SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1935

No. 650

R. C. TWAY COAL COMPANY, R. C. TWAY, PRESIDENT AND DIRECTOR OF R. C. TWAY COAL COMPANY, ET AL., PETITIONERS,

vs.

C. H. CLARK.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

INDEX

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JANUARY 23, 1936.

—7348-C

Proceedings in the District Court of United States for the Western District of Kentucky, at a Regular Term Begun and Held at the Federal Court Hall in the City of Louisville, Ky., on March 11, 1935, A. D.

C. H. Clark, - - - - - - - - Plaintiff,

vs.

R. C. Tway Coal Company,
R. C. Tway, as President and
Director of R. C. Tway Coal Co., and
L. A. Shafer, as Director of
R. C. Tway Coal Company, - - - - Defendants.

Be It Remembered, that heretofore, to-wit September 11, 1935, came the petitioner, C. H. Clark, by his counsel, Selligman, Goldsmith, Everhart & Greenebaum, and tendered his Petition is Equity, which was filed and which is in words and figures as follows:

BILL—Filed Sept. 11, 1935.

1.

The plaintiff, C. H. Clark, states that he is a citizen of the Commonwealth of Kentucky, residing at Louisville in the Western District of Kentucky, and that he is a stockholder and a member of the board of directors of the defendant corporation, R. C. Tway Coal Company.

2.

The defendant, R. C. Tway Coal Company, is a corporation organized under the laws of the Commonwealth of Kentucky and is a citizen of that State, with its principal office and place of business in the City of Louisville, in the Western District of Kentucky. As such corporation it has the power to sue and to be sued, to contract and be contracted with, in its corporate name aforesaid, and is empowered to engage in, and is now and has for many years been engaged in the business of mining and producing bituminous coal from its mines located in

Harlan County, Kentucky, and in selling the coal so produced. Under its charter its affairs are conducted by a board of three directors, elected by its stockholders annually at a meeting held for that purpose. The defendant, R. C. Tway, is a citizen of the Commonwealth of Kentucky, residing in Jefferson County, in the Western District of Kentucky, and he is a stockholder and director of the defendant corporation, R. C. Tway Coal Company and the President of said company. The defendant, L. A. Shafer, is a citizen of the Commonwealth of Kentucky, residing in Louisville, in the Western District of Kentucky, and he is a stockholder and director of the defendant, R. C. Tway Coal Company. The defendants, R. C. Tway and L. A. Shafer, together with this plaintiff, constitute the entire board of directors of the defendant corporation, R. C. Tway Coal Company.

3.

This is a suit in equity of a civil nature, arising under the Constitution and laws of the United States, and involves the validity, construction, application and enforcement of the Act of Congress approved August 30, 1935, known as the Bituminous Coal Conservation Act of 1935, and is not a collusive one to confer on a court of the United States jurisdiction of a case of which it would not otherwise have cognizance. The matter in controversy in this action exceeds the sum or value of three thousand dollars, exclusive of interest and costs.

4.

Plaintiff states that the Bituminous Coal Conservation Act of 1935, referred to in the preceding paragraph of this bill, recognizes and declares that the mining of bituminous coal and its distribution by the producers thereof in and throughout the United States are affected with a national public interest, and that the general welfare of the Nation requires that the bituminous coal industry shall be regulated as provided in the Act. It is further recognized and declared in the Act that the production of bituminous coal and its distribution by the producers thereof bear upon and directly affect interstate commerce, and render regulation of such production and distribution necessary for the protection of such commerce. The Act creates a National Bituminous Coal Commission to draft and enforce a Bituminous Coal Code, containing wage, hour, trade practice, and minimum and maximum price-fixing pro-

visions, and such code, when so drafted, is binding in all of its terms upon those bituminous coal producers who accept same and agree to operate under its provisions.

5.

Plaintiff states that the Act imposes upon each bituminous coal producer who refuses to accept the Bituminous Coal Code formulated under its terms, and to operate under same, a monthly tax equal to fifteen per cent of the sale price at the mine of the coal mined and sold by such producer each month, while the tax imposed upon those producers who accept the code and operate under same is only one and one-half per cent of such sale price.

6.

Plaintiff states that Congress has the power, under the Constitution of the United States, to deal with and regulate the business of producing, selling and distributing bituminous coal, to the extent and in the manner that these matters are required to be dealt with in the code to be formulated under section 4 of the Act, and particularly Congress has the constitutional power to fix minimum and maximum prices at which bituminous coal may be sold, and to regulate wages, hours of service and trade practices in the bituminous coal producing industry. Plaintiff further states that the levy of the fifteen per cent tax upon those bituminous coal producers who refuse to accept and operate under the code required to be formulated under section 4 of the Act was a valid exercise of the taxing power of Congress under the Constitution.

7.

Plaintiff states that notwithstanding the validity of the Bituminous Coal Conservation Act of 1935, the majority of the board of directors of the corporate defendant, R. C. Tway Coal Company, prior to September 10, 1935, reached the conclusion that the Act was unconstitutional, and determined that the company would not accept the provisions of the code required to be formulated under section 4 of the Act. The plaintiff, believing that this action of the board of directors was founded upon an incorrect view of the law, and that if persisted in would subject the defendant company to the payment of the fifteen per cent tax provided for in section 3 of the Act, on September 10, 1935, addressed to the

defendant company, and to the board of directors thereof, a letter demanding that the board reconsider its action, and upon such reconsideration elect to accept the Bituminous Coal Code provided for in the Act, and to operate under its provisions. Said letter is as follows:

"Louisville, Kentucky.
September 10, 1935.

R. C. Tway Coal Company and
the Board of Directors thereof.
Louisville, Kentucky.

Gentlemen:-

The Board of Directors of the R. C. Tway Coal Company have heretofore decided that that Company would not accept the provisions of and agree to operate under the Bituminous Coal Code required by Section Four of the Bituminous Coal Conservation Act of 1935 to be formulated under the terms of that Act. This action of the Board of Directors was predicated upon the assumed fact that said Act is unconstitutional. To refuse to operate under such Code will subject the Company to a monthly tax of 15% of the gross sale price at the mines of the coal mined each month, and, as you know, the Company can not possibly operate at a profit anything like sufficient to pay such tax and the payment thereof would necessarily have to be made out of the capital assets of the corporation, which, of course, would ultimately lead to bankruptcy. It is my belief that the Act is constitutional and even if held unconstitutional so much time would be consumed before the matter of constitutionality could be finally determined that the payment of the tax during that period would materially cripple, if not destroy, the Company. As a director and stockholder of the Company, I therefore insist that the Board reconsider the matter and upon such reconsideration elect to operate under the provisions of such code.

Respectfully,
C. H. Clark."

In response to this demand of the plaintiff, a special meeting of the board of directors of the defendant company was held on September 10, 1935, to consider same

and after consideration the board of directors, by a majority vote, adopted the following resolution, the plaintiff voting against same, to-wit:

> "Whereas, C. H. Clark, a stockholder and a member of the Board of Directors of the Company, by written communication of this date, has asked the Board to reconsider its determination not to accept the provisions of and not to operate under the Bituminous Coal Code required to be formulated under Section Four of the Bituminous Coal Conservation Act of 1935; and
>
> Whereas, the Board has considered said request; and
>
> Whereas, it is the opinion of the majority of this Board that the said Bituminous Coal Conservation Act of 1935 is unconstitutional, and that this Company can not be legally required to pay the so-called tax of 15% of the gross sale price of the coal at the mines, because of its refusal to accept and operate under such Code; and
>
> Whereas, it is the opinion of the majority of this Board that to accept the provisions of said Code and operate under the terms required by Section Four of the Act to be incorporated therein would amount to an abrogation and surrender of the right of the Board of Directors of this Company to conduct the business of the Company free from unconstitutional interference on the part of the National Government and that to so accept said Code and operate thereunder would be detrimental to the interest of this Company:
>
> Be It Therefore Resolved, that the Board of Directors adheres to it original decision not to accept said Code and not to operate thereunder."

On the same day a special meeting of the stockholders was held for the purpose of considering the demand of this plaintiff, at which all the capital stock of the company was represented, and at that meeting the stockholders, by a majority vote, adopted the following resolution, the plaintiff voting against same, to-wit:

> "Whereas, this special meeting of the stockholders of the R. C. Tway Coal Company, at which there is present in person or by proxy all the capital stock of the Company, has considered a demand

addressed to the Company and to its Board of Directors by C. H. Clark that the Company shall accept and operate under the Bituminous Coal Code required by Section Four of the Bituminous Coal Conservation Act of 1935 to be formulated according to the terms of Section Four; and

Whereas, a majority of the Board of Directors of the Company, at a special meeting this day held, declined to accede to the demand of said C. H. Clark and has determined not to accept the said Code and not to operate under its provisions; and

Whereas, a majority of the holders of the voting shares of this Company fully agrees with the conclusion of the majority of the Board of Directors hereinbefore referred to:

Now Therefore, Be It Resolved, that the action of the said Board of Directors, declining to accede to the demand of the said C. H. Clark and declining to accept the provisions of said Code and to operate thereunder, be and the same is hereby in all respects approved and ratified."

8.

Plaintiff states that the defendant company has thus determined not to accept the provisions of the Bituminous Coal Code, hereinbefore referred to, and not to operate under its provisions, because of the fact that the majority of its board of directors and the majority of its stockholders have reached the erroneous conclusion that the Act is unconstitutional, and that the Bituminous Coal Code provided for thereunder deals with matters not within the competency of the National Government, and that Congress has no power to impose the fifteen per cent tax provided for in section 3 upon those producers who refuse to accept the code and to operate under its provisions.

9.

Plaintiff states that by its election and determination not to accept the provisions of the Bituminous Coal Code, the defendant company subjects itself to the tax of fifteen per cent on the sale price of all coal mined and produced by it, as provided by section 3 of the Act; that the profit realized by the defendant company for many years past has not been, is not now, and will not in the future be in excess of five per cent of the sale price of the coal mined and sold by it, and the tax of fifteen per

cent imposed upon the defendant company can only be paid out of its capital assets; and thus each month's operation by the defendant company will result in a disastrous loss to the company, and ultimately lead to bankruptcy and the entire destruction of the value of the shares of this plaintiff and the other stockholders of the defendant company; and if the defendant company refuses to report and pay said tax as it accrues, it is subject to a fine not exceeding ten thousand dollars for each such failure to report and pay, and the payment of any such fines would result in depleting the assets of the defendant company, and the value of the shares of the plaintiff and the other stockholders of said company.

10.

Plaintiff states that in view of the facts herein alleged, it is the duty of the defendant company, in the proper performance of its corporate functions, to accept the Bituminous Coal Code herein referred to, and to operate under its provisions; and it is the duty of the individual defendants, R. C. Tway and L. A. Shafer, as directors of the defendant company, to cause said defendant company to accept said code and operate under its provisions; and their failure to do so will work irreparable damage and injury upon the corporate defendant and upon this plaintiff and the other shareholders of such defendant, for which there exists no remedy except in this court, sitting as a court of equity.

Wherefore, plaintiff prays that the court decree and adjudge that it is the duty of the corporate defendant to accept the Bituminous Coal Code hereinbefore referred to, and to operate under its provisions, and that it is the duty of the individual defendants, Tway and Shafer, as directors of said company, to cause said corporate defendant to accept said code and to operate under its provisions; and that, upon final hearing, they be mandatorily enjoined to do so, and perpetually enjoined from refusing to accept said code and to operate under its provisions. He prays for his costs and for all other equitable relief to which he may appear entitled.

Selligman, Goldsmith,
Everhart and Greenebaum,
Attorneys for Plaintiff.

The affiant, C. H. Clark, says that he has read the foregoing petition, and that he believes the statements therein contained are true.

C. H. Clark.

Subscribed and sworn to before me by C. H. Clark, this 11th day of September, 1935.
(Seal)
My commission expires 23rd day of August, 1938.
Leo Roberts,
Notary Public.

MOTION TO DISMISS—Filed Sept. 19, 1935.

The defendants, R. C. Tway Coal Company, R. C. Tway, as President and Director of R. C. Tway Coal Company, and L. A. Shafer, as Director of R. C. Tway Coal Company, without denying the right of the plaintiff to the relief sought if the Bituminous Coal Conservation Act of 1935 is constitutional, but expressly recognizing his right to such relief in that event, move to dismiss plaintiff's bill because the said Bituminous Coal Conservation Act of 1935 is unconstitutional, for the following reasons and in the following respects:

1. Because Congress, under the Constitution of the United States, has no jurisdiction over and no power to legislate upon the matters required by section 4 of the Act to be embraced in the Bituminous Coal Code therein required to be formulated, and particularly because the fixing of mimimum and maximum prices of coal free on board transportation facilities at the mines; the requirement that coal shall be sold by producers to all customers similarly circumstanced at the same price; the regulation and control of contracts for the sale of coal; and the regulation of the relations between producers and their employees in the production of coal, including the regulation and fixing of wages and hours of service, as authorized in part III of section 4, are each and all matters not within the competency of Congress, under the Constitution of the United States, and the attempted regulation by Congress of the above enumerated mat-

ters is violative of the due process clause of the Fifth Amendment to the Constitution of the United States, and of the reserved rights of the States and the people, secured to them by the Tenth Amendment thereof.

2. Because sections 3 and 9 of the Act, in so far as they purport to impose upon those producers of bituminous coal who refuse to accept and operate under the provisions of section 4 of the Act, and of the code formulated thereunder, a tax equal to fifteen per cent of the sale price at the mine of the coal produced by them, is not a good faith exercise of the taxing power conferred upon Congress by clause 1, section 8, article 1, of the Constitution of the United States, but is an unconstitutional attempt on the part of Congress, under the guise of taxation, to coerce all producers of bituminous coal into accepting and operating under the Bituminous Coal Code provided for by section 4 of the Act, and to punish those producers of bituminous coal who are unwilling to surrender their constitutional right to conduct their business free of unconstitutional interference and regulation by Congress; and the imposition of such penalty operates to deprive producers who refuse to accept the provisions of the code of their property without due process of law, in violation of the Fifth Amendment, and is an unconstitutional invasion of the rights of such producers, reserved to them by the Tenth Amendment of the Constitution of the United States.

3. Because section 4 of the Act undertakes to delegate legislative power to the National Bituminous Coal Commission, and to the other agencies created by the Act.

4. Because the tax attempted to be imposed upon those producers who refuse to accept and operate under the provisions of the code required to be formulated under section 4 of the Act is arbitrary, capricious and confiscatory, and was deliberately intended by Congress to be confiscatory.

And of all these matters they pray the judgment of the court.

Woodward, Dawson & Hobson,
Attorneys for Defendants.

ORIGINAL STIPULATION—Filed Sept. 19, 1935.

It is agreed between the plaintiff, C. H. Clark, and his attorneys of record, Selligman Goldsmith, Everhart & Greenebaum, and the defendants, R. C. Tway Coal Company, R. C. Tway, as President and Director of R. C. Tway Coal Company, and L. A. Shafer, as Director of R. C. Tway Coal Company, by their attorneys, Woodward, Dawson & Hobson, as follows:

1. The defendants, and each of them, admit that if the matters dealt with in section 4 of the Act, and required by that section to be embraced in the Bituminous Coal Code required by that section to be formulated, and particularly if the fixing of minimum and maximum prices of coal free on board transportation facilities at the mine; the requirement that coal shall be sold by producers to all customers similarly circumstanced at the same price; the regulation and control of contracts for the sale of coal, and the regulation of relations between producers and their employees in the production of coal, including the regulation and fixing of wages and hours of service, as authorized in part III of section 4, are matters within the competency of Congress, under the Constitution of the United States; and if Congress has the power under the Constitution to impose a tax of fifteen per cent of the sale price at the mine of the coal mined and sold by those producers who refuse to accept and operate under the code provided for by section 4 of the Act, and to exempt producers accepting the provisions of the code from the payment of ninety per cent of such tax,—then it would be an abuse of the corporate functions of the company, and an abuse of the power vested in the directors to conduct the affairs of the corporation, to refuse to accept such code and to operate thereunder, because such refusal would impose such a burden in the way of taxation upon the defendant corporation as to consume its assets and destroy the value of the shares of the shareholders.

2. That this cause may be finally submitted upon the bill of complaint, the motion of defendants to dismiss the bill of complaint, and upon this stipulation.

3. That the plaintiff may invite the Department of Justice of the United States and the United States Attorney for the Western District of Kentucky to appear and defend the constitutionality of the Bituminous Coal Conservation Act of 1935; but this consent is not to be

construed as an agreement that the Department of Justice and the United States Attorney shall so control the progress of this suit as to unduly delay its decision.

Selligman, Goldsmith,
Everhart & Greenebaum,
Attorneys for Plaintiff.
Woodward, Dawson & Hobson,
Attorneys for Defendants.

FIRST SUPPLEMENTAL STIPULATION—Filed Sept. 27, 1935.

The plaintiff, C. H. Clark, by his attorneys of record, Selligman, Goldsmith, Everhart & Greenebaum, and the defendants, R. C. Tway Coal Company, R. C. Tway, as President and Director of R. C. Tway Coal Company, and L. A. Shafer, as Director of R. C. Tway Coal Company, by their attorneys of record, Woodward, Dawson & Hobson, by way of supplemental stipulation agree that the following are facts which may be accepted without further proof on the hearing of this cause.

I.

That with the exception of an immaterial amount shipped to prepay stations, all of the coal produced and sold by the defendant, R. C. Tway Coal Company, is sold F. O. B. mine cars at the mine of the defendant company. Approximately seventy-five (75%) per cent of the coal thus sold is sold to customers living in other states, and the remaining twenty-five (25%) per cent to customers in Kentucky.

The total annual production of bituminous coal in the United States is approximately 330,000,000 tons and that production, with the exception of an immaterial amount consigned to prepay stations, is sold F. O. B.

railroad cars at the mine of the producing company. Approximately fourteen (14%) per cent of the total annual production is sold to customers living in the state in which the coal is produced and the remainder in states other than the one in which the coal is produced.

The greatest competitors of the Harlan coal field in which defendant's mine is located are the mines located in the states of Ohio, West Virginia and Pennsylvania.

The average annual production of bituminous coal in Kentucky is approximately thirty-five million (35,000,000) tons. Of this amount, approximately four (4%) per cent is sold to customers in the state, and the remainder thereof to customers living in other states.

The average annual production of bituminous coal in the State of Ohio is approximately eighteen million (18,000,000) tons. Of this amount, approximately forty-four (44%) per cent is sold to customers in the State of Ohio, excluding coal sold and delivered to railroads for fuel in the State of Ohio and approximately eighteen (18%) per cent of the annual production is sold to such railroads.

The average annual production of bituminous coal in the State of Pennsylvania is approximately eighty million (80,000,000) tons, and of this amount, exclusive of the coal sold and delivered in that state to railroads for fuel, approximately thirty-eight (38%) per cent is sold to customers within the state, and approximately twelve (12%) per cent is sold to railroads in the state for fuel.

The average annual production of bituminous coal in the State of West Virginia is approximately ninety million (90,000,000) tons, and exclusive of coal sold and delivered to railroads in that state for fuel, approximately four (4%) per cent of the total annual production is sold to customers in that state and approximately seven (7%) per cent is sold and delivered in that state to railroads for fuel.

II.

The defendant, R. C. Tway Coal Company, ordinarily employs in the production of coal at its mine in Harlan County three hundred (300) men whose duties are exclusively concerned with the mining of coal. It has in its employ only about six (6) men who have anything to do with the sale of the product of its mines and these six employees also perform services in con-

nection with the coal producing end of the defendant company's business, and these facts are typical of other bituminous mines including those in the Harlan field.

III.

That on the 18th day of September, 1935, Messrs. Selligman, Goldsmith, Everhart & Greenebaum, attorneys for the plaintiff, wrote and deposited in the United States mail a letter addressed to Honorable Bunk Gardner, U. S. Attorney for the Western District of Kentucky, inviting him, and through him, the Department of Justice of the United States, to appear and assist in the defense of the constitutionality of the Bituminous Coal Conservation Act of 1935 here involved, said letter being properly stamped.

A carbon copy of said letter is attached hereto, as a part hereof, marked "Exhibit A."

Said attorneys have received no response to the letter referred to.

The average total sales per month of the R. C. Tway Coal Company amount to approximately Forty-four Thousand ($44,000.00) Dollars, and the fifteen (15%) per cent tax on this amount would be Sixty-six Hundred ($6600.00) Dollars. The total net profit realized and realizable by the defendant, R. C. Tway Coal Company, on the gross sale price of coal produced by it each month, over the cost of production under prudent and economical operation is not over five (5%) per cent of such gross sale price and such profit is as great as the profit realized by bituminous coal producers generally in the Harlan field and by bituminous coal producers generally throughout the United States.

Selligman, Goldsmith,
Everhart & Greenebaum,
Attorneys for the Plaintiff.
Woodward, Dawson & Hobson,
Attorneys for the Defendants.

Note—The above mentioned letter is the same one quoted in the Motion of September 27, 1935, herein.

MOTION OF UNITED STATES OF AMERICA FOR LEAVE TO APPEAR AS AMICUS CURIAE—
Filed Sept. 27, 1935.

Comes now the United States Attorney for the Western District of Kentucky on behalf of the United States of America and moves the Court for leave to file a memorandum as amicus curiae herein.

Bunk Gardner,
United States Attorney.

MOTION—Filed Sept. 27, 1935.

Comes the plaintiff, C. H. Clark, by Joseph Selligman, his counsel, and moves the Court to file herein and make a part of the record in this action a letter of said Joseph Selligman to the Honorable Bunk Gardner, United States District Attorney, inviting the said Honorable Bunk Gardner and any other representative of the Government to appear in this case to represent the Government should it desire to appear in the case to aid in upholding the validity of the Bituminous Coal Conservation Act, the constitutionality of which is one of the questions involved in this action, and with said letter to file the affidavit of said Joseph Selligman to the effect that on September 18, 1935, he wrote said letter and mailed the same to the Honorable Bunk Gardner.

