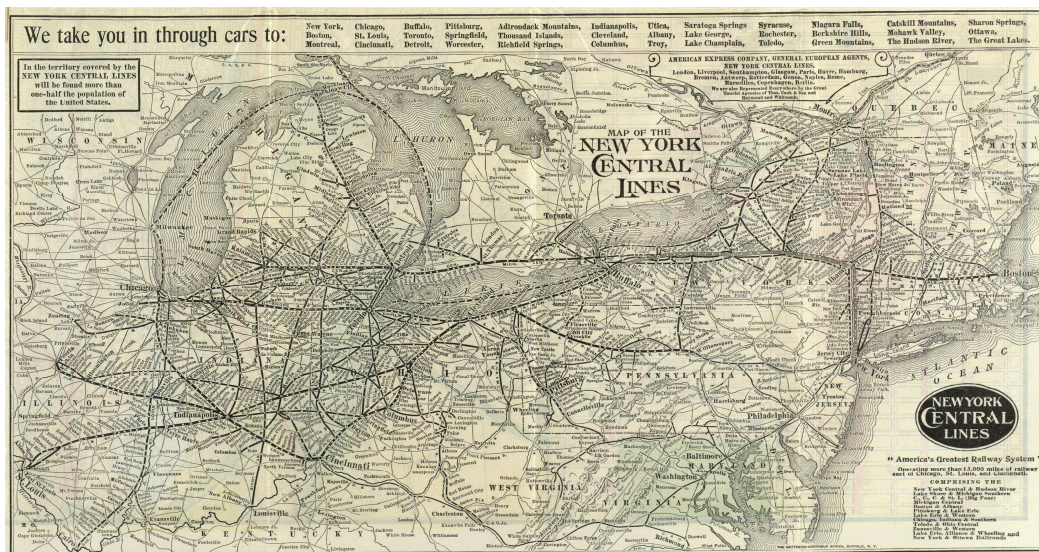


Columbus and the Coal Country Railroads

Part II - The New York Central System¹



The New York Central System (NYC) operated two lines through Columbus. NYC's Big Four route connecting Cleveland, Columbus and Cincinnati had no on-line coal mines, but attracted northbound interchange coal traffic at Cincinnati and Columbus, mostly for Cleveland's large industrial market and Lake Erie Docks. NYC's Toledo & Ohio Central Railroad (T&OC) ran from southern West Virginia, where it served numerous mines and two high-volume coal interchange points, up through the heart of Ohio's coal producing counties, and on through Columbus to the Toledo Lakefront Coal Docks and Detroit industrial market. Due to its strategic connections, the single-track T&OC carried almost a quarter of all coal moving on the NYC System.



The New York Central System in 1918.

The New York Central Railroad was formed in 1853 when Albany mayor and early rail investor Erastus Corning (1794-1862) organized a combination of ten short Mohawk Valley and western New York railroads to provide a successful through line from Albany to Buffalo. In 1869, shipping tycoon Cornelius “Commodore” Vanderbilt (1794-1877) consolidated his Hudson River Railroad with the NYCRR, bringing a New York City connection, and added his affiliated Lake

¹ This summary of coal traffic and interchange on the New York Central Railroad in Columbus covers only a small portion of the complex history of the Big Four and Toledo & Ohio Central, which became the NYC in Central Ohio during the first half of the 20th Century. For a good summary of this background detail, see *Roots of the Yew York Central Railroad in Columbus, Ohio*, an unpublished 1952 manuscript by Rowlee Steiner, available on the Columbus Railroads website at: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/13New_York_Central/01Roots_of_the_NYC/NYC%20by%20Rowlee%20Steiner.pdf

Shore and Michigan Southern Railway between Buffalo and Chicago, establishing the New York to Chicago main artery of the NYC System. The company added Boston, Michigan and Canadian connections and industrial and mineral-hauling branch lines, eventually acquiring, leasing or consolidating with more than 500 individual railroads and related terminals, car shops and marine facilities in 11 U.S. states and Quebec and Ontario in Canada. The NYC System peaked at 11,934 route miles in 1930.² The NYC also held strategic investments in coal mining, rail car builders and other key suppliers such as Westinghouse Air Brake. Between the late 19th Century and World War II, only the Pennsylvania Railroad, then one of the largest corporations in the World, moved more passengers and freight and earned greater revenues and profits than the NYC, and the NYC ran a very close second.



Erastus Corning and Cornelius Vanderbilt, c. 1855

Unlike the Pennsylvania, Baltimore & Ohio and other early competing extensive rail systems, the NYC's famed "Water Level Route" along the Hudson River, Erie Canal and Great Lakes avoided the steep grades and engineering challenges posed by eastern mountain ranges. The NYC was perfectly positioned to capitalize on the industrial prosperity of post-Civil War America.

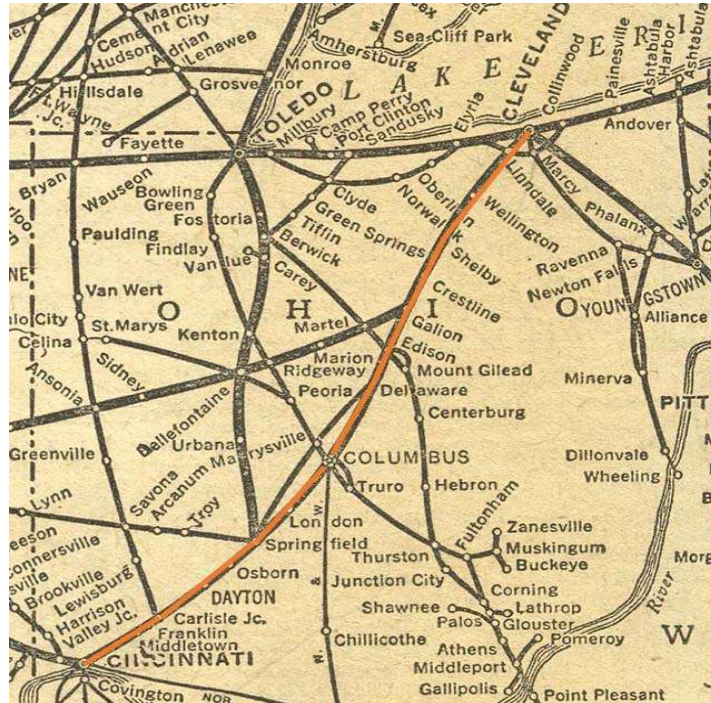
The NYC moved heavily into the coal trade with acquisitions of connecting lines such as the Pittsburgh & Lake Erie and others in Ohio and Western Pennsylvania in the 1880s, and the Beech Creek Railroad in Central Pennsylvania in 1890.³ As discussed in detail below, this was followed by NYC's 1906 takeover of the prosperous 2,629-mile Big Four with its St. Louis, Chicago, Cincinnati, Columbus and Cleveland profile, and NYC's 1922 lease of the Toledo & Ohio Central with its Toledo, Columbus and West Virginia layout.⁴ In addition to completing the NYC's expansion to St. Louis and multiple through rail connections to the west, these Midwest railroads brought the NYC access to newly expanding coal fields in Ohio and West Virginia, and key rail connections with southern coal hauling railroads looking for outlets to Chicago, the Great Lakes and profitable eastern markets.

² <https://nycshs.org/wp-content/uploads/2023/08/nyc-predecessors-1.pdf>

³ https://en.wikipedia.org/wiki/Beech_Creek_Railroad

⁴ The NYC formally leased the T&OC in 1922, but NYC was a T&OC shareholder and the two had cooperative working arrangements beginning in 1910. NYC maps in the 1910s showed the T&OC as part of its system.

With its massive capitalization and connections, the NYC was able to provide the coal transportation capacity to respond to the nearly limitless demand of this era, especially the surges arising during the two world wars and the booming 1920s, 1940s and 1950s. NYC advertising during World War II touted the “Water Level Route” as handling 95 million tons of coal annually, representing about 14 percent of total U.S. mine output, with a fleet of over 60,000 hopper cars, delivering some 4,500 carloads daily over its system.⁵ Although having a modest footprint in Central Ohio, the NYC moved as much as 20 million tons of soft coal to and through Columbus annually in the big coal years.



NYC lines in Ohio, from the 1938 Official Railway Guide. Note this “schematic” map is not geographically accurate, but is designed to be easy for rail shippers to use at a glance. The Lake Shore & Michigan Southern runs across the north, from Ashtabula to Bryan, the Big Four routes are the thicker lines through Galion and Bellefontaine, and the T&OC routes are the thin lines running north from Middleport through Thurston to Toledo. NYC included the N&W line terminating in Columbus as a critical coal interconnection.

⁵ NYC’s wartime advertising boasts do not quite match its Annual Reports figures, but they are fairly close. From 1942-45, NYC reported carrying an average of 66.5M tons of bituminous coal and 7.8M tons of anthracite, totaling about 74.3M tons annually; adding in coke volume would add another 2-3M tons and NYC’s non-revenue movement of its own locomotive fuel coal might account for a further 5M tons or more. NYC’s reported postwar volumes were somewhat higher, in the 80-85M tons annual range, NYC System-wide. See NYC Annual Reports: https://archive.org/details/ldpd_6285082_000/page/n235/mode/2up

The Big Four



The Big Four operated a 137-mile line between Columbus and Cleveland via Delaware, Galion and Shelby, and a 122-mile line south from Columbus to Cincinnati via London, Springfield and Dayton. Among the earliest railroads to reach Columbus, the Big Four ancestor Cleveland, Columbus & Cincinnati Railroad (CC&C), built on rails imported from England, entered service between Columbus and Cleveland in 1851. Of the 15 rail lines eventually serving Columbus, this one was among the most continuously financially successful. Much of the northern portion of this line was double-tracked as early as 1861. Under the leadership of its energetic founder, financier and chief executive Alfred Kelley (1789-1859), the CC&C was a premier early U.S. railroad in terms of engineering and haulage capacity. This was the route of the Lincoln funeral train from Cleveland to Columbus in April, 1865.

