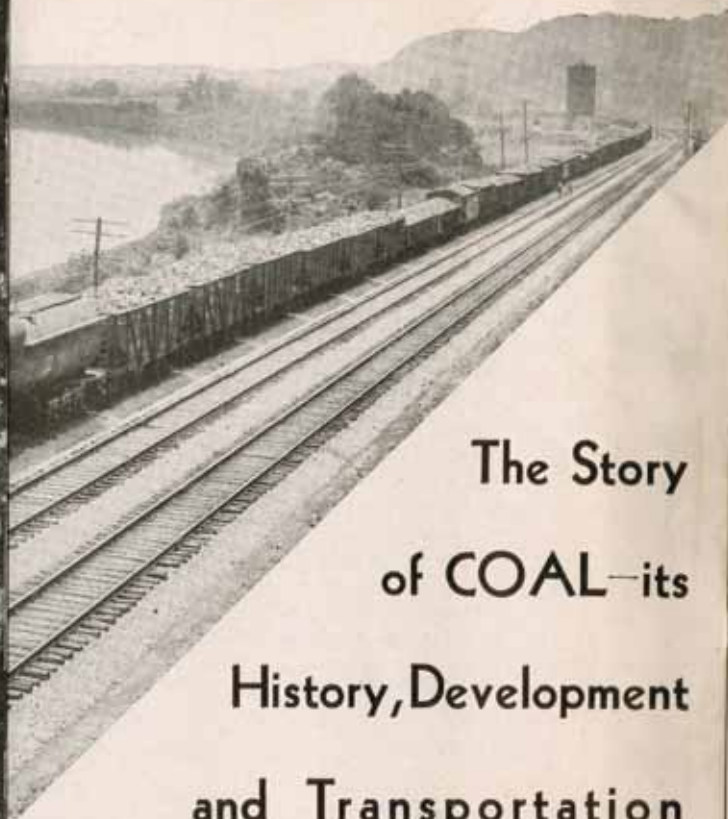


ALL PURPOSE COAL

"Coal Heat Costs Less"



CHESAPEAKE AND OHIO LINES



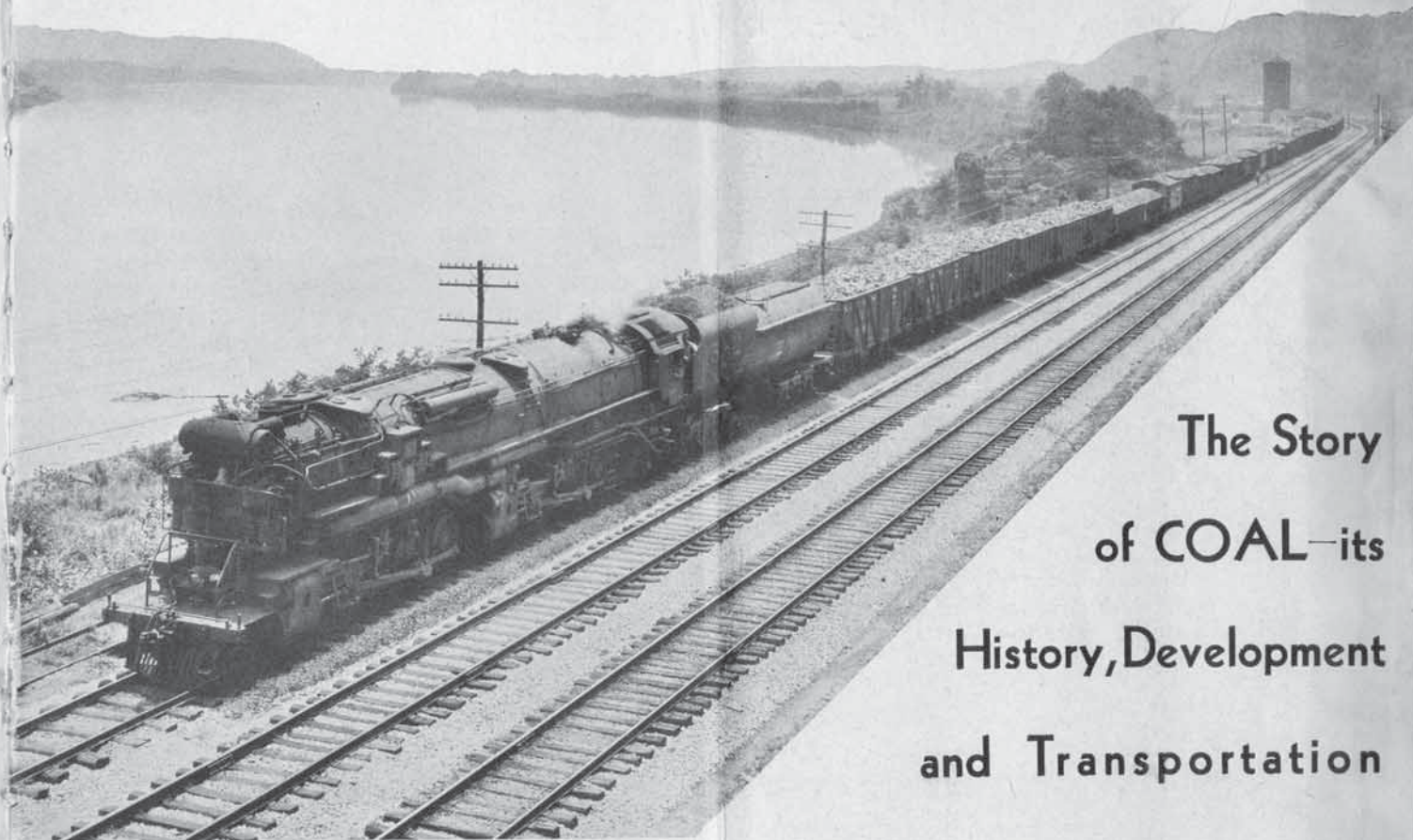
The Story of COAL—its History, Development and Transportation

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...mi-bituminous coal in the world.

...o universal uses have made Chesapeake and Ohio
...ay in the United States.

THE purpose of this booklet is to give the reader some idea of coal and the coal-producing fields in West Virginia, Kentucky and Ohio served by The Chesapeake and Ohio Lines, with pertinent facts on the preparation, quality and transportation of these All-Purpose Coals.



26

The Story of COAL—its History, Development and Transportation

COAL is a mineralized form of plant origin, and is the principal source of fuel for industrial and domestic purposes. When distilled, coal yields coal gas, coal tar and numerous other by-products. Extensive coal production in the United States did not begin until about 1820.

The United States is blessed with a wonderful supply of coal and contains a little more than half of the world's known reserves. Coal is found in thirty-six of the forty-eight states, in Alaska and in the Philippine Islands. Along the lines of The Chesapeake and Ohio in West Virginia and Kentucky are some of the richest deposits of bituminous and semi-bituminous coal in the world.

The quality of these coals and their adaptability to universal uses have made Chesapeake and Ohio the largest individual bituminous coal producing railway in the United States.

THE COAL FIELDS OF Southern West Virginia, Kentucky and Ohio

THE coals on The Chesapeake and Ohio Lines lie largely in the heart of the greatest coal fields in the world—The Appalachian. The five great operating districts, New River, Kanawha, Logan, Kentucky and Ohio, extend from Hinton, West Virginia, on the East, to Elkhorn City, Kentucky, on the West, and into Southern Ohio, on the North.

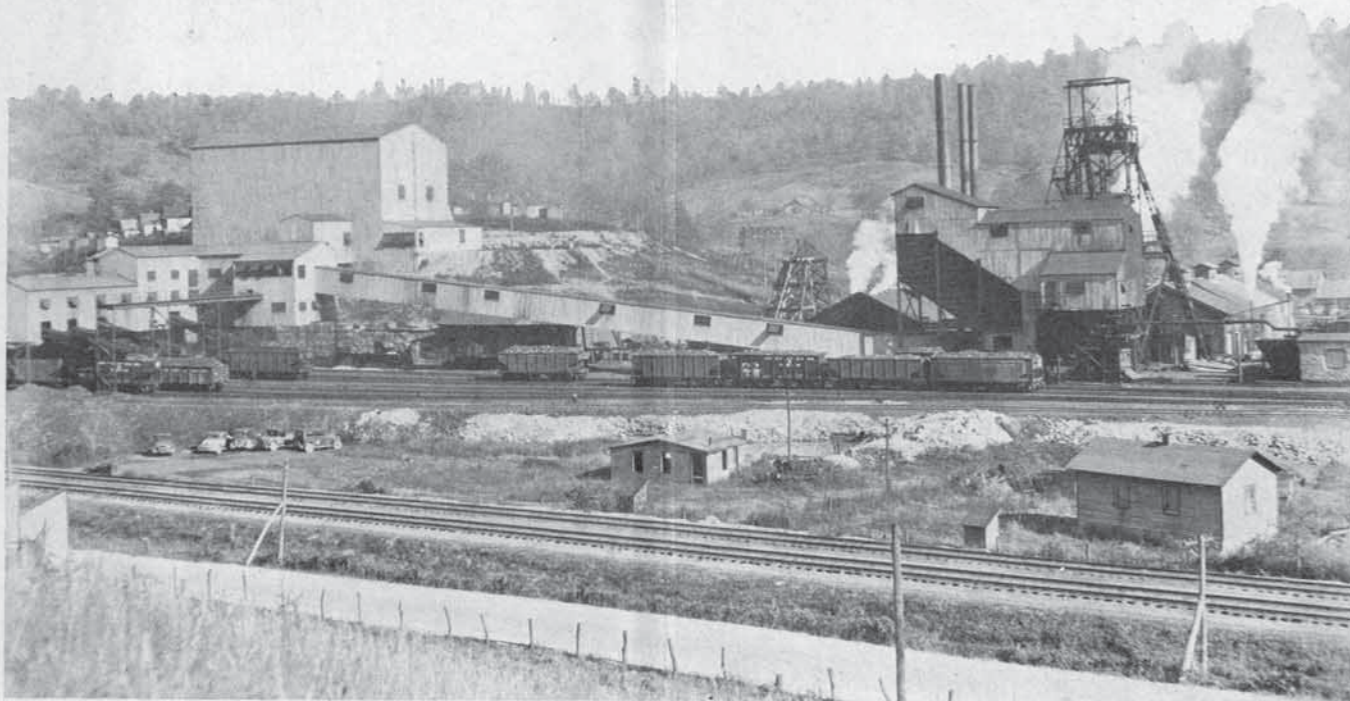
This immense area is rich in deposits of low volatile semi-bituminous and high volatile bituminous coal, varying in structure from a relatively soft columnar coal to a hard, block splint or cannel coal, and in quality from an excellent domestic fuel to a superior gas, steam, coking and by-product coal.