Joseph Selligman,
Attorney for Plaintiff.

Motion

[Letterhead of Selligman, Goldsmith, Everhart & Greenebaum.]

September 18, 1935.

Honorable Bunk Gardner,
United States District Attorney,
Sixth and Broadway,
Louisville, Kentucky.

Re: C. H. Clark v. R. C. Tway Coal Company, Et. Al.

My dear Judge Gardner:-

You doubtless know of the suit of C. H. Clark, a stockholder and director in R. C. Tway Coal Company of this City, against said Company and certain of its officers and directors, the purpose of suit being to compel that Company to accept the provisions of the Bituminous Coal Conservation Act of 1935.

The defendants have made a motion to dismiss this action, a copy of which I am enclosing herewith for your convenience, and, representing the plaintiff, we have made a stipulation with the defendants of certain facts in the case. I am likewise sending you a copy of this. While representing the plaintiff we are unwilling to permit the Government to control the entire course of this litigation, it is entirely agreeable to us that representatives of the Government do participate in the case for the purpose of sustaining the Government's contention as to the constitutionality of the Act referred to, and we welcome such assistance in the matter, esspecially as we presume the Government has already made ample preparation to sustain the constitutionality of the Act. We believe if the Act is constitutional the plaintiff is entitled to the relief prayed for and we will, of course, prepare the case ourselves on the question of his right to maintain this action, assuming the Act to be constitutional. This invitation to participate in the defense of the constitutionality of the Act is extended not only to you personally and your staff, but to any other representatives of the Government's Legal Departments who may desire to participate. Judge Hamilton will undoubtedly set the matter down for argument soon.

With best regards, I am,
Very truly yours,
Joseph Selligman.

JS:AK

Affidavit

State of Kentucky, }
County of Jefferson } Set.

The affiant, Joseph Selligman, states that he is the attorney for the plaintiff, C. H. Clark, in an action pending in the District Court of the United States, for the Western District of Kentucky, No. 997, and styled, "C. H. Clark, Plaintiff v. R. C. Tway Coal Company and others, Defendants"; that on September 18, 1935, the affiant caused to be typewritten in his office a letter addressed to Honorable Bunk Gardner, United States District Attorney, a copy of which is attached hereto and made a part of this affidavit, and that on said same day he mailed the same in Louisville, adequate postage affixed thereto, to the said Honorable Bunk Gardner at his office in the Federal Building, Louisville, Kentucky. Affiant has been informed by the Honorable Oldham Clarke, Assistant District Attorney at Louisville, that said letter was duly received by the District Attorney.

Joseph Selligman.

Subscribed and sworn to before me by Joseph Selligman this 26th day of September, 1935.

My Commission as Notary Public will expire on the 13th day of September, 1939.

(Seal) Kathryn K. Brown,
Notary Public, Jefferson County, Kentucky.

ORDER—Filed Sept. 27, 1935.

This cause came on to be heard and both sides announced ready. Then counsel for plaintiff tendered a supplemental stipulation signed by counsel for both sides, which stipulation is ordered to be filed. Then the plaintiff, C. H. Clarke, by counsel, tendered a motion

asking the Court to file herein as part of the record a letter of plaintiff's counsel, Joseph Selligman, to the Hon. Bunk Gardner, inviting him to appear for the Government in this case. Said letter is dated September 18, 1935 and is attached to the motion. In support of said motion, plaintiff filed an affidavit of Joseph Selligman. Said motion and affidavit are ordered to be filed and the motion to file the aforesaid letter is sustained and it is ordered to be filed as part of the record herein.

Then came the United States of America, by Bunk Gardner, United States Attorney, and Oldham Clarke, Assistant United States Attorney, and tendered "Suggestions of the United States of America as Amicus Curiae." Said Suggestions are ordered to be filed.

On motion of counsel for defendant, the Hearings Before a Sub-Committee of a Committee on Ways and Means, House of Representatives, 74th Congress, First Session, on H. R. 8479, beginning on June 17, 1935, published by the United States Printing Office, Washington, D. C., is ordered to be filed as evidence in this case.

Then the case was argued by counsel for both sides and by agreement, the case is submitted for final determination with leave to both sides to file briefs within a reasonable time.

Elwood Hamilton,
Judge.

SECOND SUPPLEMENTAL STIPULATION—Filed Oct. 21, 1935.

The parties hereto agree that the following are facts and may be so accepted by the Court on the trial of this cause in addition to the facts heretofore stipulated:

1. That bituminous coal is used in generating energy for the production of light, heat and power in all parts of the United States and that substantially forty-

five (45%) percent of the total energy consumed for such purposes in the United States is produced from the use of bituminous coal.

2. Substantially all of the bituminous coal mined in the United States is transported from the mine where produced to the point of destination by railroad and about eighty-six (86%) percent of the production is thus transported to destinations in states other than the one in which the coal is produced, the remaining fourteen (14%) percent being consumed in the states where produced. The transportation of bituminous coal supplies nearly eighteen (18%) percent of the total gross freight revenues of the interstate railroads of the country and substantially twenty (20%) percent of the total annual production of bituminous coal in the United States is required for the use of such interstate railroads as fuel.

3 Approximately 450,000 men are employed in the mining of bituminous coal in the United States and over sixty (60%) percent of the cost of producing such coal is attributable to the cost of labor. The potential productive capacity of the developed bituminous mines in the United States is in excess of the normal demand for such coal.

4. At the hearing of this case on September 27, 1935, counsel for both parties hereto invited the United States Attorney for the Western District of Kentucky, who was present at the hearing, to prepare and present any statement of facts he conceived to be pertinent to the issues in this case, and agreed that if true and material such statement could be filed as evidence to be considered by the Court in the decision of this case. That invitation has been renewed more than once since that day but no such statement has ever been presented.

Joseph Selligman,
Attorney for Plaintiff.
Woodward, Dawson & Hobson,
Attorneys for Defendants.

ORDER—Filed Oct. 21, 1935.

On joint motion of the parties, it is Ordered that this case be submitted for final decree and declaration of rights.

Elwood Hamilton,
District Judge.

SUPPLEMENTAL STIPULATION No. 3—Filed Nov. 11, 1935. Lilburn Phelps, Clerk.

The plaintiff, by his attorneys, Selligman, Goldsmith, Everhart & Greenebaum, and the defendants, R. C. Tway Coal Company, R. C. Tway, as President and Director of R. C. Tway Coal Company, and L. A. Shafer, as Director of R. C. Tway Coal Company, by their attorneys, Woodward, Dawson & Hobson, stipulate that an order may be entered as of this date, setting aside the order heretofore entered finally submitting this cause, and that the plaintiff may file as evidence in his behalf in this cause the attached statements of Frederick C. Tryon, Charles O'Neill, H. L. Findlay, George W. Reed, Fred S. McConnell, Philip Murray, F. E. Berquist and Homer L. Morris, together with the charts and tables referred to and identified in said statements attached hereto, with the same effect as if these witnesses were present in court and testifying under oath, the defendant reserving the right to object and except to said testimony for want of relevancy and materiality, the said statements and exhibits of said witnesses being exact carbon copies of the same statements and exhibits filed by the defendant, Selden R. Glenn, as evidence in his behalf in the case of R. C. Tway Coal Company et al. vs. Selden R. Glenn, etc., in equity action No. 996 now pending in this court, and being all the evidence offered by the defendant, Glenn, in his behalf in said equity action No. 996.

It Is Further Stipulated that the attached statement of Roy Carson shall be filed and received by the Court as evidence in behalf of the defendants herein, with the same effect as if he were present in court and testifying under oath to the facts therein stated, the plaintiff re- and materiality, if it so desires.

It Is Further Stipulated that the evidence filed with

serving the right to except to same for want of relevancy this stipulation shall not be accepted by the Court to the exclusion of the facts heretofore stipulated by the parties, but as evidence in addition thereto.

It Is Further Stipulated that this cause may be now submitted for final decree.

Selligman, Goldsmith, Everhart and Grenebaum,
Attorneys for Plaintiff.

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EVIDENCE OFFERED BY PLAINTIFF UNDER STIPULATION No. 3.

FREDERICK C. TRYON.

I am employed by the United States Government in the Economics Branch of the United States Bureau of Mines, assigned to duty in the Coal Division of that Branch, my title being Principal Economist. I have been a student of the coal industry since 1917. My training is that of a Mineral Economist, with supplementary studies of economic geology. My training was acquired at the University of Minnesota and at Johns Hopkins University.

I studied geology merely to get a background for the pursuit of inquiries in mineral economics, and to gain some knowledge of reserve conditions I followed geology long enough to earn a very poor living as an oil company geologist, and to pass the assistant geologist examination of the United States Geological Survey, and be appointed. I was immediately assigned to work in the economic and statistical inquiry branches, and have been so engaged ever since. I have done no work of a technical character for the United States Government, either as a geologist or as an engineer, although I have been in contact with technical men.

In the narrow field of economic and statistical approach I have had unusual opportunity to study the fuel industry of the United States, and of the world; rather I should say the coal industry of the United States and of the world.

I was assigned as junior assistant to the Committee on Coal Production of the Council of National Defense in 1917. Likewise, I was detailed to assist the statistician of the Geological Survey in charge of coal and coke, he later becoming Director of the Division of Statistics of the United States Fuel Administration.

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I was drawn into the army, and posted at the War Department, with instructions to watch fuel as a limiting factor in the conduct of the war, and was in frequent contact with the United States Fuel Administration at that time, learning much of its problems without in any sense being responsible for its success. I was sent overseas, to General Headquarters, for a time, and then was detailed to the economic section of the American Peace Commission at Paris, and put to work studying the coal industry of the central powers with reference to the reparations section of the Treaty of Versailles. I was for a time Secretary of the American Section of the Raw Materials Division of the Supreme Economic Council.

Returning to the United States I was appointed in the Statistical Unit of the United States Geological Survey, dealing with coal and coke, and shortly thereafter placed in charge of that unit, and have been associated with that work since, including the period since 1925 when it was transferred to the United States Bureau of Mines.

During that time I have been on leave of absence a number of times. I was sent abroad as a delegate to the World Power Conference at London in 1925, and had occasion to spend some months studying the coal industry of England, on the ground. I have also had opportunities to study the coal industry in Nova Scotia, Australia, and to go underground in all these countries. I was on leave of absence at the Brookings Institution, on one or two tours of duty, and took part in the preparation of their study on America's capacity to produce, writing the mining section of that report.

I was detailed for some months to the President's Committee on Recent Social Trends, and wrote the mining chapters of that report.

I was attached to the President's Committee on Fuel Coal Distribution, set up by President Harding, during the 1922 strike of miners, and took some part in the efforts to control distribution of coal at that time. I was statistical adviser to the United States Coal Commission of 1922-23, and edited its report.

I have had occasion to write a large number of reports on the statistical economic trend of the coal industry for the United States Bureau of Mines and the Geological Survey.

I wrote and edited the volume called "What The Coal Commission Found," and another volume on "Mineral Economics" published by the Brookings In-

stitution. And I believe I have lectured on mineral economics at the University of Pennsylvania graduate school and the Robert Brookings graduate school.

My approach has been throughout from the standpoint of a statistician and on economics. I think I may fairly say that I have tried to make it an impartial approach. I do not own any coal company securities, and have declined any offers of employment by coal companies or coal associations.

I did not happen to be connected with the National Recovery Administration, and I have no connection with the present National Bituminous Coal Commission.

The Bureau of Mines, of course, has primary responsibilities in the field of accident prevention, promotion of health of miners, and in technological studies, in the attempt to reduce mine accidents and improve mine technology. Those I know nothing about. It likewise has an economics branch, which collects and publishes primary statistics of the supply and demand of mineral commodities.

I work in the Coal Economics Division of that branch. Its function is to try to watch the flow of coal, the production, the consumption, the stocks, distribution, price movements. I do that currently on a scale sufficiently detailed, and at a rate sufficiently rapid to be of some service to buyers and sellers.

The unit also watches long-time trends of the industry insofar as they are recorded in the production, the operation of mines, and the mechanical equipment of mines. Also, the volume of employment and working time.

The entire work of the Bureau, of this branch of it in particular, is based on voluntary cooperation, and we cannot wisely or effectively go into controversial points, such as costs of production, investments, profits, or wage rates.

The data I have been asked to prepare and present on this occasion, that deal with the subjects of costs, investments, or wage rates, are therefore necessarily drawn from other sources, but which I believe to be reliable.

Any opinions or expressions of judgment which I may give herein represent my personal views only and do not represent the position of the Bureau of Mines nor of any other members of the staff. Indeed, I have not discussed the issues raised by this case with other officials of the Bureau, and I do not know what their views may be.

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I shall refer herein from time to time to certain charts and tables which were prepared either by me or under my supervision. These charts and tables are attached hereto and for convenience I shall designate them as follows:

Chart No. 1 entitled "Bituminous coal production, realization, and mine capacity in the United States, 1899-1934."

Statement No. 1-A attached to the foregoing exhibit and entitled "Bituminous coal production, realization, and mine capacity in the United States, 1899-1934."

Chart No. 2 entitled "Trends of employment, working time, wage rates, and labor productivity, 1899-1934."

Statement No. 2-A attached to the foregoing chart and entitled "Trends of employment, working time, wage rates, and labor productivity, 1899-1934."

Chart No. 3 entitled "Average spot prices of bituminous coal, 1913-1931, by months."

Statement No. 3-A attached to the foregoing chart and entitled "Average spot prices of bituminous coal, 1913-1931, by months."

Chart No. 4 entitled "Net income or deficit of the bituminous coal industry, prior to deductions for tax, for specified years, 1917-1934."

Statement No. 4-A attached to the foregoing chart and entitled "Net income or deficit of the bituminous coal industry prior to deductions for tax, for specified years, 1917-1934, according to Treasury Department date."

The reason that bituminous coal is important in the economic life of the country is, of course, perfectly simple. American economic life has become completely dependent on energy, and bituminous coal is the principal source of energy. National consumption of energy has grown by leaps and bounds so that during the last 25 years we have consumed more fuel and more power than in all the previous history of the country, back to the days of earliest colonization.

There is no need, of course, to enumerate the ways in which heat and power have woven themselves into American economic life. Industrial uses and heat are quite as important as the keeping of buildings warm; and as for power, it has had an immense development.

The dentist uses it in his little drill, and the street laborer uses it in his pneumatic punch.

Nowhere in the world is this dependence on power and heat as great as it is in the United States. According to studies by Professor T. T. Reed of Columbia University, more than 97 per cent of the total output of work in the United States is now derived from mechanical power, and human power makes up less than 3 per cent.

The per capita use of mechanical power is far greater in the United States than in any other country. It is 1.6 times as great as in England, 2½ times as great as in Germany. It is eleven times as great as Japan and 150 times as great as in a country like China. American life is becoming absolutely dependent upon a continuous flow of energy. Without it we would not only freeze but starve. All but a small part of this flow of energy comes from fuel, and the largest part from bituminous coal. Electricity, of course, is merely a convenient way of applying energy. It is not the primary source of energy. The electric generator has to be driven either by fuel or falling water.

Last year, 1934, our computations of the source of the total energy supply of the United States gave the following results: Water power supplied 9.3 per cent of the national energy supply. Natural gas supplied 8.7 per cent; and oil, including that part which is used in driving automobiles and which included imported oil, supplied 28 per cent. Coal of all kinds supplied 54 per cent. Of that 54 percent, 7.7 per cent came from anthracite, and 46.3 per cent came from bituminous coal. Bituminous coal is, therefore, the largest single source of the energy budget of the United States.

The share contributed by coal to the total energy supply has been declining, and the share of oil and natural gas and water power has been increasing, as everyone knows. While some of this increase in supply of oil is a direct displacement of coal, the important bulk of it goes into motor fuel to drive automobiles, where coal is hardly supposed to compete, or in other uses where coal can hardly compete.

If one considers the familiar uses of coal in the generation of steam and heat, he finds that coal still dominates. Our computations indicate that in 1929 bituminous coal supplied 75 per cent of all the primary energy used in manufacturing industries. That does not include purchased electricity produced, of course, in central electric stations. Bituminous coal supplied, in 1934, 76 per cent of all the fuel used by the public utilities, that is

the steam electric plants producing power for public use. Bituminous coal supplied, in 1933, 83.6 per cent of all the the energy used by the railroads for locomotive power.

The potentialities of water power are limited. Mr. Charles P. Steinmetz calculated before his death that if every rain drop falling on the United States should be transformed into power it would not supply the amount of energy already derived from coal.

I would state that in my own opinion water power can never furnish more than a minor fraction of the energy requirements of the United States. The supplies of oil and gas are also clearly limited. It is probable that for the next few years there will be further increases in the use of liquid fuel, but geologists are generally agreed that present supplies cannot be maintained for more than a few decades.

An inventory by the United States Geological Survey estimates the reserves of recoverable oil in known fields of the United States at 13,360,000,000 barrels. If those were drawn on steadily at the 1933 rate of production, it would last not quite 15 years, assuming, that is, that no new fields were discovered, and that it were possible to recover all the oil in that time. Practically, it would be impossible to produce the full amount of these estimated reserves in even 25 years, because, as a field gets older, the amount of oil which can be taken out in the course of a year declines, and it is well recognized that new fields will be discovered, and that improvements in the technology will increase recoveries beyond limits now practical, but the prospects of further discovery do not obscure the facts, as the Geological Survey reports: "Petroleum reserves are irreplaceable, and each year's production brings the nation nearer to an inadequate supply and ultimate exhaustion." Geologists Arnold and Kemnitzer, who are petroleum geologists of outstanding reputation, reviewing the natural resources, make the following estimate as of January 1, 1929, before the East Texas field was discovered but making allowance for future discoveries: "The resources of natural crude oil in the United States are estimated to have been on January 1, 1929, a little more than 50 per cent developed, but less than 30 per cent exhausted. At the rate wells were then being drilled, average full development would be reached in 30 years at the end of which time would begin a long period of post-development production lasting 113 years, to practical exhaustion." (Petroleum in the United States and Possessions, 1931," pp. 51, 52).

It is a reasonable interpretation of Arnold and Kem-

nitzer's position that they attach no exact value to these figures of the number of years that the supply would last. The point that is important to bear in mind is that the supply is limited, that these geologists in particular, and the United States Geological Survey, hold that the total production will necessarily decline after a few decades. As petroleum diminishes in supply, or increases in cost, the burden of meeting the national requirements for energy will naturally be transferred more and more to coal. Methods are already in commercial use in Europe for the conversion of coal into motor fuel, and at much higher prices than prevail in the United States, but there is no question that if and when a shortage of petroleum forces a great advance in the price of crude oil and refined products in the United States, the necessary motor fuel and lubricant can be made from bituminous coal. This will throw, before many decades, a greatly increased burden upon our coal supplies. The increased demand will fall upon bituminous coal. The reserves of Pennsylvania anthracite are already 29 per cent exhausted, and there is no prospect that anthracite production can increase materially over the past maximum attained during the war years. The soft coal mines, therefore, must continue to be our chief source of the flow of energy that is necessary to American industrial life.

Technical efficiency, insofar as it can be measured in terms of statistical performance, is high in the bituminous coal industry of the United States, if not the highest in the world. The resources of bituminous coal are abundant, and they are favorable to low-cost mining. I have made measurements of the average thickness of bed, the average dip of the seam, the depth of coverage, and other physical factors in the mines of the United States as compared with those of foreign countries, particularly of Great Britain. If necessary, this evidence could be presented, but I imagine there would be no dispute among practical coal men that mining condition are exceptionally favorable in this country. The beds are relatively thick. They lie close to the surface in many places. They outcrop on almost every hillside, in portions of the Appalachian field. They are exceptionally free, in comparison with European conditions, from faults or from igneous dikes, such, as occur in parts of Great Britain. They are flat-lying. The roofs, on the whole, are favorable to the application of machinery. On almost all physical factors, the natural conditions in coal deposits in the United States are among the most favorable in the world.

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As further proof of the technical efficiency of the United States, from statistical sources we have computed the average output per man per day underground in the American bituminous mines and in those of Europe and of other countries. The output per man per day here is about three times that of Germany, and nearly four times that of England. It is six times that of Belgium or Japan. The data, in terms of metric tons per man per day, are: For the United States bituminous mines, 4.9 tons per man; for Great Britain, 1.3 tons per man per day; for the Ruhr district of Germany, 1.6 tons per man per day; for France, 1 ton per man per day; for Belgium, 1.8.

Furthermore, the efficiency of the American industry has been increasing. The test of efficiency is the growth of the average output per man per day over a period of years. In 1890, according to the records of the Geological Survey, and of the Bureau of Mines, the tonnage per worker was 2.56 tons, and in 1932 this had increased to 5.22 tons. In other words, the output per man per day has more than doubled in the period since 1890, and the advance has been especially rapid in the last few years. The record is shown in the lower curve on Chart No. 2. The chart begins in 1899, and extends to 1934. This is the record of the gradual increase in the output per worker. The apparent decline in 1933 is partly a statistical fraction, and partly due to some shortening of hours and diminishing of overtime, as an effect of the N. R. A. program. These figures are in terms of net tons per man per day, whereas the ones I cited in making comparison with foreign countries were in metric tons per man, underground.

I do not see any physical obstacle in either the natural resources or the present physical and mechanical equipment of the mines, or any lack of managerial or engineering skill which would prevent the industry from providing a reasonable reward to the capital and labor engaged in it. As far as those factors are concerned, I see no reason why this industry cannot be among the most prosperous of American businesses, yielding generous wages to employees and reasonable profits and reasonable rewards to management. The difficulties lie in the economic organization of this industry and of the competing industries producing other fuels.

