The Keystone Modeler

Pennsylvania Railroad Technical & Historical Society

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Inside:

The Keystone Modeler
Pennsylvania Railroad Technical & Historical Society

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FRONT COVER, CLOCKWISE FROM TOP

Broadway Limited Imports' new Lines West H10s 2-8-0 in HO-scale. (Tim Garner)

Enhanced HO-scale Walthers/Trainline SW1 as PRR ES-6 #9154. (Jack Consoli)

HO-scale model of the Long Island tugboat, "Meitoway". (Carl Fabrizi)

Detailed Eastern Car Works G26 gondola model with girder load in HO. (Tim Garner)

Model of PRR "LEMO" Tower in N-scale by Joe Ioele at the 2014 PRRT&HS Annual Meeting. (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.

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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:

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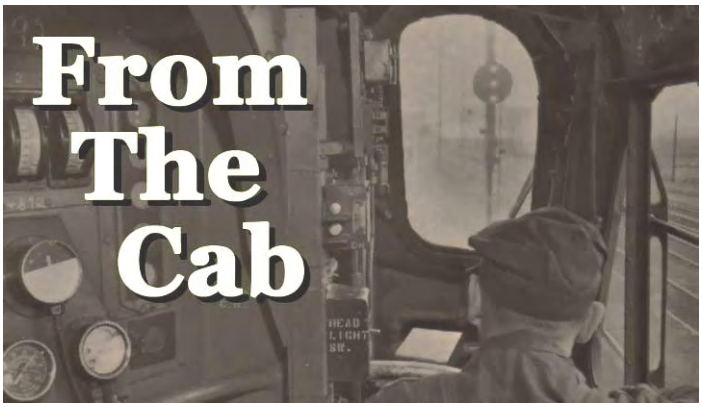

Yes, *RMC* is back! There has been much hand-wringing and sadness expressed over the possible demise of *Railroad Model Craftsman*, but it has finally reappeared. According to Chris D'Amato, who will continue as editor, Carstens Publications was having some financial problems that resulted in the decision to sell *Railroad Model Craftsman* and *Railfan & Railroad* to White River Publications. Indeed, some contributors had been griping about not being paid for their work. MIA for quite a while, I finally received Volume 83, Number 2 a few weeks ago, with July-October 2014 on the cover.

I, for one, am glad to see it come back. Despite the fact that *TKM* is wholly on line, it saddens me to think that we may be left with very little in the way of print media in model railroading (or anything else, for that matter – my local newspaper now appears only three times a week in print, although it is available on line 24/7). Many of you will remember *Mainline Modeler* and *Railmodel Journal* (I still have some old copies in my file cabinet).

The reappearance of *RMC* is also heartening because its approach to model railroading has always been different from its main competitor. *Craftsman* has always put more emphasis on kitbashing and model building with a specific prototype in mind, often with somewhat challenging projects. In other words, the articles in *RMC* seemed to be directed more at the prototype modeler than the individual who is just starting out in the hobby. Of course, there is a place for both kinds of emphasis; we need publications for beginners as well as for more sophisticated modelers. But I missed the kinds of articles I found in *Craftsman* each month.

May *Railroad Model Craftsman* live long and prosper under its new ownership.

And now, in this issue of *TKM*, we have Tim Garner's review of BLI's H10s and a G26 girder load story, the second part of Jack Consoli's review of Walther's SW1, a contribution about modeling tugboats from Carl Fabrizi, and more pictures of the excellent models that were displayed at the Annual Meeting last May. Enjoy!

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
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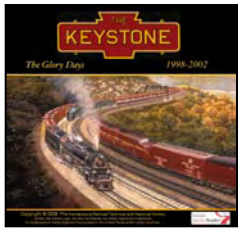
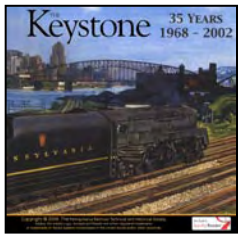
The Keystone CD 5



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

BOWSER MANUFACTURING
http://www.bowser-trains.com/
PRR N8 Cabin Car – HO scale

(BOWSER)

Bowser has announced the ready-to-run N8 in various PRR schemes as well as other roads. Both with and without trainphone attenna versions will be available. It is expected to be available in May 2015.

BROADWAY LIMITED IMPORTS
http://www.broadway-limited.com/
PRR H32 Covered Hopper – HO scale and N scale

(BLI)

Some paint scheme versions of the HO H32 are available now, according to Walthers. Others will arrive by Nov 28 or Dec 21. The N scale model is due January 2015.

PRR Alco PA/PB Diesel – N scale

This model in Brunswick green and single stripe will be available in December 2014.

PRR BF16 Baldwin Sharknose Diesel A/B Set– HO scale

This much anticipated set is due in January 2015.

PRR H10s – HO scale

The second run of this popular steam locomotive, with the 90F81 tender, is due February 2015.

PRR Baldwin Centipede – N scale

Now due in March 2015.

PRR M1A/M1B – N scale

(BLI)

The Mountain models are now due in March 2015.

PRR S2 Steam Turbine – HO scale

This Brass-Hybrid model is expected in the Summer 2015.

FOX VALLEY MODELS
http://www.foxvalleymodels.com/
PRR H30 Covered Hopper – N Scale

After mentioning this car in the Winter 2013 *TKM*, there has been no additional info available. Emails and telephone calls went unanswered. It is listed at Walthers as "TBA Adv. Res."

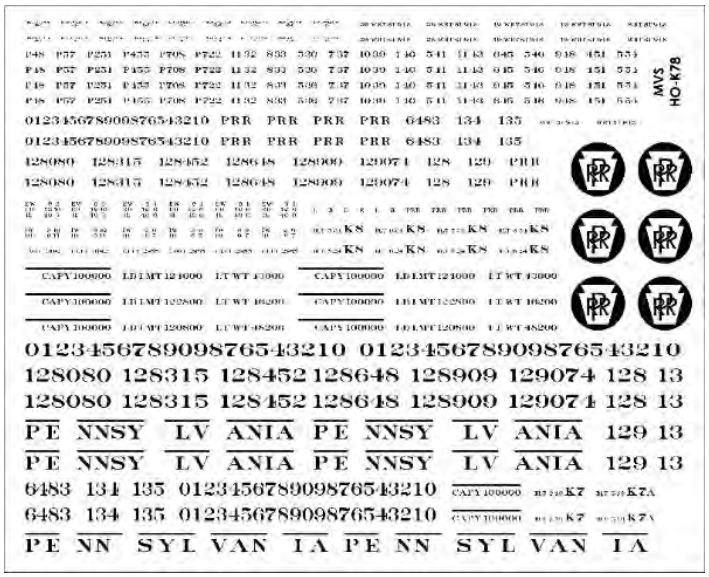
MICRO-TRAINS LINE CO.
http://www.micro-trains.com/
PRR D78B Diner – N Scale

(Micro-Trains)

Micro-Trains has available now this model of a D78b diner. It is painted and lettered for car number 4400 as it appeared after 1946.

MOUNT VERNON SHOPS
http://www.mountvernonshops.com/
PRR K7/K7A/K8 Stock Car Decals – HO scale

John Frantz has developed a decal set for the stock cars which served through the transition era. There are enough numbers and data to do three cars total, one K7 or K7A and two K8 cars.



PRR K7/K7A/K8 Decals *(Mount Vernon Shops)*

Upcoming Events

December 7-8 – Marlborough, Massachusetts
New England Model Train EXPO
http://www.hubdiv.org/fallshow/index.htm

January 8-10, 2015 – Cocoa Beach, Florida
Prototype Rails RPM Meet
http://prototyperails.com/

January 24-25, 2015 – West Springfield, Massachusetts
Amherst Railway Society Railroad Hobby Show
http://www.railroadhobbyshow.com/

January 31-February 1, 2015 – Timonium, Maryland
Great Scale Model Train Show
http://www.gsmts.com/

March 27-28, 2015 – Port Wentworth, Georgia
Savannah Prototype Modeler's Meet
http://www.savannahrpm.com/

March 28, 2015 – San Bernardino, California
Western Prototype Modelers
http://www.railroadprototypemodelers.org/sbdmeet.htm

April 11-12, 2015 – Timonium, Maryland
Brass Expo in conjunction with the **Great Scale Model Train Show**
http://brassexpo.com/index.htm

April 30-May 3, 2015 – State College, Pennsylvania
PRRT&HS Annual Meeting
http://www.prrths.com/conventions/PRR_Annual.html

Advance Planning

May 29-30, 2015 – Collinsville, Connecticut
New England/Northeast RPM Meet
http://www.neprototypemeet.com/Welcome.html

August 23-29, 2015 – Portland, Oregon
NMRA National Convention and National Train Show
http://nmra2015.org/

It's late in the Willsburgh engine terminal. A set of EF-15 (EMD F3) diesels is being sanded and fueled as AF-16 (Alco FA2) #9620 moves up to the rack. An M1B 4-8-2 watches on. *(Tim Garner)*

Product Review: BLI's Lines West H10s 2-8-0

By Tim Garner

During the modelers' forum at the 2009 PRRT&HS Annual Meeting at Merrillville, Indiana, I remember Bruce Smith saying the constant refrain to manufacturers was "H10 L1, H10, L1."[1] Well thanks to Broadway Limited Imports and the dedicated volunteers of the PRR Modeling Committee, we're half way there. BLI's H10s looks great, runs great, and pulls better than many of their larger PRR models.

THE PROTOTYPE

The size of PRR's Consolidation fleet was larger than the entire rosters of most railroads. In 1924, there were 3,335 of them out of a roster of 7,556 locomotives. At the turn of the century, the H6 (H6A, H6B, H6SB) was the big freight hauler on the line.

In 1905, Alco built PRR two experimental big-boilered 2-8-0 models classed H28. They tested on Lines East and Lines West proving superior to the H6. This led to the development of Belpaire firebox-equipped H8 while the H6 was still in production. Beginning in 1908, Altoona built twenty-five H8 Consolidations for Lines East and twenty-seven H8A models for Lines West. In 1913, the road built H9 and H10 classes with the largest difference being cylinder diameter.

From Al Staufer's Pennsy Power, we have a listing of the various H8, 9, and 10 classes:

H8	Lines East, first engine #3193, Juniata Shops, 1907, 24" x 28" cylinders
H8S	Class H8 superheated
H8A	Lines West, first engine #9384, Juniata Shops, 1907
H8SA	Class H8A superheated
H8B	Lines East, first engine #451, Juniata Shops, 1908
H8SB	Class H8B superheated
H8C	Lines West, first engine #9900, Alco (Pittsburgh), 1910
H8SC	Class H8C superheated
H9	Converted from H8B, 25" x 28" cylinders applied
H9S	Lines East, first engine #3470, Juniata Shops, 1913
H9SA	Converted from H8A, superheater and 25" x 28" cylinders applied
H9SC	Converted from H8C, superheater and 25" x 28" cylinders applied
H10S	Lines West, first engine #7001, Baldwin, 1913. Some also converted from H8C and H8SC superheater and/or 26" x 28" cylinders applied

The H8, H9, and H10 classes shared nearly identical boilers, frames, 62" drivers, 205 lbs. boiler pressure, and 55.2 sq. ft. of grate area in their Belpaire fireboxes. Juniata Shops, Alco, and Baldwin each built H8, H9, and H10 locomotives. Lima only built the H10. Most of the saturated steam H8 models were rebuilt into other classes by adding superheaters and larger cylinders. Thanks to the quality of the design and PRR's penchant for standardization, the same basic boiler would later be used on 83 E6s 4-4-2 Atlantics and the 90 PRR and 31 Long Island G5s 4-6-0 Ten Wheelers.

Besides diameter, the cylinder assemblies of the H8, H9, and H10 classes differed in other ways. The H8 had inside steam delivery passages. The H9 had outside delivery pipes with circular snifter valves where the pipes met the top of the valve chest. The H10 had outside delivery pipes with no snifter valves.

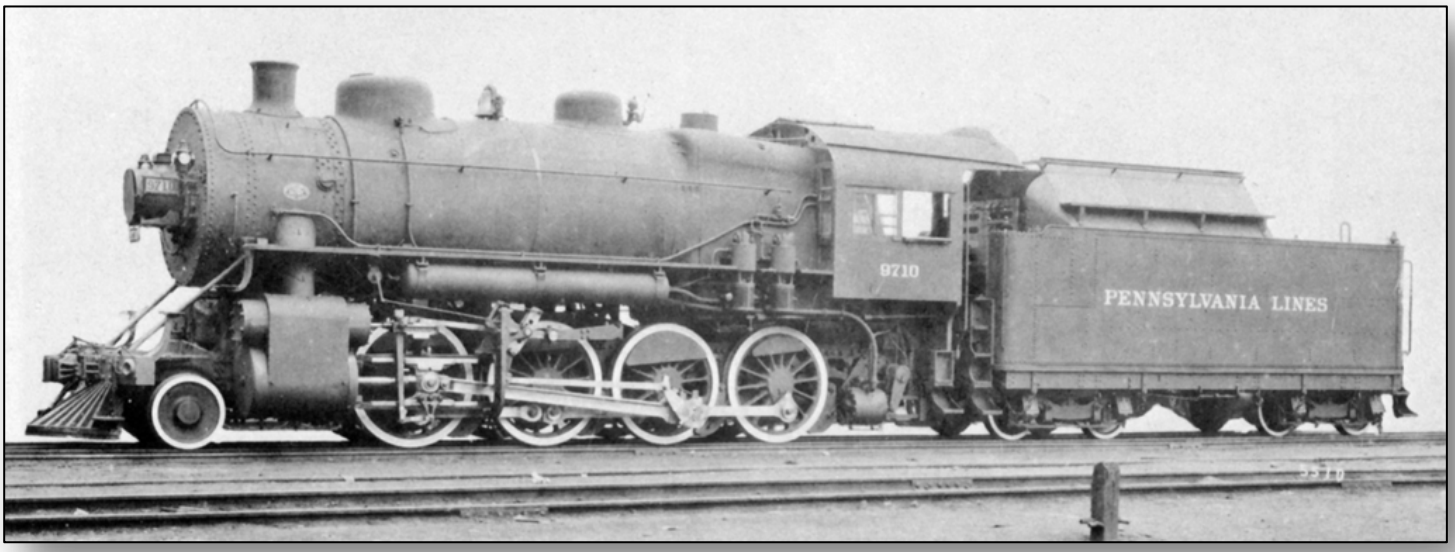
Early H8sc and H10s engines were built with Crawford and Street stokers, but they were removed. Several H10s received better Standard stokers during WWII. Power reverse became standard in the late 1930's. Most were built with pointed wooden pilots that were subsequently replaced with footboard pilots. In later years, PRR closed in the opening above the footboard with sheet metal on many of the engines.

Most were built with headlights in the center of the smokebox and two 9½"single-stage Westinghouse air pumps on the left side. The dual pumps would later be replaced with Westinghouse cross-compound air pumps on most if not all engines. Eventually all received smaller standard headlights mounted at the top of the smoke box. The Lines West H10s locomotives had a high sloping coal bunker that provided better visibility for back up moves and footboards for crews to navigate around the coal space.

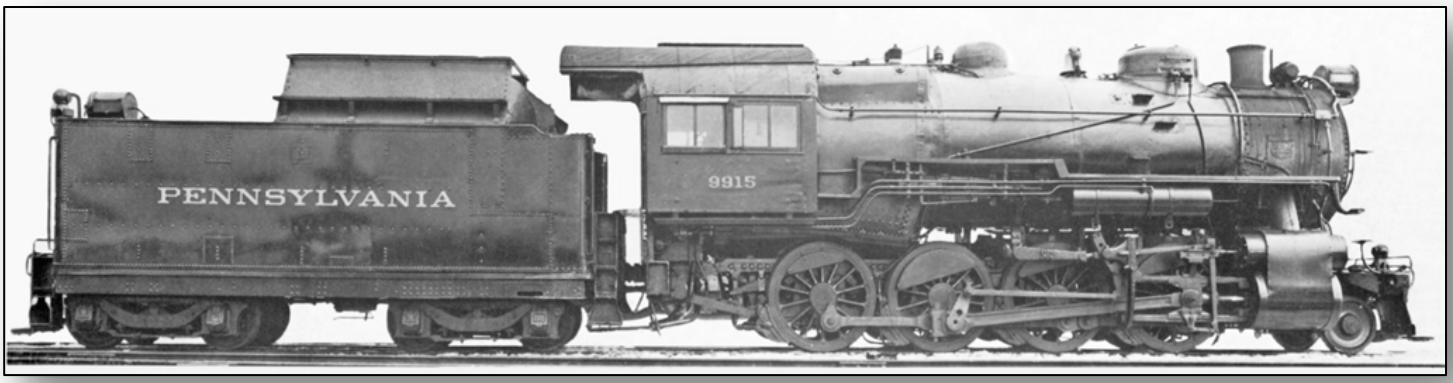
By July 1947, there were 369 hand-fired and 45 stoker-fired H10s locomotives on the roster including six on the Pennsylvania-Reading Seashore Lines, and 19 on the Long Island. Engine crews reportedly liked them because they were easy to fire, rode well, and were quick.

Until they were supplanted by L1s Mikados and I1s and I1SA Decapods, the H-classes were the mainline freight power of the day. As bigger power moved in, they moved into branch-line and local freight assignments, frequently doing the work 0-8-0 switchers did on other railroads. They were everywhere on the system. During WWII, many of the Lines West H10s engines came east where they stayed until the end of steam.

[1] Someone joked, "H10 LI – that sounds like a virus," which drew guffaws from the guys that heard him.

