The Keystone Modeler

Pennsylvania Railroad Technical & Historical Society

No. 101 Summer 2017

Inside:

The Keystone Modeler
Pennsylvania Railroad Technical & Historical Society

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FRONT COVER, CLOCKWISE FROM TOP LEFT

A Red Caboose X29 kit with patch panels added by Bruce F. Smith. *(Bruce F. Smith)* ● A Walthers PRR snowplow built and weathered by Gus Foster. *(Tim Garner)* ● This HO-scale Duncannon station won Best-in-Show for Fred Monsimer. *(Tim Garner)* ● A PRR F37 with load by Jack Consoli. *(Jack Consoli)*

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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Jim Hunter
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We have received several positive comments about our commemorative 100th anniversary issue. I'm glad so many of you liked it, and maybe it will keep you looking for our quarterly publication as it comes out. It is gratifying to past and present editors that *TKM* has continued and even thrived while the publications of some other societies have struggled. But it is your e-zine, and it will only continue if Pennsy modelers contribute articles about their modeling.

It used to be assumed that modeling slowed down in the summer because of lawn mowing, summer sports, and family vacations. I'm not certain that is true any longer. When the summer's heat is oppressive, the basement is a great place to retreat. And some summer activities may actually contribute to your hobby.

As I know many of you have discovered, a summer vacation can include a visit to a museum or tourist railroad you've always wanted to experience. There is nothing like a whiff of coal smoke to motivate one's modeling! For younger modelers, the presence of a real, working diesel makes a bigger impression than the toys under the Christmas tree.

For our summer issue this year, we have an example from Bruce Smith of super-detailing an X29 with etched metal parts, and Jack Consoli describes how he built an eye-catching load for an F37 flat car. Of course, we also have photos of models that were displayed at this year's annual meeting.

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 $40.00 to:

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

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

PRRT&HS Interchange

Selected Society Merchandise of Interest to Modelers

PRR Equipment Drawings on Microfilm

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

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

The Keystone Modeler
NEWSWIRE
With Steve Hoxie

PRR Product News

ATLAS O
http://atlaso.com/
PRR X29 REA Express Boxcar—O Scale

(Atlas)

Atlas O has announced the O scale X29 in Railway Express Agency livery. An undecorated scheme will also be available. Models can be had in both 2 and 3 rail versions. Estimated delivery is 4th quarter 2017.

TRUE LINE TRAINS
http://www.truelinetrains.ca/
PRR FF-16 C-Liner Diesel—HO Scale

(True Line Trains)

TLT is offering this newly developed C-liner in A and B versions. Equipped with DC/DCC-ready and DCC Sound (ESU/LokSound). Models include accurate details including Trainphone antenna. Additional info and photos at the website.

BOWSER MFG. CO.
http://www.bowser-trains.com/
PRR AS-16m Alco RS3 Phase III Road Switcher—HO Scale

This much anticipated model is still scheduled to be available in late 2017.

BROADWAY LIMITED IMPORTS
http://www.Broadway Limited.com/
PRR ES-17m EMD SD9 Road Switcher—HO Scale

(Broadway Limited Imports)

BLI is producing another run of the SD9, now in Paragon3. Due in September 2017.

PRR AS-24m Alco RSD-15 Road Switcher—HO Scale

A **BLI** Paragon3 version of the RSD-15 is scheduled to be available in September 2017.

PRR M1A/M1B Steam Locomotive—N Scale


(Broadway Limited Imports)

BLI is doing the next run of N-scale Mountain in their Paragon3 line. Due in September 2017.

PRR P70 Coach—HO Scale

The next run of the **BLI** P70 is due in October 2017.

RAPIDO TRAINS
http://rapidotrains.com/
PRR FA2 Alco Diesel—HO Scale

HAND-FINISHED PRE-PRODUCTION SAMPLE

(Rapido)

The **Rapido** FA2 is still expected to be delivered in late summer 2017.

Upcoming Events

July 30-August 6, 2017 Orlando, Florida
NMRA National Convention and National Train Show
http://nmra2017orlando.org/

September 9, 2017 Evanston, Wyoming
Mountain States RPM
https://www.facebook.com/MountainStatesRPM/

October 7-8, 2017 - Timonium, Maryland
Great Scale Model Train Show
http://www.gsmts.com/

October 26-28, 2017 Lisle, Illinois
RPM Chicagoland (formerly Naperville)
http://www.rpmconference.com/

November 4-5, 2017 Scotch Plains, New Jersey
Garden State RPM
http://gsrpm.org/

November 4-5, 2017 Benton, Kansas
Mid-Continent Prototype Modelers
https://www.facebook.com/Mid-Continent-Prototype-Modelers-1876840179207723/?ref=page_internal&mt_nav=1

Advance Planning

January 4-6, 2018 (tentative dates) Cocoa Beach, Florida
Prototype Rails Prototype Modeling Meet
http://www.prototyperails.com/

January 27-28, 2018, West Springfield, Massachusetts
Amherst Railway Society Railroad Hobby Show
http://www.railroadhobbyshow.com/

March 23-25, 2018
Railroad Prototype Modelers Valley Forge
http://www.rpmvalleyforge.com/

April 21-22, 2018 Roanoke, Virginia
Coalfield Railroads RPM & Scale Train Show
https://www.facebook.com/TheCoalfieldRailroadsRPMMeetAndScaleTrainShow/

May 9-12, 2018 Altoona, Pennsylvania
50th Anniversary PRR&THS Annual Meeting
http://pennsyrr.com/index.php/home

On a cool autumn morning, two Alco Centuries are pushing hard on a Focal orange N8 cabin car. This is one of the last photos taken last year on Tim Garner's Willsburgh Division layout before he tore it down to begin a new layout. *(Tim Garner)*

Modeling the Pennsylvania Railroad's Flat Car Fleet – Part 13a – Loading a Pennsy F37

by Jack Consoli – Photos by the author unless otherwise specified.

Completed HO F37 with pipe expansion bend load.

Elden Gatwood's original article on modeling the F37 and F37A classes appeared in issue #45, April 2007, of *The Keystone Modeler*. It covered the prototype background as well as described how Elden modeled, painted and weathered a brass import model as an F37 class flat. Although these cars by themselves are very unique and interesting, the loads that they carried could even further increase the onlooker's interest significantly. I've had one of these same models sitting new in the box for years awaiting the necessary inspiration for what load to put on the car before embarking on the project.

PROTOTYPE BACKGROUND

To review from Elden's article:

"*the F37 and F37A were both "well pocket" flats, or flats with a depressed center portion framed by regular height structural side members, forming a pocket with a floor supported by structural members, onto which the load was secured, or alternatively, above which the load was suspended on the car's structural frame*".

These were actually follow-on classes to the earlier FN and FNA class cars. The original 37 FN class cars were true "well hole" flats in that they were basically a flat deck with a large rectangular hole, just over 26 feet long, in the middle in and over which tall loads could be suspended, utilizing the clearance all the way down to (the acceptable clearance above) the railhead. I expanded the timeline in the original article using data from the ORERs which report these were built over a period of years, completed by 1916 and numbered 425001-425037. By late 1927, 20 of these cars were converted to class FNA. The PRR diagrams show that these cars had five added cross supports, referred to in some literature as "transoms", underneath the main deck to form a "well pocket". Wood flooring appears to have been applied and used or removed across these supports to form a contiguous floor when needed. As part of this conversion the hole in the main deck was shortened to be just over 20 feet long.

