The Keystone Modeler

Pennsylvania Railroad Technical & Historical Society

No. 81 Summer 2012

Inside:

The Keystone Modeler
Pennsylvania Railroad Technical & Historical Society

Published Quarterly by
The PENNSYLVANIA RAILROAD
TECHNICAL and HISTORICAL SOCIETY
A non-profit organization

MEMBERSHIP INFORMATION
PRRT&HS, PO Box 54, Bryn Mawr, PA 19010-0054

PRRT&HS MONTHLY E-NEWS
Keystone-e-news-request@lists.keystone-pubs.org?Subject=subscribe

FRONT COVER, TOP

Rooftop view of Walther's new PRR E8 (EP22) diesel in Tuscan Red with Dulux Gold pinstripes. (Jack Consoli)

FRONT COVER, BOTTOM

K4s #3746 moves upgrade past "MG" Tower on its way from Altoona to Johnstown in a scene from Train Simulator 2012.

BACK COVER

It's early morning on the Willsburgh Division. A J1A slowly brings a freight past the Willsburgh Yard Office and into the yard while an I1SA waits. The locomotives are from Broadway Limited Imports. Tim Garner scratchbuilt the yard office based on a photograph of a PRR building in Lewistown. The switch lamp is made by modifying an NJ International Ramapo switch throw. (Tim Garner)

The Keystone Modeler

Manuscripts and photographs submitted for publication are welcome. Materials submitted are considered to be gratis and no reimbursement will be made to the author(s) or the photographer(s) or his/her representative(s). The Society reserves the right to reject, for any reason, any material submitted for publication.

Please contact the editor for information and guidelines for submission. Photo files 800x600 pixels or larger in JPG format are preferred. Statements and opinions made are those of the authors and do not necessarily represent those of the Society.

The Keystone Modeler on CD-ROM

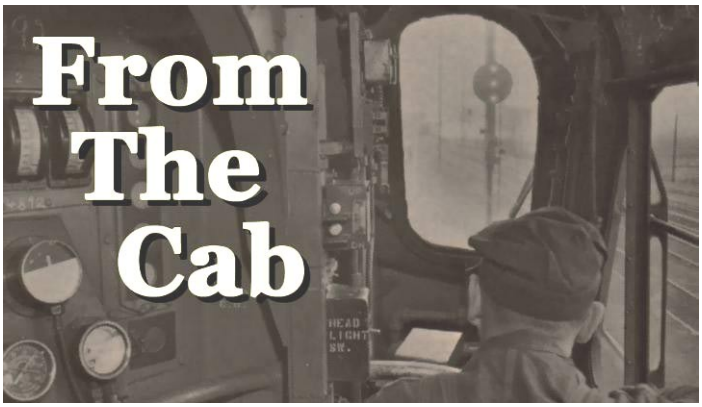
Disc 1	August 2003 to July 2004	*TKM* Nos. 1 – 12
Disc 2	August 2004 to July 2005	*TKM* Nos. 13 – 24
Disc 3	August 2005 to July 2006	*TKM* Nos. 25 – 36
Disc 4	August 2006 to July 2007	*TKM* Nos. 37 – 48
Disc 5	August 2007 to July 2008	*TKM* Nos. 49 – 60
Disc 6	August 2008 to Autumn 2009	*TKM* Nos. 61 – 71
Disc 7	Winter 2010 to Autumn 2010	*TKM* Nos. 72 – 75
Disc 8	Spring 2011 to Winter 2012	*TKM* Nos. 76 – 79

Each disc is $15.00. There is also a disc containing all issues from 1 to 48 for $60. If you are a resident of Pennsylvania, please include PA sales tax. Send a check or money order in US dollars payable to PRRT&HS to:

Jim Hunter
4306 North Victoria Way
Harrisburg, PA 17112-8641

To **subscribe** to **The Keystone Modeler**, click on the link below and send:
mailto:the-keystone-modeler-request@lists.keystone-pubs.org?Subject-subscribe

To **unsubscribe**, click on the link below and send:
mailto:the-keystone-modeler-request@lists.keystone-pubs.org?Subject-unsubscribe



Recently, I have found myself in a number of conversations about painting locomotives. It seems to be less common than in the past. Just as we have seen more and more factory-painted freight and passenger cars, so we have seen more and more factory-painted locomotives.

Back in the peak years of brass locomotive production, painting was not common on the imports, and we either had to paint the engines ourselves or pay someone else to do it. When the plastic diesels arrived, they were mostly painted, but undecorated shells were not hard to find. Nowadays it seems that modelers have less incentive to paint their locomotives. The steamers imported by BLI are painted and lettered beautifully, and the new E8 units released by Walthers for their *Broadway Limited* are finished better than many of us could manage. All that is required is a touch of weathering to be applied by the modeler.

Of course, you may have to do some touch-up painting if you want to change a few details on a locomotive, but painting the whole thing seems to be left to those who have their own ideas of how something ought to look or those who have their own imaginary railroads. I have such an imaginary "free-lance prototype," and I look for undecorated or painted-but-not-lettered locomotives. They are sometimes available, but I think the manufacturers believe that factory-painted units sell better. When sufficiently motivated, I have stripped locomotive shells and repainted them.

If you are one of those who like to custom paint locomotives, then I suspect you belong to an exclusive segment of our hobby. You might even be one of those Railroad Prototype Modelers!

Although I have not seen much PRR modeling in the press recently, there will be something special coming along soon. Andy Rubbo's Northeast Corridor with 1967 catenary will appear in *Great Model Railroads 2013*. See Steve Hoxie's column for more details.

In this issue of *TKM*, we have a review of Walthers *Broadway* diesels by Jack Consoli, a review of a railroad simulation game by Tim Garner, and some models from the 2012 PRRT&HS Annual Meeting.

Jim Hunter, Editor

The Pennsylvania Railroad Technical & Historical Society

The purpose of the Pennsylvania Railroad Technical & Historical Society is to bring together persons interested in the history and modeling of the Pennsylvania Railroad, its subsidiaries and its acquired companies. Our goals are to promote the preservation and recording of all information regarding the organization, operation, facilities, and equipment of the PRR.

The Society's quarterly illustrated journal, *The Keystone*, has been published continuously since 1968. Each issue of 64 or more pages contains illustrated original authoritative articles about locomotives, cars, other equipment, facilities, and operating practices of the PRR. The Society also publishes its own thoroughly researched books and other materials concerning PRR history. *The Keystone Modeler* is also a quarterly special 30-plus page online publication of the Society.

The Society meets annually, usually during a weekend in early May, providing an opportunity for its members to get together and learn more about the PRR. Local chapters around the country also provide members and guests with regular meetings that feature PRR related programs.

Information about our Society may be found on our website – www.prrths.com. To join the Society, send $35.00 to:

PRRT&HS
PO Box 54
Bryn Mawr, PA 19010-0054

All memberships are for a calendar year, back issues of The Keystone for the current year are sent upon joining. Overseas membership has added postage fees.

PRRT&HS Interchange

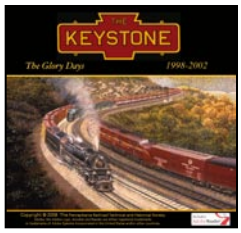
Selected Society Merchandise of Interest to Modelers

PRR Equipment Drawings on Microfilm

Copies of PRR equipment drawings are available from the Society's microfilm collection. To order drawings, you must know the drawing number and title. Ordering information and lists of arrangement drawings are available on the Society's website. Go to www.prrths.com, select National Society, and then The Interchange. If you require a printed copy of this information, please send your address and a check for $2.00 made out to PRRT&HS to:

Richard C. Price
779 Irvin Hill Road
McVeytown, PA 17051

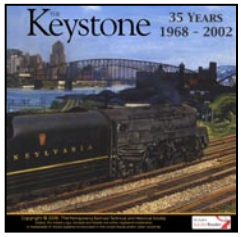
The Keystone CD 5



The Keystone CD No. 5, The Glory Days, covering 1998 to 2002, is now for sale at the price of $75 for members. New Jersey residents add $5.25 sales tax. Order CDs from:

Al Buchan
785 Cornwallis Drive
Mt. Laurel, NJ 08054-3209

The Keystone DVD 1

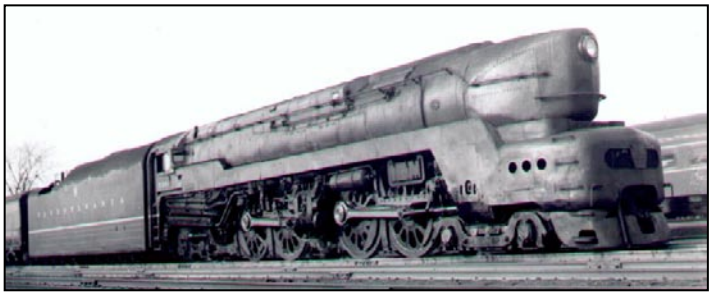


The Keystone DVD No. 1 covering 35 years of *The Keystone* from 1968 to 2002 is available. The navigation of this product is being upgraded as are some of the administrative notes and text. The improved edition will be ready for ordering soon. Those few who have already purchased the DVD will be able to trade it in for a new one when it's available. The price of this DVD is $375. ***This DVD requires a computer with a DVD drive. It is NOT a video disk that can be played on a DVD player for viewing on your TV.***

The Keystone Modeler
NEWSWIRE
With Steve Hoxie

PRR Product News

BROADWAY LIMITED IMPORTS
http://www.broadway-limited.com/
PRR T-1 (As Built) 4-4-4-4 Steam Engine – HO Scale



(BLI photo)

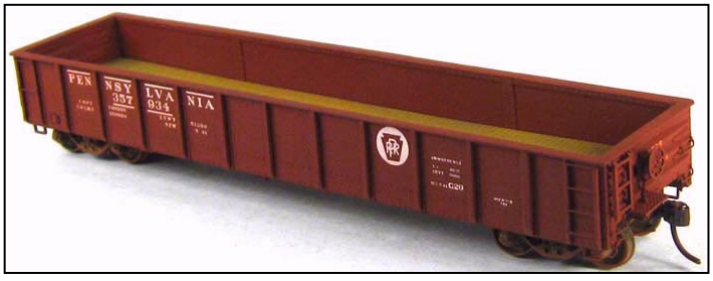
BLI will be producing the T-1 in the appearance they had when built. Equipped with sound and smoke for operation on DC and DCC. Due February 2013.

CONCEPT MODELS
http://www.con-sys.com/
PRR F42 Depressed Center Flat Car-HO Scale

(Concept Models photo)

Concept Models has available a resin kit of PRR 470256.

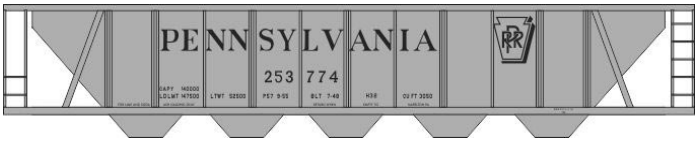
FUNARO & CAMERLENGO
http://www.fandckits.com/
PRR G29 Gondola-HO Scale



(Funaro & Camerlengo photo)

F&C has produced a resin kit for the G29 class gon. This class is featured in an article in TKM No. 14, September 2004.