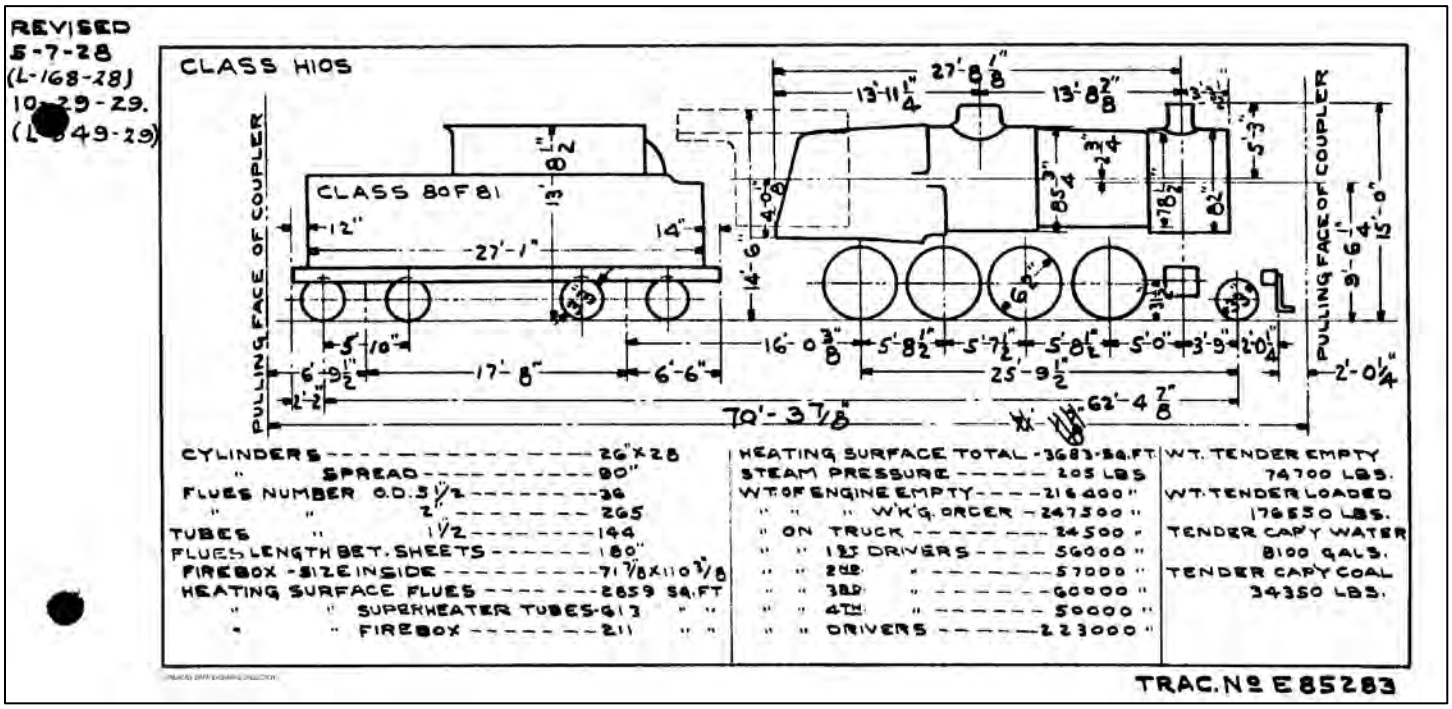


Baldwin builder's photo of Lines West H10s #9710. It shows off the original wood pilot and oil headlight. Note that it has twin single stage air pumps and only one sand pipe on this side. As was common for builder's photos, the locomotive is painted in a light flat color with white driver tires to make details show up better on film. *(Baldwin, Tim Garner collection)*

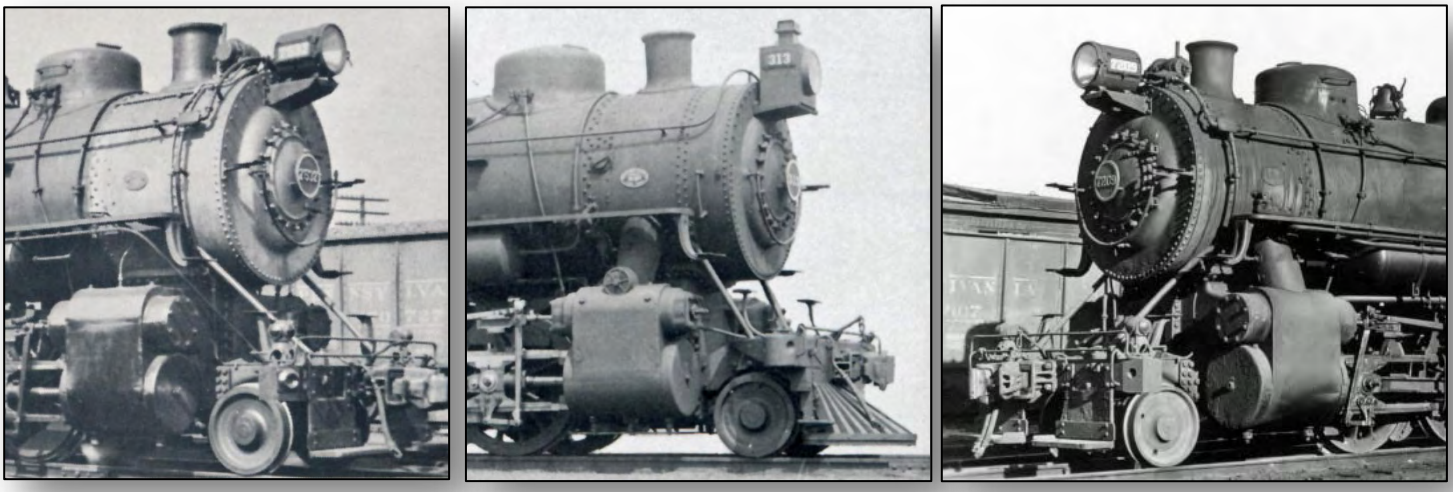


These two images were shot of Lines West H10s #9915 by PRR on December 27, 1938. These may have been taken for a booklet circulated at the 1939 New York World's Fair that showed equipment in operation on the PRR at that time. A few updated details are evident compared to the builder's photo – footboard pilot, claw-foot markers on the pilot and tender, electric headlight and generator mounted high, and an additional sand pipe behind the third driver. The standard narrow "toe-way" below the cab has been added. *(PRR, Tim Garner collection)*

Preserved H10s #7688 is posing at the Northumberland Enginehouse on October 21, 1964. This engine is now on display at the Railroad Museum of Pennsylvania. The lower part of the smokebox front has had patches welded in at some point. *(William D. Volkmer)*



H10s arrangement drawing. *(Rob Schoenberg)*



Differences in the cylinder saddle are the key spotting difference of the very similar H8, H9, and H10 locomotives. (Left) Other than the H8SB, the H8 classes have inside steam delivery pipes. (Center) The H9 classes have outside delivery pipes with a snifter valve on top of the value chest. (Right) The H10s has outside delivery pipes with no snifter valve. *(Left – Martin Flattley; center – Baldwin, Tim Garner collection; right – Fred Feitas collection)*

Many Consolidations, when they became surplus, were sold to other roads. They could be found on the Western Allegheny, the Bellefonte Central, the Norfolk & Portsmouth Belt Line, the Central Indiana, and others.

In the Post-War years, several of the H9s and H10s locomotives had their headlight and turbo-generator positions reversed and a maintenance platform added to the smokebox front. Many had their classic Lines West tenders altered with higher capacity coal boards.

Three PRR Consolidations survive. H3 (old class R) #1187, H6SB #2846, and H10S #7688 live on at the Railroad Museum of Pennsylvania in Strasburg, Pa.

We believe BLI's H10s is the first HO-scale, ready-to-run, PRR-prototype 2-8-0 ever made. It was worth the wait. If you wanted a PRR Consolidation before this, you had to buy brass or build kits by Bowser or Model Die Casting.

Right and left sides of the BLI H10s.

MODEL DETAIL

The model arrives in one of BLI's familiar substantial maroon boxes. The locomotive and tender are each wrapped in a sheet of clear plastic and cradled in polyurethane foam packing. Along with the locomotive are two spare traction tires, a wrench for the side rod screws, and bags of eight yellow and eight red lenses for the marker lights. A Paragon 2 operator's manual, exploded view diagram, and 2-year warranty registration are included.

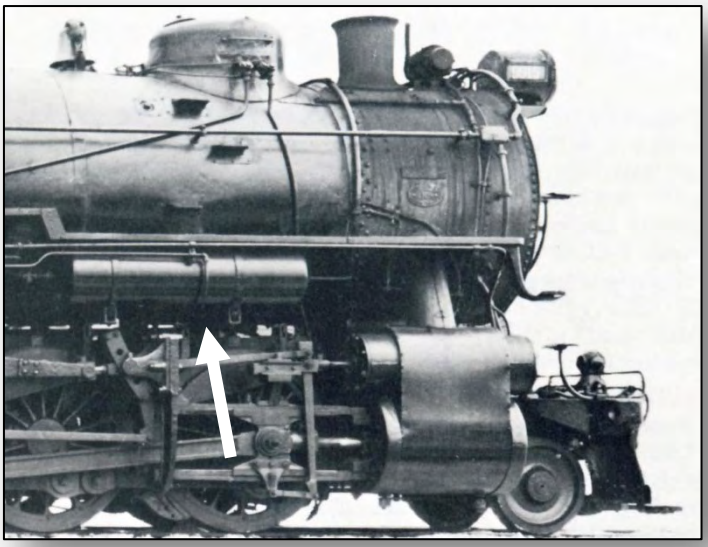
Compared to a drawing in *Model Railroader Cyclopedia – Volume 1: Steam Locomotives* (Linn Westcott, Kalmbach Publishing, ©1960) of a similar H9s, BLI's Lines West H10s model is accurately scaled. My model is numbered #9915. In my collection, I have PRR photos of both sides of this engine taken by the PRR on December 27, 1938 (see bottom two photos on page 7). I speculate the images may have been taken for displays and literature for the 1939 New York World's Fair.

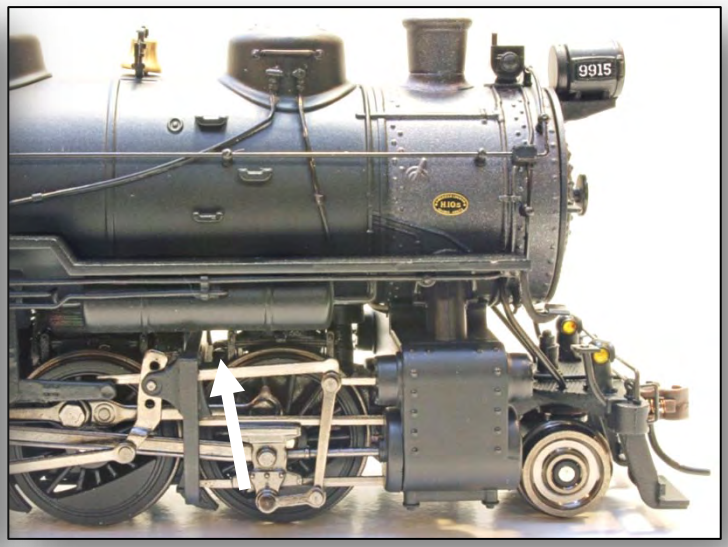
Comparing the model to these two images, the level of accuracy is exceptional. It appears BLI detailed and painted the model to represent the H10s locomotives as they looked in the Post-War transition era popular with modelers. The cab is equipped with a hinged footplate, painted engineman and firemen figures, and a cast-on backhead details. The roof vent slides open and closed as on most other BLI PRR steamers. The model is made with the rear side cab windows fixed in the open position as these engines were typically operated. Simulated deflector windows are cast into the cab in solid metal instead of being transparent.

The brake shoes and rodding on the engine are particularly well done. The tender trucks are diecast with strong detail. However, open spaces in the prototype truck are solid metal on the model. The front pilot includes a brake hose while the rear tender sill does not. The pilot is equipped with a standard-size brown plastic Kadee-compatible coupler. The rear of the tender has a metal coupler. I will replace both with "scale" Kadee couplers.

Overall, the detail discrepancies are minor, but, in the interest of fidelity to the prototype, I need to nit-pick a little. On the left side, the 1938 view shows two single stage air pumps. The model has a cross-compound air pump with associated piping appropriate for Post-War. The model has a neat-looking clinker hook in a bracket on the left side coal board. I've not been able to find a photo of this on a prototype photo yet, but there must be one somewhere. The model has a water scoop. Though I have seen photos of H8 and H9 tenders with water scoops, I've not found one showing a scoop on an H10 – Lines West or otherwise.

On the right side, the only issue I see relates to the air piping below the running board. On the prototype photos (and most other H10s photos I've seen), the bottom pipe over the air tank turns down and hugs the outside surface of the tank. On the model, this pipe goes over and behind the tank. It looks like it might be an assembly error from the factory. The toe walkways below the cab sides should extend farther out from the surface of the cab wall.





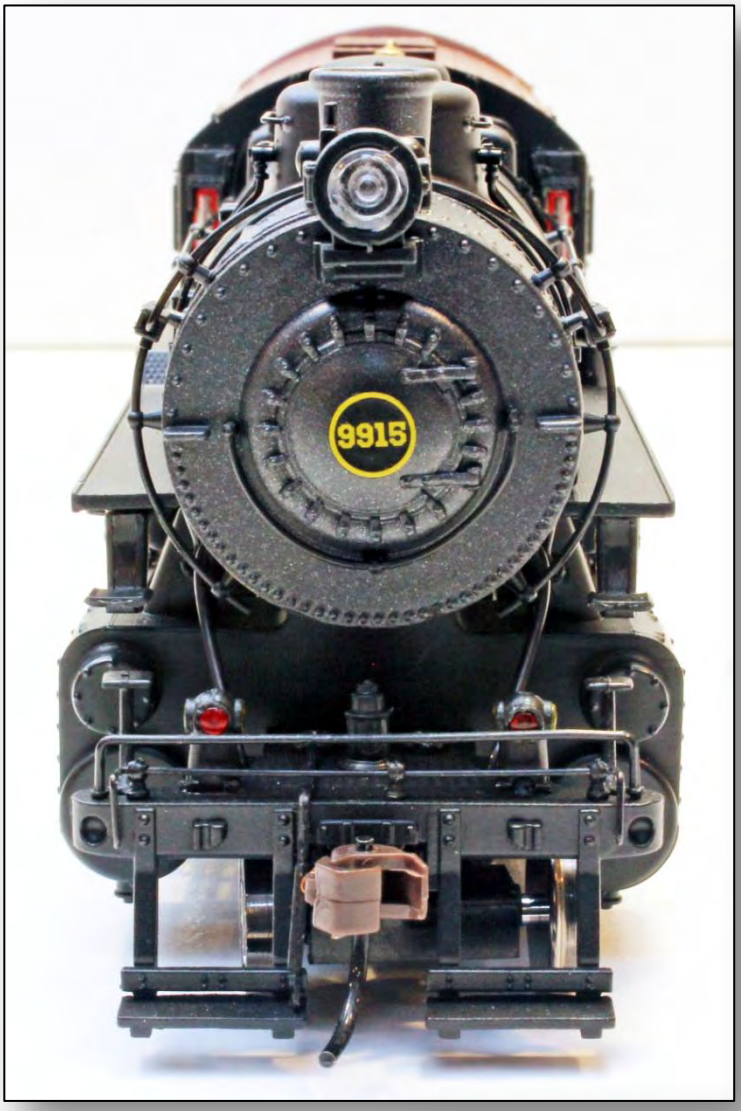
One detail discrepancy may be a mistake in assembly of the model. On the prototype, the bottom air cooling pipe makes a right angle turn and curves down over the right air tank. This is common on the other H-classes as well. On the model, it appears the pipe has been forced behind the tank in assembly. You can't tell for sure unless you disassemble the model – something I don't intend to do at the moment. The rivet detail on the cylinder wrappers it too bulky and misplace. I'd recommend filing it off. Other than that, the fidelity to the prototype photo is impressive.

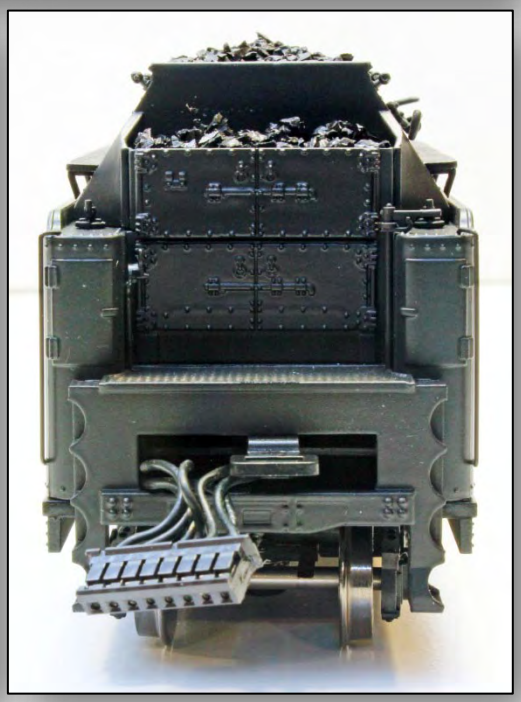
There are three minor discrepancies on the pilot. As is common on most HO-scale models, the footboard supports on the pilot are too thick. This is usually done to give the pilot more durability as scale thickness supports would be exceptionally fragile. No complaints there. They look perfect from the front. From the side, the handrail on the top of the pilot is straight like an "I", but it should come forward before it turns up like an "L". This error is also on the rear tender sill handrail. The cut lever is mounted in three straight brackets. They should be in brackets that position the cut lever over the front of the pilot as BLI did on the rear tender sill.

