Columbus and the Coal Country Railroads Part III - The Baltimore & Ohio Railroad¹



The Baltimore & Ohio Railroad operated a single rail line through Columbus, running from Newark through the City via Union Depot, and on southwest via Washington Court House to Cincinnati. The B&O was the first railroad to carry coal into Columbus from Ohio's coal mining counties. However, unlike the other Columbus railroads which all moved millions of tons of coal annually through Columbus on its way to Chicago, Michigan and Great Lakes markets, the B&O primarily just served local coal distributors and consumers in Columbus. With few exceptions, the B&O's heavy-volume coal movements from Eastern Ohio mining counties toward northern and western destinations moved around Columbus to the east via Newark.



Map of the B&O Railroad in the 1950s. At its peak, the B&O operated 6,143 miles of main line, secondary and branch tracks, including 254 miles of trackage rights, of which 1,858 miles was in Ohio.

¹ This summary of coal traffic and interchange on the B&O Railroad in and around Columbus covers only a small portion of the complex and colorful history of the B&O in Central Ohio during the 19th and first half of the 20th Century. For a good summary of this background detail, see *Roots of the Baltimore & Ohio Railroad in Columbus, Ohio*, an unpublished 1952 manuscript by Rowlee Steiner, available on the Columbus Railroads website at: http://www.columbusrailroads.com/new/live/05Steam_Railroads/11Baltimore_&_Ohio/01Roots_of_the_Baltimore_and_Ohio/B&O_by_Rowlee_Steiner.pdf

The B&O was America's first steam railroad actually built, both chronologically and in its corporate ambitions and realized destiny. Chartered in 1827, the B&O was initially designed to keep the Port of Baltimore competitive during the canal era (1815-45). When other eastern port cities' enterprises pursued canal construction to reach inland markets, Baltimore faced the obstacle of hills and grades immediately to its west, making a canal unrealistic. The B&O's objective was to provide a rail link from Baltimore to Cumberland, in western Maryland, to compete with the Chesapeake & Ohio Canal building up the Potomac River from Georgetown in the District of Columbia. Ironically, due to the relative ease of rail construction, the B&O reached Cumberland by 1842, eight years ahead of the C&O Canal. The B&O right-of-way was laid out brilliantly by its Chief Engineer, Benjamin Latrobe II (1806-78), the pre-eminent railroad surveyor of the era.

The B&O did not pause at Cumberland. Its owners envisioned a grander rail system reaching not only the Ohio River at Wheeling (then in Virginia), which it did in 1852, but well beyond. The B&O's affiliate railroads in Ohio reached Cincinnati and the Mississippi River at East St. Louis by 1857, although these lines had three different rail gauges which were not standardized until 1871, and the B&O would not bridge the Ohio until that same year.

The B&O was hit hard by the Civil War, starting with loss of train crew and station employees killed in John Brown's raid on Harpers Ferry in October, 1859. Confederate armies under Generals Stonewall Jackson and Jubal Early, and Morgan's Rangers, destroyed extensive parts of the B&O's and its affiliates' lines in Maryland, Virginia and West Virginia. The B&O resumed its expansion after the war, acquiring and completing lines in Ohio, Indiana and Illinois and finally constructing its Ohio River bridge at Bellaire in 1871.² Building westward from Chicago Junction, Ohio in Huron County (later renamed Willard), the B&O reached Chicago in 1874.



B&O Ohio River Bridge at Bellaire, 1871. https://www.bridgehunter.com/bridge/83116

² The 1871 B&O bridge at Bellaire was a single-track structure utilizing Whipple through truss spans and Bollman deck spans. (See Note 15 below about B&O "Master Builder" Wendell Bollman.) This was replaced by a larger double-track structure in 1905, which is still in place. Most Ohio River rail bridges were designed such that a sturdier span could later be built around the initial structure on the same stone piers without interrupting traffic.

As the first common carrier railroad, with no antecedent on which to model its operation, the B&O pioneered what would become the standard big railroad organizational structure.³ The B&O operated the first steam locomotive in the U.S., and later the first electric locomotives, and issued the first railroad Time-Table. It was the first business to use its own telecommunications network to run its vast operations spread over 950 miles from the East Coast to the Mississippi River. The world's first telegraph transmission, by inventor Samuel Morse in May, 1844 ("What hath God wrought?") was sent from the U.S. Capitol over wires along the B&O right-of-way to its Mount Clare Station in Baltimore. The B&O's telegraph system, itself a major enterprise of the era, was sold to Western Union in 1887 in a deal personally brokered by J.P. Morgan.

The company was among the most innovative in experimenting with new technologies, especially in collaboration with its long-time principal locomotive builders at Baldwin. Although at the center of some of the country's most confrontational labor disputes in the 1870s, the B&O later devoted much attention to employee relations, introducing novel economic, health and safety benefits, including the first testing for color-blindness for train crews and others needing that skill to observe signals. The B&O developed successful strategies for government relations and transparent shareholder financial reporting, subjects which other industrial companies of the mid-and late-19th Century often ignored at their peril.



Like all early U.S. railroads, the Baltimore & Ohio was highly sensitive to New York stock prices, interest rates, construction cost overruns and rail traffic revenue fluctuations, and was also exposed to international financial turmoil. Weakened by the "Panic of 1893," a four-year world-wide depression triggered by reckless English bank investments and a *coup d'etat* in Argentina, the B&O was forced into receivership in 1896. The preeminent Wall Street railroad banker of the era, Otto Hermann Kahn (1867-1934), said to be the inspiration for the white-mustached financier featured on card decks in the "Monopoly" board game,⁴ led the reorganization of the

B&O, although the Pennsylvania Railroad managed to get a controlling minority interest in the B&O as it emerged from receivership in 1899. Perhaps thanks to Kahn, the B&O lives on for all time as one of the four "Railroad" squares on the ever-popular Monopoly board.⁵

"Uncle Dan" Willard

Among many legendary and colorful B&O leaders over the company's 140-year history, Daniel S. Willard (1861-1942) merits great attention. Willard, from a Vermont farm family, was forced to abandon university studies due to poor eyesight. He signed on with the Vermont Central Railroad as a track worker, and later became a fireman and engineer on a Boston & Albany predecessor line (notwithstanding his vision issues), then moved up to management. Willard

³ Exploring the Contents of the Baltimore and Ohio Railroad Annual Reports, 1827-56, https://egrove.olemiss.edu/cgi/viewcontent.cgi?article=1555&context=aah journal

⁴ The game's illustrator, Daniel Fox, who created the character in 1936, later said his inspiration was J.P. Morgan, not Kahn. <u>https://en.wikipedia.org/wiki/Otto Hermann Kahn</u>

⁵ The B&O did not serve Atlantic City, NJ, which is featured on the Monopoly gameboard, but it owned the Central of New Jersey, which did. <u>https://www.thesprucecrafts.com/monopoly-railroads-2382515</u>

was hired by the Soo Line as a Division Superintendent, then came to the B&O in 1899. In 1901 Willard moved to the Erie Railroad, then was Operating Vice President of the Chicago, Burlington & Quincy from 1904-10. He returned to the B&O as its 14th President, serving from 1910 until shortly before his death in 1942.

Willard kept the B&O competitive with its larger PRR and NYC rivals, adding more powerful



and efficient locomotives, upgrading track, bridges and shops, re-engineering the line over its Allegheny summit at Sand Patch, PA. "Uncle Dan" developed what many consider the most productive and loyal corps of employees in the industry, providing better working conditions, income and benefits, motivated by a relentless top-to-bottom focus on excellent customer service. He served on government industrial oversight committees in World War I, receiving the President's Distinguished Service Medal in 1920, became Chairman of the Trustees of Johns Hopkins University in Baltimore, and appeared on the cover of *Time* magazine in January, 1932. Willard guided the B&O through the perils of the Depression, when the company's stock share price plunged from \$452 to \$4 and the B&O could not pay a dividend for more than a decade.

He strengthened the company with strategic acquisitions including regional lines in West Virginia and Pennsylvania that originated over 60 percent of the B&O's coal business.

In 1917, Chicago Junction, Ohio, location of the B&O's major midwestern rail connections, yards and shops, renamed itself "Willard" to honor "Uncle Dan."