JERRY GLOW DECALS
http://home.comcast.net/~jerryglow/decals.html
PRR H32 Shadow Keystone Decal Set – HO Scale



(Jerry Glow image)

Jerry Glow has available a decal set for the H32 covered hopper.

KALMBACH PUBLISHING CO.
http://www.kalmbachstore.com/gmr.html
***Great Model Railroads 2013* – Publication**

GMR2013 includes an extensive article on member Andy Rubbo's amazing HO double deck layout depicting the '60's era four track electrified main line. Here is a short video taken by Bill Lane showing Andy's work.
http://www.youtube.com/watch?v=QZCnh8Yj5AQ&lr=1.

I have it on good authority that shooting a new video has been scheduled. In the early 50's my family lived in Englishtown, NJ. In the middle of winter, to get two rambunctious boys out from under Mom, on Sunday afternoons Dad would drive us to Monmouth Junction to "watch the electrics". There was an occasional train of hoppers coming off the branch from Jamesburg, but the G's streaking through on the four track main were what made it memorable. Even sitting in the warm car we could feel them approach long before the "swoosh" was heard. Amazing. The scenes and video of Andy's layout capture that perfectly. ***GMR2013*** is expected to ship 10/13/12.

LASER MODELING 3
http://lasermodeling3.com/
PRR Sodus Point Welding Compound – HO Scale

(Laser Modeling3 photo)

Laser Modeling3 has produced a craftsman kit of this uniquely PRR structure and scene on the Elmira Branch. In TKM No. 77, Summer 2011, Ed Swain wrote an article on his model of this scene, starting with drawings found in Model Railroader and a Westerfield camp car.

MOUNT VERNON SHOPS
http://www.mountvernonshops.com/
PRR Decals—HO and N Scale

John Frantz has announced HO decals for G26, G28, and G29 gondolas in the Circle Keystone scheme. He also has a set to do G26 and G33 classes in N.

WESTERFIELD MODELS, LLC
http://www.westerfieldmodels.com/
Resin Freight Car Kits – HO Scale

Many of you know that Al Westerfield has retired and sold his line of top quality resin HO models, including many following PRR prototypes. The new owner is now up and running. See the website for model availability.

Upcoming Events

October 11-13, 2012 Strasburg/Lancaster, Pennsylvania
Fine Scale Model Railroader Expo
http://www.modelrailroadexpo.com/

October 13, 2012 Seattle, Washington
Pacific Northwest Railroad Prototype Modelers
http://www.northwestrpm.com/

October 18-20, 2012 Naperville, Illinois
19th Annual RPM-Naperville Conference
http://railroadprototypemodelers.com/

October 27-28, 2012 Timonium, Maryland
Great Model Train Show
http://www.gsmts.com/

December 1-2, 2012 Marlborough, Massachusetts
New England Model Train Expo
http://hubdiv.org/

January 10-12, 2013 Cocoa Beach, Florida
Prototype Rails Modeling Meet
http://www.prototyperails.com/

January 26-27, 2013 West Springfield, Massachusetts
Amherst Railway Society Railroad Hobby Show
http://www.railroadhobbyshow.com/

May 16-19, 2013 Lancaster and Strasburg, Pennsylvania
PRRT&HS Annual Meeting
http://www.prrths.com/

July 14-20, 2013 Atlanta, Georgia
NMRA Annual Convention and National Train Show
http://www.nmra2013.org/

The New England Chapter of the PRRT&HS often holds their quarterly chapter meetings at model railroad clubs in southern New England. Members get to operate their PRR equipment through new and sometimes unusual scenery. At their June meeting, the chapter visited the Bay State Model Railroad Museum in Roslindale, Mass. This club has large HO, N, and O layouts which have all been featured in Model Railroader *over the years. In the first image, a 1967-era empty coal train led by an HO-scale Bowser ALCo C630 and two Athearn SD45 diesels exit a western canyon. In the second, a late 1940's reefer train led by Life-Like Fairbanks-Morse Erie-Built units crosses a tidal inlet next to a nude beach. (Models and photos by Tim Garner)*

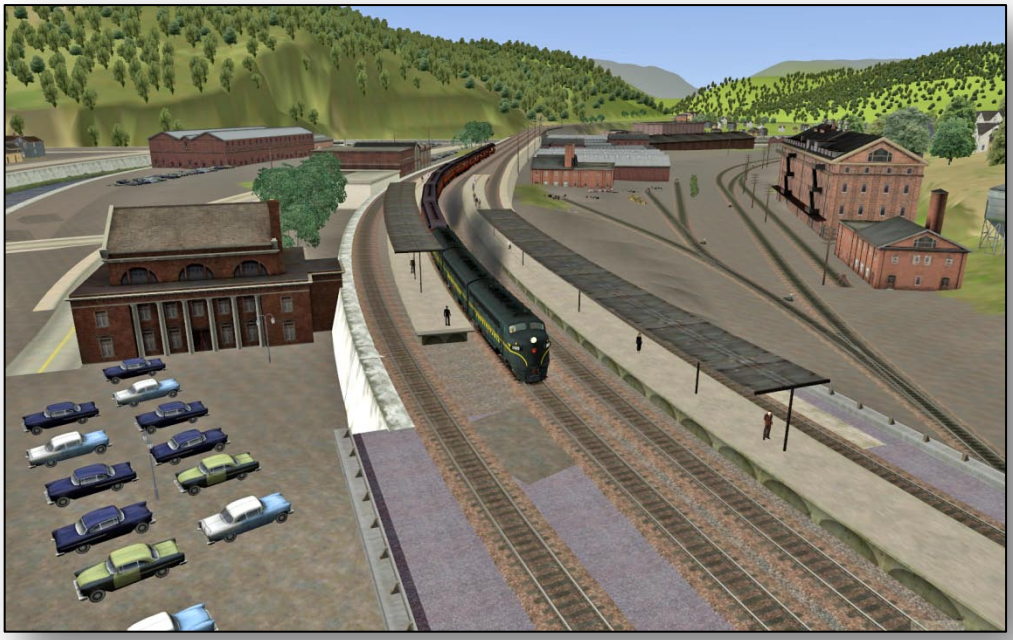
Product Review: Train Simulator 2012

Tim Garner

Manufacturer
RailSimulator.com Ltd.
27 New Dover road
Canterbury, Kent UK CT1 3DN
railsimulator.com

Minimum requirements:

- Windows XP/Vista/Windows 7
- 2.8 GHz or faster processor
- 2 GB RAM, 6.0 GB hard disk space
- DirectX 9.0c or compatible sound card
- Internet connection



F7 units on a passenger train leaving Johnstown. ►

I'm not really a computer game enthusiast, but several years ago I purchased Microsoft Train Simulator. It was fun to explore Marias Pass on the BNSF and the Northeast Corridor on Amtrak, but I rarely used it. I'm a Pennsy guy I guess. However, when I learned that Railworks 3: Train Simulator 2012 was coming out with a Horseshoe Curve add-on, I decided to try again.

While it is possible to buy this in a DVD version, I purchased mine through http://www.steampowered.com. Steam calls itself the world's largest online gaming platform. It is owned by game developer, VALVE. This connection keeps end-users up to date with news on the game, software updates, and add-ons. The connection also helps with troubleshooting and fixes.

The basic game includes Cajon Pass in California with the Santa Fe, one route in Germany, and three in England, plus some fictional routes. The deluxe version includes PRR's "Horseshoe Curve" route from Altoona to Johnstown, Pa. You can also get it in a "Haulin' USA Pack" add-on that also includes Amtrak's Northeast Corridor, and Southern Pacific's route over Donner Pass.

HORSESHOE CURVE

The Horseshoe Curve route has excellent graphics. I think the scenery and track layout are quite accurate for the mid-1950's. The stations and towers, such as Altoona, Johnstown, Cresson, "ALTO", "SLOPE", and "MG" are recognizable. The PRR Master Mechanics Building, now occupied by the Railroaders Memorial Museum, appears in several locations along the line as an industrial building.

There are a few visual inaccuracies in the scenery that will bother purists, but don't significantly detract from the effect. Bridges don't generally look like the classic stone arch spans found along the line. In Sugar Run Gap at Tunnel Hill, Route US-22 is shown parallel to the line, though it wouldn't be built there for at least 25 years.

Eastward view from F7 cab in Johnstown station.

GP7 at Altoona Shops with X29 boxcars and H21 hopper.

▲ *P70 coaches in Johnstown.* ▼ *Close-up of K4s #3746 on the eastern slope.*

The route comes with two PRR locomotives – EMD F7 (EF15a) and GP7 (ES15) – in 1950's paint. Depending on how bright one adjusts the graphics, the dark green locomotive paint will be just right or too green.

Passenger equipment is limited to PRR P70 coaches. The color schemes on the coaches are accurate for the mid-1950's, but the body styles date much earlier with ductwork at the four roof corners and windows in the vestibules. Freight equipment is limited to X29 box cars in a hybrid of the simple keystone and shadow keystone schemes, but with silver roof walks. F50A flatcars appear with various loads including PRR trailers. H21 four-bay hoppers appear with the older double-doors (reverse positions of the name and herald) and "Pennsylvania Lines" lettering. None of the freight trains have cabin cars, but some N5B cabins with shadow keystone lettering appear in the yards.

If you have a good sound system on your computer, you'll appreciate the rumble of the diesel exhaust which responds to your throttle settings. If you have a sub-woofer, you can shake your house. The bell sounds fine, but horns are weak and inaccurate. I understand it is possible to get free replacement sounds from trainsim.com. Ambient sounds, such as birds and autos, are also included.

When you run the simulation, you have the option to roam free on the route or follow pre-installed scenarios. The scenarios contain assignments you must complete. Once you understand the locomotive controls, they are not especially difficult. In one scenario, you are moving equipment away from a burning building near the Juniata Shops. In another, you are taking a passenger train from Johnstown to Altoona with a stop at Cresson. In the final scenario, you are taking a train to Horseshoe Curve to participate in the famous 100th anniversary photograph of the Curve. Scenarios end if you derail your train, run through a red signal, or can't keep close enough to the schedule. Some scenarios take an hour or more to complete, but it's possible to save your progress and come back to it later. In free roam mode, it is possible to go past the end of track in Altoona or Johnstown and wreck your train.

I purchased the K4s add-on. The quality of the graphics for the engine is outstanding, though my computer had difficulty handling the chugging sound at certain train speeds. The add-on also included additional scenarios designed for this engine.

The controls that allow you to change your visual perspective help in running trains, but also allow you to appreciate the artistry of the game designers. You can look out of the cab (in this view you can operate the locomotive controls in the cab with your mouse), look alongside the cab as if you were hanging out the window on both the right and left sides, see aerial views at the front and rear of the trains, see an aerial high altitude view, or look inside the train. On most, you can zoom in and out and pan left and right with the arrow keys on your keyboard. Another view shows you one photo runby after another. A camera button allows you to take screen shots of your train which are instantly saved to your computer's "my pictures" directory (how the images in this article were created).

A westbound passenger train rounds Horseshoe Curve behind two K4s locomotives.

View from the cab of a westbound K4s in Altoona while waiting for two K4s locomotives to clear. Note the coaling facilities in the distance before the tracks curve right toward Altoona station.