The CC&C originally reached Cincinnati via acquisition of a partially-built line from Delaware to Springfield, connecting with various short lines south and west of Columbus built during the 1850s and 1860s. After an 1868 consolidation with a line to the west, the CC&C became known as the Cleveland, Columbus, Cincinnati & Indianapolis Railroad. The company completed a direct connection between Cincinnati and Columbus via London in 1873. After a further consolidation with lines in Indiana and Illinois, in 1889 it became the Cleveland, Cincinnati, Chicago & St. Louis Railroad (CCC&St.L), picking up the popular "Big Four" name.

The New York Central acquired the Big Four in 1906, but operated it as a separate entity until 1930. With a board of directors populated with Vanderbilts and Rockefellers, the Big Four was a major U.S. railroad in its own right through the late 1920s. Headquartered in Indianapolis, the Big Four operated 2,391⁶ miles of owned and leased track, reaching western termini in Chicago, Peoria and Cairo, Illinois, and crossing the Mississippi River at St. Louis, with a steam locomotive fleet peaking at 925 engines.

Unlike other major railroads that grew by corporate acquisitions and consolidations, the New York Central's component parts tended to retain much of their original identity and culture. The Big Four and the other NYC Columbus line, the Toledo & Ohio Central (T&OC), while sharing the 20-stall West Columbus roundhouse from the 1930s onward after the Big Four's ancient Dennison Avenue Roundhouse was closed, did not combine Columbus yard facilities until the ill-fated successor Penn Central opened Buckeye Yard in 1969. The Big Four and T&OC switch keys were different, with switches near NYC interchanges having a metal bar through the lock slot with a T&OC lock in a hole on one end, and another lock with the Big Four's distinctive comma-shaped key opening on the other.

⁶ NYC historical records peg the Big Four's track miles at 2,629 at the time of the NYC's initial acquisition, but apparently some of its assets were not retained.



View looking eastward at Grandview Tower, where the Big Four double track main toward Cincinnati (foreground) crossed the single-track T&OC main toward Toledo diagonally at the two diamonds. Curving interchange tracks are just to the right and left of the diamonds. The west throat of the T&OC West Columbus Yard is just beyond Grandview Avenue, where a vehicle can be seen crossing. The small tower to the left is for a crossing guard. West Columbus Roundhouse (built in 1918) is to the right. Photo circa 1940 from E Miller/BJ Kern collection, as shown on Columbus Railroads.

In its early stages, there is no evidence of the CC&C hauling coal to or from Columbus. Annual reports from the 1850s-60s show the line's freight equipment including only boxcars, stock cars and flatcars. Coal does not appear on the line's list of commodities carried.⁷ By the later 1860s the CC&C was still using wood as its principal locomotive fuel, annually consuming 38,000 cords of wood but only 3,400 tons of coal.

But coal soon began to play a substantial role. By the time of the Big Four's final stage full consolidation in 1889, the CCC&St.L owned and leased 3,668 "coal and coke cars," about 23 percent of its overall fleet of 15,995 cars. By the early 1900s, the Big Four was hauling 12 million tons of bituminous coal annually, representing about 45 percent of its traffic, a portion of which came from southern Illinois coal fields the line served. The company's 1914 annual report indicates it owned 5,653 "coal and coke cars," plus 50 steel coal and coke cars, which constituted over 25 percent of its overall 20,474-car fleet of rolling stock.⁸ The Big Four might have been its own biggest coal customer, as its locomotives consumed some two million tons of coal in 1913.

⁷ See, Annual Reports of the Cleveland, Columbus and Cincinnati Rail Road, 1855-66.

https://www.google.com/books/edition/Annual_Report_of_the_Directors_of_the_Cleveland_Columbus_and_Cincinnati_Railroad/AAAAAYAAJ?hl=en&gbpv=1&dq=Cleveland+Columbus+%26+Cincinnati+Railroad+annual+report&pg=PP1&printsec=frontcover

⁸ Annual Report of the Board of Directors, The Cleveland, Cincinnati, Chicago and St. Louis Railroad, Dec. 31, 1914, Ohio State Univ. Library, <https://babel.hathitrust.org/cgi/pt?id=osu.32435064254527&view=1up&seq=41>

At its peak in 1925, the Big Four had 16,411 "coal cars" representing 46 percent of its total fleet of 35,204 cars, and hauled over 27 million tons of coal annually, 60 percent of its tonnage.⁹

From the 1890s onward, due to the rapid pace of rail consolidation, available corporate records for Ohio railroads generally aggregate coal traffic figures on a system-wide basis, not breaking out volumes to and from Columbus. However hard to quantify, coal traffic handled by the Big Four in and through Columbus was clearly significant.

During the last quarter of the 19th Century and all of the 20th, the Big Four hauled both full trains and blocks of coal hoppers from Columbus to Cleveland and Ashtabula for loading to steamships bound for points on the upper Great Lakes. The Big Four had access to a substantial volume of northbound coal at Cincinnati coming off the Louisville & Nashville Railroad (L&N), via Undercliff Yard. From Cincinnati, the Big Four was the major hauler of steam coal to utilities such as Dayton Power & Light up through the 1970s, delivering some 1.7 million tons annually in L&N hoppers plus additional volume off the N&W, B&O and C&O to DP&L's generating stations. From the Columbus end, the Big Four moved coal southwest to DP&L, reaching over 300,000 tons annually in the 1960s. This volume originated at the Peabody Sunnyhill mine in Perry County, and was brought to West Columbus Yard by the T&OC, where it interchanged over to the Big Four at Grandview Tower.

The Big Four also carried L&N coal north from Cincinnati to Springfield and then onto its Sandusky Branch up through Bellefontaine, Kenton and Tiffin to the Sandusky Docks, or onto the T&OC Western Branch at Ridgeway or T&OC Eastern Branch at Berwick to reach the Toledo Lakefront Docks or Michigan destinations. The NYC had abandoned a portion of this line (originally the Mad River & Lake Erie Railroad, one of Ohio's very first rail lines built in the 1830s) between Sands, just south of Kenton, and Belle Center in the 1960s. After that, Big Four northbound coal trains had to move via Columbus or proceed from Bellefontaine onto the Big Four's Cleveland main line to Ridgeway, and then onto the T&OC northward toward Toledo. The T&OC had a steep and sharply curving interchange track connecting back onto the Big Four Sandusky Branch at Kenton, but this could only accommodate southbound trains.

The Toledo & Ohio Central



Built mainly for coal from its origins, the Toledo & Ohio Central connected many of the richest coal mining areas in Southeast Ohio and West Virginia with Columbus, and onward to the

⁹ Thirty-Seventh Annual Report, The Cleveland, Cincinnati, Chicago and St. Louis Railroad, Dec. 31, 1925, <https://babel.hathitrust.org/cgi/pt?id=mdp.39015080119574&view=1up&seq=1&skin=2021>

Lakefront Docks in Toledo and heavy industry and utilities customers in Michigan. In Central Ohio lore in the early 1900s, T&OC stood for “Train of Coal.”

At its point of greatest expanse between 1900 and World War II, which coincided with peak coal production in Southeast Ohio, the T&OC and its affiliates operated some 800 miles of railroad stretching from Toledo to Swiss, West Virginia. The main components of the T&OC were the 197-mile Western Branch from Corning through New Lexington, Columbus, Marysville, Kenton and Findlay to Stanley Yard in Toledo, the 147-mile Eastern Branch running from Thurston (Milepost 160 on the Western Branch) through Johnstown, Bucyrus and Fostoria to Stanley Yard, and the 172-mile Southern Branch (formerly the Kanawha & Michigan Railroad) south from Corning through Hobson, over the Ohio River via a ponderous 3,932-foot through-truss bridge at Point Pleasant, WV, and up the Kanawha Valley through Charleston to Swiss. These lines were supported by roundhouses and shops at Stanley Yard, Kenton, West Columbus, Bucyrus, Fultonham, Corning and Hobson in Ohio, and Charleston and Dickinson Yard, West Virginia.



T&OC Depot at 379 West Broad Street, Columbus, built in 1895, which mimicked the pagoda-style Macklin Hotel just across the T&OC tracks to the right. The tracks were elevated above Broad Street in 1911. The T&OC moved its passenger service to Union Depot in 1930.

T&OC branches included the 60-mile St. Marys Branch from Peoria (Western MP 98) via Bellefontaine and Wapakoneta to St. Marys, originally planned as a Chicago connection, which was “orphaned” in the late 1930s by abandonment between Peoria and Bellefontaine, the 6.2-mile East Columbus Branch, a switching track north from Truro (Western MP 141) to Woodland Avenue which originally was the Columbus Shawnee & Hocking (CS&H) main line into downtown Columbus, the 16-mile Federal Creek Valley Railroad (Marietta, Columbus & Cleveland Railroad) which ran east from Palos (Southern Branch MP 5.4) to Lathrop, Ohio,¹⁰ the

¹⁰ The Toledo and Ohio Central Extension Railroad, incorporated in 1888, acquired assets of the Marietta, Columbus and Northern Railroad Co. This company was reorganized as the Marietta, Columbus and Cleveland Railroad Company. The main line of road extended from Palos, Ohio, to Moores Junction, Ohio, 41.09 miles.
https://www.facebook.com/www.HarmarVillageMariettaOhio/photos/a.965260290213990/1059505914122760/?type=3&_rd=1

14.4-mile Buckingham Branch north from Glouster to Drakes and Shawnee, and the Hitop Branch, a 34-mile track from Charleston through coal-mining valleys up to Hitop, WV (originally the Kanawha & West Virginia Railroad, later "orphaned" from the T&OC and only reachable via the B&O). Smaller branches included the seven-mile Bailey Run, Sugar Creek & Athens Railway, running west from Chauncey, and a pea vine of mine tracks running off the T&OC up nearly every wooded hollow between New Lexington and Hobson, a three-mile switching spur in downtown Marysville (a fragment of a former Delaware-Springfield Big Four branch), a 2.1-mile spur into Mt. Gilead, a 2.5-mile alternate main track route in Meigs County north from Hobson, and a 1.5-mile interconnection track between the Big Four and T&OC north of Kenton.

