

The Life of B&O 316

By Edward F. Bommer

Baltimore & Ohio Railroad #316 was one member in a unique group of twenty-seven locomotives built during a period of great corporate need in 1865. It was built at a time of nation-wide shortages of manpower and materials as the Civil War ended. Originally designed as heavy, eight-wheel coupled freight engines to work over the grades west of Cumberland MD, this group was the first sizeable class of locomotives built in the United States to employ the concept of a uniform design with interchangeable parts. Three different builders were used to construct them. The 316 was one of them and it gave 80 years of service to the B&O.

Thatcher Perkins, the Civil War years B&O Master of Machinery, laid out drawings for this new class of eight-wheel freight locomotives before he left the company in 1865. His designs used the same 43" diameter drivers fitted with wrought iron tires and having a 22" stroke that were also employed on older Winans camels and Company engines.

With the departure of Thatcher Perkins from the B&O, John C. Davis was recruited from the Northern Central Railroad in Pennsylvania to take over as Master of Machinery. He quickly put three locomotives of Perkins' design into production at the Mount Clare shop. In June 1865 number 47 was first engine to roll out. It was followed in July by numbers 83 and 242. While still under construction, the 83 was renumbered 32 after the original 83 that had been taken south was located. It was to be rebuilt and returned to service.



B&O #32, a Perkins designed eight-wheel coupled freight engine built in July 1865 at Mount Clare; stands ready at Weverton, MD in 1871.

C. B. Chaney collection

A mad scramble of locomotive numbers was used on the new locomotives as some replaced older power. It was customary to re-use numbers as old locomotives were replaced. New numbers were applied to engines added to the roster. Number 242 was the first of those. Twenty-four new locomotives continued from that number. Twenty were built by the New Jersey Locomotive & Machine works in Paterson, NJ. Two were assembled by Reamy, Son & Archbold in Chester PA, using Mount Clare provided parts. Mount Clare also built two more of these locomotives by the close of 1865.

The New Jersey Locomotive & Machine Works was one of the smaller builders. Like the Danforth & Cooke Works in Paterson, the N. J. L. & M. was a descendant of the Thomas Rogers Locomotive and Machine Works, founded in 1837. All three builders in Paterson were located either across the street or at the next corner from each other.

N. J. L. & M. signed the B&O contract to be the builder of twenty Perkins-designed B&O locomotives, which were to be delivered as quickly as possible. Some refer to these engines as having been built by the Grant Locomotive Works. However, it would be two years later when the N. J. L. & M. was re-organized to become the Grant Locomotive Works.

A question may arise as to why the B&O directors selected this company, far from Baltimore. Several factors may have influenced the company to secure a contract with the N. J. L. & M. The Baldwin Locomotive Works in Philadelphia at the time was booked with orders for the Pennsylvania as well as several southern roads. It also had a policy of not building to outside designs and preferring its own instead, which it would warrantee.

The Rogers Works as well as Danforth & Cooke were busy with new locomotives for the expanding transcontinental lines of the West. Similarly, the American Locomotive Company in Schenectady NY was booked with orders from the New York Central, Delaware & Hudson, Albany & Susquehanna and some New England lines.

An order for twenty identical locomotives for priority delivery and built to a railroad's own design was a large, unusual contract for that time. Most railroads ordered locomotives in small groups of four to six. To get these locomotives, the B&O paid the N. J. L. & M. a premium price of \$20,000 each, including Mount Clare supplied parts. This average cost of a new, heavy freight locomotive back then was about \$ 13,000 - \$ 15,000.

Since 1863, the N. J. L. & M made use of templates and gauges for the production of parts for the machinery it built. It had a reputation of making high quality products. Templates and gauges assured uniformity of the parts, as well as their fit and finish. It also overcame the shortcomings of not having any official standard of measurement in the United States. The use of templates and gages for finishing parts enabled final assembly to be done with less-skilled labor. N. J. L. & M.'s shop men and their teenage apprentices concentrated on making uniform, high quality parts.