THE NORTHEAST CORRIDOR

The Northeast Corridor route covers the former PRR mainline from Penn Station in New York to Union Station in Washington, D.C. The graphics of the route appear to look like today so some of the PRR flavor is lost. The detail appears to be at a higher level than the Horseshoe Curve add-on. It is possible to recognize the current skyline of cities along the route – amazing. The standard equipment includes the *Acela Express* and other modern Amtrak equipment.

One of the beauties of this route is the PRR GG1 add-on. The train's designers have created a realistic locomotive in the classic green five-stripe scheme. You can have the joy of operating a G, but you'll be pulling Amtrak equipment much like #4935 did when it was restored to PRR paint in the late 1970's.

As with any computer simulation, it is possible to get very deep into this. But for me, I enjoy it as an occasional break when I want to do something train-oriented, but I'm too mentally tired to tackle a model train project.

A westbound K4s at "SLOPE" interlocking in Altoona.

Engineman's view from a GG1 cab.

▲ *GG1 #4935 leaves Amtrak's 30th Street Station in Philadelphia with a northbound Amfleet train on a rainy day.* ▼ *The train crosses the Schuylkill River on its way to Penn Station, New York.*

Model Review – Walther's/Proto 2000 PRR E-units for their 1953 *Broadway Limited* in HO Scale
The EMD E8A and E7B Passenger Road Units

Jack Consoli – All photos by the author unless otherwise specified

Out of the box Walthers / Proto 2000 PRR classes EP-22 and EP-20.

Walthers / PROTO 2000 recently released their retooled HO scale version of the EMD E8A and E7B passenger locomotives specifically to accompany the release of their circa 1953 (and later) *Broadway Limited* train-set. These locomotives include improvements such as "corrected" bulldog nose contours, factory applied Trainphone apparatus and more details and features than the prior versions. As to specific details, their ad copy states:

Power for Pennsy's Finest — PROTO 2000® E8A Units

Handling the Blue Ribbon Fleet, Pennsy's 74 E8A units began arriving in 1949 and provided outstanding power and performance for years. Like their prototypes, Walthers E8s include Train Phone antenna, an improved five-chime air horn replica, nose lift rings and much more. Multiple unit numbers are available, and each is factory-finished in authentic paint, lettering and striping to match the cars. Choose Sound and DCC equipped, or Standard DC versions. Other features include:

- See-Through Air Intake Grilles
- Painted Metal Grab Irons, Handrails and Lift Rings
- Superb Paint and Lettering
- Five-Pole, Skew-Wound, High-Torque, High-Efficiency Can Motor
- Helical Gears with 12:1 Ratio for Smooth, Ultra-Quiet Running
- Correct 36" Wheels
- Easy Multiple-Unit Operation
- Proto MAX™ Metal Knuckle Couplers

Sound Units Feature:

- Dual Speaker Design
- 32mm Diameter Speakers
- Accurate Nathan M3 Horn Sound

(Author's notes: Although EMD E8 production started in mid-1949, the first PRR units were not delivered until March 1950. "5-chime" air horn is a typo. The Nathan M3 on the models is a 3-chime horn.)

Their offerings include the following eight PRR locomotive road numbers:

E8 A-A Sets

920-41360 #5804A and 5807A w/Sound and DCC
920-41363 #5712A and 5713A w/Sound and DCC
920-48360 #5804A and 5807A Standard DC
920-48363 #5712A and 5713A Standard DC

E8A Units Only

920-41361 #5803A w/Sound and DCC
920-41364 #5710A w/Sound and DCC
920-48361 #5803A Standard DC
920-48364 #5710A Standard DC

E7B Units Only

920-41362 #5840B w/Sound and DCC
920-41365 #5848B w/Sound and DCC
920-48362 #5840B Standard DC
920-48365 #5848B Standard DC

These are very nice models. The big news regarding these units is: the improvements to the A-unit nose contours compared to previous releases, the Trainphone transmitting and receiving structures are now included and factory applied, and for the first time a plastic E7B in the PRR "phase II" configuration has been produced; blessings to PRR modelers everywhere. Overall the models feature fine detail, including see-through screens with simulated structure behind, coupler release levers, lighted numberboards, constant lighting, operating diaphragms, wire lift rings on the roof hatches and numerous other nicely rendered details. The units run well and the sound equipped units nicely reproduce the sounds of the prototype, including the correct horn via their dual speakers.

The units are carefully packaged to prevent damage to the delicate trainphone structures as well as several parts, including the pilot, which are included separately.

Along with all these positive features, there were a few minor things about these models I viewed as negatives. As mentioned previously in my review of the E7 models, there are those minor injection mold tooling construction considerations that result in small raised "witness" lines in the plastic around the curves of the nose and the windshields and front section of the cab roof areas. They are not prominent or hugely bothersome, and they could be easily removed if the modeler was going to repaint the units or was confident in his paint matching skills to touch up the areas if removed. They also suffer from mold design limitations in that the recessed-yet-flush-mounted appearance of the windshields leaves a little to be desired.

There are also some minor detail discrepancies between the models and the specific PRR prototypes they are supposed to represent. Realistically, these things fall under the umbrella of what level of prototype-specific details is reasonable to expect a manufacturer to reproduce for a single model offering. These small items are inevitable victims of limited tooling budgets. For specifics, read on….

Prototype Background

Power for the *Broadway Limited*

So which, and how much power, was right for the *Broadway* circa 1953? As seen in the advertising of the period, which was the image the PRR wanted to portray of their company and their equipment, as well as period photographs, a pair of E8A's was the preferred power for the *Broadway*. Not surprisingly, this was nothing but the newest, finest and most reliable power they had to offer for the most noteworthy train in the fleet. A two unit set was consistent with the Motive Power department's testing and mid-1948 reassessment that their concept of what was deemed to be the desired road locomotive configuration for most trains under most conditions: 4500 horsepower. This assessment was the main reason why only E8 A-units were purchased: an EP-2 set of two E8A's at 2250 hp each yielded exactly that desired number. The PRR also desired "double-ended" locomotives that did not require turning at each end of every run. Thus under "normal" conditions, B-units in a two-unit "locomotive" would defeat this operating objective.

Of course, the guideline of "most trains under most conditions" did not always apply to the *Broadway*, as well it might not with any other train on any given day. On occasions when ridership was high or inclement weather conditions warranted, additional power was added. Since installation of nose MU capability on the E8A's was not begun until 1957, B-units were needed when more power was required. Despite the absence of E8B's on the railroad, there were other B-units that could be utilized. However, the only MU, steam heat and gearing compatible options on hand at the time were the 14 EMD E7B's or the five ALCo PA1 2000 hp B-units. Walther's choice of locomotive offerings for their *Broadway* is thus appropriate for that period.

Artwork excerpt from PRR Timetable Form 1, January 25, 1953 illustrating the Broadway. *Units pictured appear to be 6-month old 5806A and mate from the first group of factory painted units in Tuscan Red with Buff lettering and striping.*

► *PRR ad for the* Broadway Limited *celebrating its Golden Anniversary shows the train as all red. Note that lead unit pictured is 5884A and mate, the first E8A pair delivered to the PRR. Interestingly however, on this date these specific units were still green, as they had been delivered. The author's suspicion is that since the artwork would have needed to be prepared in advance for publishing circa the June anniversary date, the four experimental units had probably not yet been delivered. Since the PRR had suitable photos for the art department to work from in its own files of the first E8A set (see below), that probably explains why this historical inaccuracy occurred.*

► *PRR photo E.18454 taken September 7, 1950 of six month-old 5884A and 5885A. These were the first PRR E8A pair and are painted dark green here as were the majority of the E8's when delivered. Note the original small 3 in. numberboard numbers and that either the pilot arch under the doors is rotated up to the "open" position or it is missing.*

June 15, 1952 marked the 50th year of operation of the *Broadway Limited*; its golden anniversary. The PRR used this occasion to help promote the train in their advertising describing the 1952 *Broadway Limited* as "OFFERING THE NEWEST IN LUXURY TRAVEL". But what *was* new about the train? The train consist and the cars being used had not changed for several years prior to this date. Looking carefully at the ad below published in July 1952, underneath the "golden" tone superimposed over the image of the train and the pair of E8A's powering it, one notices that they are all Tuscan Red. In June 1952, what was new were four experimental Tuscan Red E8A diesel-electric locomotives.

The Pennsy's first two orders of E8's (1950-built 5884A-5893A and 1951-built 5808A-5810A, 5835A-5839A, 5894A-5899A, 5902A-5905A) as well as all their other diesels up to that time had been painted dark green. Just prior to the beginning of the 1952 (third order) deliveries, Chief of Motive Power H.T. Cover sent a directive to EMD on February 21, 1952 stating, "In connection with the 24 E.M.D. Model E-8 passenger A-units, on PRR Contract 4577-3, E.M.D. Order No. 6354, it has been decided to have four of the units painted P.R.R. Tuscan Red color for use on the BROADWAY." Details followed that the units were to be worked into the production schedule so as not to cause disruption in delivery schedules. After several delays the four units, 5789A-5792A, were selected, prepared, and delivered in mid-May 1952.

They were intended to have gold leaf lettering and striping, since they were built prior to the changeover to Buff color on passenger equipment implemented later in 1952. But due to continued resistance from EMD in applying gold leaf, the four units were actually finished with a metallic gold paint, and although not gold leaf, it was visibly different from the later Buff color paint. Thus these four units differed from all the other Tuscan Red passenger diesels that would follow. The other units of that order delivered earlier in March, April, and May (5765A-5769A and 5788A) as well as the eight that followed the four experimental units, in June (5793A-5799A and 5801A), were painted standard dark green.

Satisfied with the public reception of the experimental units, on July 7, 1952 the edict was passed that going forward, all passenger-service Diesel-Electric locomotives were to be painted Tuscan Red with Buff lettering and striping. Thus the remaining units of the 1952 order, the six units delivered in July, 5802A-5807A, as well as the 22 units from the fourth order that were delivered in September through November 1952, 5700A-5716A and 5760A-5764A were the first (and only) factory painted "production" Tuscan units.