Almost from its birth, the B&O was a coal hauler. Upon the B&O's arrival at the Ohio River, it had access to on-line coal in West Virginia as well as river barge coal movements, which included coal coming across from its future extension lines in Ohio. By 1857, when the B&O was operating 380 miles of railroad (Baltimore to Wheeling, known as the "Main Stem"), with 233 locomotives and 1,295 "coal cars," its ton-miles of coal movements exceeded 50 percent of the company's total traffic. Coal loadings grew from 5,000 tons in 1843 to 132,000 tons in 1850, to over 500,000 tons by 1857, which included 61,000 tons used as locomotive fuel. The B&O was an early developer of locomotives designed for burning coal, replacing far less efficient firewood.⁶ The B&O's coal tonnage declined during the Civil War disruption, but robust growth resumed after 1865.⁷

By 1885, the B&O was operating 1,663 miles of track, 666 locomotives and 21,408 "freight cars." In this era before the advent of the self-clearing hopper car designs enabling mass transport of mineral cargoes, the B&O's annual coal volume had grown to 6.4 million tons. Its annual report for that year notes that its "Main Stem" lines (by then 786 miles including connecting branches) handled 3.5 million tons of coal, including 443,000 tons representing the company's own

⁶ Annual Report of the President and Directors to the Stockholder of the B&O Railroad, 1857: <u>https://www.google.com/books/edition/Annual_Report/6lUaAQAAIAAJ?hl=en&gbpv=1</u>

⁷ Cumberland Coal Trade - rail and canal coal traffic, 1842-65: <u>https://en.wikipedia.org/wiki/Baltimore_and_Ohio_Railroad#/media/File:Cumberland_coal_trade.jpg</u>

locomotive fuel, of which 2.3 million moved east to Baltimore and 750,000 moved westward. Separately, the B&O "Trans-Ohio Divisions," 568 miles of railroad including Bellaire to Columbus, Shawnee, Sandusky and Chicago, loaded 909,000 tons. The 1885 report boasts that the B&O's Columbus & Cincinnati Midland Road, just recently opened, enabled the company to transport coal, coke and other cargoes from the Pittsburgh area via Columbus toward Cincinnati and points west and south-west thereof, but makes no mention of any potential coal traffic moving up from Cincinnati toward Columbus on this new line.⁸

The company's 1905 annual report shows that the B&O system had grown to 4,025 miles, was operating 1,798 locomotives and 80,338 freight cars, and had nearly quadrupled its traffic to 20.1M tons of bituminous coal, 1.1M tons of anthracite and 3.8M tons of coke.⁹ By 1915, the B&O covered 4,478 miles, and was operating 2,365 locomotives and 25,000 hopper cars, carrying 33M tons of coal annually, some 40 percent of its overall traffic.¹⁰ In 1926, a year for which detailed information about the B&O's hopper cars has been compiled, the company had 37,343 self-clearing hoppers and a total of 58,083 "coal and coke cars" (including both hoppers and gondolas) in service, and carried over 56M tons of coal and coke. The B&O added more branch lines from the 1920s through the World War II era, growing to 6,143 miles of main track by 1943. Its annual coal movements fell as low as 28M tons during the Depression, but surged back over 50 million tons during World War II and the post-war boom years.¹¹

At its apex, the B&O's operations covered 13 states, and its fleet of engines, hoppers and infrastructure for moving coal was surpassed statistically only by the considerably larger Pennsylvania and New York Central Systems, which were moving more than 75M tons each annually. The B&O's annual wartime tonnages also were slightly less than those of the heavily coal-centric Chesapeake & Ohio and Norfolk & Western (each around 60M tons annually). The latter lines had the advantage of crossing through the rich late-developing Pocahontas and Flat Top coalfields in western Virginia and Southern West Virginia, where each of three individual counties could annually produce nearly as much coal as the entire State of Ohio in peak years.

At its best, the B&O was always impressive and often dramatic. The most remarkable photos of B&O freight operations in the steam era have always been muscular "Big Six" 2-10-2s and pairs of workhorse EL-class 2-8-8-0 helpers pounding coal tonnage over the road's Allegheny summits at Sand Patch, Pennsylvania, and the Cranberry Grade in West Virginia, and photogenic hook ups of three "Yellowstone" EM-1 class 2-8-8-4s clawing their way up Swine Creek Hill¹² on the B&O

⁸ Fifty-Ninth Annual Report of the President and Directors to the Stockholders, 1885: <u>https://www.google.com/books/edition/Annual_Report/Zi4oAAAAYAAJ?hl=en&gbpv=1</u>

⁹ Seventy-Ninth Annual Report of the President and Directors to the Stockholders, 1905:

https://archive.org/details/baltimoreandohiorailroadannualreports/baltimoreandohio1905/page/n3/mode/2up?view=t heater

¹⁰ Ninety-First Annual Report of the President and Directors to the Stockholders of the Baltimore & Ohio Railroad, 1915: <u>https://babel.hathitrust.org/cgi/pt?id=osu.32435064249998&view=1up&seq=3&skin=2021</u>

¹¹ The Baltimore & Ohio Railroad Company, Annual Report, 1942,

https://umedia.lib.umn.edu/item/p16022coll284:7679/p16022coll284:7677?child_index=19&query=&sidebar_page =7_

 $[\]overline{^{12}}$ For details and photos of this operation, see:

https://www.trumbullcountyhistory.com/baltimore-ohio-railroad-lake-branch/

Lake Branch in Northeast Ohio toward Fairport Dock. However the story of historical B&O coal haulage in and around Columbus is far different, more complex and obscure.



B&O Class EM-1 2-8-8-4 Triple-Header, Trumbull County, Ohio, 1956.

The B&O in Central Ohio

The B&O constructed and assembled two main lines west from Cumberland. The first was built in the 1850s to Wheeling and on across Southern Ohio through Marietta, Athens, Chillicothe and Cincinnati and on toward St. Louis, later known as the B&O Southwestern. The other B&O main line, opened three decades later, ran northwest through Pittsburgh across Northern Ohio and Indiana to Chicago.

Before tackling its northern line, the B&O established a second line across Ohio in 1853-4, through Bellaire, Zanesville and Newark to Columbus. In 1885, the company extended this line southwest from Columbus through Washington Courthouse to Midland City in Clinton County, where it merged into the B&O Southwestern main line to Cincinnati. The B&O also acquired connecting lines in eastern Ohio running north and south from Newark, and south from Zanesville. The 33mile multiple-track B&O line between Columbus and Newark, shared with the Pennsylvania Railroad's Panhandle line, became the C&N Division. The B&O's Newark Division, virtually all single track lines, included the 103-mile Bellaire-Newark track, known as the Central Ohio Subdivision, the 71-mile Columbus-Midland City line, known as the Midland Subdivision, the 44mile Shawnee Subdivision south from Newark into the heart of Ohio coal country, best known as the Rock Run Branch, the 116-mile Lake Erie Subdivision running north from Newark through Mansfield to the Sandusky Coal Docks, the Eastern Ohio Subdivision running 16 miles southwest from Lore City, and the Ohio & Little Kanawha Subdivision running 84 miles southeast from Zanesville to a junction with the B&O Southwestern at Belpre on the Ohio River opposite Parkersburg, West Virginia.

The B&O Central Ohio lines were the platform the B&O originally used to reach Chicago. The B&O built and acquired track westward from Chicago Junction, Ohio (renamed Willard in 1917) on the Lake Erie Subdivision, reaching Chicago by 1874. From that time until completing its

northern main line from Cumberland through Pittsburgh and Akron to Willard in 1893, the B&O's trains between the East Coast and Chicago ran over the Central Ohio lines between Bellaire and Willard via Newark. While today we think of the B&O Central Ohio lines as having been minor regional branches, B&O timetables and Official Railway Guide entries for those two decades showed Zanesville, Newark, Mt. Vernon and Mansfield as stations on the B&O main line from New York to Chicago, carrying the mighty B&O's hottest passenger trains. Only after the Akron Division took over the Chicago traffic did the Newark Division lines become "secondary."

The focal point of these Central Ohio operations, especially for coal haulage, was at Newark, rather than Columbus. The B&O operated a long 12-track yard and several smaller yards, a heavy car shop and 25-stall roundhouse in Newark, which serviced road engines running through Columbus. The B&O maintained a two-stall engine facility and turntable near Columbus Union Depot which was only used to service a pair of local and transfer service E-27 2-8-0s assigned to Columbus duties plus a Q-4 2-8-2 used as a helper between Columbus and Summit Station, at the top of the grade to the east. The B&O's only yard facility in Columbus was its diminutive 4th Street Yard. In the late 1950s the B&O added a new freight yard near Port Columbus. But the B&O remained by far the Columbus railroad with the most modest facilities and lowest coal haulage profile.