A common error on the smokebox front is the steps at 9 and 3 o'clock. The style on the model simulates "L" shaped sheet metal stamped steps. I can only find evidence of this style on Consolidations that received the Post-War "beauty treatment" – the servicing platform and turbo generator mounted on the face. BLI's version is actually too shallow even for those steps. For the era BLI modeled, the common design looks like a square of sheet metal welded on a bracket extending out from the smokebox front.

Another common error is the placement of the curved handrail on the smokebox front. Photos show the handrail posts should be attached on outer portion of the bulge that surrounds the smokebox door (see the Bill Volkmer photo below). On the BLI model, the posts are outside of that bulge making the radius of the handrail too large. Other than that, the detail on the smokebox is about the best I've ever seen. None of these issues is major and most modelers, me included, will probably leave them alone.

I've been unable to find photos of an H10s with the smokebox steps on the BLI model unless they have received the Post-War "beauty treatment" with the servicing platform and the headlight and generator positions reversed. The style on #7688 was far more common. The style on the model should be at least twice as deep. *(Right photo, William D. Volkmer)*





(Clockwise from above) BLI has rendered one of the best standard PRR smokebox fronts I've seen. The only issue is the position of the curved grab iron which should be on the outside edge of the bulge instead of just outside of it. The number plate is crooked on my model. The shape of the pilot grab and cut lever is a little off. The back of the tender features nicely rendered plates on the cistern and frame. I wish BLI would use this material for numberplates. The front of the tender is nicely detailed as is the back of the cab. The inside of the cab features an engineman, fireman, and some backhead detail.

PAINTING

Paint colors on the H10s appear very accurate and neatly applied. The locomotive is painted in flat dark green locomotive enamel. The smokebox and firebox are painted a dark metallic graphite color. As of October 8, 1929, the top of tender cisterns were to be painted PRR freight car color. Cab roofs above the gutters to be painted equal parts freight car color and black when more than one coat was applied. The model looks like a good match. Locomotive numbers on the cab, "PENNSYLVANIA", on the tender, "P.R.R." and the locomotive number on the back of the cab, and "P.R.R." on the back of the tender are painted a Dulux gold color. The spacing of the roadname and cab numbers is appropriate for the Post-War period. The builder's plates on the sides of the smokebox are legible in black and gold. On the #9918, they say, "AMERICAN LOCO CO". The back of the tender includes a black and gold class plate on the cistern and a smaller plate on the frame.

The number plate on the front of the smokebox is a separately applied piece with Dulux gold numbers and rim. Unlike the prototype, the numbers and rim do not have any relief. This is understandable since it allows BLI to avoid casting unique number plates for each number locomotive they produce. The number plate on my H10s was not straight.

The side rods, pilot wheels, tender wheels, and driver centers are unpainted metal. They should be painted and weathered to improve the appearance of the locomotive. Painting will help hide the oversized hubs and tires on the pilot wheels.

LIGHTING

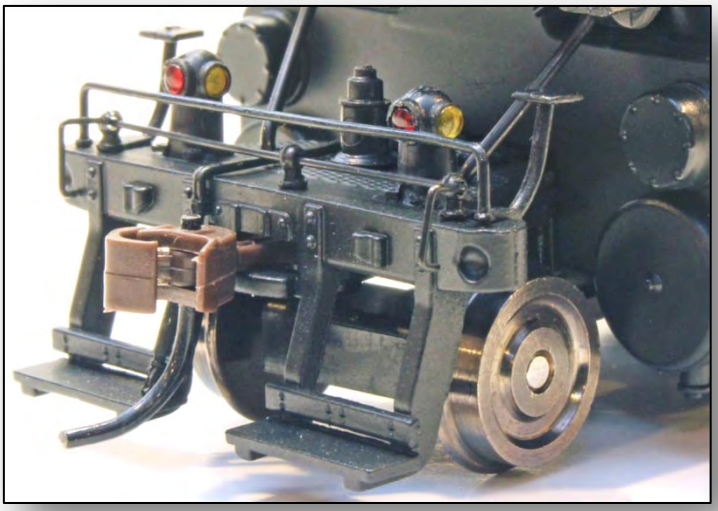
The H10s comes with operating LED headlights on the engine and tender, a cab light, and BLI's first locomotive with operating marker lamps on the pilot and rear of the tender. The headlights are a close copy of PRR's standard headlight including lighted locomotive numbers on the sides that match the numbers on the cab.

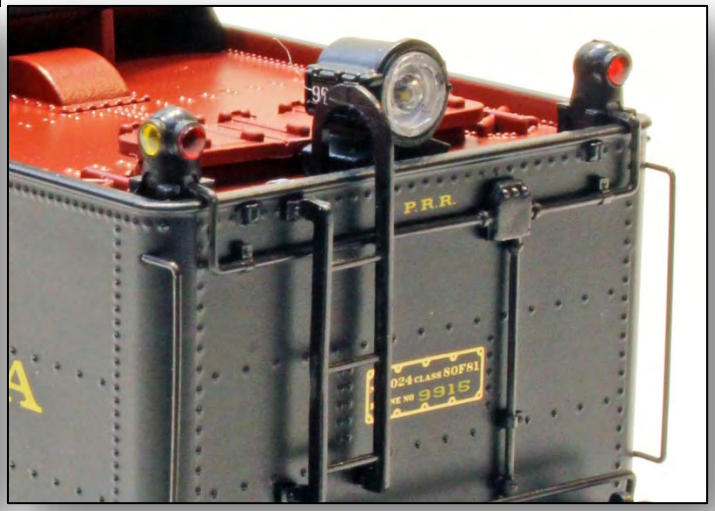
Visually, the marker lamps are rather thick looking and are missing the characteristic claw-foot details. From the box, the pilot markers each have three lenses. They show red to the front and yellow to the sides. The tender markers have two lenses. They show red to the rear and yellow to the sides. The extra marker lenses give you the ability to change the lenses to red or yellow.

As soon as the locomotive is on powered track, the marker lamps and cab light come on. The cab light is very bright, but goes out as soon as the locomotive is in motion. The cab light can be set to always off by setting CV 208 to 255 and always on by setting it to 0.

According to my copy of the *Pennsylvania Railroad System Book of Rules* effective April 26, 1925, marker lamps and headlights were only lit at night. If the engine was "running backward by night, without cars or at the rear of a train pushing cars," the front marker lamps would display red to the front and yellow to the sides, the tender markers would be dark, the engine headlight would be off, and the tender headlight would be on. Conversely, if the engine was "running forward by night, without cars or at the rear of a train pushing cars," the tender marker lamps would display red to the rear and yellow to the sides, the front marker lamps would be off, the rear headlight would be off, and the front headlight would be on.

Unfortunately on the BLI H10s the marker lamps are always on. The BLI Service Department confirmed there is no CV to turn the markers off. Since the instances where the marker lamps would be on will be very rare on my layout, I will either black out the BLI marker lenses or replace the markers with brass castings and simulated conduits. I hope on future locomotives, BLI chooses to install more detailed, unlit claw-foot markers.





The pilot and tender markers are lit whenever there is track power. There is no CV to turn them off. According to PRR rules, they were only to be lit after dark and only when the front or back was the end of a train. I would have preferred more accurate-looking unlit markers.

The locomotive chassis features brake rodding. The slide switch on the left turns the smoke unit on and off. The rear axle is sprung and has traction tires. The frame above the front axle has sockets for springs, but brass spacers are included instead. I replaced the spacers with springs on my model.

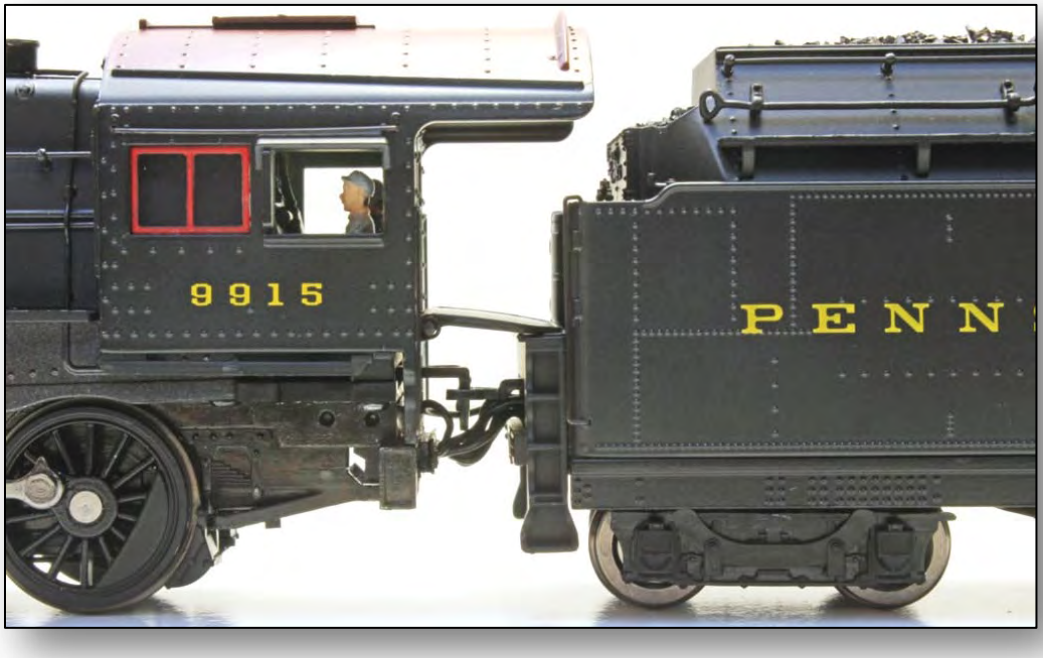
SOUND

The engine comes with the same sound quality we have come to expect from BLI. Engine exhausts are correctly synchronized four chuffs per driver revolution. You'll hear the sound of open cylinder cocks the first few revolutions. Enginemen did this to remove accumulated water from the cylinders which could possibly result in a blown cylinder head.

Out of the box, the sound volume is too loud for my taste (and can cause blown ear drums on your HO-scale citizens). Fortunately you can lower the volume by setting CV 133 to a number between 1 and 128. I prefer 35 or 40. You may also press F8 once to mute the sound of all but the whistle and bell. Pressing twice quickly, like double clicking a mouse, will lower the volume one step until it reaches the lowest level. Then double clicking will increase the sound until a maximum is reached.

There are several manually activated sounds. The whistle (F2), defaulted to a PRR single chime "banshee", can be "quilled" if the DCC controller is capable. According to the manual, "holding the whistle button down for a long blast, releasing it quickly, pressing again, then releasing plays an alternative whistle ending." The bell (F1) stays on when pressed. CV 180 can be lowered to speed up the ringing. Pressing F3 plays a coupling sound. Pressing it again when the engine is stopped plays the sound of slack running out when the engine begins to move.

Pressing F4 turns the air pump on and off. Pressing F5 when the engine is stopped plays a blow down sound. While moving, it increases the chuff volume with each press. Pressing F6 when the engine is stopped activates a tender watering sound effect.



The drawbar on the engine is designed to increase the spacing between the engine and tender on curves. There has been some criticism of this feature on the PRR discussion groups as unnecessary on such a short wheelbase locomotive. Other BLI steam engine drawbars typically include two or three holes which allow you have prototype spacing if you have wide curves on your layout or wider spacing to tighter curves. Prototype spacing is not an option with this arrangement.

When the engine is not moving, pressing F9 plays a start up sequence. Pressing it again plays shut down sounds. Pressing F10 turns a coal shoveling sound on and off. F11 does the same with an injector sound. F12 plays a set brakes sound when standing still and a brake release sound when moving. Above speed step 5, it plays a brake squeal as does a sudden decrease in throttle.

If your DCC controller is equipped with higher level function keys, F13 plays a long-long-short-long grade crossing whistle signal, F14 plays passenger sounds, F15 plays freight sounds, F16 plays maintenance facility sounds, F17 plays a crew radio messages, F18 plays radio chatter in a city, F19 is radio chatter on a farm, F20 is industrial sounds, and F21 is lumber mill sounds.

Operation

The H10s can operate on straight DC or DCC. I only tested it on DCC.

It's a great puller. The diecast boiler brings the total weight of engine and tender to 15¾ ounces – just shy of one pound. The engine is 11¼ ounces. By comparison, the Paragon 2 I1sa weighs an even 12 ounces. On the 2% grades on my layout, the H10s out pulls the I1sa by several cars. Just like the I1sa, the H10s is equipped with traction tires on the rear set of drivers.

As delivered, only the rear set of drivers is sprung. The frame above the front axle bearings has holes to hold driver springs, but the manufacturer has instead installed two thin brass spacers to remove some of the vertical play in the bearings. To help my engine track better on rough track, I removed the spacers and installed coil truck springs.

To help the engine negotiate sharp model curves, BLI designed a drawbar that forces the engine and tender farther apart on curves. The footplate remains in contact with the tender deck when this occurs.

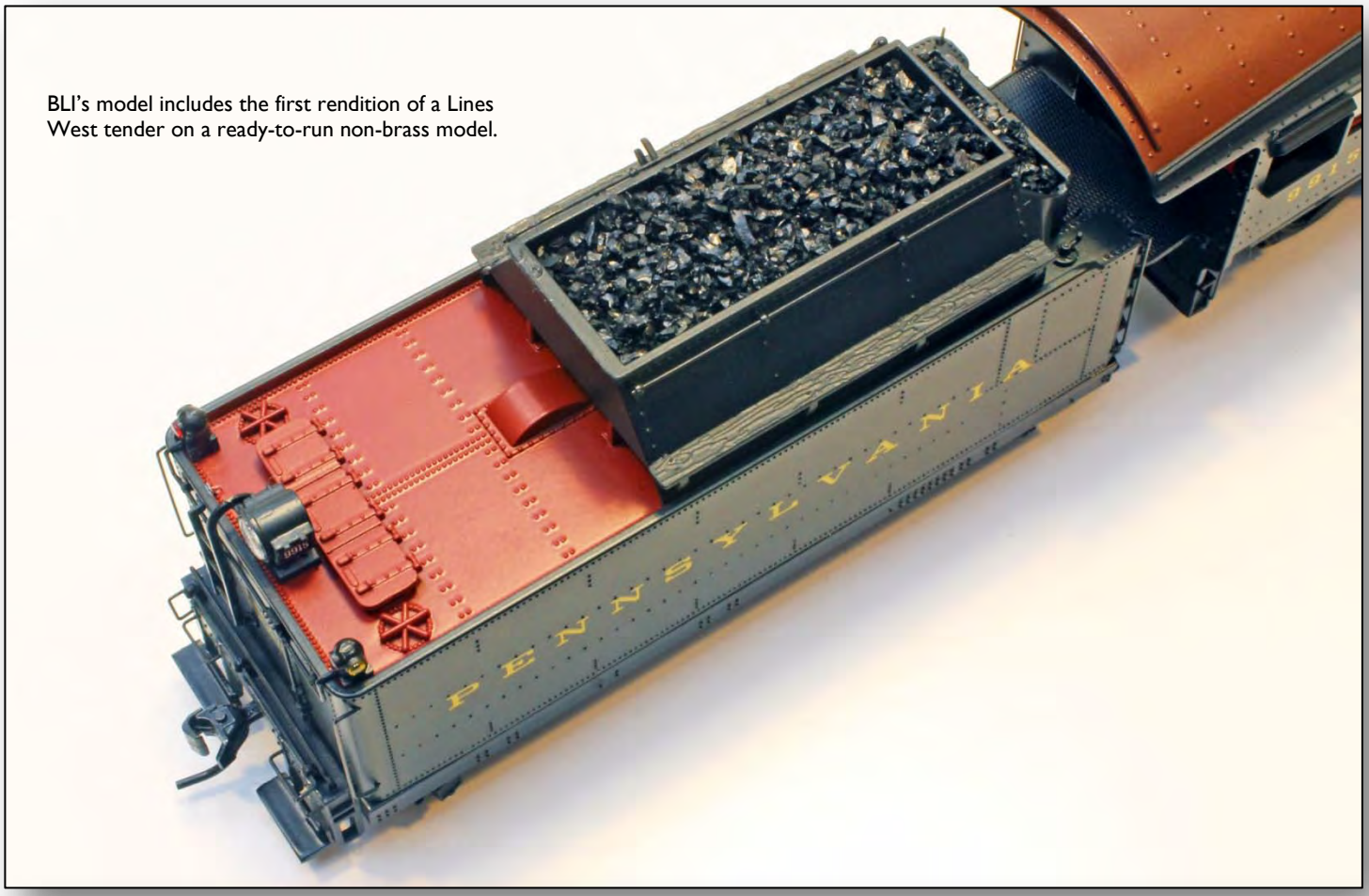
The BLI decoder supports consisting, long addresses, alternate speed tables, starting and maximum voltage, plus 14, 28, and 128 speed steps.

In Summary

The new BLI H10s fills a long-standing void in mass-produced PRR steam and is probably the first such model with the Lines West tender. Future runs will feature the tender BLI created for the I1sa Decapod and a Long Island-lettered version. Visually and operationally, this locomotive is a winner.

The right side of the BLI H10s.

BLI's model includes the first rendition of a Lines West tender on a ready-to-run non-brass model.



The new BLI Lines West H10s meets a PRR HH1 (former N&W Y3) 2-8-8-2 in the Willsburgh Yard on my home layout.

Girder Load for a G26 Mill Gondola

By Tim Garner

G26 #440375 with two flat cars as idlers around 1951. *(Andrew J. Hart collection from "Pennsylvania Railroad Gondolas," PRRT&HS)*

Well before the huge range of accurate HO scale resin gondola kits and the great Tangent Models G31B came out, we had the Eastern Car Works G26 mill gondola. It was easy to assemble, relatively inexpensive, and a pure PRR prototype. They are very hard to find now, but I got my two when Eastern Car Works was in business and going strong.