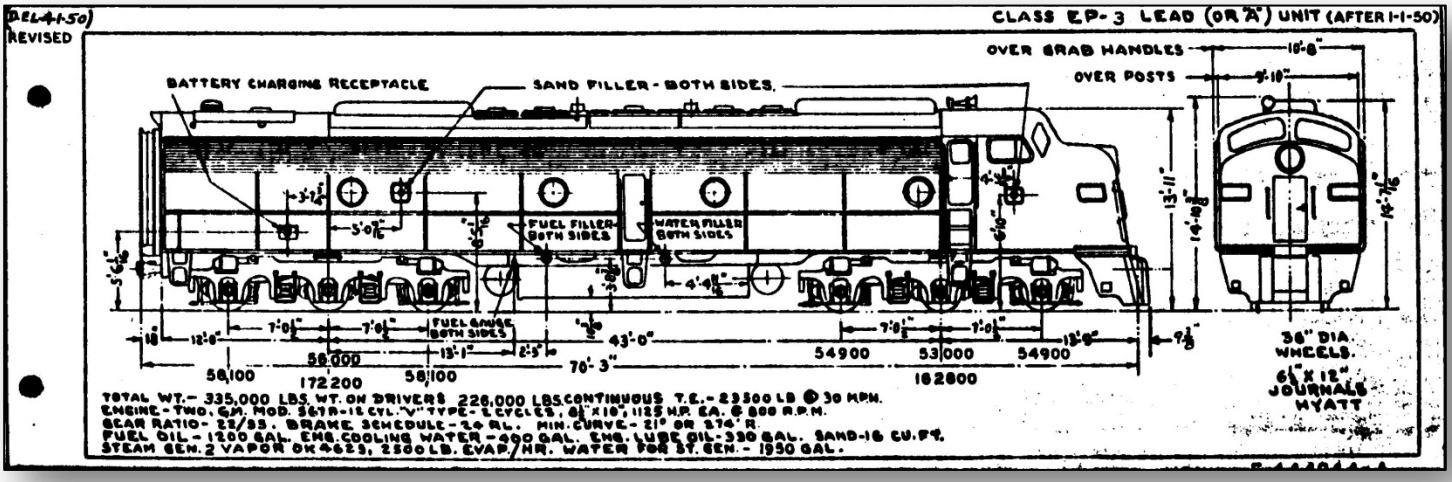
As was typical when repainting instructions were issued, it was specified that repainting was to be done when units next came in for high-mileage maintenance and repairs, thus making the changes only when units *needed* repainting. However, the scenario with the passenger diesel fleet's transition to the red scheme was a bit different and instructions were added that, starting in late October 1952, two units (not otherwise requiring new paint) per week were to be cycled through the Harrisburg diesel shop to speed up the process. Without the painting records, the only completely safe choices for units that were red in Walther's target year of 1953 were either those factory-painted red or ones for which there is photographic evidence. They chose correct numbers from the factory-painted groups. Since 1953 was a year in transition for the color of the passenger units, obviously any combination of units *may* have appeared on the *Broadway* on any given day based on what power was available, but clearly the PRR's preferences were that the units be red. In a PRR internal report from first Quarter 1953 the status of the color changeover for passenger diesel locomotives was described as follows: "This new colorful striking innovation will be passed on to the other passenger diesels as they are overhauled. One must not undervalue the importance of color to the diesel locomotive and the streamline train."

E8A's

The E7's and their successors, the E8's, were the most successful and most numerous diesel passenger locomotives the PRR purchased. They remained in the passenger pool their entire existence and held down the top spots on the Blue Ribbon Fleet as the other builders' passenger units proved they could not match up to the EMD's formidable competition.

The PRR purchased 74 A-units of EMD's total production of 449 E8A 2250 hp locomotives. They were built between March 1950 and November 1952 in four orders. The initial 10 units arrived in March and April 1950; the second order for 18 units was delivered in January through April of 1951. These units were all classified initially as EP-2 under the PRR's 1947 "locomotive"-based classification system. The class signified EMD-built, Passenger service, in a 2-unit locomotive set.

The largest order, 24 units, was delivered in March through July 1952 and the final group of 22 came later that same year in September through November. This last group was actually part of the 1953 diesel program, but EMD was able to shorten the delivery schedule such that they arrived in late 1952. These were the last passenger cab units of any builder, built for the PRR. The 1952 E8's were delivered following the changeover to the PRR's "unit"-based classification system introduced in June 1951 in which they and the earlier units all became class EP-22, signifying: EMD as the builder, Passenger service, 22-hundred (2250) horsepower per unit.



E8 A-unit diagram issued 4-1-50 concurrent with the delivery of the first order. Note this diagram incorrectly lists their class as EP-3 which appears to have carried over from the E7 diagram that should have been changed from EP-3 to EP-2 in 1948, but was not updated. Upon release of this E8 diagram with its notation "EP-3 (after 1-1-50)", the E7 diagram was updated as "EP-3 (before 1-1-50)" to distinguish between the two different locomotive models with the same class: illustrating one shortcoming of the 1947 locomotive-based classification system. (Courtesy Robert Schoenberg)

The units as a whole were generally similar in appearance as built, with some minor differences in the EMD and PRR-specified details between groups. Since Walthers numbered them in the 1952 factory-painted Tuscan Red series and stated that they configured these models to be appropriate for the circa 1953 *Broadway*, the models are reviewed as such.

Note however, that as with most equipment on the PRR, a number of modifications and upgrades were made to the units that resulted in changes to the external appearance, even within relatively short time periods, so any model cannot be expected to be correct for any extended period of time. These details will be presented for the modelers benefit.

E7B's

Refer to issue 76, Spring 2011, of *The Keystone Modeler* for the prototype background for the E7 locomotives.

Model Detail Review

E8A's

The overall dimensions of the units appear to be in agreement with the prototype, although I didn't check every single dimension to the nearest inch. Certainly nothing jumps out at you as being wrong when viewing the model. At the finer detail level, I will present below the specifics of the PRR prototypes and the model's fidelity to these features.

- 1950-built units: 5884A-5893A
- 1951-built units: 5808A-5810A, 5835A-5839A, 5894A-5899A, 5902A-5905A
- 1952-built units: 5765A-5769A, 5788A-5799A, 5801A-5807A (1952 program year units)
- Late 1952-built units: 5700A-5716A, 5760A-5764A (1953 program year units)

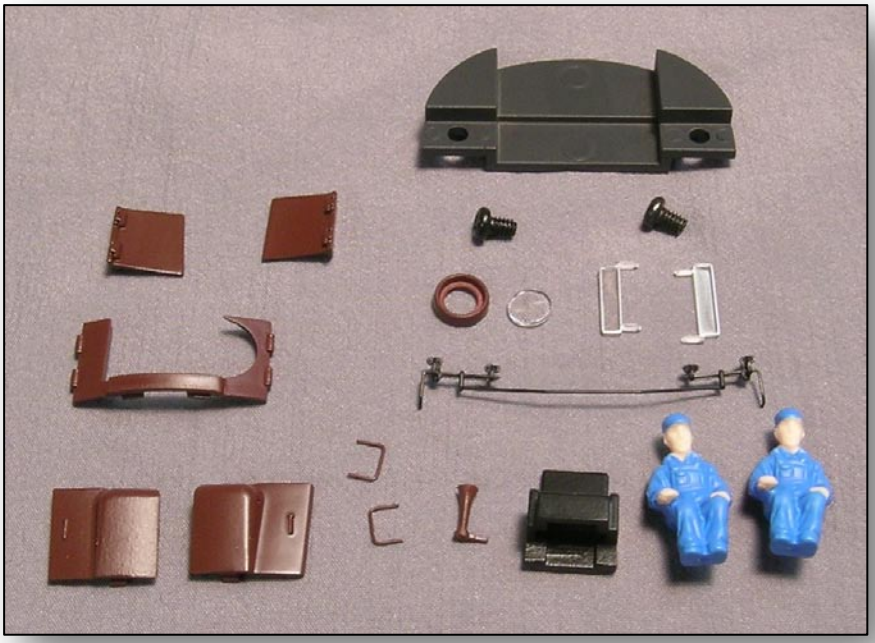
A-Unit Nose

Windshields, Wipers, and Washers

All the E8's had the "increased-view" windshield with the visible gasket. They all came factory-equipped with one top-mounted wiper on each half of the windshield and with factory installed washers in the form of a small horizontal squirt tube mounted on the post between the windshields. The Walther's model duplicates these features except that the washer tube is missing.

Grab Irons

While all the 1952 units were delivered with the handholds above the windshields, the ladder rest grab irons on the upper corners of the nose and the pair of additional straight, 3-bolt roof grabs above the cab side doors factory installed, the 1950 and 1951 units were not. The 1950 and 1951 units never had the straight 3-bolt roof grabs applied and the PRR retrofitted the windshield handholds and the ladder rest grabs to the early units in their own shops in 1953 and 1954. The models have all of these grab irons and thus correctly represent the 1952 units.



E8 detail parts included with model: crewmen, spare cab seat, pilot doors, grabs and filler pieces, square end cut lever, backup light, cab visors, B-unit horn and lighting shield.

Stock Walther's PRR E8A (pilot door pieces not yet applied).

LIFTING LUGS

All the E8 units were delivered with both the nose and square end steel lifting lugs. The Walther's units have lift lugs and are thus appropriate for the all the E8's.

NUMBER BOARDS

All of the PRR E8's were constructed with the large, flush, wrap-around style number boards and had a separate classification light mounted above. The 1950 units were delivered with the standard (of the day) 3 in. numbers applied, while all the later units were delivered with the 5 in. numbers that were adopted in late 1950. The early units then had their smaller numbers replaced. The Walther's model is thus correct for the 1952 units.

FLAG BRACKETS

All the PRR Es were originally equipped with two front and two rear "special classification flag and marker light brackets." These small castings were located on both sides of the A-unit cabs just below the front corner of the cab side windows. On the square end they were mounted midway up the body near the outer edge of the end sheets. These are missing from the models. Later, many of the brackets were removed or knocked off the units over the course of their existence, primarily those on the sides of the A-unit noses. Photographs show some disappeared as early as 1954, others lasted throughout the PRR era.

MULTIPLE UNIT CONTROL

None of the E8's were delivered with MU capability on the nose ends of the A-units. This equipment was not applied until starting in 1957. All the 1950 and 1951 A-units did, however, have a flush-fitting door with a slotted opening near the bottom on the nose on the fireman's side of the headlight. The purpose of this is unknown to the author. The models are correct without them for the 1952 units.

CAB SIDE WINDOWS

The E8's had the taller-height side cab windows with the large radius rear corners. All units had the standard moveable, automotive-style vent windows in front of the roll-down side cab windows. The two-piece rain gutter arrangement protected the window and the cab door. The model appears more or less correct for all the E8s.

HEADLIGHTS

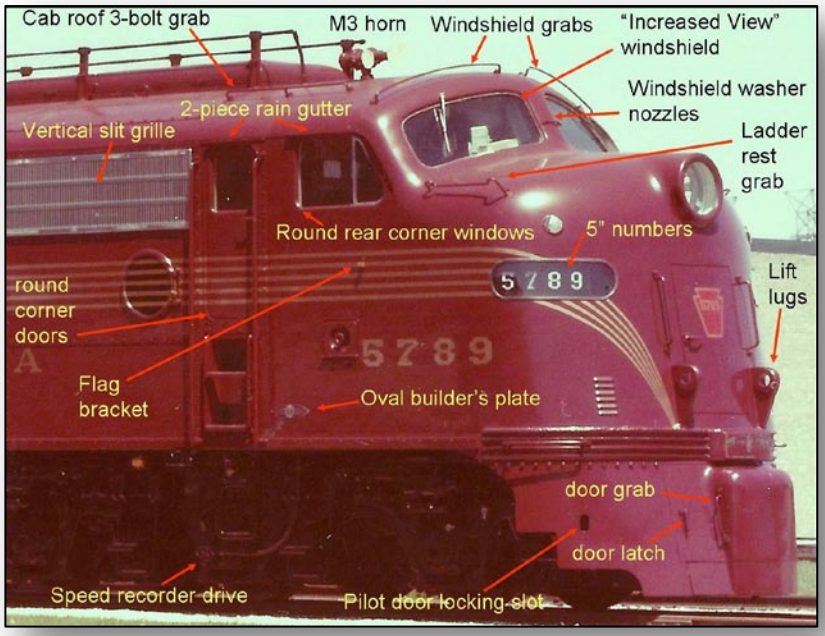
All the E8's except 5700A and 5701A had only a single beam headlight in the upper position on the nose. 5700A and 5701A had the headlight mounted in the lower position in the nose door with an auxiliary light in the normal upper position. The Walther's models replicate the typical units with the single headlight.