Although built and operated to run dense traffic of mixed freight, coal and industrial commodities, the T&OC was virtually all single track, with only a 5.5-mile stretch of double track in Columbus, and another 15.2 miles in short sections at Fostoria, Hobson and Charleston. But the T&OC was a high-capacity railroad, featuring an abundance of train-length passing tracks and sidings, especially on the Western Branch. Most of the line was laid with NYC's 127-lb. or heavier rail¹¹ on a well-drained and ballasted right-of-way. The Western Branch had a long section of welded rail south of Findlay laid around 1960. The 41 miles of the Eastern Branch between Stanley and Berwick had the first Centralized Traffic Control system in the U.S., installed in 1927, and later added CTC on the Western north of Ridgeway. In the peak coal-hauling era, during World War II and up through the 1950s, the T&OC was dispatching over 120 trains daily over its system.

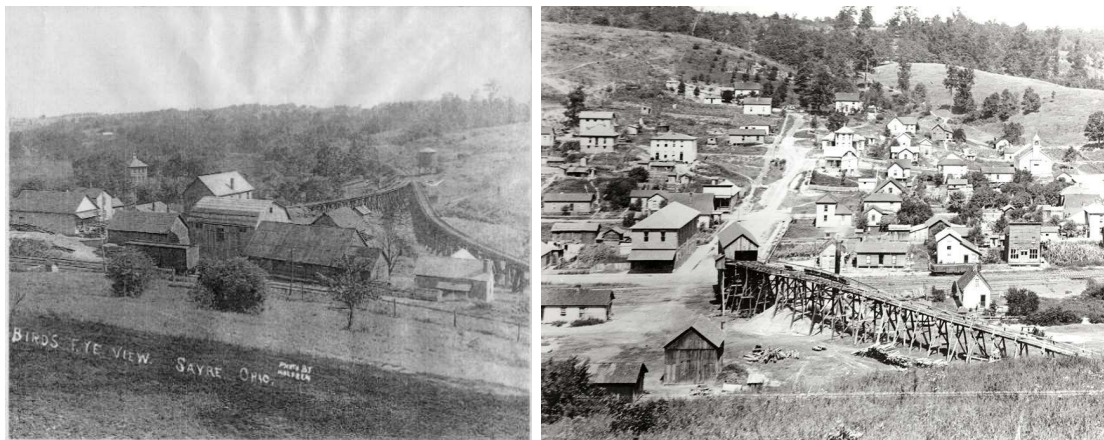
A major coal traffic contributor on the T&OC system in its earlier years was its NYC affiliate, the 108-mile Zanesville & Western Railroad. This line originally reached Columbus in 1880 via Thurston and Truro as the Columbus, Shawnee & Hocking Railroad, terminating at an interconnection with the B&O and Panhandle line at East Columbus (then called Alum Creek Junction), running its trains the last four miles into downtown over the Panhandle tracks. The CS&H built its own line from East Columbus to Union Depot in 1886 via Shepard, Milo and the Fairgrounds. The CS&H reached Zanesville, Corning, Shawnee and McConnelsville to the east via new construction and several acquisitions of other lines during the 1880s. During the early 1890s the CS&H was consolidated with the recently-completed Sandusky Short Line, with the two railroads operating under the common name Columbus, Sandusky & Hocking, but conveniently keeping the original "CS&H" corporate logo. The CS&H operated roundhouses near Cleveland Avenue in Columbus and at its major junction point in Fultonham. The CS&H lived and died for coal traffic, with over 80 percent of its rolling stock from the mid-1890s on being coal hoppers.

After financial disruptions and a major reorganization in 1902, the CS&H was divided, with the portion west and north from the Cleveland, Akron & Columbus Railroad diamond at Milo becoming the PRR Sandusky Branch, and the part east and south of the CA&C crossing becoming the Z&W, affiliated with and operated as a branch of the T&OC and eventually the NYC.

The NYC also operated 115 miles of track south from its southern terminus at Swiss, WV as a joint venture with the Chesapeake & Ohio, trading as the Nicholas, Fayette & Greenbrier Railroad

¹¹ For a detailed history of NYC's progress from 112 to 127 to 140-lb. rail see: *NYCS Rail*, by Dave Staplin, <https://nycshs.org/wp-content/uploads/2014/03/nyc-rail.pdf>

(NF&G), named after the three West Virginia Counties through which it ran. The NF&G was built in 1926-32 to interconnect the NYC and C&O with the Sewell Valley Railroad and the Loop & Lookout Railroad, timber-hauling short lines in the area, and to serve rapidly expanding coalfields in these counties.¹² It also linked the T&OC with the K&M's former Peters Creek Branch, a highly productive coal feeder running to the Cornelia Mine from a switch seven miles south of Swiss. The NF&G constituted the highest rail elevations on the entire NYC System, reaching 2,795 feet above sea level on its main line at Springdale Summit, and up to 3,409 feet at the summits of its Johnstown, Watts and Clearco branches. The NF&G also featured the only main-line switchback arrangements on the NYC, with four reversing switch points where the line clawed its way up a 3.4 percent gradient to Meadow Creek. The switchbacks were eliminated by construction of several loops, cuts and tunnels in later years. The NF&G operated about 25 trains daily during the peak coal era, using a mix of NYC and C&O engines and rolling stock.



Deep in Coal Country about 1910: Sayre on the Zanesville & Western Railway, in Perry County, (L) and the Old Palmer Mine at Glouster on the T&OC (R).

The T&OC and its predecessor K&M's feeder branches prospered loading Ohio coal at dozens of on-line mines in Perry, Muskingum, Morgan, Athens, Meigs and Washington Counties, which often produced a combined 10-12M tons annually.¹³ The T&OC main line twisting and turning back and forth over Sunday Creek between Corning and Chauncey (MP 16.9 on the Southern Branch) had more than one active mine per mile during the height of the coal era. Three long Z&W branches served over 20 major mines and dozens of smaller operations at the coal production peak in 1914.¹⁴ There were eight active large mines on the Federal Creek Valley Railroad. These on-line producers ranged from major multi-mine industrial giants each loading hundreds of cars per week down to small operations with a handful of miners, shipping a few cars monthly.

¹² <https://abandonedonline.net/location/nicholas-fayette-greenbrier-railway/>

¹³ For annual coal production by Ohio counties see: *A History of the Coal Mining Industry in Ohio*, by Douglas Crowell, 1995: https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/geology/B72_Crowell_1995.pdf

¹⁴ <http://www.genealogytrails.com/ohio/athens/coal.htm> ; see also Annual Mine Report, Industrial Commission of Ohio, 1914: https://www.google.com/books/edition/Annual_Mine_Report/uy05AQAAMAAJ?hl=en&gbpv=1

The nerve center of the T&OC's Ohio coal business was in Corning, which featured a 12-stall roundhouse and machine shop and a mile-long complex of yard tracks with capacity for 1,162 cars snaking down Sunday Creek Valley. The T&OC had seven tracks across Main Street there. Long trains of empties returning from Columbus had to be held a mile north at Rendville, until a track could be cleared out for them at Corning. Virtually everyone in this area worked either for the mines or the railroad, or serving those who did. The T&OC operated labor coach runs between Corning and Chauncey to take the great mass of miners to and from their jobs. Corning High School sports teams were originally the "Miners," and later the "Railroaders."



The T&OC and Kanawha & Michigan roundhouse at Corning, 1953. Built in 1891 and employing 280 during the peak coal era, the roundhouse closed shortly after the last steam engine (Mikado H-5t No. 1450) departed in 1952 and was demolished in 1962.

Chauncey, at the south end of this continuous belt of mining industry, also had a large yard for receiving and distributing empty hoppers to mines, and for making up coal drags to pull northward. Just south of Chauncey, at Beaumont, on the Hocking River and astride the remnants of one of Ohio's early canals, the T&OC had one of its several coal traffic interchanges with the Athens Division of the Chesapeake & Ohio (originally the Hocking Valley Railroad).

Massive volumes of coal originated between New Lexington and Albany. Through the 1970s, Peabody's Sunnyhill Mine at Claybank (Western MP 189.8) was shipping 1.4 million tons north to Columbus annually, with some 1.1 million tons making up twice-weekly unit trains of Peabody's distinctive yellow 100-ton "bathtub" gondolas bound for a power plant at Essexville, Michigan, and another 300,000 tons for Dayton Power & Light via the Big Four. Other producers, such as the JT Mine just south of New Lexington, and the Congo Mine at Drakes on the Z&W, which had the distinction of producing reportedly the single largest single chunk of coal ever mined, a 13.8-ton behemoth exhibited at the Chicago World's Fair in 1893, and a myriad of smaller tipples, provided in the aggregate several thousand weekly loads for northbound coal drags to Columbus and Toledo, and corresponding numbers of southbound empty hoppers.



At the Congo Mine, circa 1910.

Meigs County was also a source for T&OC northbound coal. Meigs mines yielded up to 1.5 million tons annually at their peak around World War I, a portion of which moved toward Columbus on the T&OC.