In February 1942, 20 new FNA-like cars were added as class F37, numbered 470060-470079.[2] Between 1950 and 1953, the FN & FNA class cars were rebuilt/replaced with 14 F37A and 17 F37B cars. The F37A had five transoms and wood floors like the FNA/F37. The F37B cars had only one transom at each end, more closely resembling an FN, but with a significantly shorter 16'8" open well. The minor details as to what differentiated these classes are not obvious. The PRR diagrams for all these classes are online at Rob Schoenberg's site: http://prr.railfan.net/diagrams/PRRdiagrams.html?sel=flat&sz=sm&fr=

This evolution seems straight forward, but when looking at photographs of these cars the configurations of the transoms does not always appear to be as clear cut: some cars have non-standard arrangements. The photo below of the car I chose to model clearly appears to have the center transom missing so apparently there was some ability to modify the cars to match the specialized loads these cars were designed to accommodate.

THE LOAD

Inspiration comes unexpectedly sometimes, as was the case here. While discussing a repurposed old industrial facility in the Pittsburgh area with my brother, he informed me that this location used to be operated by the National Valve and Manufacturing Company. Doing some searching on the internet I found an obituary for one of the former owners that stated "*NAVCO, a firm founded in 1908, specialized in piping systems for utilities, process industries, and nuclear power plants. NAVCO was a pioneer in the nuclear piping industry, furnishing the piping for the prototype of the first nuclear submarine, the Nautilus, and for pilot nuclear reactor power plants. NAVCO piping was also used in the space industry, ballistic missile launching pads and all manner of industrial applications*." The Nautilus! How great is that? The plant is located in PRR-served territory near 28th Street Yard in Pittsburgh, not far from my layout's intended location. I also then found this ad from a 1931 piping catalog.

Table 1 – Quantities of PRR FN, FNA, F37, F37A & F37B classes in existence.
Note that for many years, only the combined quantity of FN + FNA was listed.

Official Railway Equipment Register Dates

Class	Feb 1904	May 1906	Aug 1906 thru Aug 1912	May 1913	Aug 1914	Dec 1914	Feb 1916 thru Jun 1924	Dec 1927	Aug 1928	Nov 1929 thru Jan 1942	Apr 1943 thru Jul 1949	Apr 1950	Jul 1951	Jan 1952	Jul 1953 thru Oct 1965	Oct 1966	Jan 1968
FN	0	3	5	10	35	35	37	37	37	17	37	34	25	25	0	0	0
FNA										20							
F37											20	20	20	20	20	2	1
F37A												1	1	1	14	2	4
F37B													9	9	17	9	9

▲Despite the low resolution, the caption reads; "48 Feet of 14-Inch Pipe Formed into an Expansion Bend". This expansion section, a common sight in large industrial complexes, was supported with two wooden A-frames on the FNA's end decks and was anchored with cables near each end. The flanged ends of the pipe are not open, and are thus capped for transport; typical when desired to keep such a product clean inside. A makeshift wood railing has also been constructed to protect anyone on the car from falling into the open well.

►The car pictured here was clearly a PRR class FNA flat (with the five transoms: the only possibility in 1931) and although it is a low resolution image, sometimes you need to just work with what you have. As this is a fairly generic looking piping component that could have been suitable for *all manner of industrial applications*, it seemed like a good candidate for modeling on my branch line serving the heavily industrialized Monongahela Valley.


929

NATIONAL VALVE & MANUFACTURING CO.

Manufacturers and Contractors of Complete Piping Systems

PITTSBURGH, PA.

BRANCH OFFICES

ATLANTA, GA. CHICAGO, ILL. CLEVELAND, OHIO COLUMBUS, OHIO NEW YORK, N. Y. PHILADELPHIA, PA.

Products

Equipment and Manufacture

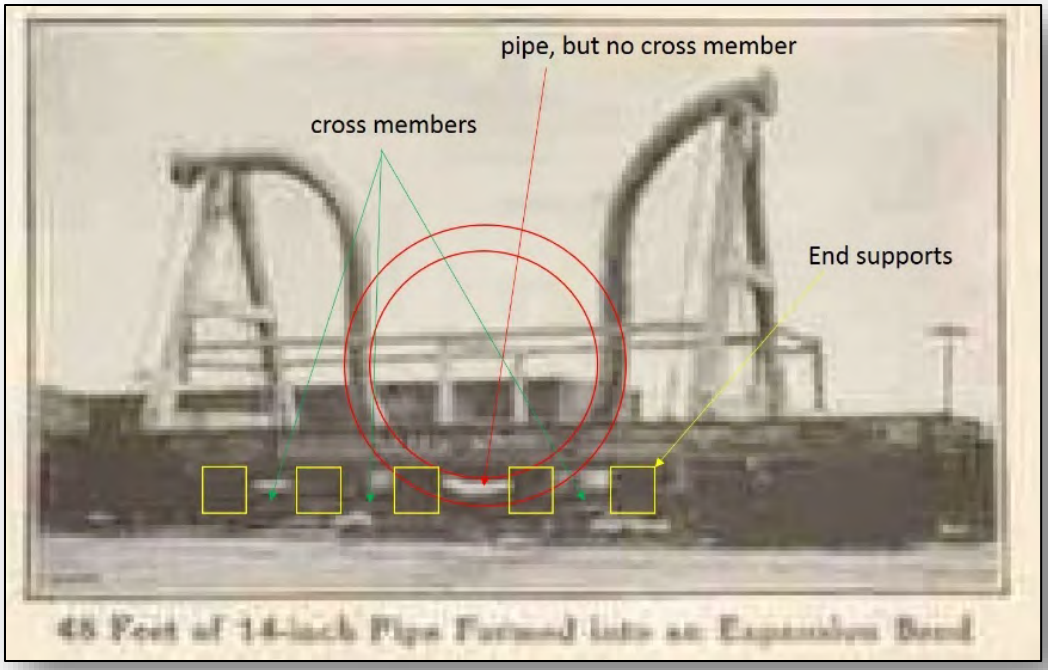
Navco Lap Joint

Navco "Universal" Pipe Support

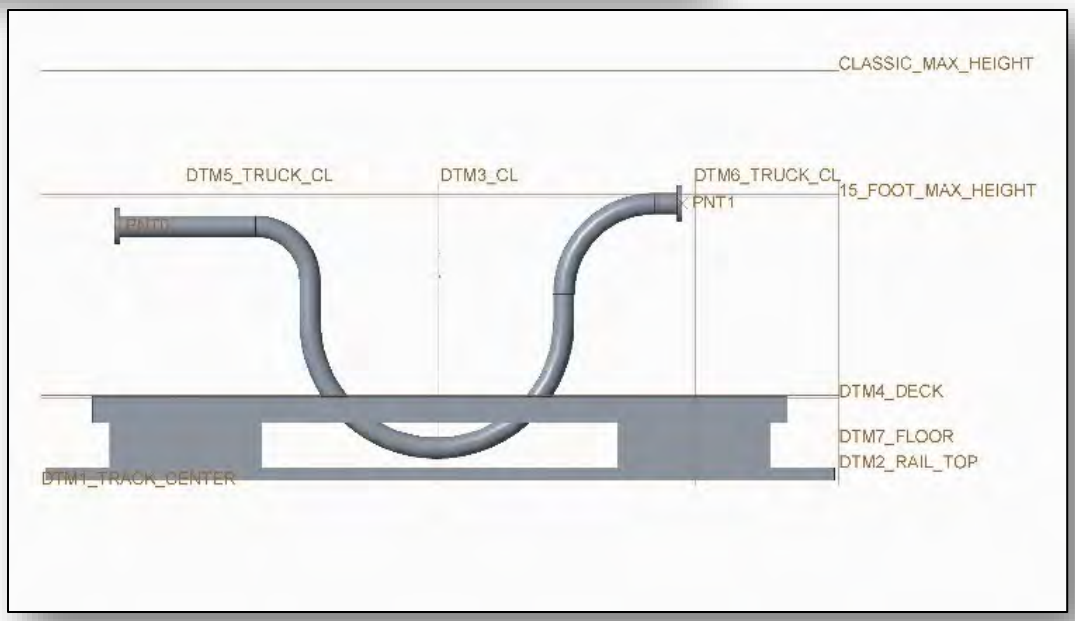
48 Feet of 14-inch Pipe Formed into an Expansion Bend

Service

The Keystone Modeler 7 No. 101 Summer 2017



Squinting at the photo, I overlaid some lines to try to figure out how and where the pipe sat down in the well of the car. I could see the five triangular end supports along the sides for the transoms, but it became clear that the center transom cross piece was missing as the bottom end of the pipe was in the space it should have occupied.