HORNS

A three chime horn was factory applied on the right (engineer's side) of the cab roof on all the E8's. The 1950 and March-July 1952 units received Nathan M3 horns, the 1951 units had Leslie A-125-3E horns and the September-November 1952 units had Leslie S3J horns. The M3 and S3J horns had all three bells facing forward, while the A125-3E had the center bell facing rearward. Although some units had replacement horns applied during their lifetime, others retained their originals until retirement. The model horn is most similar to the M3 that would be appropriate for units 5803A/5804A/5807A although the positions of the outer two bells should be switched. Since one model horn cannot look like two different prototype horns, it does not resemble the S3J on 5710A/5712A/5713A very closely.

PRR E8 5792A displays its Nathan M3 horn here in September 1955. A true three chime horn, the M3 consisted of three chimes attached to a common manifold with a single support. The metallic gold lettering and striping on this, the last of the four experimental red units for the Broadway, *is clearly visible.*

The final order of E8's, delivered in late 1952, were built with Leslie S3J horns, as shown here on 5712A, February 1953. The bells were attached to a triangular manifold with the small center bell above the outer two and incorporated wider flares on the bells, characteristic of the Leslie Super-Tyfon horns.



May 1952 EMD photo of the 1st experimental red E8A #5789A, the first red diesel on the PRR. Note the appearance of the metallic gold paint used for the striping and lettering only on the four experimental units and that the trainphone support stanchions were painted red, but the rubber coated conduit was left unpainted (black). Characteristic details of the 1952 program year units are noted.

E8 with pilot doors in place (supplied grabs not yet applied).

Cab-Side Ladders

The PRR did not begin to apply the ICC-mandated access steps and handholds to the right side of the E8 A-unit noses until 1959, so the models are correct for the period intended.

Enclosed Coupler Pilots

The PRR opted to have their entire fleet of E-units (except the original experimental E7 pair 5900A/5901A) built with EMD's "passenger" or more accurately, "enclosed coupler pilots." This was EMD's answer to the PRR's requirement put forth in early 1947 for the passenger units to have a pilot that would "lift an object and throw it to one side". All the E8A's had the same pilot arrangement as that on the last (1949) order of E7A's save for the uncoupling levers.

The pilot doors had a rounded corner bulge to cover the retractable couplers. The doors had vertical handholds on each side of the bulge and locking handles near the outer edges of the doors. In order to lock the doors in the open position, vertical slots were provided in the pilot sheets, forward of the steps, in which to engage the locking devices by rotating the handles. The pilot steps and grab irons above were located as far rearward as possible to provide clearance from the doors. The horizontal grab mounted above the steps was located in the center slot of the anti climber. Visually, only the steel strap supporting the step formed the squared-off rear corner of these late pilots. As a result, the rear edges were vertical at the bottom.

The removal of the doors was eventually approved by the ICC and the doors began to be completely removed and the pilots reconfigured in 1955.

Uncoupling Levers

The uncoupling lever handles on all the E8 enclosed coupler pilots incorporated a bent rod that hung vertically downward behind the rear edge of the pilot, on both sides of the locomotive.

Buffers

All the units had a buffer built into the center of the anticlimber. The buffers protruded out beyond the anticlimber by several inches and were essentially flat across the center and had a radius at the end corners.

The Walther's pilot recreates the as-built E8 pilots including the rounded-corner doors with appropriate hardware, vertical rear edges with corner steps and grab irons above in the anticlimber center slot. The oval door locking slots and the uncoupling lever rods are missing, and the protruding buffers have rounded, instead of flat fronts, but these are simple corrections for the modeler. The pilot doors as well as a filler piece for the pilot to represent the configuration after the doors were removed are supplied as separate parts for the modeler to apply as desired.

Left side details of the E8.

Carbody

Carbody Doors and Kickplates

All the E8's were built with the rounded cornered cab and engine room side doors. These units also had rectangular bare stainless steel kick plates on the body side above each of the steps. They did not have them on the bottom portion of doors. These features are correct on the models.

Windows and Grilles

The 1950 and 1951 E8's were delivered with the horizontal slotted stainless steel GE-style grilles all along the top of the carbody sides. The 1952 units had the later vertical slotted stainless steel Farr-style grilles. The grilles were all left unpainted. All units had four porthole windows along the carbody sides. The front and rear windows were hinged along their front edge and the center two windows were fixed. The models have nicely done separate etched metal grilles of the correct vertical slot style for the 1952 units. The window arrangement is also correct.

Builder's Plates

The E8's all had the distinctive EMD oval shaped, blue, red and silver, stainless steel plates applied in front of the cab side steps. The Walther's models represent these correctly and are very finely printed and properly located.

Financing Plates

Rectangular metal plates identifying the financing of the units under equipment Trusts were located on both sides of the 1950 units while the 15-year Trusts were fulfilled. The 1951 and 1952 units were financed under Conditional Sales Agreements. The CSA plates are similar to the Trust plates except they are generally not as tall and have different wording cast into them. On the E8's the plates were originally mounted on the curved portion of the fuel tank skirts towards the front of the units. These are present and properly located on the models.

Electrical Receptacles

The E8's had a small plate with electrical receptacles in the body side panel just in front of the rear vertical grab irons and behind the small rear side numbers on both sides of the units. These are omitted on the models.

Sand Box Doors

All the E8's were delivered with the standard arrangement of hinged doors for accessing the two sand boxes per side. All were delivered with the only EMD door in existence in that period, the style with rotary locking knobs that featured a knobby, circular handle in a spherical recess in the door. As early as November 1950, the Prime Manufacturing Company had offered for sale to the PRR an improved replacement "journal type" sand box cover. It can be readily identified, as it was a flat door with a rectangular finger opening near the top and small gussets along the bottom. This was not the new, similar, improved door that EMD announced in September 1953. Their door had a larger rectangular opening with a small horizontal bar across it for grasping. The Motive Power department directed in October, 1953 that replacement of broken sand box covers on EMD road passenger and freight locomotives was to be made with Prime covers and the doors began to appear randomly on PRR units as needed as repair and replacement parts after this date.

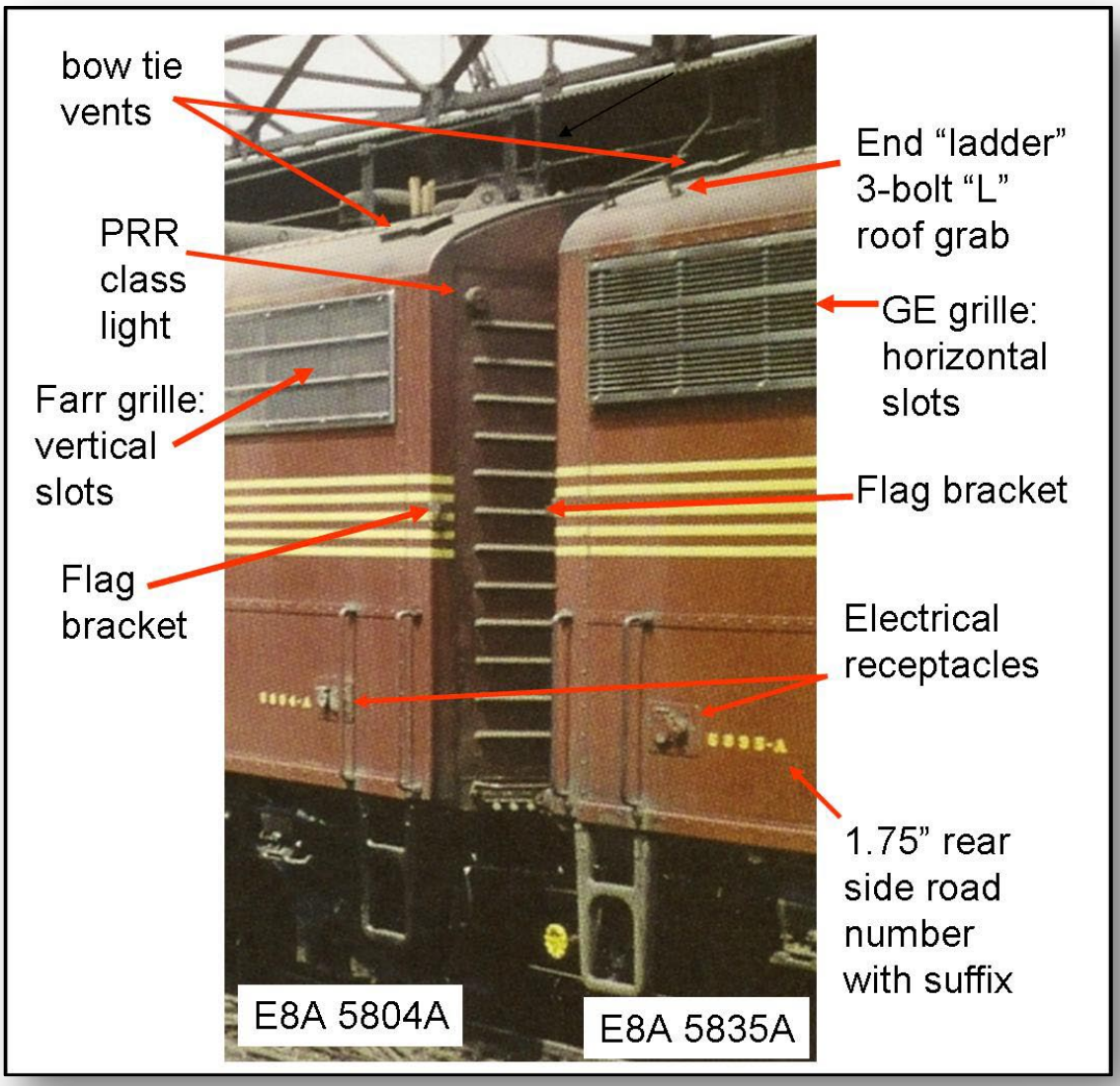
The Walther's A-units have molded-in sand box doors that cannot be changed out to match particular units on particular railroads. They most closely resemble the EMD replacement doors with the rain gutters applied, which would not be the correct doors for the PRR units. The rain gutters that the PRR later applied around all the E8 sand box doors starting in mid 1954 should not be found on units in 1953.

Square End Details

Overall, the basic details of the square ends of the units are correct as to the mu equipment, coupler cut levers, etc. There is one too few stiffening embossments on the engineer's side of the rear sheet.

Passage Doors

EMD changed the square end passage door windows from square to circular in the 1950 time frame, so it is not yet clear which shape windows were used on the 1950 E8's. All the 1951 and 1952 units had circular windows. The model has a square window which is incorrect for the 1952 factory-delivered red units.



► *Rear side detail view of 1952-built 5804A and 1951-built 5835A, June 12, 1953.*

Right side detail shows the CSA and builder's plates, stripes across the windows, rounded-corner cab doors and windows, etched grille, speed recorder drive on the center axle and the EMD replacement style sandbox door.

VOL. I - NO. 6 SEPT. 18, 1953

ELECTRO-MOTIVE

GENERAL MOTORS LOCOMOTIVES

Pointers

Division of General Motors Corporation, La Grange, Illinois

B 1300

NEW STYLE SAND BOX DOORS - CONVERSION KITS AVAILABLE

A newly designed sand box door with over-center type hinge arrangement is now available in kit form for replacement of existing sand box doors with rotary locks. $17.00

The new door not only costs you less, but equally important, is easier to maintain and does not drop against the side of the locomotive.