The normal distribution of these famous All-Purpose Coals may be generally described as follows:

The greatest industrial area of the country, the so-called Central Territory,—Western Pennsylvania

and Western New York, Ohio, Indiana, Illinois, Michigan and Wisconsin is the largest consumer of Chesapeake and Ohio coals. Fifty percent of the production goes there. The Great Lakes take fifteen percent; the Northwest four percent, some finding its way as far as Alaska; Railway Fuel seven percent; Inland East and South, including the District of Columbia, eight percent, while a final sixteen percent moves to Tidewater through Newport News, for trans-shipment on vessels.

Of the Tidewater tonnage approximately seventy-five percent of the total is consigned to New England and other coastwise destinations, while export cargoes go principally to North and South America, the West Indies, and Mediterranean ports, with consignments to the Pacific Coast through the Panama Canal.



THE NEW RIVER DISTRICT NEW RIVER - GREENBRIER FIELDS

Low Volatile Semi-Bituminous Coals
The New River Coal Operators Association



TYPICAL ENTRANCE TO A MODERN MINE
Empty cars enter at the right and emerge loaded at the left

THE New River coal field, producing the famous New River low volatile, semi-bituminous smokeless coal, lies in Fayette, Raleigh and Greenbrier Counties in the southern part of West Virginia, and constitutes an integral part of the Southern West Virginia Coal Field.

That section of West Virginia was historically famous during the early days of the American Revolution. The engineering lines which form the basis for property titles originally were set by George Washington. The mountains of the New River Field formed the base of operations for the Indians in their drive from the Allegheny Mountains into the middle west prairies. Some important battles of the Civil War were fought behind the natural mountain fortresses.

From the first commercial shipments in 1871, from the primitive mines, with pick and shovel methods of mining, an annual production of 2,500 tons, has arisen the great New River Coal Field of today, with its modern tipples, modern mining machinery, and a production in excess of 15,000,000 tons annually, employing approximately 15,000 men. New River coal is exchanged for wheat and corn and other agricultural products in the western prairies. In the great manufacturing centers of the Middle West it is exchanged for steel rail, electrical supplies and machinery. Thus, the New River Coal Field is an important factor in the business fabric of our Nation.

In the beginning the markets of the New River Field were limited principally to the east. Today,

due to the superior quality of New River coal, it is demanded in the great northwest and central west, through the industrial centers of Indiana, Illinois, Ohio and Pennsylvania, with a tremendous volume of tonnage moving to the Atlantic Seaboard for coastwise trade, including New England and foreign countries, as well as for bunkering the ships of the United States Navy and commercial vessels.

Geologically the New River Coal Field contains twenty seams of coal, ten of which are of commercial thickness and purity. The principal seams which have made the New River Coal Field famous, and which are now mined commercially, are the Sewell, Fire Creek and Beckley Seams. These coals are produced from mines high on the mountain tops by drift or slope methods of mining, or from shafts penetrating the bowels of the earth ranging from 400 to 700 feet in depth.

The name New River is synonymous with unusual quality in low volatile smokeless coal. New River coal is an economical coal. It is low in ash content, ranging from 2% to 6%. It is easy to fire. It provides a maximum of efficiency by complete combustion. It has greater lasting qualities in burning and many discriminating consumers demand New River coals for heating their homes. New River coal is high in carbon content, and provides a maximum of efficiency, being one of the highest heat unit coals of the world, averaging approximately 15,000 B.T.U.s.

New River coal is produced under the most modern methods of mining and is screened through the most modern and efficient tipples, making it com-

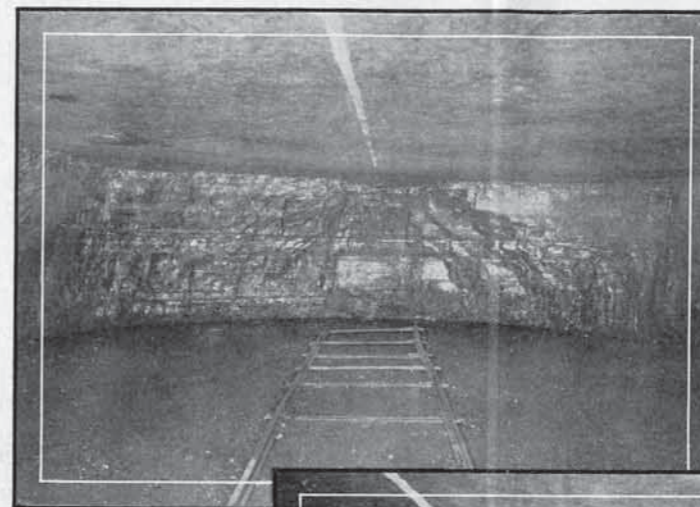
paratively free of impurities. Thus the buyer is assured a superior product.

Many New River mines are prepared to treat the coal for allaying dust where the trade demands. New River coal has passed satisfactorily the most exacting tests as a superior fuel for use in industrial and domestic automatic coal stokers.

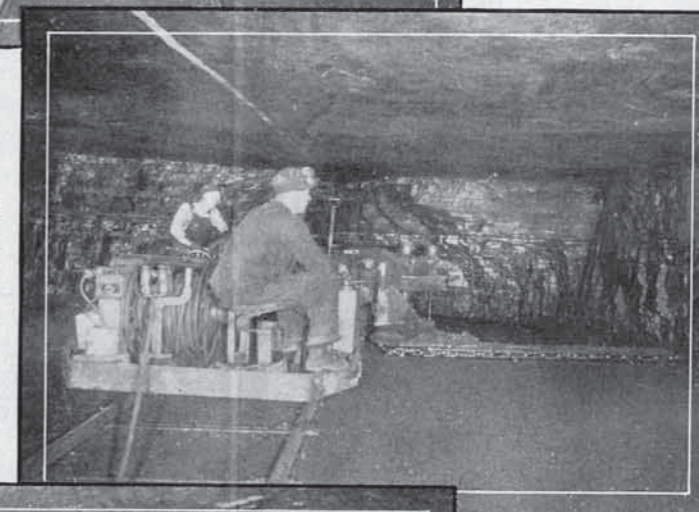
The chief uses of New River coal are steam, domestic, by-product, metallurgical, coking, brick and tile burning and smithing. New River coal is produced and sold in lump, egg, stove, nut, pea, nut and slack, pea and slack, slack and run-of-mine sizes—every size conforming to the demands of an exacting trade.

Adequate rail facilities insure prompt movement to all points, even as far west as the Pacific Coast. The modern terminal facilities of The Chesapeake and Ohio at Hampton Roads provide a superior service for the handling of coastwise coal to points along the Atlantic Seaboard, including New England; also coal destined to foreign countries, as well as the efficient bunkering of all classes of vessels. Chesapeake and Ohio also owns and operates at Presque Isle, Toledo, most complete and modern terminals, which afford expeditious handling of coal for transshipment via lakes.

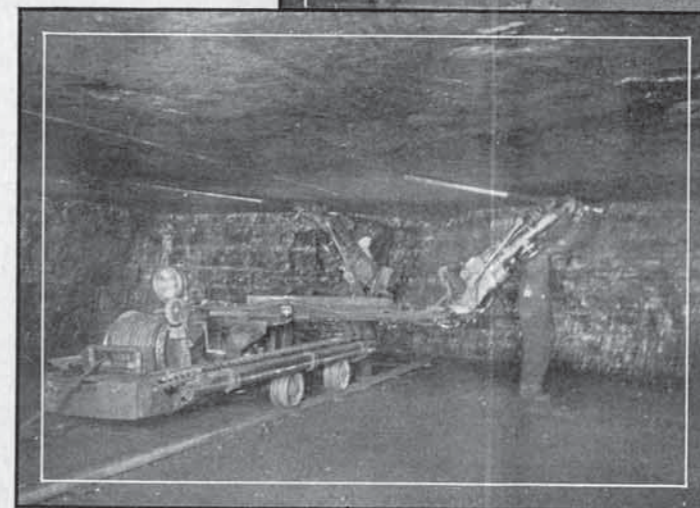
New River means reliability in dealings, quality of product, clean coal, superior service, and satisfied customers. The New River Coal Operators Association, Mount Hope, West Virginia, any dealer in New River coal, or any representative of the Chesapeake and Ohio Railway System, will be glad to assist prospective buyers of New River coal in meeting their fuel needs.



THE WORKING FACE OF COAL IS FIRST CLEANED AND MADE READY FOR CUTTING AND DRILLING



AN ELECTRIC MACHINE UNDERCUTS A CHANNEL ALONG THE BASE OF SEAM



A MOUNTED ELECTRIC DRILL BORES TWO HOLES SIMULTANEOUSLY IN WHICH ARE PLACED THE CHARGES OF POWDER

THE WINDING GULF DISTRICT

WINDING GULF FIELD

Low Volatile Semi-Bituminous Coals

The Winding Gulf Operators Association

THE Winding Gulf District of the Smokeless Coal Fields of Southern West Virginia lies in Raleigh and Wyoming Counties and is flanked by the Pocahontas District on the southwest and by the New River District on the northeast.