When I saw the picture above in my copy of the great book *Pennsylvania Railroad Gondolas* by Al Buchan and Elden Gatwood (PRRT&HS, ©2011), I was inspired to enhance the level of detail on my G26 gondolas and to build a similar load with PRR FM flat cars as idlers.

The Prototypes

The G26 gondola was the first, most numerous 65'-0" or longer inside-length gondola on the Pennsy, and perhaps on any other road. It was narrower than most gondolas for better clearance on curves. There were 1,700 cars built between October 1930 and May 1931 with construction at the Altoona Works, Enola Car Shop, and Pitcairn Car Shop. They were long-lived cars with 1,649 surviving to 1964 and 581 to 1968 in as-built form.

The cars featured steel floors and drop ends. They were delivered with 70-ton 2E-F7 class National or 2E-F8 Dalman trucks that ran on the cars until scrapping.

The 40' FM flat car was the workhorse of the PRR fleet until the 50' F30A was built in the mid-1930s. The FM was built from 1902 to 1913 by the Altoona Car Shops and five commercial builders. The car was made of pressed steel shapes riveted together with 12 stake pockets per side. They had a 2¾" thick wood deck. Trucks were originally arch bar, but were rebuilt with PRR common 2D-F8 trucks. They were originally built with two brake wheels and were converted to one by at least 1937.

They were used to haul any type of freight that would not fit in a box car or gondola or as an idler car adjacent to cars with oversized loads as modeled here.

Here is the G26 with two FM flat cars as idlers. The girder in the prototype photo was asymmetrical. I chose to make mine symmetrical and a little shorter so overhang on curves would not be an issue.

A total of 3,661 were built. By the end of WWII, there were 2,017 (including 635 converted to container service). By 1950, it was down to 1,427 (619 in container service). The frame of one car exists at the Railroad Museum of Pennsylvania.

The Car Models

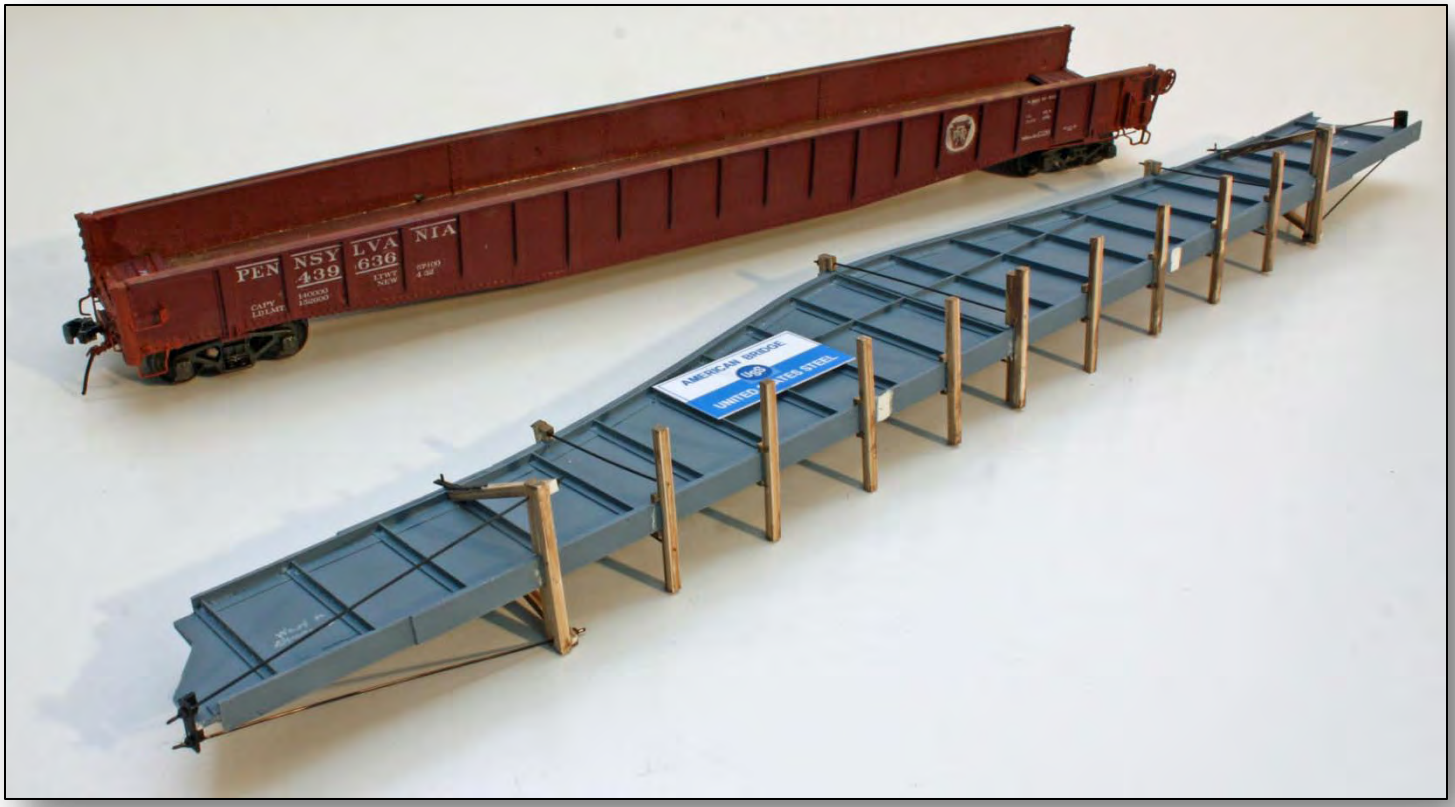
My FM flat cars are Funaro & Camerlengo kits. The boxed kit includes two flat cars which is very convenient for a project like this. I built the kits per the instructions with a few modifications. Since the underbody is not visible from the side, I left those details off. Instead I filled every opening underneath with lead bird shot held in place by full strength Elmer's white glue.

I used Kadee PRR trucks and #58 scale couplers. I added Hi-Tech Details 22" AAR rubber brake hoses without brackets (HTD-6038). I painted and weathered the cars with Floquil paints.

The Eastern Car Works G26 gondola model was already painted and assembled. I went back over it and upgraded the details. I carved off all the plastic grab irons and replaced them with .0125" dia. phosphor bronze wire from Tichy Train Group. I closely studied photos in the gondola book to get the details right.

I took stirrup steps from A-Line from my parts box and reshaped them to match what is on the prototype. I also added wire details for the visible brake rodding, cut levers, and the air line to the retainer handle. I replaced the factory brake wheel with one from Tichy. I added rubber brake hoses with brackets from Hi-Tech (HTD-6039). I updated the trucks and couplers with Kadee products.

The drop ends are lowered. Blocking keeps the girder from resting on the ends. I used styrene strip painted like freshly milled wood for the blocking.



This view shows the underside of the girder load. The rods are phosphor bronze wire. Everything else is styrene cemented in place.

THE LOAD

I built the girder using styrene strips and shapes from Evergreen Models. First, I drew out the girder and bracing in pencil on a piece of 0.020" styrene. I cut out the girder and cemented angle stock for all the verticals. I used styrene sheet and strip of various thicknesses to make the rest of the bracing.

When one side was finished, I turned the girder over and did the other side. When the sides were done, I glued on the top and bottom pieces. On girders, the top and bottom flanges are in layers with more layers toward the center. When it was finished, I spray painted it a color that might be appropriate for a bridge component heading to a construction site. For simplicity, I chose to represent a welded girder. You could simulate a riveted girder by using Archer or Micro Mark rivet decals, or you could emboss rivet strips in styrene using a pounce wheel.

Once the girder was painted, I began assembling the blocking. The prototype photos do not show all the blocking, so I speculated on what was out of view. The simulated wooden blocks the girder rests on raise the girder above the drop ends and the idler cars. I also pieced them to look like they are centering the girder in the car.

For various supports held by rods, I glued the simulated wood in place then drilled holes for 0.015" dia. phosphor bronze wire from Tichy. For nuts on the rods, I took Tichy plastic nut/bolt castings, cut the bolts off, and drilled out the center of the nuts. It's tedious work, but looks good.

By building the load this way, it can easily be removed if you want to run the car empty or replace the load.

For the sign, I did my best to recreate it on a computer, and then I printed it on glossy photo paper. With a white artist's Prismacolor pencil, I scribbled shipping instructions on the girder. Frequently, long loads such as this had to be oriented in a specific direction when they arrived at the destination especially if there was no room for a crane to spin it. Chalk instructions could tell train crews which end should be toward what city or direction of the compass when it arrived.

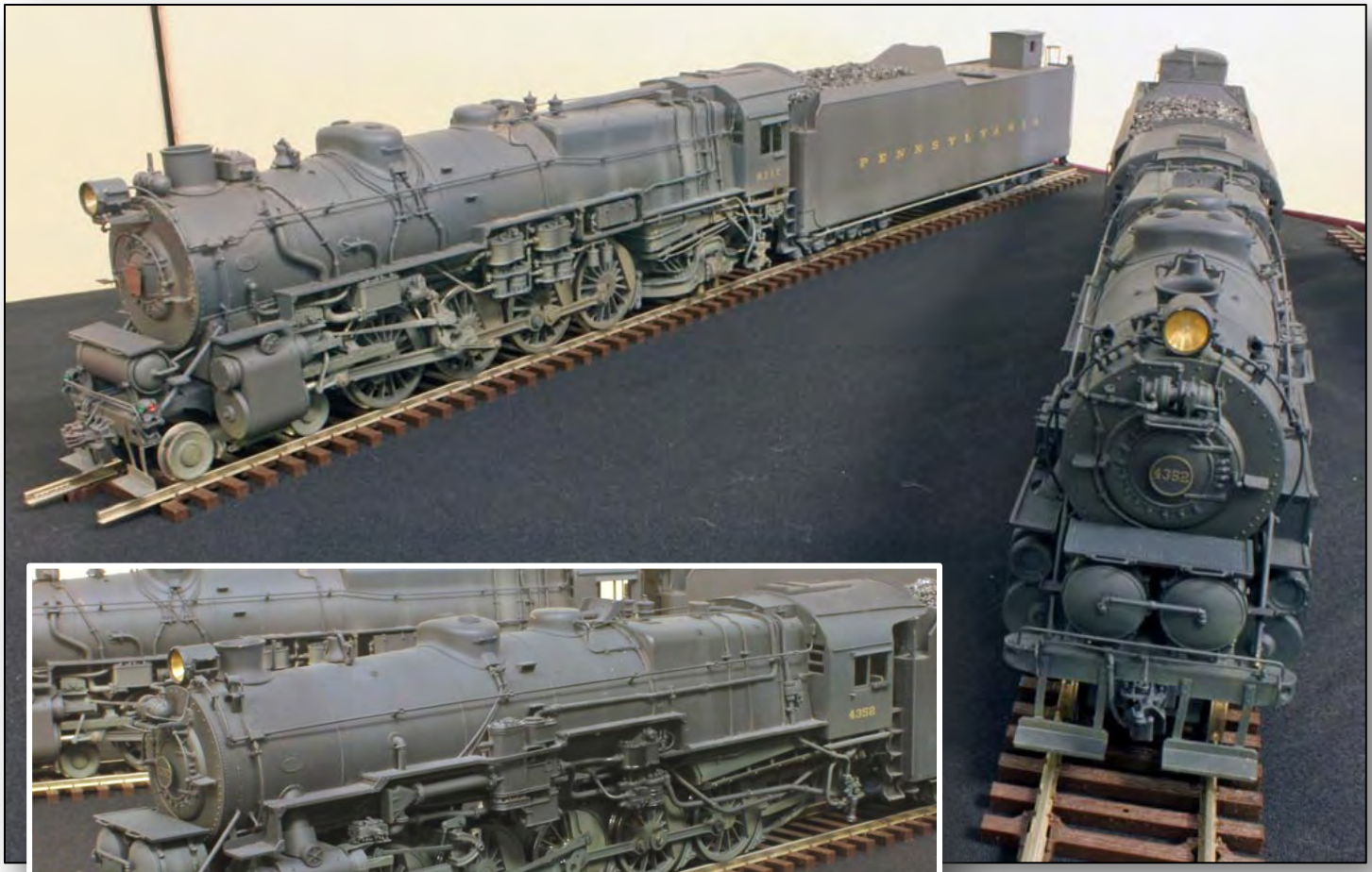
These views show the blocking on the load and the simulated nuts on the rods. The angled wood bracing has steel straps held by "bolts" at the top. The end view also shows I was a little light on the blue spray paint on this end. It's not noticeable on my layout, though.

These images show how far the girder hangs over the FM idler flats. You can also see the chalk instructions written with an artist's pencil and the revised wire details on the G26 gondola.

2014 Annual Meeting Models – Part 2

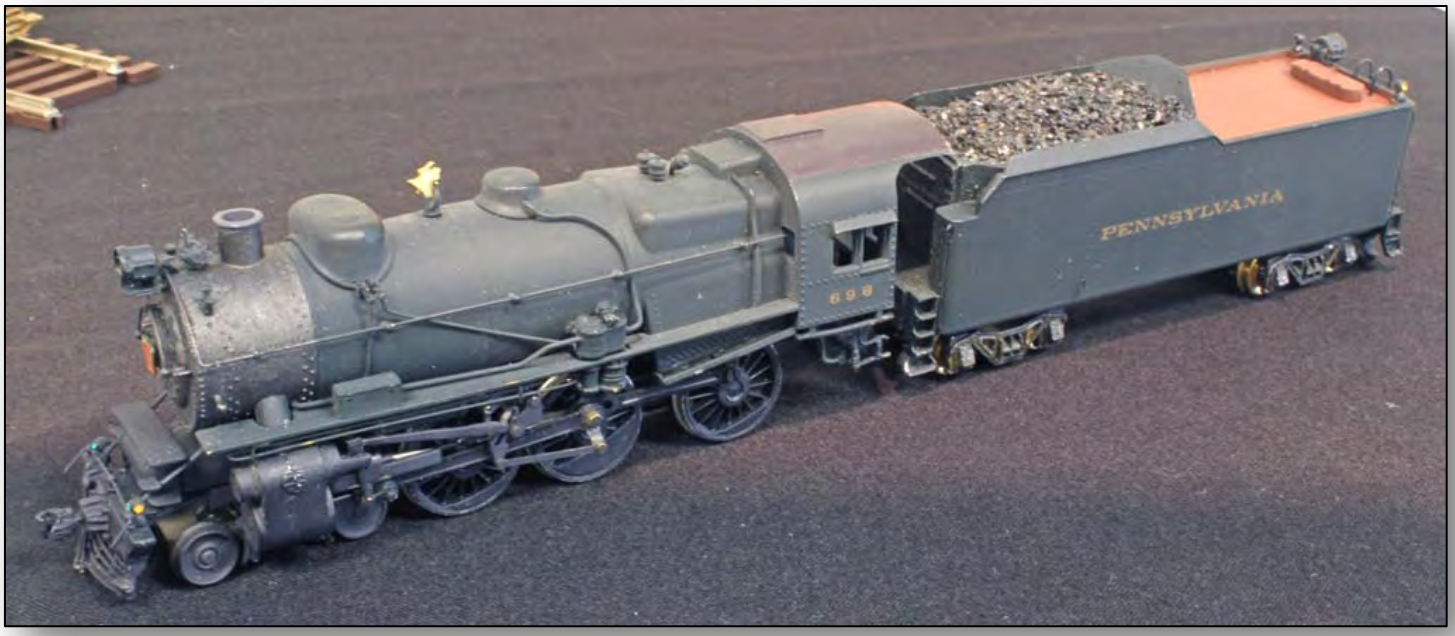
By The TKM Staff

Gary Smith scratchbuilt this spectacular O-scale model of Lines West H10s 2-8-0 #8173 as it looked before World War II. The detail, painting, and weathering is about as good as it gets!



Gary Smith also shared these three brass O-scale steam engines he enhanced with many additional details. At the top are M1A #6717 and 11SA #4352. The inset shows the left side of the 11SA. The K4s is awaiting one of Gary's exceptional paint jobs. All are detailed for the pre-WWII era.

