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 UPPER LEFT

A pre-1946 version of Broadway-Limited's long-awaited HO-scale L1s 2-8-2. *(Tim Garner)*
Greg Martin's weathered, freight car color Bowser H30 covered hopper. *(Greg Martin)*
The Athearn Genesis EMD *Phase III* GP9B showing the cabless end. *(Tim Garner)*
Ron Hoess's PRR overhead crane. *(Ron Hoess)*
The GHB International N-scale L1s Mikado in the sunshine. *(Rod Clifford)*

The Keystone Modeler

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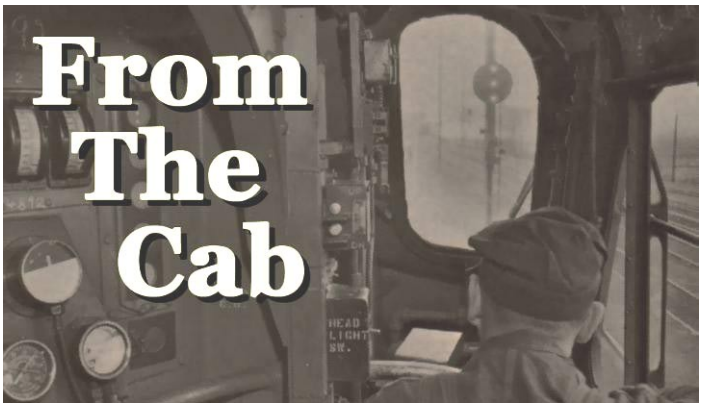

Winter, after Christmas, is a good time to use those trains you gave to your child or other young relative to encourage a long-time interest in model trains. Many of us in this hobby started as children who got trains for Christmas, and I have a nephew I encourage.

Sometimes the interest persists in toy trains, and there are adult associations, like TCA, some of whose members build complex and detailed layouts. Some of those enthusiasts erect elaborate Christmas layouts on an annual basis. Those folks are obviously having a good time, and model trains should provide a means for individual expression.

On the other hand, the readers of *TKM* are oriented toward scale models, reproducing the prototype in a smaller scale. The question then becomes, "how do we get young people interested in our version of the hobby of model trains?" My nephew began with Thomas the Tank, but now he says he wants more realistic trains. My hunch is that he began looking at trains differently because his parents have taken him to ride on real trains, first on tourist railroads with steam engines and later on Amtrak. I am not sure about this, but I suspect that exposing kids to real trains by riding on them and going to a museum to see historic trains can help children see trains as more than just cute toys. Inviting young people to see our layouts and the kinds of models we build and operate can also help them to see the possibilities of prototype modeling.

For our winter *TKM*, we have a review of the new BLI L1s by Tim Garner, a review of the new GHB International N scale L1s by Rod Clifford, and a review of the Athearn Genesis GP9B by Jack Consoli and Tim Garner. Ron Hoess shares with us his building of an overhead crane that was used on the tiny PRR branch he models. And finally, part two of Greg Martin's weathering of the Bowser H30 is also included.

Jim Hunter, Editor

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:

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PO Box 54
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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:

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The Keystone Modeler
NEWSWIRE

With Steve Hoxie

General News

ATLAS MODEL RAILROAD COMPANY
http://www.atlasrr.com/

Atlas continues to add to its line of model railroad products. After purchasing rolling stock tooling and remaining inventory from **Branchline** in 2011, **Atlas** has now purchased **BLMA Models. BLMA** offers HO, N, and Z scale rolling stock and accessories. **Atlas** plans to offer the entire **BLMA** line and continue with announced new production plans. When **Weaver** ceased production last year, **Atlas O** bought the **Weaver** line of O scale rolling stock. Models in this line are expected in the second quarter of 2016.

PRR Product News

BROADWAY LIMITED IMPORTS
http://www.broadway-limited.com/
PRR S2 6-8-6 Steam Turbine Locomotive – HO Scale

(Richard Glueck)

BLI is planning on having their brass-hybrid model of this unique PRR engine available in April 2016. The 6-8-6 will be offered in as-delivered, small smoke deflector, and large smoke deflector versions. The model will be equipped with the Paragon3 sound decoder. The photo above was taken at the recent Amherst Show.

PRR P70 and P70R Coach – HO Scale

The delivery date of the original as-built P70 coach as well as the ice air conditioned P70R continues to be April 2016. Painted and lettered test shots were on display at the Amherst Show the weekend of January 30-31. A photo can be viewed on the Model Railroad Hobbyist web site; scroll to the bottom of the page: http://model-railroad-hobbyist.com/node/25243. Although some discrepancies still exist, obvious progress is being made.

PRR M1A/B Steam Locomotive – N Scale

BLI is continuing to show March 2016 for the delivery date for this much anticipated model.

PRR Alco PA1/PB1 Diesel Locomotive – N Scale

Delivery continues to be planned for May 2016.

EASTERN SEABOARD MODELS
http://www.esmc.com
PRR G32C Gondola – N Scale

ESM is expecting arrival of test shots of the G32C gondola this month. Release for sale of this kit is anticipated during the second quarter of this year.

SPEEDWITCH MEDIA
http://speedwitchmedia.com/
PRR Decals – HO Scale

Ted Culotta at **Speedwitch** has been revitalizing the lines of products he is offering. Of particular interest to us are these decal sets: an X26/X28a/X29 set and an X31/A/B/C/F and a X32A/B set. Each set will do multiple cars in the Circle Keystone scheme. These sets include many reproduced reweigh, repack and brake test stencils dated from 1930 to 1956. Also available is a decal set to letter a Fruit Growers Express rebuilt wood refrigerator car modeled by the Intermountain kit. PRR was an owner of FGE. Speedwitch decals are thoroughly researched and meticulously developed. These are the best decals this experienced modeler has used.

MORNING SUN BOOKS
http://morningsunbooks.com/
Pennsy Books in *Digital pdf* Format

Morning Sun has available digital reprints of the long out of print PRR related books:

- **Pennsy Diesel Years, Vol. 1** (*Yanosey)*
- **PRR Color Guide to Freight and Passenger Equipment** (*Sweetland and Yanosey)*

To purchase these reprints go to http://morningsunbooks.com/pages/ebook-faq and read the eBook FAQ for your device first. Then go to http://morningsunbooks.com/collections/digital-reprints and follow the instructions.

KEYSTONE DETAILS
http://www.shapeways.com/designer/keystone_details
PRR Tool Shed – N Scale

(Keystone Details)

A Plan 57984-B tool shed kit is among the offerings from this Shapeways designer.

Upcoming Events

March 18-20, 2016 Malvern, Pennsylvania
Railroad Prototype Modelers Valley Forge Meet
http://rpmvalleyforge.com/

April 1-2, 2016 Port Wentworth, Georgia
Savannah Prototype Modelers Meet
http://www.savannahrpm.com/

May 19-21, 2016 Camp Hill, Pennsylvania
PRRT&HS Annual Meeting
http://pennsyrr.com/index.php/home

June 3-4, 2016 – Enfield, Connecticut
New England/Northeast RPM Meet
http://www.neprototypemeet.com/Welcome.html

June 18, 2016 – Richmond, California
Bay Area Prototype Modelers Meet
http://www.bayareaprototypemodelers.org/

Advance Planning

July 3-10, 2016 Indianapolis, Indiana
NMRA National Convention and National Train Show
http://www.nmra2016.org/

August 12-13, 2016 Collinsville, Illinois
St. Louis Railroad Prototype Modelers Meet
http://home.mindspring.com/~icg/rpm/stlrpm.htm

September 23-24, 2016 Fredericksburg, Virginia
Mid-Atlantic Railroad Prototype Modelers Meet
http://www.marpm.org/

October 20-22, 2016 Lisle, Illinois
RPM Conference
http://www.rpmconference.com/

A unit coal train behind EMD SD45's enters the Willsburgh freight yard as EMD GP30's depart on Tim Garner's layout. *(Tim Garner)*

Product Review: The Broadway-Limited Imports PRR L1s 2-8-2 in HO Scale

By Tim Garner

BLI issued their long-anticipated L1s 2-8-2 in two styles. The post-WWII version is on the left and the pre-1946 version is on the right.

For years, modelers of the PRR in HO scale have waited for a mass production model of the PRR's ubiquitous L1s Mikado. Broadway-Limited Imports, the most prolific manufacturer of PRR prototype motive power, has come through. Other than one notable detail issue, the appearance and mechanical performance of both the pre-1946 and post-WWII versions are excellent. Control and sound problems with the initial run of its Paragon 3 DCC decoder are widespread, but BLI has been providing decoder replacements upon request.

The Prototype

Imagine 999 locomotives with similar boilers – 425 K4s 4-6-2 Pacifics for passenger service and 574 L1s 2-8-2 Mikados for freight. Such facts help back up PRR's self-anointed title of "Standard Railroad of the World".

The L1s was designed to replace 2-8-0 Consolidations like the H9s in mainline freight service. It delivered a 25% increase in power with a 30% increase in weight.

The first L1s, #1752, left the Juniata Shops in April 1914. This was followed by the first K4s, #1737, in May. From then until 1919, Juniata, Baldwin, and Lima would build the rest of the L1s fleet to help the road handle WWI traffic. As was typical of the time, the engine numbers were scattered filling vacant numbers in Lines East below 7000 and a few Lines West numbers above that.

As built, the hand-fired engines had 27" x 30" cylinders, 205 lbs of boiler pressure, 62" diameter driving wheels, Walschaert valve gear, Schmidt superheaters, and a screw reverse. With an engine weight of 314,600 lbs and tractive effort of 61,465 lbs, they had the potential of 2,712 horsepower. They had a wooden pilot beam, passenger-style wood cowcatchers, oil headlights, the KW trailing truck, and low-sided tenders with a capacity of 9000 gallons of water and 17½ tons of coal.

Beginning in the late 1920's, the railroad began enhancing the engines with stokers, footboard pilots with a cast pilot beam, and larger tenders. Addition of a power reverse resulted in the move of one of the air tanks to the pilot. The most common tender was the 90-F-75 which held 9700 gallons of water and 21 tons of coal. As of July 1947, there were 513 stoker-fired, 39 hand-fired, and 10 oil-fired L1s locomotives. The oil-fired Mikados operated out of the 46th Street Enginehouse in Philadelphia.

Right sides of the pre-1946 and post-war versions. Note that the post-war version includes the front brakeman's doghouse on the tender.

Left sides of the pre-1946 and post-war versions. Cab and tender letter spacing was spread out on cabs and tenders after the war.

In his book *Set Up Running*, John Orr said his father, O.P., believed the L1s was one of PRR's best engines. An undersized tender was its only drawback. Near the end of steam, the PRR added an auxiliary tender to the L1s on specific runs.

As PRR began putting its 598-engine fleet of I1s Decapods into service (the last one completed in 1924), many L1s engines were moved into lighter duty assignments around the system. They bumped Consolidations from a variety of mainline and local chores. During the Great Depression of the 1930's, declines in traffic and completion of electrification of eastern lines led the PRR to declare many L1s locomotives surplus. Dozens were stored in yards at Hollidaysburg and Marysville, Pa. where they would sit until the WWII traffic surge drew them back out on the road.

L1s locomotives became the main freight haulers on the Belvedere, Delmarva, Cumberland Valley, Schuylkill Divisions among others. They pushed freights west out of Philadelphia to Paoli as "snappers". They would often be assigned

as the lead helper on passenger trains heading up the East Slope from Altoona to Gallitzin. Movies from the late 1940's show that L1s / K4s helper sets leading T1 4-4-4-4 duplexes up the Allegheny grade were common. Up until the end of steam, L1s locomotives pulled transfer runs from Enola Yard through Harrisburg to Reading's Rutherford Yard.

PRR experimented with improvements on many of the L1s Mikados. Several received trailing-truck mounted booster units. At least one and maybe more received a Worthington feedwater heater. Locomotive #2861 was equipped with an Emerson water tube boiler at Baltimore & Ohio's Mount Clare Shops in 1932.

After the war, many L1s locomotives received front-end modifications with a smokebox mounted servicing platform and turbo generator, and a modern headlight mounted on top of the smokebox. "Tombstone" or bulls-eye markers replaced the pilot-mounted claw-foot markers. Tenders were equipped with "doghouses" for the front brakeman. Many had the dog house mounted toward the back of the tender with an extended roof over the entry door as a safety feature for engines operating in electrified territory.

As many became surplus again after WWII, the PRR sold some to other lines. The Santa Fe bought three. Others were bought by the Lehigh & New England, the Cambria & Indiana, and the Interstate. Near the end of steam in 1955, five oil burners were sent to Sunnyside Yard on Long Island to serve as stationary boilers – four in use and one as a standby – until a steam generating plant was built a couple years later. One, #559, was fired up in January 1959. It ran to South Kearny, N.J. the next year to supply steam for an industrial customer. It steamed back to Enola later that month.