The twenty N. J. L. & M. built locomotives were numbered 243-262. To speed things along, the B&O Mount Clare Shops provided eighty sets of wheels for their tenders. It is likely Mount Clare also loaned the patterns for iron castings, to better assure identical parts. This is based on the production timing of the Mount Clare, N. J. L. & M. and the two Chester-built locomotives.

Three months after completing existing work and tooling up for the B&O contract, the N. J. L. & M. delivered its first four locomotives in August 1865. The very first was number 243 which was delivered with a green painted boiler jacket rather than the usual Russia iron, which was rather labor intensive to produce. That boiler jacketing gave members of this class the nickname "Jersey Greenback," or simply "Greenback" regardless of which company built them.

As they were delivered, the "Greenbacks" went west to haul B&O freight over the mountain grades beyond Cumberland. From 1865 until the arrival of new E class 2-8-0 locomotives in 1873, they worked the main line. Gradually these engines were assigned to lesser duties and branch line work.

In 1884, the B&O did a system-wide renumbering of its locomotives. The "Greenbacks" were now numbered 312-338. In this process, number 243 became number 316. By this time, they were all working branch line and local freight. While several of them no doubt were in accidents and derailments over those years, none were totally destroyed.

Fifteen "Greenbacks" were retired in 1897. Four more followed in 1902. Two remained in service until 1904. Improvements made on them over those years included steel tires and steel fireboxes replacing the originals. Westinghouse air brakes were added as well but their appearance was hardly changed.

Six of these locomotives were rebuilt as class D-1 six-wheel switching engines at Mount Clare in October 1886. Their numbers were 312, 316, 320, 331, 334 and 338. Four were N. J. L. & M. engines. One each (312 and 338 respectively) were built by Mount Clare and Reamy, Son & Archbold of Chester, PA.. The choices made seem to demonstrate the uniformity of these locomotives, regardless of original builder.

As yard engines, they kept their angled, 19 ½" x 22" cylinders. Their cast iron bar frames were altered to receive larger 50" diameter drivers with different axle spacing. New steel boilers, air brakes and new tenders completed the job. The locomotives now weighed 83,670 lbs., gaining just over nine tons of weight. As D-1 class 0-6-0 switchers, they worked in the Baltimore area. Locomotive 312 was retired in 1897. The 338 followed it in 1902, with the 320 and 321 off the roster by 1907. Number 334 lasted until 1910.

D-1 number 316 was taken back to Mount Clare for another rebuilding in February 1898. Originally numbered 243, it was the very first "Jersey Greenback" delivered in August 1865. Its next assignment would be handling freight at the B&O New York Terminal West 26th Street Yard. A small but powerful locomotive was desired for that car float terminal. Repairs and maintenance would be done at the Staten Island Rapid Transit's Clifton Shop. It would be transported to St. George by car float. A class D-1 0-6-0 would be an ideal choice for that yard, if refitted as a tank-type engine.

When Mount Clare finished the 316, it emerged with a large, wood over-all cab made to resemble a passenger car. Listed by B&O as a coal burning 'steam motor,' the big cab was supposed to help avoid frightening the horses along 12th Avenue in Manhattan, or so they thought. It had black running gear with a green body, topped with a black roof and lettering in gold. Polished nickel-bearing monel jackets were applied to the cylinders and the rods were originally polished as well. A canvas awning was fitted to the rear of the cab, to provide some relief from the setting sun's glare.

When it arrived in New York, B&O 316 was a rather jaunty-looking engine for the drudge work of West 26th Street. It was outfitted for an important market setting, where the prestige of the B&O was under scrutiny by the public and potential customers. The 316 remained a D-1, the sole member of its class.



B&O #316 at West 26th Street, New York City in 1922.
The rods are grimy now but the monel cylinder jackets still on it hint of a spiffier day.
Photographer unknown, collection of the Baltimore & Ohio RR Historical Society.