Simplified CAD layout to determine the profile for the pipe load. Rectangles were drawn as simplified representations of the trucks. This layout also confirmed that the center transom cross piece had to have been removed to fit the load in the car as it appears in the photo.

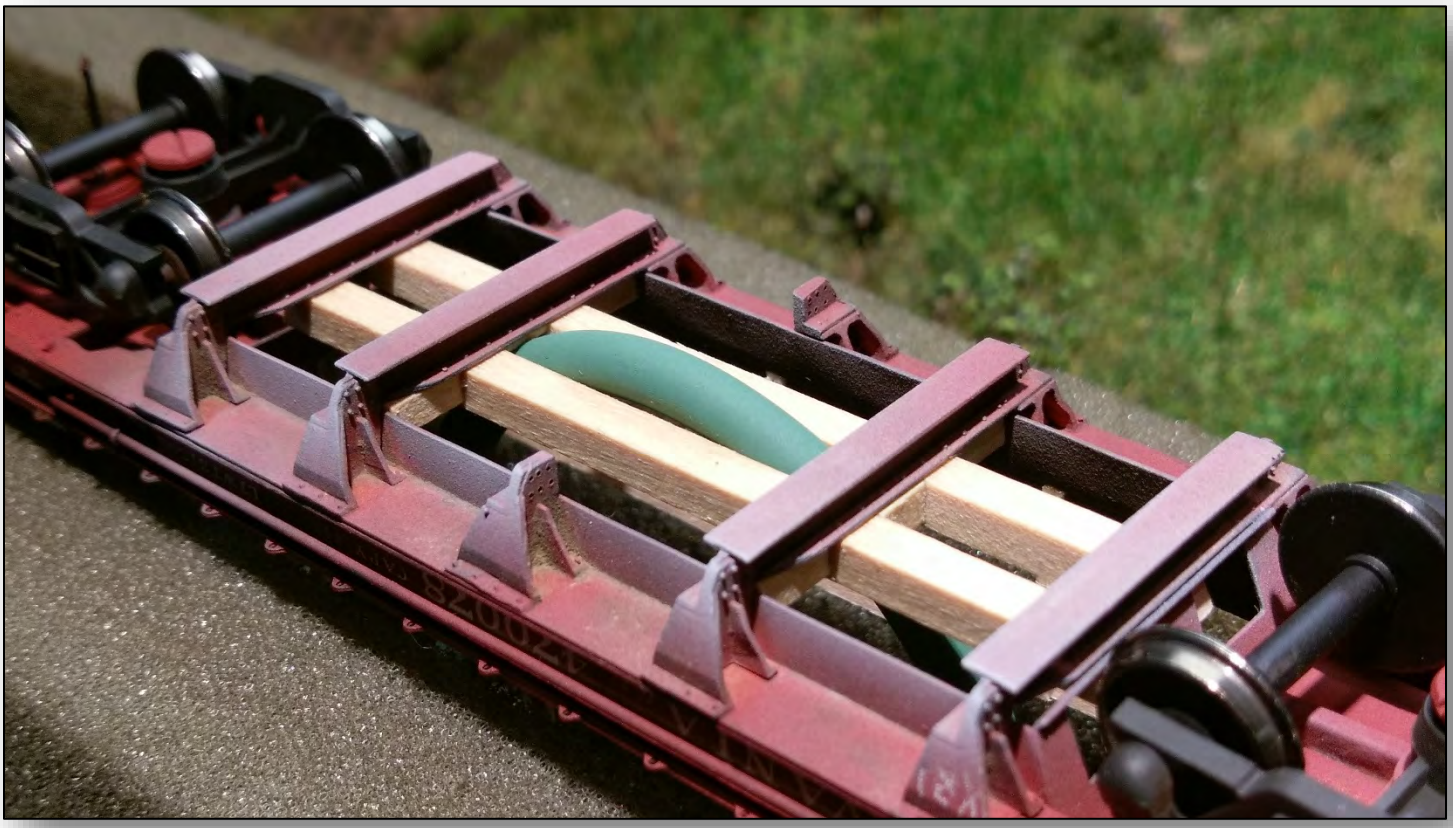
Elden had detailed how some of the prototype cars received substitute 2E-F2 "Crown" trucks, and the addition of a plate steel yoke surrounding the coupler pocket. I left my ends unmodified, but did replace the supplied brass trucks with plastic sideframe Bowser "Crown" trucks. I prefer to avoid brass trucks on brass cars, especially those that sit low on the trucks to avoid potential shorting problems. I installed .088" tread ReBoxx metal wheelsets and couplers in Kadee boxes. I drilled holes in the lower side sills near the bolsters and soldered brass wire U's in place for the roping staples. I re-bent the coupler cut levers a bit and soldered the brake shafts into the ratchet castings on the decks.

Due to the configuration of the load I intended to install, I left the separate brass simulated wood floor pieces supplied with the model in the box. At this point I drew a simplified side representation of the car in a CAD program using the dimensions from the PRR diagram and confirming them against the actual model. I added a 15' maximum height line based on typical railroad equipment of that period, and the height limitations of my own layout, as a guide to help draw the pipe expansion bend to scale. I roughed in the shape of the pipe and then kept adjusting it until it looked as close to the photo as I could get, using the specified 48' length as a design parameter. As an aid, I drew the car sitting on a 43.5' piece of "rail" which should then be actually 6" long when the drawing was printed correctly to HO scale. I kept adjusting the printer scaling until I got it to print correctly so I had a 1:1 plan to use when bending the pipe.

Since the photo and the drawing seem to show the center transom was removed, I did the same. On the model, each transom plus its triangular supports at both ends were single brass castings. In order to be able to cut it apart and not destroy the model in the process, I unsoldered the entire center casting. Even off the model, I still couldn't make the necessary internal "L" cut so I had to cut off the vertical webs at the ends of the transom, but this at least left the supports looking correct. I then soldered brass strip to the ends of the transom and then cut them off at an angle to match the supports at the proper length. I drilled holes in both the ends of the transom and the supports to simulate where the fasteners would have been removed. I then soldered the supports back onto the model and set the transom aside for painting.

The pipe was identified as being 14" diameter in the photo caption. Those in the industry use "nominal" diameters in their normal conversations, so I looked up what the outside diameter should be, since the nominal size is normally the inside diameter. I did a quick search for a standard pipe sizes chart and found that after pipe gets to be nominal 14", that number *is* the outside diameter, below that, all outside diameters are larger. The closest size piece of brass rod I found was 0.156" (5/32") diameter or 13.6" in HO. Using whatever appropriate size metal pieces I could find for mandrels, clamped in a bench vice, I slowly worked the rod into shape checking it by laying it on the 1:1 drawing. As the material has spring-back after plastically deforming it, a mandrel smaller in diameter than the desired bend is required. On several of the bends, I had to repeat the bend on increasingly smaller mandrels to get to the correct size. The brass was much stiffer than I expected, so having the rod stock about twice as long as needed for the finished part gave me valuable leverage. In hindsight, I should have annealed it before bending to soften it. Once bent to shape, I cut the excess length off each end and sanded the rod surface smooth.