Doors are packed in kit form and complete instructions for installing are included in each kit. Part number 8202482 covers sand box door conversion kit for cab end of all units and panel end of all units except E8. Part number 8204415 covers kit for panel end of E8 units. Both kits are priced at $13.00 each and are available at La Grange and all Branches.

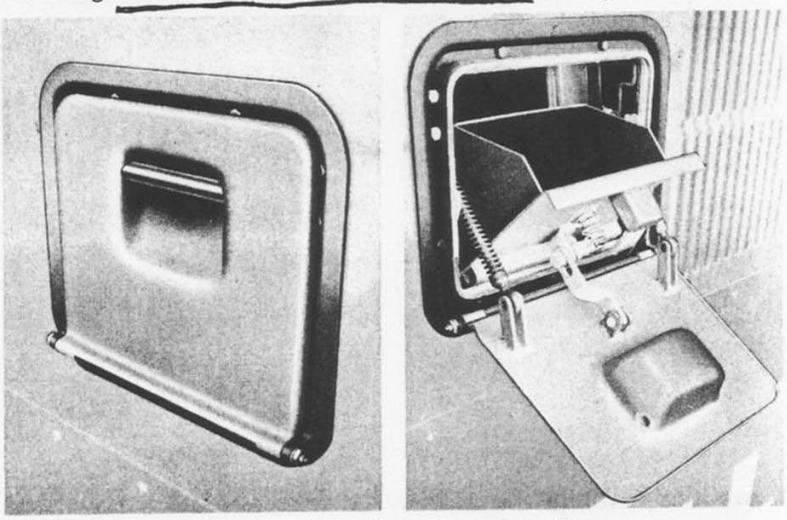
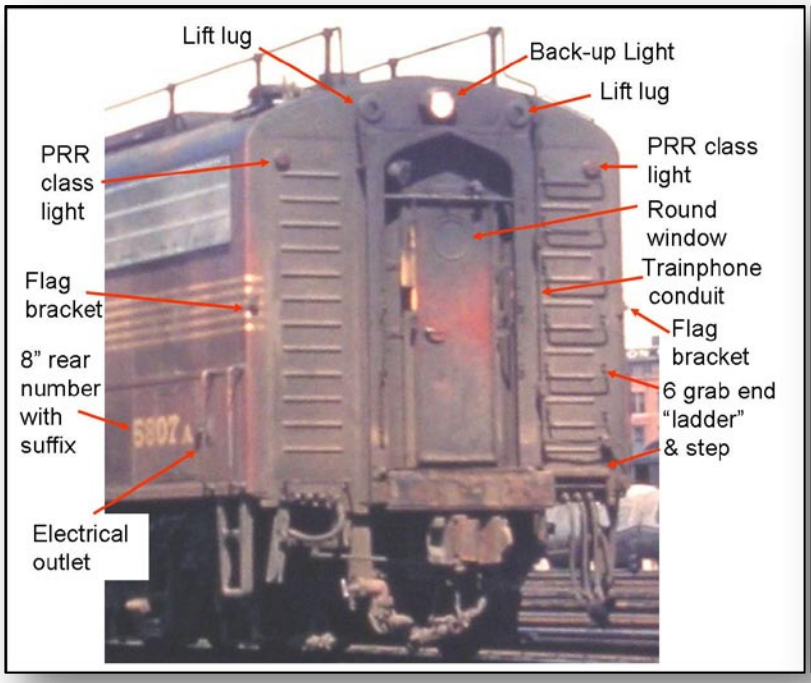


Fig. 1 - New Style Sand Box Door

Views of the EMD replacement doors as depicted on the model, correct as-built EMD door, correct door (with a replacement knob) shown on E7A 5901A with the later PRR application of the rain gutter.



Square end detail view of 1952-built 5807A, April 22, 1959. Note the later large 8 in. rear number.

Square end detail.

Roof Overhang

Unlike the F-units, with their familiar overhanging metal roof sheet, shaped to a point centered above the end door and tapering out to blend into the roof line near the edges of the body, the E8's had a no overhanging lip around the perimeter of the end where the sides and roof sheets joined the ends.

Diaphragms

All the E8's were factory equipped with diaphragms on the square ends. The PRR issued orders starting in December, 1953 for their removal to occur at the next appropriate scheduled maintenance shopping.

Back-up Lights

Fleet-wide application of back-up lights to the square ends of all EMD cab units was authorized in October 1950. Thus, all the 1951 and 1952 units were delivered with back-up lights, the 1950 units were not. Betterment data show that the retrofit installations to the 1950 units were made in 1951 through 1955.

Marker Lamps

The PRR specified the addition of electric marker lamps to both ends of their diesel locomotives, intended to be used in road service, that were otherwise not so equipped. These PRR-designed, simple circular lights thus become standard across many classes of diesel power. On the E8s, they were applied near the upper, outboard corners of the square ends. The lights were comprised of a metal can recessed into the car body that held the lamp socket and a red glass lens. It appears the E8's were delivered with these markers factory installed. None were applied to the A-unit noses as they came factory-equipped with the standard EMD classification lights.

Grab Irons

The 1951 and 1952 E8's were equipped with the end "ladders": the bottom step, six separate grab irons up the right-hand side (when facing the end) of the square ends, plus an "L" shaped roof grab above. These were not applied to new units until 1951, and the 1950 units did not have them retrofit. The models do have the six end grabs and one roof grab to represent the 1952 units, although the spacing of the end grabs does not match the photos of PRR unit ends. The step at the bottom of the "ladder" is missing

The models correctly depict the lack of overhang of the roof sheets. Working diaphragms are provided on the models although their geometry is slightly different than those on the PRR units. Separate parts are provided with the models for back up lights that are larger than those used in the PRR units. The PRR style marker lamps are not represented.

Roof

Trainphone Antenna

All the E8's were equipped with the distinctive PRR rooftop Trainphone transmitting and receiving equipment at the factory. The "road" Trainphones installed employed the configuration of parallel transmitting and receiving loop structures mounted on the units' roof. The transmitting loop or "sending inductor" was on the engineer's side. The conductor from the electronics inside the car body exited the cab roof sheet, angled outward and entered the front end of the roof conduit. At the rear of the roof, the conduit turned downward, went through two bends jogging outward, and then continued vertically downward along the square end of the unit near the edge of the door frame. Near the bottom of

the end sheet it turned and ran horizontally outward and then again turned downward. At the bottom of the end sill it turned and continued forward under the frame to a point near the bolster of the rear truck. From there, a flexible strap was connected to a point near the middle of the rear truck sideframe. Similarly on the front truck, another flexible jumper connected the axle bearing cap to the sideframe and a final jumper ran from the middle of the front truck sideframe up into the bottom of the cab. The conduit for the receiving "loop" on the fireman's side was stub-ended at its front end above the cab roof. Behind the rear support it turned downward to enter the roof. The conduit supports on the roof were located symmetrically about the longitudinal centerline of the unit, ten per side. The supports consisted of 3 in. diameter tubing, flattened to a 1 in. x 4 in. oval. The tube was bolted at the bottom to an angle bracket welded to the roof and had a 3 in. x 4 in. plate welded to its top. A Union Switch and Signal transmitting loop clamp was bolted on top of the plate and clamped the conduit via four bolts. The four supports on each conduit adjacent to the winterization hatches differed from the others in having a taller gusseted bracket in place of the angle bracket and thus a shorter section of flattened tubing above. The entire loop assembly then had a black protective insulating coating applied.

Cooling Fans

The E8's had four exposed 36 in. circular fans for the radiator cooling on the roof in addition to those covered by the winterization hatches front and rear. The cooling equipment formed a symmetrical pattern about the center of the unit. There was also a "U" shaped cooling pipe on the roof outboard of the rear set of cooling fans and the winterization hatch on both sides of the unit.

Steam Generators

The E8's had a pair of steam generators mounted at the rear of the unit. The pairs of exhaust and vent equipment appeared in the rear roof hatch. On each side of the roof outboard of the steam generator hatch was a raised bow-tie shaped vent.

Spark Arrestors

The units had a circular exhaust stack at the center end of each of the cooling hatches. Spark arrestors were not applied until well after delivery, starting circa 1963.

Dynamic Brakes

The E8's did not have dynamic brakes so the center roof hatch should be blank except for the two small inverted "J" shaped vent tubes of the steam generator water tank/s located below that roof hatch.

These and the other as-built small roof details are correctly represented on the models, with a couple exceptions. The bottoms of the molded plastic trainphone support stanchions are exaggerated in their cross section for mechanical robustness and thus appear heavy and almost as if there is a jog midway along their height and are all the same for all the stanchions. The front stanchion on the engineer's side is moved back and the conduit enters the cooling hatch instead of the cab roof in front of the hatch. The bow-tie vents at the rear of the roof are missing and are replaced instead by pairs of half-moon shaped vents located farther forward. The cooling fans are delicate, see-through and have a representation of a fan located below.

Roof details on the E8.

Running Gear and Underbody Detail

Axle Bearings

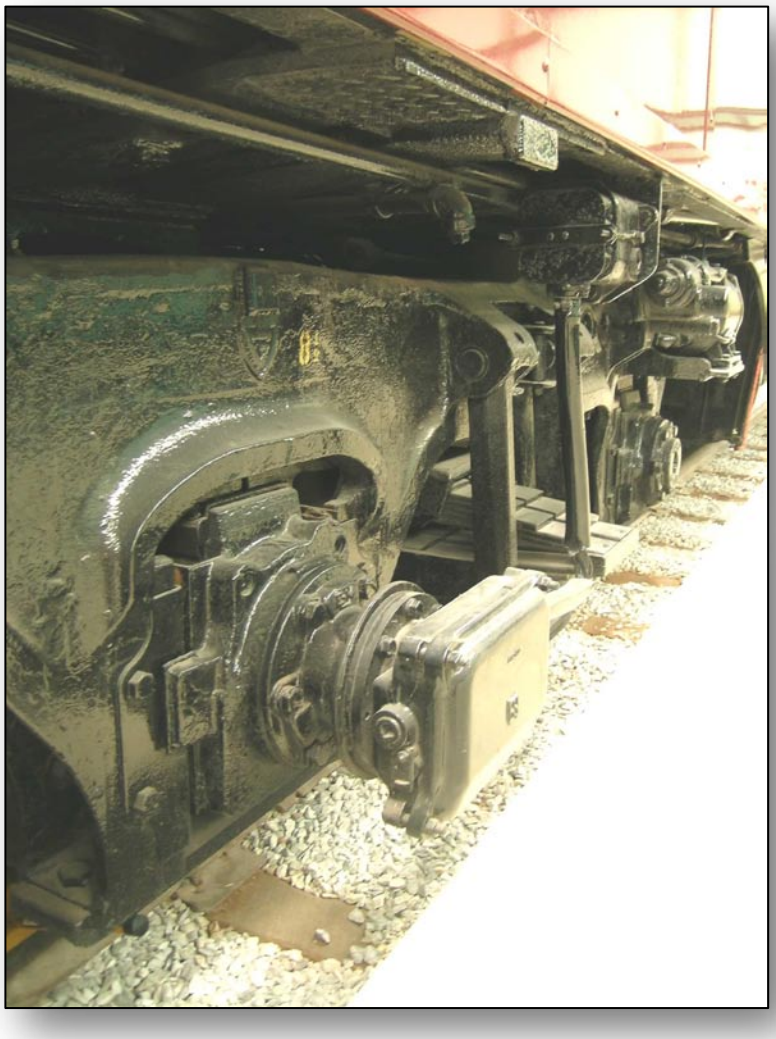
All the E8's came equipped with those used on later EMD locomotives: the smaller, circular bearing caps on all the axle ends with the new rubber bearing thrust design. Changes occurred to the original configuration of the axle bearings on the units after being in service. Photographs show that as early as 1954, bearings with both versions of the two earlier Hyatt roller bearing boxes, or covers originally applied to E7's and F3's appeared: the roughly square box on the center axle bearing and the sloped-top boxes on the outer axle bearings, replacing the circular bearing caps. Over the years, almost every possible combination of bearing covers has been observed resulting from truck or axle change-outs.