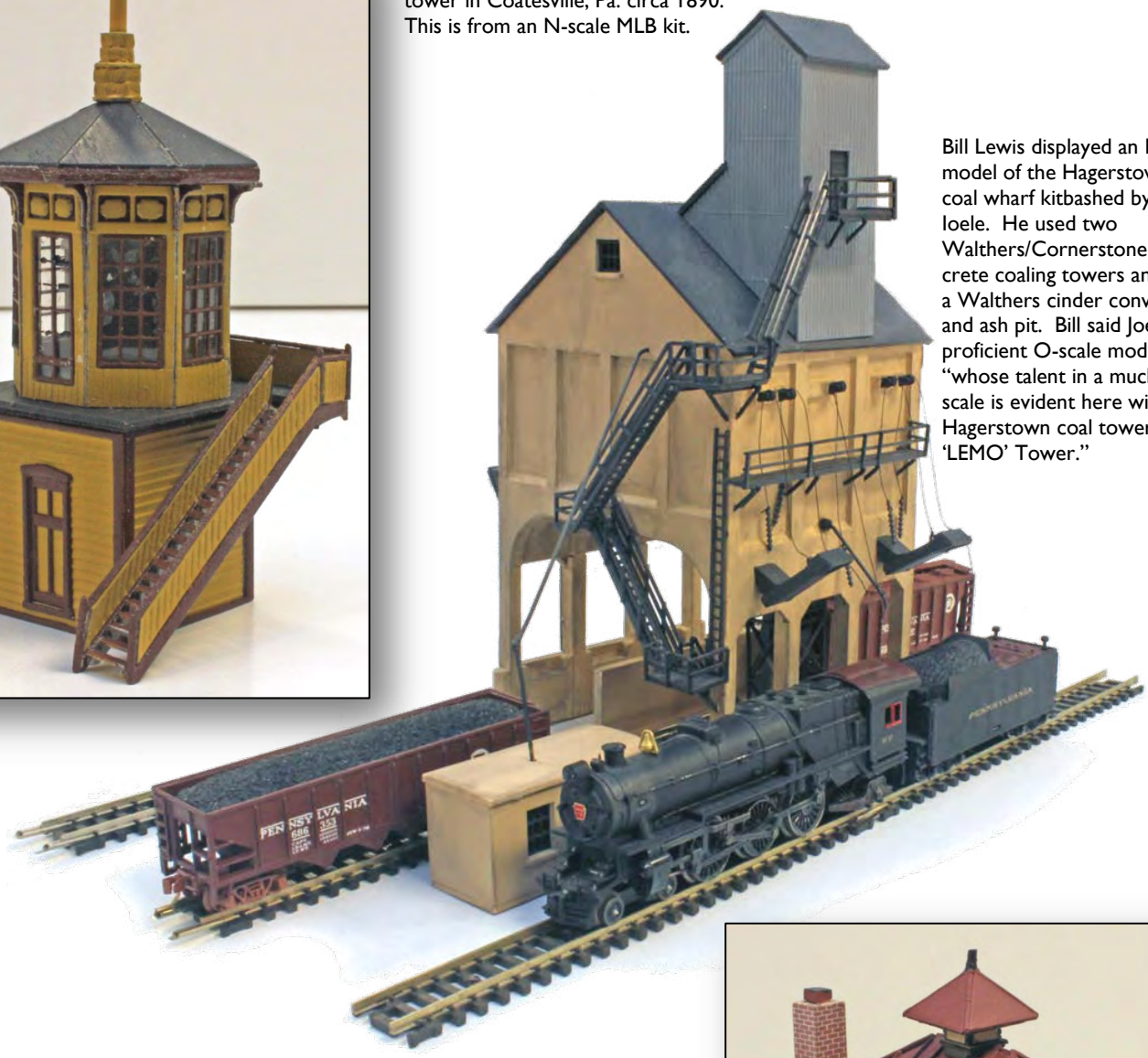
Matthew Hurst's "as built" T1 #5536 started as a stock Broadway Limited Imports model. He added details including tender hatch, railings, cut levers, diaphragm between cab and tender, real coal, enginehouse assignment decals, dull-coat and weathering. The results are impressive.



James Reilly shared HO-scale G5s #698. The locomotive was assembled from a Bowser kit by James Otto. It includes several extra details including a back-up headlight and a passenger pilot on the tender. The PRR occasionally did this on steam locomotives that would need to operate in reverse at track speed for extended distances. A DCC sound decoder is also installed.

Gus Foster presented this exceptional kit-bashed model of the Harrisburg turntable in HO scale. He started with a Walthers 130' turntable kit – only five scale feet longer than the prototype, but visually indistinguishable. Gus used a *TKM* article as a basic guide (*Modeling PRR Turntables* by Tim Garner, January 2009), and added a host of details specific to this installation. He added Ngineering Nano LED lighting in the operator's cab and floodlights each end of the table. He also added markers and "traffic lights" on both sides of the portal. He left the pit behind on his layout, but from his description of the detailing and weathering, we would love to see the full scene.

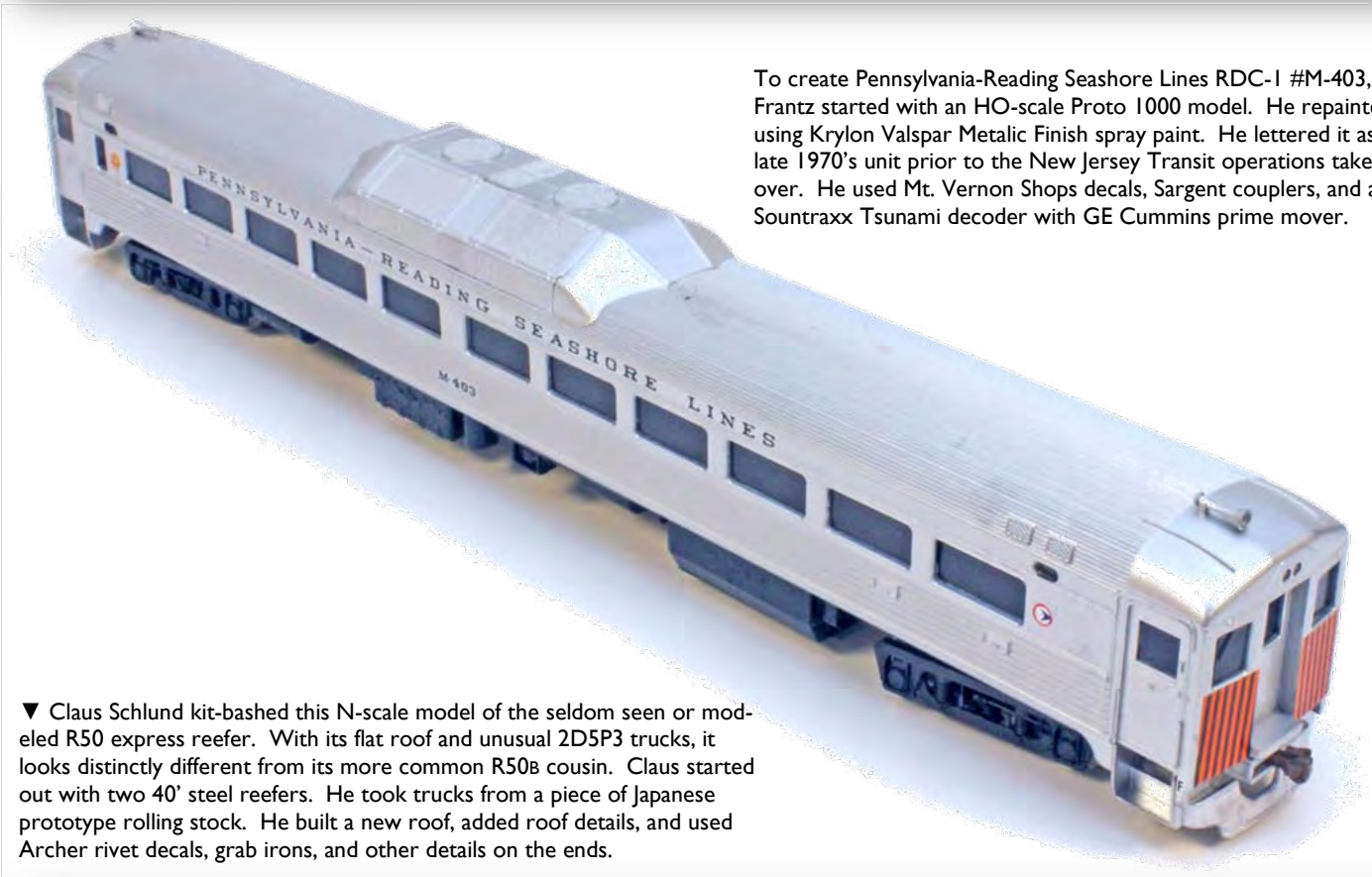
◀Jack Walsh shared a model of the tower in Coatesville, Pa. circa 1890. This is from an N-scale MLB kit.



Bill Lewis displayed an N-scale model of the Hagerstown, Md. coal wharf kitbashed by Joe Ioele. He used two Walthers/Cornerstone concrete coaling towers and added a Walthers cinder conveyor and ash pit. Bill said Joe is a proficient O-scale modeler "whose talent in a much smaller scale is evident here with the Hagerstown coal tower and 'LEMO' Tower."

To model an N-scale "LEMO" Tower in the PRR era, Joe Ioele used two GC Laser "J" Tower kits – the same tower in an earlier era. He changed door and window locations, added a chimney, interior, and other details. Bill Lewis displayed the model.

Tim Garner displayed a Pittsburgh commuter train in HO-scale around 1947 including a GEM brass G5s 4-6-0 with extra era-specific details and a sound decoder along with Con-Cor mP54 coaches and an mPB54 combine.



To create Pennsylvania-Reading Seashore Lines RDC-1 #M-403, John Frantz started with an HO-scale Proto 1000 model. He repainted it using Krylon Valspar Metalic Finish spray paint. He lettered it as a late 1970's unit prior to the New Jersey Transit operations take-over. He used Mt. Vernon Shops decals, Sargent couplers, and a Sountraxx Tsunami decoder with GE Cummins prime mover.

▼ Claus Schlund kit-bashed this N-scale model of the seldom seen or modeled R50 express reefer. With its flat roof and unusual 2D5P3 trucks, it looks distinctly different from its more common R50B cousin. Claus started out with two 40' steel reefers. He took trucks from a piece of Japanese prototype rolling stock. He built a new roof, added roof details, and used Archer rivet decals, grab irons, and other details on the ends.

Doug Nelson displayed this circa 1948 Pittsburgh Division passenger train in N-scale. The kitbashed collection includes a K4s 4-6-2 locomotive, Pacific Fruit Express wood express reefer, PRR R50B express reefer, B60B baggage car, PB70 combine, and a P70R coach.

Doug also displayed kit-bashed N-scale cars from the post-1948 era. Top is an R50B express refer and below is a D70BR diner. He's done a nice job on the diner roof and interior.

Garry Spear displayed his kit-bashed model of POS211 sleeper observation "Alexander Johnston Cassatt". He started with an HO-scale AHM car.

Jack Walsh shared several pieces of N-scale passenger equipment led by a GHQ L1s 2-8-2 steam locomotive. There are two wood express reefers lettered for PRR, two Hell Gate B60B baggage cars, a Lima PBM70A passenger-baggage-mail car, and a Lima P70 coach. Jack added piping to the L1s and vents to the Lima cars.

Aaron Heaney showed off his HO-scale Branchline 6-6 Pullman "Monument Square" kit. He added figures and blinds before applying some light weathering.

Aaron also showed his Walthers B60B baggage #9224. He added couplers by Sergeant Engineering and hoses. Nice job on the weathering, too.

Claus Schlund backdated an N-scale Hell Gate Models B60B to a 1929 configuration. He replaced the portal doors with cast resin panel doors. He used 2D-P3 trucks instead of the 2D-P5 trucks suggested in the instructions.

Claus first built this resin N-scale X29 kit twelve years ago, then dropped it to the floor. Recently he found the pieces then repaired and rebuilt the N-scale car.

Pennsy Tugboats

By Carl Fabrizi

Port-side view of Pennsylvania tugboat "Overbrook". Steam-powered, 104' long, 50' smokestack; retired in 1955.

I got my inspiration for building tugs from the fabulous article, "Steam and Salt Water," by the late Captain Jack Witmer in the spring 1992 issue of *The Keystone*. I need a tugboat for my Dutch Kill (creek) diorama, and I selected a 70' Pennsylvania utility tug from the plans in the article. Seventy feet in HO may not seem very big, but it measures out to 9⅝ in real inches. Most Pennsy and Long Island tugs were in the 90' to 110' range and some even longer.

For scratch building, I prefer working with wood. Usually I grab whatever I have in the shop: mahogany, poplar, bass, or pine. Styrene can also be used to build up a hull and cabins. Patience is also required. It usually takes me six to nine months to build a water-line tug. The only commercial parts I use are whistles, handrails, and stanchions. I like Athearn diesel and rail stanchions and thin wire for the deck and handrails. I have also used sewing needles for stanchions, with thread for the handrails. The notions department of a sewing shop can be the source of many tugboat accessories. Many marine accessories are also available from Model Shipways, such as davits, bits, ventilators, and rail stanchions, etc. However these parts can be expensive.

By now almost everyone has seen the Walthers tugboat kit. I have built one, and it is an excellent model of a modern diesel boat. It is long; almost 14½" long. It can be used for Pennsy boat. Walthers even includes keystone decals for the stack.

Tugboat "Patchoque" belonged to the Long Island Railroad. 90' long, steam-powered, retired in 1959.

The Model Shipways kit has been around for a long time. It is a wood craftsman kit that builds into a nice steam tug. However it is a 1/8"-to-the-foot model and looks too large next to an HO model.

Sylvan makes a resin HO-scale model of a 50' harbor tug, but it is not suitable for a Pennsy tug. Seaport Model Works makes a resin 78' steam tug kit. This one can be used for several Pennsy boats. You have several choices if you're not into scratch building.

Pennsy tug "Delmar" worked in Chesapeake Bay. 122' long, steam-powered, retired 1947.

Pennsylvania tugboat "Meitoway" beloned to the Long Island Railroad. 96' long, diesel-powered, 1959 paint scheme. She sank in a storm of Cape Hatteras in 1963 while heading to an assignment.

Upgrading the Walthers/Mainline PRR ES-6 in HO Scale – The EMD SW1 Switcher

by Jack Consoli – photos by the author unless noted

Final results of adding details, repainting, re-lettering and weathering, back-dated a mid-1960's era PRR class ES-6 into one suitable for use on my early 1950's layout.

In the previous issue of *The Keystone Modeler*, I reviewed the recently re-released Walthers HO scale version of the SW1 EMD 600 horsepower switching locomotive with an all new drive mechanism and paint schemes. I will now describe what I did to upgrade the details on this model and back-date it to match my modeling time period.

The Prototype

To quickly recap the prototype information regarding the ES-6 class locomotives on the PRR: EMD's SW1 design evolved, resulting in several changes to the external appearance of the units over the course of the PRR purchases, including:

- The double-stage hood taper in front of the cab was simplified to a single-stage taper.
- The original cab front windows that formed a curve along their top edges became flat across their tops.
- The early units had side sill members that jogged downward at the stepwells, whereas on the later units the jogs were eliminated.

The Walthers model incorporates the curved-top cab windows, double-stage hood taper, jogged side sills and overall general configuration that matches the PRR units built in 1942 through 1948: the twenty-four 5900-series units plus the eighteen units numbered 9137-9154. Fortunately, the ES-6 assigned to the division I model was one of this group, so modifications to the model were minimal: the work was mainly just adding details.

The PRR's ten 1949-built units 9200-9203, 9104, 9205-9209 still retained the curved-topped windows, but featured the single taper hood transition and the jog-less side sills. The thirty-three 1950-built PRR units, 9396-9428, had the single-stage hood taper, jog-less sills as well as the flat topped cab front windows. More serious modifications are required of the Walthers model to match these later style units, and, although I didn't model a later PRR ES-6, I will describe the changes you should make along the way.

Model Modifications

Drive Unit

I neglected to discuss it in my review of the model, but Walthers upgraded the drive mechanism:

- Factory-installed 8-pin DCC plug
- All-new drive mechanism
    - 14:1 helical-cut gears
    - 5-pole skew-wound armature motor
    - All-wheel drive and electrical pickup
    - Dual machined brass flywheels
    - Heavy die cast chassis
    - Correct 40" turned metal wheelsets

The changes result in a unit that runs very nicely out of the box. I therefore made no modifications to the drive unit other than to add a bit of grease to the gears. I do operate with DCC, so I took advantage of the models being "DCC ready" by simply removing the factory-installed jumper pc board in the 8-pin socket and replacing it with a basic 8-pin 1-amp decoder unit I purchased from Soundtraxx, their (non-sound) unit #MC1H102P8. This 17mm x 17mm unit is one of several commercially available decoders configured to fit small locomotives like this one and plug in directly. I chose not to install a sound system. If you wanted to do this, the speaker would likely have to occupy the cab. You need a two-function decoder to allow for full operation of the factory installed white LED front and rear headlights. No additional resistors are required to operate the LEDs with DCC.

To remove the body from the drive unit, the two sides of the cab have small latches that can be disengaged by gently prying the cab sides near the front outward, away from the frame. Once these are unlatched, tip/rotate the cab backwards to unhook the center rear plastic tab from the frame. The hood can then also be removed by lifting/rotating the hood forward to unhook the plastic tab at the front from the frame. Be careful as you do this as the wiring to the LED lights is delicate, it can be detached once the cab and hood are removed.

To facilitate painting and weathering of the wheels and underframe later, I removed the truck sideframes which are held to the bottom of the truck assemblies with two small screws each. Once the sideframes are removed the wheelsets drop out. You can then remove the circuit boards, motor, wiring and gear boxes from the top side of the frame. I also removed the couplers and set these parts aside.

As shown and discussed in the review, these latest Walthers offerings are decorated for two different PRR road numbers, #9137 and #8590, in the mid 1960's era "Volkmer" lettering scheme. I model the period a decade earlier than this, so I, unfortunately, needed to strip off the nice factory paint and lettering. Before doing this, remove the LEDs by peeling off the tape that restrains the wires and pry the LEDs out of the holder clips into which they are inserted and lightly glued.

View of the drive unit with DCC decoder installed.

The out-of-the-box model showing the hood and front details.

View of the as-molded louvered grille openings in the top of the model hood.

Whether I am repainting a pre-decorated unit like this or just weathering it, I normally would prefer to remove the cab windows prior to these steps. The alternative is to mask the windows to keep them clear – something I really don't want to do when there are 14 mostly irregularly shaped windows. I prefer to just remove the clear plastic "window" parts from inside the cab while it is disassembled and then replace them at the very end of the project or just prior to the final dusting of weathering. On some models this is just plain impossible to do without destroying the parts, forcing you to have to go the window masking route. I would like to give Walthers a hearty pat on the back because as I started to pry at the windows inside the cab, I think I let out an audible "YIPPEE" when I found the windows were attached with only a few minimal daps of a pliable, removable adhesive material. You can basically just pull them out with tweezers and rub off any remaining spots of the adhesive as you would with rubber cement, without damaging the windows or the cab. I did not attempt to remove the plastic headlight lenses as they seemed to be firmly anchored and they are simple to mask later.