I cut four disks of styrene and drilled the two .040" thick parts to fit over the pipe as the flanges. I drilled eight small holes evenly spaced around the two flange parts and then glued each to one of the 0.10" thick solid disks. Once dry, I drilled through four of the flange holes (at 0°, 90°, 180° & 270°) through the solid cap disks and installed nut/bolt/washer castings in them to represent the shipping cap attachment fasteners. After gluing these assemblies to the ends of the pipe I realized it was going to be impossible to spray paint the entire pipe assembly in one sitting as it was. So I drilled a hole about half way up into the bottom of the pipe at each of the two points it would later be supported by the A-frames and soldered about a 6" length of .028" diameter brass rod into each hole. I then soldered a scrap of brass strip across the far ends of these rods to form a handle to hold the pipe during painting.



Underside view of removed center transom and lower end blocking.

Painting, Lettering, and Weathering

The car body and the pipe assembly were then cleaned of oils, grease, and solder residue. Painting and lettering was done similarly to what Elden described on his car. I painted my car a 2:1 mixture of Floquil Oxide Red and Caboose Red. Long ago I built some simple wood fixtures to hold models through the painting, lettering and weathering steps. The small metal strips can be moved to various holes in the wood block to accommodate car length and are bent over at the top to be attached using the truck screws. These are particularly helpful for working on small models such as this one. Separately, the wheels and trucks were painted a dirty black and the pipe Floquil Light Green, darkened with some black.

I lettered the car with the Railworks decals provided and chose to only mildly weather the car. My techniques are similar to Elden's except that I usually add a step with weathering powders between the paint washes and the flat finishing. The chalks are useful both in adding specific details as well as more subtle effects and blending. Since the pipe load is factory fresh, it was not weathered. Nor was the stripwood for the supports and blocking, using its natural coloration to represent new lumber.

Adding the Load

Oddly, mounting the load was more complicated than building the car or the load. Unlike many model loads which basically sit in or on the car and where the blocking and tie downs are for show, loads with form-factors like this need functional mounting hardware.

▲ ► Pipe cap and flange details

Again using the scale layout drawing on which I had sketched the A-frame geometry, I constructed the two A-frames from 0.125" square stripwood right on top of the plan like an old-school wood trestle bent or wood model airplane wing. I added 2" scale splice plates at the joints and simulated fasteners by poking the wood in the joint areas with the tip of a 0.3 mm lead mechanical drafting pencil (it makes small holes and blackens them at the same time). I left the tops of the side members oversize, then once the frames were dry, sanded them down to cradle the pipe at the proper height using sandpaper wrapped around a rod. I cut the brass painting support rods off the pipe leaving about a 0.1" stub. I drilled vertical holes in the tops of the frames to accept (and hide) these stubs and thereby help anchor the load. With the pipe attached to the frames, I centered the loop in the well between the remaining transoms and decided where I would locate the loose transom and the cable hold-down ties at each end of the pipe. The model came with rows of "keyhole" tie-down locations on the deck, simulating those on the prototype which accommodated the use of threaded steel rods with nuts, which could be tightened down to secure loads. They are only partially etched through on the model, so I drilled the ones I planned to use through at this point, before the load got in the way. I then glued the A-frames to the deck with CA. I cut and glued in place more wood blocking to center the loop in the well and to support it on the 2nd and 4th transoms. With 3" x 4" lumber, I assembled the railings to the A-frames and the ledges inside the well.

Thinking the railroad would not have wanted the removed transom to get separated from the car, as it may have only been a temporary arrangement, I anchored it to the deck. I drilled lengths of wood to accept wire simulating the rods entering the deck keyholes and topped them with nut/bolt/washer castings. In photographs it can be seen that many larger commercial loads of that period were advertised with pride by the manufacturer with some type of sign noting at least their name and sometimes describing the load, such as "WORLD'S LARGEST…" I printed out the NAVCO logo from the advertisement on paper at several scales, picked one that seemed appropriate, built a small wood frame for the two back-to-back "signs" and glued it to the A-frame and deck.

DO NOT HUMP signs were also added.

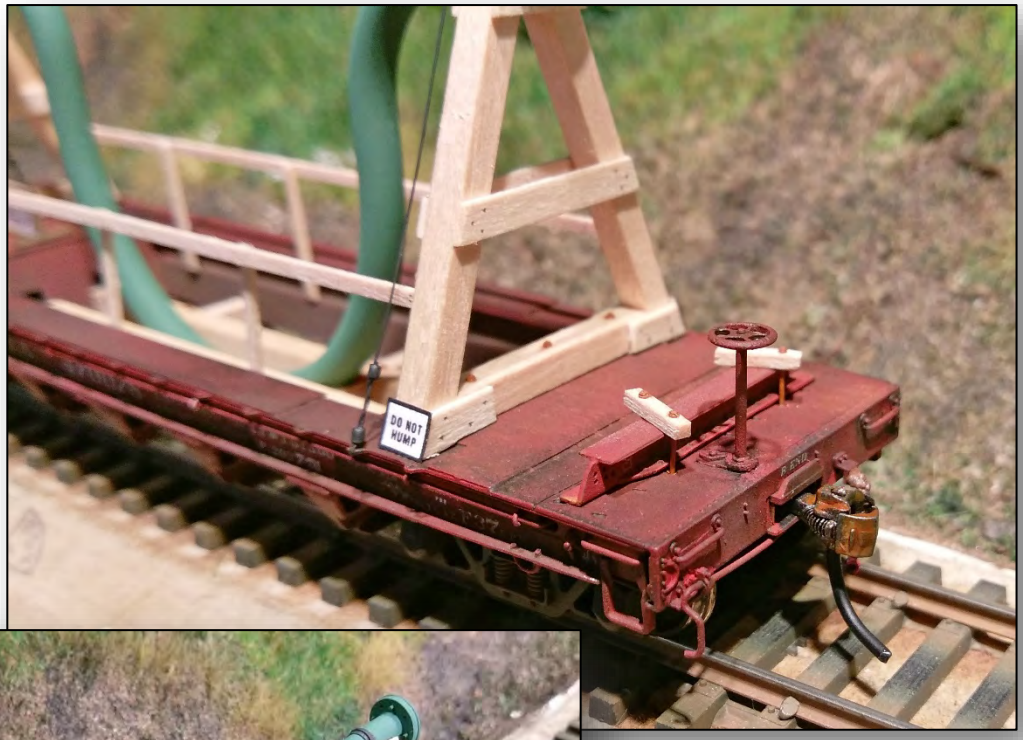
The final and most delicate step was to add the hold down cables. I used 0.008" diameter enameled copper magnet wire liberated from an old motor winding in my junk box. Since the pipe isn't symmetric, the tie downs at each end were located in different spots. At one end I could use the tie down holes etched along the outer edge of the car's deck. At the other, I inserted small metal wire eyes like the old Detail Associates #2206 parts through the drilled-out deck keyholes, bent them over underneath and glued them in place. I needed them to be able to mechanically anchor the "cable" when I applied some tension, as it actually needs to secure the load. I ran the cable through an eye at one end and twisted it, then slid four short sections of plastic insulation stripped off small gauge wire onto the cable. These were later slid in place over the twists to simulate cable clamps, once the cable was secured. I then looped the cable one turn around the pipe, then down through the other eye and twisted it to secure it, all the while applying some tension. I was afraid that if I tried to wrap the wire directly around the painted brass pipe (rod), it would be impossible not to scrape some paint off. So I first cut and wrapped small strips of 600 grit emery cloth around the pipe over which I then wrapped the cable. The rough surface of emery cloth helps to keep the cable from sliding about and it is matte black, so it doesn't need painting. CA adhesive was then applied to secure the twists, clamps, eyes and emery cloth bands. Finally, I hand painted the cables and hardware black and the nut/bolt/washers on the blocking a rusty color, completing the project.