The present difficulties of the bituminous coal mining industry are not wholly new; as far back as the statistical record can be pushed, there was a marked surplus of the mine capacity. This surplus of capacity came about

from many causes. The resources were widespread. They had passed into the ownership of hundreds of thousands of farmers, and their farms, in turn, had been sold to a large number of land-holding companies. The owners desired to realize on their investments, in the only way they could put it to use, and that tended to open more mines than were needed. The pressure of taxes and carrying charges on these land-holdings led to opening still more mines. Once the mines opened, the pressure of overhead, the tax burden, and other factors drove the operator to produce all that he could possibly sell.

Shifts in market demand occurred, throwing tonnage from one district to another district. The change from beehive to by-product coking caused a transfer of the heavy load of business from some of the northern fields formerly producing a beehive coke to the southern fields, in a position to supply coal for by-product coke in markets where by-product ovens were established. The expansion of the railroad net alone led to the opening of many new fields, and consequently of new mines. The freight-rate and wage-rate structures were, on the whole, so adjusted as to encourage development of the outlying districts. Finally, large-scale suspensions in the organized fields tended to cause consumers of coal, during the period of the suspensions, to seek sources of supply elsewhere, and were a factor in the devolopment of additional capacity. All of these factors combined create the surplus of mine capacity. The statistical record of capacity is shown in chart No. 1.

At the top of the chart is given the full-time capacity at 308 working days a year, and below it is shown also the capacity assuming 280 days, a more conservative figure, which was suggested some years ago by the coal department of the American Institute of Mining and Metallurgical Engineers.

Both these records of capacity are calculated from the reports supplied by mine operators to the Bureau of Mines, or, in earlier years, the Geological Survey. They show what the mines could produce if they worked a specified number of full-time days, 308 days, with the same equipment and the same labor force, and at the same rate of production that they actually obtained on the days that they were operating. In the calculation of the national total capacity, each mine is weighted in accordance with its tonnage and its importance.

Turning to the figure of full-time capacity at 308 days, it is important to bear in mind that coal mines

actually do try to operate 308 days a year, or they did, before the coming of the N. R. A. code. There is possibly some limitation as a result of the code.

The daily car loading records, kept over many years, show that in the typical districts coal would be leaving the mines—some mines, at least—on every one of 308 calendar days in the working year. In some districts the working year is a bit longer, and in other districts a bit shorter than 308 days, on account of variations in observance of holidays, but the national average is very close to 308 days. There are quite a number of mines that succeed in operating 308 days a year. Many of them are captive mines. There are numerous instances where a mine has produced 308 days without a breakdown or without loss of time.

However, it is clear that all mines cannot manage to avoid mechanical breakdowns during the course of the year, and that some allowance has to be made for the possibility of falls of roof, accidents, failure of power supply, or some other mechanical difficulty that will shut down the mines. To test this point, I have made a study of the operating performance of 2,000 mines over a period of five years, and it shows that on the average the typical mine will lose about nine days out of the year through failures of a mechanical character of one kind or another. 308 days less nine days in 299 days. On 299 days of the year the mines were there in this period, physically able to produce, and seeking a market.

Even in the pre-war days, the soft coal mines of the country never approached 299 days a year. The actual average for the years 1890 down to 1914, was 213 days a year, so that out of this physically available 299 days they lost, on an average, 86 days.

Of this 86 days average, an idleness of 34 days has to be set down as more or less unavoidable on account of the seasonal character of demand. Consumers require more coal in winter than they do in summer. In the middle west the January peak may be twice as high as their off-season trough. Obviously, until consumers change their buying habits, the industry has to maintain a capacity sufficient to take care of this peak.

Over the country as a whole our studies indicate that the seasonal pattern of demand involves an average loss of 34 days a year, which cannot well be avoided unless consumers are induced to change their buying habits. But the fact that there are 34 days of seasonal idleness that cannot be avoided does not make the loss of time

any less serious to the worker or to the owner of the mine.

The miner has to feed himself on the 34 days when the consumer is out of the market, and the operator has to continue to pay fixed charges and overhead. The operator is therefore under continuous pressure to try to sell that coal on the days when the market is dull, and the surplus continues to hang over the market. That is why coal prices usually fall off during the summer months.

This one fact, that the bituminous coal industry has to maintain a productive capacity sufficient to take care of the seasonal peak, is one of the great causes of the intense competition in the industry. In the pre-war days the industry never approached even the limitations that would be permitted by the seasonal pattern capacity.

If you take nine days away from the 308 days time, and get 299 days potential working time that is physically available, and then subtract from that 34 days for seasonal loss, there remains 265 days in the year, where, if capacity were nicely and accurately balanced with demand, the mines would be able to work, but they have never succeeded in attaining the 265 days.

During the pre-war days, in addition to the seasonal idleness, there was an average loss of 52 days a year, which has to be set down to simple excess of capacity beyond even the maximum seasonal need. Some of this time might be taken out in a car shortage or a labor dispute, but even if there had been no artificial interruption, like a car shortage or a labor dispute, the mines would have continued to be idle through lack of demand. The capacity was developed, even then, not only beyond average requirements, but beyond peak seasonal requirements.

As the chart shows, capacity continued to grow throughout the pre-war period. It grew, in fact, slightly faster than demand. The total capacity, on the full-time basis, has increased from 152,000,000 ton in 1890 to 279,000,000 tons in 1900, and 668,000,000 tons in the year 1914. The trend, in average working time of the mines, is shown in the lower portion of Chart No. 2.

The surplus of capacity which I have described, and which very clearly existed in the pre-war years, had the effect of forcing intense competition among coal operators. It was relieved only occasionally by car shortage or a strike. Competition made it difficult for operators to maintain reasonable labor standards. Whether the

standards were reasonable or not did depend on whether you think the record, in itself, reasonable; but there can be no doubt about the difficulty experienced by employers in maintaining such standards as then existed.

During this period it was possible to get jobs in the mines, and the rates of wages were sufficient to cause men to enter employment, because you will note from Chart No. 2 how the number of workers increases. There was a rapid increase in the number of men working in the mines, but the employment was intermittent and the average man, between the years 1890 and 1914, was offered about 217 days during the year. Accident rates in the mines were high, as they still are. The use of rock dust to control explosions was not then known, or at least not practiced, and hardly a year passed without a horrible disaster.

The trend of the daily wage rates in the years before the war is indicated in Chart No. 2. I have selected for plotting in this chart the union day wage scale for inside labor, the occupation of trackman, which is one of the skilled occupations, in the State of Illinois. In the year 1900, the day wage rate was $2.28, and it increased slowly, with one recession, from 1904 to 1906, to $2.85 a day before the World War.

In the year 1913 the rate in effect for inside skilled labor was $2.85 in this state. The mines of the State operated 189 days in that year. One can get a rough indication of the earnings of an average day man by multiplying the daily rate by the average number of days worked by the mines. The answer is $540 for the year's work, and that in a year when business in the coal industry, on the whole, was quite as good as normal. The increase in the day wage rate from 1900 to 1914 amounted to 57 cents.

In this pre-war period there were strikes of labor, or labor disputes, as indicated by the statistical record maintained by the Geological Survey at that time. I ought to explain the basis of that record. Every operator was asked, in his annual report, were there any strikes at the mine during the year? If so, how many men were on strike, and how many days did the strike last, exclusive of Sundays and Holidays?

The operator's reply is obviously an ex parte statement, in the sense that it came from one party to an industrial dispute, and could not be submitted to the other for verification. It is clear also that an operator might report as a strike a labor dispute that was really a lockout, and in later years I have followed the practice

of indicating that these records represent losses of time on account of all labor disputes, not merely strikes, but lockouts and suspensions. "Suspension" is the term used in the industry for a stoppage of work at the expiration of a wage contract between employers and employees, when the two parties were unable to agree on the terms of renewal of that contract.

During these pre-war years labor relations in the industry were unstable, as is indicated by the statistical record. Aside from petty strikes involving a single mine, there were a number of major suspensions, which shut down several fields in several States at one time, and there were a number of strikes in districts arising over the attempt of the union to organize the non-union fields.

With reference to suspensions, the employers and the employees in the organized districts had adopted a system of two-year wage contracts, which expired in the even years. It proved very difficult to negotiate the renewal of those contracts, largely because of the competitive pressure of one field against another field, and particularly because of the competition of the non-union districts against the union districts.

The lower part of Chart No. 2 shows, in this black segment, the amount of the working year, for the country as a whole, which was idle on account of strikes, lockouts, and suspensions. You will note that the incidence of labor disputes falls, with curious regularity, in even years, and that in the years between the negotiation of the wage contracts, when the contracts were in force, there was comparatively little of interruption due to labor disputes. That runs from 1899 to the last year of record, which is 1933. It is an annual average for all mines in the country. Naturally, in the districts that were directly affected by the labor dispute, the time lost on account of the dispute would be much greater than the national average shows.

During the odd years, the loss on account of labor disputes was relatively small, because most of the loss of time arose in the suspensions accompanying the termination of the wage agreements.

The suspension of 1906 was one of the greatest disputes in the history of the American bituminous industry. In that year 211,394 men were technically out on strike, or some other labor dispute, and almost all of these were known to have been involved in the great suspension which began on April 1. This suspension affected mines in 10 states. In the State of Pennsyl-

vania there were 59,593 men out during the year 1906, for an average of 66 working days. In Ohio there were 37,636 men out for 71 days. In Michigan there were 3,340 men out for 88 days. In Indiana there were 15,875 men out for 63 days. In Illinois there were 49,792 men out for 58 days. In Iowa there were 7,969 men out for 28 days. In Missouri there were 6,212 men out for 78 days. In Kansas there were 11,827 men out for 59 days. In Oklahoma there were 7,372 men out for 72 days. In Arkansas, a small coal producing state, there were 3,828 men out for 76 days.

In this suspension of 1906, most of the men that I have enumerated went out simultaneously, so that the suspension was in effect, not necessarily continuously over the entire period, but it was in effect simultaneously in 10 States.

In 1908 there occurred another suspension, which again affected several States. In the central competitive field, which included western Pennsylvania, Ohio, Indiana in round numbers, there were involved 132,000 men, and it affected, again, a number of States.

The year 1909 was a year of peace. When the wage agreement expired in March, 1910, there occurred another large suspension, in which 12 States were affected. In these 12 States there were, in round numbers, 211,000 men involved in labor disputes that year, and the duration of these disputes ranged all the way from an average of 45 days working time in Pennsylvania to 157 days in Missouri.

There were lesser suspensions in 1912 and in 1914. The statistics which have been cited relate to what the industry terms "suspensions" rather than strikes. The wage contract had expired and the parties were unable to agree on the terms of renewal at some time during this period. The statistical record shows a different type of dispute occurring in connection with attempts to organize the non-union fields. These strikes for recognition, instead of affecting a number of States simultaneously, generally affected one field at a time.

In 1902 the record shows such a strike, or group of strikes, in southern West Virginia. In that year 18,129 men were reported by the operators as being on strike for an average of 75 days. In Alabama two strikes of local importance occurred, and 6,059 men were out for an average of 23 days.

In 1903 there was again a strike in Alabama, involving 7,319 men for 32 days.

The other significant strikes of this type, involving an effort to organize a non-union area during this period, included a dispute in Colorado from 1903 to 1904, and a dispute in Alabama in 1904.

In 1912 and 1913 there occurred a strike for recognition of the union in the Paint Creek and Cabin Creek districts of the Kanawha Valley of West Virginia, which was accompanied by bloodshed and declaration of martial law, and led to an investigation by the United States Senate. The strike in Colorado in 1913 was accompanied by calling out the militia, and by the so-called Ludlow Massacre, leading to the intervention of Federal troops, and another Congressional investigation.

The war resulted in a shortage of coal, and a marked increase in price. The average price f.o.b. mines rose from $1.30 a ton in August of 1916, to $4.18 a ton in February of 1917. These data are shown in Chart No. 3.

Spot price represents sales on the open or free market, as opposed to sales under contract. At any one time a large fraction of the output of coal will be moving on contract, the proportion of spot and of contract varying from field to field and from time to time. It is commonly said in the industry that approximately 25 per cent of the tonnage moves on the spot market and approximately 75 per cent on the contract market.

These figures are based upon trade journal quotations, taken from the best and most useful of the trade journals, including the Coal Age and the Black Diamond. It is necessary to rely upon trade journal quotations for the measurement of spot price fluctuations because it is very difficult to obtain information of an adequate character in any other way. The trade journal correspondent visits both the buyer and the seller in the field and matches up what the buyer tells him about the price he is paying and what the seller tells him as to the price offered. On the whole, spot price quotations from trade journals tend to be slightly above the market, if anything, in periods of depression because of the reluctance of the reporting operator individually to disclose the full extent to which prices have been reduced.

Spot prices tend to rise very much above contract prices at times of acute shortage. They tend to fall samewhat below contract prices during periods of dull market. The operators average realization for the year would, of course, be a composite of his spot business and his contract business. The average realization or average value per ton f.o.b. mine is shown in Chart No. 1, and in the accompanying table No. 1-A.

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The primary cause of the so-called coal shortage during the war period was congestion of railway transportation. At no time during the war was there any lack of physical mine capacity. And only for a brief period in the fall of 1917 did labor disputes exercise a serious restraining influence on the national output of coal.

Coal mines are dependent upon continuous flow of cars for f.o.b. at mine in order that the operator can ship his product. Even at the present time, when motor-truck traffic has largely increased, only about 4.6 per cent of the total output of coal is handled in trucks, and that part which is sold commercially moves almost entirely in railroad cars.

During the war a number of factors combined to create a congestion of transportation and to prevent the railroads from delivering what cars the mines needed to fill their orders.

In part, the breakdown of railroad transport was due to increased volume of business pouring into the United States from the war orders of the allies. War orders dealt largely in heavy industry products, involving a large consumption of coal, and there was an increase from 500,000,000 tons demand in 1916 to 550,000,000 tons demand in 1917, and to an all-time peak of 579,000,000 tons in 1918.

In other words, the increase in coal production threw an increased burden on the railroads. At the same time other commodities were flowing in increasing volume, and the traffic congestion was especially severe in Northeastern United States, where the munitions contracts and heavy coal-consuming industries were located.

At the same time the price had increased in the way indicated in the spot price diagram. This led to the opening of more than 1,000 new mines. In the year 1916 there were 5,726 commercial bituminous coal mines in operation, not including the country coal banks. In 1917 the number had jumped to 6,979. The increase in the number of mines added to the burden on the railroads, because it was necessary to place cars at a large number of points of origin.

During the war the control by the Federal Government of distribution of coal became imperative. I was attached to the Committee on Coal Production, Council of National Defense, which attempted to handle the problem during the early months of the War. And later I was detailed to assist the statistician in charge of coal in the United States Geological Survey, and who was at

the same time functioning as Chief Statistician of the Fuel Administration.

The Committee on Coal Production did what it could to take care of urgent needs by granting priorities, certain coal which was available to those who had the most urgent need for it. They attempted to control prices by voluntary agreement of producers with the Secretary of the Interior.

But the levels at which prices could be fixed by voluntary agreement proved unsatisfactory to the consuming interests, and consumers induced the Congress of the United States to include in the Lever Act a provision authorizing the President to fix prices for coal f.o.b. mines, and to control distribution.

The President set the prices August 23, 1917. The Fuel Administration assumed office September 1, 1917. The program ultimately adopted by the Fuel Administration was primarily one of saving coal transportation, thereby making it possible for the railroads to handle the increased demands of consumers for coal, and at the same time to handle the other burdens of traffic arising out of the War.

The steps taken were briefly as follows: As the problem was one of cutting down the number of car miles to be handled by the railroads as far as possible, the country was divided into thirteen consuming zones. The coal fields were divided into 27 producing districts. A budget was set up allotting to each district certain tonnages to move to each consuming area.

The general technique of those zones lay in warping toward the East as far as possible the supply of coal arising from the western fields, and making available for the eastern markets the coals that were produced in the East.

Certain eastern coals were zoned out of the Middle Western markets in order to cut down the length of haul and increase the turning point of cars and releasing the railroads, and thereby increasing the total volume of coal traffic that could be handled.

Exceptional cases requiring special coals were taken care of by a permanent system, so that a by-product coke plant in Illinois might receive Pocahontas coal when other consumers, who did not require it in Illinois and could get along with the local coals mined in Illinois and Indiana, were not permitted to have a special permit.

The net result of this regulation of the distribution of coal was to make it possible for the railroads to handle

the war traffic. The total output of bituminous coal rose to 12,000,000 tons or more a week during the middle of 1918. The national output for the year was the highest on record, a record never equaled since, and on the day of the Armistice consumers had been supplied with stocks of 63,000,000 tons of coal, which was twice any preceding known stock, and quite sufficient to carry them through a war of indefinite duration.

A disperity is noted on Chart No. 1 between the upper line representing capacity and the lower black line representing production during the period from 1919 to 1923. An explanation of this is that the capacity increased far in excess of any increase in requirements, because in the period of shortage it drove prices to heights and made coal mining a highly profitable business during two distinct periods. That led to the opening of more thousands of coal mines, and to an extension of those mines which were in operation. The increase in capacity was a reflection of the very great increase in price. The average value per ton rose to approximately $3.75 during the year 1920 because of the runaway market which occurred that year. The price was again high in the year 1920 in connection with the great strike and the further difficulties at that time. It was this increase in price which led to the opening of thousands of new mines, and to an extension of capacity in mines already in operation, and which brought about an inflation of the total mining capacity as of the year 1923 to 970,000,000 tons as against a demand in that same year that would represent 560,000,000 tons, as I recall the figures.

There was an acute shortage of coal in the years 1919 and 1920. This shortage began with the strike effective November 1, 1919. Other factors continued to make the market disturbed and the shortage persisted until the late fall of 1920 and early part of 1921.

The Federal Government took action in connection with that shortage. When the strike broke in November, 1919, the Government restored the regulations of the United States Fuel Administration under the Lever Act, and put into effect the schedule of prices which had been fixed during the War, delegated to a central coal committee, and in the face of the breakdown of the railroads, it forced the Fuel Administrator to distribute coal, and he took possession of what coal was on wheels and proceeded to distribute it, to distribute a limited supply to the consumers who were most in need.

At the peak there were 415,000 men on strike, involv-

ing 22 states. The strike lasted approximately 6 weeks, being settled on December 16th.

In the week before the strike, consumers had been purchasing 13,300,000 tons of coal, in a last-minute effort to build up their reserves. In the first week of the strike, the output was 3,600,000 tons, and it rose slightly thereafter. But at no time during the strike did it exceed approximately 5,000,000 tons a week, an amount which was entirely insufficient to meet the current consumption of the country.

The consumer was protected as far as price was concerned by the reinstatement of the wartime Fuel Administration prices. But many consumers found it difficult to get coal. Toward the end of the strike industrial plants along the Atlantic Seaboard began to shut down and schools in New York and elsewhere were closed, and the settlement of the strike became absolutely necessary.

The shortage lasted from the beginning of the strike to the end of the year 1920, in all some 15 or 16 months. After the strike had been settled but before consumers had succeeded in rebuilding their customary stocks of coal, another cause of shortage appeared.

That was an outlaw strike of railway switchmen, which began April 1, 1920. This strike largely congested the terminals of the principal coal-carrying railroads, and coal delivering railroads, in the area north of the Ohio and Pontomac Rivers, the great industrial center of the United States. That led to an acute shortage of cars at the mine, which lasted in its sharpest form for two or three months.

At the same time there was a period of another cause of shortage. The British Government had found it necessary to place a limitation on customary exports from the United Kingdom. As Great Britain was the chief supplier of the world's export trade, this action had the effect of creating an extremely active demand for the export of American coal.

These three factors acted in combination. Their result was to drive up spot prices of coal to an average for the United States at the peak of $9.51 a ton. The average, however, concealed the fact that along the Eastern Seaboard, where the shortage was greatest and the demand was most important, sales of $20 were reported. The average spot price of Pocahontas coal, according to trade journals in the month of August, was $12.90. The average price of Somerset mine-run coal was $11.97.

Frederick C. Tryon

I should like to add in the interest of clarity and justice to coal operators, that these prices were not obtained by all shippers, and that the average sales realization for the year, contract and spot business, for the country as a whole, was $3.75. It was a very handsome sales realization, but it was obviously much less than the average spot price sales for the year.

There was a coal shortage during the years 1922 and 1923. The cause of that shortage was a great strike—or it should properly be called suspension—affecting all the union mines and the non-union mines in a number of districts, in the bituminous coal fields, and a simultaneous suspension affecting the anthracite mines. In this strike 460,000 bituminous miners went out, and 73 per cent of the productive capacity of the bituminous coal fields were shut down. At the same time 142,000 anthracite miners went out. The strike began on April 1, 1922, and lasted officially in all districts until August 16th, when there was signed the wage agreement at Cleveland. Thereafter other districts accepted the agreement, and most of the mines were back at work in September.

I should add that the effects of this strike were accentuated by a simultaneous walk-out of the railway shopmen. The shopmen's strike began on July 1, 1922, and had the effect of creating a further shortage of cars in the non-union fields and a slowing up of the movement of coal out of the southern districts, over the great southern railroads. The two forces combined to produce a shortage in that year, and resulted in an average spot price f. o. b. mines, at the peak, of approximately $6 a ton.

The effects of this shortage on consumers were enormous. It had the effect frequently of compelling the consumer to accept dirty coal, impure coal, which he found it rather difficult to use. It had the effect of compelling him to accept coal from unaccustomed sources of supply, coal which was not always suitable to his requirements. There were enormous engine failures on railroads as a result of inferior coal which they were compelled to utilize at that time. Consumers had to put in heavy stocks of coal in anticipation of shortage, because a probable strike was known for some weeks in advance. Stocks at the beginning of the strike of 1922 were approximately 60,000,000 tons, which is perhaps 30,000,000 tons above what it might have been had there been no strike in sight at the time. The principal cause of complaint by the consumer was, of course, the increase in price.

