Shoe Industries, The
Lumber and Timber Products Industry, Economic Problems of the
Men's Clothing Industry, The
Millinery Industry, The
Motion Picture Industry, The
Migration of Industry, The: The Shift of Twenty-Five Needle Trades From New York State, 1926 to 1934
National Labor Income by Months, 1929-35
Paper Industry, The
Production, Prices, Employment and Payrolls in Industry, Agriculture and Railway Transportation, January 1923, to date
Retail Trades Study, The
Rubber Industry Study, The
Textile Industry in the United Kingdom, France, Germany, Italy, and Japan
Textile Yarns and Fabrics
Tobacco Industry, The
Wholesale Trades Study, The
Women's Neckwear and Scarf Industry, Financial and Labor Data on
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Women's Apparel Industry, Some Aspects of the

Trade Practice Studies

Commodities, Information Concerning: A Study of NRA and Related Experiences in Control
Distribution, Manufacturers' Control of: Trade Practice Provisions in Selected NRA Codes
Distributive Relations in the Asbestos Industry
Design Piracy: The Problem and Its Treatment Under NRA Codes
Electrical Mfg. Industry: Price Filing Study
Fertilizer Industry: Price Filing Study
Geographical Price Relations Under Codes of Fair Competition, Control of
Minimum Price Regulation Under Codes of Fair Competition
Multiple Basing Point System in the Lime Industry: Operation of the
Price Control in the Coffee Industry
Price Filing Under NRA Codes
Production Control in the Ice Industry
Production Control, Case Studies in
Resale Price Maintenance Legislation in the United States
Retail Price Cutting, Restriction of, with special Emphasis on The Drug Industry.
Trade Practice Rules of The Federal Trade Commission (1914-1936): A classification for
comparison with Trade Practice Provisions of NRA Codes.

Labor Studies

Cap and Cloth Hat Industry, Commission Report on Wage Differentials in
Earnings in Selected Manufacturing Industries, by States, 1933-35
Employment, Payrolls, Hours, and Wages in 115 Selected Code Industries 1933-35
Fur Manufacturing, Commission Report on Wages and Hours in
Hours and Wages in American Industry
Labor Program Under the National Industrial Recovery Act, The
Part A. Introduction
Part B. Control of Hours and Reemployment
Part C. Control of Wages
Part D. Control of Other Conditions of Employment
Part E. Section 7(a) of the Recovery Act
Materials in the Field of Industrial Relations
PRA Census of Employment, June, October, 1933
Puerto Rico Needlework, Homeworkers Survey

Administrative Studies

Administrative and Legal Aspects of Stays, Exemptions and Exceptions, Code Amendments, Con-
ditional Orders of Approval
Administrative Interpretations of NRA Codes
Administrative Law and Procedure under the NIRA
Agreements Under Sections 4(a) and 7(b) of the NIRA
Approved Codes in Industry Groups, Classification of
Basic Code, the -- (Administrative Order X-61)
Code Authorities and Their part in the Administration of the NIRA
Part A. Introduction
Part B. Nature, Composition and Organization of Code Authorities
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Part C. Activities of the Code Authorities
Part D. Code Authority Finances
Part E. Summary and Evaluation
Code Compliance Activities of the NRA
Code Making Program of the NRA in the Territories, The
Code Provisions and Related Subjects, Policy Statements Concerning
Content of NIRA Administrative Legislation
Part A. Executive and Administrative Orders
Part B. Labor Provisions in the Codes
Part C. Trade Practice Provisions in the Codes
Part D. Administrative Provisions in the Codes
Part E. Agreements under Sections 4(a) and 7(b)
Part F. A Type Case: The Cotton Textile Code
Labels Under NRA, A Study of
Model Code and Model Provisions for Codes, Development of
National Recovery Administration, The: A Review of its Organization and Activities
NRA Insignia
President's Reemployment Agreement, The
President's Reemployment Agreement, Substitutions in Connection with the
Prison Labor Problem under NRA and the Prison Compact, The
Problems of Administration in the Overlapping of Code Definitions of Industries and Trades,
Multiple Code Coverage, Classifying Individual Members of Industries and Trades
Relationship of NRA to Government Contracts and Contracts Involving the Use of Government
Funds
Relationship of NRA with States and Municipalities
Sheltered Workshops Under NRA
Uncodified Industries: A Study of Factors Limiting the Code Making Program