On-line coal production on the West Virginia portion of the T&OC and K&M system continued to grow as the Ohio sources having been extracted for many decades longer began to be exhausted. By the end of World War II, many small mines in both states closed or were consolidated into bigger central loading point producers. As of 1945, while carrying increasing volumes, the T&OC was serving only 16 active on-line mines in Ohio and 34 in West Virginia.

From its earliest days, the K&M also had a number of interconnecting railroads feeding northbound coal onto the system. By far the largest sources of interchange traffic in the big coal era were the Chesapeake & Ohio and Virginian Railway, discussed below. Other substantial K&M feeders included the Coal & Coke Railway running east from Charleston (T&OC Southern Branch MP 125) up to Elkins, WV (opened 1892, leased by the Baltimore & Ohio in 1917), the Campbell's Creek Railroad, a 13.5-mile line running east from Reed (now Port Amherst, MP 131) from 1901-62, serving 19 mines in at its peak,¹⁵ the Kelley's Creek & Northwestern Railroad, which crossed the T&OC at Cedar Grove (MP 144), an eight mile coal-only line that operated from 1903-93,¹⁶ and the Cannelton Railroad near Smithers (MP 153).¹⁷

As detailed in another article in this series, the C&O built across West Virginia in 1869-73 along the south bank of the Kanawha River from Gauley Bridge to Charleston, and then westward to the Ohio River at Huntington, eventually reaching Cincinnati by 1888. The K&M had connections

¹⁵ <https://www.wvncrails.org/campbells-creek-railroad.html>

¹⁶ <https://www.american-rails.com/kcnw.html>

¹⁷ This area produced "Cannel Coal," a valuable variety of coal discovered in 1848 that is high in petroleum content, especially useful for refining kerosene. The Cannelton mines are still in operation.

with the C&O near Charleston by 1882, and at Gauley Bridge from 1893. The C&O had substantial northbound coal traffic from Southern West Virginia, but lacked a bridge across the Ohio to connect the main part of its system with its Ohio affiliate the Hocking Valley Railroad to reach the Great Lakes and Midwest.¹⁸ The C&O's only options were to route its northbound coal onward to Columbus over the K&M and T&OC, or via the Norfolk & Western via an interchange at Kenova, West Virginia. The T&OC offered a good exchange onto the HVRR near Athens and in Columbus, as did the N&W at Valley Crossing, but the N&W was a distrusted rival over the entire Tidewater route of the two companies. Accordingly, the T&OC received a good share of C&O northbound coal via the K&M from 1885 until 1917, when the C&O finally opened its own connection to Columbus via its Sciotoville Bridge and the Russell Subdivision.

The T&OC Virginian Railway Connection

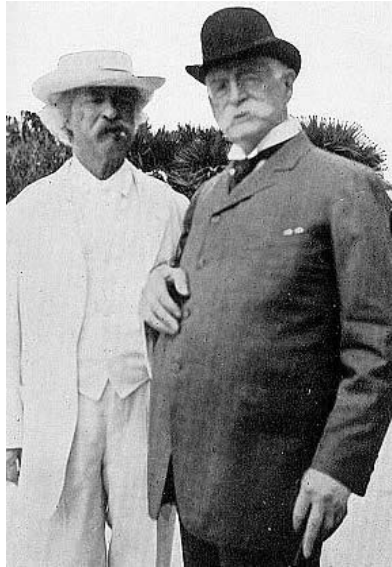
The T&OC was much more than an on-line coal hauler. The T&OC's Southern Branch, the former Kanawha & Michigan (consolidated with the T&OC in 1900), reached deep into southern West Virginia, where the earth was increasingly giving up even greater quantities of bituminous treasure. First among the T&OC's traffic sources there was a steady stream of northbound Virginian Railway coal interchanging onto the T&OC at Deepwater Bridge, south of Dickinson Yard (MP 157.2 on the Southern Branch).

The Virginian Railway and T&OC enjoyed a coal-driven symbiotic relationship lasting a half century. Completed in 1909, the Virginian was one of the last inter-regional lines built in the Eastern U.S. The Virginian had its origins in 1898, when entrepreneur Col. William Nelson Page (1854-1932) began developing the Deepwater Railway, a short line reaching newly-opening coal mines in a remote area of south-central West Virginia that the big railroads had not reached. In 1902, Page wisely partnered in this venture with financier Henry Huttleston Rogers (1840-1909).

Son of a New England grocer, Rogers worked as a railroad clerk and brakeman in his youth before the Civil War. An early speculator in the Pennsylvania petroleum industry at age 21, Rogers amassed a fortune in oil, mining, steel, banking and railroads, becoming a partner with J.D. Rockefeller in Standard Oil in 1874. He was known as the "Hell Hound of Wall Street" for his ruthless financial dealings, yet anyone who became his friend would never need another. Rogers used his vast wealth and connections to support the common good during this dynamic era. He donated schools and municipal library buildings, and financed young Hellen Keller's education and Booker T. Washington's African-American schools, including the Tuskegee and

¹⁸ The C&O's legendary financier, Collis P. Huntington (1821-1900), of Transcontinental Railroad and Golden Spike fame, tried unsuccessfully to acquire the K&M's predecessor Kanawha & Ohio line north from Charleston to provide this needed Midwest link. In 1910 the C&O finally purchased a controlling share of the K&M, but its success was short-lived. An Ohio court applied federal antitrust laws to disallow the C&O's control over the K&M, and forced the sale of the K&M to the T&OC in 1914.

Hampton Institutes. His closest confidant was Mark Twain, whom Rogers helped resolve a personal financial crisis. "H.H." often hosted Twain along with B.T. Washington for Atlantic cruises on his 471-ton yacht, the *Kanawha*. In a long-running practical joke, Rogers repeatedly "forgave" Twain for pilfering apparel and kitchenware during Twain's frequent lengthy stays at Roger's 85-room summer home in Fairhaven, Massachusetts.



Mark Twain and Henry Huttleston Rogers, 1908.

<https://www.studenthandouts.com/historical-figures/t/mark-twain/mark-twain-henry-huddlestone-rogers.htm>

Stymied by collusion of the bigger N&W and C&O, which refused to grant reasonable rates to interchange Deepwater coal eastward to Norfolk or north to Great Lakes markets, Col. Page quietly set up the Tidewater Railway with Rogers' secret backing. They built their own 500-mile railroad from Deepwater's southern connection in West Virginia to a sprawling coal terminal at Sewell's Point near Norfolk, merging the Deepwater and Tidewater into the Virginian Railway in 1907. The Virginian was engineered for heavy coal working in both directions, well graded with 131-lb. rail and its steepest sections electrified. The VGN could move eastbound coal drags of 17,000 tons. Annual coal volume was 14-15M tons in peak years.

To circumvent the C&O and N&W for its northbound coal traffic, the Virginian turned to the Kanawha & Michigan, by then controlled by the T&OC. After attempting unsuccessfully to buy the K&M in 1913, the Virginian signed an agreement with the T&OC in 1916 to build an interconnecting bridge across the Kanawha River at Deepwater. This ambitious project was delayed by federal takeover of the railroads during World War I, then blocked by legal maneuverings of the C&O during the early 1920s. In the interim, the T&OC was itself leased by the NYC. The bridge was finally built by the Virginian in 1929-31, giving the line a northward end-to-end connection onto the NYC System.



Virginian's first northbound coal train over Deepwater Bridge, March 15, 1931, arriving at the T&OC switch. (T&OC Southern Branch MP 157.2).

<https://bridgestunnels.com/location/deepwater-railroad-bridge/>

In addition to shifting the Virginian's surging flow of northbound hoppers over to the T&OC, the agreement provided trackage rights for VGN passenger trains to run up the NYC from Deepwater to Charleston and NYC trains to run over the VGN down to Mullens, WV, and the two companies began to advertise through passenger connections and joint freight rail services.¹⁹ T&OC symbol freight trains used the letter "N" to designate origin or destination in Norfolk. This practice continued into the PennCentral era, with T&OC's main northbounds being NT-5 and NT-7, and southbounds being CN-2 and TN-6.

The passenger train arrangement ended in 1952, when the T&OC curtailed its connecting services. The coal relationship lasted until the N&W acquired the Virginian in 1959, gradually moving the VGN Columbus traffic over to their own system. Remaining VGN Lakes traffic for the T&OC further dwindled once the N&W acquired the PRR Sandusky Branch in 1964.

During the 1950s and 1960s, when the N&W's northern end was still at Joyce Avenue Yard, the T&OC received full trainloads of N&W coal at Bannon, handled at the T&OC's South Columbus Yard. Moving under Columbus-Stanley "CS" symbols, as many as three of these trains daily, 4,500-6,000 tons in the steam era, and 8,000–10,000 tons with diesels pulling, would move up the T&OC's Western Branch, or occasionally move east to Thurston and up the Eastern Branch, both of which terminated at Stanley Yard just south of Toledo. With a crew change near Stanley Yard, the CS trains carrying Lakes coal would proceed directly to the Toledo Lakefront Docks, or if

¹⁹ The collaborative Virginian-NYC freight train operations involved joint crewing and interchanges between Virginian's Elmore Yard and the T&OC's Dickinson Yard. <https://cs.trains.com/ctr/f/3/t/250082.aspx>

traffic was congested there, would be held in Yard “O” at Stanley.²⁰ Full trainloads for customers such as Ford would proceed north from Stanley Tower to the River Rouge Plant near Detroit. Other CS trains with multi-destination coal shipments would be yarded and humped at Stanley.