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As of the year 1920, according to the record of the Interstate Commerce Commission, Volume 61 of its reports, page 763, the average cost of bituminous coal purchased by the carriers per net ton at the mine, on the contract market, increased from $2.56 a ton in 1919 to $3.22 a ton in 1920. The average cost per net ton purchased on the spot market, which of course was the market reflecting the greatest increase in price, rose from $2.83 a ton in 1919 to $4.53 in 1920. The shortage was most acute in the region served by the New England railroads.

The developed capacity of mines increased, as I have indicated, from 730,000,000 tons in 1918 to approximately 970,000,000 tons in 1923. This was accompanied by an increase in the number of mines, as indicated in the curve on Chart No. 2. The number of mines rose from approximately 8,200 in the year 1918 to 9,330 in 1923.

The opening of these new mines, and the extension of existing mines, led to a recruitment of a large number of men. The number of men employed rose from 615,000 in 1918 to 705,000 in 1923. In 1923 those men averaged 179 days; that is to say, the mines were in operation an average of 179 days. The wage rate increased to $7.50 a day in fields in the Illinois district, which was roughly typical of all the organized fields. The increase became effective in August of 1920.

I have already stated that the Federal Fuel Administration was restored during the year 1919. The Federal Government took other action in connection with this period. In 1920 use was made of the powers of the Interstate Commerce Commission under the Transportation Act to declare priorities in the movement of coal. Those were in part geographical priorities to facilitate shipment of coal to areas of the country that were in particular need, and in part some classification priorities directing the shipment of coal to those branches of consumption which it was felt were in particular need.

During the strike of 1922 another attempt was made to utilize the priority powers of the Interstate Commerce Commission, at this time associated with an attempt to negotiate voluntary agreements to restrain prices f. o. b. mines. A presidential fuel distribution committee was set up to advise the Interstate Commerce Commission in the application of priority powers, and in September of 1922 an Act of Congress was passed known as the Federal Fuel Distributor Act, which was intended to validate the procedures used prior to that time by the Interstate Com-

merce Commission, and to advise the Commission as to which areas of the country and which branches of consumption were in particular need.

Action was also taken by several States in connection with this shortage. In 1920 the Legislature of Indiana passed a special food and fuel commission act, setting up a commission and instructing it to set maximum prices on coal produced in the State of Indiana for intrastate shipment, to consumers in Indiana, and authorizing and directing the Commission to distribute coal, at this maximum price, to domestic consumers and to other classifications of consumers in particular need.

By referring to Chart No. 1, you will note variations in the line indicating production from the year 1923 down to date. The variations indicate a general change in trend. The chart indicates a steadily rising trend up until 1918, and then the line goes off practically horizontal until 1930, and falls off after that. The fluctuations from year to year in the curve of production represent primarily the ups and downs of the demand for coal, as it is affected by the conditions of general business. In some years the production is not exactly equivalent to consumption because of changes in stocks. In a year like 1919 there may be a considerable draft upon storage in the hands of consumers that does not make it necessary to produce quite as much as the yearly consumption, but if one were to plot the consumption curve alongside the production curve, he would find that it was substantially the same, with the exception of 1919, 1922 and 1923.

In 1919 the effect of the great strike of that year was to deplete consumers' stocks, and consumption in that year was greater than production. In 1922 there was a similar effect. Consumption was greater than production. Production was actually curtailed by the strike.

In 1923 there were some additions to storage, so that consumption was less than there indicated. But, in the main, the movements up and down reflect the ebb and flow of business in the fuel-using industries. The reasons for the change in the general trend of demand which is so noticeable after 1918 are, briefly, as follows:

Prior to 1918 demand had been increasing steadily at a rate averaging 13,000,000 tons a year. Thereafter it flattens off, and at no time since the war has the demand actually reached the war peak. The first factor in that slowing down of demand was a change in the fuel-using industries themselves, particularly in the iron and steel industry. As the country matured in its economic development, there was a tendency to pass from the produc-

tion of crude materials, like crude iron and steel products, to more fabricated materials, and there was also going on in the iron and steel industry a remarkable substitution of scrap for virgin pig iron. The result was that while formerly the demand for coal in the manufacture of coke, and consequently of iron and steel, had been growing very rapidly, it now begin to flatten off. The iron furnaces were supplemented by this flow of scrap coming into the steel mills. Not so much coke was needed, and not so much coal was needed. That is one of the major causes of the flattening of demand, reflecting primarily the accumulation of scrap, and of importance because the iron and steel industry, next to the railroads, was the largest single consumer of coal.

The second factor was fuel efficiency. Fuel efficiency had been improving since the first invention of the steam engine, but along about the time of the war fuel economy became an organized movement. The lead in that movement was taken by the electric utilities. It was stimulated by the high prices of fuel, associated with war, and the reduction in the unit consumption of fuel which has been accompanied by the fuel engineers in the period since the war is notable. With steam railroads, from 1919 down to the end of 1933, the reduction in the average requirement to move 1,000 gross ton miles of freight was 28.8 percent, since the war. In the electric-power plants the reduction in the amount required to generate one killowatt hour of power was 53 per cent since the war. In the iron and steel blast furnaces the reduction in the amount of coking coal necessary to smelt one ton of pig iron was 19.6 per cent. In the meantime, the by-product oven was saving great quantities of fuel that had formerly been wasted out of the beehive coke ovens; and that saving also turns out to be approximately 19 per cent of the total fuel input of the by-product oven. Averaging together all branches of industry and transportation, it is safe to say that the economies effected since the war are between 20 and 30 per cent. In my judgment that is the largest single factor in the slowing-down of the former growth of coal demand.

A third factor, of course, was the competition of other fuels and of water power. The federal water-power act, passed in 1920, had opened up a lot of new power sites to public development and there was rapid development. Oil and gas continued to increase in production. Probably the greater part of the oil and gass that have been produced during the last decade has in no sense come into direct competition with coal. Much of it is either

used in the field for the production operations, drilling the wells and pumping them, or in is used out on the Pacific coast, where coal could not compete, or it is refined and goes into lubricants, with which coal could not very well compete as a source. Also it goes into gasoline, which, at anything like present price levels, coal cannot make. Only a minor fraction of the total increase of the production of oil and gas capacity was directly competitive with butuminous coal, but every coal man knows that it has been a factor, and that business has been lost both to fuel oil and to natural gas.

The net result of these changes was to convert an industry that had for 100 years been used to a steadily growing demand, and had based all its plans and expectations on a growing demand, into an industry that was faced with a stationary demand, and that tended to bring about a very difficult readjustment.

The fact that the demand had stopped growing meant that the tremendous increase in capacity which had taken place during the war was now clearly not needed. Beginning in 1924, the causes of shortage which had hitherto prevented the mines from producing in a period of shortage, were eliminated. The car shortage largely disappeared on the railroads, through improvements in railroad transportation. The signature of the three-year wage agreement between the miners' union and the operators eliminated the prospect of strike for three years.

Under those conditions there was nothing, in effect, present to prevent the surplus capacity which had been created in the shortage years from exerting its full effects on the market. The capacity, being up at 970,000,000 tons, and demand, stabilized at around, let us say, 530,-000,000 tons, were so clearly out of balance that a long and very difficult liquidation became inevitable. That has had the effect of intensifying competition, and of putting great pressure upon prices and upon wages.

In the year 1926 the bituminous coal industry benefited by outside circumstances which threw it extra business. Late in the fall of 1925, and continuing through the early months of 1926, the anthracite miners of the United States were on suspension. It lasted about five months, and a large volume of tonnage which was normally supplied by anthracite was transferred to the demand for bituminous coal.

Later, in the year 1926, the British miners were on strike. They were out for perhaps nine months, and the shortage in the world's export trade created by the with-

drawal of British coal during that period threw a windfall of extra business to American shippers who could participate in the export trade.

Those two factors account for much of the increase in tonnage which the bituminous trade of the United States experienced in 1926, as compared to the year before or the year after, and temporarily stiffened prices.

You can see the effects of this combination of the anthracite strike and the British miners' strike in the record of spot prices for that year. In Chart No. 3 it is shown that in the fall of 1926 spot prices sprang from a level of about $2 a ton to $3.20 a ton, for a brief period.

The effect of the deflation heretofore mentioned was a very drastic liquidation of both mines and plant capacity. The number of operating mines between 1923 and 1932 fell off from 9,331 to 5,427. The drop in the number of mines is indicated in the top curve on Chart No. 2. These properties are commercial mines, not country coal banks, not little wagon mines—mines producing a thousand tons a year or more.

Some of this reduction, of course, might be attributed to the effects of the depression of general business, but even if one compares the number of mines operating in 1923 with the number operating in 1930, he finds that there is a net reduction of 3,440 mines during those years. This net decline in number of mines does not measure the total number of mines that have been abandoned or kept down or otherwise forced out of business. It is merely the net change in those years.

In the meantime there has come into existence a very considerable number of small trucking mines, utilizing hard roads and motor transport. Mr. Newell G. Alford, a mining engineer, in a paper published in the Transactions of the American Institute of Mining Engineers, presents a study of the records of individual mines on the books of the State mine inspectors and he treats the individual cases, 4,800 properties or more, which had been forced out of business since 1923, and concluded that exhaustion of the coal accounted for a very small part of this reduction. There were corresponding effects upon the plant capacity in operation. The total capacity declined from 970,000,000 tons to 770,000,000 tons in 1929. That is a reduction of 200,000,000 tons of active capacity. That, again, does not measure the full extent of the deflation on the bituminous coal mining industry. It is merely the net change in the capacity. Meanwhile, a number of new mines had come into existence, and the old mines had expanded their

production. Out of these several thousand mines that have been closed down since the depression began in the bituminous coal business in 1923, there are large numbers that are now idle, but not finally abandoned. The Bureau of Mines made an effort to determine the importance of those idle but not permanently abandoned mines, and, as of 1930, we found that there were on our books 1,359 mines of this class, shut down, out of business for several years, but not yet finally abandoned by their owners. The capacity of those mines, when they operated, was 130,000,000 tons a year. I have made an earnest effort to find out the status of these mines, idle but not permanently abandoned, because we are frequently asked the question, "What effect do they have upon the market capacity of the industry, and how many of them might go back into production if there were a great increase in prices?"

The evidence that we have been able to collect on the subject indicates that they include an appreciable number of properties that, if there were any sustained advance in price, would come back into the market. They include also many hundreds of mines in all states of collapse and disrepair, which, in the phrase of one coal operator, nothing but a World War would ever bring back into production again. No one can tell, therefore, how far shut down mines, not formally abandoned, ought to be reckoned within the production capacity of the industry. If you counted them all, and decided that they should be included, their total capacity, as of 1930, would have been 960,000,000 tons plus 130,000,000 tons. Most of that is known to be so far out of repair and so hopelessly damaged by the long shut-down that it could not come back. Some part of it possibly could.

The existence of this idle capacity in shut-down mines is a further reason for the long-continued depression in the coal market. The presence of these properties and the possibility that they may reopen is one more factor tending to intensify the competition, to beat down prices, with the consequent results.

It is important also to know how far these shut-down mines—1,355 in 1930—are still in the picture. I have just had a test made of three of the principal States. We find that in those three States as of 1930 there were 291 mines in this class, shut down but not permanently abandoned. Of those, 203 have since been dropped from our records. So far as we can tell, the owners consider them permanently withdrawn, but there remain 88 in these three States that are still in the class

of shut-down but not permanently abandoned, which conceivably, might go back into production, and which go, among other factors, to create the difficult competitive situation that this industry faces.

The effect of the described condition upon profits and losses in the industry has been to transform a large profit during the days of the prosperous years into a heavy and continued loss, later. The evidence on this point is the income tax returns published from time to time, or made available by the United States Treasury. The Treasury data which are at hand have been checked up in the lower portion of Chart No. 1. The years of profits are shown in black and the years of deficit in red.

The data have been made up into a table which I have here, marked Table No. 7, attached hereto.

The Treasury data available for the years 1917 to 1921 are not entirely complete, and the profit showing for those years is therefore somewhat less than the industry as a whole actually enjoyed. Briefly, they show that in the year 1920 the excess of net income of the corporations making an income, over the deficits of those that lost money, was $249,000,000-odd. There was a net credit balance also in the year 1921, when business in general in the United States was depressed. Data are lacking for the intervening years until 1925.

The question marks appearing on chart No. 1 for the years 1922, 1923, 1924, 1926, and 1927 are merely to indicate that the Treasury had published no separate data regarding bituminous coal for those years, but in those years the Treasury combined anthracite and bituminous, and the combined showing of the two industries for the year 1922 shows a net of $70,000,000, and the combined showing for the two, authracite and bituminous, in 1923, shows a net of $67,000,000. That is to say, an excess of net income, for those corporations that reported net income, over the deficits of those corporations that reported a deficit.

From observing that fact, and recognizing also that spot prices and sales realizations were relatively higher in the years 1922 and 1923, it seems an inescapable conclusion that if the data for bituminous coal had been separated from the anthracite, they would have shown some excess of income over deficit in those two years.

Similarly, in the year 1924, the Treasury's combined record for anthracite and bituminous shows a loss, an excess of deficits over net incomes, amounting, for the combined industries, to $49,000,000. That, taken together with the fact that there was a drastic liquidation

in the number of mines and capacity in the year 1924, and that prices of coal were known to be falling in that year, appears to indicate that all the losses for the combined group could not possibly have been due to anthracite.

During this period of which we have been speaking, 1923, to 1933, wage rates have been declining, as a whole, and over the period as a whole.

The extent of the decline, and the dates at which it took place, are indicated in the charts of wage rates and earnings given in chart No. 2. The chart shows three different indicators of the trend of miners' wages. This does not purport to show the annual earnings of miners, but merely daily rates or daily earnings.

The first of the indicators selected to show what the trend has been is the Illinois day scale, for skilled inside labor, to which reference has already been made. It is indicated by the dotted line on chart No. 2.

As the Illinois district was completely organized throughout this period, wage rates in that field have changed by sudden steps at periods when there was a change in the wage agreement. In the Illinois field, as it had reached by wage agreements in August, 1920. of 1923, the day rate was $7.50 a day, the point which The miners' union in that area remained strong enough to hold it at the $7.50 level down to late in the year 1928, at which time, due to the competition of other districts, and particularly of the non-union fields, it was forced down to $6.10. It remained at the level of $6.10 for a period ending in 1932, and then dropped to $5.

The second indicator of the trend of wages shown in this chart, and selected merely to indicate a change from time to time, is the average earnings of all day men in the State of West Virginia, covered by the periodic wage surveys of the United States Bureau of Labor Statistics. The Bureau of Labor Statistics cannot attempt to cover all mines, but it has selected an example covering a considerable number of mines in each State, and at intervals of two years it makes a close examination of the books of those mines to find what have been the average earnings during one typical pay period. For the State of West Virginia the record compiled from these publications of the Bureau of Labor Statistics is as follows:

The sample made in 1919 shows the average earnings of the day men were $4.09. They rose to a high of $5.87 in late 1921 and early 1922.

The next observation made by the Bureau of Labor

Statistics, in 1924, shows that they had dropped to $4.93. They stayed at that level, with slight reductions, until the beginning of the great depression, and in February, 1933, the Bureau of Labor Statistics sample showed an average earning of all day men in West Virginia mines covered of $3.25. It is significant that the drop in the daily earnings, which means essentially wage rates, in the State of West Virginia, came four years before the drop in the Illinois rate, indicating the competition to which the northern districts, as represented by the State of Illinois, were subjected during this period.

The third barometer of wages indicated on this chart is the average daily earnings in the State of Tennessee for day men, also developed from the Bureau of Labor Statistics. The Bureau seems not to have made any canvass of Tennessee mines in the years 1921 and 1922, so the chart shows the record beginning with 1924.

In their 1924 determination the Bureau of Labor Statistics found the average for Tennessee, on this selected payroll, to be $3.55, and that fell, by degrees, to $2.66, in early 1933.

The working time tended to increase for a while, due to the fact that the number of men on the rolls had been drastically reduced by the discharge of about 200,000 workers between 1923 and 1930. The drop in the number of workers is shown in the line marked "Then Employed" in chart No. 2. With the elimination of these 200,000 men that lost their jobs—This is the number of jobs, not the number of individuals.

The fact that these men were forced out of the industry, and that the mines in which they worked had also shut down, made it possible for the remaining mines to operate far more steadily, and the average working time for the mines that remained in business increased. It rose from 179 days in 1923 to 219 days in 1929. The figure of 219 days in 1929 is still less than the average.

The average working time in 1929 was somewhat less than the average working time in 1913, the last prosperous year before the war. What a man could make in the course of a year depends on his daily rate, and on the amount of time that he has to work.

During the prosperous years before the reductions in wage rates, there were masses of men in the mines who earned in the neighborhood of $1,100 or $1,200, and some, of course, who earned very much more than that, and some who did not make anywhere near as much. You can get a rough picture of what these day men would be making in the year 1932 if you take the Bu-

reau of Labor Statistics' findings as to their average earnings in the month of February, 1933, and multiply that by the number of days the mines worked in 1932. If you make that computation, the result is as follows:

In West Virginia, the product of days times the February, 1933, rate, would be a yearly income of $546. In Illinois, if you take the days times the union rate, $5, the annual income would be $560.

In Tennessee, if you took the Bureau of Labor Statistics' findings as truly representative, the annual earnings would be $394 paid in that area.

These are the day men, not the tonnage workers. The tonnage workers sometimes make less, and often make more.

I ought to add that the Bureau of Labor Statistics' samples are thoroughly comparable, from time to time, but, in my judgment, may not show the full depths to which the reduction of wages went during the years of the depression. The list of mines has been brought to my office for checking. I have examined the mines that are counted by the Bureau of Labor Statistics in its findings for the States of West Virginia and Tennessee. They include a number of large mines. They are heavily weighted by the bigger mines, and especially by the captive mines. On the whole, those mines have maintained wage scales rather better than the little properties. It is therefore more than possible, in my judgment, that a complete count of all the mines in the State of Tennessee would have shown average earnings per day materially less than $2.66 in February of 1933. I think we all of us have seen mines where rates were lower than that figure.

I refer now to a table entitled "Disposition of total output of bituminous coal mines of the United States, by years, 1915-1933," marked Table No. 8, attached hereto. This table was prepared under my direction from data in the Bureau.

The first column is the year. The next column is "Loaded at Mines for Shipment." That is to say, loaded at the mine in a railroad car, or in a few local instances in a river barge, for shipment by rail or river.

In the next column, is the percentage that that item bears to the total production in the country.

The next column is "Truck or Wagon Commercial Sales." It will be noticed that there is no entry in that column until the year 1933. That does not mean that there was no coal loaded into trucks or wagons prior to that time.

Frederick C. Tryon

There have been wagon sales at least from the earliest times, but there was no separation made of them in the statistical records prior to this year, 1933, or 1932. They were included in the caption "Other Sales to Local Trade, Used by Employees, or taken by locomotives at tipple." In 1933 for the first time we obtained an accurate separation, which warrants a publication under the name "Truck or Wagon Commercial Sales." It was found that in 1933 that constituted 4.6 per cent of the total output of coal.

The next item "Per cent of Total" will speak for itself.

The next column is headed "Made into Coke at Mines." We have data in the Bureau showing what happens to that coke after it is made at the mines.

Virtually all the coke as it is drawn from the beehive oven at the mine is loaded into railroad cars, or very rarely into a river barge, and shipped away. According to our latest accounts, there are three coke-oven plants in the United States that are still using some coke they produce in an affiliated factory right at the mine. But for practical purposes, all the coal that is charged in beehive ovens at mines, either 24 or 48 or 72 hours later is loaded on railroad cars, or on a river barge, and shipped away.

This table shows the relationship between production and shipments.

I have before me a table entitled "Distribution of bituminous coal produced in 1929 according to the records of the United States Bureau of Mines, grouped by State of origin," which I have marked Table No. 9 and which is attached hereto.

I have also a chart entitled "The Interstate Movement of Bituminous Coal in 1929, as shown by the reports of the United States Bureau of Mines," which I have marked Chart No. 10 and which is attached hereto. The chart No. 10 is based upon table No. 9.

Certain additional details have been entered on this chart to indicate the distribution of coal shipped to tidewater, as to what States it is known to enter into, and certain additional details to show which of the New England States have received coal from the region of the districts represented.

I have also a chart entitled "Production of bituminous coal and total rail (or water) shipments, by States, in 1929," which I have marked Chart No. 11 and which is attached hereto. This chart is based on very familiar published data in the Annual Report of the Bureau of

Mines. The figures under the small heading on this chart represent production for that year in that State in millions of tons.

I have also another table entitled "Distribution of the supply of bituminous coal from each originating district in 1929, divided between interstate, intrastate and railroad fuel," which I have marked Table No. 13 and attached hereto. This table was prepared by me upon data of the Bureau of Mines, which was compiled under my direction.

I have also prepared, and attach hereto, a table comprising two pages entitled "Distribution of the total national supply of bituminous coal in 1929, divided between interstate, intrastate, and railroad fuel," which I have marked Table No. 14.

I also have prepared, and attach hereto, a table entitled "How intrastate rail shipments of bituminous coal to Indianapolis meet competition from interstate rail shipments (1929 data)," which is marked Table No. 15.

I have also prepared, and attach hereto, a table entitled "How intrastate rail shipments of bituminous coal to other large cities of Indiana, Illinois, and Ohio meet competition from interstate rail shipments (1929 data)," which I have marked Table No. 16.

This table is based upon the detailed records of two railroad traffic bureaus, one called the Ohio Bureau of Coal Statistics, and the other called the Illinois Freight Association. All cities carried on the books of the two traffic bureaus in such form that they could be matched up, say a figure from the Illinois Bureau be placed alongside a figure from the Ohio Bureau, were used in this compilation. Then there was a certain lumping of destination groups, all in Illinois and all in Indiana and they were left out as having no significance.