It was the last of the three great Smokeless Fields to be opened, because it laid in the more remote sections of the mountainous region of Southern West Virginia; and like so many products of nature, the more difficult the accessibility, the finer the product. Following by thirty-five years the opening of the New River Field, and by twenty-five years the opening of the Pocahontas Field, the extraordinary high quality of the coal from this field rapidly won an equal position in market preference with those two other long famous coals.

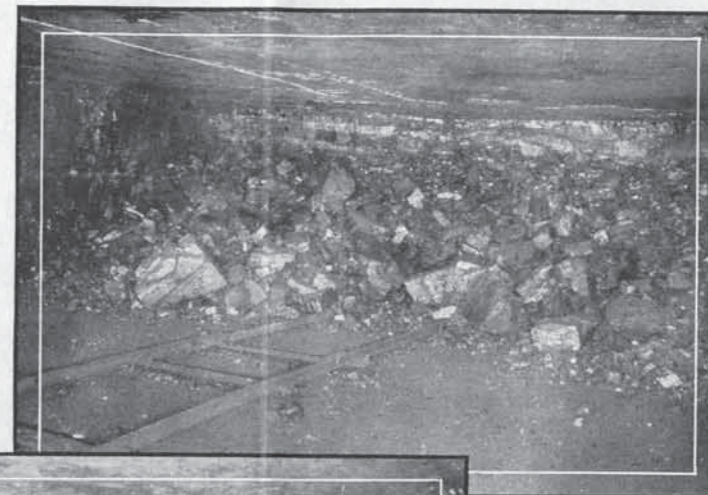
The original openings of 1907 to 1910 were in the Beckley Seam of coal, which lies under the famous Sewell seam of the New River Field, and several seams above the Pocahontas seams of that field. Production grew rapidly from the original shipments of less than 10,000 tons in 1907 to 12,000,000 in 1929, and the field has since maintained its capacity at that figure. In subsequent years other seams were opened up, principally the Fire Creek or Pocahontas No. 6, and the Pocahontas No. 4 and the No. 3.

These coals are excelled nowhere in the world for their remarkably consistent high quality of low ash, low volatile content, and high fusing temperature of its ash. Low ash, of course, means a maximum of combustible matter in the coal. Low volatile content means an absence of smoke on combustion and, therefore, an absence of soot to cover boiler tubes and reduce the efficiency of the coal as a fuel. High fusing temperature of ash insures either the domestic or industrial user absolute freedom from clinker trouble under all firing conditions, including extraordinary over-rating and poor physical condition of plant.

Winding Gulf Smokeless coals are in general use in the United States and Canada, from the Dakotas in the Northwest to the Carolinas in the Southeast. They are in use where domestic consumers appreciate the best in fuel, and where exacting firing conditions or high guarantees on resulting coke specifications demand the use of high grade coals of consistently uniform quality.

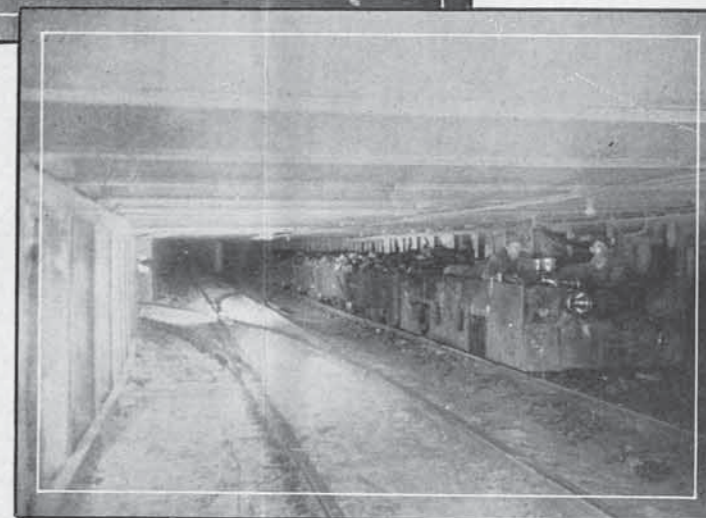
The Winding Gulf Operators Association of Beckley, West Virginia, or the Traffic Department of the Chesapeake and Ohio Railway Company will be very glad to furnish further detailed information concerning the famous seams upon request.

AFTER THE "SHOT"
LOOSE COAL FALLS TO
THE FLOOR OF THE
MINE AND IS READY
FOR LOADING



THE LOADED CAR IS
NOW WAITING TRAN-
SIT TO MINE EXIT

A TRAIN OF LOADED
CARS IS THEN MADE
UP AND BY ELEC-
TRICITY IS BROUGHT
TO THE TIPPLE



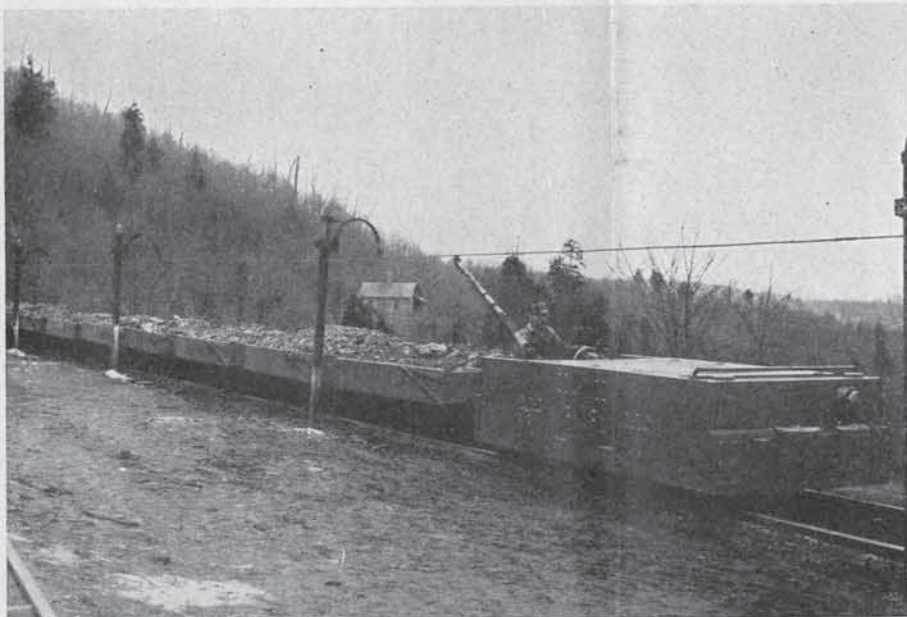
THE KANAWHA DISTRICT

KANAWHA - COAL RIVER FIELDS

High Volatile Bituminous Coal
The Kanawha Coal Operators Association

COAL is a necessity. Civilization depends upon it. The marvelous advancement made in this country during the past fifty years, a record that cannot be compared to that made by any other nation in the world's history, is due primarily to coal.

The Kanawha coal district is an area comprised of Boone, Kanawha and Putnam counties and a portion of Fayette, Nicholas, Logan, Lincoln and Raleigh counties. The production rate of the district is approximately 18,000,000 tons a year, an output which could be greatly increased should the necessity for an increased tonnage arise.



This is the oldest coal field in West Virginia and one of the first to be worked in North America. In the spring of the year 1742, John Peter Salley, on an exploration trip that carried him from Augusta County, Virginia, across the Alleghanies and thence to a river that he named "Coal," made the first recorded discovery of coal in what is now West Virginia. The coal he discovered was in the heart of the Kanawha District.

In 1817 coal was first used in this district for manufacturing purposes in the salt furnaces of the Kanawha Valley, at that time the most productive salt region in America. In 1840, ninety salt furnaces in this territory were using annually 200,000 bushels of coal.

These mines continued in operation to supply the needs of the furnaces until the outbreak of the Civil War, when they ceased for four years. In 1865 work was again re-

NOW, OUTSIDE THE MINE THE "TRIP" APPROACHES THE TIPPLE

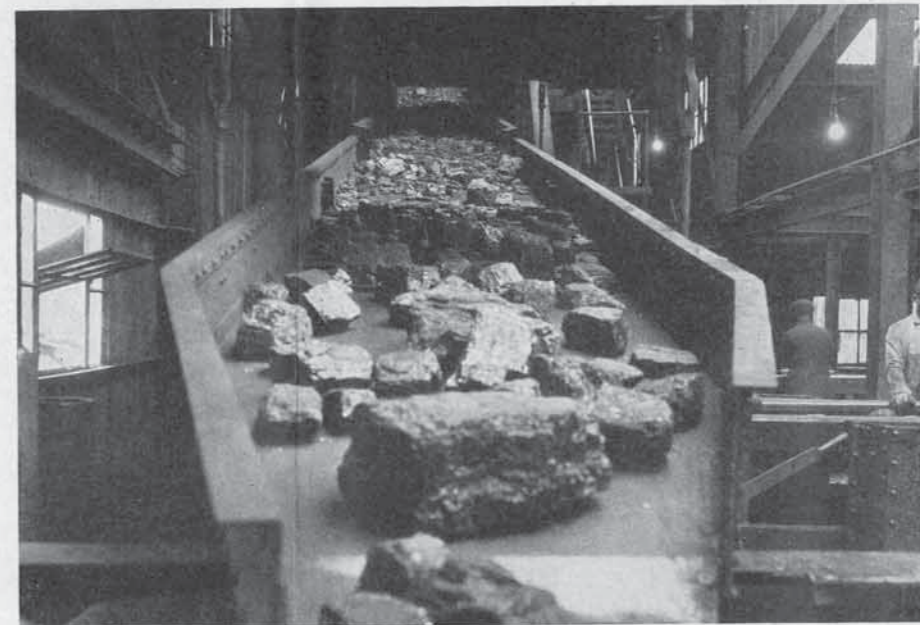
sumed and mines in this district have been operated continuously.

