

Lines West – Buckeye Region Newsletter



Volume No. 4

Issue No. 1

January 2007

**In this Issue: Upcoming Chapter Meeting
Election of Officers
Pennsylvania's SD-7 Locomotives**

Upcoming Chapter Meeting February 11

Our next chapter meeting will be held Sunday, December 10 at 1:00 in Upper Arlington at the meeting room of the Lane Road Branch Library, 1945 Lane Road, Upper Arlington, 43220. There are maps on the library's website: ualibrary.org.

An interesting part of our meetings is sharing models and displays with the other members. Please bring your best work or your most interesting discovery for display.

At the next meeting, we will be electing officers for the coming year. As you know, the current slate of officers has done a great job getting this chapter started, but some of them are desiring to pass the privilege on to someone else. Any member who can serve in one of the officer capacities is urged to make his or her willingness known to Acting President Al Doddroe at adoddroe@earthlink.net or by snail mail at 12827 Commercial Point Road, Ashville OH 43103.

Membership Renewal

It is time to renew your membership if you have not done so already. As you know, this fund pays the costs of the newsletters, and any expenses in holding our quarterly meetings. Chapter dues are a modest \$10 per calendar year for regular and associate membership, and \$25 for Organizational membership. January 1, your 2007 chapter dues were due. If you haven't already done so, please fill out the form on page 5 and forward with a check for your dues to our Treasurer:

George Bilderback III, 326 Bear Woods Drive, Powell, OH 43065-7759. Any questions? Contact George at ggb3@columbus.rr.com

Pennsylvania's SD-7's

Dan Davidson

Looking over the massive roster of the Pennsylvania Railroad's diesel locomotives brings to mind a consumer report guide showcasing virtually every manufacturer and model available. In the conversion from steam to diesels, the Pennsy gave every major builder an opportunity to prove the value of their product. When the dust settled, EMD would stand as the dominate victor.

In 1951 the PRR ordered 66 new GP-7 four-axle road switchers, which soon proved their versatile abilities throughout the entire PRR system. It is no surprise that EMD was chosen to provide the PRR with two distinct units specially designed for a demanding challenge.

An operational headache for the railroad was Madison Hill, located on the PRR Madison-Columbus Secondary in Indiana. Madison Hill's two-mile 5.89 percent grade up from the Ohio River was America's steepest rail line. Over the years, steam locomotives of various types were used, with the last being a handful of H class 2-8-0 Consolidations used from 1951 to 1953.

Impressed with the versatile GP-7, the PRR ordered a bigger six-axle version classed as an SD-7, with modifications specifically designed for the work on Madison Hill. The SD-7 was slightly over sixty feet in length and had a horsepower rating of 1500. The PRR order required a lower modified gear ratio of 65:12, providing a traction effort of 90,000 lbs at a maximum speed of 55 MPH. The unit's weight was increased to 360,000 lbs. by adding ballast to the lower frame. This brought the targeted starting traction effort to 87,000 lbs at a minimum speed of 4.6 MPH, which Pennsy projected would meet the Madison Hill's challenge.

Optional equipment provided by EMD were the dynamic brakes, a brake pressure maintaining system in case the train brakes developed a leak in the brake pipe, a special wheel slip control and an automatic sanding device. The units also had hump controls installed. Due to restrictions placed upon operating the hill, neither had multi unit (MU) capability.

The PRR Altoona shops designed and installed a unique device to the unit, a rail washer. A water tank was placed in the short hood of the locomotive, pressurized by tubing running from a high capacity compressor. Tubing was added to the bottom front and rear of the locomotive with a spraying device installed toward the front of the truck. This option gave the unit the ability to wash the rails of debris and fallen leaves that could increase slippage while going up grade. The water tank was vented on the roof of the short end, giving these SD-7's a distinct and recognizable appearance.

On November 9, 1953, the new units, classified by the PRR as ERS-15a, numbers 8588 and 8589, replaced the steam locomotives used on the hill. These two unique units would be a familiar sight on the Madison Secondary for the next twenty-five years.



A close up view of unit 8588's front end shows the addition of tubing used to supply water to the rail washer. In the lower right a portion of the rail washer can be seen.

To work on Madison Hill, these units and their assigned crew had to perform under some unique circumstances that required the PRR to post a lengthy set of rules assuring a safe move both up and down the hill. The locomotive had to be on the south end (downhill grade) of a train that could not exceed a length of 15 cars or a weight of 350 gross tons. When traveling downhill the speed could not exceed 8 MPH and under no circumstances were the engines to run light, which might cause unsafe and questionable braking without the added ability of coupled cars.