I also attach a table, prepared under my direction, entitled "Bituminous coal loaded for rail shipment on origin railroads in the Appalachian districts north of Alabama—Northern Railroads," which table I have marked Table No. 17.

I also attach a table, prepared under my direction, entitled "Bituminous Coal Loaded for Rail shipment on Origin Railroads in the Appalachian Districts North of Alabama—Southern Railroads," which table I have marked Table No. 18.

I also attach hereto a table, prepared under my direction, entitled "Recapitulation of Bituminous Coal Loaded for Rail Shipment on Northern and on Southern

Frederick C. Tryon Charles O'Neill

Railroads in the Appalachian Districts North of Alabama," which table I have marked Table No. 19.

CHARLES O'NEILL.

I am Vice-president of Peale, Peacock & Kerr, Inc., miners and shippers of bituminous coal, with mines located in Indiana, Cambria and Clearfield Counties of Pennsylvania.

I am president of the Eastern Bituminous Coal Association, a voluntary, unincorporated association of coal producers with mines located in the following counties in Pennsylvania:

Bedford, Blair, Bradford, Cambria, Cameron, Centra, Clarion, Clearfield, Clinton, Elk, Forest, Fulton, Huntingdon, Jefferson, Lycoming, McKean, Mifflin, Potter, Somerset, Tioga.

Armstrong County, including mines served by the P. & S. R. R. on the west bank of the Allegheny River, and north of the Conemauch division of the Pennsylvania Railroad.

Fayette County, all mines on and east of the line of Indian Creek Valley branch of the Baltimore & Ohio Railroad.

Indiana County, north of but excluding the Saltsburg branch of the Pensylvania Railroad between Edri and Blairsville, both exclusive.

Westmoreland County, including all mines served by the Pennsylvania Railroad, Torrance, and east.

The State of Maryland; and Grant-Mineral and Tucker Counties in West Virginia. This association has 141 members, producers who in 1934 produced 37,822,549 tons of coal.

From 1898 until 1916 I was employed as a coal miner and held a position as an officer of the United Mine Workers of America.

From 1918 to 1930 I was Secretary of the Central Pennsylvania Coal Operators Association; since January 1st, 1930, I have been Vice-President of Peale, Peacock & Kerr, Inc. I have been actively engaged in the mining, production and selling of bituminous coal for approximately 35 years.

Coal from the Central Pennsylvania District is sold in 42 states and the District of Columbia, the Dominion of Canada and to Interstate carriers. The principal areas using our coal are the Middle Atlantic and New

England States, the District of Columbia and the coal sold to railways. The total of our production sold in New England, Middle Atlantic States, District of Columbia, and for railway fuel, amounted to 94.52%, the balance is shipped to all the other 42 states and exported to foreign countries and Canada.

Our district competes in each of these markets with practically every other coal district East of the Mississippi River, except Alabama, and with coal produced in the States of Pennsylvania (outside of our District No. 1) Ohio, West Virginia, Virginia, Kentucky, Tennessee, Indiana, Illinois, and Iowa. Our principal competitors, however, outside of our own district are the mines located in Western Pennsylvania District, Ohio, No. W. Va. District, and the Southern West Virginia Districts, Low and High Volatile. Our principal competition from the South is coal shipped from the Low Volatile and High Volatile Districts from Hampton Roads, which is distributed from there to points along the Atlantic Seaboard, and from docks re-loaded on to railroad cars and trucks and shipped to interior points. A complete description of this Tidewater origin and distribution is available from reports issued by the United States Bureau of Mines currently. We also compete with Northern West Va., West Pa., and Ohio in all-rail markets East of Youngstown, Ohio, to Points in Maine. Our district also competes with all of the Districts shipping to the Great Lakes for delivery beyond the dumping ports.

For several decades prior to 1910 the production and consumption of bituminous coal practically doubled every 10 years. In 1890 it was 111,000,000 tons; in 1900, 212,000,000 tons; in 1910, 417,000,000 tons; in 1918, at peak production in the industry, it was 579,000,000 tons. Since that time there has been no steady increase in the consumption of coal. As a matter of fact, whatever general tendency there has been has been in the other direction. The noteworthy thing, from the standpoint of the coal operators, is that the growth in consumption which had been uniform and steady prior to 1910, and which the industry had in general counted upon, quite suddenly ceased. This was due to several causes, but primarily to more economical methods in using coal practiced by the large users and to the increased use of competitive fuels and sources of energy, such as oil, gas and hydro-electric energy. This in a general way describes the growth of the industry from a consumptive stand-

point. The growth of the industry from the point of view of production or rather of development of productive capacity has been quite different. The increased demand and high prices existing during the War period stimulated the opening up and development of many new mines, and this tendency was promoted and increased by the Wartime Fuel Administration. The result was that in 1923 there were 9331 operating mines throughout the United States with a total productive capacity, if operated 308 days a year of 970,000,000 net tons. The production of coal during that year was 564,565,000 net tons, or only 58% of the developed capacity. The result was that the mines operated on the average of only 179 days during that year.

The practice existing in the industry relative to the relationship between the sale of coal and the actual mining of it is as follows:

Primarily, the establishment of a price is based upon the cost of production with the hope of an additional margin that will produce a profit. Of course, the competitive circumstances in the bituminous coal industry, due to excess productive capacity and the contraction and reduction in the consumption of coal due to competition from other fuels and sources of power such as oil, natural gas, and hydro-electricity, has intensified the struggle for orders, so that there is a constant surplus of offerings on the market. This, of course, has a tendency to depress prices.

The coal is sold in different ways. The larger companies usually sell their coal by direct solicitation of consumers by salesmen. A great deal of coal is sold through agents, and there is also considerable coal sold through middle-men or wholesalers who purchase for resale. Practically all companies do some business in each of the three ways, the bulk of the tonnage being sold by direct solicitation, and the character of the actual price on the contracts made by individual bargaining, taking into consideration the competitive circumstances on the day the sale is consummated.

After an order is obtained and accepted by the coal company, copy of the same with shipping instructions and so forth is furnished to the coal mine, upon which proper accumulation of orders for a day's run, fills the orders that are available so far as they can produce the coal on any given day. In the accumulation of orders where coal is sized, there is considerable difficulty in keeping a proper balance on the output of sizes at any given mine. The result is that after a number of days'

work if the screenings or finer coal is not moving readily in the market and the larger sizes are moving readily, which often occurs in the winter or heating season, accumulation of slack or screenings will finally stop the operation of the mine by filling the siding capacity of the mine. In such an event the operator to continue to sell and deliver on his contracts for larger sizes is compelled to try to move this slack into some market at a price that will move it.

As a general rule there are no storage facilities at the bituminous coal mines in the United States. This is largely due to the fact that coal deteriorates considerably on being stored and to the extra cost of handling necessitated by storage. The general practice is to load the coal directly from the mine into railroad cars. This means that the coal must or should be sold before it is actually mined. The general practice in the industry is to secure orders for coal and then to mine that coal to fill such orders and load it directly into railroad cars. The tendency in late years to sell coal by sizes complicates the general practice to a considerable extent due to the fact that in the mining and sizing of coal all sizes are made and if orders are on hand for one or two sizes only, some disposition must thus be made of the other sizes. This fact has caused a tendency on the part of some operators to load the unsold sizes into railroad cars and bill such cars on consignment to the various consuming markets. Unless this coal is actually sold by the time it reaches its destination it becomes subject to heavy demurrage charges which quickly eat up the value of the coal and forces the operator to sell the coal in an already glutted market at any price he can get for it. This is what is called "distress" coal, and the presence of such distress coal on the market has had a substantial effect upon prices.

There is no storage of coal at the mines in the Central Pennsylvania District. All coal mined is shipped, except the very small portion that may be used at certain collieries for the generation of steam for power, and practically all the coal shipped from the Central Pennsylvania district is shipped in railroad cars, except about a million and a half tons per annum that is distributed locally by trucks.

When sufficient orders are secured at a mine, arrangements are made each night for the placement of sufficient empty railroad coal cars for running the mine the next day. This is usually arranged by the mine office with the yardmaster of the serving railway carrier. When ar-

rangements have been made with the railroad for a supply of cars, notices are posted or other signal used to notify the mine employees the night before that there will be work on the succeeding day. If no railroad cars are available (which did at one time occur frequently but now only occasionally), the men are notified not to come to work the next morning. In other words, railroad equipment is essential to the operation of any of the coal mines in our district. There is no storage at the mine and there is no other place to put the coal except in railroad cars.

The effect of surplus capacity upon the price of coal has been generally as follows:

Excess productive capacity in the mining industry had been chronic for many years preceding the World War, but up until 1910 the industry was doubling its production every decade, so that the expansion of production facilities and development was required by the country's needs. Naturally, there was a considerable momentum in the development of coal fields at the time the curve of consumption began to flatten after 1910. This was occasioned, of course, by the history of the industry as stated prior to 1910, by the encouragement of railroads who up until the time of the World War were constantly making extensions into new coal fields, encouraging their development of the volume of this lucrative traffic that they might have placed upon their lines.

While over-capacity in the coal industry had existed for a number of years prior to 1923, prior to that time such over-capacity did not have any substantial effect upon prices largely because the actual productive capacity of any mine is limited by the ability of the operator to get railroad cars into which coal may be loaded. Prior to 1923 a shortage existed in railroad equipment and it had been generally impossible for mines to get enough cars to transport anywhere near their full-time operating capacity. As a result the sale of coal in those days was to quite a large extent a sale of transportation facilities, and prices were relatively high.

With the beginning of the World War and the tremendous purchases of munitions and materials by the Allied Nations from this country, there was a substantial increase in prices the latter part of 1916, and the projection of new mines was accelerated by the War boom as was the further development of mines then in operation by increasing the working of men on development work and the intensified application of the then

known mechanical devices and equipment to the production of coal. Prices went to a point where it was deemed necessary to place the bituminous coal industry under the provisions of a Federal Statute, the Lever Act, establish a United States Fuel Administration, which took charge of production and distribution of bituminous coal in the United States and fixed maximum prices at which the bituminous coal in the nation could be sold. The maximum prices fixed by the United States Fuel Administration were from Six to Eight Dollars below the then current prices obtainable in the market The United States Fuel Administration maximum prices obtained from August 21, 1917, until February 1, 1919, several months after the signing of the Armistice on November 11, 1918. Following the signing of the Armistice there was a very decided decrease in the demand for bituminous coal, and with the elimination of the maximum prices February 1, 1919, as established by the United States Fuel Administration, prices generally declined, until the latter part of the year.

As a result of the strike called by the United Mine Workers of America, which was effective on November 1st, 1919, to December 10th, 1919, supplies of coal were greatly reduced and the prices of coal in the non-union fields sky-rocketed to such an extent that the President reinstated the United States Fuel Administration for the period from December 1st, 1919, until April 1st, 1920. Maximum prices were again established under the Lever Act and strict regulations were made as to allocation, distribution and routing of railroad cars.

The post-war boom was beginning about this time, and in addition to the development of the inflationary booms in Europe, a serious shortage of transportation facilities developed in the United States, commonly known as coal car shortage at the mines. With the increasing shortage of cars and the resulting diminution of the coal supply, prices began to climb very rapidly after April 1, 1920, and by July 15, current prices for bituminous coal reached the unheard of heights of fifteen to twenty dollars a ton in certain cases. Current prices continued at very high levels until about December 31, 1920.

By 1923, however, the railroads had acquired ample car equipment and the transportation problem was cleared up. It was at this time that the over-developed capacity first became felt as a permanent disturbing market factor relative to the price of coal. A developed coal mine is something that is hard to close down. It is

generally surrounded by a more or less isolated mining community entirely dependent upon the continued operation of the mine. There is a large investment in plant and equipment and the overhead expense of an idle mine is very great. This overhead consists of such fixed charges as taxes, insurance, pumping, ventilation, maintenance, depreciation, administration and as a rule, in the case of mines on leased property of minimum rental or royalty payments. At a modern well equipped mine the cost of properly maintaining it in idleness will approximate 20c to 30c per net ton of developed capacity, so that the continuing cost of maintaining an idle mine with a monthly capacity of 50,000 net tons will approximate $10,000 to $15,000 per month. In addition, the shutting down of a mine for any considerable period of time generally results in a substantial loss of the actual coal reserves in the developed portion of the mine, due to the fact that certain coal becomes inaccessible because of caving and squeezes. The cost of mining also varies very considerably according to the number of days per week during which the mine is operated. The more continuous the operation, the lower the cost. There is, therefore, a natural tendency on the part of the Operator to keep his mine operating as continuously as possible, and, therefore, a natural effort is made to increase the volume of sales. This possibility of cost reduction by volume of output is the principal cause for price cutting; the Operator is forever asking himself the question—

> "Can I save money by taking an order at a lower price than heretofore, through the reduction in the overhead or fixed charge per ton that will result from this additional tonnage?"

The Operator seldom contracts at one time for the sale of the entire production of his mine, but having contracted for the sale of a part of his production he has the proverbial "bear by the tail," and finds himself in the position where he cannot refuse to accept additional business even at a price which is only slightly above *actual cash out of pocket cost of production,* including only such items as wages, power, supplies and royalty, in the case of a mine operating under lease. Naturally under these conditions with the large excess production capacity hanging over and pressing upon the market, it is inevitable that prices must decline in a downward spiral in the absence of some form of price control. Operator after Operator cuts the price in an attempt to

secure for himself a disproportionate share of the limited volume of available business. The inevitable result is a continuous decline in price until a national strike or some other abnormal situation develops.

The consequences of this fierce competition have been disastrous to the industry and may be more readily appreciated when it is realized that by May 1933, the average mine realization price in the Central Pennsylvania district had been forced down to $1.14 per net ton, thirty cents below the average cost of production, as determined by the statistics of the National Recovery Administration. This disparity between cost and selling price existed in spite of the fact that in the competitive process mine wages had been forced down to a point where in some localities men were working for $1.00 to $2.00 per day for only two or three days per week. To illustrate the extent to which prices had been depressed, railway fuel was sold under competitive bidding during 1932 as low as 43c a net ton. However, the price of coal for household consumption did not decline to any such level. This resulted naturally from the greater economic influence of the large industrial consumers of coal who usually contract for their supply of coal for a year in advance, and whose individual coal consumption is very large by comparison with the quantity purchased in the course of a year by the average retail coal dealer. It was not at all uncommon for industrial coal to sell f. o. b. the mine at price $2.00 and more per ton below the f. o. b. mine price for household fuel. In the absence of a regulated price it is inevitable that the price of industrial fuel is subjected to the greatest pressure, with the result that the producer must recoup himself as best he can by securing a disproportionately high price for household fuel.

In 1923 the total number of operating mines in the country was 9331. In 1933 the number of operating mines had been reduced to 5555. The capacity of the mines producing in 1923 was 970,000,000 net tons, the capacity of the producing mines in 1933 was 615,000,000 tons. Thus 3,776 mines with a production capacity of 355,000,000 net tons have been wiped out of the picture, with the resulting loss of millions of dollars in capital investment in these mines and also with probable permanent loss of hundreds of millions of tons of coal which has become inaccessible except at a very high cost, because of caved workings, squeezes, etc. In addition to wiping out completely the operators I have just referred

to, the competitive conditions existing in the industry caused by this overcapacity have resulted in the insolvency or bankruptcy of many producing companies, including such large and powerful organizations as the Consolidation Coal Company and the Elkhorn Fuel Corporation, and has put the vast majority of producers on the road to insolvency. Since labor costs are the largest element of the total cost (60 to 65 percent) and since the other items of cost (taxes, insurance, workmen's compensation, supplies, power, depreciation, depletion) are quite inflexible, reductions in cost are naturally brought about by reduction in wages.

Prior to April 1, 1924, the Jacksonville wage agreement was consummated on the basis of $7.50 per day wage rate, which was merely a continuance of the agreement effective August 16, 1920. Immediately thereafter the non-union fields reduced their wages to the so-called Garfield scale of $5.00 per day base rate. The Jacksonville agreement effective April 1, 1924, continued until March 31, 1927. This wide disparity in the wage scale resulted in a series of strikes in the northern states beginning in 1925 and terminating in the early part of 1928. During this period the Union was practically wiped out in Pennsylvania, Ohio and portions of Indiana. In Pennsylvania and Ohio the first reduction in wages, made in an effort to meet the competition from the southern fields, was to reduce the $7.50 rate to $6.00 and other rates proportionately. This continued until June 16th, 1929, when another reduction of $1.00 per day and other rates proportionately was made at the northern mines, bringing the wage scale to $5.00 per day, which was relatively the same level as that which obtained in the low volatile fields of the South. From 1929 to the end of 1930 the wage scales, North and South, remained relatively uniform. Following 1930 and with the accentuation of the depression, there was a continuous downward spiral of prices and wages. On November 16, 1931 wages were reduced in my district to $4.40 per day and other rates proportionately. Again on April 16, 1932, wages were reduced from $4.40 to $4.00 per day, and again December 16, 1932, wages were reduced to $3.44 per day. This schedule of wages remained in effect quite generally in the Central Pennsylvania District until July 16, 1933, when wages were increased prior to the enactment of the Bituminous Coal Code on October 2, 1933, and the establishment of the union in the Appalachian area under the Appalachian Wage Agreement as of the same date.

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The downward spiral of prices and wages can best be shown by the effect of one upon the other. On November 16, 1931, a wage reduction from $5.00 to $4.40 per day was made in anticipation of the contracting season which would begin about January 1, 1932. Bids for business were made generally on this reduced wage scale. One very large buyer in New York City, the Interboro Rapid Transit Company, made its lettings after a public opening of bids. The public opening of bids in 1932 was about the 15th of March and their awards or lettings were granted on March 29 of that year. One of the larger suppliers of the Interboro Rapid Transit Company submitted a very low price and received a generous proportion of the business. The day following the making of the awards, namely, March 30, this supplier cut his wages.

Of course, other shippers had to revise their bids in order to participate in this business, with the result that a further reduction in wages to the basis of $4.00 per day was made on April 16, 1932, generally throughout the district because of the price cut "discounted" in the bid of this one particular shipper.

Before the contracting season of the next year, 1933, the final wage reduction was made to $3.44 per day.

On the opening of bids to the Interboro Rapid Transit Company about March 15, 1933, it was discovered that one of the largest shippers had resorted to a very low price, in fact, $1.03 per ton run-of-mine for high grade low volatile coal, which was the lowest price ever quoted at this plant for coal in the recollection of any one. Naturally this price on the great volume of business involved had the effect of disturbing the prices for public utility business at every plant along the Atlantic seaboard, and its effect reached to points far in the interior.

From 1898 until March 31, 1927 relations in the union fields were maintained and wages were established for that entire period by negotiations directly or through Federal intervention by the Central Competitive Field Wage Conference. The Central Competitive Wage Agreement was a basic agreement for the union fields of the country and was made by the district comprising Ohio, Indiana, Illinois and Western Pennsylvania. This interstate agreement was called the basis agreement and the increases or decreases in wages allowed upon basic rates by this agreement affected the same basic rates in all of the so-called outlying Union districts that were not part of the Central Competitive Field.

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In 1906, 1910 and 1914, the Central Competitive Field failed to make an agreement and in these years agreements were made by signing up with individual districts and mines. However, the United Mine Workers of America established with its original agreement the changes that were to be made in basic rates, and the effect was working out an agreement substantially in accord with the custom under the interstate agreement.

By the end of 1927 practically all of the union fields except Illinois and Indiana had changed to non-union bases of operation. During this period prices and wages continued downward until they had reached their lowest point in May 1933, just preceding the enactment of the National Industrial Recovery Law. Under the guidance of the National Recovery Administration a Code of Fair Competition was established, and complementary to it the Appalachian Wage Agreement was established by collective bargaining under the provisions of 7a and section 7b of that Act. This agreement was an interstate agreement, taking in all of the mines in Pennsylvania, Maryland, Ohio, W. Va., Virginia, eastern Kentucky, and northeastern Tennessee, and involved approximately 300,000 men and a production of 250,000,000 tons in 1934. There was a small number of company unions in this area which did not sign the Appalachian Agreement, and a number of companies in Harlan County, Kentucky, that remained non-union. The total production of these out of the 250,000,000 tons was approximately 15,000,000 tons and involved probably 20,000 men.

The necessity for an interstate agreement is obvious. All of these districts in the Appalachian area compete with each other, both with mines in their own district and with all of the other districts making up this great interstate area. They also compete with Illinois and Indiana intensely, and the wage scales in Illinois and Indiana are now predicated upon the wage scale negotiated by the Appalachian Joint Wage Conferences. The operators in one district are unwilling to negotiate an agreement under ordinary circumstances separately, but with such a volume of tonnage in a conference that the basic rates of pay for day and piece workers over a large area will be relatively uniform. The Appalachian Conference governs the direct establishment of basic rates of pay on about 70% of the production in the United States. The establishment of the basic inside day wage rate and the basic Shortwall machine cutting and loading rate in all fields in this basic agreement provides the

bases necessary to project all other rates in every given mine in the area. With an agreement as to these basic rates, every operator knows approximately his competitive situation so far as wages cost is concerned with all of his competitors. Basic rates of pay in other Union districts vary as basic rates in Appalachian Area are raised or lowered.

It would be impractical for any one district to engage in establishing an agreement alone, because of its fear that other districts might compel a settlement of their wages upon a basis more favorable to them than such one district would be able to negotiate alone. Therefore, the interstate contracts made by the old Central Competitive field and the one now made by the Appalachian Joint Wage Conference affect a sufficient volume of competitive tonnage as to establish fairly relative wages cost in the districts directly affected and to have a compelling influence upon the negotiations and settlement of wage agreements in the outlying districts upon the same basis. In other words, with 70% of the tonnage of the United States agreed upon a basis of settlment in the Appalachian Conference and with these mines operating upon that basis, there is little likelihood that Illinois and Indiana could afford to refrain from signing a similar agreement, because the Appalachian mines would be able to supply, with the excess productive capacity they have, all of the customers of the operators in Illinois and Indiana. Therefore, it may be said without any doubt that wage-making under union conditions in the mines of the United States must necessarily be interstate in character, and there is a continuous history of this kind, broken only in a few periods, of agreements on this basis.