Speed Control

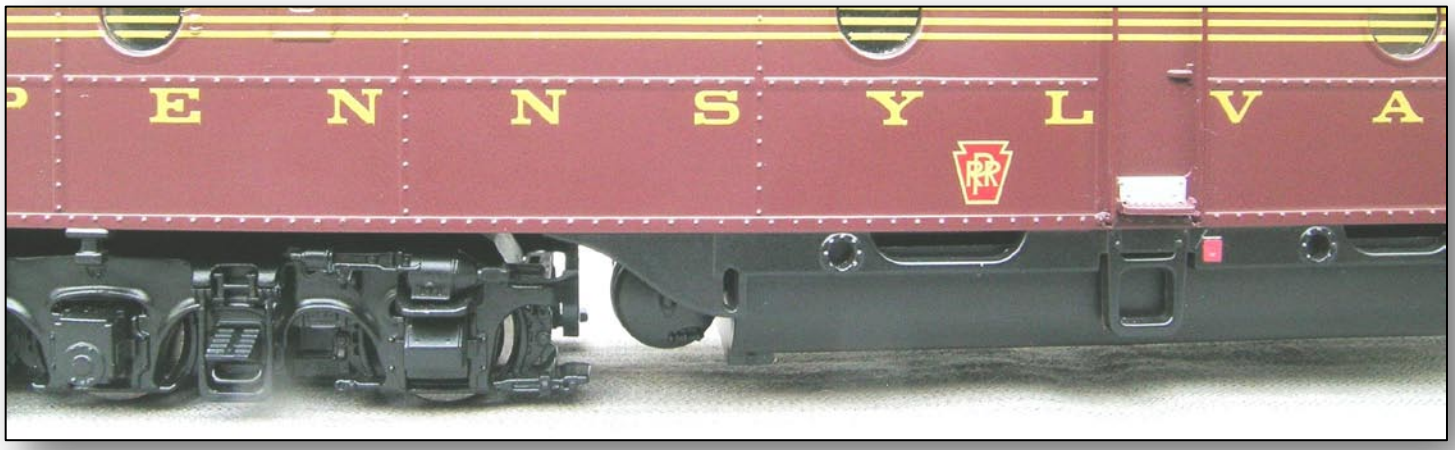
A system-wide program was authorized in February 1951 to equip 321 passenger locomotives, steam, electric and diesel, with speed control by the spring of 1953. As a result, all the E8's had three-speed control apparatus installed. Externally visible hardware for this apparatus was the Automatic Train Speed Control direct acting speed governor, its output conduit and a small plug connector box under the sill. This Union Switch and Signal Co. device was a large rectangular box mounted on the end of the center axle of the rear truck on the engineer's side (axle #5). All the 1950-built units were retrofitted in 1951, all the 1951-built units were retrofitted in 1952. The 1952 units came factory-equipped with speed control.

Speed Recorders

All A-units were built with speed recorders/indicators. The axle drive unit for these devices was mounted on the bearing cover of the center axle of the front truck (axle #2) on the engineer's side of the locomotive.



Three views of the ATS equipment as applied to the right side rear truck on E7A 5901A at Strasburg. Although the conduit has been damaged and kinked, the governor, conduit and connector box are still intact after 60 years. Note the later style circular bearing caps applied to all the E8's were retrofitted to upgrade these trucks as well. Hat's off to the PHMC for their fine work in preserving 5901A.



Underbody detail on the right side shows fuel tank skirting with the GLO ROD cutout, side door step kickplate and fine detail on the trucks, albeit with the E7-style bearing end boxes.

FUEL GAUGES

The Betterment for the application of "GLO-ROD" type fuel gauges to replace the inadequate factory-installed fuel gauges was initiated by the PRR for their EMD cab units in 1950, too late for them to be installed on the units built that year. The 1950 units thus had them retrofitted over a number of years following the issuance of the Betterment. The 1951 and 1952 units had them factory installed. These gauges consisted of long vertical site-glass tubes mounted on the vertical rear surface of the fuel tanks on both sides of the units. They are primarily visible by the vertical oval cutout in the fuel tank skirts just behind the tanks, necessary to view the fuel level in the sight glass.

FUEL TANK SKIRTS

The streamlined skirting that extended downward from the car body sides over the fuel and water tanks were not ordered to be removed until 1959, so they would be intact for the units of the intended modeling period.

The models incorporate finely detailed renditions of the trucks but unfortunately have the earlier E7-style box and slope bearing covers instead of the circular caps. They include an oval slot for the "GLO ROD" fuel gauges in the as-built tank skirting. A speed recorder is applied to the models but the ATS governor drive is omitted.

E7B'S

The features which are appropriate for these units are summarized below. Refer to issue 76, Spring 2011, of *The Keystone Modeler* for more detailed explanation of these locomotives.

CARBODY

CARBODY DOORS AND KICKPLATES

The models have the correct original EMD square cornered engine room side doors with the rectangular bare stainless steel kick plates on the bottom portion of the doors and above the steps.

WINDOWS AND GRILLES

All PRR E7's were delivered with a typical "phase I" arrangement of body side windows and grilles. However, after several years of operation, as part of a Betterment, the PRR installed two additional screened air filters "to lower temperature of the engine intake air" in the top carbody panel, one each near the front and rear of the unit for a total of five. The forward double sash window was replaced with a single sash window (located where the original rear sash had been) and three small square screened filters were added in the panel just ahead of this window. The bulk of the units were so modified in 1952, and photographic evidence shows all units received these modifications before or at the time they were repainted red. These PRR changes mimicked the EMD factory changes that resulted in what the railfan community terms the "phase II" production E7 locomotives.

For the first time in model form, these units match the modified "phase II" appearance which is correct for red units. The screens are separate metal parts which add to the three dimensional effect seen on the prototypes.

BUILDER'S PLATES

The early PRR E7 B-units, 5840B-5851B, were fitted with the early style EMD black and silver rectangular builder's plates. Walther's models represent the 1947 group and thus correctly have the rectangular plates which are very finely printed and properly located.

TRUST PLATES

Rectangular metal plates identifying the financing of the units under equipment Trusts were located on both sides of the units until the 15-year Trusts were fulfilled. On the B-units, the plates were originally mounted on the fuel tank skirts, just ahead of the water fill. These are present and properly located on the models.

E7B left side (top) and right side (above) show the modified "Phase II" body configuration.

SAND BOX DOORS

None of the PRR's E7 B-units were delivered with any sanding equipment whatsoever. Pressure from the I.C.C. caused the PRR to retrofit the entire sanding system equipment to all the E7 B-units and all eight 1947 units had the equipment installed in 1953. The PRR specified using the Prime door assemblies for all these installations. The models are thus correctly configured with the Prime doors for the modified units. The rain gutters that the PRR later applied around all the E7 sand box doors starting in mid 1954 would (correctly) not be found on these units.

Prime Manufacturing Company's after-market sand filler doors were the PRR's replacement door of choice.

E7B (left side) details include the correct Prime sand doors, etched metal intake screens and representations of the bare stainless steel kickplates above the side steps and on the bottom of the square-corner side doors.

Square End Details

Overall, the basic details of the square ends of the units are correct as to the stiffening embossments, square passage door windows, mu equipment, coupler cut levers, etc.

Roof Overhang

The E7's had a minimal uniform overhang lip around the perimeter of the end where the sides and roof sheets joined the ends.

Diaphragms

All the E7's were factory equipped with diaphragms on the square ends. The PRR issued orders starting in December, 1953 for their removal to occur at the next appropriate scheduled maintenance shopping.

Back-up Lights

Fleet-wide application of back-up lights to the square ends of all EMD cab units was authorized in October 1950. Thus, all E7's were delivered without back-up lights. Betterment data show that the retrofit installations were made in 1951 through 1956, with the bulk of them occurring in 1952-1953.

Marker Lamps

The PRR specified the addition of electric marker lamps to both ends of their diesel locomotives, intended to be used in road service, that were otherwise not so equipped. It appears most units were delivered with these markers factory installed.

Grab Irons

None of the E7B's were equipped with the end "ladders": the bottom step, six separate grab irons on the square ends, plus a roof grab above.

Hostler Horns

The cabless B-units had no need for a full size airhorn but in conjunction with their hostler's control station, all had small, single-note horns mounted vertically with the bell facing downward on their front square ends. These all appear to have been originally equipped with Leslie model A-75-H Tyfon horns.

The model correctly depicts the minimal overhang of the side and roof sheets. Working diaphragms are provided on the model although their geometry is slightly different than those on the PRR units. Separate parts are provided with the model for back up lights and a separate B-unit horn. The PRR style marker lamps are not represented, however a more standard EMD arrangement of what appears to be two marker lights with an adjoining conduit are molded into the square ends. These details were not present on PRR units.

Roof

Cooling Vents

The E7's originally had four pairs of large rectangular vent areas for the radiator cooling on the roof. EMD protected these openings with an array of metal louvers mounted vertically on edge in the longitudinal direction of the carbody atop the roof. In conjunction with the Betterment to improve the carbody cooling efficiency by adding the "phase II" grilles and filters, the PRR removed these louvers and replaced them with flush mounted diamond mesh screening to "increase air flow through radiators". As with the filter modifications, these changes are incorporated on these models.

Roof detail showing the etched metal "Phase II" radiator cooling screens that replaced the original factory installed louvers.

Steam Generators

All the E7B-units had a steam generator mounted at the rear of the unit. The exhaust and vent equipment appeared in the rear roof hatch.

Spark Arrestors

Spark arrestors were not applied until circa 1963.

These and all the other as-built small roof details are correctly represented on the models.

Running Gear and Underbody Detail

Axle Bearings

The E7's came equipped with two variations of Hyatt roller bearings at the axle ends of their trucks, which were discernable by different styles of bearing boxes, or covers. The original arrangement on all the units consisted of one roughly square box on the center axle bearing and two sloped-top boxes, one each on the outer axle bearings on the sideframe of each truck. Once in service changes occurred to the original configuration of the axle bearings and as early as mid-1955, bearings with both square and sloped box covers were removed from some axles, replaced by the circular bearing caps. The models incorporate finely detail renditions of the trucks and bearing covers in their as-built configuration.

Speed Control and Speed Recorders

B-units were not equipped with these devices and they are not present on the models.