Legal Studies

Anti-Trust Laws and Unfair Competition
Collective Bargaining Agreements, the Right of Individual Employees to Enforce
Commerce Clause, Federal Regulation of the Employer-Employee Relationship Under the
Delegation of Power, Certain Phases of the Principle of, with Reference to Federal Industrial
Regulatory Legislation
Enforcement, Extra-Judicial Methods of
Federal Regulation through the Joint Employment of the Power of Taxation and the Spending
Power
Government Contract Provisions as a Means of Establishing Proper Economic Standards, Legal
Memorandum on Possibility of
Industrial Relations in Australia, Regulation of
Intrastate Activities Which so Affect Interstate Commerce as to Bring them Under the Com-
merce Clause, Cases on
Legislative Possibilities of the State Constitutions
Post Office and Post Road Power -- Can it be Used as a Means of Federal Industrial Regula-
tion?
State Recovery Legislation in Aid of Federal Recovery Legislation History and Analysis
Tariff Rates to Secure Proper Standards of Wages and Hours, the Possibility of Variation in
Trade Practices and the Anti-Trust Laws
Treaty Making Power of the United States
War Power, Can it be Used as a Means of Federal Regulation of Child Labor?
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THE EVIDENCE STUDIES SERIES

The Evidence Studies were originally undertaken to gather material for pending court cases. After the Schechter decision the project was continued in order to assemble data for use in connection with the studies of the Division of Review. The data are particularly concerned with the nature, size and operations of the industry; and with the relation of the industry to interstate commerce. The industries covered by the Evidence Studies account for more than one-half of the total number of workers under codes. The list of those studies follows:

Automobile Manufacturing Industry	Leather Industry
Automotive Parts and Equipment Industry	Lumber and Timber Products Industry
Baking Industry	Mason Contractors Industry
Boot and Shoe Manufacturing Industry	Men's Clothing Industry
Bottled Soft Drink Industry	Motion Picture Industry
Builders' Supplies Industry	Motor Vehicle Retailing Trade
Canning Industry	Needlework Industry of Puerto Rico
Chemical Manufacturing Industry	Painting and Paperhanging Industry
Cigar Manufacturing Industry	Photo Engraving Industry
Coat and Suit Industry	Plumbing Contracting Industry
Construction Industry	Retail Lumber Industry
Cotton Garment Industry	Retail Trade Industry
Dress Manufacturing Industry	Retail Tire and Battery Trade Industry
Electrical Contracting Industry	Rubber Manufacturing Industry
Electrical Manufacturing Industry	Rubber Tire Manufacturing Industry
Fabricated Metal Products Mfg. and Metal Fin- ishing and Metal Coating Industry	Shipbuilding Industry
Fishery Industry	Silk Textile Industry
Furniture Manufacturing Industry	Structural Clay Products Industry
General Contractors Industry	Throwing Industry
Graphic Arts Industry	Trucking Industry
Gray Iron Foundry Industry	Waste Materials Industry
Hosiery Industry	Wholesale and Retail Food Industry
Infant's and Children's Wear Industry	Wholesale Fresh Fruit and Vegetable Indus- try
Iron and Steel Industry	Wool Textile Industry

THE STATISTICAL MATERIALS SERIES

This series is supplementary to the Evidence Studies Series. The reports include data on establishments, firms, employment, payrolls, wages, hours, production capacities, shipments, sales, consumption, stocks, prices, material costs, failures, exports and imports. They also include notes on the principal qualifications that should be observed in using the data, the technical methods employed, and the applicability of the material to the study of the industries concerned. The following numbers appear in the series:
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Asphalt Shingle and Roofing Industry	Fertilizer Industry
Business Furniture	Funeral Supply Industry
Candy Manufacturing Industry	Glass Container Industry
Carpet and Rug Industry	Ice Manufacturing Industry
Cement Industry	Knitted Outerwear Industry
Cleaning and Dyeing Trade	Paint, Varnish, and Lacquer, Mfg. Industry
Coffee Industry	Plumbing Fixtures Industry
Copper and Brass Mill Products Industry	Rayon and Synthetic Yarn Producing Industry
Cotton Textile Industry	Salt Producing Industry
Electrical Manufacturing Industry	

THE COVERAGE

The original, and approved, plan of the Division of Review contemplated resources sufficient (a) to prepare some 1200 histories of codes and NRA units or agencies, (b) to consolidate and index the NRA files containing some 40,000,000 pieces, (c) to engage in extensive field work, (d) to secure much aid from established statistical agencies of government, (e) to assemble a considerable number of experts in various fields, (f) to conduct approximately 25% more studies than are listed above, and (g) to prepare a comprehensive summary report.

Because of reductions made in personnel and in use of outside experts, limitation of access to field work and research agencies, and lack of jurisdiction over files, the projected plan was necessarily curtailed. The most serious curtailments were the omission of the comprehensive summary report; the dropping of certain studies and the reduction in the coverage of other studies; and the abandonment of the consolidation and indexing of the files. Fortunately, there is reason to hope that the files may yet be cared for under other auspices.

Notwithstanding these limitations, if the files are ultimately consolidated and indexed the exploration of the NRA materials will have been sufficient to make them accessible and highly useful. They constitute the largest and richest single body of information concerning the problems and operations of industry ever assembled in any nation.

L. C. Marshall,
Director, Division of Review.