Following the Civil War, owners of mines began looking for other markets and the high quality of the Kanawha coals met with instant favor wherever they were introduced. A great demand for these coals followed closely the development of transportation facilities. Markets spread from a few points on the Ohio River, which had been available to water transportation only, to many sections at home and abroad. New England, the Carolinas, middle western and northern states and foreign countries were attracted by the quality inherent to these Kanawha coals to an extent that market expansion and mine development has been continuous.

Tools and methods of mining in those early days were, like in all pioneering developments, crude. But tools and methods, however inefficient, are not discarded easily and to this day the old pick and shovel method of mining persists to a limited extent. In fact, any other system of extraction appears to be impractical under certain conditions. In general, though, mining tools and equipment have fully met the demand for a greater tonnage.

In contrast to the former hand method of loading a mine car, a machine now loads as much as four tons a minute, whereas the old method would use up hours to reach the same result. Following closely the improved mining methods, preparation to meet the most exacting requirements for heat and fuel came in for the interested attention of the Kanawha coal operators. The crude chute

COAL PASSING OVER SHAKER SCREEN IN A MODERN TIPPLE OF A C. AND O. MINE

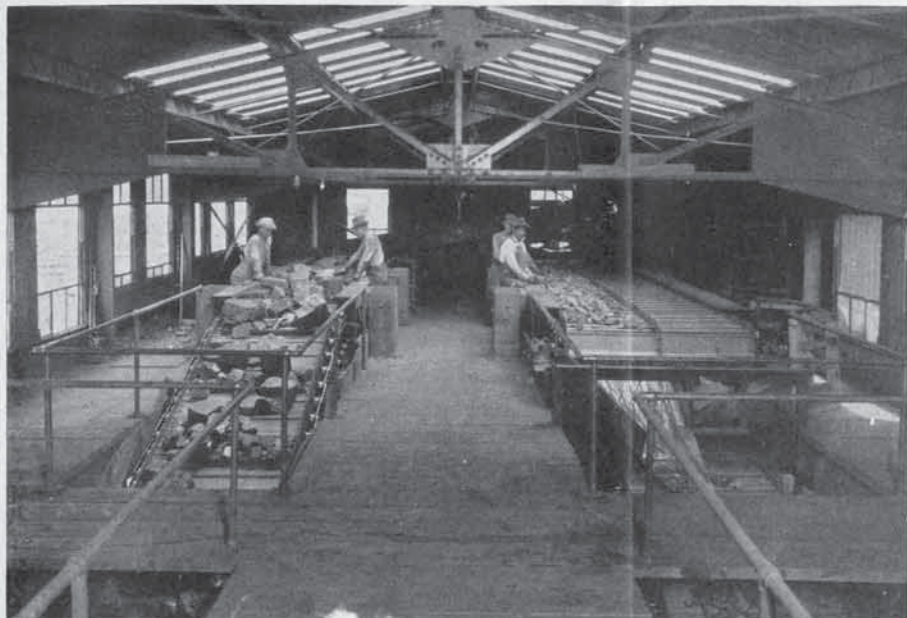


employed years ago to transfer the coal from the mine into railroad cars or river barges has been supplanted by modern steel structures that receive the coal as it comes from the mine, converting it, almost automatically, into a wide variety of sizes and while so doing removes all impurities.

Sizes ranging from almost dust-size particles to huge lumps satisfy the requirements for fuel needed to most efficiently motivate industrial equipment or give the greatest values as domestic heat.

The science of chemistry has opened a Pandora's box of wonders from the composition called coal and the Kanawha district is extremely fortunate in being so located as to embrace a territory unusually rich with the best of those coals susceptible to reduction into valuable chemicals as well as coals which, in the production of heat units, are of outstanding value.

The names of Kanawha coal seams are familiar in every market and the label "Winifrede," "Coalburg," "No. 5 Block," "No. 2 Gas," "Eagle" or "Powellton" are synonymous terms for coal quality. All of these coal measures, classed as high volatile, are supreme for a wide range of uses. Analytically, they may differ at times from the "Average" obtained through many tests, but modern preparation has worked wonders in preserving a uniform result



THE COAL THEN
PASSES OVER "PICKING
TABLES" OR MECHAN-
ICAL CLEANERS AND
EXTRANEIOUS MATTER
REMOVED

The railroads have built and maintain their lines into the difficult territory of remote sections. Hard surfaced roads contribute to citizens the possibility of comfortable travel to and from any part of the district. Excellent schools meet the demand for

education while social and spiritual welfare is fostered by the many active churches established in this territory.

for customers making definite specifications that must be met.

The summary of developments since that distant date in 1742 when coal was discovered in the Kanawha District reads like a fairy tale. Inspired by the proximity of such efficient fuels, the present day picture is one of vast chemical plants, glass manufacturing institutions, metal working factories and a long list of other manufacturing industries.

FROM THE TIPPLE THE
COAL SAFELY CREEPS
DOWN A CONVEYOR
TO THE RAILWAY CARS
BELOW



THE LOGAN DISTRICT

LOGAN FIELD

High Volatile Bituminous Coal

The Logan Coal Operators Association

THE Logan Coal District of The Chesapeake and Ohio extends from Barboursville to West Gilbert, including branches, located principally in Logan and Lincoln Counties, the district centering around the City of Logan, West Virginia.

The growth of this district, which began shipping coal in 1905, although spectacular, has been steady from year to year, and today stands as a monument to those men who had the vision to see in Logan County a great and prosperous coal field. In a period of twenty-seven years, the field grew from an annual production of five hundred tons to approximately 20,000,000 tons.

Twenty-eight coal companies, operating forty-five mines now are producing coal in the Logan District. These companies range from the small Company producing less than five hundred tons a day, to the large company producing twenty-two thousand tons a day.

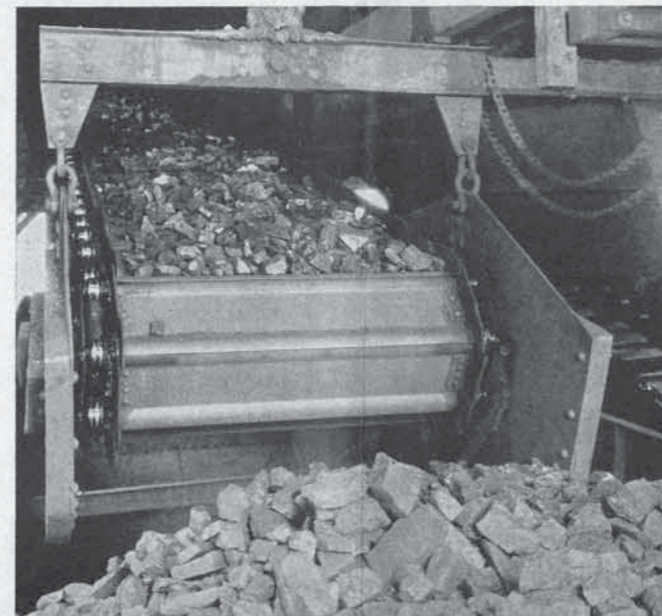
The coals principally mined in this district are the Island Creek, Eagle, Winifrede, Alma and Chilton. Island Creek coal is produced in the

largest quantities. Island Creek, Eagle and Chilton coals are probably the best known of the Logan coals on the market.

These five coal seams range in thickness from forty-eight to seventy-two inches, with very little parting or impurity. Coals from the Logan District have a wide range of adaptability, including domestic, steam, by-product, railway fuel, metallurgical and gas purposes. While all of these coals are remarkably free from ash and sulphur, the operators have spared no expense to make their product one that will stand up under rigid inspection, between 85 and 90% of the coal produced in the district being mechanically screened.

With the introduction and widespread use of the small

stoker, many of the operators are producing specially sized coals for stoker use. Many of the mines are either washing or cleaning their stoker coal with air, or treating it to make it dustless, in order to make their product attractive to the small stoker user.



AN ADJUSTABLE LOADING BOOM GOES A LONG WAY
TO PREVENT BREAKAGE

THE KENTUCKY COAL DISTRICT

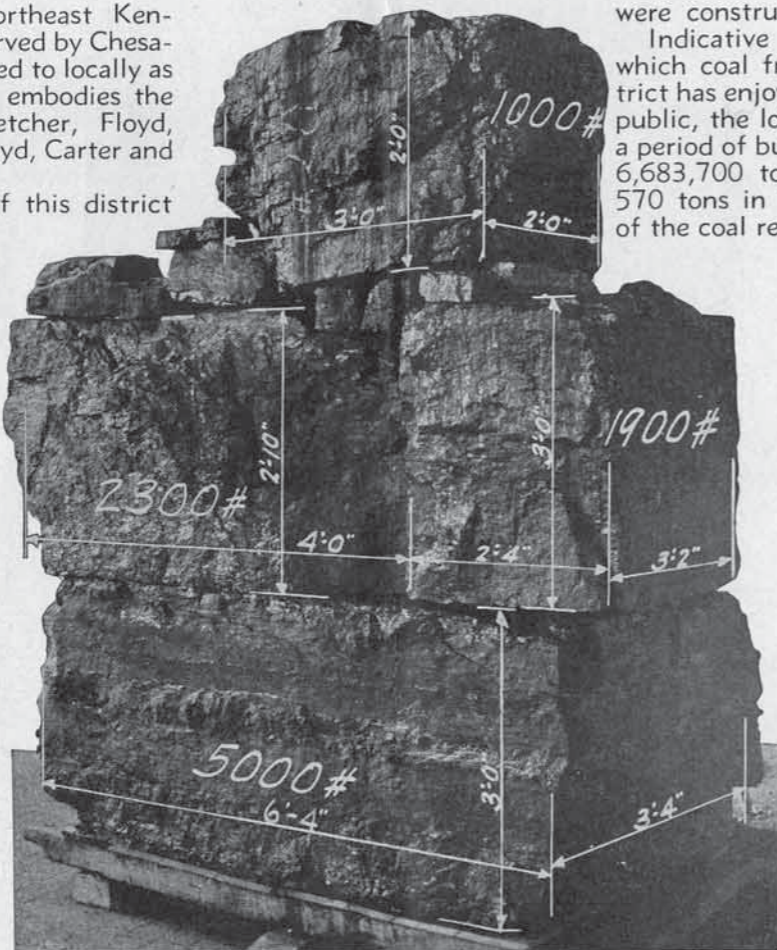
BIG SANDY FIELD

High Volatile Bituminous Coal

THE Northeast Kentucky Coal District, served by Chesapeake and Ohio, referred to locally as the Big Sandy Valley, embodies the counties of Pike, Letcher, Floyd, Johnson, Lawrence, Boyd, Carter and Greenup.