Hood

As with any project of this nature, you always want to do any "heavy" work before adding back on delicate details. First I removed the long railings attached to the hood side since I intended to replace them with thinner gauge wire. I chiseled off all the molded-on door handles on the hood doors, the two forward supports for the side handrails and the six small nubs (not the hinges) protruding upward on the exhaust hatch atop the hood. I drilled the holes for the side "ladder" grab irons: three on the fireman's side of the hood and two above on the top of the hood, using the molded-in spots on the hood to locate them. I marked and drilled holes for the replacement wire hood door handles. As I mentioned in the review, the locations of the molded-on door handles differ somewhat from what appeared on the PRR units matching this body configuration. On the fireman's side, the handles should be on doors #1, 3, 5, 8, 10, and 12 counting from the front and on the engineer's side doors #1, 2, 4, 7, 10, and 12. I marked and drilled pairs of holes for the handles on the front/top corner of the sandboxes at an angle. I scribed a line into the lid of the sandbox to make it appear correctly as having a two-piece lid. I also drilled out the exhaust stack hole using progressively larger drill bits, holding and twisting the bits between my fingers, to make it as large as I dared, to look more like a sheet metal part.

Walthers rendered the group of four radiator/engine compartment cooling openings atop the hood on their model as louvers which *were* used as such on some railroads SW1's.

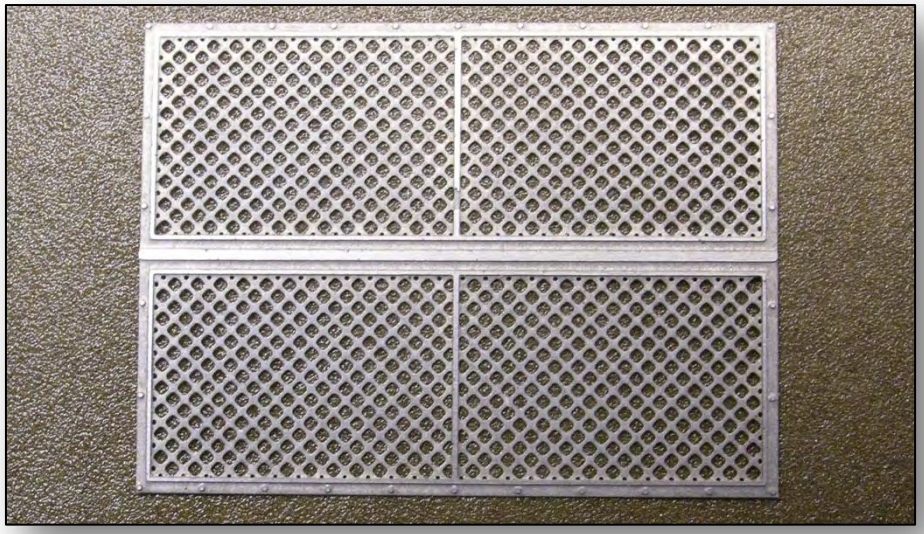
Unfortunately, the PRR units had the other option, diamond mesh screens, covering these openings. Any photos looking downward on the units, such as #9418 in the photo at http://www.railpictures.net/viewphoto.php?id=257515 , show a distinctly different look than that of a louvered metal plate – the screens reveal very dark openings with depth below. The easiest solution I found to remedy this situation was to cut out the louver sections and cover the area with an etched diamond mesh screen. Fortunately, Details Associates made a very nice EMD screen/grille like this (GR2727), unfortunately it is too long as it was intended for the larger SW9 and SW1200 switchers. Without seeing any better options, I figured that if I could cut an entire brass flat car into five sections and reassemble it, I should be able to do the same with a single little etched piece of stainless steel and make this plan work.

So by drilling starter holes and using a jeweler's saw and then files, I cut the two large cooling openings out of the top of the hood following the edges of the raised louvers as my guide, leaving the surrounding raised rivet strip around the entire perimeter. I also left a center support down the center of the hood as it would be hidden by the solid center part of the screen and would provide some much needed support for the delicate etching. Once the holes are cut, gently sand or file off any raised rivet heads on the raised surround.

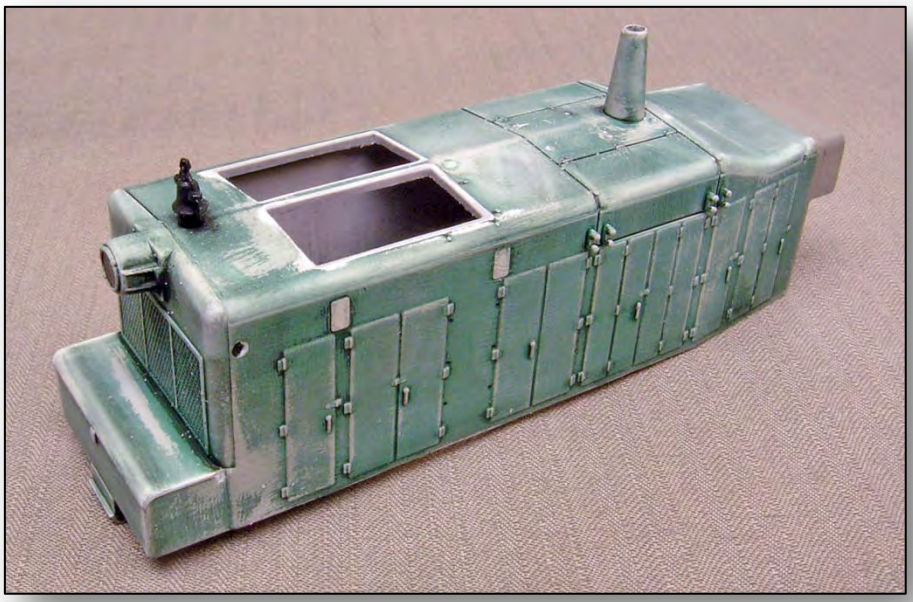
The etched grille has a nicely detailed frame surrounding the mesh and this is (not coincidentally) the same width as the molded-on detail so it will sit right on top of the surround. I measured the openings I had cut and marked a slightly longer length on the screen, centered on the part. This slight overlap would give the ends of the screen some support on top of the hood without looking too far off, prototypically. I applied strips of transparent tape on the center section of the screen to mark these lines and protect the part during cutting. Carefully cut along the tape with fine, smooth, sharp shears – like those commercially available being advertised as being ideal for use with delicate etched model parts such as this one. Then take the two remaining end sections and carefully cut along the inside edge of the frames. These pieces invariably curl a bit as you cut, so straighten them afterwards and then bend all three pieces along the centerline over a metal edge to form an angle that matches the top of the hood. By cutting the screen into five parts instead of three, the etched center transverse support is then centered as it should be in the openings.

With the slight overlap of the mesh onto the hood, it isn't necessary to re-generate a bond between the frame pieces and the mesh for mechanical stability – they can be glued onto the hood abutting each other, but separate. Attach the center section first, centering it both longitudinally and transversely and wick thin CA adhesive underneath the edges from below. Then add the end sections of the frame.

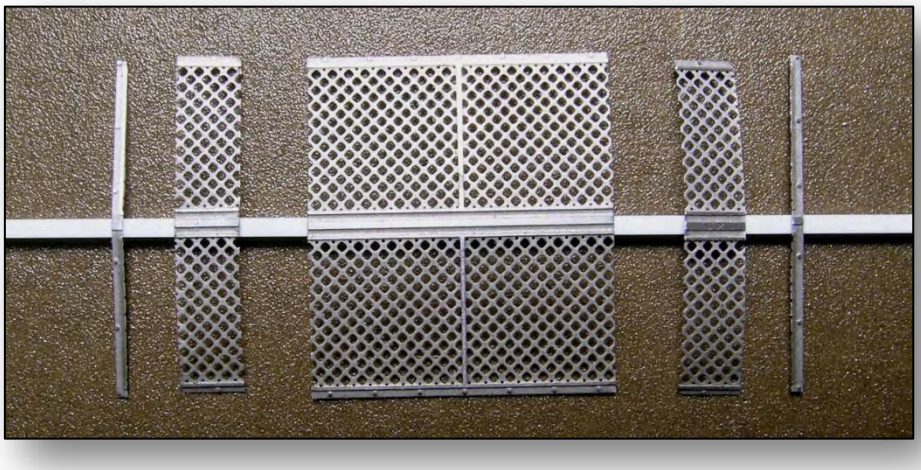
The remaining small details can now be added.



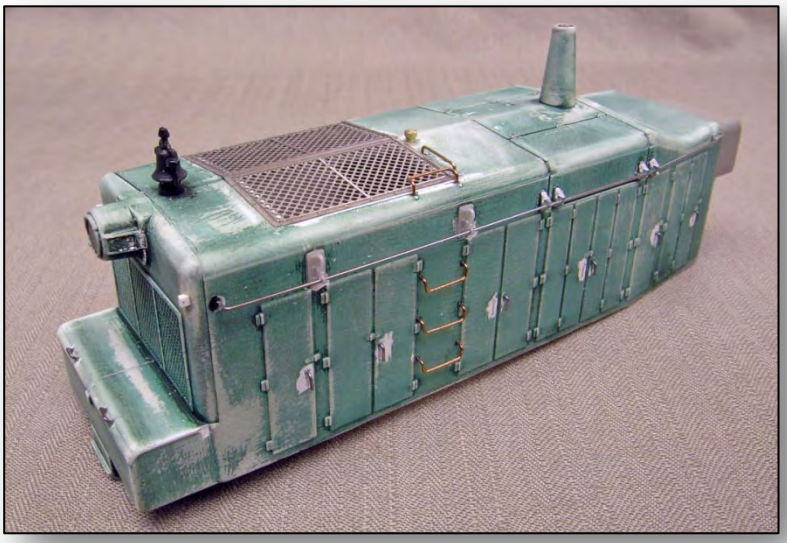
The etched SW9/SW1200 grille as purchased.



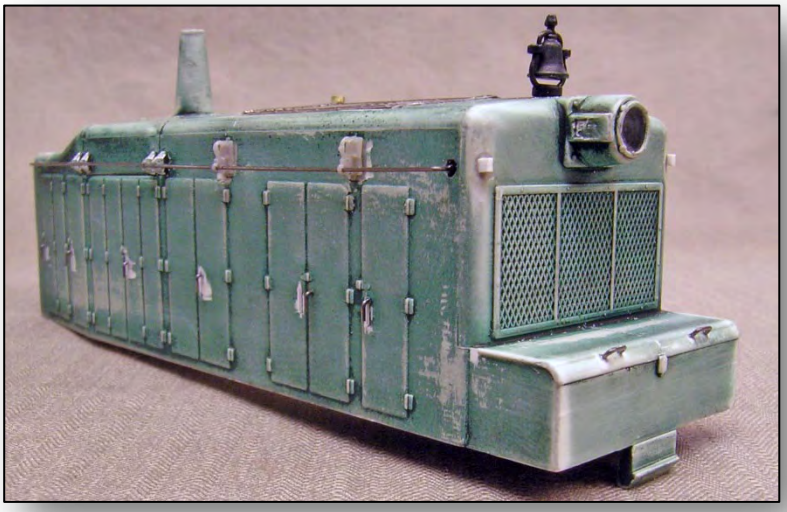
View of the hood with the cooling grille openings cut out and the two forward side handrail brackets removed.



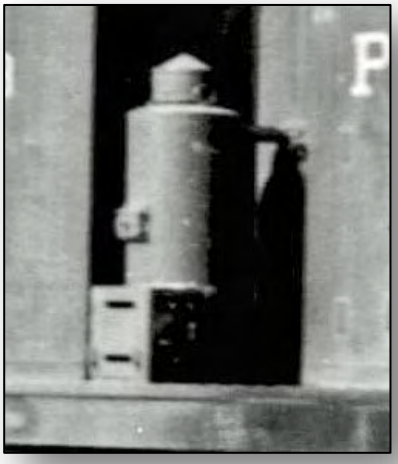
The etched grille cut into five pieces for shortening. The symmetric center section and the two outer frame ends will be used, the other two sections, discarded. The parts have been bent along the centerline to match the hood top angles.



The shortened, etched grilles shown glued in place. Other added details include the "ladder" grabs, water filler, door handles, new handrail and brackets.



Completed hood details shown include sandbox lid handles, flag/marker light brackets, door handles and new handrail and brackets.



Left: detail view of #9143 shows block heater, painted body color by the time of this 1966 photo. Right: completed model block heater unit ready for painting.

I turned a small cooling water filler pipe w/cap out of a piece of 0.040" brass rod. Drill a hole for it in the spot on the top of the hood just behind the grille where it looks like there was, or was supposed to be, something representing this detail molded into the hood and glue in place.

Add the grab irons for the hood side "ladder": three normal drop grabs below the hand rail on the hood side and two grabs on top of the hood. One of these is another drop grab parallel to the lower ones, alongside the grille, but with the "drop" facing towards the grille and a straight grab in the remaining location transverse to the hood.

Make short lengths of wire with a right angle bend to represent the hood door handles and insert into the 12 previously drilled spots on the doors.

Bend a pair of small grabs/handles and apply into the holes in the sand box lids.

Cut a pair of small rectangles from scale 2" x 3" styrene strip and glue these to the front of the hood above the radiator grille to represent the combination flag/marker brackets.

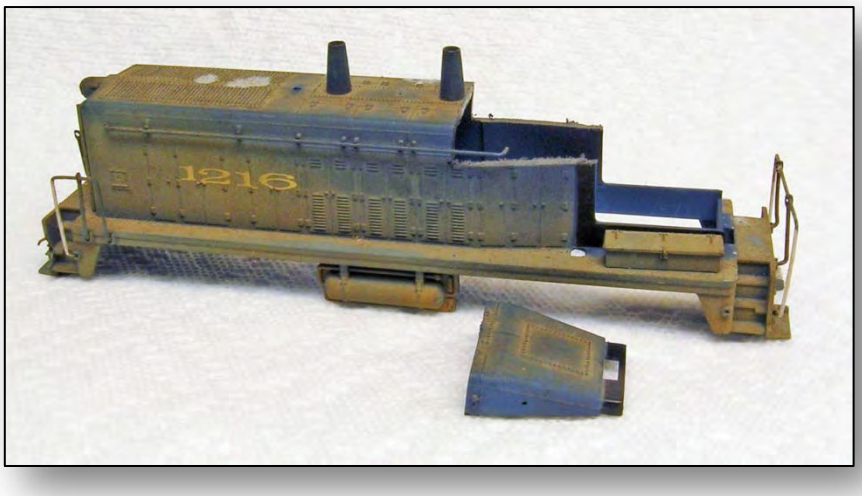
Apply a pair of Detail Associates LR1105 Switcher side hood type lift rings to each side of the hood where the molded-on details were removed. These have a closer to scale appearance and opening for the handrail so I chose to replace the factory applied handrail with one bent from 0.012" wire to fit the detail parts.

I didn't have any suitable detail parts to use to replace the other four handrail supports further back on each side of the hood, so I filed down the molded-on nubs to be less obtrusive and look more like the downward-angling prototype handrail stanchions. On the prototype the handrails were actually three separate pieces, with the splits between the pairs of support stanchions, to allow removal of the hood sections separately. I considered cutting mine between the "stanchions", but since the attachment to these molded-on details is tenuous, I thought better of that idea.

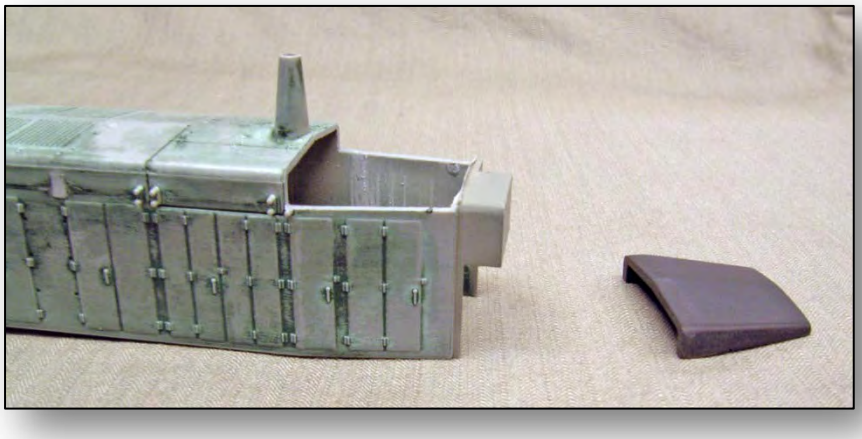
Based on several photos, the particular unit I chose to model did not appear to ever have the roll-up style canvas front radiator grille cover found on some other units, so I omitted this detail. It was, however, in the minority of the units equipped with an engine block heater installed on the walkway directly in front of the cab on the engineer's side. Although I consider that fortuitous as it adds character, there is no commercially available detail part similar to it, so I had to scratch build this detail from some bits of styrene and wire.

For the main cylindrical section I used a length of 0.187" diameter styrene tubing into which I insert a smaller piece of rod to make the part solid. I then turned the upper contours of the part with it chucked into a small motor tool. The prototype unit had two pipes running from it, through the hood, into the engine compartment. These ran horizontally into the hood behind the rearmost hood door: one near the top, and one near the bottom of the cylindrical section. The photo of #9145 on page 749 of the Withers book showing this locomotive in 1966 after the block heater had been removed presents an unobstructed view of the holes where the pipes entered the hood. I made the pipes from 0.033" brass rod for strength and drilled appropriate holes in the hood and cylinder to accept these pipes. I glued them into the heater and set the completed unit aside for painting. Initially, the heaters were a silver color so I wanted to paint this part separately from the hood. The two pipes running into holes in the hood make this convenient to do as the heater can be attached after painting and glued cleanly from inside the hood. Since the heater touches the hood and frame and is very close to the cab, all of which are separate parts on the model that need to be able to come back apart after assembly for drive train maintenance, the pipes also make for a convenient and rigid attachment to only one of these three parts.