At a time when its sisters were being retired and scrapped, B&O 316 began a new career.. It now tipped the scales at 97,000 lbs. and was fitted with 44" diameter drivers. The original angled 19 ½" x 22" cylinders were kept and it was set to operate on 140 pounds steam pressure. This gave the locomotive a respectable tractive effort of 22,600 lbs.

Nothing is known of any relief engine that the B&O may have provided to cover for when the 316 was in the shop. Possibly it was an older class C 0-4-0 tank engine that may have been 316's predecessor at the B&O rail facilities in Manhattan.

From 1898 until the spring of 1925, B&O 316 shuffled cars across 12th Avenue to and from car floats at the West 26th Street Yard. In 1924, the New York State Legislature passed the Kaufmann Electrification Act, which required the use of steam locomotives in New York City and the metropolitan area to cease. All the railroads serving Manhattan looked to new technology for handling freight cars.

The New York Central experimented with "tri-power" locomotives that had oil-electric drive, could operate on third rail power or use batteries for a short while. Instead, the B&O followed the lead of the Central Railroad of New Jersey and bought the second Ingersoll-Rand 300 hp diesel-electric box cab switching locomotive built.

B&O number 1, as it was designated, arrived in 1925 painted black and lettered in gold. It spent its first few weeks at St. George Yard on the Staten Island Rapid Transit, where it was tested and used for training operators. When number 1 arrived at West 26th Street, B&O 316 still looked sharp and well maintained.



Begrimed #1, working at West 26th Street, New York City in 1939.

In a few months, it would be repainted B&O blue and renumbered as 195.

In 1957 an overhaul and renumbering to #8000 was done. Retirement came later that year.

This box cab diesel awaits restoration at the National Transportation Museum in St. Louis, MO. collection of the Baltimore & Ohio RR Historical Society.

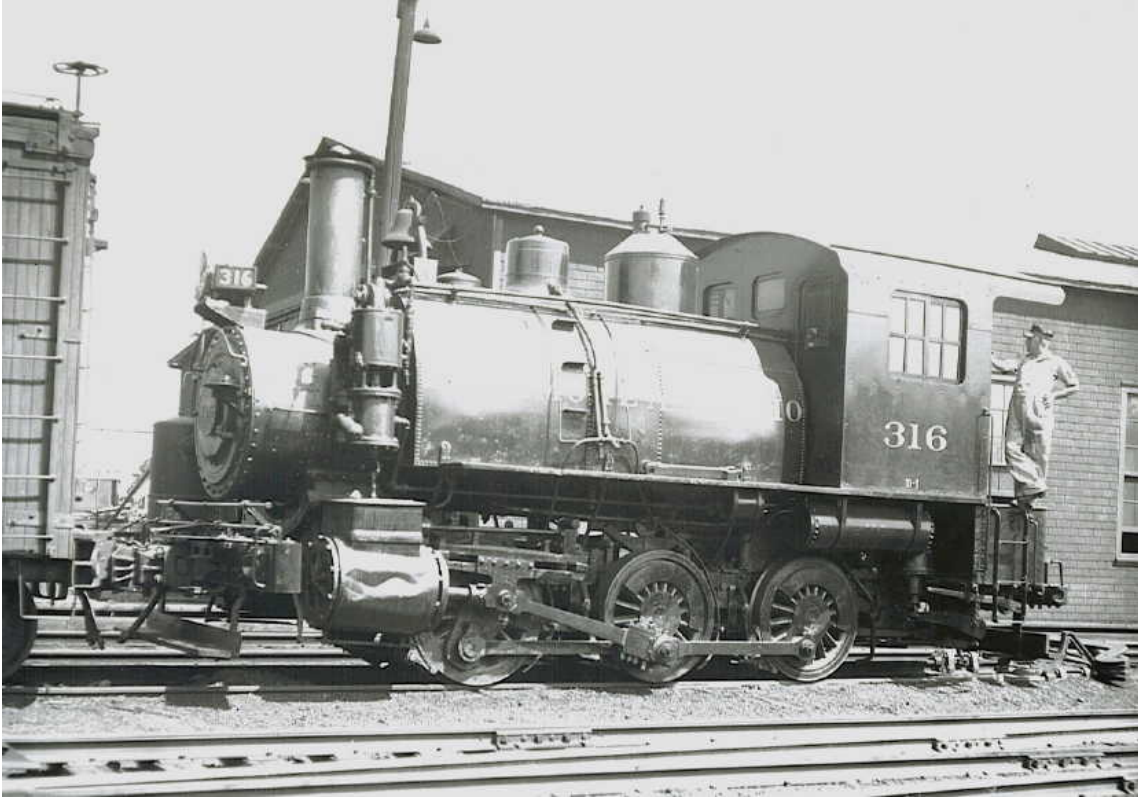
Even though B&O 316 put in a half-century of service, it continued working on Staten Island at the American Dock Company in Tompkinsville and the City of New York Municipal Piers at Stapleton.