References

1) *The Keystone Modeler*, issue #45, April 2007, Elden Gatwood, pages 12-17.
2) *Pennsylvania Railroad Flat Cars – Revenue & Work Equipment, 1881 – 1968*, Elden Gatwood and Al Buchan, 2008, pages 29-30 and 68-72.

F37 on the holding fixture after painting and decal application. The loose transom can be seen taped to the fixture for painting.

Mounting of the removed transom on end deck.



Interior blocking in the well and railing attachment.

Tie-down cable attachment points are different at each end due to the load's asymmetry.

Upgrade an HO-Scale X29 with Photo-etched Parts

Bruce F. Smith

The completed Red Caboose X29 with patch panels added.

If you are familiar with the field of military modeling, you know that there are a huge number of aftermarket detail parts available to upgrade just about every plastic or resin kit on the market. Many of these parts are etched metal and provide very fine detail. While detail parts have also been available to model railroaders for years, recently the number of etched parts that are specifically designed to improve existing kits or ready-to-run models has exploded, creating a new paradigm in both modeling and the business of model railroading. In this article, I will use the venerable Red Caboose HO scale X29 kit as the basis for using etched metal parts to improve both the appearance and accuracy of this model. Added etched details for this article include patch panels, sill steps and Carmer uncoupling levers. I will also discuss how to make the details of this kit match specific prototypes.

I started working on these models by identifying photographic sources to aid in specifying details. Two excellent articles on the X29 are available, one by Patrick C. Wider in Railway Prototype Cyclopedia, Volume 24, and the other by Ben Hom, in *The Keystone*, Volume 43, No. 1 (which is available on the PRRT&HS eStore at http://www.prrths.com/estore/keystone_magazine.html). Based on these two sources, I decided to build two cars, both with 1929 style bodies, but one with a long upper door track and widespread door stops and one with a long upper door track and low single door stop. Both cars would retain KD brakes and therefor the diagonal retainer line on the B end of the car. As has been discussed elsewhere, these models are pretty accurate, especially given the age of the tooling, but there are some areas for additional detail.

Patch Panels

Because of the design of the roof of the X29, moisture would accumulate at the bottom of the side sheets and cause the side sheets to rust. Eventually the damage became so severe that the Pennsy resorted to placing patch panels over the rusted areas. Initially, patches were only placed over the side sheets that were rusted, but eventually, patch panels were placed over the entire side that was affected. In some cases, this might only be on one side of the door, but they were commonly placed on both sides at the same time. Red Caboose did offer the X29 1924 body style with full-length patch panels cast into the plastic body. While that gives the modeler one option this does not represent the breadth of this problem and the different approaches to fixing it. Fortunately, there is now a solution in the form of etched metal patch panels (Yarmouth Model Works #505).

X29 patch panels from Yarmouth Model Works. These panels are approximately 13 scale inches high.

The long patch panels glued to the side of the car.

The part offered is a full-length patch panel, but it can be cut down to represent a partial length panel. I tested a single panel patch on the second car. This set of panels has not been released for sale at this point. These panels are fairly easy to install. First, I trimmed the panels from the frets with a sharp knife. The remaining tabs were carefully filed off with an emery stick. In order to provide a better gluing surface, the back side of each panel was roughened with medium sandpaper. To prepare the car body, the plastic rivets that would be under the panel were carefully scraped off with a chisel blade. When applying the panels, it is critical to make sure that the panels are correctly oriented; there are left and right panels. On the panels, the side without rivets is the top, and represents a welded seam. At each place where the panel crosses a seam, there is a continuous vertical row of rivets and a row with just 2 rivets. These should line up with the respective rows on the side of the car. I used thick ACC cement to glue these panels to the car side, but I would advise using a contact cement such as Barge Cement or Walthers GOO. Just be sure that the cement has had a chance to completely outgas before applying the parts. While the ACC should hold well in this application where there is little sheer force, the panels have formed small gaps where the relative difference in the hot/cold expansion rates have loosened the panels.

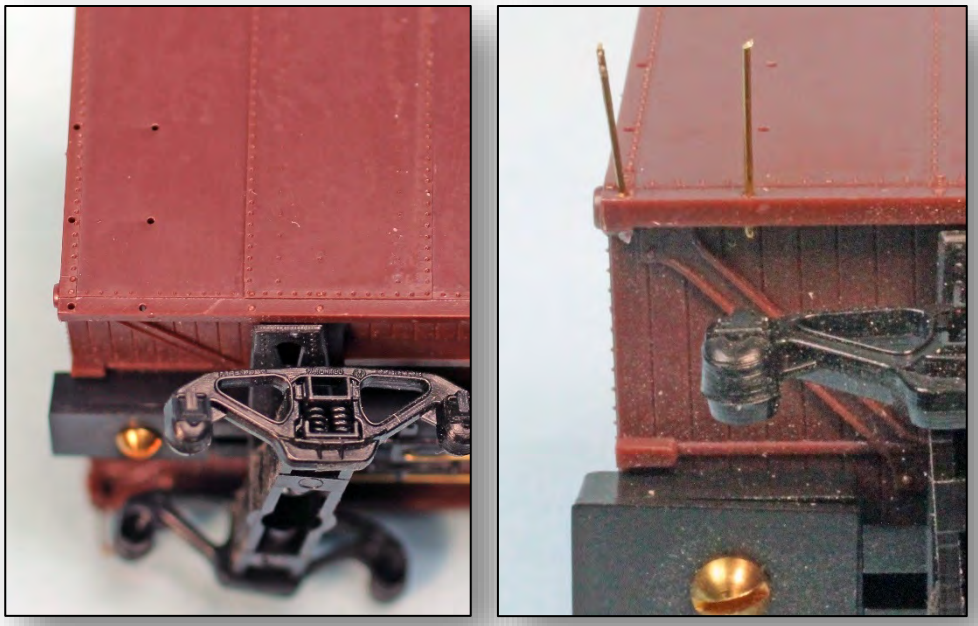
Sill Steps

After applying most of the rest of the kit parts, I wanted to substitute the overly delicate plastic sill steps provided by Red Caboose with some etched brass steps. Usually, I would use steps made by A-Line, but these are applied to the bottom of the sill, and do not have the detail of the step attaching to the car side. Recently, Yarmouth Model Works has released etched brass X29 steps (YMW #209). These steps are highly detailed and require careful assembly, but the final product is very accurate. The car body has holes for mounting the Red Caboose steps. I drilled through the lower holes on the car body with the same #78 bit. 0.012" brass wire was placed in the car body holes and secured with ACC.