During the period of non-union conditions prevailing in the Appalachian area there was no way of establishing uniform or relative wage scales, and the force of competition compelled a continuous descent of wage rates and earnings from 1928 to 1933. Since 1933 the Appalachian Joint Wage Agreements have stabilized conditions as to wages and hours of labor in practically every district in the United States. True, there are several local strikes in northeastern Tennessee and Alabama at the present time, based upon the competitive circumstances in those fields where the operators in the case of Alabama believe that the wage scale negotiated by the Appalachian conference and applied to their rates will so intensify their competition with oil and natural gas as to practically destroy their business, and in the case of northeastern Tennessee a fear that if Alabama is successful in maintain-

ing wage rates below those established by the Appalachian Conference and they (Tennessee Operators) are compelled to support the results of the Appalachian conference that Alabama competitors will destroy their business. This only another showing of the direct effect wage relationships have over wide areas in different districts and in different states.

Among the matters to be settled in the recent Appalachian Wage Conference was the question of wage differentials. The United Mine Workers requested a settlement of differentials within and between districts, based upon facts and equity. This demand was made when the Conference was assembled February 18, 1935. The operators agreed to undertake a settlement of the problem surrounding these questions. Wage differentials is simply another way of saying wage relationships. The importance competitively of proper wage relationship is manifest when it is remembered that sixty to sixty-five percent of production cost is wages cost. The mine workers were willing to adopt any of a dozen formulas which were submitted that would bring about a solution of the North-South differential, which is 40c a day less for day labor in the South than in the North, the intra-district differentials, which include the relationship of rates between mines within the same district, and the inter-district differentials which includes the relationship of basic day and tonnage rates between different and competing districts. The simple fact is that the Appalachian Wage Conference of 1935 made no progress whatever, because of the tenacity with which operators who had advantageous or lower rates than their competitors, refused to agree upon any formula that would bring about a settlement of the questions. Of course, those districts which believed they had higher rates and were being prejudiced by the rates in other and competing districts were just as firm that a formula should be agreed upon that would bring a settlement. So serious was the division of opinion between the operators on these differential questions that it almost broke up the Wage Conference. Finally in desperation the mine workers and those operators who wished to bring about a settlment of the wage scale finally agreed upon the present clause in the Appalachian agreement, which is not one having determinative provisions in it. These wage relationships become of paramount importance because of the effect they have upon the competitive situation as between shippers who may be preferred and those who may be prejudiced by the rates in effect. This is one of the most difficult

questions in any wage conference and is to a large extent interstate in character.

Since 1919 the experience of the industry with reference to labor disputes has been as follows:

At the September, 1919, Convention of the United Mine Workers of America a demand was made for a thirty-hour week, 60% wage increase, six hours per day, five days per week, as against the then prevailing wage scale on an eight hour day, six days a week. This offer was rejected by the coal operators and a strike was called by the United Mine Workers of America, effective November 1, 1919, and which lasted to December 10, 1919. Seventy per cent of the miners went on strike in some States. During the period of this strike the limited storage supplies fo the country were used, and winter was upon us. Schools and hospitals in different parts of the country, and particularly in those portions of the country far away from the mines in states that did not produce coal, were without fuel, and indications were that the situation in this respect, as well as in respect to public utilities and railroads, would become serious each day the strike continued.

The result was that the President of the United States intervened through cabinet officers and directly by bringing about a temporary settlement and appointing a Coal Commission to conduct extensive hearings as to the causes of the strike, the demands of the mine workers, and the defense offered by the operators of the nation. This Commission made an award, which was effective April 1, 1920. The mine workers were awarded an increase of an average of about 27%. I was technical adviser to one of the Commission and was quite familiar with the work of this Commission and the negotiations attendant thereon.

The effect of the strike, however, was to reduce the supply of coal available and sky-rocket prices in the non-union operations of the country so greatly that the President re-established the United States Fuel Administration and re-established the maximum prices which had been in effect up to February 1, 1919, for the period from about December 1, 1919, until April 1, 1920, when under the recommendation of the Commission these maximum prices were again abandoned, when their award to the mine workers became effective.

The post-War boom was beginning about this time, and in addition to the development of the inflationary booms in Europe, a serious shortage of transportation facilities developed in the United States, commonly

known as coal car shortage at the mines. With the increasing shortage of cars and the resulting dimunition of the coal supply, prices began to climb very rapidly after April 1, 1920, and by July 15, current prices for bituminous coal reached the unheard of heights of fifteen to twenty dollars a ton in certain cases. Current prices continued at very high levels until about December 31, 1920.

During this period the award made by the Bituminous Coal Commission to the day wage workers for an increase of one dollar per day (making their daily wage six dollars for eight hours), was subjected to violent criticism in certain coal fields, particularly Illinois and Indiana, which was followed by a series of wild-cat strikes in those states. President Wilson permitted and requested re-assembling of the Central Competitive Joint Field Conferences for consideration of the situation. This conference was assembled and failed to reach an agreement or settle the difficulties, which were expanding in Illinois, Indiana and other coal fields by this time, whereupon the Illinois operators agreed with the Illinois miners to increase the daily wage by $1.50, effective August 16, 1920, making the basic inside day wage rate for eight hours $7.50. This was followed by the signing of agreements in all union districts, applying the $1.50 increase to the daily wage rates. The first award was negotiated by the Central Competitive Field Conference, which comprised Illinois, Indiana, Ohio, and Western Pennsylvania.

In 1921 there was a very substantial decline in prices, with the result that the operators asked for reconsideration of the wage agreement and a conference was called in the early part of 1922. Operators from certain districts refused to attend the conference, with the result that a strike was called April 1, 1922. The strike was very extensive, and was terminated in different fields at different dates between August 19 and the end of the year. In that case local wage agreements only were signed, but President Harding intervened on numerous occasions and was instrumental in bringing about conferences between the miners and operators that finally resulted in a settlement. At the same time while the strike was in force it was one hundred per cent effective in six fields and in as many states, and between 75% and 100% effective in thirteen other districts out of a total 42. At its maximum it was 73% effective for the country as a whole.

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During the 1922 strike there was some non-union operators in Pennsylvania and some union operations in West Virginia. Practically the entire North was unionized, and the South non-union.

The effects of the 1922 strike in the coal mines was aggravated by the railroad shopmen's strike which began July 1, 1922, which increased the "bad order" of railroad equipment tremendously and brought about one of the worst transportation deficiencies or coal car shortages which we have ever experienced, in the latter part of 1922. This car shortage continued throughout the latter part of 1922 and the first quarter of 1923. As a result prices were again very high during the latter part of 1922 and the contracting period of 1923. In other words, most of the coal contracts are made in the period from January 1 to March 31 of each year, and generally effective April 1 and continuous for a one-year or two-year period.

Prior to April 1, 1924, the Jacksonville Wage Agreement was consummated on $7.50 basis, which was merely a continuance of the Agreement effective August 16, 1920, and immediately thereafter the non-union fields reduced their wages to the Garfield Scale of $5.00 base. The Jacksonville Agreement effective April 1, 1924, continued until March 31, 1927. The wide disparity in the wage scale as between Illinois, Indiana, Ohio and Pennsylvania on the one hand and the lower rates generally effective in the States of Kentucky and West Virginia forced operators in the Northern states to break away from the union and reduce the wages of their miners. This brought about a series of strikes in the Northern states, beginning in 1925 and continuing until the early part of 1928. During this period the Union was practically wiped out in Pennsylvania and Ohio and portions of Indiana. Following this, a series of price and wage cutting commenced. As a result of this continuous wage-cutting and price-cutting, bankruptcies had increased, mines were being abandoned in all portions of our district, and conditions among the mine workers had become so deplorable that the men began to organize themselves in the United Mine Workers of America. The operators had reached the point where conditions were so bad that no resistance was made to the organization of the union. When the miners were organized they first demanded checkweighmen and recognition of the mine committees. This request was readily acceded to by the operators in the Central Pennsylvania District.

These events were occurring in May and June, 1933,

and during the period when the National Industrial Recovery Act was being considered and finally passed by the Congress. When the National Industrial Recovery Act became a law and its Administrator appointed, operators from all over the United States were called to Washington to work together with the N. R. A. and the Mine Workers in formulating a Code of Fair Competition and the First Appalachian Wage Agreement, which Wage Agreement became operative on the same date as the Code of Fair Competition, namely October 2, 1933. The Agreement and the Code were worked out simultaneously, and one document was contingent upon the other. The Appalachian Wage Agreement covers several thousand mines in Pennsylvania, Ohio, Maryland, West Virginia, Virginia, Eastern Kentucky, and Northern Tennessee, producing in 1934, 251,000,000 tons and employing 310,000 men. The original Appalachian Wage Agreement extended to April 1, 1935. Failure to negotiate a new Agreement prior to that date resulted in threat of a general strike, which was postponed from time to time on five different occasions through the intervention of the Federal Government, and the settlement which was finally achieved was assisted through the intervention of the United States Department of Labor.

The effect of large strikes upon the distribution of coal has been as follows:

These strikes caused gains of production in the non-union areas, and to some extent were responsible for permanent losses of tonnage in the union areas, therefore these strikes affected different areas in a different way. Since strikes were more effective in some areas than others, the result was a permanent shifting of production from the more seriously affected fields to those relatively unaffacted.

The effect is clearly brought out by an analysis of the records of strikes 1919, 1922, 1927 and 1932, upon different producing areas. In 1918 the four highly organized states of Illinois, Indiana, Ohio and Pennsylvania, produced nearly 345,000,000 tons of coal, while the two relatively unorganized states of Kentucky and West Virginia produced 121,500,000 tons. Of the total production of the six states, there was produced by Northern states 73.9%. In 1919 there was a six-week strike in the union fields. At that time there was some union operators in the fields in Kentucky and West Virginia and some non-union operation in Western Pennsylvania, but the effect of the strike was the loss of 30 days per man employed in the Northern states and 13 days per man in the Southern

states. As a result of that short strike the percentage of the combined output produced by the Northern states declined to 71 and the 1918 percentage was never again recovered. Similarly, in 1921, the year before the big strike of 1922, the four union states produced 69.5% of the combined output and the non-union states 30.5%. The loss of operating time in 1922 because of the strike amounted to 105.7 days per man employed in the Northern states, whereas in the two Southern states the loss was only 35.9 days per man employed. The result was seen in the percentage of coal coming out of the Northern states declining from 69.5 to less than 64 and again the Northern states never recovered their 1921 percentage. In 1926 the Northern states produced approximately 57% of the combined output and the Southern states 43%. During the strikes of 1927 the North lost 84.5 days per man employed, while the South lost less than half a day per man employed. The output of the North declined to slightly more than 50% of the combined output, and again we find that it never recovered its 1926 percentage. In 1931 the Northern states produced 55.5% of the combined output. During 1932 the Northern states lost 38.4 days per man employed because of strikes, while the southern states lost only .6 of one day. Again the Northern states dropped, this time to 52.8, and again it never came back to 1931 percentage.

The shifting of production from one area to another not only affects the fortunes of the individual operators, but has serious social consequences in the territory adversely affected, which means loss of capital to investors in abandoned coal mining properties, loss of employment for labor, and the loss to society of the coal left in the ground in the abandoned mine, most of which will never be recovered. In the territory which is adversely affected by the shifting of production there are also great indirect losses to local businesses and local industries, financial institutions and railway carriers, all of which naturally developed with the growth of the coal mining industry within the district and all of which suffer a loss of business and of income as a result of the diminished activity of the local mining industry.

Consumers also have a tendency to prefer a continuous assured source of supply, and non-union supply was not threatened by strikes to the same degree that union supplies were threatened. This caused customers who shifted during the emergency from union operations to non-union operations to continue to give their business to the more assured supplier.

Charles O'Neill

Many efforts have been made in recent years to control the competitive condition in the industry.

During the latter part of 1931 there was a great deal of discussion among coal operators and State and National officials with reference to the desperate conditions in the coal industry. In the summer of that year Secretary of Commerce Lamont and Secretary of Labor Doake of President Hoover's cabinet had a meeting of operators in Washington, D. C. They discussed with the coal operators the necessity of taking some action to improve the condition of the industry. After considerable discussion it was the views of the Secretaries of Commerce and Labor that there was nothing they could do to assist in the situation, except to recommend to the producers that they endeavor actively to work out their own problems. Following this, the Governors of various States discussed the matter with coal producers in their respective States and Governor Sampson of Kentucky had several meetings with operators of Kentucky and operators from adjoining and competing states.

In October, 1931, Governor Conley of West Virginia called a meeting of coal operators at Charleston, West Virginia, for the purpose of discussing the situation in the coal industry in West Virginia, and also the advisability of his participating in conferences with the Governors of the important coal-producing states east of the Mississippi River, to see if anything could be worked out within the states to improve conditions in the coal mining industry. At the conclusion of that meeting it was the view of those present, including Governor Conley, that the matter was one that would have to be handled by the producers themselves. There was discussion of limitation of production in the states by agreement, and of the question of the states themselves entering into an agreement for uniform legislation to limit the production of coal. It was generally agreed that this was impracticable, if not illegal. A committee of operators was appointed at that meeting who arranged with Mr. C. E. Bockus, President of the National Coal Association, to call a general meeting of coal producers east of the Mississippi River, in which territory is produced about 90% of the National bituminous coal output. The meeting was held in New York City on October 21, 1931, and a number of plans were there discussed looking toward the stabilization of the industry. As a result of that meeting, and subsequent meetings, it was decided to attempt the organization of so-called District

Sales Agencies. One of the first of these sales organizations was Appalachian Coals, Inc., which was organized by a group of producers in the Southern high-volatile coal fields. After the organization of Appalachian Coals, Inc., and before it had opportunity to function, an injunction suit was brought against it by the U. S. Attorney General on the ground that the organization was in violation of the Sherman Anti-Trust Act. The trial court sustained the Government's contention, but this decision was reversed by the United States Supreme Court in March, 1933, and thereafter Appalachian Coals, Inc., was actively organized to do business and continued to function until some time during the winter of 1933-1934. The inherent weakness in a district coal sales agency is that it involves the production of coal in only a limited area and in the nature of the case cannot affect or stabilize competition between it and producers in other competing coal fields. It has been aptly said that if district coal selling agencies were generally organized, and in the absence of their regulation by Government, the industry would then be organized for warfare between large armies under expert leadership, and that the resulting battles would be ever more bloody and destructive than the guerilla warfare which has prevailed in the industry during the past twelve years.

When the National Industrial Recovery Act became a law in the summer of 1933 and a Recovery Administrator was appointed coal operators from all over the United States were called to Washington to work together with the National Recovery Administration and the United Mine workers in formulating a Code of Fair Competition and a wage agreement. The Coal Code and the first Appalachian Wage Agreement both became operative on the same day, namely, October 2nd, 1933.

The N. R. A. had a most beneficial effect on the industry. It increased and stabilized the price of coal; it increased and stabilized wages; it made it possible for the industry as a whole to earn a small profit in the year 1934, the first in ten years. When Congress had under consideration the extension of the National Industrial Recovery Act for a period of two years, the proposal had practically unanimous support and approval of the Bituminous coal mining industry. Under the N. R. A. Coal Code there was a great contraction in the difference between the price of coal sold to industrial consumers and the price of coal sold to retail coal dealers for consumption by householders. Prior to

the N. R. A. Coal Code it was not uncommon that the price of industrial coal F. O. F. the mines was $2.00 and more per ton below the price for household fuel. Under the N. R. A. Coal Code this price differential did not average more than 75c a ton. During the existence of the N. R. A. Coal Code, an agreement was made between the subdivisions of Division No. 1 (comprising practically the entire Appalachian area) under which prices were to be so coordinated that each of the subdivisions would receive approximately a certain predetermined percentage of the aggregate volume of production within that area. This plan was in effect from June, 1934, until May, 1935, and was worked out with remarkable accuracy. Each of the affected subdivisions had an output approximately equal to the percentage agreed upon, although naturally there were some slight variations from the exact figures. Since the termination of the N. R. A. on May 27th of this year, although mine wages have held up and were actually increased effective October 1st, 1935, prices have greatly declined, so that losses from current sales are now greater than during the depths of the depression in 1932 and 1933.

There is no difference between coal mined in one state and coal mined in another state, so far as competition at any particular destination is concerned, if the coal is delivered at the same price and is of the same quality. From the standpoint of competition there is no separation or distinction as between coal produced within the state of consumption and coal shipped to such state from fields in other states. The consumer has no interest in the fact as to whether the coal which he consumes is produced in Pennsylvania or is shipped into Pennsylvania from West Virginia. He is interested only in price and value. This is demonstrated by the large amount of coal shipped from other states that is consumed in the large producing states of Pennsylvania, Ohio, Indiana and Illinois, as compared with the coal mined in those states and consumed in the home state.

An example of this is the fact that rates on Bituminous coal, established by State commissions, are changed by the Interstate Commerce Commission if they tend to give coal on the State rates preference over coal moved on the intrastate rates. Numerous rates of this character are established. The fact is that practically all Bituminous coal rates are subject to regulation by the Interstate Commerce Commission in order to maintain fair competition by the railroads moving coal into consuming points. The same situation, as

exists competitively between railroads for the transportation of Bituminous coal, exists among the producers of Bituminous coal, who seek to sell coal at a given destination. If intrastate prices can be maintained on a lower basis than interstate prices, it would eliminate interstate coals from competition, the same as if an interstate freight rate were substantially higher at a given destination than the intrastate freight rate. If the coal is put out of line on the basis of delivered cost with a competing coal, it will, of course, lose the market, in fact will not have any opportunity to participate in the market.

Theoretically, an industry will adjust itself through the operation of supply and demand, by the speedy elimination of the most inefficient producers, who are unable to compete. But in the coal mining industry, this does not happen because of the great resistance on the part of even the least efficient producers to closing down their mines. A coal mine represents a large investment, averaging between $3.00 and $4.00 per ton of annual developed capacity. The cost of maintaining a mine which is closed down is prohibitive, ranging from 15c to 25c a ton of annual capacity, so that the unfortunate owner is better off to operate his mine at an actual *cash* loss at 15c to 20c a ton. The operator is practically forced to continue to operate his mine until his working capital has been entirely wiped out by losses, since his only alternative is to abandon his property and once and for all time sustain the loss of his entire investment. If the industry is not regulated through price control, and the resulting stabilization of wages, as contemplated under the Bituminous Coal Act of 1935, there will inevitably follow the destructive price-cutting and intolerable wage-cutting, as in the past. If carried on to its final and logical conclusion, the result would be that a very large majority of the operators in the industry would be eventually bankrupted and only the strongest units would survive and ultimately be in control of the industry. However, this liquidation would extend over many years, would result in the ruin of entire communities that would succumb in the struggle, and would pauperize coal mine labor during the entire period of the conflict. That this experience would continue over a long period of time is apparent from the fact that the industry went through a ten-year period of extensive liquidation from 1923 to 1933, and at the end of the ten years it was more demoralized than at any time during the period. Eventual stability under unregulated com-

petition would be achieved, but at a prohibitive cost of human misery and destruction of property.

As an alternative, it is essential that some bottom be established, beneath which the price of coal cannot fall, in order that the efficient operating units in the industry, ready to supply the public at all times with coal at a fair price, while paying coal mine labor fair wages, may be kept in operation. The price-fixing provisions of the Bituminous Coal Act of 1935 provide this solution.

H. L. FINDLAY.

I am vice-president of the Youghiogheny and Ohio Coal Company which owns and operates mines in Western Pennsylvania, Ohio, and Southern West Virginia, and which owns and operates docks on Lake Superior and Lake Michigan and at Bridgeport, Connecticut. I am also president of the Simpson Creek Collieries Company of Cleveland, Ohio, with operations in Northern West Virginia. I have been in the coal business over 30 years and have been vice-president of the Youghiogheny and Ohio Coal Company since 1915.

Our companies distribute coal from tidewater through New England, from our docks into Wisconsin, Minnesota, North and South Dakota, and Idaho, and by rail into New York, Pennsylvania, Ohio, Michigan, and Indiana.

Most of the coals in the Appalachian area are interchangeable as to use; that is, most of them can be used for steam or domestic and general purpose coals. Even the special purpose coals, such as high grade gas coal or by-product coal, while they are required for certain uses can also be used for steam or domestic purposes. In effect, therefore, any of the Appalachian coals are in competition with all other coals in all markets east of the Mississippi River. On the Great Lakes there is a volume of business amounting to about 35,000,000 tons a year, for which practically all the mining districts in the Appalachian area compete.

Prior to 1924, the districts in which we operate, particularly Western Pennsylvania and Ohio, were able to fairly well meet their competition from the unorganized fields because up to that time, for the most part, the wage scales, taking into consideration the various conditions in the various fields, were relatively in balance, so that we were able to compete on a reasonably fair basis.

However, starting with April 1, 1924, when the Jacksonville Wage Agreement went into effect, and which applied only to the organized coal fields, the unorganized fields immediately commenced to reduce their wages, and the competition from the unorganized fields became more intense from year to year and resulted in the diversion of very large tonnages from the organized fields to the unorganized.

This condition made the competitive condition even more severe because of the fact that as a mine loses tonnage and has less operating time, its cost correspondingly increases, while the mines that can secure the business and better operating time correspondingly reduce their costs. Therefore, as the tonnages shifted from the organized to the unorganized fields, the ability to compete on the part of the organized fields became more difficult from year to year. To illustrate what I mean, in Western Pennsylvania our tonnage was approximately half, in 1924, what it was in 1923. It continued about on that basis until the expiration of the Jacksonville Wage Agreement, March 31, 1927, at which time our mines were put on an open shop basis. Immediately, upon doing that, we commenced to get our tonnage back, and, by 1928, produced approximately the same tonnage in Western Pennsylvania that we did in 1923.