The T&OC also received a significant flow of Columbus coal via the NF&G off its orphan Peters Creek branch, largely destined for transloading to Lakes steamships. As late as 1970 Peters Creek produced some 6,900 annual loads of Lakes coal, likely more than 450,000 tons using NYC 70-ton hoppers, with 6,000 hoppers for Ashtabula via the Big Four, and 900 to Toledo. The Lady Dunn mine of the Cannelton Coal Company on the NF&G shipped metallurgical coal to steel mills at Sault Ste. Marie, Ontario, using big 100-ton PRR "Yellow Ball" hoppers during the Penn Central era, sending 1,775,000 tons annually via the T&OC through Columbus to Toledo Lakefront Dock. The Semet-Solvey West Virginia mines produced 190,000 tons of coal annually for the T&OC, with Morris Fork adding 725,000 tons, and Hitop Mine accounting for another 410,000 tons. While a portion of this coal coming to the T&OC off the NF&G was absorbed by industries around Charleston, an average of more than 2.5 million tons of West Virginia coal moved north into Ohio on the T&OC annually into the late 1960s.²¹

Fortunately, the T&OC also served many enormous industrial chemical producers in the traffic-rich Kanawha Valley, which produced the bulk of the line's daily NT-5 and NT-7 manifest trains. These premium rate shippers sustained the T&OC once the Lakes navigation season closed every winter. They were its ace in the hole as Ohio coal mines “played out” in the 1950s, the N&W took over the VGN and northbound West Virginia coal shipments diminished in the later 1960s.

Historical evidence as to the precise quantity of T&OC coal volumes is scarce, but there is no doubt the line was built for coal, and coal it did carry as its principal “earner” on the freight side at all times. By 1892, just before the T&OC line between Columbus and Toledo was completed, the line was moving 1.3 million tons of bituminous coal annually, constituting 65 percent of all freight tons carried, with a fleet of 3,937 gondola cars within the T&OC overall roster of 4,669 freight cars.²² By 1908, the T&OC transported 4.1 million tons of soft coal, representing 72 percent of the line’s total freight tonnage, using 4,686 gondolas, including 500 self-clearing “dumps” models within an overall car roster of 6,060 cars. As a portent of what would follow, 2.8 million tons of this 1908 coal, or 68 percent, was interchange volume received from other railroads, principally the C&O, with 1.3 million originating at mines on the T&OC north of Corning.²³

For years after the takeover of the T&OC by the NYC, segregated coal volumes for the T&OC are more difficult to trace. One most useful detailed snapshot is in the November 1945 edition of the NYC’s house publication, the *Central Headlight*, featuring an article about the Ohio Central

²⁰ See, Jeremy Taylor, *Gravity Switching on the New York Central on the Eve of Merger*, <https://nycshs.org/wp-content/uploads/2021/12/gravity-switching.pdf>

²¹ Jerry Taylor, *A Sampling of Penn Central: Southern Region on Display*, Indiana University Press; Second Edition (May 22, 2000), ISBN-13 : 978-0253337023.

²² T&OC 1892 Annual Report, https://play.google.com/books/reader?id=I9qeAAAAIAAJ&pg=GBS.RA1-PA26&hl=en_US

²³ T&OC 1908 Annual Report, https://play.google.com/books/reader?id=4eicAAAAIAAJ&pg=GBS.PA24&hl=en_US

Division, which consisted of the T&OC and former K&M lines.²⁴ The *Headlight* boasted that in 1944, the T&OC moved more than 23 percent of all coal on the entire New York Central System. The T&OC handled 287,102 of the NYCS total of 1,207,907 carloads, including 99,779 loads originated on the T&OC itself, 7,034 loads off the NF&G, and 180,289 carloads received from interchanging railroads. With that era's predominately 55 and 70-ton cars, the T&OC's overall coal loading would have been 17-18 million tons of the NYC's 1944 overall total 75 million tons, with the T&OC receiving some 11 million tons of interchange traffic.

A significant portion of the T&OC's Lakes and Michigan coal movements before 1960 would have bypassed Columbus, moving onto the Eastern Branch at Thurston and proceeding to Stanley Yard. But Columbus would have seen a sizable tonnage of Chicago-bound coal from Corning, VGN loads via Deepwater and traffic interchanged onto the T&OC from the N&W at Bannon.

Coal-Hauling Steam Power on the NYC Ohio Lines

Unlike its principal competitors in Central Ohio, the New York Central never developed iconic late-steam era engines capable of lugging legendary tonnages over challenging Appalachian grades. The NYC did not build articulated or compound-working locomotives, like the N&W, C&O or B&O, or long-framed brutes like the C&O's or PRR's Texas-type 2-10-4s.²⁵ There were many reasons for this, including the Central's flatter "Water-Level Route", as well as the NYC's older ancestral lines mostly having lighter, lower and tighter loading gauges (*i.e.*, controlling height, width and axle weight limits). The Central also dealt with engine crew labor agreements that paid higher compensation based on the weight on the engine's driven axles. For these and other reasons, the NYC stuck with smaller but robust locomotive designs for its demanding coal traffic, largely Class H 2-8-2s, along with some Class L dual-service 4-8-2s.

Starting with its H-5s which arrived in 1912-13, and culminating with the technologically-advanced H-10bs²⁶ built in 1922-24, the bulk of the coal behind the drawbar on the western part of the NYC System was pulled by its stout Mikados. Early H-class engines were built by the prolific ALCO predecessor Brooks Locomotive Works at Dunkirk, New York, with others, especially the later H-10s, coming from ALCO-Schenectady and Lima. Overall, the NYC ordered 1,350 Mikados between 1912 and 1930, making it the owner of the most engines with this wheel arrangement. H-10s accounted for 352 of NYC's Mikado fleet.

²⁴ <https://www.canadasouthern.com/caso/headlight/images/headlight-1145.pdf>

²⁵ The NYC considered purchasing Lima A1 "super-power" 2-8-4 engines, and in 1925-30 ordered 55 of these Berkshire-class engines from Lima Locomotive Works for NYC affiliate Boston & Albany Railroad. The Berkshires replaced a fleet of 2-6-6-2s on the B&A. NYC affiliate Pittsburgh & Lake Erie also ordered seven 2-8-4s from ALCO in 1948. None of these were ever assigned to the NYC's Central Ohio lines. See: <https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-4&railroad=nyc#46> and <https://nycshs.org/wp-content/uploads/2014/10/baaclasses.pdf>

²⁶ The best New York Central historical resources include R.S. Curl's detailed articles about locomotive designs and deployments on the Central's various divisions. See: <https://nycshs.files.wordpress.com/2014/10/mikados.pdf> Another "must read" on NYC steam locomotives is Richard Leonard's New York Central Collection: <https://www.railarchive.net/nycollection/>



An 1894 Brooks Locomotive Works nameplate

Although designed and built in the early 1920s, decades before steam era end-stage giants like the PRR J-1s and the C&O Alleghenies, the H-10s were among the more advanced U.S. single-working engines ever delivered. Riding on 63-inch drivers, they featured fuel efficient combustion chamber designs, oversized state of the art superheater systems, enlarged steam passages between the superheater and the throttle, Baker valve gear, innovative double poppet valve throttles located forward near the cylinders, 210 psi boiler working pressure,²⁷ six-axle tenders with a capacity of 24 tons of coal and 15,000 gallons of water with superheated steam available for the stoker, and a steam booster on the firebox truck. All this brought the H-10s' total drawbar pull up to 77,340 ft./lbs., putting the maximum possible power and tractive effort atop the Central's limited maximum axle loadings. The boosters were removed in 1948 owing to a combination of substantial maintenance demands, a desire to increase train operating speeds and reduce extra hourly wage levels of engine crews operating them under collective bargaining agreements, leaving the H-10s with a still impressive 66,640 ft./lbs. of tractive effort.



Lima-built No. 2118, delivered 1922, photo by Otto Perry, Denver Public Library Digital Collections.

H-10s typically handled trains of 75-80 loaded hoppers loaded with 4,500-5,500 tons, and up to 7,500 tons on flatter divisions. An H-10 could handle 200 empties. Single H-10s were able to move 147 70-ton hoppers, carrying more than 10,000 tons of coal, over level ground between Toledo and Detroit, at 12-15 miles per hour.²⁸

²⁷ H-10 safety valves were re-set from 210 to 200 psi in the early 1930s. The reason for this is not known with certainty, and it may have been to reduce driver slippage. But this followed three deadly H-10 boiler explosions between 1926 and 1930, the last being at Arnold, Ohio northwest of Columbus on the T&OC (Western Br. MP 114).

²⁸ <https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-2&railroad=nyc#15862>

The H-10s were not easy on the eye, with a big Elesco feedwater heater cylinder protruding ahead of the stack, air pumps usually on the leading pilot platform, covered with external piping and equipment everywhere. But projecting the very image of rugged muscle and reliability, these engines were absolutely blue-collar beauties. They were popular with NYC engine crews, with the one complaint being they rode a bit roughly at speeds around 45-50 miles per hour, not commonly reached on coal drags. At 10-25 tons heavier than NYC's earlier H-class engines, the H-10s could not operate on the Z&W or other lighter rail branches.

Of course, unlike a PRR J-1, with 110,000 ft./lbs. of pull with its booster cut in, or a C&O Allegheny with its 135.2 ft.² firebox (double that of an NYC Mikado's), an H-10 could not march 125 hoppers north from West Columbus up the seemingly endless grade. It took two of them, or more. The T&OC maintained helper territory up from Grandview Tower (Western Branch MP 130) to "Helper Siding" at MP 112.5, and also provided some helpers for the hill just north of Kenton (Western MP 69-71). South of Columbus, the T&OC ran multiple helpers on the rear of coal trains north from Corning over the unforgiving Moxahala Hill (known as "Drawbar Hill" locally), with one helper cutting off at New Lexington (Western MP 185), and another staying on up over Johnstown Hill (Eastern MP 118) if the train was dispatched on the Eastern Branch.