The development of this district is an interesting story of pioneer work beginning before the Civil War. The discovery and location of the virgin coal deposit, said by some geological experts to be the greatest undeveloped coal field in the world, called for years of patient, persistent effort and taxed the skill of engineers.

Real development of Big Sandy's coal field started in 1906. However, as far back as 1845 companies were formed in the North and opened mines at Hurricane, eighteen miles above the mouth of the river. In 1850 mines were opened at Peach Orchard on a more extensive scale and churches, school houses, and homes



COAL MINED IN MAMMOTH SIZES SHOWS THE PURITY OF CHESAPEAKE AND OHIO ALL PURPOSE COALS.

were constructed for employees.

Indicative of the popular favor which coal from the Kentucky district has enjoyed with the consuming public, the loadings in 1932, during a period of business depression, were 6,683,700 tons compared to 124,570 tons in 1906. Only one-third of the coal reserve of this area is developed or available to transportation and the remaining two-thirds is undeveloped virgin territory. Based on the present yearly loadings, the reserve coal available in this territory is sufficiently adequate to take care of the demand for several generations without danger of complete depletion.

The area is rich in deposits of bituminous coal varying in structure from a relatively soft coal to a hard block, splint and cannel coal and in quality from an excellent domestic fuel to a superior gas steam, coking and by-product coal. The principal seams mined are the Millers Creek and Elkhorn.

MILLERS CREEK SEAM

The extreme hardness of this splendid coal permits ready preparation into block sizes, many too large for any man's single strength, with the resultant, egg and nut sizes and a very small percentage of slack. The block coal from this seam attained a very quick popularity and in many cases has displaced the use of anthracite in the markets of the Middle West. Its distinctive features are its hardness, specially desirable in transportation and storage, its quick ignition and its extremely small percentage of non-combustible material. It is especially adaptable to domestic use in either wood stoves or grates. The egg and nut sizes give excellent results in producer practice and are very popular in city use in domestic furnaces and cooking ranges since a quick heat is easily secured for cooking or heating. The small sizes are very much in demand for boiler use, both stationary and locomotive, and especially for use in semi-commercial or domestic stokers.

ELKHORN SEAM

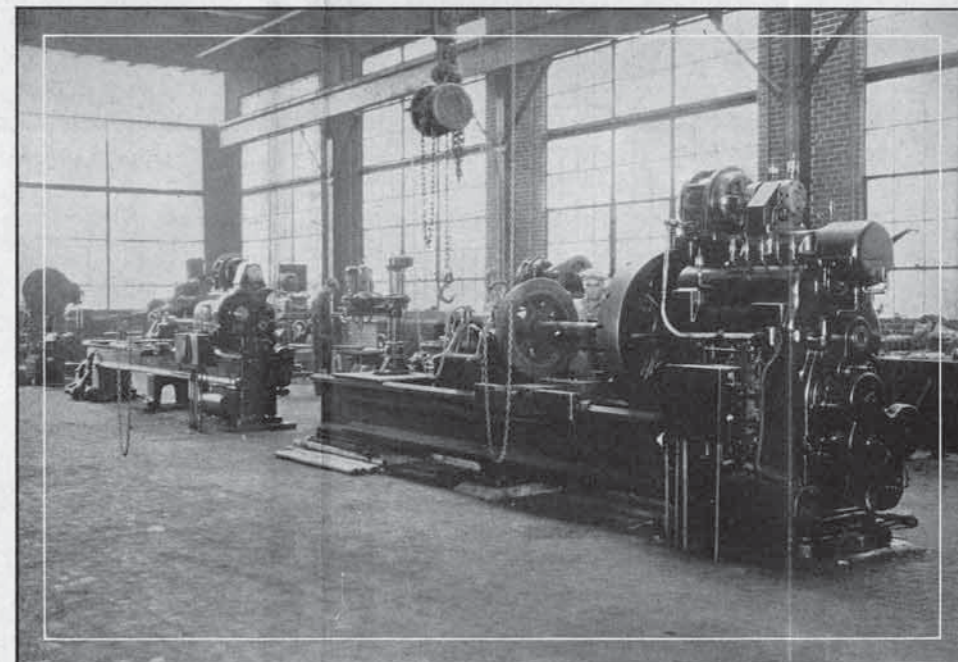
With the extension of Chesapeake and Ohio rails to Elkhorn City and Jenkins, the upper end of the Big Sandy Field was immediately exploited and, when placed on the market, Elkhorn coal was given immediate recognition for

its high quality. This necessitated the construction of several branch lines to serve this rapidly developing area.

Chemical analyses of the Elkhorn and Millers Creek seams are almost identical; however, the former is an excellent coking coal, whereas the latter is of the non-coking variety. The Elkhorn seam, being sufficiently lumpy and firm, is in popular demand among domestic consumers. It is equally adaptable for use for steam generation as it responds quickly to changes in boiler demand. Elkhorn coal is very rich in by-products and offers every advantage to be had from a high volatile coal. The coke produced is of a very hard, close grain texture, low in ash and sulphur, high in heat content and ignites readily. It is hard enough in structure to withstand transportation and permits storage with minimum degradation and breakage. The gas yield is great and high in calorific value.

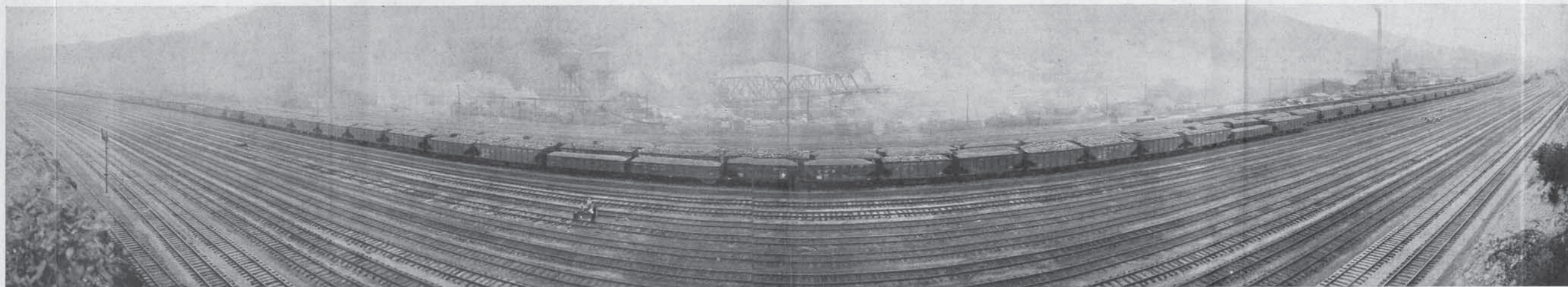
Elkhorn coal burns with a long flame, is low in ash and sulphur. These qualities have earned for it the title of All-Purpose Coal which is attested to by its popularity for domestic, stationary and locomotive use, illuminating and producer gas, by-product coking, malleable iron melting, kiln burning, cement clinkering, annealing, etc.

MODERN MACHINE SHOPS MAINTAIN THE MINES IN FIRST CLASS MECHANICAL CONDITION





CHESAPEAKE AND OHIO WESTBOUND ASSEMBLY TERMINAL AT RUSSELL, KY. CAPACITY 6,500 CARS



CHESAPEAKE AND OHIO EASTBOUND ASSEMBLY TERMINAL AT CLIFTON FORGE, VA. CAPACITY 4,000 CARS



CHESAPEAKE AND OHIO TIDEWATER ASSEMBLY TERMINAL AT NEWPORT NEWS, VA. CAPACITY 8,000 CARS

THE HOCKING COAL DISTRICT

HOCKING VALLEY, POMEROY, JACKSON FIELDS

High Volatile Bituminous Coal

THE Hocking Coal District of The Chesapeake and Ohio Lines is in the southeastern part of Ohio.

A goodly portion of the coal from those fields enters the domestic markets in competition with coals from other states. This requires careful cleaning and sizing and in order to accomplish this purpose all of the larger mines have been equipped with the latest and most modern screening devices, such as shaker screens, picking tables, mechanical slate pickers, etc. The installation of washers has resulted in the production of a very much higher grade of fuel. Both the operators and miners are continually striving and are showing a conscientious interest in producing the best prepared Hocking coal ever placed on the market. The Hocking Coal District is divided locally into three fields; viz. Hocking Valley, Pomeroy and Jackson.

HOCKING VALLEY FIELD

This field, as generally known today, comprises Athens, Hocking and Perry Counties and while this term includes both the Hocking and Sunday Creek Valleys, for many years the entire production of coal was confined to the developments along the Hocking River and its tributaries. The central point, or gathering yard of The Chesapeake and Ohio Lines for this coal field is at Nelsonville, in Athens County, about sixty-two miles southeast of Columbus.

Although coal was first marketed in this field as early as the year 1840, it was not until 1869, that it started to move by rail to distant markets.