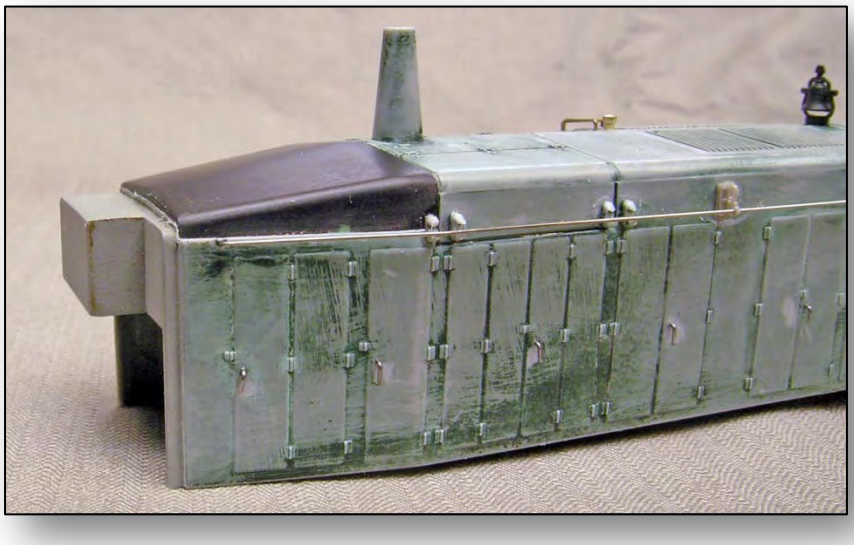
As to the side discussion promised, if you want the Walthers model to represent any of the 1949 or 1950-built PRR ES-6 units, you need to make an additional, serious modification to the hood, which should be done prior to adding all the small details noted above. The later units had the single stage hood taper at the rear of the hood transitioning to the cab. (I happen to also be modeling one of the Union Railroad's SW1's as I have an interchange with this road on my layout. Since their earliest SW1's were 1949 vintage units, I had to make some of the same modifications I would have if I had chosen to model one of the PRR's 1949 units, so I will illustrate those modifications here in case you choose to model one of the later PRR units.) There is, or at least was, a commercially available single stage transition SW1 conversion part for the Walthers loco available from Custom Finishing as their part number 247-285. I didn't have one of these handy, but I did have an old, unused Athearn EMD SW7 switcher body shell in my junk box, so I cut out an oversize section of the hood surrounding this transition area.



Athearn EMD switcher donor body shell with oversized section of the hood taper area removed.



SW1 hood with the double stage transition taper section removed and the trimmed down Athearn single stage taper section ready for grafting.



View of the completed 1949 vintage SW1 hood showing the single stage transition section in place. Unlike the PRR, the URR units *did* have the louver-style radiator opening covers on their units, so I did not replace them here on this model. Note that the boxy protrusion on the rear of the hood is intended to replicate the geometry of the main electrical cabinet protruding into the cab on these switchers. The "dashboard" or instrument panel in the cab is the flat area adjacent to the right of the cabinet.

View of the out-of-the-box model showing the cab side and rear details.

Modifications to the cab front include adding windshield wipers, horn bracket, sunshades and a door handle.

I carefully cut the double stage transition section out of the SW1 hood, trying to follow the hood seams surrounding the section to make the joints less difficult to hide. Once this area was cut out, cleaned up and the edges squared up with some filing, I whittled on the replacement part to get it to fit into the hood cutout. The Athearn piece has an access panel molded into the top of it that needs to be filed/sanded off and their hood in this area is only slightly oversize in width compared to the SW1 hood so carefully, and a little bit at a time, file and sand the new transition section until it fits perfectly into the hood opening.

The Athearn shells appear to be molded in ABS resin, so use a solvent cement intended for bonding ABS plastic when attaching this part.

Cab

First I removed the two handrails leading up to the rear cab door and set these aside until after painting. Since they are to be yellow, it is easier to paint them separately and then reattach later. I shaved off the front and rear cab door handles and since the top surface of the cab was a bit uneven in the center around where the part is gated during molding, I filled the area with putty and sanded it smooth. I lightly scribed vertical lines on the sides of the cab in line with the rear edges, down across where the battery box is attached, to represent the joint, as this was a separate part on the prototype.

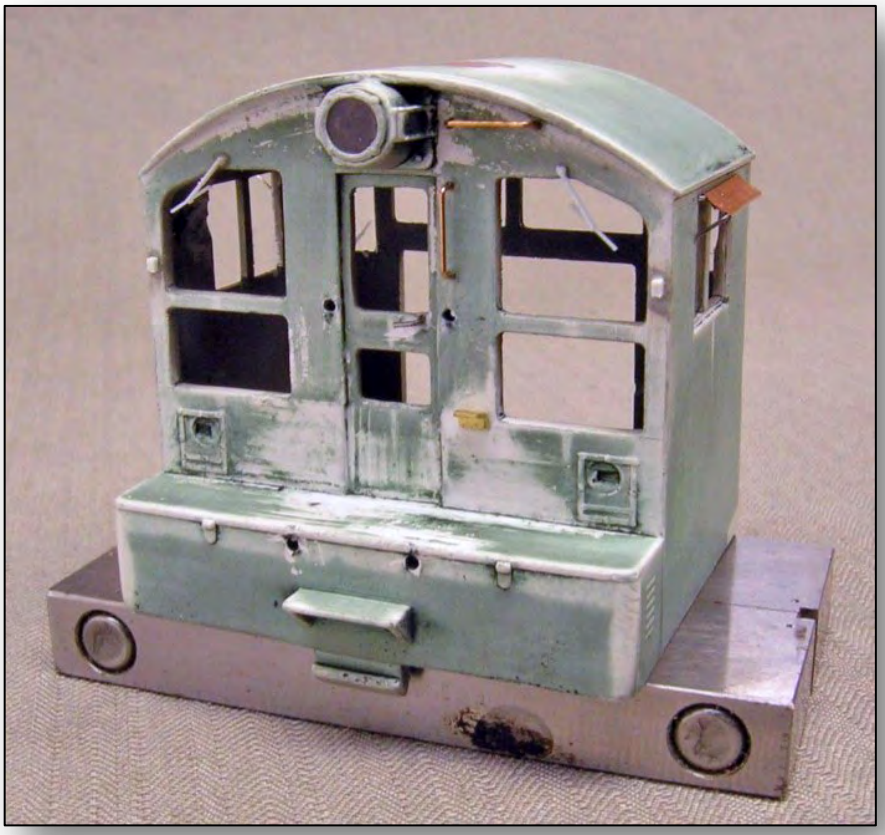
I drilled holes for the door handles, the windshield wipers and at the pre-spotted locations for the two grab irons adjacent to and above the rear door. I formed and added the door handles as described above for the hood and bent straight grab irons to fit the locations by the rear door. I bent a small angle out of thin brass to represent the step on the rear wall of the cab between the door and lower window on the engineer's side and glued it in place.

The single chime Leslie, forward-facing, small horn mounted on the front wall of the cab is a decent representation of the prototype. I lightly drilled out the front of the horn casting to give it some shape and added a small block of styrene behind and below the lower part of the horn to better represent the mounting bracket. I was only partially correct in my review of this model saying that the horn could be improved by adding a couple small triangles of styrene to better represent the horn bracket. This comment is only true for the 1950 units. Since they have the front cab windows which are flat across the top, there is more space to mount the horns and thus those units had a larger triangular bracket. The bracket on the arched window units is much smaller due to lack of space.

As on the front of the hood, cut a pair of small rectangles from scale 2" x 3" styrene strip and glue these to the rear corners of the cab to represent the combination flag/marker brackets.

Based on photographs, it appears that circa 1952, most units had retractable canvas cab sunshades installed, but the wind visors were only beginning to be added and the replacement trapezoidal metal visors were not yet being applied. So I chose to model the canvas shades, but I skipped the visors. I drilled a pair of holes near the upper corners of the side windows for the upper support and another pair, part way down along the sides of the windows for the lower support. I drilled these lower holes at an angle rather than having to bend the support legs and this seemed to make things go more smoothly. I bent the "U" shaped supports from .008" wire. I chose to use thin copper sheet, about 0.002" thick to represent the canvas, as it is thin, flexible and strong.

The material I used is copper foil tape intended for use in making stained glass articles. It comes in rolls from the craft store and has a light adhesive on the back. Cut a rectangle just a bit narrower than the span of the support brackets and about twice as long as the sunshade is deep. With the adhesive side up, crease the foil near one end, lay one of the supports into the corner of the crease and fold the foil over the support and burnish it to conform down over the wire. The nice thing is that the adhesive then sticks to itself where it overlaps and aids in holding this all together while you are getting it together. Repeat the process and make a second crease the desired distance from the first support to give the proper shade depth and add the other support wire. Carefully take the assembly and insert the support wires into their respective holes in the cab. The angled lower holes allow things to float and to find their proper relative positions. Glue the upper bracket ends into their holes and then gently rub the shade with a rounded object like a toothpick to put a little droop into the shade. Once everything looks good, glue the ends of the support wire in the lower bracket holes. Finally, run a couple small drops of CA adhesive along the underside of the shade to wick into the overlap joints of the ends of the copper onto the center section so the adhesive joint doesn't fall apart with time.



Completed upgrades to the cab side and rear are shown here. Grab irons, wipers, flag brackets, door handle, and step have been added. The score line on the side differentiating the battery box from the cab wall can be seen also.

Modified Walthers cab to incorporate the post-1948 vent from an Athearn cab, here the black piece grafted into the cab front on the engineer's side just above the walkway.

I waited until after I had washed the cab in preparation for painting until I added the windshield wipers in the holes I had previously drilled since they are so delicate. I inserted the A-Line #29201 short wipers above the upper pair of rear cab windows and below the outer window on each side of the cab front.

To continue with the side discussion of modeling the later units, those built in 1949 and 1950, another major modification or two are required on the cab. These units had a grille/vent at the bottom of the front wall of the cab just above the walkway on the engineer's side that the earlier units did not. Once again, I turned to the surplus Athearn shell I had on hand as it incorporated this detail in its cab. I simply cut the vent out of the donor cab and cut a matching opening in the Walthers cab. If you cut and file the parts such that you form a 45° miter joint along the vertical corner of the cab wall, the process is painless: the vent protrudes from the cab wall along the top edge, so in combination with the miter joint along the side, there are no seams to hide.

This fixes the major discrepancy with the model compared to the 1949 units, but the 1950 units have a much bigger issue. These late units had the cab front windows that were flat across the top, so you really need to either replace the front of the cab, or possibly more easily, just replace the cab completely. Two potential options are to use a spare cab from a PROTO 2000 SW9 or an aftermarket part – the Cannon and Co. "late switcher" thin wall cab kit, their part no. 1504. (This kit comes in pieces so it might be more conducive for replacing just the front wall.) I did not have to do this so I can't vouch for how easy or difficult this might be and what detail modifications would be required. I did observe on the diagram in an EMD operators manual for their small switchers that the height to the top of the cab above the rails is listed as being 14'-4⅝" on the 600 HP switchers and 14'-6¼" on the 1,000 and 1,200 HP models, so either the SW1 cab was a bit smaller than those on the larger units or the difference lies elsewhere, but I didn't investigate the implications of this either.

Front and rear views of the out-of-the-box model.

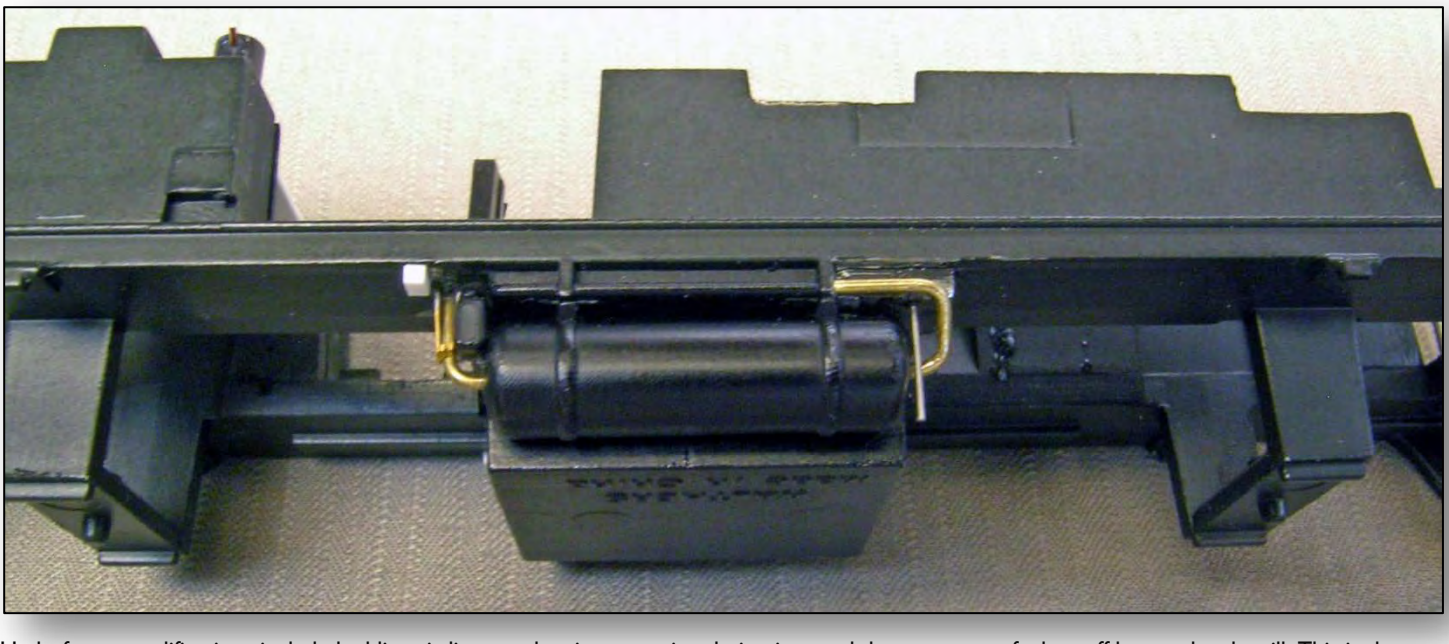
Frame Assembly

I only made minor modifications to the underframe/drive unit. The PRR locomotives had circular poling pocket indentations on the vertical inboard walls of the corner stepwells which are missing on the model. I marked the locations and added the recesses with the touch of a spherical dental burr. There should be a pair of grab irons on each pilot face, one on either side of the couplers, below the cut levers, so I drilled and added straight grabs to both front and rear pilots. The end configuration of the supplied cut levers differed from those on the PRR units so I carefully popped them off the model and re-bent them to better match the desired compound bends. Fortunately the originals were wider and thus had enough material to accomplish this rework.

PRR equipment Trust plates were applied differently over the various orders. The 1946 and 1947 units had their plates at the front of each side sill, while the 1948 and 1949 units had them applied at the rear of each side sill. On the 1949 units, since the downward jogs on the side sills had been eliminated, the plates hung down below the straight part of the sills. The 1950 units had shorter, stubbier plates applied to each sill just behind the front step well. These plates stayed in place until the 15 year financing was paid off on the locomotives, so since the trusts were still in effect during my modeling period, I added some resin castings I had made of typical trust plates to the rear ends of the sills.

The underframe details on the models follow what appeared on the PRR units pretty accurately, including the underframe "T" shaped jacking pads. The fuel tank, air tank, and piping arrangement are pretty close, so I only added a few parts to improve them. The air tanks are separate plastic parts so they can be manipulated more easily than the diecast underframe to which they are applied. I gently twisted the air line extending out from the front of the fireman's side tank to better represent those lines that angled inward and upward on the prototype. Add a new pipe of 0.033" brass rod to the rear of the fireman's side that similarly angles upwards towards the frame and one on the rear of the engineer's side tank that turns vertically upward. The air line on the front of the engineer's side should run up from the end of the tank to join with the pipe above the tank, represented as a raised feature on the diecast part. So I first clipped off the molded-in pipe on that end of the tank and drilled a hole in the end to accept the brass rod. I then ground off the front section of the cast-on ridge on the frame from the front mounting bracket forward. I bent a "U" shaped section of brass rod to run from in the end of the tank up and along the frame where the cast on part had been. The small, vertical engine air box drain pipes at the front of the air reservoirs are missing on both sides, so I added lengths of .015" wire into holes drilled into the bottom of the walkways. Likewise, the underframe-mounted emergency fuel cutoff boxes are missing, so I added small blocks of 4 x 4" styrene to the underframe just behind the fuel tank on both sides.

The PRR units had sanders on all wheels of both trucks. To represent these, I added pieces of 0.015" wire for the nozzles in holes drilled at an angle in the end of the truck sideframes plus lengths of black 28-gauge wire insulation to the inboard ends of both trucks since those pipes are fairly visible and wouldn't interfere with anything when the trucks rotated. I left off the outer sanders, however, as they are much less visible and looked likely to hit the corners of the stepwells in operation.