B&O System Map, c. 1876, showing the Central Ohio Bellaire-Newark line and Newark-Sandusky line as segments of the B&O's first through route to Chicago. http://www.columbusrailroads.com/new/pdf/b&o%201876%20map%20library%20of%20congress%202000.pdf



Map of the B&O Newark Division, showing B&O lines to Sandusky, Bellaire, Parkersburg, Shawnee and Midland City, c. 1952.

http://www.columbusrailroads.com/new/images/photos-steamroad/b&o%20map-1500.jpg

The B&O's various Ohio subdivisions had well over 100 on-line mines, and carried substantial coal from Southeast and Eastern Ohio toward Newark. But the prevailing coal routing from there was north to Lake Erie, not toward Columbus. The B&O did not regularly carry substantial overhead coal traffic north from Cincinnati through Columbus, but moved a good volume of local Central Ohio coal traffic in both directions over its Midland City route up through World War II.

Generally if you saw a coal hopper elsewhere in Ohio the odds might be more likely it would be a B&O car than that of any other railroad. But that was not the case in Columbus. Nevertheless, as detailed below, at least some B&O through coal movements occasionally did move through Columbus and interchanged with other railroads in the City, especially the Pennsylvania.

Columbus and Newark Division (C&N).



Between Columbus and Newark, the B&O shared 33 miles of railroad with the PRR Panhandle line. This double-track route, with three and even four main tracks over part of its right-of-way, was at times Ohio's heaviest traffic railroad, with reportedly up to 89

trains daily at its peak. Its distinctive features included being dead straight for many miles between Blacklick and Outville, with a continuous but undulating long uphill grade of slightly less than 1.0 percent between East Columbus (C&N Milepost 28.3) and Summit (MP 18.9). Railroaders noted that the headlight of a train coming up this bee-line stretch would disappear and reappear three times before reaching Summit. The C&N was laid with hefty 130 and 140-lb. rail on meticulously maintained crushed stone and slag ballast, all to the PRR's most exacting main line standards.

This line was originally built as part of the Central Ohio Railroad, a very big undertaking for its time. Commencing in 1847, and intending to be a westward connection for the B&O which was building toward Wheeling on the opposite shore of the Ohio River, the Central Ohio route ran from Bellaire through Cambridge, Zanesville, Newark and on to Columbus. The Newark-Columbus section entered service in January 1853, being the third railroad to reach the City after the PRR predecessor Columbus & Xenia in 1850 and Big Four predecessor CC&C in 1851. The full through route from Columbus to Bellaire was completed in 1854.

In spite of having such advantageous eastern connections, the Central Ohio suffered from the typical shortcomings of early U.S. railroads caused by inadequate capitalization, including poor rolling stock, unballasted lightly-built track that led to derailments, insufficient passing tracks and yard capacity. It went into receivership in 1857. The B&O acquired an interest in the company, supported it through the Civil War and leased the line in 1866, upgrading its facilities substantially. Completion of the B&O Ohio River bridge at Bellaire in 1871 brought increased traffic and assured economic health for the Central Ohio. In 1857, the PRR Panhandle predecessor Steubenville & Indiana Railroad obtained trackage rights over the line from Newark into Columbus,¹³ leading to the B&O-PRR shared use of the C&N that continued into the modern railroad era.

While Panhandle trains moved a considerable volume of coal from the PRR's on-line mines in Eastern Ohio westward over the C&N toward interchanges in Columbus, the B&O's regular trains into Columbus did not appear to include coal drags or large cuts of loaded hoppers in their manifest trains. Most coal moving to Newark from the B&O Newark Division lines flowed north on its Lake Erie Subdivision line toward the Sandusky Docks or Chicago.

Nevertheless, B&O local trains on the C&N served substantial coal-consuming customers. These included in-town industries such as the Ralston Steel Car plant and its manufacturing neighbors in the Rarig's neighborhood near East Columbus. Reportedly the 48-acre Jeffrey Manufacturing complex on the north side of Columbus used coal delivered by the B&O Rock Run Branch and C&N from a Perry County mine owned by Joseph Jeffery. Other industries like Claycraft Brick and Tile at Taylor Station were likely significant coal consumers. Local home heating and commercial coal dealers also took daily deliveries off team tracks and coal tracks along the C&N through the first part of the 20th Century before gas and electric utilities reached consumers.

A prominent coal-fired facility served by the B&O on this line was the big two-stack utilities plant that served the sprawling Columbus Quartermaster Reserve Depot in Whitehall. The depot was built in 1918 to the south of the C&N right of way between James Road in East Columbus and Hamilton Road. It eventually covered 576 acres, employing 10,000 workers, and housed Axis prisoners during World War II. Popularly known as the "Army Depot," this rail-centric site was chosen because of its ready access to the adjacent B&O, Panhandle, New York Central's Toledo & Ohio Central (T&OC) and nearby Norfolk & Western lines. The depot featured more than 15

¹³ The Steubenville & Indiana acquired a 50 percent ownership interest in the Newark-Columbus track in 1864.

miles of track, including the right of way of the T&OC's East Columbus Branch.¹⁴ As late as 1959, the Army appropriated \$2.8 million to install this steam plant to replace outmoded decentralized facilities.¹⁵ The B&O backed cuts of hoppers into the depot using a long switching lead that ran from East Columbus to the west throat of the depot yard. The depot's own small switching engine and crews spotted the cars at the power plant.

The Newark Division



The B&O at Newark, Ohio. (L) The B&O yard, shops and engine house just east of Lake Erie Crossing in Newark. <u>https://www.theclio.com/entry/102650</u>; (R) Lake Erie Crossing and Newark Depot, circa 1900, looking west, with the Central Ohio line to Zanesville and Bellaire behind the camera, the PRR Panhandle crossing, and Lake Erie line to Sandusky in the upper right.

The B&O's Newark Division included as its six subdivisions the original Central Ohio line between Newark and Bellaire, as well as the Lake Erie line north from Newark to Sandusky, Rock Run Branch from Newark south to Shawnee, the oddly-named Ohio & Little Kanawha subdivision that ran from Zanesville southeast to Parkersburg, West Virginia, the Eastern Ohio Subdivision from Lore City to Cumberland, Ohio and the Midland line from Columbus southwest to Cincinnati. The focal point of all these operations was at Newark.

Central Ohio Subdivision - Bellaire to Newark.

The B&O's Ohio Central route had substantial on-line coal mines in Muskingum, Guernsey and Belmont Counties, and served Barnesville, Cambridge and Zanesville, which emerged early as major coal shipment rail hubs. Before the railroad arrived, Zanesville was already shipping coal via the Ohio Canal and Muskingum River Improvements, which reached there in 1841. To reach these locations, the Central Ohio encountered daunting engineering obstacles, including a major rock cut at the Black Hand Gorge near Toboso, a challenging tunnel at Cambridge and numerous bridges including a 528-ft. double-track "Bollman

¹⁴ See diagram of the Army Depot rail layout and power plant and description at Columbus Railroads: <u>http://www.columbusrailroads.com/new/?menu=06Industry&submenu=01Army_Depot&submenu4=16Railroad_Structures</u>

¹⁵ Report, Hearings before the Subcommittee on Military Construction, Senate Committee on Armed Services, 86th Congress, First Session, on S. 1086 and H.R. 5674, March 10 - April 29, 1959, p. 257.

Through Truss" Muskingum River span at Zanesville.¹⁶ The full 103-mile connection was in service from Bellaire to Newark by 1854.

East of Newark, the Bellaire line was single track. Although operated as a secondary route after the B&O moved Chicago traffic over to the Akron and Wheeling Divisions in 1893, the B&O continued to run eight passenger trains daily and had many substantial shippers on the line. The company eventually re-laid this line with 120 and 130-lb. rail and more substantial ballast in places. The Bellaire line had several long and fairly steep (up to 1.75 percent) grades, many sharp curves, bridges and tunnels through rough country, with a long grade bringing the track up nearly 600 feet from the Ohio River to Barnesville. The grade between Eldon and Barnesville was helper territory for eastbound coal.