The coming of the railroad with its many spur tracks permitted a wide development of the territory so that in 1883 the Hocking District produced 3,270,000 tons, or two-fifths of the entire state's production. The production continuously increased up to 1920, when 12,350,000 tons were produced.

The principal seam of coal mined in the Hocking District is the number six, or Middle Kittanning. In recent years the number seven or upper Freeport seam has also been mined to some extent. The number six, or what is known as Hocking coal, is a non-coking, free-burning fuel and with proper furnace conditions burns with little smoke and comparatively free from soot. It is therefore especially in demand for domestic as well as steam purposes. For many years it was one of the most famous soft coals mined in the United States and is now, when properly prepared, considered one of the best all-around bituminous coals on the market.

POMEROY FIELD

This field is situated in Southern Meigs and Eastern Gallia Counties in Southern Ohio and borders the Ohio River, directly across from West Virginia. The principal seam mined is Pomeroy number 8-A, or Redstone. While this coal carries the name number, Eight, it is an entirely different structure than the number eight coal mined in Eastern Ohio. The Pomeroy coal is very large and blocky. It has the heat units of the number eight coal mined in Eastern Ohio but like Hocking number six, it is free from soot, thereby making it one of the best domestic coals produced in Ohio. As a steam coal it is equal to the Eastern Ohio number eight. Pomeroy coal has always been identified by its lustrous colors, having the brilliance of a peacock's tail.

JACKSON FIELD

The Jackson Field is located principally in Jackson and Vinton Counties, in Southern Ohio. Although the original number two Jackson seam also underlies this area, the principal vein now being mined in the field is known as the Limestone Coal, Seam number four. This seam ranges in thickness from two to six feet and is an excellent coal for either steam or domestic purposes.

Labor and Living Conditions

No STORY, however brief, would be complete without some reference to co-operation between the employer and employee. Realizing their responsibility in employing men to work at the coal mines, the operators have spared no expense to make pleasant living conditions. Filtration and settling plants for the water supply; welfare workers, club houses, moving picture theaters, have been provided, and in several instances operating

companies have built hard surfaced roads, feeling that the ability of their employees to travel in and out comfortably over the highways would tend to better living and working conditions. Graded and high schools are found throughout the fields, as well as churches of all denominations. These facilities make satisfied labor and contribute to the uninterrupted supply and excellent preparation of all Chesapeake and Ohio coals.



COMMUNITY HOUSES AND CLUBS ARE TO BE FOUND IN THE MINE VILLAGES





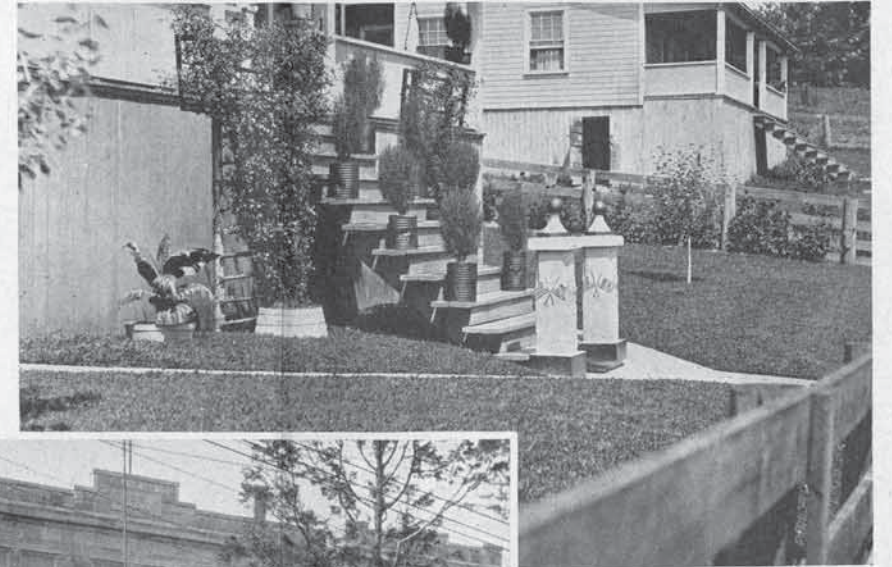
MODERN HOSPITALS
CARE FOR THE MINERS
AND THEIR FAMILIES



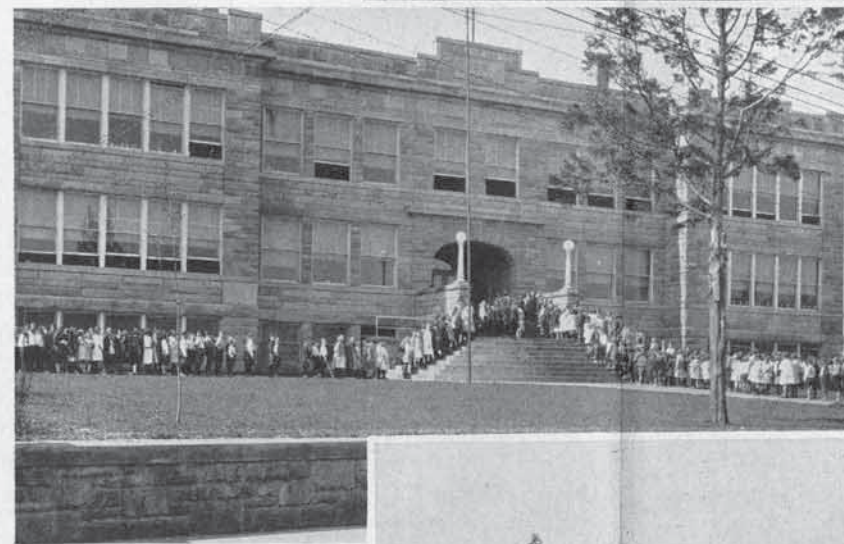
THE BEST MEDICAL
AND SURGICAL AT-
TENDANCE IS AVAIL-
ABLE IN ALL DISTRICTS



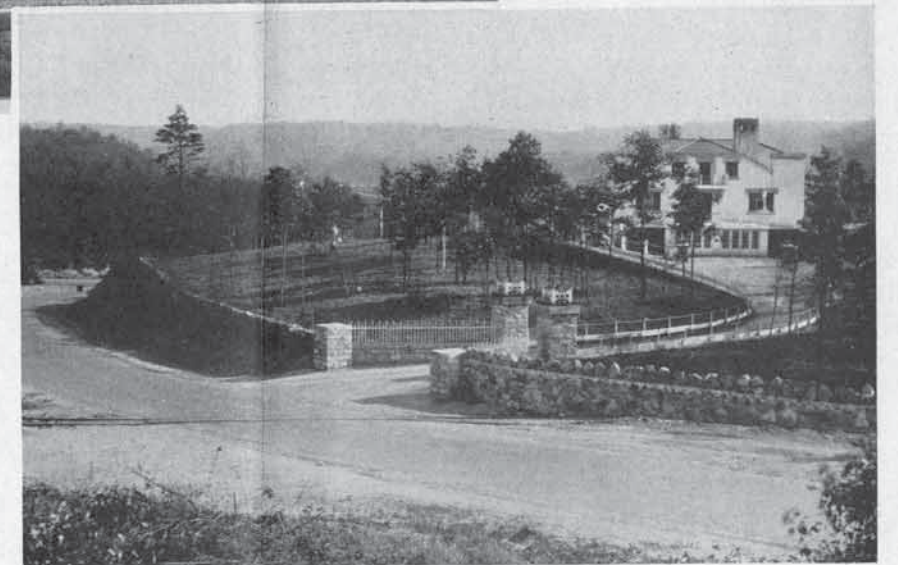
MINERS' CHILDREN
HAVE SPACIOUS AND
WELL SUPERVISED
PLAYGROUNDS



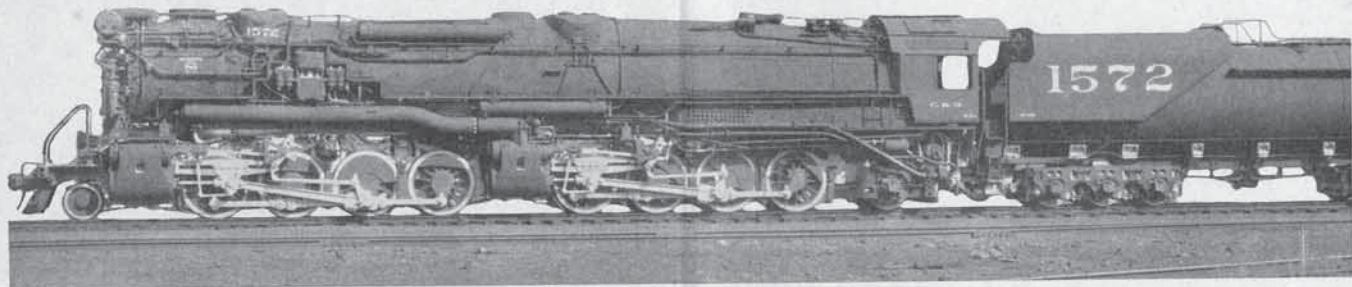
MINERS OCCUPY SUB-
STANTIAL, WELL-
BUILT HOMES AND
TAKE PRIDE IN THEIR
APPEARANCE



MINERS' BOYS AND
GIRLS HAVE MODERN
SCHOOLS THROUGH-
OUT THE MINING
DISTRICTS



MANY BEAUTIFUL
HOMES GRACE THE
HILLSIDES AROUND
THE MINES



MODERN LOCOMOTIVES OF THE MOST POWERFUL AND EFFICIENT TYPE HAUL LONG TRAINS OF CHESAPEAKE AND OHIO COAL TO THE CONSUMER

The Transportation of Coal

ANY story of coal would not be complete without some mention of the extent and functions of the great transportation machine serving this Realm of Stored Energy. Chesapeake and Ohio Railway main lines extend from Tidewater at Newport News, and Washington, D. C., on the East, to Toledo, Cincinnati, Ohio, Louisville, Kentucky, and Chicago, Illinois, on the West. The entire system (including subsidiaries) embraces 3,144 miles. Considering first, second, third and fourth main tracks and sidings, the system operates over 6,138 miles of track.