One L1s, #520, was saved by the PRR for their historical collection and now sits at the Railroad Museum of Pennsylvania in Strasburg, Pa. awaiting cosmetic restoration.

Details of the Models

BLI has offered the first run of their L1s in several variations:

- PRR Pre-1946 version – engine nos: 1159, 2911, 3483, and unlettered
- PRR Post-War version – engine nos: 1429, 1682, 3648, and unlettered
- Lehigh & New England – Pre-1946 version, engine no. 501
- Detroit, Toledo & Ironton – Post-War version, engine no. 317

I bought one each of the Pre-1946 and the Post-War PRR versions. My first impression of both locomotives was very favorable. The only glaring problem is below the firebox. Instead of the engine frame and a simulation of the trailing truck support bearings, there is open space and a visible silver spring on top of the KW truck. BLI nicely executed the correct details on their K4s model and acceptably well on the M1A and M1B. It would have been nice if that detail was repeated here. Fortunately it would not be difficult to fix the problem with styrene for the frame and Cal-Scale #190-390 Trailing Truck Bearing Plates.

Differences Between Versions

Both the Pre-1946 and Post War versions have more in common than not, so first I'll describe the differences:

Front End and Boiler – The Pre-1946 version has a servicing platform mounted on the front air tank, headlight on a bracket on the smokebox front, semi-circular handrail around the top half of the smokebox door, turbo-generator on top of the smokebox, and lighted markers on the pilot beam. The markers come on when the headlight is on and display red to the front and yellow to the side. The lenses can be moved.

Unfortunately, BLI did not model the frame beneath the cab on the L1s (left) near as well as they did on their older K4s model (right). Filling in the space with styrene and adding a pair of brass Cal-Scale Trailing Truck Bearing Plates will not be difficult for experienced modelers.

Most of the differences between the two models are at the front – headlight style and placement; turbogenerator type, piping, and placement; marker type and placement; front platform type and placement. The pilot beam markers on the pre-war model light up when the headlight is on. Under PRR rules, these markers would only be lit at night for whichever end of the locomotive is at the rear end of a train. If an engine was moving forward light (by itself) at night, the front headlight and the rear markers would be on. The front markers would be out. On the BLI models, all markers are on or off when the headlight is on or off. That's an improvement over the H10s where the markers are always on. The numberplates are flat with the number and rim painted on. I wish BLI would make numberplates as they produce builder's and tender plates or use etched brass to provide some dimension like the prototype. They would photograph so much better than the current method.

The Post-War version has the servicing platform mounted on the smokebox front, two shorter grabs by the smokebox door, turbo-generator on a bracket on the smokebox with associated piping including an exhaust pipe running behind the smoke stack, a headlight on top of the smokebox, and bull's-eye markers mounted high on either side of the headlight. On both engines, the mold parting line on the pilot air tank is very pronounced. It can be carefully scraped off with an X-acto knife followed by some paint touch up.

The Post-War version also has a blow off muffler on the top of the firebox with associated piping.

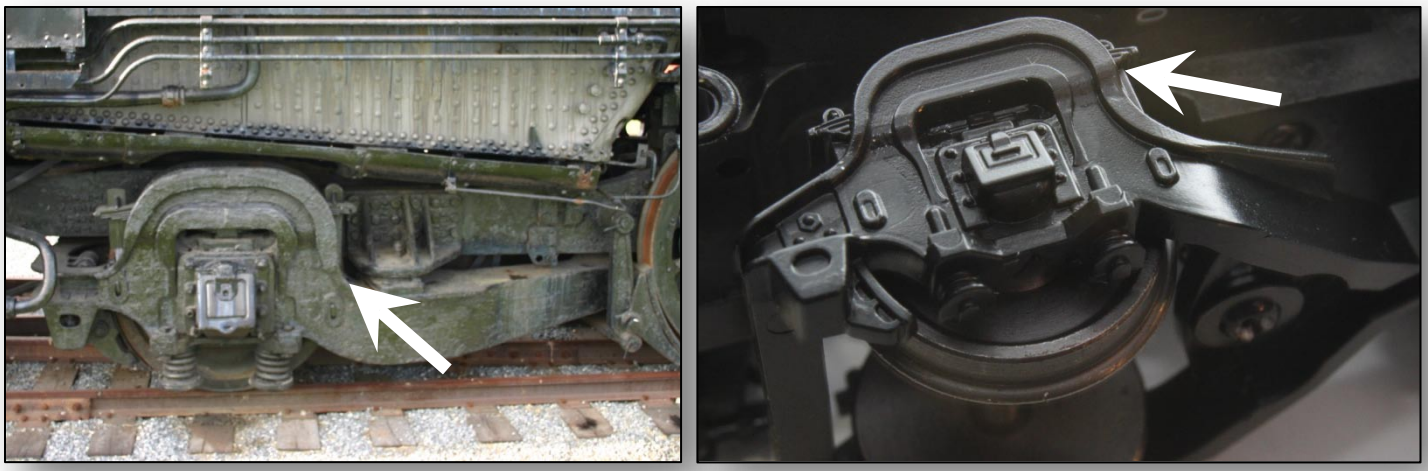
Tenders – Both models have a 90-F-75 tender. The Pre-1946 version has no doghouse, but has a ladder from the top of the cistern to the end of the slope sheet. The Post-War version has a doghouse butted against the slope sheet with nicely done handrails. There is no ladder to the slope sheet, but there should be one. The fireman will need to return to the cab after refilling the tender with water.

Lettering – The Pre-1946 version has closely spaced numbers on the side of the cab and a closely spaced "PENNSYLVANIA" on the side of the tender. On the Post-War version, the lettering is spaced out. The builder's plates, tender plates, and numberplates match the numbers on the individual locomotives and are very legible. Unfortunately the numberplates are flat with printed numbers rather than having some relief like the prototype.

Common Details

Overall, the details on both versions are excellent and capture the look and personality of the class. Many of the details are separately applied.

Overall Dimensions – Comparing each model to drawings of the L1s in *Model Railroader Cyclopedia Vol. 1, Steam Locomotives* (9th printing 1981), the model is incredibly accurate in every dimension I checked – including driver diameter.



This comparison of the KW trailing truck on L1s #520 at the Railroad Museum of Pennsylvania and the BLI model shows a lot that is right. A couple inaccurate details are noticeable. The white arrows point out a misplacement of where the top flange curves in toward the body of the truck. The length of the truck springs are about half as long on the model as on the prototype. The flange over the journal opening is not as wide.

Running Gear – The drivers are nicely rendered, but the axle ends have unfortunately been left unpainted as with all BLI locomotives I've ever seen. All drivers have flanges with the rear pair having traction tires. The front and rear axles are sprung. All drivers have brake hangers and brake shoes. The pilot, trailing, and tender wheels are unpainted. The pilot wheels are unsprung, but the KW trailing truck is sprung. KW trailing truck frame has a couple noticeable detail discrepancies primarily with the shape of the flanges over the journal box and the size of the simulated springs. Weathering may help hide this. Even so, it is amazing how many slight variations of this truck there are among prototype L1s, K4s, M1, M1A, E6s, E5s, and N1s locomotives.

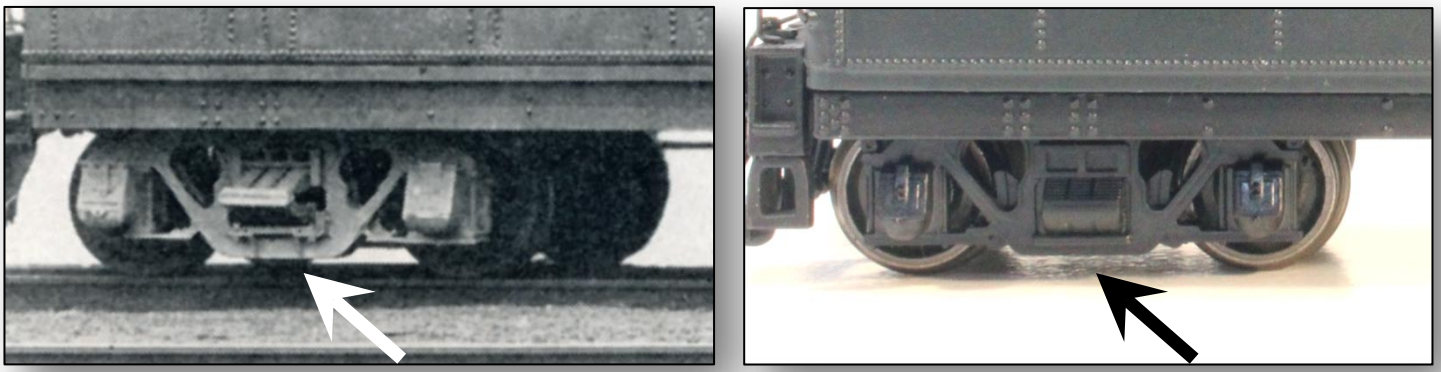
The drawbar between the engine and tender has two holes. Based on the comments on the Society's modeling discussion group, PRR modelers prefer this fixed drawbar to the variable-spacing drawbar on the BLI's H10s 2-8-0 model. A plastic deck plate is hinged to the back of the cab and rests on the front of the tender deck. The tender has water scoop and brake details on the underside. The Andrews tender trucks look okay at first glance, but vary slightly from prototype photos and the MR plans in the depth of the center of the truck. They are missing two cast supports for the bottom of the spring package (see photos).

The main rods, side rods, and valve gear are chemically darkened.

Smokebox Front – The molded-in details are very crisp. The steps on the face of the smokebox at 3 and 9 o'clock are accurate for the Post-War model, but are not the correct for the Pre-1946 version. However, accurate one would be very delicate and prone to breakage.

Cabs – The cabs include operating sliding roof vents and sliding side windows. Painted enginemen and firemen are in the seats. The backheads are nicely detailed with gauge faces painted white. Beneath the cabs on the left side are the details for the stoker motor.

Fittings and Other Details – The bells, whistles, and safety valves appear to be brass or brass colored. Both versions have the train control equipment box on the right running board to the rear of the steam delivery pipe. The running boards have simulated safety tread.



PRR's May 1948 list of locomotives and tenders indicates that 90-F-75 tenders were equipped with Crown S. C. 2E-T2 trucks. Trucks BLI used on the model differ in certain details from what I have seen in photographs such as this PRR builder's photo. The most notable difference is the shape of the truck frame below the leaf springs. The prototype is wider, has a flange at the top, and two cast supports for the flange. Since tender trucks are usually in the shadows on model railroads, this discrepancy is not that noticeable.

Marker Lights – Both versions have operating marker lights on the back corners of the tender that come on when the headlight is on with red lenses to the rear and yellow lenses to the sides. The lenses can be changed. The Pre-1946 version has operating marker lights on the ends of the pilot beam with red lenses to the front and yellow lenses to the sides. As I mentioned in my BLI H10s review, the marker lights would only be on at night and only on whichever end of the locomotive was at the rear end of a train – when traveling light (alone) or pushing at the end of a train. BLI's decoder doesn't give you the ability to light one end or the other or to turn them off altogether when the headlight is on.

Couplers – BLI has installed metal magnetic couplers at each end of the locomotive comparable to Kadee #5 couplers. I will change these for more prototypical looking Kadee #58 couplers. The screws retaining the front couplers needed to be tightened on both of my models to level the coupler to the proper height.

Tenders – As mentioned above, both models have a 90-F-75 tender. Both have a tender class/number plate printed on the back of the cistern. The lettering is clear and legible. The fill hatch runs across the tender. A simulated coal load is in the tender, but the coal chunks look oversized.

This shows the differences in the two tenders, the post-war version on the left. The markers light up when the headlight is on for both. The back-up headlight comes on when the engine is reversed. BLI has cast grab irons into the top edge of the slope sheets. The coal chunks appear oversized.

As always, BLI does a fine job with the tender plate.

Pilots – Both models have footboard freight pilots at both ends with brake hoses. The vertical members of the pilots are thicker than the prototype from the side for added durability. The grab irons and uncoupling rods are accurately done. The pilot-mounted air tanks have a visible mold parting line running across the middle. This can be carefully scraped off with a small chisel blade without disassembling the models.

Painting – The locomotives are painted a dark green which in strong light looks a little too green. As described in PRR painting standards, the red lead on the cab roof is visibly darker than the freight car color on top of the tender cistern. The smokeboxes and lower firebox sides are done in a very pleasing dark graphite color.