#316 back in Manhattan again in 1937 and equipped with electric headlights,
 #316 waits the next move in the shadow of Lehigh Valley Railroad's Lehigh - Starrett Building.
 Box cab diesel #1 was probably at the Staten Island Rapid Transit Clifton Shops for inspection and maintenance work.
 Ralph C. Dunn photograph, Charles Winters collection.

B&O 316 returned to Manhattan more than once to cover for the box cab when it was being serviced at the Clifton Shop facility on Staten Island. It was the Manhattan relief engine until 1943 when the S.I.R.T. took delivery of its first diesel locomotive. It was a 400 hp. 65 ton GE switcher, numbered 184. The GE engine substituted for the box cab, which by this time was painted blue and renumbered 195.

Around 1939, the large wood cab was taken off the 316, no doubt suffering from age and rot. The SIRT Shops re-jacketed the locomotive and put on a new steel cab patterned after those on 2-4-4-T Forney engines that once hauled passenger trains. Plain and purposeful in black, 316's slanted cylinders and odd dome tops hinted at its ancient origins. Through WW II, B&O 316 worked at the Staten Island piers and also the Clifton Shops where it was the 'goat,' as the piers and shops are close by each other.



316 with its replacement steel cab and 'stored serviceable' in August 1945 next to the Staten Island Rapid Transit's Clifton Electric Car Shop.
 In one more year, it will be moved to Arlington Yard then over to New Jersey to meet the scrapper's torch.
 Bob's Photo's, E. F. Bommer Collection.

Late in August 1946, B&O 316 was retired at last. Few people noted its passing as it seemed little more than an odd-looking engine, long overdue for the scrap heap. A local newspaper, "The Staten Island Advance" briefly reported that it was the oldest steam locomotive in service on a Class I United States railroad at the time. Likely it was not a story the Baltimore & Ohio Railroad would enjoy, given in its efforts to appear modern and up-to-date, especially in the New York City area.

Eighty-one years and a month after it was built, B&O 316 was taken to Cranford Jct. along with several other condemned B&O and S.I.R.T. steam locomotives. The Jersey Central hauled them to various scrap yards in the Newark area. Somewhere out in the Jersey Meadows, B&O 316 met the torch. It was cut up not all that many miles from the City of Paterson, where it was built in 1865.

Locomotive 316 served its owners well. Created in the days following the Civil War with its hand-charged cannons, B&O 316 worked through our nation's westward expansion, two World Wars and into the "Cold War" with its Iron Curtain and atomic bomb. Thatcher Perkins could not have possibly imagined that in 1864, when he put to paper his thoughts on improving 1840's era eight-wheel connected freight locomotives for the Baltimore & Ohio Railroad.

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