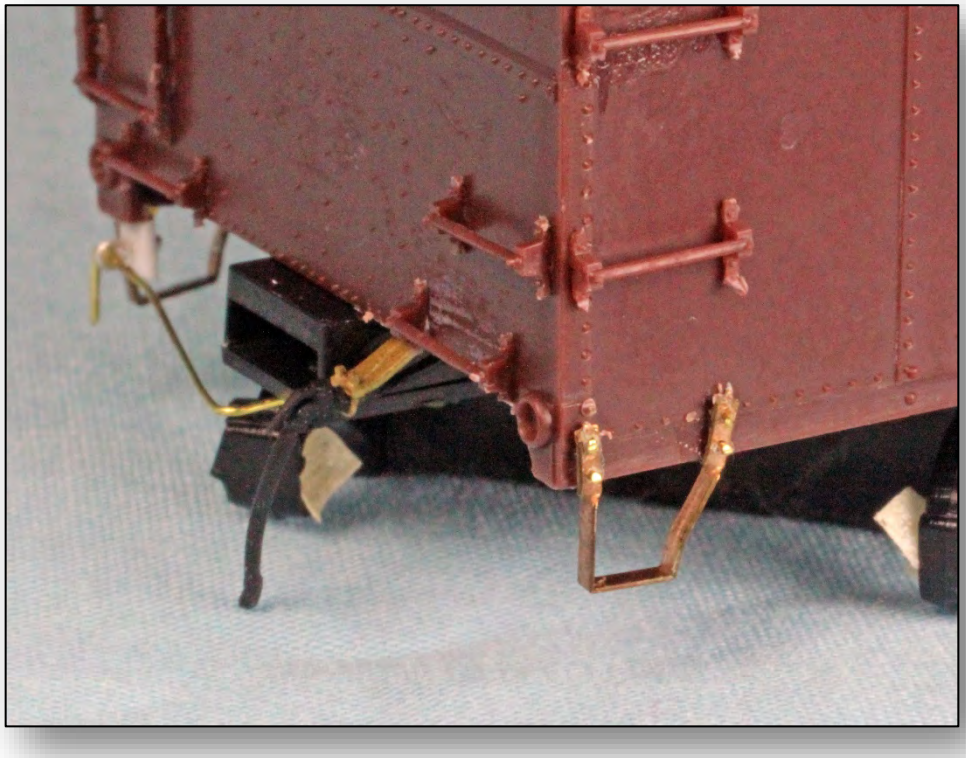
While the steps were still attached to their fret, I drilled the mounting holes out with a #78 bit. If you look carefully, you will see that one "leg" of the stirrup step is longer than the other. This will be the leg towards the center of the car and will have an additional bend. While the steps are still on the fret, mark this end with a marker. The top of the step is twisted 90 degrees from the step part in order to attach properly to the side of the car. To make this twist, I removed the step from the fret and grasped it just inside the drilled holes with a pair of hemostats or needle-nosed pliers. I then grasped the end with a second pair of hemostats/plier and holding both firmly, twisted the end 90 degrees. I repeated this with the other end as well. Then I bent the steps, with the etched lines to the inside of the bend. Grasping the longer leg near the base, I then bent that leg out at a slight angle. This gives the leg a vertical base and slanting upper portion. Finally, I bent the very top portion, with the holes back upright to parallel the other leg to duplicate the look of the inner leg of the step on the prototype. I then test fit the steps over the wires that were mounted in the car side. I adjusted the steps as needed to keep the attachment parts vertical on the car side. Once everything looked appropriate, I tacked the steps to the pins and body with some ACC. Then I drilled #78 holes through the body using the upper holes in the step as a guide. On the left side of the body, 0.012" brass wire was inserted to "pin" the steps to the body and secured with ACC. On the right side, a Tichy drop grab iron was used instead. Once the ACC was dry, the pins were cut nearly flush with the step, but left slightly proud to represent the bolts that secured the step to the carbody. The pins were cut flush with the inside of the carbody. One note here: Drilling through the etched patch panels was not easy. I made sure to use a sharp bit, made sure to lubricate it frequently with candle wax and took my time. In addition, it is advisable to strengthen the area where the sill step is bent with a drop of ACC in the bend.

CARMER UNCOUPLING LEVERS

Carmer uncoupling levers were found on many PRR cars including the early X29s. Most modelers assume that "one size fits all" with these levers, but in reality the levers were made of two separate parts, the operating lever, which was the part sticking out towards the side of the car from the pivot, and the lifting lever, which was actuated by the operating lever and "pulled the pin" on the coupler. To add an additional layer of complexity, there were a number of different operating and lifting levers, and they were used in many different combinations. Single piece etched brass Carmer levers have been available from Free State Systems for at least 10 years. Recently, Yarmouth Model Works has released 2 piece Carmer levers. These are available in a range of combinations. In addition, the YMW web site has a usage guide for PRR cars. That guide indicates that the X29 used a #17 operating lever and a #16 lifting lever. The Carmer lever bending guide also available on the YMW web site, indicated that the operating lever was straight, but the lifting lever had a series of bends. I bent the lifting lever according to the diagram. Then I turned to the operating lever. While the lever itself does not require any bends, the end that interacts with the lifting lever must be bent in two places to form a "cup" that holds the lifting lever. I used an Etch Mate tool to help hold the etched part and made the bends with a single edge straight razor. Because there are two bends, you should make the outer one first, then reset the part and make the inner bend. That will bring the part you bent first parallel and above the rest of the letter, forming a cup to hold the lifting lever.



Holes drilled in car side for pins and brass wire pins placed for sill steps.



Brass stirrup step installed with brass pins. The pins have been cut off and represent the attachment bolts.

If the small parts are a little daunting, Free State Systems makes single piece Carmer uncoupling levers in etched brass as well. These pieces come in a number of combination of operating and lifting levers and a bending guide is provided with the parts.

Regardless of the lever selected, it needs to be applied to a pivot point, attached to the car. I happened to have some Carmer pivots left over from Westerfield resin kits in the scrap box, but these can be made from scrap styrene as well. I drilled a #78 hole and placed a piece of 0.015" wire into the hole to serve as the pivot. The hole in the levers was cleared out with the same drill bit and the lever installed on the pivot with ACC once the lever was in the correct position. After the glue was dry, I trimmed the wire close to the lever to represent the bolt holding the lever on.

Brake end view of car with full length patch panel showing Carmer uncoupling lever.

ADDITIONAL DETAILS AND MODIFICATIONS

I modified the brake levers included in the kit to better represent the prototype. To do this, I removed the portion of the hand brake lever between the center sill and the clevis for the hand brake rod. This lever is the one that attaches to the side sill of the car and is farthest away from the brake cylinder. The incredibly fragile brake wheel shaft was replaced with 0.019" brass rod. The kit air hoses were replaced with brass brackets and hoses from Hi-Tech Details. Brass brackets from Precision Scale can also be used. These brake hoses are my standard now, as they are paintable and flexible, making them nearly impossible to break. Install the air hoses after painting as they will accept paint readily. I also substituted brass wire grab irons on the latitudinal running boards since the plastic ones in the kits are so fragile. I use etched eyebolts from Yarmouth (YMW #500) for the corner attachment of these grab irons.

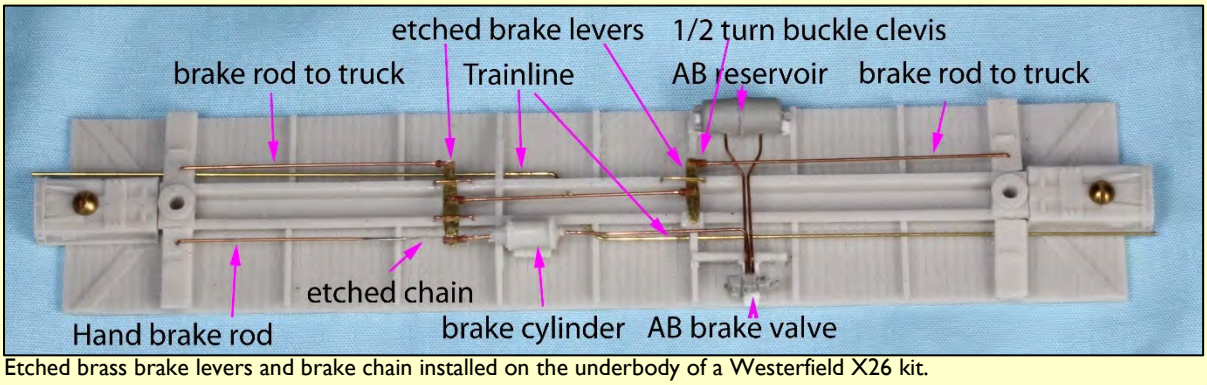
WRAPPING IT UP

With this much brass on the models, I media blasted them with baking soda and then carefully washed them in dish soap and hot water. After the cars were thoroughly dry, I painted them with several coats of my 1940's era freight car color, which is a 50:50 mix of Polyscale Special Oxide Red and Zinc Chromate. Once the paint was dry, I over sprayed with Future, and then decaled with the Speedwitch X29 set. Another overspray of Future to hide the decals was followed by multiple layers of weathering and a final flat finish. Note that the reweigh and truck lubrication dates were masked to provide "new" paint for these areas, and chalk mark dry transfers (Clover House) and decals (Sunshine Models) were added.