The progressive decline in price could only be met by cutting wages because wages are the only cost element subject to appreciable reduction. Labor costs approximate 60% to 65% of the total cost of production and the balance of the cost item consists of such factors as taxes, workmen's compensation, depletion, royalties, material and supplies, the cost of which a producer cannot control. The result is that when he gets into a fierce competitive situation the only thing he can do is reduce his wages.

The consumer is interested in the price at which the coal is delivered to his plant or to his home. The two main factors which make up the delivered price are the price at the mines and the transportation charges. If there is a reduction in either one of these items it will result in diversion of tonnage from one producing area to another as in most cases a difference of a few cents a ton will result in a consumer shifting his source of supply. Since the freight rate is fixed the only part of the delivered price which is subject to competition is the mine price, and the only part of the mine price which

can be controlled by the individual producer is the labor cost.

In order to meet the competition referred to, we reduced our minimum inside day wage in 1928 from $7.50 to $5.00 per day and the loading and cutting rates were reduced relatively the same amount. We started out on this $5.00 basis when we went open shop, and that continued until about the spring of 1929, when, due to competition not only from the non-union mines in the South but also from mines in the same and neighboring districts that had also gone open shop, it got to a point at which individual companies, in order to secure a piece of business would take that business below cost and then go back home and reduce their wages to a point which would enable them to at least get their cost out of that business. This condition resulted in chaos for the reason that you never could tell what your neighbors were paying their labor, and when you bid on a piece of business, you could not tell whether you would be within 5c or 50c per ton of the price that would take that business. As a result of these conditions and the more intense competition which developed after the depression started, the cutting of wages reached a point where, in many of the mines in Western Pennsylvania and Ohio, the rates got down as low as from $2.00 to $3.00 per day. Our company was obliged, on account of these conditions, to make at least six successive wage cuts.

This condition continued until, in 1932, there were numerous strikes in Western Pennsylvania and Ohio on the part of the open shop miners to try and force an increased wage on which they could live. In considering this matter, you must also take into consideration the fact that the miners did not work every day but did not average, in our district, in excess of three days per week, which would mean that with the low wages prevailing in 1932 and the early part of 1933, a miner would not earn more than $6.00 to $8.00 per week, on which to support himself and his family.

This condition continued until the inception of the Bituminous Coal Code on October 2, 1933, at which time practically all the mines in the Appalachian area became unionized and the wages were advanced to a point where the miner has some chance of making a fair and decent living.

In spite of the continued wage cuts, our company and the other companies operating in the same area were not able to operate their mines at a profit. In fact, the

industry as a whole operated in red from 1924 until the inception of the Bituminous Coal Code on October 2, 1933.

Commencing with the inception of the Bituminous Coal Code, our company and the other companies operating in the same area were able to pay their labor a fair wage and also obtain a profit on their coal. That condition continued until the Schechter case decision. The wages under the Code carried through until October 1, 1935. The prices under the Bituminous Coal Code were maintained fairly well for about one year. It then became evident that there was to be no effective enforcement of prices, and many companies sold coal below Code prices in their effort to secure business and operate their mines to the fullest extent possible. This became progressively worse, and by the spring of 1935 there was very little observance of the Code. This was due primarily to the lack of enforcement.

After the demise of the N. R. A., the coal industry went back to its old vicious practice of practically unlimited price-cutting. This has become progressively worse until, today, coal is being sold in many districts at prices from 25c to $1.00 per ton below actual cost.

The inevitable result if this condition continues is that it will be impossible for the industry to pay the present wages. The economic situation will force reduction of wages and will bring the industry back to the conditions that prevailed from 1927 until October 1933. These evil conditions will return irrespective of any improvement in general business conditions, as illustrated by the fact that in 1929, the year in which business generally was in a highly prosperous condition, the coal industry generally was greatly depressed.

In my judgment this downward trend cannot be stopped by any action by individual States because the pressure of competition from other States makes such action impossible. Nor can it be stopped by voluntary action, such as the formation of marketing agencies by Appalachian Coals, Inc. My company has been a member of Appalachian Coals until the recent months. Our experience has been that the districts outside of Appalachian Coals which fixed the lowest prices, really fixed the price for Appalachian Coals. Even if a similar organization existed in all of the major districts the situation could not be controlled any better within those districts than Appalachian Coals has within its own district.

H. L. Findlay George W. Reed

The pressure of the competitive situation results in uneconomic mining of coal. A good deal of coal is left in the ground which, under more favorable conditions, would be taken out. Such coal is permanently lost and can never be recovered. If the industry were to be stabilized producers would have an opportunity to mine the coal in a proper manner as they proceed into their workings and prevent this waste.

The most appropriate agency for initiating price fixing is a group representative of the producers in the district. These persons are most familiar with the situation in the district and with the competition which they have to meet. It would be impracticable, if not impossible, for a central governmental agency to initiate prices due to the great complexity of the situation. Coordination by a simple agency of these prices is necessary in order to stabilize competitive relationships between the districts and to maintain an equal opportunity to compete in economic markets.

GEORGE W. REED.

I am a director and vice president of the Peabody Coal Company which is one of the largest coal producing companies in the United States and by itself and subsidiaries operates mines in Oklahoma, Illinois, Indiana, West Virginia and in Harlan County, Kentucky. The largest interests of the company are in Illinois. I have been connected with the coal business for 32 years and with the Peabody Coal Company for 19 years.

Generally speaking, very few of the coal producing companies in Illinois have been able to show any profit during the last eight years. The decline in production and profits began in 1923 and continued to 1933. The situation was at its worst just before the enactment of the National Industrial Recovery Act. The effect of the N. R. A. Code was to improve conditions materially in Illinois. During recent years the bulk of Illinois coal has been marketed in Illinois, Iowa and Missouri, and is shipped to some extent to 13 other states in direct competition with coal mined in 15 producing states. It meets coal from those states in the following consuming markets:

Alabama coal in Tennessee, Mississippi, Louisiana, Arkansas, and Missouri.

Tennessee coal in Indiana, Michigan, Illinois, Iowa, Wisconsin, Minnesota, North Dakota and South Dakota.

East Kentucky coal in Indiana, Michigan, Illinois, Missouri, Iowa, Nebraska, Wisconsin, Minnesota, North Dakota and South Dakota.

West Kentucky coal in Kentucky, Tennessee, Mississippi, Louisiana, Arkansas, Missouri, Nebraska, Iowa, Minnesota, North Dakota, South Dakota, Indiana, Michigan, Illinois and Wisconsin.

West Virginia coal in Indiana, Michigan, Illinois, Iowa, Missouri, Nebraska, Minnesota, North Dakota, South Dakota and Wisconsin.

Virginia coal in Indiana, Michigan, Illinois, Iowa, Missouri, Nebraska, Minnesota, North Dakota, Sonth Dakota and Wisconsin.

Ohio coal in Michigan, Wisconsin, Minnesota, North Dakota, South Dakota and Indiana.

Western Pennsylvania coal in Wisconsin, Minnesota, North Dakota and South Dakota.

Indiana coal in Indiana, Michigan, Illinois, Iowa, Missouri, Nebraska, Wisconsin, Minnesota, South Dakota and North Dakota.

Iowa coal in Iowa, Missouri, Nebraska and Minnesota.

Missouri coal in Missouri, Illinois, Iowa, Nebraska, South Dakota and Kansas.

Kansas coal in Missouri, Iowa, Nebraska, Kansas and South Dakota.

Arkansas coal in Arkansas, Missouri, Iowa, Nebraska, Kansas, Minnesota and South Dakota.

Colorado coal in Nebraska, Kansas, Iowa and South Dakota.

Wyoming coal in Nebraska, Kansas, Iowa, North Dakota, South Dakota and Minnesota.

North Dakota coal in North Dakota, South Dakota and Minnesota.

Illinois coal is not in direct competition with that produced in Maryland, Central Pennsylvania, Michigan, Montana, Utah, New Mexico, Idaho and Washington, but coals with which Illinois does compete directly are in direct competition with coal from these producing States.

Illinois coal can be, and has been, used for every known purpose. Whether it is selected by buyers in 16 States to which it moves, depends entirely upon results obtained from its use, and the price at which it can be delivered to the consumer.

A coal operator will continue operating while losing money because there is always the hope of losing less by

operating than by closing. Operating some of the time tends to reduce the loss.

Conditions which are peculiar to the coal mining industry greatly increase and intensify competition in the sale of coal. Steady running time decreases the average production cost in a greater ratio than in almost every other industry. The difference in operating time between 2 days per week and 5 days per week results in a very great saving in the average production cost per ton. At our largest mines in Central Illinois producing 5,000 or more tons per day, the difference in cost between 8 days and 20 days per month running time is 30 cents per ton; at another group in the same locality, in mines producing about 2,000 tons per day, the reduction in cost is 41 cents per ton; and at a mine which we have been operating in Oklahoma, with a production of 600 tons per day, the difference is 70 cents per ton.

During the last 9 months of the year 1934, idle days at Peabody Coal Company's 12 Illinois mines which were in operation, not including those which did not operate, cost $607,574.87, exclusive of taxes, insurance, depreciation and the other fixed charges, which amounted to 13.6 cents per ton on their Illinois production of 4,461,000 tons during that period.

This large cost gives a tremendous incentive to the producer to move some of his production at almost any price. He may start selling his coal at a price based on four days a week production but encounter some difficulty in selling the last two days' production, and without regulation will make prices on those last two days of production on which no producer could exist and pay living wages.

A coal mine cannot be closed and left to take care of itself. There are two methods of handling a mine which is not in operation. One is to endeavor to keep water out of the mine, and a flow of air through it, which involves power costs and the expense of pumpmen, electricians and others, and the other method is to seal the mine and have temporarily only the expense of a watchman. The cost of placing a sealed mine in operating condition far exceeds the cost of maintaining it temporarily, and a mine is seldom sealed unless it is known when the mine is closed that it will be down for several years.

Another objection to the closing of a mine is the loss of experienced and trained men in the organization, such as superintendents, foremen, top and bottom bosses, who cannot be easily and readily replaced by another trained organization.

George W. Reed

Except during short periods of abnormal conditions, such as those created by labor troubles, railroad car shortages, war, the tendency of coal prices with unrestrained competition is always downward. Price reductions are never kept secret. Each price reduction is met by competing producers, and the tendency is towards a constantly reduced schedule of prices, and the field or producer quoting the lowest prices secures the market regardless of cost of product.

A price made on one car, or one ton of coal, quite often affects the prices on several hundred carloads. Prices made on such coal for delivery today will affect the prices on competing coals for delivery over several weeks.

The price on a ton of coal hauled from a local wagon mine into almost any community will affect the price which can be secured for coal which has moved interstate to dealers handling coal in the same community.

Price reductions intensify competition temporarily, but if continued may entirely eliminate competition. An outstanding example of this is the north half of the State of Minnesota and the east half of the State of Wisconsin. As a result of continuous price reductions on one hand and railroad rate increases on the other, those sections which formerly purchased large amounts of coal shipped all rail now rely almost entirely for their coal supply on the docks on Lake Michigan and Lake Superior.

Wages constitute 60% or more of the total cost of the production of coal. The costs of coal in the ground, machinery, equipment and supplies are fairly stable, and a producer has no control over the cost items of power, Workmen's Compensation, taxes, insurance, depreciation of plant and equipment, and depletion of coal acreage or royalty. The other cost items, except labor, are sales, administrative and general expenses. These latter items have all been cut to a minimum. The only item in which appreciable reduction in cost can be secured is that of labor, with the result that, without some stabilizing influence, coal is produced, sales are made and markets obtained through slashes in wage scales or lengthening of hours of employment, which produce low labor costs. With the necessity of meeting low prices, established as a result of low labor costs, competing producers are compelled to reduce their labor costs, and, in the absence of some restraining force, there is a constant lowering and further lowering of wages. These lower wage scales are sometimes reflected in hourly rates; at other times

by charges for house rents, household supplies, medical services, etc. The result is a constant lowering of wage cost to meet the constant lowering of sales realization. It is really a process of selling human lives and labor.

The one restraining influence against lowering of wages below that which will produce a fair scale of living, other than the desire of many operators to pay a fair living wage (which has, to a large extent, been ineffective due to the inexorable pressure of competition), has been unionization. Most strikes in the organized districts have been caused by attempts of producers to secure reductions in wage scales and the lengthening of hours to place them in position to meet prices made by operators in unorganized districts paying lower wages and working longer hours, or through resistance on the part of operators in organized districts to granting increases which would throw their wage scale and costs further out of line with those of competing operators. The last strike, in September of 1935, was caused by the producers' refusal to grant increases on account of the extremely low prices which have been made throughout the country since the abandonment of the Bituminous Coal Code under the N. R. A.

I know that in the latter part of 1932 and in the early part of 1933 in the Harlan County, Kentucky, field, wages were as low as $1.50 for a 13-hour day for outside labor, $2.00 for inside labor, and $2.25 for skilled labor. A subsidiary of the Peabody Coal Company, which operates two mines in Harlan County, was paying $4.00 for skilled inside labor, $3.50 for unskilled inside labor, $4.00 for skilled outside labor, and $2.50 for unskilled outside labor. We decided not to make any further reductions in the wages being paid by us, and, since by reason of the extremely low wages paid by other companies they were able to sell at much lower prices, we were forced to close one mine for the entire year of 1932 and the first seven months of 1933. Our company's losses in that period amounted to $333,000. The tonnage of these mines decreased from 1,125,000 in 1929 to $465,000 in 1932. All of the tonnage thus lost would have been sold in interstate commerce.

FRED S. McCONNELL.

I have been in the coal business twenty-five years and I am now vice-president of the Enos Coal Mining Com-

pany, with mines located at Oakland City, Pike County, Indiana. Our production is about 900,000 tons per year.

Our coal is shipped into Indiana, the Chicago district, northern Illinois, eastern Iowa, Wisconsin, Michigan and Minnesota. Within the State of Indiana we meet competition from Illinois, West Virginia, eastern Kentucky, Ohio, Pennsylvania, western Kentucky, Iowa, Missouri and to some slight extent from Arkansas and Oklahoma.

All coal destined for railroad shipment is immediately loaded into railroad cars when it is produced. There can be no production unless railroad cars are available because there are no storage facilities at the mine. Substantially all of our coal is mined after we have received orders. This is generally true in Indiana and throughout the coal industry, as far as I know.

Aside from certain special purpose coals and the certain limited amount of coals used for domestic purposes, the bituminous coals from the various producing areas are of sufficiently similar characteristics as to permit their being used interchangeably, and the delivered price per heat unit contained in these coals is the determining factor of their use. This situation causes keen competition among coals from many producing areas in most consuming markets.

Owing to the pressure to sell coal and to keep his mines running, each operator, through his sales organizations, constantly is pressing his coal upon the purchaser. Steady running time at the minimum is a factor in lowering production costs. The operator therefore figures that he can take additional business at a lower price in order to give his mines steadier running and still be better off than he would be without the business. He therefore cuts the price and another operator, in order to hold the business, makes a still further cut in price. Inasmuch as wages are the largest single item of the cost of producing coal, the operator who takes business at a lower wrice immediately resorts to the cutting of wages as the most effective way of cutting his cost of production.

In areas where no collective bargaining agreements existed, it was the practice for operators, in their struggle to get business in order to keep their mines running, to cut the price below the cost of production. In order to obtain sufficient money to keep the mines in operation, they would offer their men a lower wage with the explanation that the business was made possible only by

price cutting and that unless the men accepted the lower wage there would be no work. The men, under the lash necessity, accepted the cut. Soon another operator in the same district or elsewhere would make another and greater cut in prices and repeat the same process with his men. This practice of wage cutting worked in a vicious circle, and resulted in the men accepting wages which were below the subsistence level and in many operators becoming bankrupt. This wage cutting did not work so disastrously in districts under collective bargaining agreements, but the cutting of wages in the non-union districts resulted in the latter districts securing a larger and larger proportion of the business. Thus, Indiana remained unionized to a great extent from 1923 through 1933. In consequence of wage cutting in the non-union districts which competed with it, the tonnage produced by Indiana fell from over 26,000,000 tons in 1923 to 16,379,000 tons in 1928. During that same period the tonnage of the State of Kentucky rose from somewhat over 44,000,000 in 1923 to over 61,000,000 in 1928. The chief cause for the decline in the production of Indiana during this period was the competition of the non-union areas.

In the past there has been a general disinclination on the part of most operators to accept unionization of their mines. In large part, this has been due to the competition with non-union mines which were able to reduce their wages and change their working conditions when it seemed necessary. It is very difficult to maintain a union in one state when a state which is competing in the same consuming markets is running non-union. Likewise, it is difficult for a district within a state to remain union when a competing district is non-union. The result has been that the number of non-union districts steadily increases, as well as the number of non-union states, as long as part of the industry is unionized and part is not unionized.

To give one specific illustration: Our company used to have a very considerable business in the City of Evansville, Indiana. Owing to the fact that many of the mines in the immediate vicinity of Evansville broke away from the union and operated non-union at a lower price and owing to the fact that western Kentucky has been paying a lower wage rate than the union rate of Indiana, we have lost entirely the business that we had in Evansville. The coal which we sold in Evansville we now have to seek other markets for, largely outside the State of Indiana.

Fred S. McConnell Phillip Murray

The competitive price and wage cutting which went on in the years following the World War drove the industry further and further into a state of demoralization. With the adoption of the Bituminous Coal Code under the National Industrial Recovery Act, conditions became stabilized for the first time in many years, and many companies in Indiana were able to earn a profit. The experience under the N. R. A. Code is a convincing demonstration that the conditions in the industry can be improved if competition is regulated. Since the end of the N. R. A., there has been a constant reduction in price and cut-throat competition has reasserted itself. In Indiana a reduction in price of at least 35c per ton has resulted.

It would be impossible to regulate interstate prices of coal without at the same time regulating intrastate prices. Under open competition there can be no such thing as an interstate and an intrastate price in the coal industry. If intrastate prices were lowered, they would immediately bring down the interstate price. This can be illustrated as follows: Operator A, mining coal in Indiana, may quote a low price to Consumer B, operating a factory in the State of Indiana, in an endeavor to take this coal business away from Operator C, mining and producing coal in western Kentucky and shipping to Consumer B in Indiana. Immediately, in order to hold the business, Operator C in Kentucky will reduce his price. It is therefore obvious that the Indiana coal operator cannot reduce his price to intrastate business without an immediate and disastrous effect upon the interstate business of the western Kentucky operator.

PHILLIP MURRAY.

I started working in the coal mines when I was ten years old in 1897. I have been connected with the coal business ever since, either as a miner or as an officer of the United Mine Workers of America. I have been an officer of the United Mine Workers since January, 1913, and at present am International Vice President of the Organization.

When I became an officer of the United Mine Workers of America in 1913, collective bargaining in the coal mining industry was based upon an interstate relationship that existed between the producing states of Illinois, Indiana, Ohio and Western Pennsylvania, this field being

known as the Central Competitive Field. The territory embraced some 200,000 coal miners. Wages arrived at as a result of collective bargaining in the Central Competitive Field were used as a basis for mining wage contracts in all other unionized mine districts throughout the United States. In other words, they were used as a guide toward the determination of proper relationships between all the producing districts throughout the Nation. Four coal operators' associations, one for each of these states, and four district organizations of the United Mine Workers participated in the making of these contracts.

The method used in the determination of the wage agreements in the Central Competitive Field was that the coal operators representing the producers of the four states measured their ability to pay the wage rates upon their ability to compete with districts not parties to the contract embracing the Central Competitive Field and they usually insisted prior to arriving at an agreement that whatever wage increases were written into the Central Competitive Wage Agreement would necessarily have to be applied to competitors in outlying districts not parties to the Central Competitive Agreement. In the Central Competitive Field there was a uniform day wage standard for what are known as "day workers" and there was a uniform base rate for tonnage workers mining coal in seams of about the same thickness. There was also a tonnage level arrived at for thinner seams of coal properly related on a competitive basis to the base rate for the four districts.

Outside of the Central Competitive Field wage agreements were negotiated for the Eastern Pennsylvania District, the Maryland District, those portions of West Virginia that were organized, certain portions of Kentucky that were organized, and the states of Kansas, Missouri, Iowa, Oklahoma, Arkansas, Texas, Colorado, Wyoming, Montana, Washington and Michigan. Agreements were made in these districts after the base agreement was arrived at for the Central Competitive Field.

During the War an agreement was negotiated in the Central Competitive Field containing a clause to the effect that the contract as to wages, hours, conditions of employment, etc., should continue during the period of the War. After the Armistice in November, 1918, an international convention of the United Mine Workers of America met and during the course of its wage deliberations took occasion to declare that for all practical purposes the War was at an end and therefore instructed

the officers of the International Union to request a meeting with the coal operators of the Central Competitive Field for the purpose of considering modifications of the then-existing Competitive Field Wage Agreement. The operators refused to meet with the mine workers, contending that the War was not ended. In October, 1919, instructions to call a strike were issued in the Central Competitive Field. Operators remained adamant in their refusal, contending as late as November, 1919, that the War was still on. Disagreement ensued and a strike was called. Attorney General Palmer on behalf of the Government then stated that the Federal courts would be used to restrain the United Mine Workers from engaging in the strike in violation of the then existing Lever Act and Federal Judge Anderson issued an injunction restraining the miners from striking. The Policy Committee met in Indianapolis and in obedience to the court's order refused to strike. Subsequently the President of the United States appointed a commission known as the Bituminous Coal Commission which conducted exhaustive hearings in Washington. In January, 1920, the Commission made an award granting the mine workers an increase of 14% and a new contract for the Central Competitive Field was entered into on that basis.