This line was among the first to reach Zanesville, which became a vibrant industrial and mining center by the mid-1800s. Zanesville was also soon reached by the PRR's Cincinnati & Muskingum Valley Railroad, PRR's Cleveland, Akron & Columbus Railroad (with trackage rights via its Dresden Branch), the Wheeling & Lake Erie (later part of the Nickel Plate and then N&W), and the Columbus, Shawnee & Hocking (later the NYC's Zanesville & Western), plus some more obscure roads like the Bellaire, Zanesville & Cincinnati. It was served by a local "belt" switching line, the Zanesville Terminal Railroad (jointly owned by the CA&C and Z&W), and had one of the more complex rail layouts in Ohio.

Zanesville was the hub for an enormous flow of coal. Related manufacturing and supply industries serving the mining industry sprung up in the city. The B&O had good coal traffic available there from Muskingum County mines and dozens more to the east. Additionally, several tributary lines, including one that later became the B&O's Ohio & Little Kanawha branch to Parkersburg, and other short tracks from and an industrial spur at Fair Oaks, fed a daily stream of coal hoppers into Zanesville.¹⁷ From there, coal flowed north and west to various markets via B&O's trains to Newark and Columbus, as well as to Lake Erie ports. The narrow gauge (3'6") Bellaire, Zanesville & Cincinnati Railroad, in service from 1879 until 1931, also brought coal to Zanesville from numerous on-line mines in Muskingum, Noble, Monroe and Belmont Counties. BZ&C equipment could not interchange onto other railroads so there is no evidence any of this traffic might have moved west toward Columbus.

The B&O also operated a 6.5-mile branch built in the 1870s from Neffs (Cent. Oh. MP 99.5) to St. Clairsville, north of Bellaire. However, coal from several really big producer mines on this track appears to have interchanged onto the nearby Wheeling & Lake Erie or flowed east to Bellaire, and then north to the B&O's eastern Lake Erie gateway at Holloway.

¹⁶ The Bollman Truss was eponymously named for the B&O's "Master Builder," self-taught civil engineer Wendell Bollman (1814-1884). Bollman started as a carpenter with the B&O at age 13. He later founded his own engineering firm. His improved safety and durability truss designs were used across the U.S. and around the world. Some of his bridges still stand in places such as New Zealand. <u>https://en.wikipedia.org/wiki/Wendel_Bollman</u>

¹⁷ The 1914 Ohio Industrial Commission, Division of Mines report indicated there were more than a dozen active coal mines on the B&O in Belmont County, another 9 substantial mines and numerous smaller operations in Guernsey County, and additional producing mines on the B&O in Muskingum County on the B&O's O&LK line. <u>https://www.google.com/books/edition/Annual_Mine_Report/MvLNAAAAMAAJ?hl=en&gbpv=1&dq=Fortieth+A nnual+Mine+Report+Industrial+Commission+of+Ohio,+Division+of+Mines&pg=PA1&printsec=frontcover</u>

Eastern Ohio Subdivision

Built in 1873 running southwest from Lore City (Central Ohio MP 60.1) into the Belle Valley, the B&O's Eastern Ohio Subdivision was a substantial coal producer for almost 100 years. This branch ran through Senecaville and Buffalo, crossed the PRR's Cleveland & Marietta line at Pleasant City (E.O. MP 9.4) and on through Blue Bell, where there was a locomotive water station, to Cumberland (E.O. MP 16.7). At Cumberland there was a turning wye and coaling station, a coal loading tipple and three spurs reaching beyond to a number of large coal mines. There were station buildings at Senecaville, Buffalo and Cumberland, with a B&O operator office at Senecaville. The 1914 Ohio Industrial Commission report listed 11 Guernsey County mines in operation on this line. The B&O ran dedicated "Lore City Turn" trains from Newark to pick up loads and drop off empty hoppers for mines on the Eastern Ohio, and also operated a combination passenger, express freight and mail train on this track. This was a remarkably busy little branch.

In the late 1960s, the B&O extended the Eastern Ohio track for several miles over the former route of the narrow-gauge Bellaire, Zanesville & Cincinnati Railroad to deliver equipment for construction of the monstrous American Electric Power "Big Muskie" dragline excavator, ¹⁸ which worked the Central Ohio Coal strip mine near Beverly west of Cumberland from 1969-91. The 18M tons of brown coal produced at this site rode out on a Muskingum Electric proprietary railroad using unmanned remote-control electric locomotives, rather than in B&O hoppers.

The B&O filed with the Interstate Commerce Commission for abandonment of the line beyond Blue Bell in 1942, but mines there remained active up until the 1950s, and the track to Cumberland was still in the B&O Timetable into the 1960s and in Chessie System Ohio Division Timetables into the 1980s. In 1966 the B&O abandoned the track between Lore City and the C&M crossing, while continuing to access the orphaned track between Pleasant City and Cumberland via the PRR from Cambridge. The C&O was still switching on the Eastern Ohio line up into the late 1980s.

Shawnee Subdivision - the Rock Run Branch

NEWARK STRATESTICE The Newark, Somerset & Straitsville Railroad (NS&S) was chartered in 1867, and purchased the stalled works of a predecessor line, the Scioto & Hocking Valley, between Newark and Junction City (originally called Wolf Station). The NS&S constructed 44 miles of single track line between Newark and Shawnee by 1872, originally with 54 and 62-lb. iron rail, later upgraded but only to 90 and 100-lb. rail. The route began at the west end of the outermost track of a small yard on the C&N west of Lake Erie Crossing in Newark, proceeding south, skirting the east shore of Buckeye Lake, through Thornport, crossing the Columbus, Shawnee & Hocking (later the Zanesville & Western) at Walser, south through Somerset, crossing the Columbus & Muskingum Valley line (later Pennsylvania Railroad, also used by the T&OC) at Junction City, and then southeast to Shawnee. The steepest northbound grade was an intimidating 1.94 percent, with several others over 1.6 percent. The route included

¹⁸ This 12,400-ton, 222-ft. tall shovel, with a 300-ft. boom and 220-cubic yard bucket, was the largest single scoop excavator ever built. <u>https://en.wikipedia.org/wiki/Big_Muskie</u> Big Muskie's 230-ton bucket is now on display at Miners' Memorial Park at Bristol, OH, and the area the machine excavated is now "The Wilds" safari park.

the 1,100-foot Bristol tunnel south of Junction City and a rock cut near Somerset so tight that passing trains in winter reportedly would knock snow and ice loose from the walls.

Just after completion, the NS&S was leased to the Sandusky, Mansfield and Newark Railroad, with an arrangement for the B&O to equip and operate the combined enterprise. The B&O would operate this line for the remainder of its 99-year existence. In 1900, B&O affiliate the Ohio Midland Railroad purchased the NS&S, and in turn the Ohio Midland was purchased by the B&O in 1915. The former NS&S eventually became known as the Straitsville Division and later the Shawnee Subdivision or Rock Run Branch in B&O timetables.

The NS&S built six short spurs out from Shawnee to coal mines in the immediate area. The line had an interchange track at Shawnee with the T&OC affiliate Zanesville & Western, and onto the Toledo & Ohio Central and Kanawha & Michigan via the T&OC Buckingham Branch running from Drakes to Glouster. The NS&S also built an 2.8-mile branch track in the mid-1880s from Shawnee to what was called the Jobs Mines.¹⁹

It is a matter of some debate whether the NS&S ever reached New Straitsville, which is separated from Shawnee by a high ridge. A detailed 1898 Perry County rail map shows a Hocking Valley Railroad track connection between McCuneville, on the NS&S just north of Shawnee, over to New Straitsville. Ohio rail maps from 1894 onward, available on the "Steam Railroads Maps & More" page of Columbus Railroads, show that McCuneville-Straitsville track but indicate it was part of the B&O. The McCuneville-Straitsville track is aso identified as a B&O "spur" in the railroad's 1971 abandonment application. Railroad fans scouting this area on foot several decades ago reported finding this right-of-way. Thus evidence for existence of this NS&S New Straitsville connection seems fairly convincing.