The kit after painting, decals, and weathering. The close up shows the re-weigh and lubrication dates masked to look repainted.

More Detail Parts Available

There are even more detail parts available that could be used to upgrade other PRR freight car models. Yarmouth Model Works has released a set of etched brake levers. These can be substituted for the cast resin levers included in many resin kits, or plastic levers in injection molded kits. Because these levers are thinner than their resin or plastic counterparts, they fit easily inside brake rod clevises made from turnbuckles that have been cut in half. A second etched detail part, originally available from Burl Rice and now sold by Wright Trak Models, represents the chain between the brake lever and the hand brake rod. Both taught (applied) and loose brake chains are on the fret. Since these parts are etched from flat stock, they have no detail when viewed edge-on. However, when viewed from the side, they provide a very detailed representation of the brake chain. I have found the easiest method of installation for these to be to solder them to a 0.012" brass wire, which represent the rod to the hand brake. There is a clevis at the other end that attaches to the brake lever where the brake cylinder also attaches. I applied both of these parts to a Westerfield X26 box car.



Etched brass brake levers and brake chain installed on the underbody of a Westerfield X26 kit.

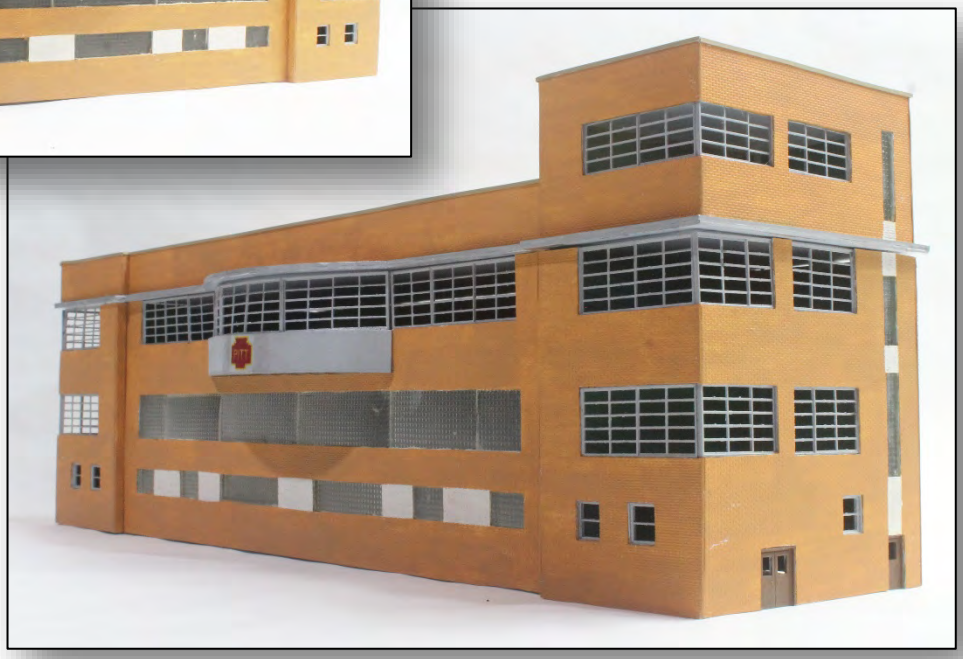
PRRT&HS Annual Meeting Models – Part 1

The TKM Staff

Members of the Society displayed a nice collection of models at the 49th Annual Meeting in Camp Hill May 18-20, 2017. Here, in the first of two parts, are photos of the models taken by the TKM staff on the last day of the meeting. Captions are based on the written descriptions the modelers displayed next to their creations.

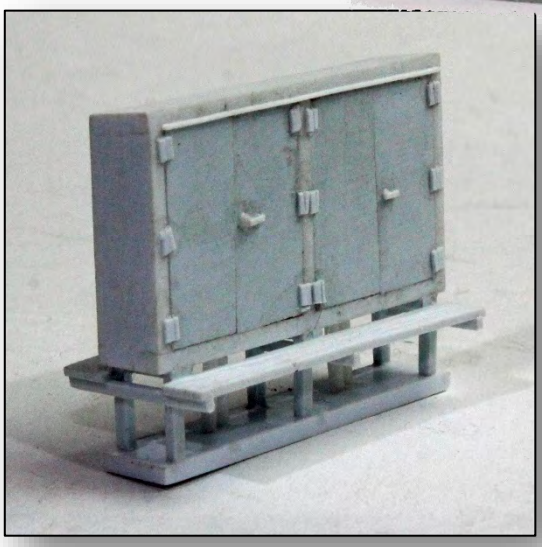
Gus Foster took Best in Show for his scratchbuilt model of the Duncannon, Pa. station as it looked in 1956. He used 0.060" styrene, Holgate & Reynolds brick, RS Laser Kits herringbone brick, Tichy and Grandt Line windows and doors, Bar Mills slate shingles, and other parts. The dentil molding detail is amazing.

The Modeling Committee awarded Rick Glas the Bob Yagodich Award for his assortment of scratchbuilt PRR refers circa 1900. There are one class RA #66953, two RB #67019 and 67128, and two RD /UL #66241 and 66705. He also displayed a Westerfield RF #119724 ca. 12/1904 for comparison. The superstructures are scratch riding on underframes made from two altered Roundhouse diecast pieces. He used Kadee 153 couplers, brake wheels, and ribbed wheels. He used Tahoe arch-bar trucks, Precision Scale brake wheels and chains, and Tichy boxcar door hardware.



Brandon Sliko scratchbuilt this N-scale model of PITT Tower in Pittsburgh as it appeared in the 1950's. He used styrene, modified Tichy windows, and Plastruct doors and windows. He used the online PRR sign maker to create the keystone PITT sign. This is only Brandon's second scratchbuilding effort.

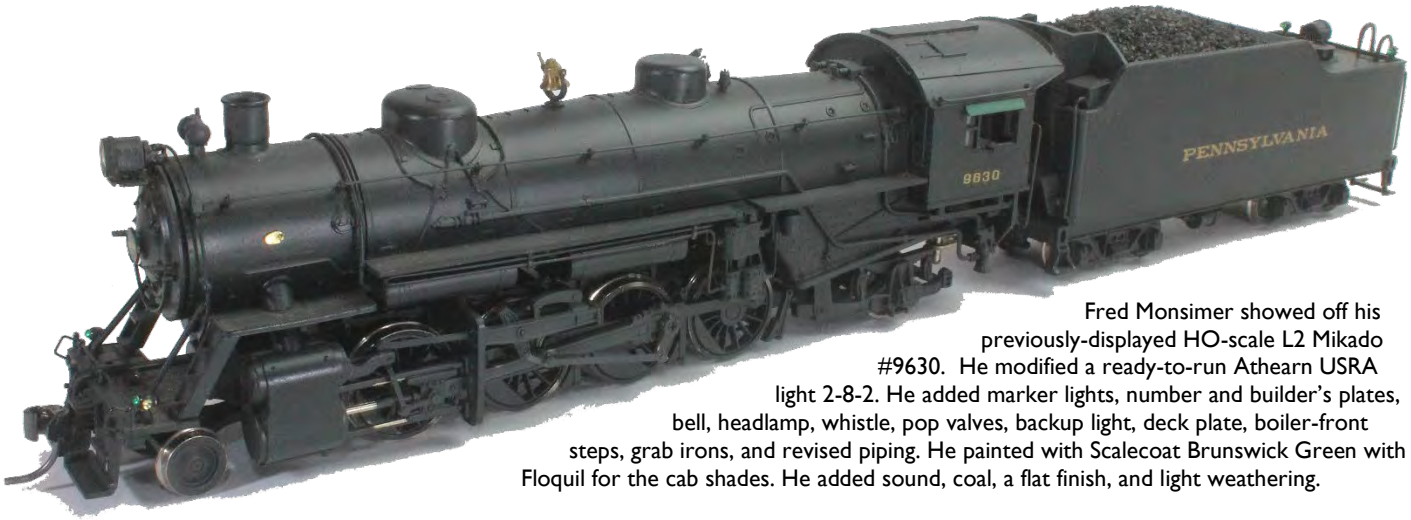
J. M. Johnson scratchbuilt this HO-scale model of DF Tower circa 1951. He used Evergreen styrene and Tichy windows.