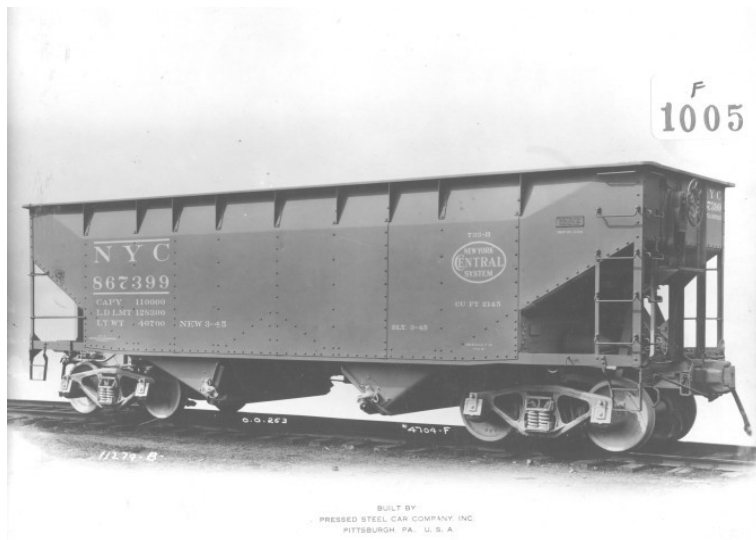
While not widely recognized as a "landmark" locomotive when they first appeared, the H-10s now receive growing credit in retrospect. Lima's superpower-type innovations, and especially the radical upsizing of the superheater, led to a revolutionary improvement in the H-10s' power, fuel and water efficiency over predecessor models. The H-10s are sometimes even mentioned along with the designs of the legendary French designer André Chapelon (1892-1978) who applied scientific knowledge of thermodynamics to produce remarkable advances in thermal efficiency and horsepower of European steam locomotives in the post-war era.

NYC's Mikados served long and faithfully. They were retired and scrapped with some 3,050 other NYC steam locomotives during the early 1950s. H-7 No. 1977 was the last steam engine to drop its fire on the NYC System, on May 2, 1957, at Cincinnati.

New York Central System Coal Hoppers

The NYC ordered some 123,448 open-top self-clearing hoppers from its affiliated shops and suppliers between 1899 and the Penn Central merger in 1967. These included 36,216 50-ton hoppers, virtually all ordered before 1920, and 49,283 55-ton models, about half of which were delivered in 1916-1926 and the other half in 1940-1964.²⁹ The NYC began ordering 70-foot hoppers in 1917, eventually taking on 37,974 units. Like its 55-ton cars, about half the 70-ton units were delivered before 1930, with no new orders for several decades, with other half delivered between 1948-61.

²⁹ <https://www.canadasouthern.com/caso/NYC-MODELS-FREIGHT2.htm>



NYCS 55-Ton two-bay hopper, built by Pressed Steel Car Co., 1945

NYC's 55-ton hoppers included 13,347 built to a design developed by the US Railway Administration.³⁰ The USRA took over control of all the big US railroads from late 1917 until March, 1920 in order to upgrade deteriorated infrastructure and operate the industry as a more efficient rationalized system during World War I. USRA built 22,200 55-ton hoppers conforming to the USRA's "Specification 1005" and allocated 3,000 of these to the NYC, including 200 built by Ralston Steel Car's East Columbus works. Most of these USRA hoppers were assigned to the Big Four, T&OC and its southern sister, the Kanawha & Michigan. In 1920-21, after the USRA relinquished control, the NYC ordered another 5,500 USRA Spec. 1005 models. NYC built 4,847 more 55-ton hoppers in 1920-21 to a slightly modified specification. These designs were famously robust and long-lived, with 59 percent of them still surviving on NYC's active roster in 1955. A few made it all the way to the Penn Central merger.

The NYC was not as prone to experimentation and advances with hopper designs as was the rival PRR. NYC stuck with proven designs, making a few marginal improvements with the brake systems and trucks.³¹ NYC's 70-ton designs evolved more than the others, initially having four sawtooth hoppers, then two sawtooth hoppers on the ends with a shallow bay in the middle, and eventually having three larger sawtooth hoppers. NYC also followed a pattern of ordering profligate numbers of new hoppers when times were flush such as the prosperous 1920s, and then ordering virtually none at all during harder times (1929-39), while rebuilding and keeping the older cars in good operating condition in its shops.

NYC annual reports generally aggregated the number of hoppers and gondola cars active in the railroad's fleet for a given year, giving combined figures between 58,000 and 65,000 during the peak World War II and post-war years.³² Accordingly, it is difficult to determine from available

³⁰ U.S.R.A. Design Hopper Cars, by C.M. Smith, <https://nycshs.org/wp-content/uploads/2014/07/usranycshoppers.pdf>

³¹ For a chart comparing all NYC hopper designs from 1899 forward, see: <https://nycshs.org/wp-content/uploads/2020/10/nycs-open-hopper-cars-1919-1968-handout-9-26-2020-rev-b.pdf>

³² The NYCS 1949 Annual Report lists 64,844 "gondola and hooper cars" with an average capacity of 58.72 tons per car. https://archive.org/details/ldpd_6285099_000/page/n13/mode/2up

published company sources how many true hoppers were on NYC’s active roster in any given year. NYC wartime advertising claimed that the railroad was operating 60,000 “coal cars” moving 95 million tons of coal annually, including fuel for its own locomotives. Based on the reported expected economic useful life of various classes of car orders, which extended beyond 35 years in some cases, with some examples of hoppers built before 1920 still being in service in the 1960s, it appears NYC most likely operated some 50,000 – 55,000 hoppers during its highest coal haulage era during World War II through the mid-1950s.³³

A significant percentage of these hoppers were built by shops owned by the NYC’s affiliated railroads, especially the Merchants Despatch Transportation (MDT) works at East Rochester, NY, and NYC’s in-house shops at Beech Grove, Indiana. The principal independent suppliers of hoppers were Pressed Steel Car at McKeesport PA, Standard Steel Car at Butler, PA and Pullman (SSC and Pullman merged in 1934). Ralston Steel Car began building cars for the NYC in 1914. Prior to 1930, many of the NYC’s orders were for specific affiliated railroads such as the Big Four and T&OC, and would be delivered with the livery and markings of those lines. After 1930 when operations of most of the NYC System were consolidated, orders and car markings were virtually all for the “NYC System.”

Lakes Coal on the NYC

As much as half the coal moving north from Columbus on the New York Central lines, especially during April - December each year, was destined for transloading to Great Lakes steamships.

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

The expansion of iron ore mining around Lake Superior in Minnesota and Upper Michigan in the 1880s, the advent of reliable steam navigation, and upsizing and major improvement of the locks around the Sault Ste. Marie rapids connecting Lake Superior to Lakes Michigan and Huron also spawned a huge waterborne trade in iron ore. Most of this ore moved south to steel mills in Michigan, Indiana, Ohio, Pennsylvania, New York and Ontario and on the Ohio River. The same

³³ More recent historical volumes of the Official Railway Equipment Register (ORER), published by S&P Global, showing current year active hoppers for the NYC not available on-line. For earlier years the ORER terminology and footnotes are confusing, as NYC modified drop-bottom gondolas that its annual corporate reports aggregate with modern self-clearing hoppers. Modelers groups have prepared detailed compilations of car rosters for their other various favored railroads, but there does not appear to be such a work product published for the NYC.

ships also hauled metallurgical coal north to primary industries on the Upper Lakes, especially in Chicago and Northern Indiana, and steam coal to northern electric utilities.

By the early 1890s, marine terminal facilities had developed car dumping machinery that could load a ship at the rate of 1,000 tons per hour. By 1896, Lake Erie ports, including Erie and Buffalo along with some eight Ohio terminals, were loading about ten million tons of coal annually.



Left: Toledo's Lakefront Docks and adjoining rail yard facilities, 1940s. Right: Car dumper facilities, Toledo, 1940s. National Museum of the Great Lakes: <https://nmgl.org/coal-dumpers-lakefront-dock/>

Driven by the industrial surge during World War II, coal shipments through Lake Erie south shore ports peaked at 49.7 million tons in 1945. Ohio railroads rose to meet this demand. During the Lakes navigation season, traffic often more than doubled on Ohio's north-south lines, moving coal north, and mostly empty hoppers back to the mines plus some iron ore unit trains south to steel centers such as Ashland, Kentucky. Many Ohio railroaders made their money on the north-south T&OC, PRR Sandusky Branch and C&O during the Lakes season, and then would mark up on the Panhandle and other east-west freight haulers to hang on during the winter.

NYC Coal Interchange in Columbus

Both the Big Four and T&OC had direct interchanges with all four other big railroads in Columbus, as well as with each other where they crossed at Grandview Tower.

Grandview crossing was at a reflex angle less than 30 degrees in the Southwest and Northeast quadrants, making it simple to accommodate interchange tracks for southbound Big Four movements northbound onto the T&OC, and northbound Big Four movements southbound into the T&OC West Columbus Yard. This worked well for certain traffic, especially T&OC Peabody unit trains crossing over southbound onto the Big Four for Dayton Power & Light. Also, Grandview siding, on the T&OC just north of the crossing, was a useful 120-car facility for dropping and picking up long blocks of coal interchange cars. However, for through northbound coal unit trains, this was all just exactly backwards. T&OC coal needing to head up the Big Four toward Cleveland or the Ashtabula coal dock could not easily make that move at Grandview, and

likewise northbound Big Four trains of Kentucky coal arriving from Cincinnati could not readily move northbound onto the T&OC for Toledo. Southbound NYC empties on both lines faced that same difficulty in reverse. Those moves would have entailed changing of ends out on the busy Big Four main, using Grandview Siding, or pulling into the always-overloaded West Columbus Yard and taking up two tracks to reform a T&OC train to head in the right direction.