Shawnee, c. 1909, Little Cities Archive

The NS&S southern terminal at Shawnee was deep in coal country, and coal was its principal "earner" commodity from the start. In its first year, 1873, the NS&S reported carrying 115,800 tons of coal to Newark; nearly all this coal originated in Shawnee and most was bound for Great Lakes ports. As shown in an 1882 annual report, the company's 266 employees and 13 locomotives

¹⁹ <u>https://www.abandonedrails.com/rock-run-branch</u>

(only three fitted with train brakes; brakemen must have been athletic on the above-mentioned 1.94 percent grade) hauled 181,000 tons of coal, 73 percent of its freight by weight. The line also was converting from wood to coal fuel, using over 10,788 tons of coal and only 183 cords of wood annually by 1882.²⁰ The 1914 Ohio Industrial Commission coal mining report mentioned above shows over a dozen active coal mines on the Rock Run Branch. Perry County's coal production peaked at 3.7 million tons in 1920, followed by several other 3-million ton years just after World War II, but dwindled thereafter to a fraction of that by the 1970s.²¹ The NS&S also carried substantial clay, tile and brick traffic from trackside kilns ranging from Shawnee up to Junction City.²²

"The usual rate of charge for coal over Ohio roads is one and a quarter cents per mile, per ton, so that the carriage to [Sandusky, Cincinnati, Cleveland and Toledo, each about 160 miles from the Hocking Valley mines] will not vary much from \$2.00 per ton. Adding to this \$0.90, the average estimated cost of mining the coal of the great vein, including expenses at the coal bank, this coal will then cost, when delivered at the principal points of consumption and of the shipment in Ohio, about \$3.00 per ton."

T. Sterry Hunt, Hocking Valley Coafield, published 1874, Salem, Mass.



B&O Mine No. 3, Perry County

Rock Run coal was all carried to Newark. From there it could be dispatched on up the B&O Lake Erie Subdivsion line toward Sandusky or the B&O northern main line. The B&O had its own mines on the Rock Run branch, which supplied its fueling stations at Newark and Willard. Rock Run coal could also move westward toward Columbus, as did Jeffrey Manufacturing's proprietary

²⁰ Annual Report of the Ohio Commissioner of Railroads and Telegraphs, 1882 https://columbusrailroads.com/new/pdf/1882%20nsands%20report.pdf

²¹ James L. Murphy, An Archaeological Study of the Rock Run Reclamation Area, Coal Township, Perry County, Ohio, Grovetucky Press, 2011.

²² Ludowici Roof Tile, founded in 1888 and based in New Lexington, appeared to be the major kiln operator on this line in the 1960s. Ludowici remains in business today, with nationwide distribution. <u>https://www.ludowici.com</u>

shipments, but the available evidence suggests most of this volume moved north until the Shawnee mines eventially played out in the 1950s.

Lake Erie Subdivision - Sandusky Branch

ongoing mutually-destructive "Gauge War" with Pennsylvania.

SM&N

This 116-mile B&O branch was the former Sandusky, Mansfield and Newark Railroad (SM&N). Its meandering track ran north from Newark through Mt. Vernon, Mansfield and Shelby, crossing the B&O's Chicago main line at Willard, connecting at its northern terminus with the coal docks in Sandusky shared by the B&O, PRR and NYC. Work on the SM&N began in 1846, and construction was completed by 1856. The SM&N track was originally 4 feet 10 inch gauge, then known as the "Ohio Gauge," supported by Ohio political interests in an

The SM&N was leased to the Central Ohio Railroad almost immediately following its completion, with the lease guaranteed by the B&O. The B&O then acquired the line in 1869, and reset the gauge to standard 4 feet 8.5 inches. The B&O later upgraded the line with new rail, varying from 100-lb. to 130-lb. with the majority of its mileage being 115-lb. Its grades were relatively gentle, with no sections over 1.0 percent.

As noted previously, from 1874 until 1893 the B&O lines from Bellaire to Newark and Newark to Willard were part of the B&O main line route from the East Coast to Chicago, carrying the elite passenger trains in the B&O's timetables. The B&O's ultimate northern route from Cumberland, Maryland through Pittsburgh and Akron to Willard was completed in 1893, after which the Lake Erie Subdivision and other Central Ohio lines were relegated to secondary status, but were still carrying numerous daily passenger trains and first-class express and freight services.

The Sandusky Coal Docks at the northern terminus of the SM&N were among the early premier transloading facilities on Lake Erie, with three piers and a high capacity steam-powered car dumper in operation by 1898.²³ Sandusky also had facilities for handling other rail-transported bulk commodities such as ore, stone and grain. The B&O had other sizable industrial shippers there, including a big Hinde & Dauch paper mill (later acquired by Westvaco).

The B&O also had excellent connections to four other Lake Erie coal docks (Toledo, Lorain, Cleveland and Fairport) using its northern main line to Chicago (denominated the Akron Division east of Willard and the Chicago Division west of Willard), a series of feeder branches running north from that main line toward Lakes ports, and the B&O Toledo Division running from Cincinnati via Dayton to Toledo. By the 1950s, the B&O was moving much of its Eastern Ohio coal north and west over its Wheeling Division to Warwick, onto its Akron Division, and then west to Chicago or over the Cleveland Division's former Cleveland, Lorain & Wheeling (CL&W) routes to Lorain or Cleveland. The B&O scheduled 130-car coal drags over these routes from its main coal traffic consolidation point at Holloway, in northwestern Belmont County.

The B&O could also utilize its bigger engines, including T-3 and T-4 4-8-2 mountain types and S-1 "Big Six" 2-10-2s on those routes (some of these being on the roster at its Willard roundhouse),

²³ For a detailed history of the Sandusky coal docks, see: http://sanduskyhistory.blogspot.com/2018/12/a-history-of-coal-docks.html

while the Big Sixes were only permitted on the Lake Erie Subdivision north of Mansfield. The B&O's Lakes transload focal point gradually shifted from Sandusky to more modern facilities the company and its affiliates had built in Toledo and Lorain.

B&O coal traffic on the Lake Erie Subdivision all but ceased by 1960. There are reports of B&O successor C&O moving N&W interchange coal north on the Lake Erie Subdivision in the early 1970s. This was halted following a derailment at St. Louisville (MP 8.5 just north of Newark), apparently due to inadequacy of the Subdivision's 100-lb. rail. The C&O abandoned much of Lake Erie Subdivision in 1975-6.

Ohio & Little Kanawha Subdivision



This oddly-named B&O branch is obscure and far from Columbus, but was in its day a significant B&O Central Ohio coal feeder line, worth mentioning here. O&LK photographs from the steam era are also the most picturesque of B&O historical images,

which may rescue this increasingly tedious article.

The O&LK ran 84 miles southeast from Zanesville along the west shore of the Muskingum River through Malta, just opposite McConnelsville, on to Marietta and down the north bank of the Ohio River to Belpre, opposite Parkersburg, West Virginia, where the B&O Southwestern line to Cincinnati and St. Louis crossed into Ohio. This route was a key link of the early Ohio canal network, which included the "Muskingum River Improvements," a series of eleven locks and dams built in 1836-41 between Marietta and the Ohio & Erie Canal at Dresden to make the river navigable for canal boats, at least most of the time. The O&LK railroad featured mostly 100-lb. and even smaller rail, with multiple short grades over one percent, some as steep as 1.68 percent. The significant grades are surprising as this track hugs the shores of the Muskingum and the Ohio Rivers for its entire distance. Substantial heavy industries developed along the Ohio between Marietta and Belpre, which became known as the "Ruhr Valley of Ohio." The B&O upgraded the right-of-way and laid heavier rail on this track in the 1950s.



Roxbury on the O&LK Subdivision, c. 1900, West2K Ohio Station Database.

In its prime years, the O&LK offered three daily four-hour run passenger trains between Parkersburg and Zanesville in both directions, but discontinued passenger service in 1931. President Franklin Roosevelt entered Marietta over this line in 1936 in his private rail car, the "Marco Polo" pulled by one of the B&O's earliest diesels.

Historical records for the O&LK line are sparse and inconsistent, with one otherwise reliable 1898 map calling it both the Ohio River & Western Railroad and part of the B&O Southwestern. However, the OR&W (later renamed the Bellaire, Zanesville & Cincinnati) was a narrow-gauge line from Zanesville to Bellaire via Woodsfield, built in 1875-1884 and abandoned by 1931, which seems to have no connection whatever with the O&LK's riverside route. Other good sources, including the dependable West2k Ohio Station Database, refer to the O&LK as originally being called the Zanesville & Ohio River Railroad. Detailed historical maps provided through the Columbus Library, available on the Columbus Railroads website,²⁴ show a partially completed rail line from Zanesville to Roxbury in 1883, with no name indicated. By 1888, that line is shown as completed from Zanesville to Marietta, with the name "Zanesville & Ohio River," and this legend appears on maps up through 1899. Beginning with the 1901 map, that line is labeled as the "O&LK." By 1906, this map series lists the line as part of the B&O. A B&O subsidiary company by the name Ohio & Little Kanawha is listed as part of the Newark Division in some B&O corporate history references, one of which suggests the B&O acquired the O&LK between 1901 and 1904. Another academic resource indicates the O&LK corporation was formed in 1900 and existed until 1966.