Fuel Gauges

The Betterment for the application of "GLO-ROD" type fuel gauges resulted in the bulk of the units receiving them in 1954 through 1956.

Fuel Tank Skirts

The streamlined skirts that extended downward from the car body sides over the fuel and water tanks were not ordered to be removed until 1959.

Water Tanks

The E7's had split underbody tanks. The rear section was for fuel and the forward section carried the water for the steam generator. The PRR units were delivered with 1200 gallon water tanks, but the E7 tanks were replaced with 1600 gallon tanks. The Betterment records show the B-units had the larger replacement tanks applied in 1952.

The models do not incorporate the original style fuel gauges and tank skirting and appear to have the larger 1600 gallon water tank, which is correct for the red units modeled.

Painting and Lettering

The painting diagrams for both the E7 and E8 units originally called for gold leaf striping and lettering over Dark Green Locomotive paint. On July 7, 1952 the Motive Power department announced the decision to paint all passenger diesels Tuscan red with imitation gold (Buff) lettering and striping. The change was to be implemented thenceforth on all new passenger diesels and repainting was to be done when the diesels came in for high-mileage maintenance repairs.

Both tracing D-437132 for the E7B's and B-448622 for the E8A's were revised August 11, 1952 to reflect these changes. They called for Buff lettering, five 1 3/8 in. stripes, monograms and edging of keystone medallions. Background color in the keystones was toluidine red. Everything below the bottom of the side sills, except the pilot surfaces was to be black enamel. The interior enamel colors were specified as follows: cab and engine room surfaces, suede gray enamel; control equipment in cab, black; floors (except linoleum), Indian Red; air piping, black; oil lines, green; fuel line piping and filler caps, red; steam and water lines and filler caps, yellow; CO_2 lines and pull box doors, orange: all colors, PRR shade.

The Buff lettering specified included: 8 in. cab side numerals (on A-units) and "PENNSYLVANIA" road name; 1 3/4 in. "F" (designating the unit's front), side numerals with unit letter suffix at rear on A units and at front on B units; 14¾ in. keystones with monograms on sides and with 3 in. numerals on A-unit front end, inside the nose keystone. The stripes were originally applied over the side window frames and glass, sand box doors and body side doors, making for an uninterrupted streamlined appearance on the E8's. The E7B's were similar except that the stripes did not run across the three filter intakes that replaced the forward-most double window when the "Phase II" Betterments were implemented. The stripes ran out to the end of the protruding side sheet lip at the square ends, but did not wrap around onto the ends on the E7s, whereas they did wrap around on the E8s. The E8A number boards displayed 5 in. white numerals when the red scheme was introduced.

The stainless steel kickplates above the two steps below the cab doors, the single step below the body side doors (plus the plate on the bottom of each door on the E7B's) were left as bare metal. The cab vent window frames were also bare metal. In the early years, the E's did not have the monthly maintenance assignment markings on the pilots since they were all assigned to Harrisburg for maintenance.

The new monogram (intertwined "PRR") keystone on the nose, 9 in. cab side numbers and 8 in. A-unit rear and B-unit front side numerals were specified on the E-unit paint tracings on June 25, 1953. Officially on September 2, 1953 the striping across the window glass was removed from the E7 and E8 paint diagrams, thus the earliest of the red units had numbered nose keystones and stripes across the windows.

The Walther's model shows its fine quality of the striping and lettering details, including the Trust plate with correct series letter "S", early style builder's plate and stripes across the windows. The representation of the "Phase II" side intakes, although only molded in the plastic, is very convincing due to the painting method.

As is always the case with PRR locomotive models, the authenticity of the Tuscan Red and Buff colors is always debated. For these locomotives, the colors match the passenger cars being offered for the Broadway Limited train set. In the author's opinion, they are in the acceptable range for these colors. The problems with the lettering on the previous run of green E7s have been resolved on these units. These models are nicely decorated with proper separation of the red body color and the black below-sill color. The rooftop Trainphone conduits are black (wire) as delivered. The modeler should paint the red molded plastic conduit on the rear of the unit black to match. The striping and lettering is crisp, properly sized, located and nicely applied. The toluidine red background color of the keystones is nicely rendered as well.

IMPROVING THE MODELS

As described above, with all the changes that the prototypes underwent over time, the out-of-the-box models cannot possibly be correct for all possible modeling periods, particularly over the years when they were painted red with 5-stripes. Walthers configured the models to represent units that would have been in service circa 1953 coincident with the changeover from gold leaf to Buff striping and lettering on the *Broadway's* equipment. The E8s are numbered amongst the late 1952-built units, which were factory painted Tuscan red, to be 1953-appropriate. The E7Bs were also configured to be appropriate for some of the first units to have been painted Tuscan for that period. To summarize, below is the list of modifications the modeler could implement to improve the units for that period:

E8A's

- For new units, modify the pilots to add the door locking slots and add cut levers. If representing a unit in service circa 1955 or later, assemble the pilot without the doors and modify the pilot opening shape.
- Modify the tops of the square end diaphragms to remove the excess structure not correct for PRR units.
- Add an ATS drive unit to the center axle bearing box on the Engineer's side of the rear truck.

- Replace all or some of the truck bearing box covers with the correct original circular style end caps.
- Add PRR style marker lights and combination flag/marker brackets
- Modify or replace the Trainphone antennae roof supports with those having the more correct configuration. Correct the configuration at the front end of the engineer's side conduit.
- Add the rear underbody section of the Trainphone conduit and paint the square end conduit section black.
- Reconfigure the Nathan M3 chimes or change the horn on 5812A and 5813A to a Leslie S3J.
- Add the electrical receptacles to the rear body sides.
- Replace the rear roof top half-moon shaped vents with bow-tie vents.

E7B's

- Modify the tops of the square end diaphragms to remove the excess structure not correct for PRR units.
- Remove the non-PRR appropriate marker lights and conduits on the square ends.
- Add PRR style marker lights and combination flag/marker brackets.
- Add the hostler horn to the front end.
- Add backup lights to both square ends.
- Add an oval cutout to the fuel tank skirts to represent the GLO Rod gauge applications.

CONCLUSION

Overall, I would rate these as very nice models. I think Walthers deserves thanks for their work done in upgrading these models from their original incarnation when first released by PROTO 2000 and also in tooling the "Phase II" E7B. They have only minor flaws as noted above, but *T*he *K*eystone *M*odeler should be able to make these a more accurate addition to his model roster with a bit of work (this is a *modeling* magazine, after all).

REFERENCES

- *Pennsylvania Railroad Diesel Locomotive Pictorial Volume 7: EMD E Units and ALCo PAs*, Paul K. Withers, August 2002.
- *Rails Northeast,* December 1978, paint diagrams, pages 38-39.
- *The Keystone Modeler: "Walthers/Proto 2000 PRR EP-3 – The EMD E7"*, Jack Consoli, #76 Spring 2011.
- *The Keystone Modeler: "Modernizing the Proto 2000 EP-3 (EMD E7) in HO Scale"*, Jack Consoli, #77 Summer 2011.

Typical power for the 1953 Broadway.

2012 Annual Meeting Models

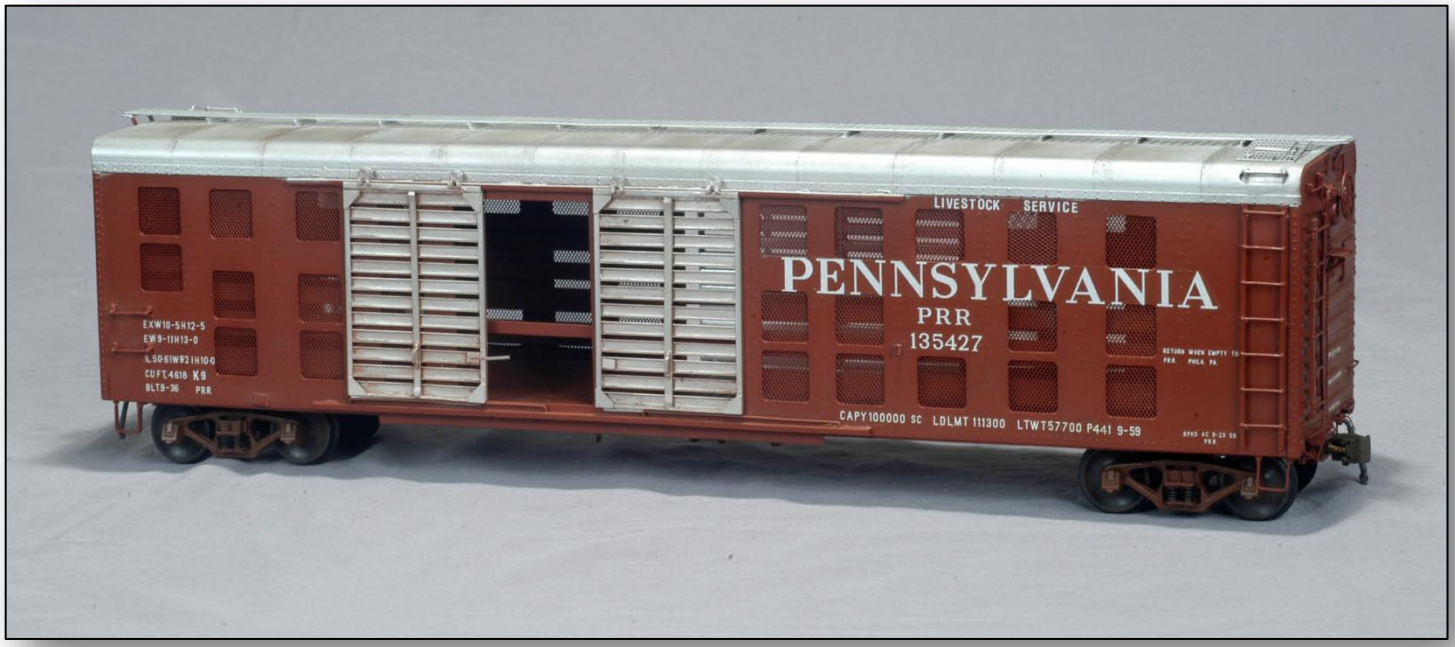
TKM Staff

This is a small sampling of models displayed at the 2012 PRRT&HS Annual Meeting in Camp Hill, Pa. Unfortunately, we were unable to obtain sufficient information on the modelers and models by press time to include more. More models will appear in the next *Keystone.*

This was the final Annual Meeting with a model contest. In future years, the names of the modelers will be on display with their models making the identification process much easier for our team and easier for the members to express their appreciation.

This nicely weathered HO-scale R50B express refrigerator car #2581 is by Bruce Smith. Note that the "Railway Express" markings have been blanked out as these cars appeared in their final years. He also added brake, signal, and steam connections to the ends and enhanced the brake details.

Here we have the body of white-lined N6B cabin car #982150 riding on F30A flatcar #474582. The blocking and tie downs look great on this HO-scale model. Unfortunately, we don't have the name of the modeler.



George Kushner showed off O-scale model of K9 stock car #135427. These cars, converted from auto box cars, handled livestock shipments on the PRR in its final years.

This HO-scale model by John Johnson shows G22 gondola #801262 with a rack added for coke service. Note how the brake shaft has been extended above the end of the car.


THE PENNSYLVANIA RAILROAD
YARD OFFICE