Locomotives engaged in coal transportation are of the most powerful type, maintained in excellent condition to promote maximum efficiency. The largest type weighs 435 tons, with its tender, and is capable of hauling a train of 160 loaded coal cars at a speed of ten miles an hour on a .2 percent grade. Chesapeake and Ohio also owns 48,278 coal cars of various types, ranging in capacity from 50 to 100 tons; and 15 units of floating equipment for use at the Tidewater terminals. The heaviest type of rail is used on the main line and several of the more

important branches. More than 1,227 miles of track are laid with rail weighing 130 pounds to the yard. About 22,000 employes are daily engaged in maintaining, and improving where possible, the high level of transportation, which has resulted in the tremendous growth of this Road That Service Built.

Only a relatively small number of the mines which Chesapeake and Ohio serves are located on the main trunk lines, the great majority being on main and lateral branches, 5 to 140 miles away from the main line connections, in all embracing 1,000 miles of railroad. Despite this, the various phases of operation are so well co-ordinated that the entire system's coal loading is gathered, classified and moved daily.

To provide uniform service in the movement of these All-Purpose Coals to the numerous markets, Chesapeake and Ohio maintains large concentration yards for classification of loads for movement over the various transportation lanes, the two most important being at Russell, Kentucky, for Westbound, and at Clifton Forge, Virginia, for Eastbound traffic. At the former there is a working capacity for 6,500 cars, and at the latter for 4,000 cars. The prepon-

derance of coal traffic must necessarily pass through one or the other of these principal assembling yards, consequently shippers are permitted to forward loaded cars from the mine tipple to either yard on a memorandum bill, final shipping instructions to be given at the respective yards, where shippers usually maintain a representative for that purpose. The advantage of this method is apparent, as it tends to expedite both the arrival of cars at destination and all accounting details.

and forward 3,500 cars during a 24-hour period; while Clifton Forge handles similarly 1,500 cars. In addition to the two principal classification yards, there are numerous others which perform their useful purposes in the assembling of this immense traffic.

The Tidewater terminus of Chesapeake and Ohio is at Newport News, on Hampton Roads, the greatest harbor in the world. This harbor is always free from ice or other impediments to navigation and



FIFTY TON HOPPER BOTTOM CAR



FIFTY-SEVEN AND ONE-HALF TON HOPPER BOTTOM GONDOLA

Russell and Clifton Forge yards are equipped with the latest type of automatic scales of sufficient capacity to weigh accurately the largest railroad car. These scales are balanced daily and tested at regular intervals. Weighing is supervised by men particularly trained for and expert in the work, which assures absolute accuracy in all weight returns to shipper and receiver.

As an indication of the efficiency of these yards, at Russell it is not at all unusual to receive, weigh

has a tidal range of approximately 2½ feet. Here are located the Railway's modern high and low level loading piers and extensive yard facilities for handling and dumping coal into vessels for Atlantic ports, export to all parts of the world, and for bunkers. Coal-sampling apparatus has been installed for use of such consignees as may desire to sample coal while it is being loaded into a vessel.

The new low level pier, which was put in operation a little over a year ago, was built at a cost of two



SEVENTY TON HOPPER
CAR

and a quarter million dollars. The pier is equipped with a dumper that picks up a loaded car and empties it into a ship's hold through a telescopic chute mechanized to permit flow control at all times, thus preventing breakage of the coal. This method eliminates at least one extra dumping from the procedure in effect at other Hampton Roads piers and avoids a vertical drop of about fifty feet.

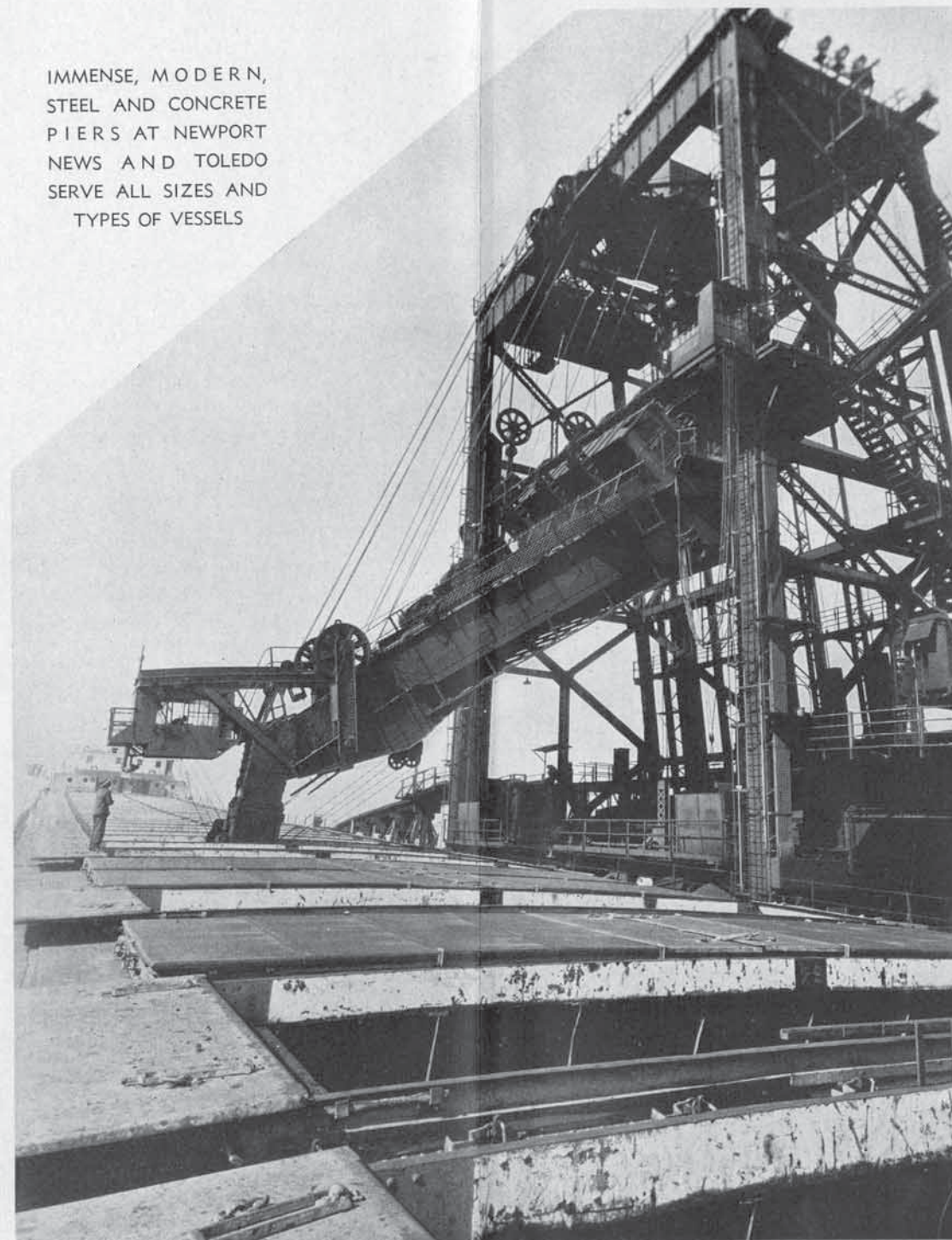
To further give prompt and efficient service in handling coal moving to Toledo for trans-shipment on the Great Lakes, Chesapeake and Ohio con-

structed new coal and ore docks at Presque Isle, on Maumee Bay, at the mouth of the Maumee River. These new facilities were put in operation about two years ago. Splendidly located and completely equipped, these docks assure shippers the fastest available service on the Great Lakes, tugless docking and undocking, and the elimination of a six mile river movement.

With these new facilities, Chesapeake and Ohio offers a coal and ore handling service without parallel on the Great Lakes and Atlantic Seaboard.



MAMMOTH ONE HUN-
DRED TON FLAT
BOTTOM GONDOLA



IMMENSE, MODERN,
STEEL AND CONCRETE
PIERS AT NEWPORT
NEWS AND TOLEDO
SERVE ALL SIZES AND
TYPES OF VESSELS



LOADING A SHIP FROM ONE OF THE PIERS AT NEWPORT NEWS

THE COAL TRAFFIC DEPARTMENT

CHESAPEAKE AND OHIO LINES

TO INCREASE and further popularize the consumption of coals mined on its rails, Chesapeake and Ohio maintains a well organized Coal Traffic Department for the purpose of co-operating with the operators, their sales representatives and consumers of these high-grade, quality, ALL-PURPOSE COALS.

These coal representatives, with offices located at strategic points in the East and West stand ready to serve the public in every possible way. Call on them—they are at your command!

A. M. DUDLEY
General Coal Freight Agent
Richmond, Va.

F. H. CUMMINGS
Assistant General Coal Freight Agent
Cincinnati, Ohio

CHICAGO, ILL.
F. A. Harmon, Coal Traffic Agent

RICHMOND, VA.
J. B. Young, Coal Traffic Agent

DETROIT, MICH.
J. H. Phillips, Coal Traffic Agent

G. G. RITCHIE
Fuel Engineer—Traffic Department
Richmond, Va.

CINCINNATI, OHIO
R. L. Abbuhl, Coal Traffic Agent

CLEVELAND, OHIO
C. L. Rothgeb, Coal Traffic Agent

TOLEDO, OHIO
T. V. Bush, Coal Traffic Agent

Additional information regarding these ALL-PURPOSE COALS may be secured from the Coal Association Secretaries mentioned below:

S. C. HIGGINS, Secretary,
New River Coal Operators Association,
Mount Hope, West Virginia.

P. C. GRANEY, Secretary,
Winding Gulf Coal Operators Association,
Beckley, West Virginia.

D. C. KENNEDY, Secretary,
Kanawha Coal Operators Association,
Charleston, West Virginia.

J. W. COLLEY, Secretary,
Logan Coal Operators Association,
Logan, West Virginia.

IN ADDITION to the Coal Traffic Representatives shown on the preceding page, the following Freight and Traffic Officers will cheerfully and promptly furnish information regarding transportation of any character in connection with or movement via The Chesapeake and Ohio Railway and its affiliated lines.