The O&LK name is strange, because the Little Kanawha River is actually on the West Virginia side, flowing into the Ohio at Parkersburg. There was a B&O-owned Little Kanawha Railroad which followed that river southeast from Parkersburg for about 30 miles, abandoned in the 1930s except for a two-mile stub at Parkersburg that continues to exist as a short line.

The O&LK served a rich coal mining area in its day. The 1914 Ohio Industrial Commission reports show several large and many smaller active coal mines on this route in Muskingum and Morgan Counties and near McConnelsville feeding volume onto the line toward Zanesville. The O&LK had a connection with a Z&W branch at Shawnee Junction north of Malta, at least until 1912, and operated miner labor trains between Shawnee Junction and Sayre, while the Z&W continued to haul the coal north from mines on this track. The Z&W routed coal from the major producer in this region, Sunday Creek Coal, up to Heath on the Z&W's affiliate T&OC's Eastern Branch and back onto the B&O there for delivery at industries and coal yards in the Newark area.

²⁴ See Columbus Railroads "Steam Railroads Maps and More" page.



OL&K south of Waterford. Harmar Village and Marietta Facebook Page. <u>https://www.facebook.com/photo/?fbid=1062992847107400&set=a.965260290213990</u>

Little other evidence exists regarding the volume or directional movements of coal from the O&LK. This branch served two Ohio Power coal-fired generating stations, which may have taken up a portion of its on-line coal loads. Given various known traffic flows, coal likely would have moved north on the O&LK Subdivision and then west from Zanesville, and then north from Newark. But it also could have gone to Zanesville and departed there on any of four other railroads serving that interchange, or possibly even moved south and east on the B&O main line from Parkersburg at times.

Midland Subdivision – Columbus to Cincinnati



For some 30 years after reaching Columbus from the east, the B&O terminated there without pushing on to Cincinnati as originally intended. With B&O assistance, the Columbus & Cincinnati Midland Railroad (C&CM) was completed in 1885, running 71

miles southwest from Columbus via Grove City and Washington Courthouse to tiny Midland City, 44 miles east of Cincinnati on the B&O's southern main line, then known as the B&O Southwestern Railroad (B&OSW).²⁵ The C&CM was absorbed by the B&OSW in 1890, and the B&OSW was taken into the parent B&O in 1900. The C&CM was a relatively late entrant to the Columbus market, approaching from the west over shared track with the Big Four into High Street and the Columbus Union Depot, where it connected end-to-end with the B&O C&N Division.

Not ever apparently a heavy haulage line, with relatively modest local business between Columbus and the Cincinnati urban area west of Midland City, the Midland Subdivision for many years

²⁵ The Marietta & Cincinnati Railroad, originally the Belpre & Cincinnati Railroad, was opened in 1857 with assistance from the B&O, and became the B&O Southwestern Railroad in 1889. https://en.wikipedia.org/wiki/Marietta and Cincinnati Railroad

carried only the B&O's few Central Ohio passenger trains, which lasted until July, 1956, plus several regular manifest freight trains and daily locals. The locals between Columbus and Midland City worked from Columbus, and the C&N local worked from Newark. As noted above, the B&O did not have a fully-found engine house in Columbus, supporting only three locally-assigned locomotives there. B&O's freight and passenger road engines running through Columbus were serviced at their big roundhouses in Newark and Cincinnati.

As noted in the B&O's annual report for 1885, when the Midland City line opened, it enabled the B&O to carry coal from Pennsylvania and Eastern Ohio to consignee destinations in Columbus and to the southwest. From the late 19th Century until World War II, coal was used for home and institutional heating, municipal utility and industrial power generation, and production of illuminating gas in the pre-electric era. Every town on the B&O lines had a coal wholesaler or dealer taking weekly deliveries for local distribution. Even if a railroad only delivered ten to twenty cars a day to its on-line consignees, this could amount to a quarter million tons annually.

There is little ready evidence of the B&O moving coal over the Midland Subdivision as overhead traffic through Columbus in either direction in large quantity. After the L&N Bridge was opened across the Ohio River at Cincinnati in 1872, the B&O had access to great volumes of northbound coal from Eastern Kentucky, especially off the L&N itself which often moved over 30M tons of coal annually on its system. In 1917, the B&O acquired the Cincinnati, Hamilton & Dayton Railroad (CH&D), which had a line running from Cincinnati via Dayton and Lima to Toledo. This became the B&O Toledo Division, which provided a direct route for Cincinnati interchange coal to the B&O-NYC Toledo Lakefront Docks, as well as B&O's northern main line running to Chicago to the west, and a number of other Lake Erie docks to the east. The Toledo Division, with 122 and 140-lb. rail rated for bigger engine classes such as B&O's S-1 2-10-2s as well as the B&O's biggest hoppers, and having extensive double-track sections,²⁶ was much better suited for northbound coal haulage than the Midland Subdivision.

The competing Cincinnati-Columbus lines of the NYC and PRR carried Kentucky coal north to Columbus, often for oncarriage to Great Lakes ports. With 115 miles of fairly flat road, and without any congested crossings with other railroads (the C&CM did not go through the Dayton area), the B&O Midland could have been competitive for some of this traffic. B&O would have had to run shorter coal trains due to the line's locomotive size limitations and short passing tracks. Observers have recollections of L&N hoppers moving elsewhere on the B&O Central Ohio routes. Likely some of these would have been carried up from Cincinnati on the Midland Subdivision. However, it seems unlikely the B&O would have routed Chicago-bound coal from Cincinnati toward Columbus over the Midland, given that the B&O's Toledo Division would have provided a much more direct route, where the B&O's bigger coal-drag locomotives could operate larger trains, and which offered interconnections with the PRR Bradford line to Chicago at Piqua and with the B&O's own Chicago main line at Deshler.

²⁶ See B&O Toledo Division Employee Timetable and Track Charts: <u>https://www.onthebellcgt.com/chessie-system-trackcharts</u> and <u>https://www.onthebellcgt.com/_files/ugd/69405c_208ef47cc75d41ee920c64cf068c0ae2.pdf</u>



Schematic Map of the B&O Newark Division from Todd's Railfan Guide to the B&O Railroad:

https://www.railfanguides.us/system/B&Odiv/index.htm

B&O Hopper Cars

Like all railroads, the B&O began carrying coal from its earliest days using gondola cars, which required a lot of manual labor. Loading could be done by gravity from overhead chutes, but unloading required men with shovels, wheelbarrows and small track-side cranes.

By the 1890s, most railroads and coal shippers were improving the efficiency of unloading by using side discharge and horizontal bottom discharge doors from gondola cars. The first modern self-clearing design was the Pennsylvania Railroad's GG model in 1895, which featured a twobay design with steeply-sloped bottom chutes and angled hatch doors that permitted gravity discharge between the rails, instead of to the side.²⁷ Pressed Steel Car Company began delivering these designs to several railroads by 1897, including some to the B&O in 1899, and a much-improved steel model GLa two-bay design appeared in 1902. These cars were quickly upsized from 35 tons to 40 and 50 ton models.



B&O Class N-12d 50-ton hopper built by Ralston Steel Car Co. in 1915. Photo courtesy of Columbus Railroads.

The B&O began ordering its improved design 50-ton class N-10 steel hoppers in 1905. However, so-called "Seley" hoppers, with steel frames and wooden sides and ends, remained popular well into the World War I era. The B&O ordered some 1,600 Seley-type Class N-11 hoppers in 1906-7,²⁸ and appears to have been taking deliveries of these models up to 1918, many of which were later rebuilt as all-steel cars.

A definitive compilation of hoppers in the B&O car fleet in 1926 by modeler and historian Eric Hansmann shows the B&O was operating 37,343 hoppers in more than 25 classes and subclasses identified in the Official Railway Equipment Register (ORER). In addition to the N-10s and 11s mentioned above, B&O was using N-12 through N-18 class hoppers mostly built from 1913 onward, largely 55-ton designs. A prominent class was its 55-ton N-17s, which followed the U.S. Railway Administration (USRA) Specification No. 1005 favored by most of the big railroads, with deliveries starting in 1918.

Between the late 1920s and late 1940s, the B&O also ordered 70-ton three- and four-bay hopper cars, many built to an AAR design in wide use by a number of lines.