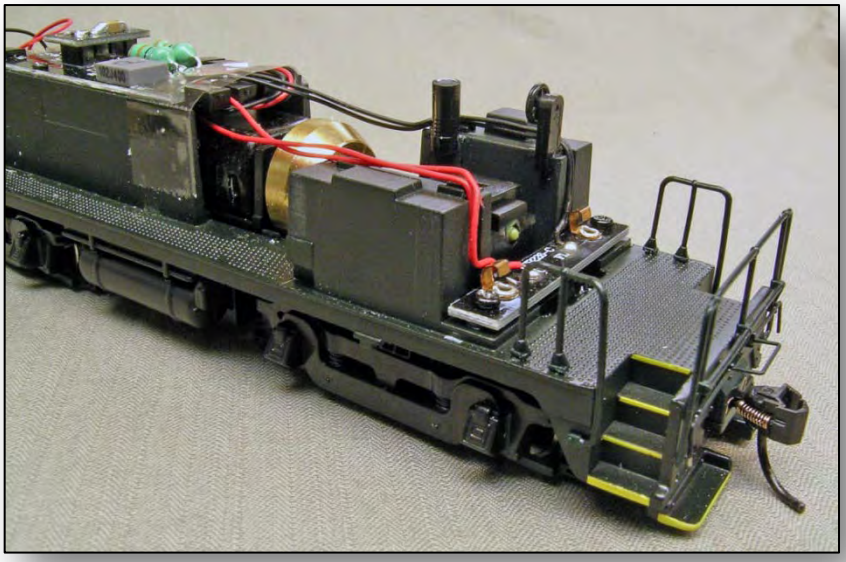


Underframe modifications included adding air lines to the air reservoirs, drain pipes and the emergency fuel cutoff box under the sill. This is the engineer's side.

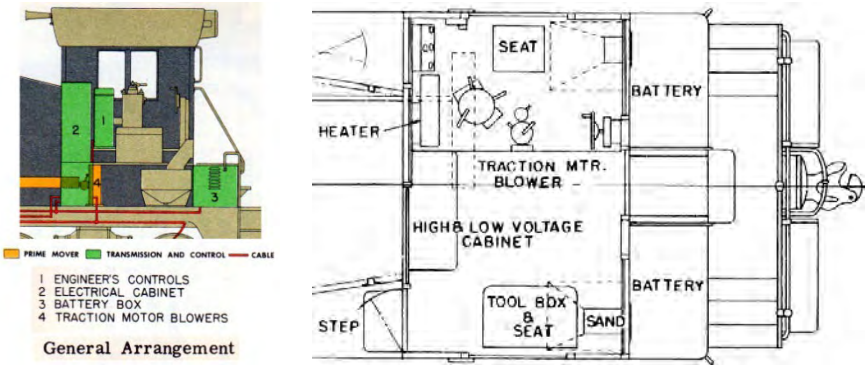
The Walthers model includes some parts of the cab interior; adding a few more pieces can result in a decent representation of the cab interior. With all the windows through which to see inside, a little detailing effort here is pretty visible.

I cut a piece of 0.030" styrene for the floor, fitting it down between the large diecast blocks protruding up from the frame. This "floor" has to remain higher than on the prototype to clear the top of the rear truck gear tower. Do not glue in place until reassembling the unit after painting and reinstalling the drive components as the gear towers are assembled from above. I moved the brake stand provided with the model from its location on the diecast block onto the floor piece – it should be right in front of the engineer's side door pillar on the back of the cab wall. I also added a brake stand made from a couple blocks of styrene. I modified a couple plastic figures for the crew to fit in the space available and set them aside to paint.

The last major item in the side discussion of modeling the later units, those built in 1949 and 1950, is a modification required on the underframe. Unlike the early units which had side sill members that jogged downward at the stepwells as on the out-of-the-box model, the later units had straight side sills the full length of the unit. To replicate this, first, either totally remove the small handrail sections at the inboard sides of the stepwells, or pull out the lower attachment point and tuck the end of the railing out of the way temporarily. Then either file or machine off the small section of the diecast sill that jogs downward at the stepwells. Replace the handrails.



Rear ¾-view of the out-of-the-box model showing the cab interior area. The rounded piece protruding vertically behind the flywheel represents the control stand in the cab, and there is also a brake wheel provided just inside the rear wall of the cab. The rectangular upward protrusions atop the large blocks represent the cab seat boxes. The as-supplied jumper board in the 8-pin DCC decoder socket on the main PC board is visible at the upper left.

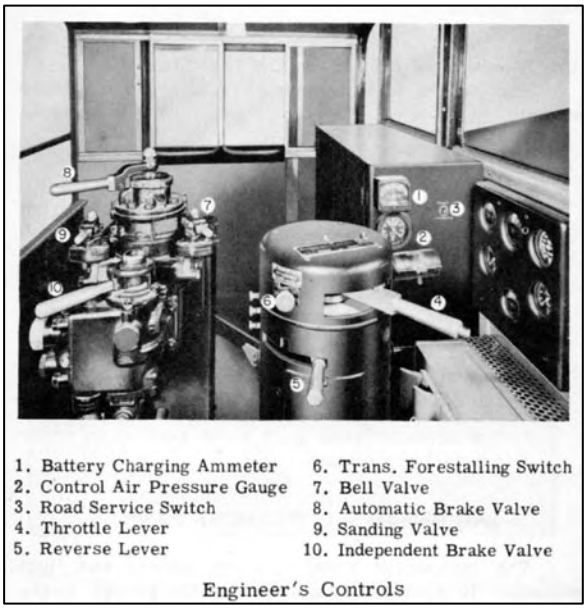


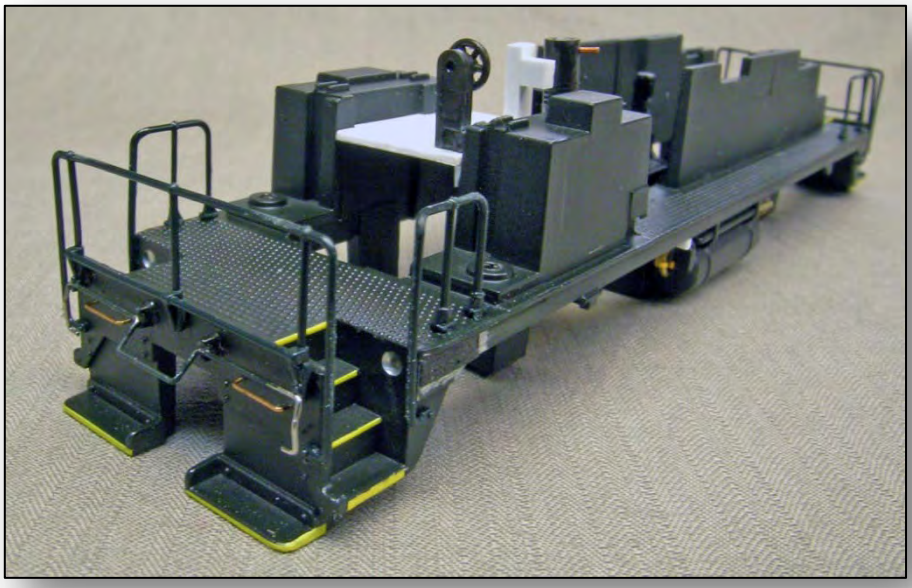
Side and plan views of the switcher cab arrangement from an EMD service manual. Note that the cab floor is at the level of the top of the battery box. The rear sandboxes are located under the cab floor, fed through the sand fill doors on the rear wall of the cab.

Painting and Lettering

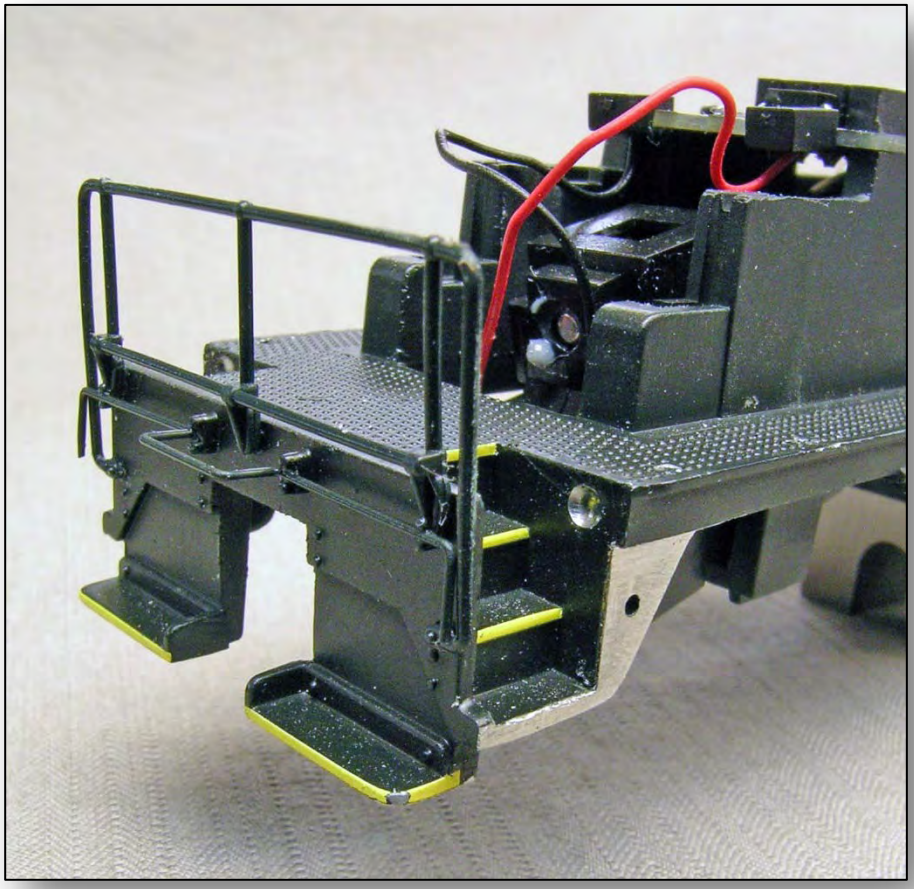
For my 1952 model era I needed to apply the (almost) as-delivered painting and lettering scheme. The base color was PRR standard Dark Green Locomotive Enamel. The diagram states that the all outside surfaces below cab and engine hood, including trucks, fuel tanks etc., and also handholds and handrails were to be painted black enamel. It appears from inspection of early photos of units that, more specifically, the cab, hoods, sills, walkways, platforms, step wells, step well fairings and pilot sheets typically were all painted green. Only the trucks, fuel tanks and other underbody equipment between the end step wells were painted black. I first painted the underbody equipment black, not bothering to mask off the areas to be painted green later. Once fully dried, I masked over the areas to remain black and sprayed the

A cab interior photo with the various pieces of equipment identified from an EMD service manual. The large rectangular protrusion on the rear of model hood replicates the high & low voltage electrical cabinet on the front wall of the cab, and the round protrusion up from the frame, the engineer's control stand that houses the throttle lever.





Rear view of the frame assembly shows the added pilot face grabs irons, reconfigured cut lever, poling pocket recesses and (black) Trust plate added to the rear end of the sill. Also visible is the new cab floor with the added brake stand and relocated brake wheel.

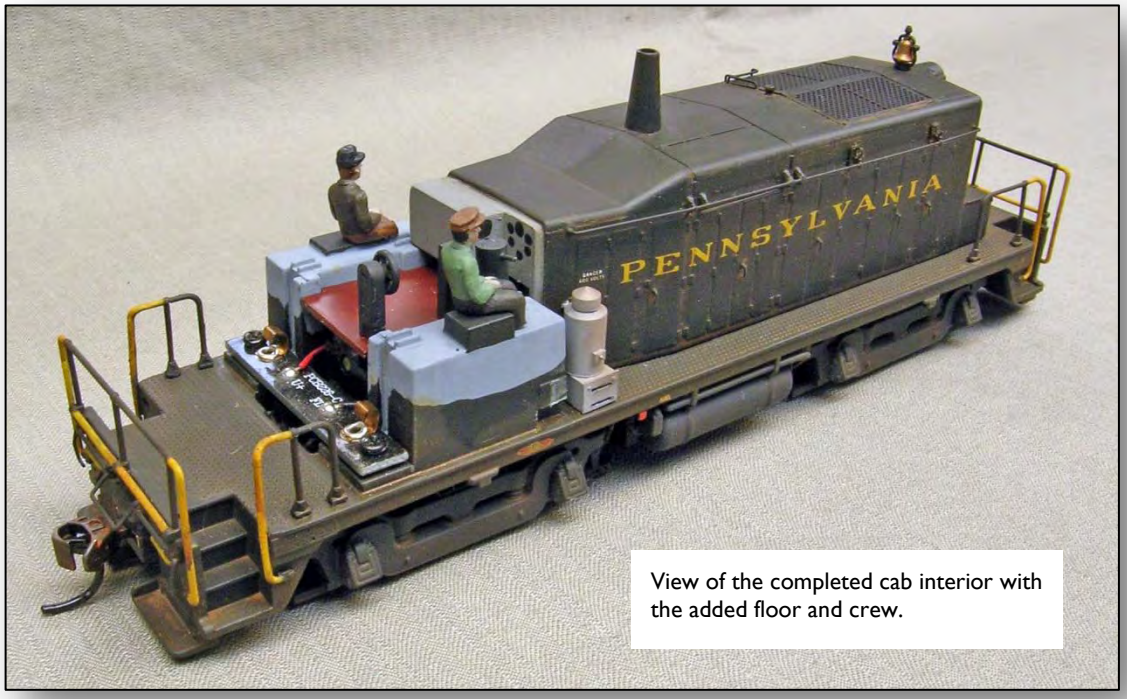


View showing the step well area after removing the downward jog in the side sill for the post-1948 built units. The missing paint indicates the area that I filed to be planar and smooth. The cut lever is still in its stock configuration in this view.

pilots, stepwells and walkways green. I sprayed the inside of the cab and the rear end details of the hood a medium grey to represent PRR's "Suede Grey". After the cab dried I masked the inside of the cab by inserting some PARAFILM® "M" material up into the cab to prevent the green from entering the window openings. On the cab and hood I masked the headlight lenses with a liquid mask and then painted them green.

I painted the control and brake stands and the handbrake gear on the insert black, as per the paint diagram description and the cab floor Polly-S Lehigh Valley Cornell Red as it appears to be a decent match for "Indian Red Floor Enamel". Give the cab insert a coat of flat finish if necessary and install the insert once the drive mechanism is reassembled. I painted the cab figures, gave them a dark wash to make them appear more real and glued them to their seats. Since I had not yet attached the engine block heater unit, I painted it an old silver color separately. The cab sliding side window frames were unpainted metal initially so I hand painted them silver as well. I painted the bell to appear to be polished brass, the sunshades a weathered canvas color and the wheels a dark rusty color.

A modification was made to the original PRR scheme in October 1951 when the "safety appliances" were specified to be painted Chrome Yellow. These included the ends of the handrails and grab irons marked with the letter "Y" on the paint diagram in the previous article. Note that the yellow used for the various handrail sections was a bright Chrome Yellow, different than the paler Buff lettering color. Paint the end sections of the handrails from the step wells to the first stanchions chrome yellow with one of the special acrylic paints intended for use on flexible plastic parts, popular in the RC car hobby. I used Pactra Racing Finish yellow for R/C Cars. The full width grab at the base of the end railings, the pilot face grab irons, the angled grabs along the rear cab door and the vertical cab rear door grab are also yellow. Refer to photographs as to exactly where the yellow starts and stops.



View of the completed cab interior with the added floor and crew.

Once the paint was dry, I applied the decal lettering. The early scheme was the typical early diesel switcher scheme. The roadname, numbers, and "F" initial (designating the front of the locomotive) were PRR Buff color. The cab numbers were 36" long and 6" high. The 16'-10½" long roadname was in 8" letters. The road numbers on both ends of the units adjacent to the headlights were 3" numbers.

The small hood and frame markings were, as typical on many PRR diesel locomotives, moving targets. They were supposed to be 1½" high white letters as per the paint diagram and there was some variation over the years as to what, where and how many places some of the markings appeared. I chose a typical arrangement. On both sides, this included one DANGER 600 VOLTS on the rear-most hood door and FUEL on the side sill. On the fireman's side, there was one FIRE EXTINGUISHER INSIDE stencil on the front-most hood door and a WATER marking on the sill. I applied 3" white numbers to the headlight-side numberboards. I used pieces from Microscale PRR diesel sets 87-21 (modern hood diesels) and 87-39 (old RH-39 5-stripe diesels) for the above items. I did notice that the 6" numbers were the correct size on a more recent printing of the -21 set, whereas they were 7" to 8" tall on an older version of the same set. Likewise, most of the sets appear to have 4" size end numbers which is not what is needed for this switcher however, where the more current -39 sets have almost correct size 1¾" numbers for the rear body side numbers for cab units, on the old RH-39 version of this same set these numbers are 3" tall and usable for this application. I added the appropriate white, monthly maintenance assignment markings to the pilots on my unit and applied EMD oval rectangular builder's plates from a Microscale MC-4056 EMD builder's plate set on both sides on the side sills under the center of the cab. I then reattached the angled rear cab handrails and glued the block heater to the hood in preparation for weathering.

Weathering

Since this unit would have been only four years old in my modeling period, I gave it a medium weathering treatment with minimal specific details, such as rust streaks, chipped paint, etc. I gave the locomotive an all-over thin wash of a Raw Sienna and Burnt Umber mixture (artist's oil color thinned in mineral spirits). The units appeared to collect dirt in the grilles and hood details and the horizontal surfaces primarily when the paint was still in good condition. I applied some black chalk to the top surfaces of the unit to simulate soot and to the yellow handrails to simulate the dirt and wear with a soft brush. I applied brown and gray color weathering powders to the body, trucks and underbody and painted the couplers with RUSTALL. I masked around the radiator screens and painted them as well as the underside of the hood-top screen and shell opening black to make them look more "open". I sealed the weathering with Dullcote flat finish.

Once the weathering was complete I unmasked the headlights and reassembled the LED headlights into the hood and cab and glued in the cab windows with rubber cement. I applied a piece of black paper with pencil lines drawn on it to resemble the radiators to the inside of the hood opening under the open screen to hide the circuit board inside. I reassembled the drive, replaced the couplers and attached the hood and cab.

Completed unit showing block heater installed in front of cab on engineer's side.

See-through effect of the etched radiator screen is visible in this overhead view.

With a little TLC and attention to the details, the Walthers model can make a fine addition to your PRR locomotive roster.