OPERATION

DCC Decoder – Beginning in mid-2015, all new BLI locomotives are equipped with BLI's new Paragon 3 decoders. The most recent run of BLI's PRR M1A and M1B were the first locomotives shipped with this technology. BLI's web site lists key features of these decoders as:

- 2 Selectable Bells
- 3 playable whistles with variable endings
- 1 long, non-looped whistle
- 1 alternate whistle for locomotives with a second horn
- Quill whistle with Digitrax DT400 or NCE Pro Cab throttle
- 4 Times Expanded Autopilot storage
- Expanded Startup and Shutdown sequences
- 64MB or 128MB sound memory
- Smoke Temperature safety cutoff sensor
- 2 Watt Audio output
- 90 db signal to noise ratio
- 16 bit audio resolution
- 24 sounds with separate volume control
- Unmatched frequency response as low as 20 Hz when paired with Rolling Thunder™ subwoofer kit
- 8 simultaneously playable audio channels
- Functional Dynamic Brake with Grid Blower sounds
- Improved motor control in DC and DCC
- Motor short circuit protection
- Outputs for headlights, MARS lights, automatic cab light, rear lights, marker lights, ditch lights, firebox light, running board lights, number board lights and a few spares
- Works with NMRA standard DCC controllers
- Automatic Dual Mode: Works with DC power packs or DCC

The feature BLI most discusses is Rolling Thunder™. This is technology that sends a radio signal from an antenna on any Paragon 3 decoder to a BLI subwoofer kit. The purpose is to deliver a bass sound to your layout room that tender speakers cannot. Since bass is omni-directional (you can't sense the direction it is coming from), your brain is likely to join the bass to the higher frequency sounds coming from the tender speakers.

Even though I prefer lower volume than most modelers I know, I decided to try Rolling Thunder. The full set-up includes a red receiver about the size of a portable CD player, a subwoofer measuring 15 ¾" x 17 ¾" x 8 ¼", an RCA cable to connect the subwoofer to the receiver, a transformer cord to power the receiver, an alternate power cord to power the receiver from DCC track power, and a small instruction book. You can buy the receiver separately and connect it to any subwoofer with an RCA cable connector.

A design flaw of the subwoofer is placement of the power cable, volume controls, and receiver cable connection on the bottom. When the unit is bottom side down you can't see or operate the controls and the receiver cable is crimped. I plan to remove the factory-installed feet and place the subwoofer on its side. That reduces the unit's footprint with no adverse effect on the sound to my ear. According to BLI, the first run of the subwoofers has sold out.

BLI's instructions say the receiver works better if it is close to track level, but the included RCA cord is a little too short to do that on a taller layout if the subwoofer is on the floor. You can find longer cables with RCA plugs at electronics stores or Amazon.com. The instructions indicate the range of the radio signal from the locomotive tender to the receiver is about 15 feet. The low frequency sound gets louder or fades off depending on how close the locomotive moves to the receiver. BLI indicates that a large layout may need more than one receiver and subwoofer.

The sound you hear from the tender speakers is similar to older Paragon 2 and QSI-equipped BLI locomotives. With Rolling Thunder, low frequency sound outside the dynamic range of the on-board speakers is transmitted by radio from the decoder through the receiver to the subwoofer. The L1s broadcasts a deep boom with each exhaust, something I haven't heard on steam recordings or in person (on tourist roads). Depending on locomotive speed, the bass reminds me of a slow moving motorcycle going down the street outside my house. I was impressed with the Rolling Thunder bass effect on diesels demonstrated on the BLI web site, but not so much on steam locomotives in my basement. I've ordered a replacement Paragon 3 decoder for one of my BLI Baldwin sharks to test the difference.

Unfortunately, the Paragon 3 decoders shipped in the 2015 versions of the PRR L1s, M1A, M1B, and I1SA (as well as the N&W Y6b) had two bugs in them. BLI has acknowledged the issue on their web site. One bug involves the decoders losing the programming on certain CV's when programmed on the main. The other involves losing control of the locomotive when there is more than one Paragon 3 locomotive on the track. It can suddenly stop, blink its lights, change direction, and otherwise become non-responsive.

The mold parting line on the pilot air tank is prominent on the post-war version. This can be carefully scraped off with a narrow flat-end Xacto blade. The wire representing the turbo-generator exhaust behind the stack should be snipped off even with the top of the stack.

The BLI service department sent me replacement decoders for the problem engines which have solved the problems. The replacement decoders are sent with installation instructions, but I would also recommend snapping a photo of the existing decoder with your cellphone before you disconnect anything. It is possible to connect plugs into the wrong sockets on the decoder.

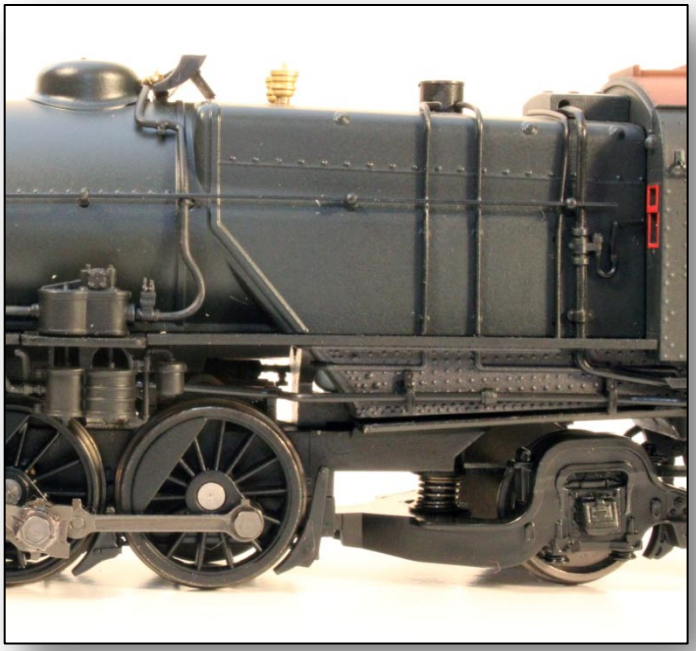
Besides commenting on decoder defect on the PRR Modeling discussion group, several Society members have expressed disappointment with the electronic sound of the exhaust chuffs and the exaggerated "I think I can, I think I can" cadence. I have to agree. The chuff sound has been more realistically reproduced on older BLI locomotives.

Smoke Unit – BLI steam locomotives are all equipped with smoke units that puff white smoke synchronized with the chuff sounds. The emissions look like that of a smoldering cigarette until the unit warms up. CV's can be changed to vary the amount of smoke. A sub-miniature slide switch on the underside of the firebox can turn the smoke unit off. I typically leave mine off so I avoid setting off a smoke detector in my train room during an operating session.

Power – BLI has a reputation for quiet, smooth-running drive mechanisms. The L1s lives up. Slow speed operation is very nice. There is plenty of pulling power thanks to the weight on drivers and the traction tires on the rear set of drivers. It would be nice if BLI used flanged drivers on the two center drivers on it's M1A and M1B locomotives, too.

THE VERDICT

With the defective Paragon 3 decoder replaced, I'd say BLI's L1s is a winner and worth the wait.



The left side of the post-war version includes a blow down muffler on top of the fire box and piping on this side.

Three-quarter view of the pre-1946 version.

The PRRT&HS Modeling Committee and the BLI L1s

A big reason PRR modelers have another great locomotive from BLI is thanks to the volunteers on the PRRT&HS Modeling Committee. Bruce Smith, Vice President of the Society and a committee member recently explained how it works in a post to the PRR Modeling discussion group – particularly in terms of BLI. It is reprinted here with Bruce's permission.

As most list members know, the PRRT&HS has a very active Modeling Committee and BLI takes full advantage of a close interaction with that committee.

I happen to have been the PRRT&HS project lead for many of their PRR projects including the I1s, Q2, S2, H10s, and L1s to name a few.

In general, the models are designed by a consultant that works closely with BLI, the factory, additional consultants, and the PRRT&HS team. The same design consultant is used for nearly every project. We (the PRRT&HS) typically see 2 to 3 sets of drawings for each project and have the opportunity to comment on them. In addition, we sometime see the test shots (not directly in the case of the L1s) and we provide information on paint and lettering as well as operational issues such as whistle sounds. We generally have little to no information on the actual engineering of the model.

In the case of the L1s, we identified the issue with the missing rear frame and communicated that to BLI. They chose to leave it off, likely either having to do with a manufacturing or operational issue. Likewise, BLI has, over the years, used a number of decoders. Based on issues with their original supplier, they chose to create their own. They have both a banshee and triple chime sound that are very nice. We were not consulted about any changes that were made in the current iteration of the decoder.

I think many of you fail to understand the intricacies of working in this industry. We routinely provide the same information that was supplied on the previous project. It is not uncommon for us to get a drawing with a deficiency in some detail, for us to say "do it like last time" and to get the reply that they need new drawings of the same detail part. This is **not** unique to BLI, but reflects the fact that this business is usually a side project for the companies involved.

The good news is that we have an active role in BLI's projects and that they actively seek out our advice. The reality is that sometimes, for a huge number of reasons, models do no turn out "perfect".

N Scale L1s by GHB International

By Rod Clifford – photos by the author

The right side of the N-scale GHB L1s 2-8-2.

The introduction of new PRR N-scale steam locomotives has been lacking until the close of 2015. We now have a Bachmann K4s with built-in DCC sound, and now there is an offering in brass by GHB International of an L1s with both original and modernized boiler detail. With a total of 574 units produced, an L1s is an essential locomotive for any layout, whether performing mainline hauling or branchline duties. Later moved to helper service, they can be seen alongside electric box cabs and other, smaller steam.

Features

George Barsky of GHB International has been posting updates of the project on the PRR N-Scale Yahoo Group page. In June 2014, the locomotives were scheduled for release by mid-summer. Four numbers for each version would be offered along with the following features: DCC Ready, Maxon Swiss Motor, tender floor drilled for speaker installation, golden white LED and tender reverse light, detailed boiler backhead, cab window glazing, hinged cab deck plate, and painted engineman and fireman.

Deliveries

Delivery of the locomotives began in summer of 2015. Posts began appearing online describing engines that did not run, and those that operated less than a half-hour. GHB requested that the locomotives be returned for correction by the factory, but, unfortunately for GHB, one retailer chose to sell their locomotives at "close-out" prices "as is" with the statement that some of the wiring and other shortcomings would have to be corrected for proper running.

Some have appeared in online auctions "as is," and some claim to have been repaired. In all cases, factory support is not available for these units. The models have been corrected, tested and distributed to those owners who had returned theirs for repair. Also, shops that listed them for sale began receiving theirs for shipping to customers who had placed orders.

The Locomotive

The subject of this review is the modernized (post-war) version with the LokSound Micro V4.0 DCC sound decoder and "Sugar Cube" speaker installed. Per tracing E80743 all dimensions listed are accurate with the exception of wheels on the trailing truck and drivers that are slightly undersized. Visually, all applied detail appears proportionally correct with the exception of steam pipes, which enter the boiler too low and at too steep an angle. The top edges of the steam and sand domes appear too sharp compared with prototype photos. One additional criticism from an online forum considered the sand dome to be too narrow.

The Paint scheme is similar to number 520 at the Railroad Museum in Strasburg; black-green, iron oxide tender deck and slope sheet, synthetic buff lettering and red window trim. Glazing is applied to the cab windows but not in the brakeman's cabin. Grabs, marker lights and ladder have been applied to the back section of the tender but no markings or builders plates are applied.


The "Golden-White LED" headlight makes a great impression.

Per the photos in the sales flyer, the tender has a brakeman's cabin on both the traditional or modernized version. The water scoop is on the underside of the modernized tender only. Photos of the locomotive numbers being offered on the North East Rails website do not clearly show the brakeman's cabin. But Pennsy Steam Years (David R. Sweetland) shows L1 #3197 with the traditional headlamp position and a cabin-equipped tender.

The chassis is of open-frame construction. The driving gears are connected to the number three axle; the drivers on axles one, two, and three are rotated by the driving rods. As delivered, there are no traction tires. GHB included them in the parts package, and, if installed, would elevate the driving wheels resulting in uneven electrical pickup.

A non-operating coupler, spring-loaded to pivot side to side is mounted to the front of the locomotive, while a micro-trains coupler is mounted to the tender. The tender has a two-hole drawbar for prototypical cab spacing or open spacing for tighter radius curves. The recommended minimum radius is 11".

Low-speed startup has been enhanced with the LokSound decoder using the switching feature (F7). Steam chuffs are well-timed with rod motion. The optional Banshee whistle (added to the sound package) is similar in tone to I1 video clips available online. During DCC installation, a status update was sent which mentioned there was difficulty in tuning slow-speed motor control and commented on having to repair much of the wiring.

The locomotive has been run on Atlas code 55 and Kato Unitrack. The Kato track has a 348mm (13.7") radius with no grades to overcome. With a total of thirteen cars, the locomotive stopped pulling. Pulling nine hoppers and cabin car, it was running smoothly.