As a solution, in 1964 the NYC concocted a "wye" interchange track in the narrow angle of the southwest quadrant at Grandview with south-facing points on the Big Four and north-facing points on the T&OC. This sharply curving track, at the bottom of a grade on both lines, was apparently a conspicuous failure, unable to handle the sideways stress on car wheel flanges, resulting in derailments. It fell into disuse, at least for heavy train purposes, and was eventually removed after Conrail took over and the Big Four east of Miami Crossing was pulled up.

<i>NYC Columbus Interchange Points</i>		
<i>Railroad</i>	<i>Big Four</i>	<i>T&OC</i>
<i>PRR</i>	Big Four East Yard - Just East of Union Depot	LM Crossing - Little Miami Transfer (the Auburn Track)
<i>N&W</i>	Second Avenue, Just East of Union Depot and 11th Avenue by Grogan Yard	Bannon - N&W Watkins Yard and T&OC South Columbus Yard
<i>C&O</i>	C&O Yard "A" near HV Crossing	Frankfort Street Crossover, C&O Mound Street Yard
<i>B&O</i>	Big Four East Yard - Just east of Union Depot	T&OC West Columbus Yard, near GN Tower
<i>T&OC</i>	Grandview Crossing - West Cols.	
<i>Big Four</i>		Grandview Crossing - West Cols.

Source: 1934 Unification Committee Map, Columbus Railroads at:
<http://www.columbusrailroads.com/new/pdf/map-1934-steamroad.pdf>

Lack of same-direction interchange capability between the Big Four and T&OC at Grandview also led to some awkward solutions for Big Four interchanges with the N&W. During the Penn Central era, often characterized by inability of the merged PRR and NYC to make efficient use of their mismatched physical facilities, the PC accepted N&W unit train deliveries to haul to Cleveland and Ashtabula for Lakes transloading. To get the returning southbound empty hopper trains on the Big Four line right way around for redelivery to the N&W, the PC routed them through Union Depot and northwest up the Bradford Line past Mounds, then south through Buckeye Yard and onto the Miami Line eastward, onto the T&OC through the Auburn track at LM Crossing, and thence to Bannon to interchange back to the N&W. This added 16 miles and untold hours of movement through many of the most congested interlockings in Columbus.³⁴

The Big Four's interchanges with the PRR and N&W were downtown, just east of Union Depot, and its connection to the C&O was at HV Crossing. There were a lot of train movements and lack of immediately adjacent long-track receiving yards at those points, sometimes making coal loads and empty hopper interchange problematic. N&W coal also moved onto the Big Four at 11th Ave.

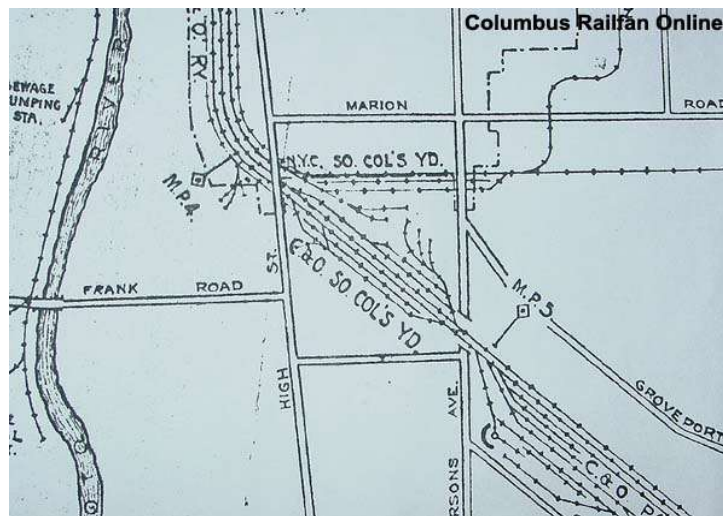
³⁴ Jerry Taylor's *A Sampling of Penn Central, Southern Region on Display* has a photo and good description of these Penn Central T&OC - Big Four interchange movements.

just below Grogan Yard. It appears that at best, most of the Big Four's interchange points were not ideal for coal movements.



Steelton Block Station on the T&OC, 1945, looking west toward the T&OC's main coal interchange facility, South Columbus Yard. Photo by BJ Kern, from Edward Miller Collection, courtesy of Columbus Railroads.

The epicenter of T&OC coal interchange was its well-designed and located South Columbus Yard, with eight tracks, the longest of which held 130 cars, and a total capacity of 415 cars. This yard was at T&OC Western MP 134.9, between the point where the T&OC curved eastward under High Street and the South Columbus Industrial Track switch. It was just west of the Steelton Block Station, at Western MP 137.4 near Lockbourne Road, which was less than a mile west of the T&OC-N&W crossing at Bannon.



*Location of T&OC South Columbus Yard, just east of High Street, from Columbus Railfan Online:
<http://www.trainweb.org/columbusrailfan/colyards/nycsouthcolumbus/nycsouthcolumbusyard.htm>*

Bannon featured interchange tracks in both its southwest and southeast quadrants. The T&OC's Columbus double track section originally ended at Steelton, but was later extended all the way to

Bannon. This arrangement allowed blocks of hoppers, or complete unit trains, to move easily between the two railroads and the adjacent South Columbus Yard and N&W Watkins Yard. Prior to 1964, the N&W had no line north from Columbus, and transferred most of its inbound coal, especially Lakes transload cars, to other railroads, including to the T&OC for Toledo and the Big Four for Cleveland and Ashtabula, as well as to the C&O for Toledo and the PRR Sandusky Branch. Even after acquiring the PRR Sandusky Line in 1964, the N&W still occasionally delivered Pocahontas Coal to the NYC at Bannon, mainly bound for Toledo and Michigan.

The T&OC's original interchange with the Pennsylvania Railroad in Columbus was the Auburn track, at LM Crossing, set up for southbound T&OC to eastbound on the PRR Miami side, and vice versa. After the Penn Central merger, new connections at both ends of Buckeye Yard at Alton and Darby (Western MP 123.6) provided interchanges between the T&OC and all the PRR lines in all useful directions for coal movements.³⁵ The T&OC and PRR also interchanged cars for local switching at East Columbus, but this location was unsuitable for coal.

The T&OC received coal off the C&O at Frankfort Street crossover, where the C&O and T&OC double track lines were parallel for several miles between LM Tower and High Street, just north of Parsons Yard. Even though the C&O had its own mostly double-track line to Toledo and access to Lake Front Docks, some northbound C&O coal occasionally came over to the T&OC for the run up the Western Branch.

The T&OC Eastern Branch, while bypassing Columbus at some 30 miles' distance, often had a major impact on Columbus interchange of coal traffic. The T&OC tended to operate the Eastern Branch as a direct northbound route for coal from Corning to Stanley, but more of a southbound route for mixed freight, especially for Big Four trains moving from Toledo to Bellefontaine via Berwick (Eastern MP 46.2), with northbound freight traffic predominating on the Western Branch. The Western and Eastern Branch junction at Thurston (Western MP 160.8) was well equipped for handling coal trains and returning empties, with a 148-car long track on the Columbus side and a 123-car track to the east side of the main track south of the junction, plus a small storage and classification yard and a wye for turning locomotives, using the west end of the Z&W track to Zanesville.

For a time, just after the advent of the diesels in the early 1950s, the T&OC also hauled Toledo coal from South Columbus to Thurston and north up the Eastern Branch to Stanley. Veteran railroaders would speak of runs from West Columbus with four purring new F7 covered wagons in an ABBA consist, picking up 100 or more loaded hoppers at South Columbus, running through the new south wye at Thurston and up through Bucyrus to Stanley. Then without going off duty, they would have a yard crew pop their caboose onto 100 empty hoppers in Yard "E" or "O," and the engine crew would change ends on the diesels and couple on for a sprint back to Thurston or Columbus, giving them up to 354 paycheck-inflating miles in a single 16-hour workday.

³⁵ Compare the 1934 Unification Committee Map on Columbus Railroads with the 1979 Conrail map, which shows all these links in place.

<http://www.columbusrailroads.com/new/pdf/1979%20conrail-columbus%20vicinity%20map.pdf>

The Eastern Branch was also oddly in play in a 1901 agreement between the T&OC predecessor Ohio Central Railroad and the C&O predecessor Hocking Valley line. The railroads agreed that beginning in May of that year, southbound cars of the HVRR would run from Toledo to Columbus over the Eastern Branch, "practically making a loop between Columbus and Toledo, the northbound through freight of both roads going over the Hocking Valley and the 'empties' returning over this division of the Ohio Central."³⁶ It is hard to imagine how this would have worked, although at the north end the two railroads' respective Stanley and Walbridge yards were only a mile apart with a ready interconnection over the Toledo Terminal Railroad, and there was also a direct T&OC-HVRR interchange at their crossing at Fostoria, 35 miles south of Toledo. The south end of the "loop" also could have been at Frankfort Street and what was then the HVRR's Mound Street Yard, via Thurston and the Ohio Central track through South Columbus. A more efficient possible southern interchange for coal traffic and empty hoppers might have been at Beaumont, between Chauncey and Athens, where the T&OC and HVRR had a connection in the very center of the two railroads' on-line Ohio coalfields. This track led directly onto the HVRR's Athens Division near its junction with the HVRR Monday Creek Division and its huge Nelsonville yard which fed hundreds of empty hoppers out daily to dozens of active mines. But how and if this clever plan may have actually worked seems lost to history.

Both the Big Four and T&OC interchanged some traffic with the B&O, with the Big Four's connection being just east of Union Depot, a congested area with no immediately convenient yard for either railroad suitable for long coal hopper cuts. The T&OC interchanged cars with the B&O over the Big Four and the Grandview transfer tracks and at GN Crossing just east of the west Columbus Yard Office. While the regular overnight "B&O Transfer" engine crew often dominated the chatter on the locomotive radios in the 1960s, there seemed to be little coal traffic involved. The B&O's main coal volume from Zanesville to the east, and off its Rock Run branch to Shawnee, likely moved through Lake Erie Crossing in Newark due north over the B&O Sandusky Branch to the B&O's Lake Erie coal docks in Lorain and Fairport. While the B&O had at least some coal volume moving up from Cincinnati to Columbus over its Midland Subdivision, it did not seem to transfer in any large part onto the NYC.