Subsequently, on March 29, 1920, a joint conference was held in New York which resulted in the formulation of a joint interstate agreement which incorporated the Commission's Award. This agreement was to be effective until March 21, 1922. As the expiration date of the agreement approached efforts were made to begin new negotiations. The miners extended invitations to the operators to meet in a joint conference in Pittsburgh January 6, 1922. Illinois and Indiana operators accepted the invitation but operators in West Virginia and Ohio refused to participate. Because of inadequate representation the meeting was called off. The mine workers renewed their invitation to the operators to meet in a joint conference on March 2, 1922. Upon the non-acceptance of the invitation an official strike order was issued and the strike began April 1st. For the country as a whole 460,589 men, or 67% of the total number employed in the industry, were involved in the strike. The average number of days lost per man on strike amounted to 117. The strike was 100% effective in Michigan, Indiana, Illinois, Iowa and Wyoming. Other areas which were almost completely shut down (90% or above) were Central Pennsylvania, the Pittsburgh District, Ohio, Kanawha, Missouri, Kansas, Ar-

kansas and Montana. The result of this strike was a joint conference held in Cleveland on August 7, 1922, which resulted in a wage agreement.

On February 19, 1924, a joint conference, consisting of Illinois, Indiana, Ohio and Western Pennsylvania operators, was held at Jacksonville, Florida, which renewed the previous wage scale and was to be effective until April 1, 1927. Soon after the signing of the Jacksonville Wage Agreement most non-union operators reduced the rates, first to the 1919 scale and later to the 1917 scale or lower. The result of this wage cutting was to give these operators a competitive advantage, enabling them to cut their price and bring about a marked shift of tonnage from states north of the Ohio River to the states south of the Ohio River. In 1927 when the operators met with the mine workers they insisted that if they were going to make any contract in the future it would have to be on such a basis that the producers in the Central Competitive Field could compete with the producers south of the Ohio River. That means that the contract would have to be predicated upon the wage and hour standards and the kind of conditions that prevailed in non-union territory. The insistence of the operators in lowering wage standards brought about a strike in 1927 which lasted in many districts until the Fall of 1928. This strike involved the states of Illinois, Indiana, Ohio, all of Pennsylvania and portions of West Virginia and Kentucky. Some 250,000 men out of 550,000 employed throughout the Nation were out on strike. This strike terminated with the organization of mine workers remaining intact in the states of Indiana and Illinois but with complete disintegration of the organization in Ohio, Pennsylvania and in the Southern states.

Subsequent to the termination of this strike the operators began a war for markets which resulted in a complete destruction of wage standards, lengthening of hours of employment and a continuous degradation of conditions of employment. Continuous wage cuts were undertaken so that in states north of the Ohio River the wage rates for day workers which had been $7.50 a day fell to as low as $1.50 per day for from 12 to 14 hours' work. In the states south of the Ohio River wages dropped to a miserable pittance—in some places as low as one dollar a day to from 14 to 16 hours work. These conditions continued until the adoption of the Bituminous Coal Code under the National Industrial Recovery Act in 1933.

Before the Code was accepted by the industry a joint

conference of the United Mine Workers of America and the coal operators of the Appalachian region was had at Washington, at which time an agreement was arrived at setting up a standard of eight hours per day five days per week for the mine workers employed in the Appalachian coal fields. A day wage standard of $4.60 per day for skilled men was adopted with the application of an increase of 10c per ton on the combined cutting and loading wage for all tonnage workers, and an additional increase of 10% on all yardage rates and deficiency work; the $4.60 rate to become applicable to states north of the Ohio River and creating a differential of 40c in favor of southern mining districts, or a rate of $4.20 for skilled workers in states south of the Ohio River. With a differential of 40c less per day than the prevailing southern rate for the State of Alabama the application of these rates to the Appalachian territory established for the first time in the history of the bituminous coal mining industry a fairly competitive situation between producers in this area. The rates were then written into the Code and became a part of the law to be administered by the National Recovery Administration. This basis of wage standards, hours, conditions of ememployment became effective October 1, 1933, and continued until April 1, 1934, when, pursuant to the requirements of our collective bargaining agreement in the Appalachian coal fields, another conference was had in the City of Washington, at which time the hours were reduced from 8 to 7 per day, 35 hours per week. Skilled workers' wages were increased in states north of the Ohio River from $4.60 to $5 per day, with the maintenance of the 40c differential for states south of the Ohio River, or $4.60 per day. Alabama continued to enjoy a differential of 80c less than states north, placed on a basis of $4.20 per day. Corresponding increases were granted to tonnage workers and recognition of an additional 10% increase on yardage and deficiency rates. These rates were placed in the Code and continued in full force and effect until May 27, the date upon which the Supreme Court rendered its decision in the Schechter case. However, with the lapse of the Code the wage agreement continued, carrying with it the same wages and conditions of employment until April 1, 1935.

No new contract was arrived at April 1, 1935, because the original conference which was held in Washington in February, 1935, to make a wage agreement to supplant the one which was about to expire, had disagreed. However, pursuant to the request of the Presi-

dent of the United States the mine workers and operators agreed to continue the wage agreement in all of its provisions and conditions until June 15, 1935, and at that time at the urgent request of the Government the agreement was continued until July 1st and then until September 16 and then until October 2nd. On the last date a new contract was arrived at which provided for the maintenance of a 7-hour day, 35 hours per week, with an increase of 50c per day for day men and an increase of 9c per ton on all yardage and deficiency work. This agreement was arrived at after a stoppage which lasted for a period of 7 days. The new agreement continues until April 1, 1937. This is the so-called Appalachian Agreement.

The basis for the last three national wage agreements has been the Appalachian Area, including Pennsylvania, Ohio, West Virginia, Virginia, Maryland, and a portion of Kentucky and Tennessee. The Appalachian Area supplanted the Central Competitive Field as a basis for collective bargaining agreements because of the changed competitive conditions. The Appalachian Area employs some 315,000 men, producing 72% of the nation's tonnage. When collective bargaining agreements are entered into the wage standards in the various areas are usually based on the ability of producers in each of the competing districts to pay the wages. Generally speaking, producers in one producing area are not willing to negotiate a collective wage agreement with their mine workers without knowing the wages that will be paid by competing producing districts. Thus, effective collective bargaining cannot be maintained in one field if other fields are operating on an individual basis.

While different wage scales are fixed for each district, taking into account competitive conditions between districts, it has been the practice for many years to fix hours of employment on a national basis. Coal operators in joint conference with the United Mine Workers of America have always insisted that uniformity as to hours must be maintained because it constitutes a very important factor in costs. During our recent Appalachian conference operators produced figures which purported to show that the transition from an 8-hour to a 7-hour day in the bituminous coal mining industry reflected an increase in cost of from 17c to 18c a ton.

The conclusion of a collective bargaining agreement reduces or eliminates the major cause of strikes, namely, the refusal to recognize the union. Also, collective

bargaining agreements themselves contain provisions penalizing so-called unauthorized strikes.

A checkweighman is employed by the mine workers and paid directly by them for the purpose of seeing to it that they receive honest wages for every pound of coal loaded on mine cars. The employment of a checkweighman imposes no burden on the coal operator. Coal operators in non-union territory have generally refused to permit mine workers to employ checkweighmen. In non-union coal territory mine workers have frequently been deprived of their honest weight in amounts varying from 10% to 50% of the actual amount of coal loaded on mine cars. This abuse became so chronic in the industry that it was the subject of several Federal investigations and inquiries by state legislatures. The practice has been universally condemned and was but an outgrowth of an insolvent business cheating its mine workers to enable it to remain in the markets. It was a concealed form of wage cutting for the purpose of gaining a competitive advantage.

It has long been the practice in non-union mining communities for companies to insist on employees occupying company-owned houses and trading in company stores. The company-owned house and the company store practice resulted in company-owned highways and company-owned towns. No meetings of any description could be had by mine workers which tended to promote trade unionism, civic betterment, improvement of health standards, or any degree of political freedom without the sanction of the company. Any coal miner who violated the edict of the company in any of these respects was summarily discharged and evicted from the company houses. This practice was long prevalent in that portion of the mining industry which was not organized and is still in force and effect in some non-union mining territories. Furthermore, by the compulsory use of the company store and the company-owned house the operator was enabled to charge higher rents and higher prices than were justified. The operator employing these devices was thus enabled to further sweat his wages and thus secure a competitive advantage over other operators. These practices are in reality a peculiarly vicious form of wage cutting. The mine workers have no objection to the maintenance of company houses or company stores provided employees may exercise the privilege of renting a house or dealing in a company store, or refraining from doing so. Wherever collective bargaining pre-

vails in the industry these abuses connected with company houses and company stores have never been resorted to by coal companies.

F. E. BERQUIST.

I am head of the Bituminous Coal Unit, Division of Review, National Recovery Administration. I have been connected with the National Recovery Administration since 1933. Prior to that time I was connected for a number of years with the Bureau of the Census and with the United States Bureau of Mines. All of the charts and tables hereinafter referred to in this statement were prepared under any direction.

Chart No. 20, with accompanying table No. 20a, gives the proportions of coal loaded for shipment of each of seven coal producing states with the aggregates of these seven states, by years, from 1913 to 1934. These seven states are the leading producing states of the country and represented 87% of the total shipments for the United States in 1933. The total shipments of the seven states are taken as 100%, for each year, and the shipments of each state are a percentage thereof. The shipments include only coal loaded in railroad cars and vessels and barges and do not include tonnage taken by truck or wagon, used at the mine, sold to local trade, taken by locomotives at the tipple, or made into coke at the mines. Tonnage loaded for shipment in the United States in 1933, amounted to 92% of total production; while for the seven selected states, shipments were 93% of their production. The data for this chart is furnished in the Minerals Year Book, United States Bureau of Mines.

Several noticeable changes in the relative importance of these seven states have taken place in the matter of shipments since 1913. The proportions for Pennsylvania and West Virginia have been nearly reversed. The former state accounted for 40% of the aggregate shipments of the seven states in 1913, as compared with 28% in 1934, while West Virginia advanced from 20% in 1913 to 33% in 1934.

Both Illinois and Ohio have lost in importance, while Kentucky and Virginia have gained. Indiana shows little change. The share of Kentucky advanced from 5.6% in 1913 to 12.9% in 1934.

Chart No. 21, with accompanying table No. 21a, pre-

sents an index of tons loaded at mines for shipments and realization, f. o. b., mine for selected competing areas from 1923 to 1933, and also an index of average hourly earnings for all miners for these selected competing states for specified years between 1921-22 and 1933. The particular states shown in this exhibit are:

Pennsylvania vs. West Virginia
Ohio vs. West Virginia
Ohio vs. Kentucky
Indiana vs. Kentucky
Illinois vs. Kentucky

These states were selected for comparison because they enter into competition with each other.

The average hourly earnings figures for all men were computed in the Bituminous Coal Section. The Bureau of Labor Statistics reports data, by states, for all day men and all tonnage men separately. These figures were weighted by the proportion of men (as shown by the Bureau of Labor Statistics), employed at tonnage work and day work to arrive at a figure for all men.

This chart shows in general that with the reduction in the differential in hourly earnings possessed prior to 1927 by the non-union Southern States and the resultant breakdown in labor union agreements in the Norther States during the period 1925-1927, shipments of Southern mines declined and Northern mines increased.

Data as to average hourly earnings are not available, as the charts indicate, for the years 1922-1923, but it is clear that very drastic reductions in wage rates were initiated in the South during the years 1922-1924. From 1919, following the Armistice, to the year 1921, abnormal post-war conditions in the industry prevailed—inadequate railroad facilities, car shortages, abnormal demand and high prices occasioned by post-war industrial inflation in this country and coal shortages in some European countries.

These tendencies came to a head in the industrial breakdown of 1920-1921. The resulting liquidation made normal conditions again operative. Southern producers seized upon these tendencies to deflate war-time wage standards. Beginning with 1922 and extending through 1924, drastic reductions were made in Southern areas in wage rates and labor costs, and the Southern wage differentials against the North increased. This action by the Southern areas, in turn, practically forced a breakdown of union agreements in the North, followed by wage

reductions, which changed the pre-existing currents of interstate commerce in coal.

By way of illustration, if reference he made to a comparison of the performance of Pennsylvania and West Virginia, it will be seen:

1. Due to the breaking away of Pennsylvania from the Jacksonville Agreement in 1925 the average hourly earnings of all classes of mine workers was practically the same in 1926-1927 as it was in 1921-1922.
2. In 1926-1927 the differential and hourly earnings which West Virginia enjoyed over Pennsylvania were reduced to 3.7 cents as against 10.3 cents in 1921 and 1922. By the year 1933 the average hourly earnings in Pennsylvania were lower than in West Virginia or 37.1 cents an hour in Pennsylvania as compared with 38.3 cents in West Virginia.
3. As a result of these changes in competitive position the shipments of coal from Pennsylvania which had declined by the end of 1924 approximately 20 per cent from the 1923 base, after 1927, because of the withdrawal of Pennsylvania from the Jacksonville Agreement increased rapidly, advancing 15 per cent between the years 1924 and 1929.
4. On the other hand, the shipments from West Virginia during the period 1923 to 1927 increased 37.9 per cent, but after the collapse of the Jacksonville Agreement in Pennsylvania rapidly declined.
5. There was a general decline in both states in value realized per ton at the mine after the year 1926, undoubtedly due to the fact that the breakdown in wage rates brought about lower costs and prices.

Similar tendencies were exhibited by comparison of the performance of Ohio and West Virginia:

1. Due to the withdrawal of Eastern Ohio from the Jacksonville Agreement in 1925 and the complete collapse of the Agreement throughout the State beginning April 1st, 1927, the average hourly earnings of all classes of employees in Ohio in 1929 were 1½ cents lower than in West Virginia, as contrasted with the differential in hourly earnings enjoyed by West Virginia in 1921-1922, amounting to 12.3 cents per hour.
2. As a result of these drastic changes in relative positions the index of shipments from Ohio, the year

1923 being taken as 100, declined to 34.4 in 1928 and increased to 56.1 in 1929.

3. On the other hand, shipments from West Virginia, based on the year 1923 as 100, increased to 137.9 in 1927 but thereafter dropped to 131.7 in 1929.

Like tendencies are exhibited through a comparison of Ohio with Kentucky. During the period 1921-1922, Kentucky enjoyed a differential in average hourly earnings of its employees, as compared with Ohio, of 22.4 cents per hour. By 1929, however, the average hourly earnings in Kentucky were only 2.4 cents per hour lower than in Ohio. As a result of these conditions the shipments of coal by the Kentucky mines, which had advanced 57 per cent during the period 1923-1927, declined rapidly while, as I have already pointed out, shipments from Ohio rapidly increased between the period 1927-1929.

A comparison of Indiana and Kentucky discloses similar trends. In the period 1921-1922, Kentucky had a differential in average hourly earnings of its employees of 29.6 cents against Indiana; during succeeding years this differential increased to 45.1 cents per hour in 1927. In the Spring of 1928 the Jacksonville Agreement rate of $7.50 per day was reduced to $6.10 in Indiana and later, in 1932, to $5.00 per day, with the effect of a decline in the differential enjoyed by Kentucky over Indiana to approximately 29 cents per hour. As a result of these changes, shipments from the Indiana mines increased during 1929 while a downward tendency in shipments, as already pointed out, occurred in the Kentucky mines after the year 1927.

During the period 1921-1922, the average hourly earnings were 30.9 cents per hour less in Kentucky than in Illinois. The mines in Illinois passed through the same modifications of the Jacksonville Agreement as occurred in Indiana, with the result that the differential in hourly earnings possessed by Kentucky declined to approximately 25 cents per hour. This change in labor costs have a stimulating effect upon Illinois shipments, which advanced from an index of 57.9 in 1927 (1923 being taken as 100) to 75.5 in 1929.

As to realizations, or prices realized at the mines during this period, the break came first from the Southern fields, due to the wide differentials which they possessed, but throughout the period, from approximately 1924-1933, the Southern States maintained a uniform position of advantage over the Northern States.

F. E. Berquist

Chart No. 22, with supporting table No. 22a, shows a similar treatment of production and realization for selected competing areas. The areas compared are Northern West Virginia as against Western Pennsylvania; Western Pennsylvania, Ohio and Panhandle of West Virginia as against Southern High Volatile (including portions of Southern West Virginia, Eastern Kentucky and Tennessee); Western Kentucky as against Indiana and Illinois, Western Kentucky and Southern High Volatile as against Indiana and Illinois. This chart is significant because it shows the realizations as between competing areas which enable a more accurate picture to be obtained than from Chart No. 21, which shows a comparison between entire states which are not as strictly comparable as competing areas.

Chart No. 23 shows an index of tons loaded at mines for shipment and realization, f. o. b., mine, during the period of the Jacksonville wage agreement (1924-1927) for selected competing states.

The data shown in this Chart are based upon publications issued by the U. S. Bureau of Mines. This Chart proposes to compare two competing states as to their tons loaded for shipment and their sales realization per ton f. o. b. the mine. Tons loaded at the mine for shipment were used in order to consider that portion of the production which is more likely to enter into interstate commerce. The data are shown in percentages based upon the year 1923.

The year 1923 was selected as a base because, except for the first two months when some railroad congestion existed, no significant disturbing elements appeared. Efforts were made to use a five year average, 1919 to 1923, but were found to be unsatisfactory because that period included a number of abnormal situations. For example, in 1919 general strikes occurred; in 1920 a runaway market with panic prices was found; in 1921 a general depression existed in most industries; and in 1922 a general suspension of mining again took place. The year 1923 was selected as a base also because it is the closest "normal" year to the beginning of the Jacksonville Wage Agreement period, April 1, 1924, to April 1, 1927.

In each comparison, broken lines were used to indicate states which were predominately non-union, while the solid lines indicate states operating on a union basis, and in which the bulk of production was produced under the terms of the Jacksonville contract. It must be remem-

bered that the Jacksonville contract specified a $7.50 basic day rate, while in the non-union states, although no single wage rate can be shown because of the variety of rates at various mining operations, it is generally known that they ranged between $4.00 and $5.00 a day.

Beginning on the left side of the Chart and comparing Pennsylvania and West Virginia, we find that by 1924 West Virginia's shipments were only 4 per cent less than the base year, while in Pennsylvania the decrease in shipments amounted to 20 per cent, indicating that the area which was paying the Jacksonville scale lost in tonnage more rapidly than the area which did not pay that scale. This is further shown in the realization comparison. Pennsylvania, because of the specifications in the Jacksonville scale, could not reduce its realization as rapidly as in West Virginia where many operators had ceased to pay Jacksonville rates and, therefore, could lower their sales realization in order to secure tonnage. From 1924 on to 1926 West Virginia's gain in shipments was continuous and amounted to about 40 per cent. In Pennsylvania no gain in shipments is shown until early in 1925, when many operators ceased to pay the Jacksonville scale and became non-union so that from 1925 on Pennsylvania and West Virginia drew closer together in production and in realization. The cessation of wage payments on the Jacksonville scale in Pennsylvania in 1925 is reflected by the lower realization appearing at the same time. The decline in shipments in Pensylvania in 1927 reflects the strike condition, whereas West Virginia continues to show an increase.

Turning next to a comparison of Ohio and West Virginia, the contrast in tons loaned for shipment is more pronounced because Ohio was more organized than Pennsylvania, and therefore more of its production came at the Jacksonville rate. Thus we find that West Virginia's shipments declined 4 per cent in 1924 from the base year and Ohio's shipments declined 26 per cent for the same period. After the Jacksonville Agreement came into effect, the divergence widens. Ohio consistently loses tonnage until 1925 when it began to break away from the union and the Jacksonville scale, while West Virginia, on the contrary, consistently gains in tonnage. Not until 1926 do we find the realization in Ohio approaching that of West Virginia. Again the decline in production in 1927 in Ohio is to be attributed to the strike, as is also the gain in shipments in West Virginia, so that by 1927 West Virginia had gained 38 per cent in

shipments and Ohio had lost 66 per cent in shipments, as compared with the base year 1923.

The next comparison is between Ohio and Kentucky and shows that when the Jacksonville Agreement became effective the divergence in shipmnts between Kentucky and Ohio widens considerably. Kentucky, from 1924 to 1927, shows a consistent gain in shipments, amounting to a total of 57 per cent for the period, whereas Ohio lost approximately 64 per cent. Similarly, in comparing realization, we find that Ohio was not able to lower its sales price f. o. b. the mine until it began to break away from the Jacksonville wage scale; but at all times Kentucky's realization decreased more rapidly than had that of Ohio, again explaining Kentucky's gain in tonnage in contrast with Ohio.

In comparing Indiana with Kentucky, we find that Indiana, a highly organized state, lost approximately 18 per cent in shipments by 1924 and then remained fairly constant, showing a slight gain in the year 1926 and then a sharp decline in 1927 due to the strike. Kentucky's shipments, as in the preceding chart, show a consistent increase in tonnage. In comparing the realization of the two states, we find that Indiana, bound to the rigid specifications of the Jacksonville scale, was not able to reduce its realization to the same degree as Kentucky, whose flexible wage rates allowed reductions in price f. o. b. mine.

The comparison between Illinois and Kentucky shows a similar situation to that which applied in the comparison of Indiana and Kentucky. Illinois being perhaps the most highly organized state in the country held rather rigidly to the Jacksonville scale during the period of the agreement and so was scarcely able to reduce the realization, whereas Kentucky throughout the period shows ability to reduce realization, as has already been pointed out.

A factor to be kept in mind throughout these comparisons is the effect of the British general strike, May to September, 1926, and the consequent increase in production and temporary increase in price.

The conclusions to be drawn from this Chart are that those states during the Jacksonville period which were predominantly union were compelled to comply with the established contract wage rate, and since the wage cost represents approximately 60 per cent of the total cost, operators in those states were not able to reduce the sales price f. o. b. the mine sufficiently to compete with the non-union operators paying lower than Jacksonville