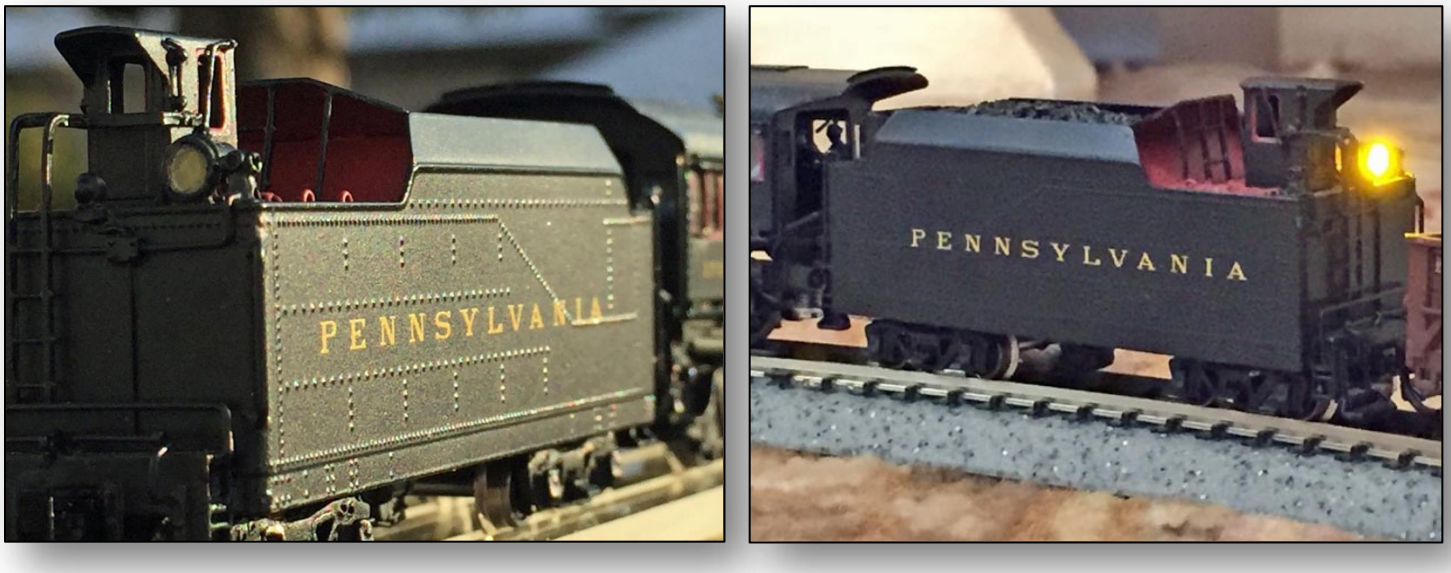
It must be mentioned a BLI PA set pulled the thirteen cars with no problem.

Adding any brass locomotive to your inventory (via online auction or new) is a major investment in your commitment to the hobby. I chose to have the decoder and speaker professionally installed because of the cost of the locomotive. Those with experience installing DCC would consider this a simple project since most of the preparation has been done during fabrication with the inclusion of a NMRA 8-pin plug and pre-drilled tender floor for speaker installation.

References

- Pennsy Steam Years Vol.1, David R. Sweetland Page 72
- GHB International (http://www.ghbintl.com/PRR_L1s_photo_advertg.png)
- Rob's Pennsy Home Page (http://prr.railfan.net/diagrams/)
- Spookshow.net (http://www.spookshow.net/loco/ghbl1.html)
- Yahoo Groups PRR-N_Scale (https://groups.yahoo.com/neo/groups/PRR-n_scale/search/messages?query=barsky)
- The Railwire-General Discussions GHB Locomotive (various dates)

A ¾ view of the left side of the locomotive.



Views of the tender showing the rivet detail and operating rear headlight.

Model Review – Athearn PRR EFS-17m in HO Scale
The EMD GP9B "Beep"

By Jack Consoli and Tim Garner – Photos by Tim Garner

Out of the box class EFS-17m plastic model HO scale.

Athearn recently released their HO Genesis GP9B models. These are the cab-less "boosters", late model phase III GP9's with the single large cooling fans. They are the first mass-produced GP9B units HO. Only two railroads purchased this model and Athearn offers the models in PRR and successor Penn Central paint schemes as well as in Union Pacific versions – the other road to order the prototypes. (Athearn will also produce the GP7B ordered from EMD by the ATSF.) These B-unit Geeps (thus sometimes referred to as "Beeps" on the PRR) were produced along with normal (with cab) versions of the same late phase GP9's.

Athearn's ad copy lists the noteworthy details of the PRR models, available as DC or DCC/Sound:

- GP9 Phase III A-unit high short hood with cab body style: #7184, #7203
- All new cabless B-unit GP9 Phase III body style: #7178-B, #7197-B
- "F" on sill at the Long hood end - Long hood forward
- Leslie Tyfon A-125-440-CA air horn
- No number boards
- 4-hose MU
- 48" button top fans
- Tall square MU stand
- Pilot long grab iron above coupler lift bar
- Front and rear early Pyle headlight
- Partial skirts
- 1,700 gallon fuel tank
- Front and rear MU catch boxes with footboard
- Trainline hose
- Coupler cut levers
- Drop steps
- "Nub" style walkway tread
- Bell located behind the right front step
- Fine-scale handrails for scale appearance
- Wire grab irons
- Lift rings
- Etched metal radiator intake grilles and fan grilles
- Two exhaust stacks and plates
- Air tanks mounted below sill
- Detailed fuel tank with fuel fillers, fuel gauges, breather pipes, and retention tanks
- Blomberg-B trucks with appropriate bearing caps
- Sander lines

- Speed recorder
- Fully-assembled and ready-to-run
- DCC-ready features Quick Plug™ plug-and-play technology with both 8- and 9-pin connector
- Scaled from prototype resources including drawings, field measurements, photographs, and more
- Accurately-painted and –printed paint schemes
- Body mounted McHenry operating scale knuckle couplers
- Genesis driveline with 5-pole skew wound motor, precision machined flywheels, and multi-link drivetrain for trouble free operation
- All-wheel drive with precision gears for smooth and quiet operation
- All-wheel electrical pickup provides reliable current flow
- Wheels with RP25 contours operate on Code 55, 70, 75, 83, and 100 rail
- Incandescent bulbs for realistic appearance
- Bidirectional constant lighting so headlight brightness remains constant
- Heavy die-cast frame for greater traction and more pulling power
- Packaging securely holds for the model for safe storage
- Replacement parts available
- Minimum radius: 18"

Sound equipped models also feature:

- Onboard DCC decoder with SoundTraxx Tsunami decoder pre-installed
- Sound units operate in both DC and DCC
- Engine, horn, and bell sounds work in DC
- Some functions are limited in DC
- All functions NMRA compatible in DCC mode
- Slow speed control
- Program a multiple unit (MU) lashup with lead unit only horn, bell, and lights
- Many functions can be altered via Configuration Value (CV) changes
- CV chart included in the box

They also offered the units decorated as Penn Central #3826, #3839 cabless B-unit.

PROTOTYPE

See issue #34, May 2006, of *TKM* for photos and more detailed information on the prototypes which was included in an article on kitbashing these locomotives, prior to this new RTR model being available. To recap quickly, one of the "oddballs" or less common models on the Pennsylvania Railroad's Diesel Electric Locomotive fleet roster was EMD's GP9B. The PRR bought 40 of the 165 produced and they were delivered in two groups in November and December, 1957 and October through December, 1959 as class EFS-17m. The groups were numbered 7175B–7204B and 7230B-7239B respectively. These Athearn models thus being numbered in the earlier group. It has been said that these GP9 units were significant in that their delivery put the last nail in the coffin of PRR steam.

Like the earlier F-unit booster units, their intended function was to serve as a (1750 horsepower) building block in a given locomotive lash-up. The omission of the normal cab-related equipment resulted in sizeable cost savings in addition to the Trainphone apparatus which was unnecessary since there could be no engineer operating the unit. Additionally, since the units had no cab and would not normally be run as a lead or single unit, the standard lighted numberboards at both ends of the units and the road unit-style horn were unnecessary and omitted to save cost. The PRR chose to have the units equipped with the options of: dynamic brakes, multiple unit control (mu), and hostler control. As on other PRR GP7 and GP9 locomotives, the long hood was designated the front end of the unit.

The units were reclassified ERS-17m and renumbered 3800-3839 in 1966 in preparation for the merger with the New York Central. The units remained in service through the Penn Central period and were passed on to Conrail, where they were retired between 1979 and 1981.

MODEL REVIEW

Hoods

Since these units were purchased late in the span of the GP9 production, they had what railfans and modelers refer to as having the late GP9 Phase III carbody configuration. The major spotting features of which were: the large 48" diameter pan top dynamic brake fan and single radiator cooling fans at the front and rear of the long hood and two small sets of louvers on the battery box doors on the short hood sub-base. The only real discrepancy here is that although the model has nicely etched see-through fan grilles with fans mounted below them, they are cap-top style fans, instead of the prototypical pan/flat-top fans. All the other hood door and louver configuration details are correct.

The small Leslie Tyfon A-125-440-CA hostler horn and straight exhaust stacks on the roof, classification lights, headlights, hand brake lever and housing and grab irons on the ends are appropriately done. As the prototype did not have numberboards on the ends, these are correctly omitted on the model. The sand fill hatches on the ends of the roof are present, but their rectangular bail handles are missing. These can easily be fashioned out of .008" wire and added by the modeler.

Three quarter view shows details of mu-equipment on the pilots, cab sub-base and hood end with characteristics particular to the GP9B's: the hood looks odd with the numberboards omitted.

Top view shows roof details including fans, exhaust stacks, DB, grabs, hostler horn, and sand fillers

The model has an array of wire lift eyes on the roof: four (one on each corner) of the front radiator fan hatch, dynamic brake hatch, rear radiator fan hatch and the blank hatch on the short hood. This was not the arrangement applied on the PRR units. The DB hatch correctly has them at all four corners. But they had only two (on the diagonal corners) of the two radiator fan hatches and the blank hatch. There were also four eyes for lifting the long hood itself: a pair in front of the front radiator fan hatch and another pair just behind the DB hatch, but these four are missing. Good news is that the modeler could carefully remove the six extras from the three small hatches and reuse them for the four missing hood lift eyes.

Cab

Of course, the major identifying characteristic of the GP9B was the lack of the cab. In its place, the resulting opening between the short and long hoods was filled with metal side and roof panels. Each side panel was flush with the long and short hoods and incorporated an access door and a porthole window. The filler section of the roof had the same contour as the hoods, except it was raised slightly above the adjoining hoods. The normal, raised cab sub base remained and the side walkways and handrails ran the full length of the unit. These details are well done on the model.

The right side window was a standard, almost-flush mounted style as was used on most F-unit porthole windows. The left side porthole window had an inward swinging sash for the hostler to open and stick his head out of when moving the unit with the hostler controls, located inside, just below the window. The July 1981 issue of *Rails Northeast* magazine has a nice 15-page pictorial article on the PRR's GP9Bs. Included are rare photos of a lone B-unit being moved, showing the hoslter's head sticking out this window. Since the sash swung inward, the glass was visibly recessed compared to the other side. Both windows on the model appear to have the glazing at the same almost-flush depth.

Frame/Sill/Walkway

The models incorporate the appropriate double-stepped side skirt with fuel fill at the end of the skirt near the cab as well as the jacking pads along the bottom of the side sills. The correct number of additional handrail stanchions were added to each side at the proper locations to fill the void left without the cab. The addition of these stanchions resulted in changes to the equipment boxes in the sub-base compared to a regular GP9. In place of the single door under the cab, a pair of smaller doors was used, with the center stanchion mounted in the gap between them. These features, as well as the end details: MU equipment, drop step, railings, cut levers and grab irons, are well done. Note that the access door on the equipment box in front of the cab on the right side of the sub-base was delivered with this panel blank, but later in life had single latch style doors installed. The model has the panel without latches, as-delivered.

GP9B cab area shows hostler horn, proper raised roof line and cooling fan detail.

Unit right side view shows the distinctive handrail and cab sub-base configuration as well as the phase III double-stepped fuel tank side skirt. The speed recorder driver unit attached to the rear axle bearing cap on the right rear truck should be removed.

Left side view illustrates the trucks, fuel and air tank details and the cab sub-base and handrail arrangement that differs from the other side of the unit.

Underframe/Drive

The proper air reservoirs and fuel tank have been applied, but the circular fuel gauges in both sides of the tank are missing. This can be remedied by drilling holes in the tanks sides and inserting Details Associates part #FU 3101. The Blomberg trucks are the correct style with the hollow-center circular bearing caps. A speed indicator/recorder driver unit has been attached to the rear axle bearing cap on the right rear truck which is correct for a normal with-cab GP9. However, without engineers running in the cab of these B-units, there was no need for a speed indicator/recorder, so this equipment and expense was omitted and this detail should be removed from the model.

Finish

The color separation of the dark green body color and the black underbody color is always somewhat in question with the prototype GP7/9 units. The painting and lettering diagrams are vague and open to interpretation and with the extreme similarity of the Dark Green Locomotive Enamel to black, color photos of brand new units aren't much help either. It does seem clear that upon repainting, the hoods, walkways, side sills and pilot assemblies were green and the trucks, air and fuel tanks were black. Athearn has chosen to make the walkways, sills and pilots black as their as-delivered incarnations of these GP9B's, and I can't argue it is wrong or right. Their shade of green seems a bit too green to me compared to actual color samples I have seen, which matched a description of the color in a PRR memo I have that says "As information, Brunswick Green is an extremely dark green shade, practically indistinguishable from black". (This is why

it is so hard to determine the color separation line on prototype photos of clean units.) The model has a good representation of Chrome yellow applied to the proper details.