Today

Notably, the north-south coal hauling lines such as the T&OC and Big Four's Columbus-Cleveland main line tended to be the survivors during the catastrophic rail upheaval in the 1960s and 70s, which saw the PRR's CA&C line vanish, the PRR Bradford and Miami Lines largely disappear and the mighty Panhandle laid low. The T&OC Western Branch north from Columbus and Big Four Columbus to Cleveland main line, both post-Conrail CSX acquisitions, remain intact and have flourished. Norfolk Southern took over the NYC Western Branch south of Columbus, and the Southern Branch south of Corning down to southern West Virginia. Much of this remains in place and operating as the Kanawha River Railroad (KRR) between Bannock and Gauley Bridge, West Virginia under the Watco flag. But the NYC-C&O joint venture Nicholas, Fayette &

³⁶ See *Findlay Republican* April 1901 article reprinted at Columbus Railroads, November, 2020: <http://www.columbusrailroads.com/new/pdf/articles%20newspaper/1901%20t&oc-hv%20cooperation.pdf>

Greenbrier was dissolved in 1996 and most of its steep remote branch tracks in West Virginia are now long gone.³⁷ The Hitop Branch running north from Charleston was abandoned in 2006.³⁸

Both CSX and Norfolk Southern continue to operate Lake Erie coal docks fed with coal unit trains moving up through Columbus on these former NYC lines. CSX's three Toledo Lakefront Docks, Norfolk Southern's Sandusky Dock No. 3, coal docks at Huron and Lorain, Cleveland Dock 24, and Ashtabula docks are still active, moving about 20 million tons annually. After the decline in steam coal shipment as utilities migrated to gas-fueled and now renewable generation technologies, virtually all the Lake Erie transload volume is now metallurgical coal destined for the steel industry on the Upper Lakes.

Most of the T&OC Eastern Branch, once the express route for millions of tons of Lakes coal, was abandoned in the 1980s, along with the orphaned stub of the St. Marys branch west of Bellefontaine. The Federal Valley line was abandoned in the 1950s.³⁹ The Buckingham Branch to Drakes survived into the Penn Central merger. The former Big Four south of Columbus exists only as a switching track for a short distance west of Miami Crossing, although the former PRR C&X Miami line traffic moves over the old Big Four west of London heading to Springfield and beyond.

The West Columbus Yard site is now developed commercial and industrial real estate. The formerly bustling Buckeye Yard, hoped-for savior of the Penn Central, but now less useful after the Conrail realignments, is rapidly yielding to development as prime suburban commercial land.

The former Columbus, Shawnee & Hocking and Zanesville & Western tracks, other than the 22-mile Truro-Thurston leg that survives as part of the KRR, were already disappearing by the 1960s. A little stub of the Z&W between the former CA&C Pennor Crossing and Leonard Avenue is still in use as an industrial lead for some very active industrial rail shippers. Aside from a couple tiny fragments at street crossings not yet pulled out, the former NYC East Columbus Branch on the old Z&W right-of-way along the western boundary of Whitehall has disappeared. A short stretch of the Z&W south from downtown Zanesville to some switching points remains in service. The rest of the CS&H and Z&W out to Corning, Shawnee and McConnellsville is rapidly-fading history.

³⁷ <https://abandonedonline.net/location/nicholas-fayette-greenbrier-railway/>

³⁸ <https://groups.io/g/NYCShS-Members/attachment/884/0/1C%20STB%20Notice%20of%20Exemption%20Attachments%20217147.pdf>

³⁹ <https://www.hmdb.org/m.asp?m=247090>



Remnants of the Z&W in 2017. The author's brother Paul Cavanaugh surveys a rare fragment of the Zanesville & Western Railway, embedded in a little-used block of 4th Avenue in the Rarig's neighborhood. Many millions of tons of coal from Perry, Athens and Muskingum Counties passed over these rails on their way to Columbus and Sandusky between 1886 and 1902.

Notes and Additional References:

Author's Note: These articles are based on various sources, including railroaders' recollections and social media posts, which often are difficult to verify from published sources. The elderly author increasingly makes mistakes. Comments and corrections are very welcome!

The best visual reference for the T&OC is a 1932 NYC Map showing the dates of construction and predecessor railroads of both the T&OC, Z&W and NF&G lines and their many branches:

North Portion: <http://www.columbusrailroads.com/new/pdf/T&OCMap-01-100.pdf>

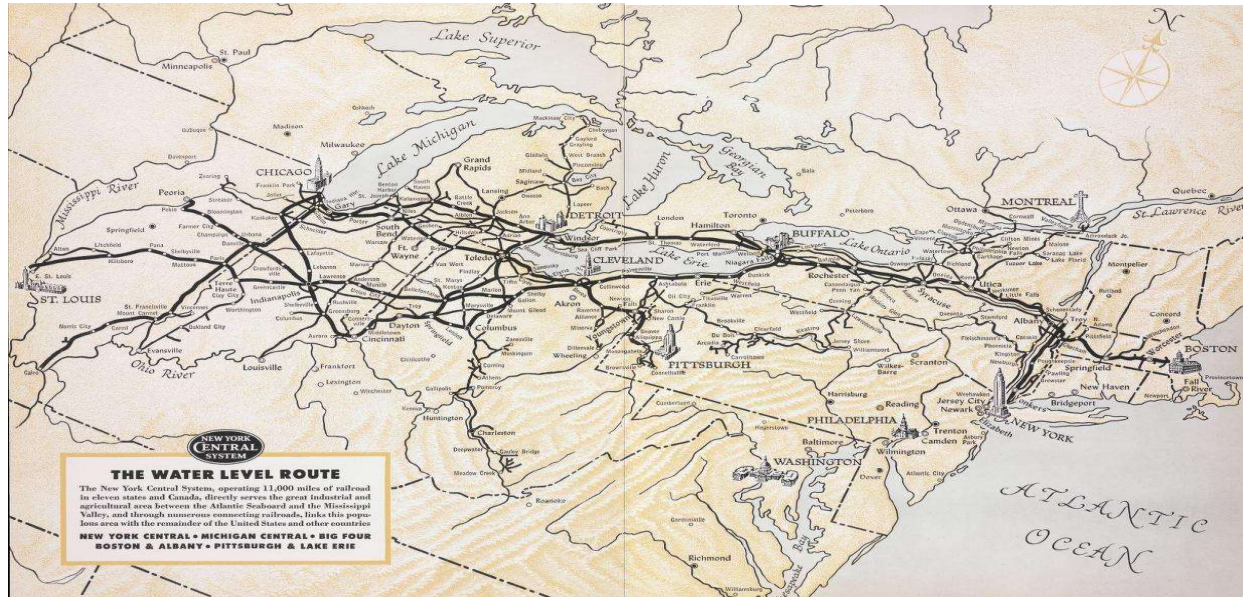
South Portion: <http://www.columbusrailroads.com/new/pdf/T&OCMap-02-100.pdf>

Detailed background material and a wealth of photos and maps for the T&OC and the Kanawha & Michigan are here:

A Sampling of Penn Central: Southern Region on Display, by Jerry Taylor, Indiana University Press; Second Edition (May 22, 2000), **ISBN-13** : 978-0253337023. 448 pages of B&W photos taken around 1970, but with extensive commentary for each by the author, a former NYC manager, covers the T&OC and K&M from Toledo to Swiss, including the St. Mary's Branch, Hitop Branch. many obscure places and a wealth of historical facts.

The Kanawha & Michigan Railroad, Bridge Line to the Lakes, by Donald L. Mills, Publishers Place (2010) ISBN-13 978-0984075751, 218 pages, detailed history of the K&M and its relationship with the T&OC, collection of local photos and history along the line from Corning to Swiss.

New York Central System Historical Society, T&OC Notes,
<https://nycshs.org/2009/05/19/the-toledo-ohio-central/>



1949 NYCS Annual Report map, https://archive.org/details/ldpd_6285099_000/page/n13/mode/2up

1906 Poor's Manual: Official corporate information as reported by the railroads.

https://www.google.com/books/edition/Poor's_Manual_of_Railroads/8dAhAQAAMAAJ?hl=en&gbpv=1&dq=Turkey+Foot+Coal+Branch&pg=RA1-PA130&printsec=frontcover

NYC Abandonment History:

<https://www.abandonedrails.com/icc-filings/new-york-central-system>

NYC Locomotives:

NYC H-Class Mikados: <https://nycshs.files.wordpress.com/2014/10/mikados.pdf>

NYC H-10 Locomotive Database:

<https://www.steamlocomotive.com/locobase.php?country=USA&wheel=2-8-2&railroad=nyc#15862>

NYC L-Class Mohawk Locomotives Database (NYC/Big Four):

<https://www.steamlocomotive.com/locobase.php?country=USA&wheel=4-8-2&railroad=nyc>

NYC Coal Hoppers:

NYC Freight Car Roster, 1906-1968:

<https://www.canadasouthern.com/caso/NYC-MODELS-FREIGHT2.htm>

NYC System Engine and Car Shop Locations:

<https://nycshs.files.wordpress.com/2016/12/nyc-structures-and-facilities.pdf>

Videos – Deepwater Bridge:

Crossing Deepwater Bridge, 2013: <https://www.youtube.com/watch?v=MjV16b8P7YM>

CSX Local Switching Former T&OC/Virginian Deepwater Interchange, 2021:
<https://www.youtube.com/watch?v=hH5TuCULqnE>