 ²⁷ For an excellent short read on the evolution of hopper cars, see David Thompson, "A Brief History of Coal Hopper Cars" (1999) <u>https://appalachianrailroadmodeling.com/a-brief-history-of-coal-hoppers/</u>
²⁸ Baltimore & Ohio 1926 car fleet: https://designbuildop.hansmanns.org/wp-content/uploads/2019/06/BO 1926 Fleet hoppers.pdf



B&O 70-ton hopper, John Grimm photo https://www.rrpicturearchives.net/showPicture.aspx?id=6321370

The B&O also ordered various Class W-1 coke hoppers beginning in 1911. Coke, produced by heating coal in a closed chamber to remove most of its contents other than carbon, is significantly less dense than unprocessed coal, and thus coke cars are typically designed for higher cubic capacity and lower weight tonnage limits. As the B&O moved away from substantial coke haulage in the 1920s, it modified these coke cars with structural upgrades so they could carry 60-70 tons of coal.

Interestingly, the B&O's 1926 Annual Report states the company and its subsidiaries were operating 58,083 "coal cars," which included both hoppers and gondolas. With the self-clearing hoppers accounting for 37,343 of these, that meant the B&O was still moving a lot of coal and coke in gondola cars. Some of these were fixed bottom, and others had bottom and side-discharge doors. The capacity of all 58,083 cars averaged 54 tons per unit. The B&O loaded 55.9M tons of coal and coke in 1926, which is about the same as its coal tonnage figures for peak years during World War II.

In contrast, by 1932, when coal traffic had fallen by some 40 percent from 1920s peak volumes, the B&O annual report indicates the company owned or leased 63,413 "coal cars" with an average capacity per car of 55 tons. The increase was likely due to car orders during the still-booming later 1920s, before the Depression struck. Transportation companies typically order new equipment during a boom period, and take delivery and have to start paying for it during the next bust cycle.

Unlike many competitors, B&O did not experiment with 100-ton coal hoppers or gondolas during the prime coal years. After the C&O took over, the B&O did take an order of 100-ton three bay hoppers in the early 1970s.

B&O Lakes Coal

The B&O was among the earliest rail lines to haul coal to Lake Erie ports. For much of its life, the B&O was also among the largest volume coal haulers in the Lakes trade, mostly utilizing the docks at Toledo, Sandusky and Lorain.



The B&O McMyler Coal Dumper, Fairport Ohio, J.W. Barnard photo, 1966. Built in 1906, the dumper could only handle 50 ton hopper cars, and was obsolete well before being retired in 1964. <u>https://towns-and-nature.blogspot.com/2020/07/fairport-harbor-oh-b-coal-loader.html</u>

Through the B&O's Newark-Sandusky Lake Erie Subdivision line, and five short feeder lines between the B&O's Chicago main line Chicago and Akron Divisions and the Lake shore, B&O connected not only with the Sandusky Coal Docks, but also with Toledo Lakefront Docks (which the B&O and NYC jointly owned), and other coal docks at Cleveland, and B&O-owned facilities at Lorain and Fairport, near Painesville. While the B&O Lake Erie Subdivision fed coal from mines on the Rock Run and Bellaire Branches toward Sandusky, the B&O's Toledo Division carried Kentucky coal coming into Cincinnati off the L&N to Toledo, and the B&O Akron Division fed coal from the big mining areas in Belmont and Jefferson Counties to Lorain, Cleveland and Fairport.

Ohio's Lake Erie Coal Docks	Principal Affiliated Railroads
Toledo Lakefront Dock	NYC (T&OC), C&O (Hocking Valley), B&O
Sandusky Docks 1, 2 and 3	PRR (Sandusky Br.), B&O, NYC (Big Four)
Lorain Coal Dock	B&O
Huron Dock	Wheeling & Lake Erie
Cleveland - Coal Dock 24, also Docks	PRR, NYC (Big Four), Erie, B&O
1,2,3 and 6 and Whiskey Island	
Fairport Harbor Coal Dock	B&O
Ashtabula	N&W, B&O, PRR
Conneaut	N&W

Lake Erie coal shipments reached three million tons annually by the late 1890s, when highcapacity rail car dumping equipment was introduced. Lake Erie rail-to-ship coal volume eventually reached 49M tons annually during World War II. B&O's Fairport facility peaked at about 1.8M tons annually.

B&O Coal Hauling Steam Power

While the B&O system relied on legendary EM-class "Yellowstone" 2-8-8-4s, EL-class 2-8-8-0s and S-1 "Big Six" 2-10-2s for heavy mineral trains, the company's loading gauge limitations prevented their use in Central Ohio. According to its 1957 Newark Division Employee Timetable, the B&O only allowed its Q-3 and Q-4 2-8-2 Mikados (sometimes called a "MacArthur" on the B&O) on most of the Newark Division subdivisions, laid in large part with 100 and 112-lb. rails. Only E-27ca and E-27da 2-8-0 Consolidations could operate on the Rock River Branch, with its 90 and 100-lb. rails, and only the lighter Q-3 Mikados were permitted on the southern part of the O&LK Subdivision. B&O's 2-10-2s were only permitted on the Lake Erie Subdivision north of Mansfield.

There did not appear to be any class of locomotive weight restrictions on the heavy-haulage C&N Division, which was eventually re-laid with 130 and 140-lb. rails to accommodate the PRR's equipment sharing this track. But bigger B&O engines from the heavier-rail parts of the B&O could not easily reach the C&N due to restrictions on all its lines connecting to the rest of the system. Accordingly, the B&O used its 2-8-2s as road engines and helpers in and around Columbus, and pair of E-27 2-8-0 Consolidations for locals, yard and transfer assignments.





The B&O built or ordered 661 Mikados during the steam era. Baldwin was its premiere Mikado builder, starting with the initial order for 160 in 1911.



During World War I, the U.S. Railroad Administration, which had assumed control of the big railroads to operate them more efficiently, ordered 100 "light" (53,869 ft.lb. tractive effort) Mikados from Baldwin for the B&O, designated by the company as class Q-3. The first of these rolled off the assembly line in a record 20 days at the insistence of Baldwin's iconic president Samuel M. Vauclain (1856-1940), who wanted the company to be the first to deliver a USRA engine to Baldwin's favorite customer.²⁹

B&O's USRA locomotives performed well, but B&O needed more power, and ordered 135 upscaled versions of the Q-3s from Baldwin in 1920. Designated as Class Q-4s, these engines worked at 220 psi, with 3,819 ft² of evaporating surfaces and 955 ft² superheaters, with 24.75x32-inch cylinders and several makes of valve gear, offering 61,996 ft/lb. of tractive effort.

While relatively big engines for the era, the Q-4s were smaller and less powerful than their New York Central counterparts. NYC's H-10 Mikados had 25 percent more overall evaporating surface and double the superheater surface of the Q-4s, with 28x30-inch cylinders, producing 77,700 ft/lb. of tractive effort, including trailing truck boosters. Nevertheless, experts of the era remarked that the smaller-cylinder Q-4s steamed well and were "livelier" than competing USRA-design Mikados. The Q-3s and Q-4s proved to be well-suited for the traffic profile and lighter rail gauges B&O maintained in Central Ohio, with the last of them remaining in service until 1959. The last steam engine was called on the Newark Division in May, 1958.

B&O Coal Interchange in Columbus

The B&O had functioning interchanges with all four of the other big railroads in Columbus, including both of the NYC's roads.

However, with the exception of the PRR, with which the B&O shared its C&N right of way into downtown Columbus past Yards A and B, and the T&OC at West Columbus, the B&O's potential interchange locations and facilities for coal loads and empty hopper drags were far from ideal. The

²⁹ Perhaps the most renown of all U.S. locomotive designers and builders, Samuel Matthews Vauclain started as a machinist in the PRR's repair shops at age 17 in 1873. He moved to Baldwin in 1883, there rising to head salesman, president and later chairman over a 56-year career with the company. Vauclain pioneered innovative designs, especially for compound working using high and low pressure cylinders driving a common crosshead. More than 2,000 Vauclain Compounds were built. At the apex of his notoriety in April 1923, he was featured on the cover of *Time* magazine. <u>https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-0&railroad=bo</u>

B&O's only Columbus yard at Fourth Street had no track of more than 28 car lengths. While smaller cuts of hopper cars from manifest trains could be delivered to or picked up from other railroads, and the "B&O Transfer" jobs of several railroads were constantly in motion, it would have been very awkward to move whole coal trains or large blocks of hoppers onto another railroad. But, reportedly, at least occasionally, the B&O would deliver large numbers of Chicago-bound loads to the PRR for its Bradford line.