As to the lettering, their interpretation of Buff seems too similar to the safety Chrome Yellow, whereas PRR Buff is a paler shade which clearly appears different on prototype photos. The lettering and its location is correct, except that the "F" letter indicating the front of the units should be ahead of the first handrail stanchion, not behind it. The "DANGER 600 VOLTS" notes on the hood doors usually appear to be white in photographs, although this point is vague on the painting and lettering diagrams sometimes as well. And although the Buff color leaves something to be desired, at least the lettering and numbering fonts are wrong. (Not to come down hard on only Athearn, but the PRRT&HS Modeling Committee repeatedly offers to any model manufacturer to provide proper color samples and official lettering font artwork, and some/many still continue to produce models with these details that they apparently deem to be "close enough".)

Small white frame lettering, oval three-color EMD builder's plates and PRR Trust plates are nicely applied to the sills. The hostler porthole window frame on the left side was silver on the prototype units as-delivered, but is not on the model. This could be easily remedied using a silver Sharpie® permanent marker or some silver paint and a fine brush.

Overall view of model illustrating the color separation and painting and lettering details. The hostler porthole window frame on this side should be silver.

Operation

As is typical with Athearn Genesis locomotives, the GP9B and matching Phase III GP9 operate smoothly and quietly with little gear noise. This is exactly what you would want in a sound-equipped locomotive. The heavy metal frame helps give the GP9 plenty of pulling power. Typical consists of two, three, or four units will not have trouble moving freight without slipping.

Out of the box, all wheelsets were within NMRA RP25 recommended tolerances. Couplers were the correct height against a Kadee coupler height gauge.

Headlights are warm white LEDs and, when on, are programmed to be on in the direction the locomotive is moving.

Sound

The sound-equipped units feature a full-featured SoundTraxx Tsunami DCC decoder. The quality of the sound is what we've come to expect from SoundTraxx. The quality of the decoder and sound installation is what we've come to expect in Athearn Genesis locomotives. From the box, the locomotives are set for auto notching – the prime mover revs to a higher speed as the DCC throttle is advanced. You can change to manual notching by setting CV 116 to 0. Once done, each press of F9 notches the prime mover up one and F10 down one.

If you haven't already, visit http://www.soundtraxx.com to download the full Tsunami manual. You have a broad range of control on the sound and operation of Tsunami DCC decoders.

Conclusion

Athearn has done a very nice job in tooling this distinctive model that rates an "A" and eliminates the modeler's need to do a bit of a messy kitbash. With a few minor detail modifications by the modeler (this is *The Keystone Modeler*, after all) it can be an A+. Unfortunately, the painting and lettering falls short of that standard and leaves the modeler with the same old quandary of "do I wipe the finish completely away and start over, or do I live with it?"

References

- *Rails Northeast* magazine, July 1981.
- *Pennsylvania Railroad Diesel Locomotive Pictorial Volume 8: Early EMD Road Switchers*, Paul K. Withers, April 2003.
- *Pennsy Diesel Years*, various volumes, Robert Yanosey, Morning Sun Books.
- *Pennsy Power II*, Alvin F. Stauffer, 1968.
- *TKM*, issue #34, May 2006.

At the same time it released the GP9B, Athearn issued a Phase III cab-equipped unit (#7203 on the left is an example). On the right is an Athearn Phase II unit. It has mid-1960's paint and a radio decal. When the prototype 7203 was new, #7138 would have had Trainphone instead of radio.

Another look at the Phase III unit on the left and the Phase II unit with a later paint scheme on the right.

A trio of Phase III GP9 locomotives on Tim Garner's layout. When these locomotives arrived on the PRR, traffic was down and many were sent to operate on the Norfolk & Western. The new Walter Berko N&W video from Railroad Video Productions shows some of these units in action.

Modeling PRR Overhead Cranes

By Ron Hoess

I became interested in PRR traveling overhead cranes when I realized I would need to construct one for my model of the PRR Stifftown Branch located in North Philadelphia. The crane was part of a freight yard at 18th and Cambria St. and spanned two tracks amongst a set of team tracks. While the exact date of construction of the crane is not known, it is listed as part of the freight yard in the 1915 CT1000. Located in a very industrial area of Philadelphia, the crane was used for unloading bulky loads and probably LCL containers. An overhead crane similar in appearance was also located in the PRR 28th St. yard on the west side of Manhattan. I typically scratchbuild structures starting from blueprints, but in this case, after searching various archival sources, I was unable to find any drawings.

While 1920s aerial photographs and ICC valuation data indicated an overhead crane, something more detailed was required to build a structure that was at least an approximation of the prototype. After a search of phillyhistory.org, an online digital collection of the city of Philadelphia's municipal photographic archives, I was rewarded with a rather good picture of the overhead crane taken in 1967. **(Fig. 1)** At that time Connie Mack Stadium (originally Shibe Park) located only a few blocks away from the Stifftown Branch, was nearing the end of its life. In what was probably a last ditch effort to save the stadium, city officials dispatched a photographer to record potential places near the stadium that could be developed for parking. By that time the Stifftown Branch was largely abandoned, but the overhead crane was still intact. While certainly not as informative as a blueprint, the photograph proved to be a good starting point for the model.

There are very few commercial kits for overhead traveling cranes available and certainly nothing as elaborate as the structure at Stifftown. Walthers has produced an overhead traveling crane (933-3102) that represents a crane of about a 25-ton capacity commonly used at foundries. The craneway girders are mounted on triangular supports. While the kit bears little resemblance to the structure at Stifftown, a few parts, the craneway girders and the crane itself, could be used as a starting point to build a structure around them.

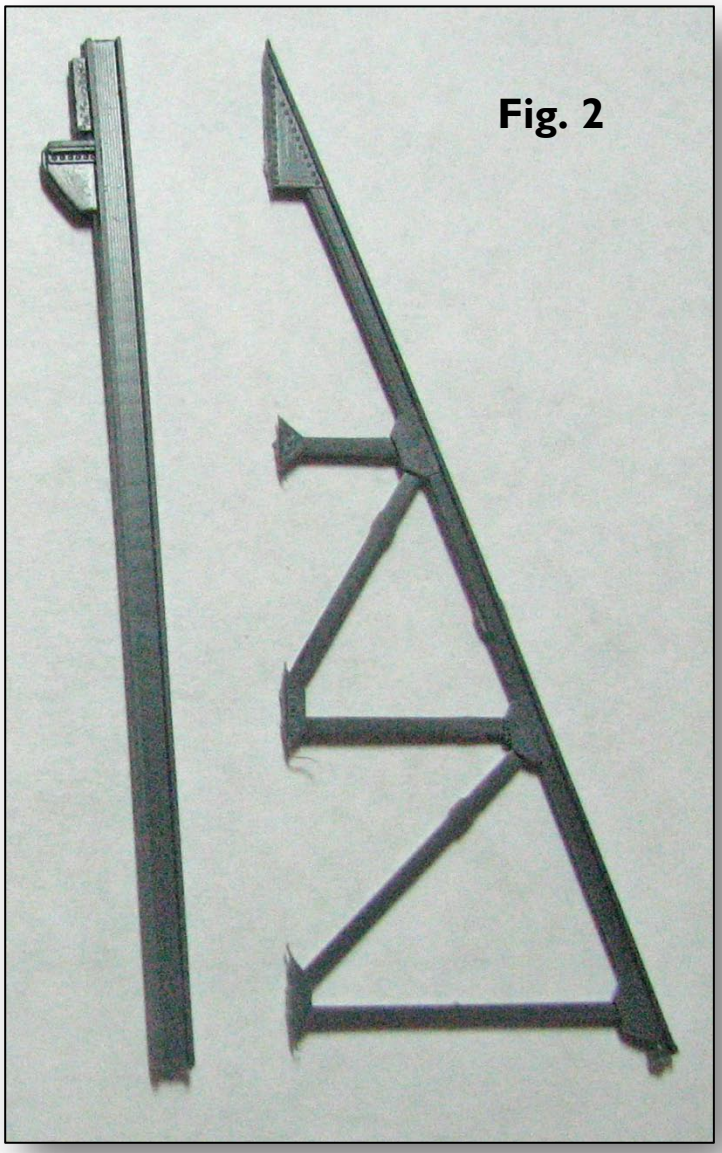
Careful inspection of the picture **(Fig. 1)** shows that the vertical supports (H-columns) appear to be wider below the horizontal craneway girder than they are above, similar to overhead cranes used by the PRR for ashpit service. My interpretation is that the wider portion represents two H-columns of unequal height bolted together and that the shorter inner column has the triangular supporting brace that holds up the horizontal craneway girder. I took the Walthers craneway supports and carefully removed the lateral triangular bracing. **(Fig. 2)** To the H-column that remained I glued a second H-column (Evergreen Styrene 284, H-column 1/8"), a perfect match to the Walthers H-column. Based on an approximation made from the photograph, I made this second column a scale 39 feet in height.

Once the vertical supports were made, they were glued to the Walthers craneway girders. The kit splices two girders together to give a final length of 89 scale feet. I estimate this to be about two thirds of the length of the actual Stifftown crane. Because of space constraints on my layout, I left it at 89 scale feet, but a full length model would require only one additional craneway girder for each side.

The vertical supports are connected to one another lengthwise and crosswise by a series of Warren trusses **(Fig. 3).** Unfortunately, there were no commercially available Warren trusses that matched the required dimensions, so I decided to scratchbuild them. This task was made easier by first drawing a scale template for a single unit of Warren truss connecting two vertical supports in the lengthwise direction. **(Fig. 4A)** I used Evergreen angle stock 292 for the chords and Evergreen angle stock 291 for supports. After cutting the styrene, I assembled the trusses on a template to ensure the correct angle between members and glued them in place with Plastruct Weldene. **(Fig. 5)**

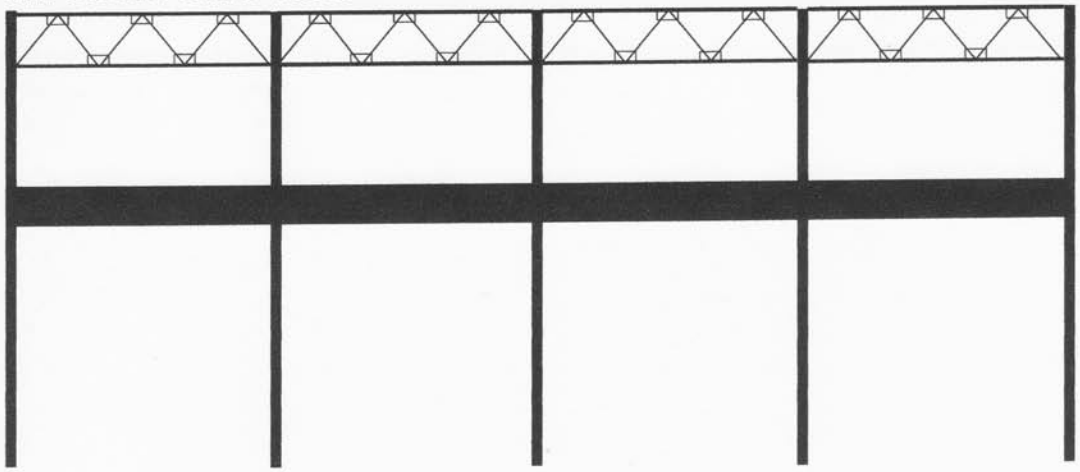
An important detail that should not be overlooked is that the web members are attached via gusset plates that can be clearly seen in the photograph. To model these, I turned over each truss and added a piece of .020" x .100" Evergreen strip styrene 125 cut to size **(Fig. 6)**. In addition, I decided to add some rivet detail since the gusset plates would obviously have been riveted on. For this I used HO scale rivet decals from Micro Mark. In retrospect, I wish I would have used something slightly heavier so that the detail would have stood out more. The decaling was the most tedious aspect of the project since there were at least 130 gusset plates.

There are four of the Warren truss units per side as well as two internal lengthwise rows of trusses, making a total of 16 lengthwise units for the structure. The outer units were assembled first, gluing them to the interior of the vertical H-columns. With the sides of the structure basically complete, it was necessary to construct the crosswise trusses. These were assembled in the same manner, using Evergreen styrene angle 291 for the chords and Evergreen styrene angle 292 for the web members. I again drew out the template on which to assemble the trusses **(Fig. 4B)**. The length of these units is absolutely critical, because the spacing needs to match the width required to accommodate the overhead crane sitting on the craneway girders. Once these crosswise units were constructed they could now be used to assemble the structure **(Fig. 7).** The remaining Warren trusses could then be inserted to form the two internal lengthwise rows of trusses **(Fig. 8)**. At this point, I airbrushed the structure using Floquil Grimy Black. In retrospect, it might have been wiser to paint some of the subassemblies first, as the built-up structure makes it difficult to get an airbrush into all the corners of the assembled structure.

