

Pennsylvania Railroad No. 4465

1963

The Arrival of the E-44:

By the 1950's, the Pennsylvania Railroad's electric locomotives were beginning to show their age after twenty to thirty years of hard work. Most in need of replacement were the locomotives of the P5 class, built from 1931 to 1933 and use mostly in freight service since the introduction of the GG1. The railroad received and tested prototypes from Westinghouse and General Electric in 1959. Although neither design would go into mass production, the ignitron-rectifiers of the Westinghouse models set the stage for the future production. The rectifier consisted of a water-cooled electron cylinder filled with, mercury, through which an AC current could be passed to break it down into useable DC pulses.

Later that year, the Pennsylvania placed an order for 66 E-44 class electrics with General Electric. Each locomotive weighed in at 386,000 pounds and would generate 4,400 horsepower, with a top speed of 70 mph. Its outward appearance was also a radical departure from its predecessors, with a pair of three-axle trucks and a boxy carbody, similar to contemporary diesel designs. Train crews often referred to the E-44's simply as "bricks." In 1962, towards the end of production, new technology was employed when the water-cooled ignitron-rectifiers were replaced with air-cooled silicon rectifiers. Not only was the system much easier to maintain, its added efficiency also allowed the railroad to increase the horsepower rating to 5,000. The design was so successful that earlier production units were rebuilt and reclassified E-44a.

No. 4465:

No. 4465, the last of the E-44's built for the Pennsylvania in 1963, has the distinction of being the last electric locomotive of any type to be delivered to the line. No. 4465 was one of six E-44's rebuilt with silicon rectifiers, delivering an amazing 5000 horsepower. The unit served the Pennsylvania in freight service five years, before becoming part of Penn Central, and then finally Conrail. Although Conrail tested two electric prototypes in the late, 1970's, rising utility costs and changing operating patterns brought an end to electrified freight service: the E-44 fleet was retired in 1980.

Most of the E-44's were scrapped at this point, but eight, No.s 4458-4465, were sold to New Jersey Transit, where they sat in storage for five years. In a deal with Amtrak, the E-44's were traded for used E60CP models that had proven largely unsuccessful for the passenger carrier. The E-44's, not designed for passenger service, were retained for maintenance-of-way trains on the Northeast Corridor.

Renumbered 902, the big electric was repainted in a simple gray and black paint scheme. She soldiered on for a few more years, but age and concerns about polychlorinated biphenyls (PCB's) used in the transformer finally brought her career to an end. Upon learning of the retirement and pending destruction of the remaining E-44 fleet, the Railroad Museum contacted Amtrak and was given permission to preserve one locomotive, provided the transformer and all PCB's were safely removed. Because of its distinction as being the last of the PRR electrics, No. 4465 was selected and arrived at Strasburg in 1991. The locomotive was restored to its as-delivered appearance by Conrail's Juniata Shops in 1997.

Builder: PRR Erie Shops & General Electric Co.

Build Date: April, 1963

Retirement Date: c. 1991

Wheel Arrangement: C-C

Class: E-44

Number Built: 66

Weight: 384,260 lbs.

Length: 69 ft. 6 in.

Tractive Effort: 53,500 continuous/89,000 max.

Pickup: Overhead Catenary Wire & Pantograph

Voltage: 11,000-v AC

PHMC Cat No. RR 91.6