Railroad	B&O Interchange Points	
PRR	4th Street Yard; east end of Yard "A"	
N&W	Taylor Avenue	
<i>C&O</i>	4th Street Yard and Yard "A"	
NYC (T&OC)	West Columbus Yard, near GN Tower	
NYC (Big Four)	4th Street Yard and Big Four East Yard	

Source: http://www.columbusrailroads.com/new/pdf/map-1934-steamroad.pdf

While apparently not a sustained practice, the B&O did at times deliver coal to the PRR for routing through Columbus to Chicago over the PRR's Bradford Line. Most of the Chicago-area bound coal departing Columbus on the PRR came over from the N&W, which did not extend beyond Columbus until it acquired the PRR Sandusky branch in 1964, or from the C&O, whose own rail routes from Cincinnati toward Chicago had steep grades unsuitable for coal drags. However, the premiere PRR historian, Rick Tipton, reports that coal shippers would sometimes require a multirailroad routing with another railroad interchanging coal onto the PRR for the run to Chicago. This led to occasional strings of B&O hoppers being hauled northwest from Columbus on the Bradford line. ³⁰ Most likely these loads would have originated on the B&O's Newark Division east and south of Newark; interchange onto the PRR would have been fairly easy either at Newark or Columbus on the C&N Division tracks shared by the B&O and PRR. There is no ready source indicating the quantity of these Chicago moves off the B&O, but it was clearly significant enough for Mr. Tipton to mention it in his definitive book on PRR Columbus operations.

³⁰ Rick Tipton, *The Pennsylvania Railroad in Columbus*, Pennsylvania Railroad Technical and Historical Society, 2011, p. 139

Today:

The Chesapeake & Ohio Railroad acquired majority ownership of the B&O Railroad and was approved by the Interstate Commerce commission to assume operational control of the B&O in 1963. In 1987 the B&O was merged into the CSX Corporation, into which the C&O had previously been merged.

The B&O C&N Division still survives as part of the newer Ohio Central Railroad, although reduced to single track for most of its length. The ponderous PRR overhead signal bridges of its glory days are long gone.

In the mid-1960s, the PRR's C&MV line, then operating as the PRR Zanesville Branch, obtained trackage rights over the B&O Midland Subdivision between Wilmington and Washington Court House, where the two lines were parallel for much of the route, and active shippers on the PRR side were reconnected to the C&CM. By the mid-1970s, after the PRR line here had become part of Conrail, the C&MV west of Wilmington was abandoned, and the B&O acquired the former C&MV line between Wilmington and Clarksville, to continue service to shippers in the latter city. CSX continued to operate the former B&O Midland Subdivision between Columbus and Midland City, and eventually leased this line to the Indiana & Ohio Railway. This continues to be active as a local service railroad between Columbus and a junction with the Norfolk Southern at St. Bernard, in Cincinnati.

Most of the Central Ohio Subdivision east of Zanesville has been abandoned and pulled up, except for some portions used as switching tracks around Cambridge. All the smaller branches off the Central Ohio Subdivision between Zanesville and Bellaire such as the St. Clairsville branch and Eastern Ohio Subdivision track to Cumberland are now gone, although the Eastern Ohio survived up intot he C&O era.

The Lake Erie Subdivision track remains in place from Newark up to Mt. Vernon and from Willard to Mansfield. The rest was abandoned by CSX in several stages in 1975-76, with portions now being a nicely paved bike trail. The Willard roundhouse was demolished in 1994.

The Ohio & Little Kanawha Subdivision is gone, abandoned in 1982 except for the southernmost 24 miles of track from Belpre through Marietta up to an American Electric Power generating station near Waterford, Ohio.



Shawnee, Ohio Exploration Society Archive.

Virtually no trace of the Rock Run Branch remains. The Jobs Mines track beyond Shawnee was abandoned in 1927. The remainder of the Rock Run Branch was abandoned by CSX in August, 1971. Most Central Ohioans will be familiar with the overpass on I-70 near the Newark exit which crossed the Rock Run line, just north of a big scrap yard, below which a line of gray passenger coaches and interurban cars sat rusting for years, waiting for a collector rescue or a museum assignment that never materialized. The little city of Shawnee still stands, with several interesting shops opening to serve visitors; a most photogenic, a weekend "must see" for Coal Country history. The former station locations and rights of way of the B&O and Z&W are visible.



The former B&O Southwestern main line to Cincinnati and St. Louis was abandoned between Marietta and Midland City in 1980.

The B&O's former Lake Erie coal docks at Sandusky, Toledo, Lorain and Fairport still exist, but only Toledo and Sandusky are handling coal.

Port	Annual Tonnage	Major Cargoes Handled
Ashtabula	4,954,000	Iron ore, coal, limestone
Cleveland	11,454,000	Iron ore, limestone, salt, cement, general cargo
Conneaut	4,771,000	Iron ore, limestone
Fairport Harbor	1,461,000	Limestone, sand, gravel
Huron	366,000	Limestone
Lorain	761,000	Iron ore, limestone
Marblehead	3,580,000	Limestone
Sandusky	2,987,000	Coal
Toledo	8,836,000	Iron ore, coal, limestone, grain, liquid bulk, general cargo

Ohio Port Activity

(Source: Waterborne Commerce of the United States, Part III, USACE, CY 2013)

Corrections, Clarifications and Additions Welcome - These articles flow from a combination of research into ancient railroad corporate records and news sources, inferences from maps and satellite images, railroaders' and others' personal recollections and anecdotes, often of the hearsay variety, and other sources which may be incomplete or occasionally incorrect. Comments and corrections are most welcome.

The B&O has many devoted followers and a great deal of history coming from many sources. The more you uncover, the more aware you become of how much more remains to be explored. Some

of these historical references are inconsistent, but that is often where things become most interesting.

Acknowledgments: Much credit goes to Columbus Railroads, for editing suggestions, concepts and overall encouragement. Many thanks to those on B&O history social media links who contributed interesting information.

Additional References:



B&O Central Ohio Lines General and Pictorial History: Carl T. Winegardner, *A Historical Account – B&O Rail Lines, 1830-1989, Vol. II.* This volume assembled by a longtime B&O fireman and brakeman includes a great deal of history about the origins and later operations and eventual abandonment of the B&O Newark Division, and includes over 250 photographs, excerpts from Timetables and news sources. This is a "must read" for B&O Central Ohio fans.

Additional B&O System map, from Columbus Railroads:

http://www.columbusrailroads.com/new/pdf/ajc%20b&o%20map-3000.pdf

B&O Newark Division Track Charts, 1964-67:

http://www.multimodalways.org/docs/railroads/companies/B&O/B&O%20Track%20Charts/B&O%20Ohio-Newark%20TC%201964.pdf

Fortieth Annual Report, Industrial Commission of Ohio, Division of Mines, 1914:

https://www.google.com/books/edition/Annual_Mine_Report/MvLNAAAAMAAJ?hl=en&gbpv =1&dq=Fortieth+Annual+Mine+Report+Industrial+Commission+of+Ohio,+Division+of+Mines &pg=PA1&printsec=frontcover

Excerpt - 1914 Report on Coal Mines in Hocking, Athens and Perry Counties:

http://genealogytrails.com/ohio/athens/coal.htm

B&O Annual Reports, 1905 - 1943:

 $https://ia903104.us.archive.org/22/items/baltimore and ohiorail road annual reports/baltimore and ohio1935_text.pdf$

Eric Hansmann's B&O Hoppers Roster, 1926:

https://designbuildop.hansmanns.org/wp-content/uploads/2019/06/BO 1926 Fleet hoppers.pdf

B&O Consolidations Database:

https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-0&railroad=bo

B&O USRA Mikados Databases:

http://www.columbusrailroads.com/new/pdf/147-baltimore-ohio-4500-freight-usra-2-8-2a.pdf

https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-2&railroad=bo

Railfan Guides – Extensive B&O System Maps:

https://www.railfanguides.us/system/B&O/index.htm

B&O Track Charts:

www.onthebellcgt.com > b-o-track-charts

History of Willard, Ohio and the B&O Chicago Connection (1874 - 1893):

https://www.willardohio.gov/history-of-willard.html

https://www.legendsofamerica.com/baltimore-ohio-railroad/

B&O President Daniel S. Willard:

https://www.american-rails.com/willard.html