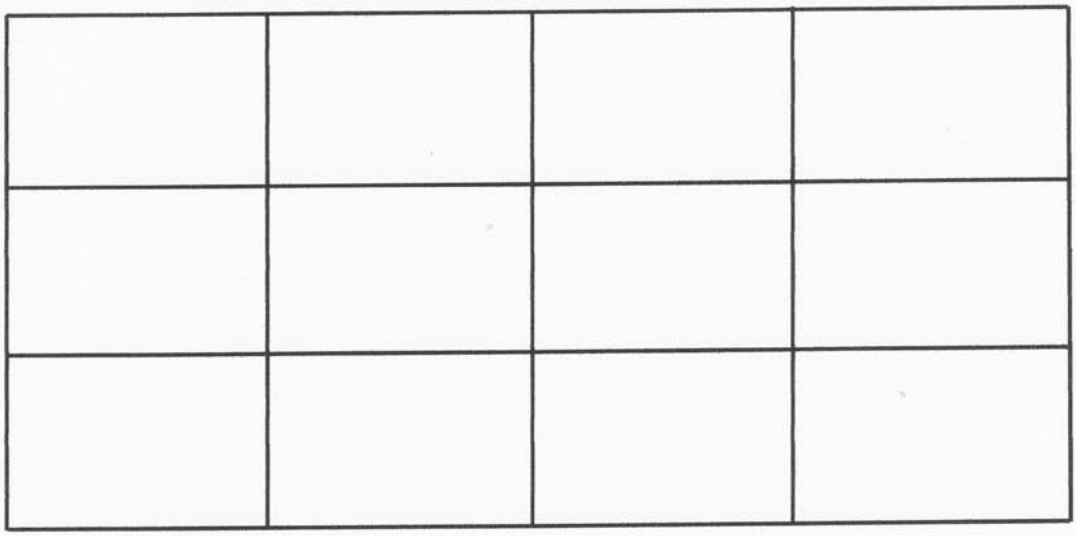


With the basic structure complete, a number of external details could be added. A piece of Evergreen styrene 264 channel stock (.125") was attached lengthwise to the outside of the H-columns on each side at a height of 19 scale feet from the base of the H-column **(Fig. 9)**. Some diagonal bracing was added using Evergreen Styrene 291 angle stock. As on the prototype, not every panel received these, so there are two of

A. Half scale side view



B. Half scale top view



C. Half scale end view

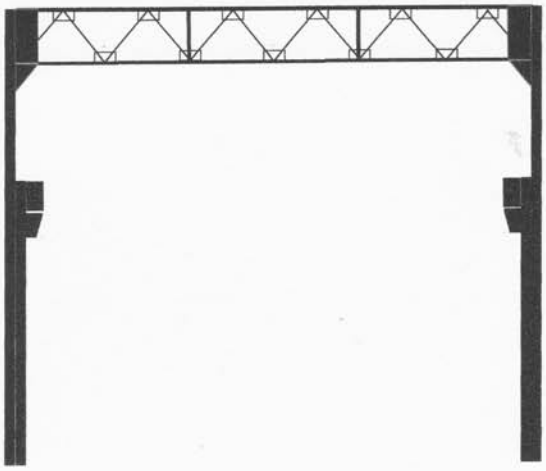


Fig. 3

these per side **(Fig. 9)**. The photograph of the prototype shows a walkway along one side of the structure. Short pieces of Evergreen styrene 142 (.040" x .040") were glued to the channel at every H-column to serve as support for the walkway **(Fig. 10)**. For the walkway itself, four Tichy #8001 walkways (2 per package) were assembled **(Fig. 11)** and glued to the supports.

Finally, I assembled the Walthers crane itself, including the operators cab. Some final airbrushing with grimy black and a light amount of rust using Bragdon Weathering Powders completed the project **(Fig. 12).** When installed on the layout, the crane will span two tracks with a Belgian block driveway for trucks down the center. In the end, what initially looked to be a very complex structure was not that difficult to construct once the basic Warren trusses were assembled.