The management will be pleased to have you make use of their services.

F. M. WHITAKER
Vice-President in Charge of Traffic
Cleveland, Ohio

W. C. HULL
Assistant Vice-President in Charge of Traffic
Cleveland, Ohio

A. P. GILBERT
Freight Traffic Manager
Richmond, Virginia

WILLIAM FITZGERALD
General Freight Agent
Richmond, Virginia

T. H. GURNEY
Passenger Traffic Manager
Richmond, Virginia

GEO. W. WOOD
General Through Freight Agent
Cincinnati, Ohio

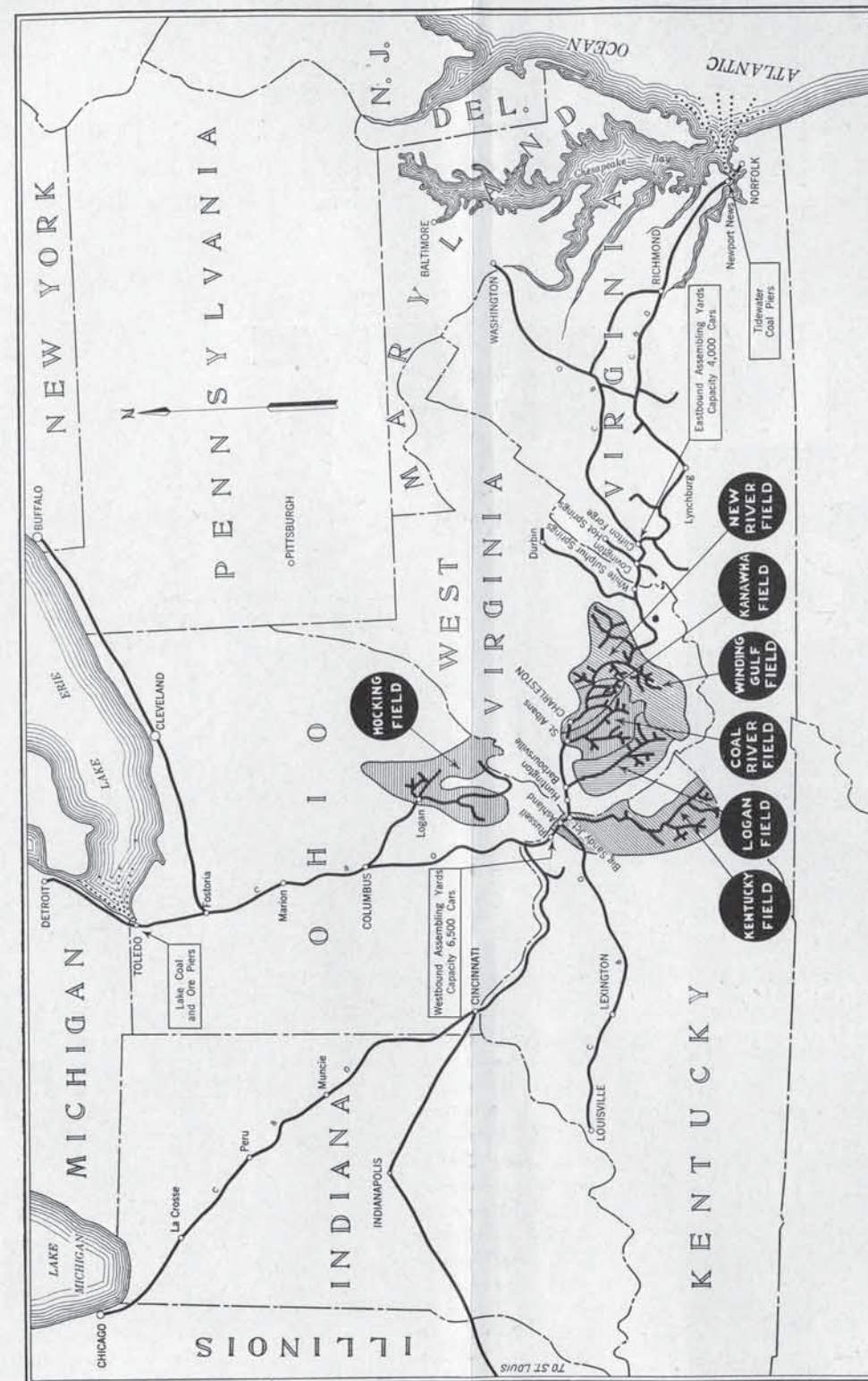


Additional Traffic Representatives are located in the following cities:

Ashland, Kentucky
Atlanta, Georgia
Baltimore, Maryland
Birmingham, Alabama
Boston, Massachusetts
Charleston, West Virginia
Charlotte, North Carolina
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Columbia, S. C.
Columbus, Ohio
Detroit, Michigan
Huntington, West Virginia

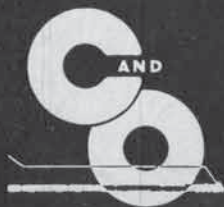
Indianapolis, Indiana
Jacksonville, Florida
Kansas City, Missouri
Lexington, Kentucky
Louisville, Kentucky
Los Angeles, California
Lynchburg, Virginia
Memphis, Tennessee
Milwaukee, Wisconsin
Minneapolis, Minnesota
Muncie, Indiana
Nashville, Tennessee
Newport News, Virginia
New York City, New York

Norfolk, Virginia
Pittsburgh, Pennsylvania
Philadelphia, Pennsylvania
Richmond, Virginia
San Francisco, California
St. Louis, Missouri
Seattle, Washington
Staunton, Virginia
Tampa, Florida
Toledo, Ohio
Washington, D. C.
Wilmington, N. C.
Winston-Salem, N. C.
Toronto, Ontario, Canada



THE COAL FIELDS SERVED BY CHESAPEAKE AND OHIO LINES

GO
EAST
GO
WEST

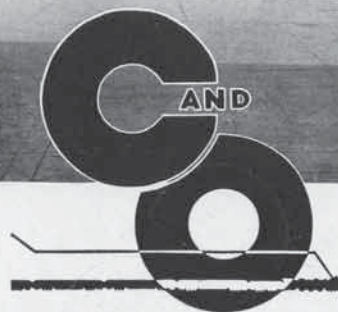
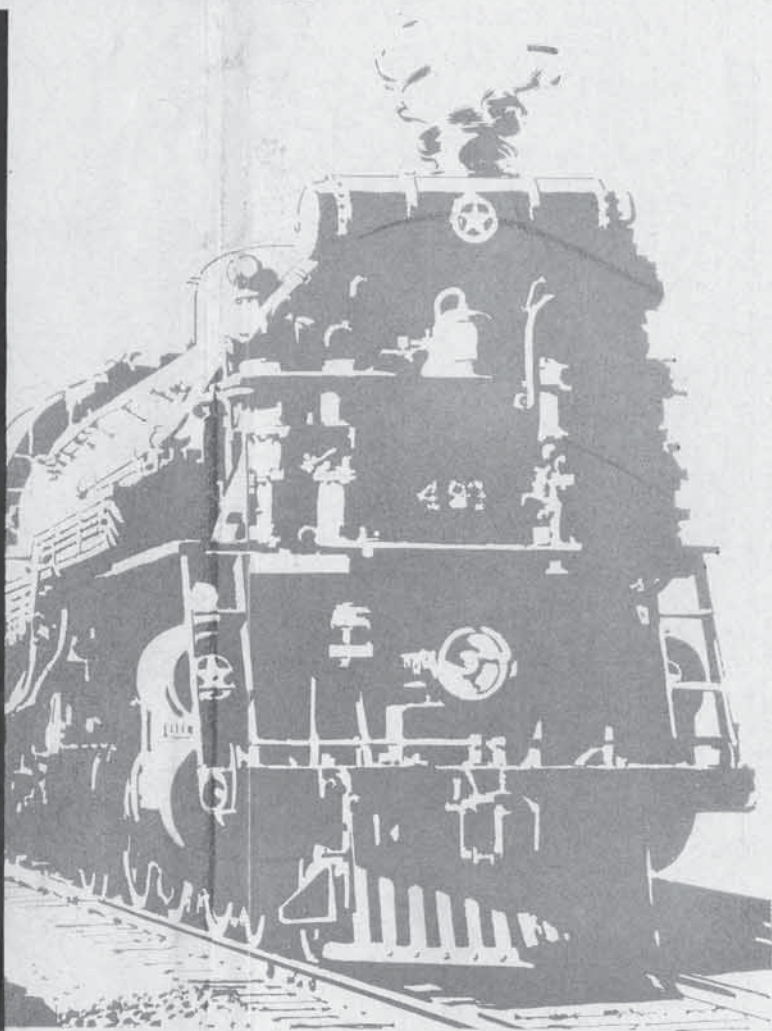


AIR
CONDITIONED
SERVICE

The
GEORGE
WASHINGTON

The
SPORTSMAN

The
F. F. V.



PORTAL TO
WASHINGTON
and Historyland

**GO
EAS
GO
WE**



**AIR
CONDITIONED
SERVICE**

**The
GEORGE
WASHINGTON**

**The
SPORTSMAN**

**The
F. F. V.**



**ALL PURPOSE
COAL**

"Coal Heat Costs Less"



CHESAPEAKE AND OHIO LINES