Prior to every trip the crew made exhaustive inspections of the train and particularly the SD-7. All aspects of the braking system had to be inspected and tested, the freight cars brakes set to a point where minimal application from the locomotive would be required, the rail washer functional, water tank full and pressurized. If used, the wheel slip control and automatic sanding device would then be applied to compensate for the now damp rail.

One SD-7 would work the hill while the other would perform hump duties at Hawthorne Yard in Indianapolis. This gave time for a unit to get minor maintenance when at Hawthorne. Periodically, they would switch assignments.

The PRR would eventually purchase 25 SD-9's, although none was used on Madison Hill, since none had the modifications Pennsy found necessary to work the Hill. With the exception of the tank vent on the short hood, the only visible difference between the SD-7 and SD-9 was the position of the classification lights above the number boards. The lights on the SD-7 were in the middle while the on SD-9 they were on the outer edge.

Use of the SD-7's continued into the Penn Central era, with the units being renumbered 6950 and 6951, then again to 6998 and 6999. In April of 1985, 8588 was retired and eventually scrapped. February of 1984, 8589 was retired and sold to the Terre Haute & Western, then resold to Consolidated Grain & Barge. It is currently owned by the Terminal Railroad Association of St. Louis (TRRA) who still shows the unit on its roster as unit 1751. It was re-classed SD-7R in 1999 and given 1750 HP rating, similar to SD-9's.

Madison Hill's operation is an example of why the PRR did not build a bridge to bypass the Horseshoe Curve near Altoona. Such a bridge would have resulted in a grade of nearly 5 percent to allow the remaining line to stay at the desired 1.9 percent. Restrictions similar to Madison Hill on the nation's busiest highway would have been an unpractical and costly idea.

SD-7 Profile (PRR Classification ES-15a, re-classed ERS-15ax in 1966)

Number 8588	Builder EMD	Builder Number 18669	10/1953
Number 8589	Builder EMD	Builder Number 18670	10/1953

Ordered June 1953, Delivered November 1953.



*SD-7, 8588 at North Madison Indiana. Note location of the classification light above the number board.
(Copyright 2002 Bob's Photo, author's collection)*



LINES WEST - BUCKEYE REGION CHAPTER
326 BEAR WOODS DRIVE
POWELL, OHIO 43065
OFFICE OF THE TREASURER GG BILDERBACK III
Email: ggb3@columbus.rr.com Phone: (614) 718-1656

2007 MEMBERSHIP DUES RECEIPT
PLEASE CIRCLE TYPE OF MEMBERSHIP APPLYING FOR:

REGULAR \$10.00
ASSOCIATE \$10.00
ORGANIZATIONAL \$25.00

NATIONAL PRRT&HS MEMBERSHIP # _____

NAME _____

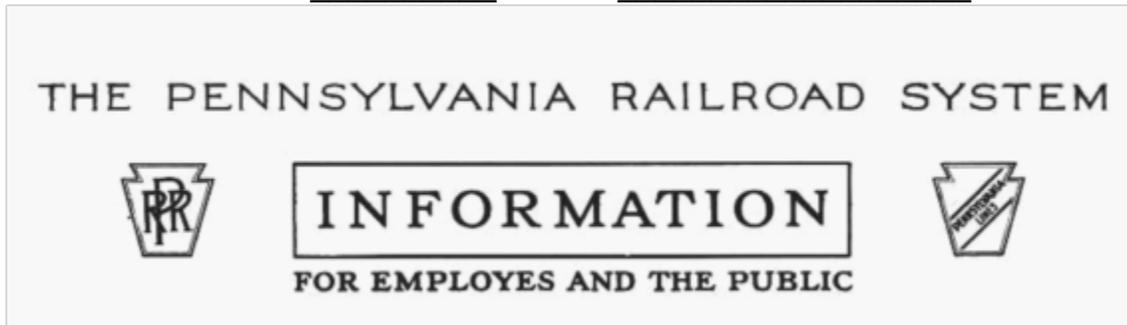
ADDRESS _____

CITY _____ STATE _____ ZIP _____

TELEPHONE _____

E-MAIL ADDRESS _____

AMOUNT PAID \$ _____ DATE _____



**P.R.R.T. & H.S. LINES WEST - BUCKEYE REGION CHAPTER THANKS YOU
FOR YOUR SUPPORT**