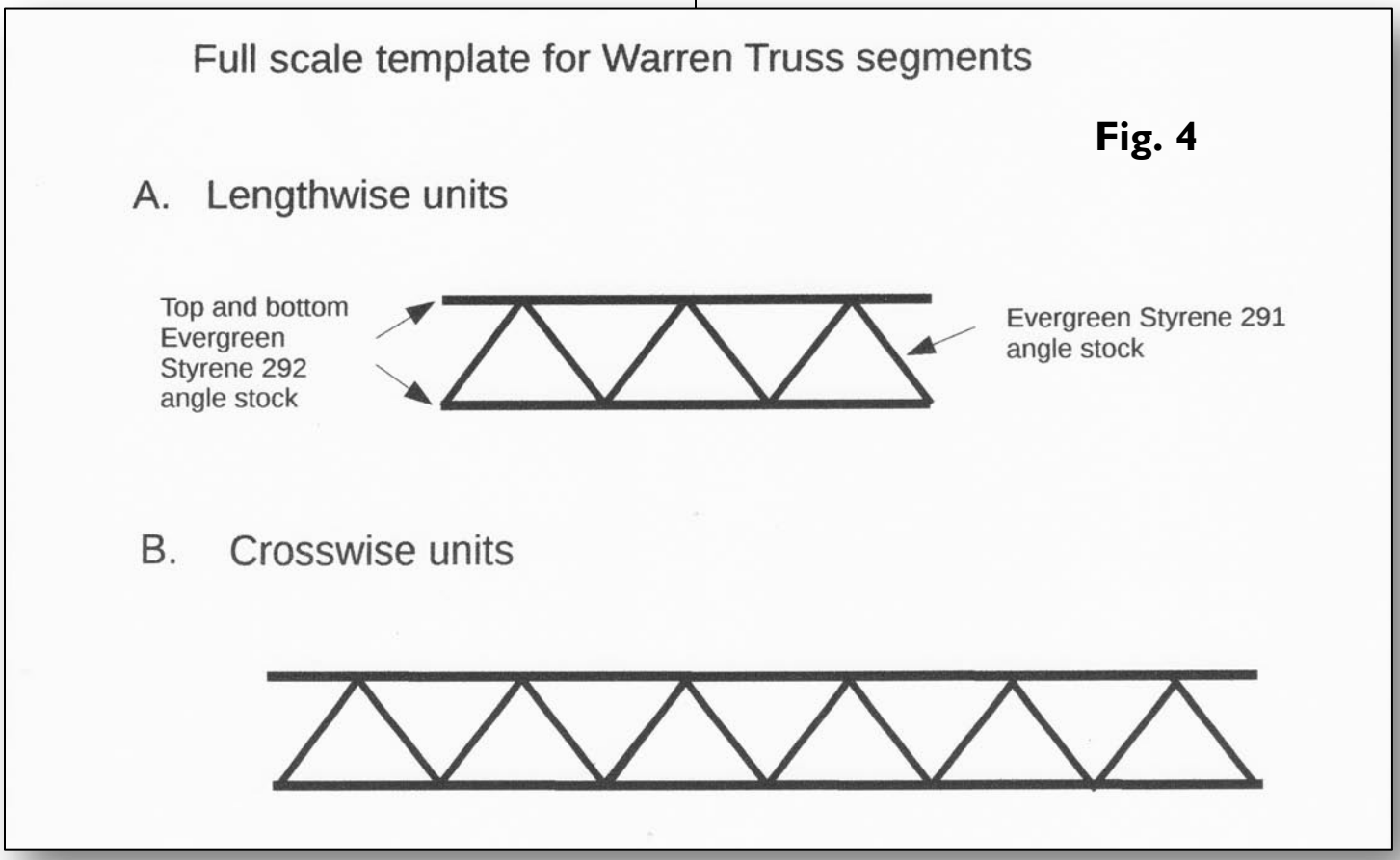


Fig. 4

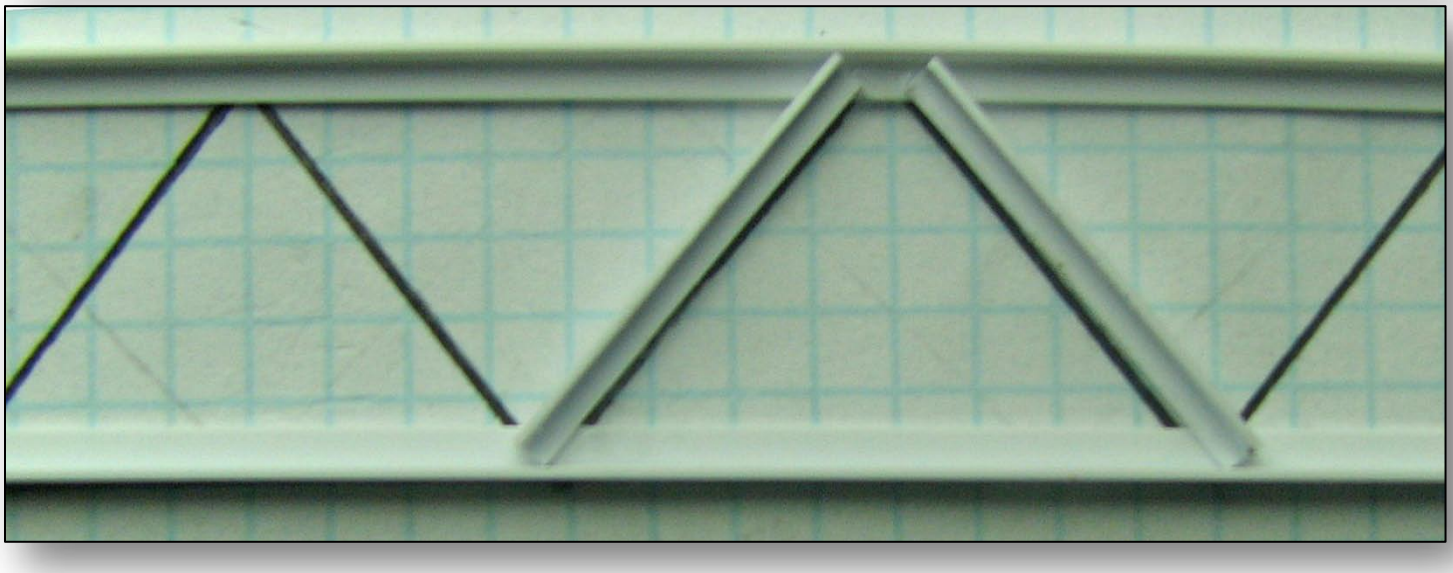


Fig. 5

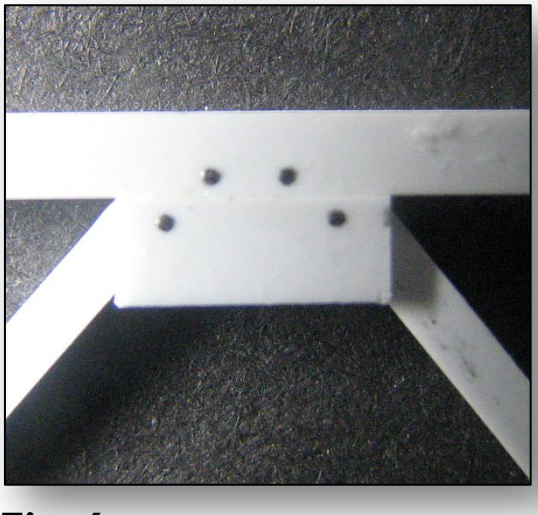
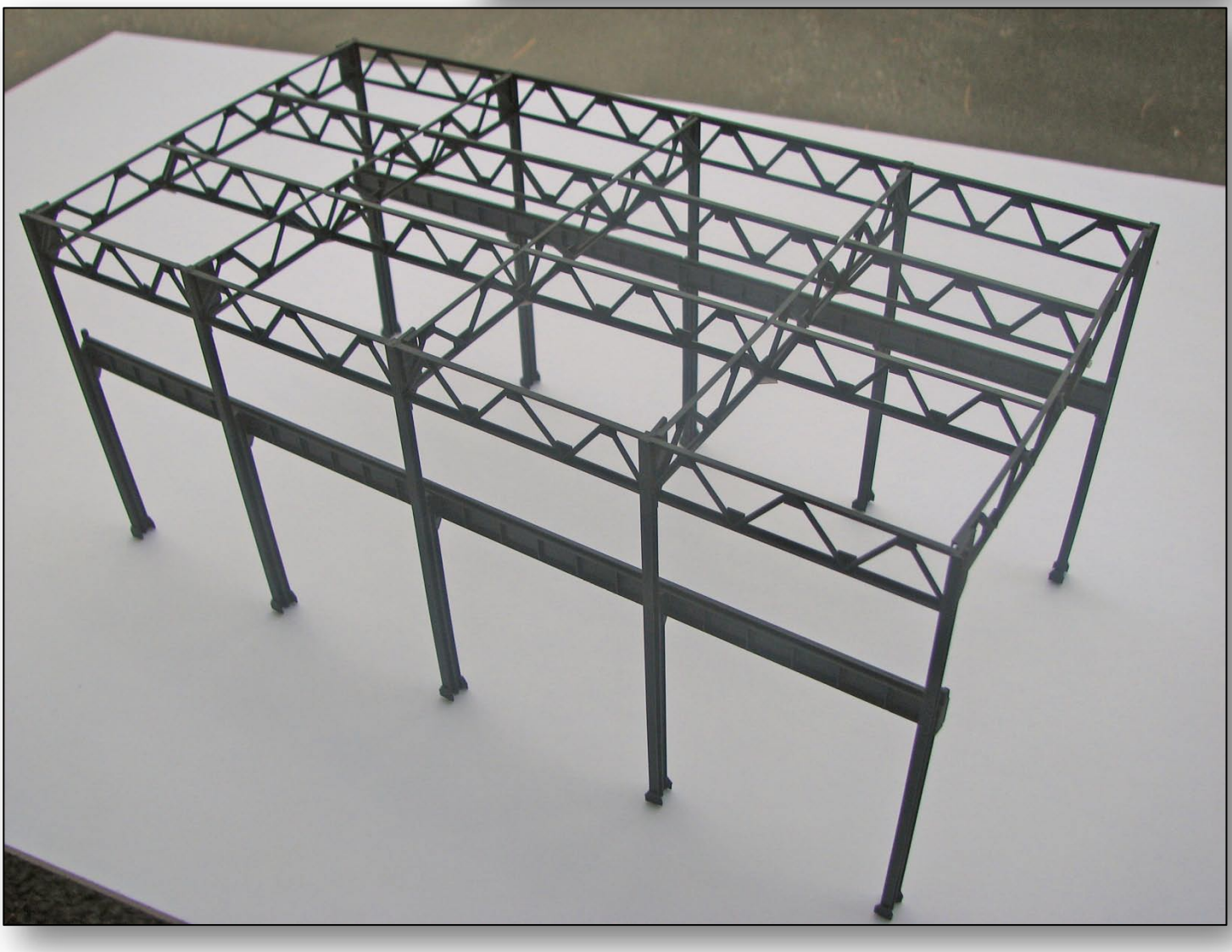


Fig. 6

Fig. 7

Fig. 8



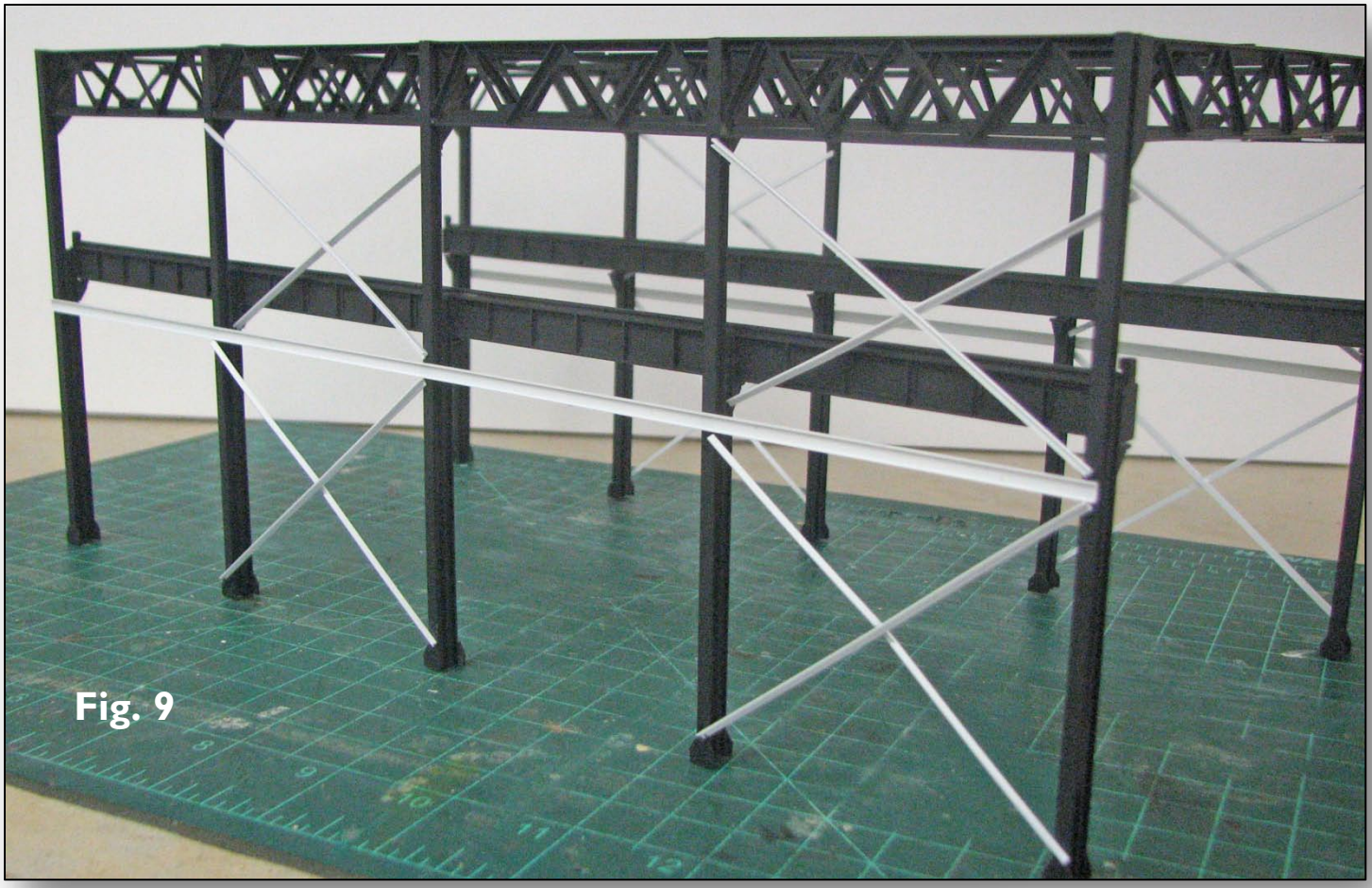


Fig. 9

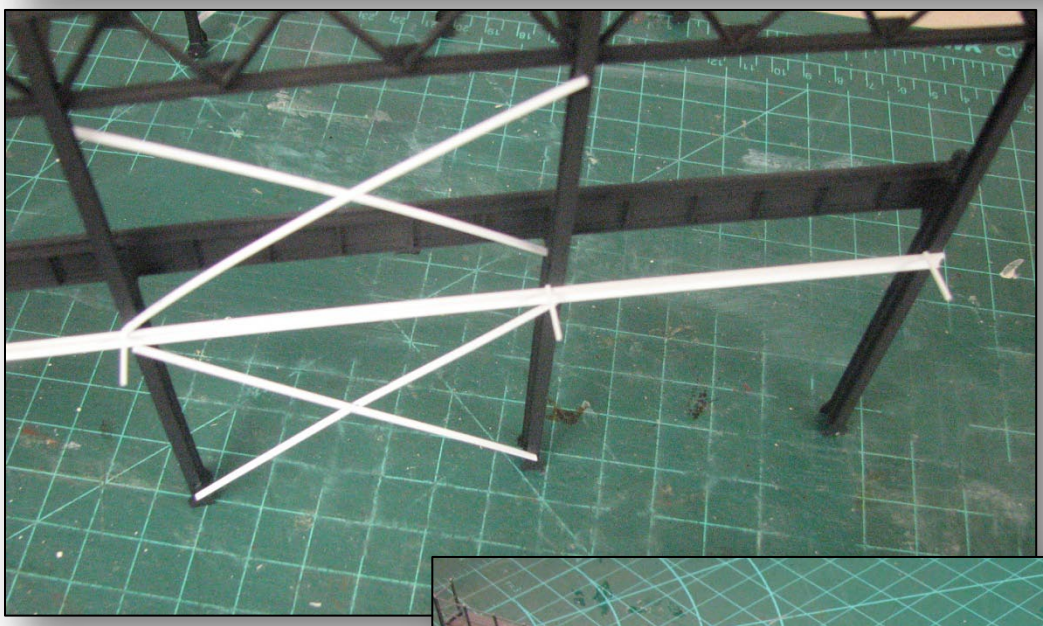


Fig. 10

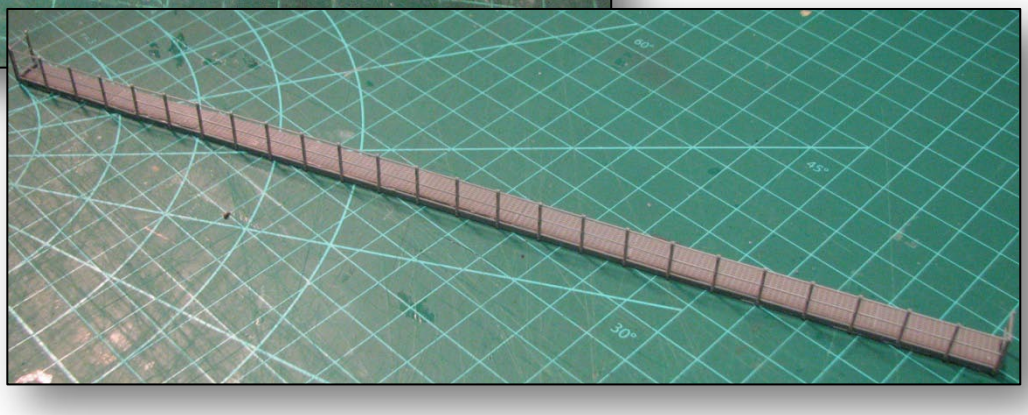
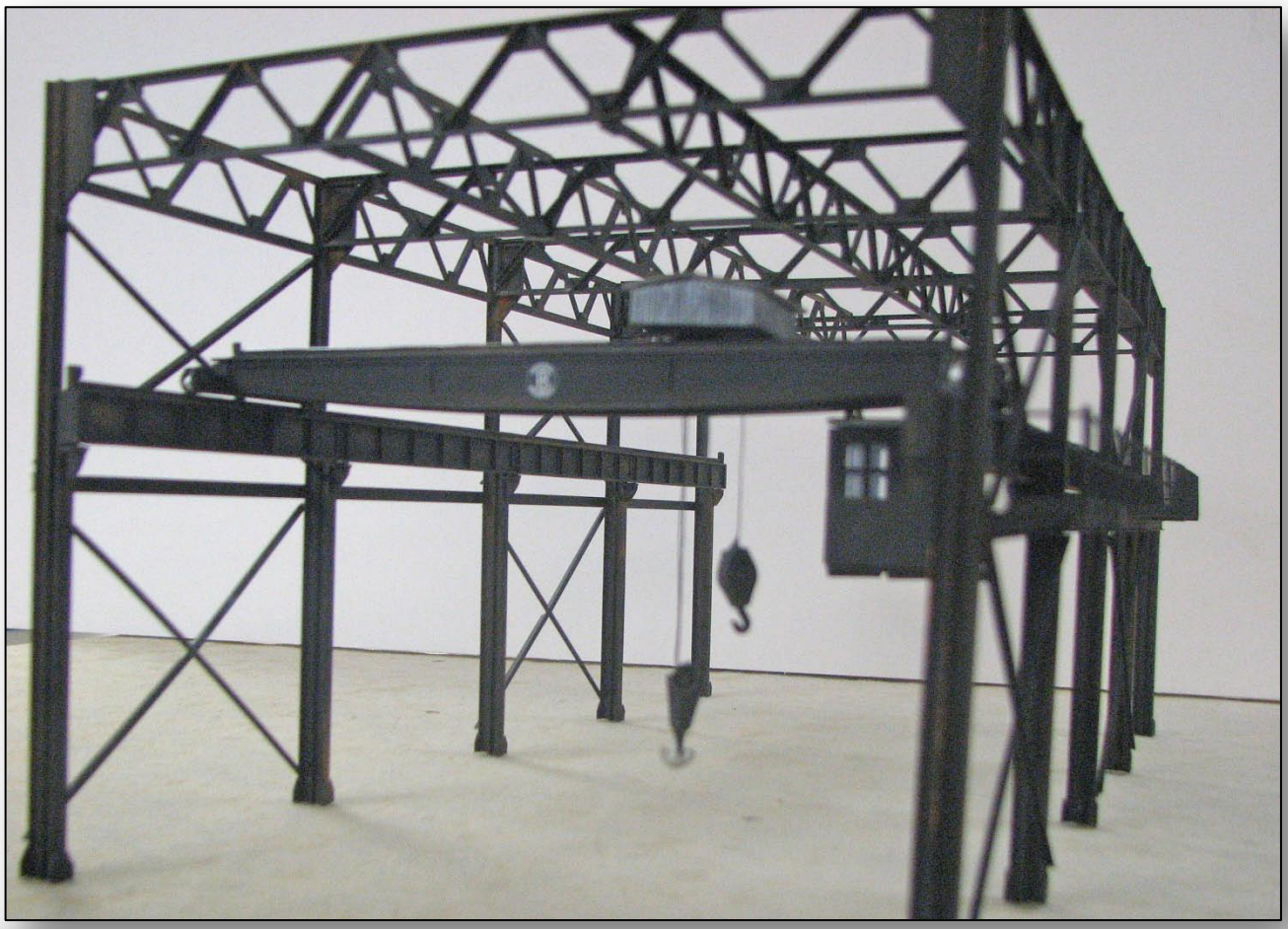


Fig. 11

Fig. 12

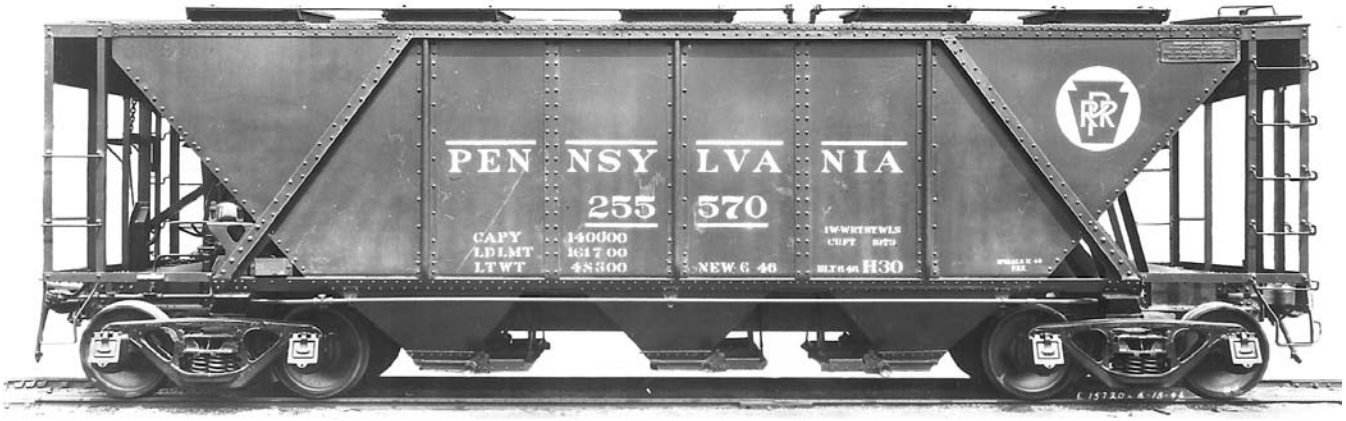


The finished traveling crane.

PRR Class H30 Three-Bay Covered Hopper

Making Bowser Better...Tips and Techniques Part 2

By Greg Martin



Repeated from the last issue for your reference, here is PRR builder's photo of H30 #255570 in the original freight car color. The contrast in the photo shows exactly why the modeler should shadow his models. *(Collection Richard Burg)*

Picking up from where we left off in the last issue of ***The Keystone Modeler*** we will now approach the most common offering from Bowser of the PRR Class H30 as delivered in PRR Freight Car Color and how I plan to deal with the highlighting and shadowing of the car.

First a word of discovery regarding the color of the car as offered by Bowser. What I said in my review was, ***"The PRR Freight Car Color (PRR FCC) is much better than any of the previous Bowser offerings; however, it is a work in progress and if Bowser works with our PRRT&HS Modeling Committee we may see some minor tweaking to this color."***

What I discovered when I was choosing a contrasting color to compliment my shadowing technique was the Bowser PRR FCC was a very close match (and I do mean close) to Testors® Model Masters Burnt Sienna in their Military line. So if you like the color and need to do a little touch up to the basic color this is what I would recommend. That doesn't make it correct or to my liking. I have found a new source of paint to replace Floquil Zinc Chromate Primer what I believe to be the correct PRR FCC with Floquil/Testors® exiting the market and we will go into that in more detail later in the article.

Getting Started with the H30 in Circle Keystone Freight Car Color Paint

Once you have added the details to bring the car up to your standards we will start the highlighting process.

This is where the India ink and drawing pen will come into play. In a bottle cap or similar add a couple of drops of India ink and a couple of drops of rubbing alcohol and mix the two together. With your drawing pen test the fineness of the line, it should be as fine as a pencil line, no wider. In the same manner as with the gray car we will want to use the ink like a pencil line wherever two joints meet at a right angle ex., a piece of angle metal and the side sheathing in order to highlight the joint. Wherever two flat plates are layered ex., the side sheathing the upper eave support, you need to highlight the joint. Where the running board meets the roof of the car you need to highlight it. What you are doing is creating your own dark shadow. In your mind's eye this again creates distance, separation and value. This will certainly create a much higher contrast, and I use this extensively on darker (read as freight/passenger car color) colored cars. This will achieve a stronger contrast needed for the darker colored cars. This will take a bit of time because you want to pick all the details you can including the handles on the hatch, the raised area on the air brake valve, and even the hinges where the hatch rods meet, leaving no stone unturned. Relax at the kitchen table (be careful as India ink is forever, so place a protective sheathing under your work area) with a table lamp and take your time. The finished car in contrast to an unfinished car is dramatic, initially overbearing, but in the end stunning! If you make a mistake just remove the ink with a cotton swab and some rubbing alcohol and start over as best you can. Testors® Model Master Burnt Sienna makes a good touch up color.

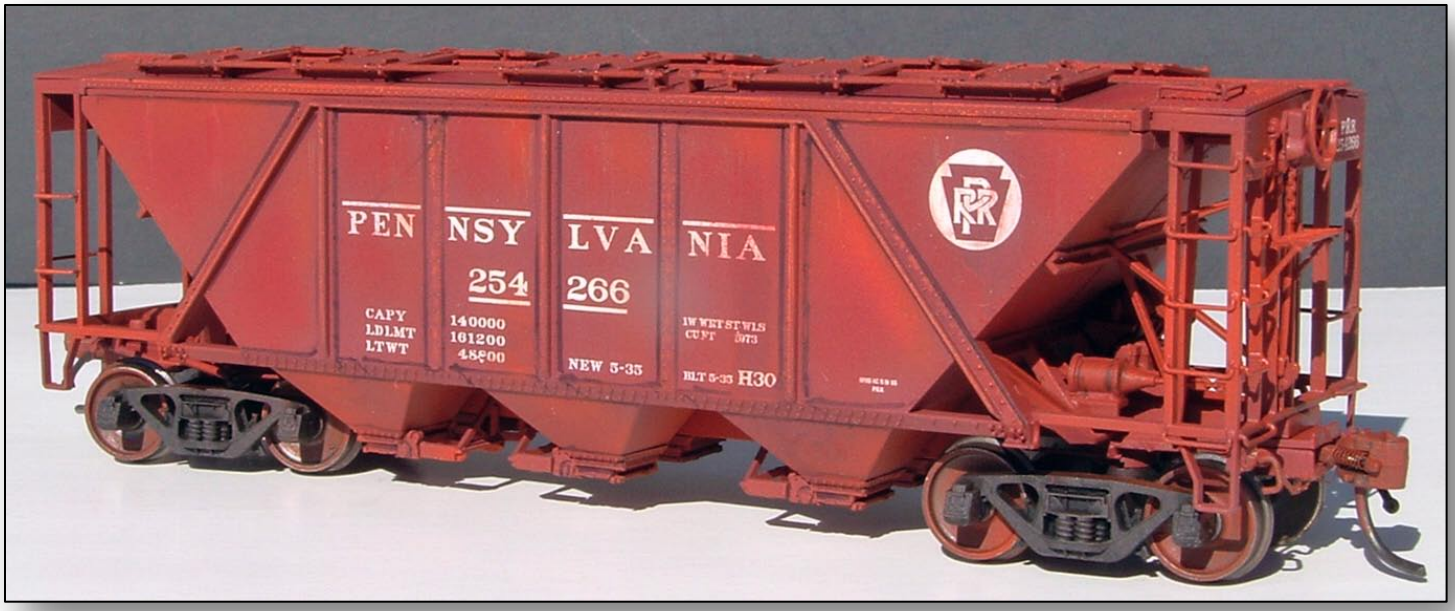
Press the tip of the pen lightly into the joint and pull the pen towards you and **look at the end point rather than watching the pen slide along the joint**. You will likely have to refill the pen more than once on longer lines. You will get faster at this. Once you have highlighted every point you can, and there are some tough spots on the slope sheets and the hopper outlet details, you are done. Carefully clean up and set the India ink on your bench with the lid tightly closed. Discard the unused India ink in the bottle cap. Did I mention India ink is permanent? And Sharpie Pens don't give the same effect!

A view of the finished car showing the roof, side, and "A" end.

Now I shadow the car in much the same way as with the gray car, referring to the basic color as the color that Bowser has used on the car, regardless of whether the color is a Pennsy spec or not. This effect will trick the eye into believing the basic color is correct. Shadow the car with contrasting colors, this time the color shifts may not be such subtle shades. I'll again start with the lightest color and in this case basic color of the car is such a dark shade of Freight Car Color you're going to use a new color I have discovered to bring out the highlight. The color is in an obscure line of paint unfamiliar to most ***KEYSTONE MODLERS***, MR Hobby, Mr. Color #7 brown. The photos will speak for themselves.

Load your airbrush with your paint at a mixture of 40% paint and 60% thinner. I work from left to right this time and first tack my Post-it to the exterior braces on the right hand side. Check your spray pattern to not more than ¼ inch in width. You will likely have to boost your air output to above 40 psi so the pattern doesn't fall onto the car in a splatter pattern. The pattern should resemble a powder effect, which is the best way I can describe it, with short bursts at a random downward pattern. Spray onto the sticky note so that about 40% hits the car side. **This time my coverage is not so random**. I want to change the color of the existing car to bring it closer to spec. But again think burst… burst … burst…

Move to the top of the car and on the roof do exactly the same as we did on the gray car at the lap seams and avoid the hatches at this point. You do not want to apply the new FCC to the running board as it stands alone. For the hatches I think of where a fellow might grab the open hatch with his glove and at that point I hold my sticky note under the top of the hatch and give a fast burst, we can simulate the dirt later with a colored pencil or the Conté crayon. It's a subtle effect and with paint this thin you may and likely will have to apply a couple of coats R*ANDOMLY* on the roof. Once you can see the opaque color shift you have achieved the effect. The effect is not to make the car become a completely new FCC, rather the idea is to simply lighten the basic color. It's a brightened highlight.



The finished side and "B" or brake end. Note how the pencil lines bring out the edges of the side trusses.

I intentionally avoided a darker color this time as the car's basic color achieved the effect of what I was looking for. Just as with the New FCC color (Mr. Color #7), I shadowed the opposite side of the braces where the basic color has done the work for us (see the photos). I wanted my car to look as if there were many years of wear, and I didn't apply additional weathering, but you might think differently and apply some weathering. You could if your car represents a car in more years of service in this scheme. Apply this color in layers the more passes you make with the color the lighter it becomes, but for me the keyword is subtle.

Moving forward with the highlighting technique take an Orange colored pencil (Prismacolor® Scholar™ Orange) and lay it flush to the running board and lightly highlight the diamond plate on the running board. This will really make the diamonds pop out at your eye. I do the same on the roof hatch handles and all the small details as well as the grab irons and ladder rungs. I switch between colored pencil and Conté to give some variety of color. You will find that as you use the technique you will get better at it. Once completed you will likely not remember the original color of the car.

I used the Yellow Ochre colored pencils sparingly to further highlight the details as it blends well with the freight car color. White charcoal pencil or white colored pencil for "chalk marks" left behind by the crews for the cars switching instructions.

Final Thoughts

I have always found that color is a very personal thing and how we perceive color varies. Some of us have been skilled at color through art classes and some just have the "knack for color". I don't profess to know it all. I do strive to find alternatives that are suitable for ***THE KEYSTONE MODELERS*** and their modeling. This new discovery of MR Hobby Mr. Color #7 will become my new standard for all of my mid-century PRR freight cars as the base color. As the kids say, "it's the bomb!"

I am not going to criticize the colors on the Bowser offerings. But I sure like what it has turned out to be on this model once this model was treated as I have done in my shadowing and highlighting techniques. What I do mean to say is that I think of this as an art project, and that I think you should all take the class and try to duplicate what I have presented. I think your opinion of the Bowser model will certainly change. It is time we old dogs learn some new tricks.

My techniques have been copied many times in the hobby press and they say imitation is the best form of flattery.

Two more views of the finished weathered "B" end of the H30. Note how the wheels, trucks, and coupler are colored.