Ed Bley scratchbuilt the signal cabinet (left) and the remote interlocking shanty (right) as they would have appeared in the 1950's and 1960's.

R. L. Branin displayed these two beautiful HO-scale Pacifics. The top locomotive is a model of one of two PRR K2SB locomotives featuring 72" drivers as it looked in the early 1930's after the striping was removed. He started with a brass Westside K3SA. He changed or added all the details on the boiler except the steam dome. He gave it a new trailing truck, brakes, cylinder steps, pilot steps, ash pans, and lowered the engine to match the driver height. Decals are Microscale and paint is Tamiya.

His second Pacific is the first K4s – #1737. We saw this work in progress at last year's Annual Meeting. It started as a Pacific Fast Mail/United brass locomotive which he backdated to its 1914 as-built appearance. Among the additions were extended piston rods and accurate 30" pilot wheels. He finished the model with Tamiya paint, custom and Microscale decals. He states he still has some painting ahead plus the motor and gearbox. He adds the side rods are wrong but he hasn't been able to find correct ones.



Fred Monsimer showed off his previously-displayed HO-scale L2 Mikado #9630. He modified a ready-to-run Athearn USRA light 2-8-2. He added marker lights, number and builder's plates, bell, headlamp, whistle, pop valves, backup light, deck plate, boiler-front steps, grab irons, and revised piping. He painted with Scalecoat Brunswick Green with Floquil for the cab shades. He added sound, coal, a flat finish, and light weathering.

Francis Treves modeled E6s #3412 in N-scale as it looked in the late 1940's. He kitbashed the mechanism from a Mini-Trix K4s, shortening the chassis and removing a driver. He shortened the pilot truck and modified the length of a Shapeways tender. He kitbashed the boiler from the K4s, added a smokebox door from a Kato L1s, added a Shapeways cab and a sand dome. The firebox came from the L1s. Added details included marker lights, working headlights from an L1s conversion kit, wire piping, brake shoes, pewter air pump, bell, generator, and whistle deflector. Paint is Floquil acrylic and decals are by Microscale.

Claus Schlund built this N-scale N2sa Santa Fe as it looked in 1929 starting with a Bachmann USRA 2-10-2. He added a Belpaire firebox, rebuilt the pilot, replaced the running boards, and modified firebox front. He finished with DCC, sound, paint, and decals.

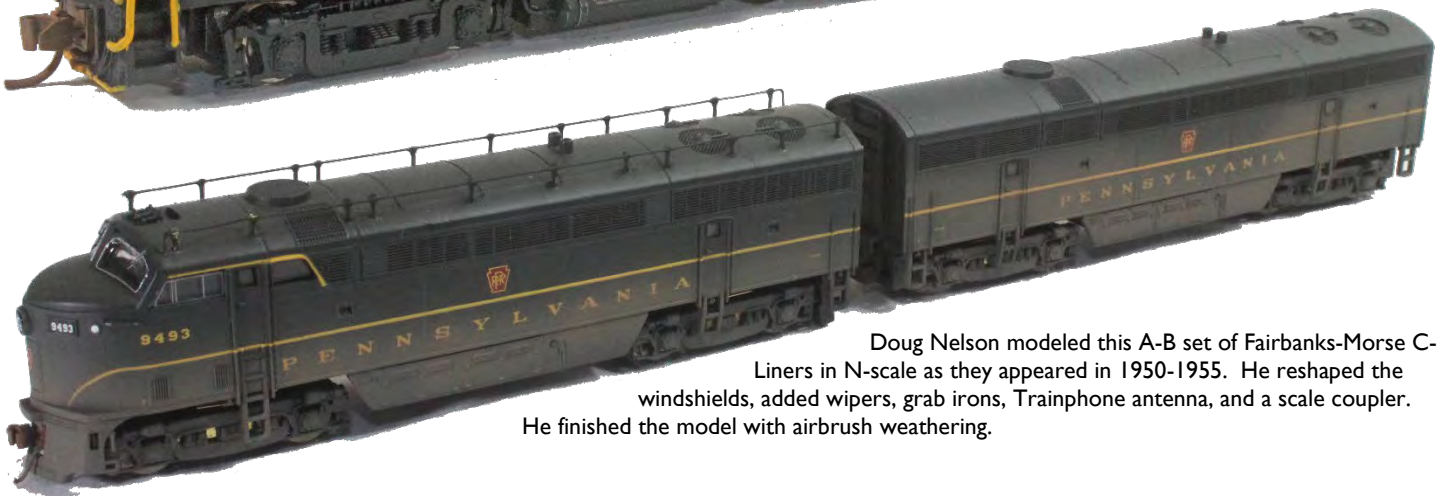
Matt Hurst displayed HO-scale T1 #5536. This T1 retained its as-built front end until September 1948 – the last one. He started with a Broadway Limited Imports model, added an antenna loop under the tender skirts, water heater shroud, supports, and rails, cut levers, great-looking diaphragms, and figures. He installed a coal load and water pools on the tender. Enginehouse assignment details are on the pilot. Weathering is using chalk.

David Wilson brought three HO-scale steam locomotives to the Model Room this year. From the top are D16SB #1046, G5s #3109, and T1 #5544. They are painted with Floquil Brunswick green, Floquil Zinc Chromate primer, Floquil earth, Floquil grimy black, and Wilson's Modelworks decals. The T1 has Microsoft stripes and keystone.

Ron King brought this A-B-A set of passenger EMD passenger diesels. The two E8A and one E7B are shown as they looked in the mid-1950's Tuscan red and buff lettering scheme. Ron added Trainphone equipment, air hoses, windshield wipers, and crew. He added number board decals and weathered with air-brushed Floquil.

Buzz Burnley showed this impressive 2-rail O-scale Pennsylvania-Reading Seashore Lines EMD GP38. The kitbash was made from a Weaver GP38-2 by extending the cab a scale 12", removing the dynamic brake blister and fan. He added MU hoses, a brake hose, MU connections, fuel fill pipe, and speed recorder. He painted the model in Floquil Brunswick green then lettered with Champ and Microscale decals.

Francis Trevey modeled PRR's only hammerhead RS-3 in N-scale as it looked in the 1950's. He started with a Kato RS-3 and made multiple prototype-specific modifications.



Doug Nelson modeled this A-B set of Fairbanks-Morse C-Liners in N-scale as they appeared in 1950-1955. He reshaped the windshields, added wipers, grab irons, Trainphone antenna, and a scale coupler. He finished the model with airbrush weathering.

Also in N-scale are William C. Lewis's models of Alco PA #5752A, PB #5750B, and PA #5758A as they looked in York, Pa. in January 1961 at the north end of Windsor Yard. William writes of the photo that was his inspiration, "This was from what could have been termed a 'one-in-a-million' photo in that the lead unit is a 'one-of-two' such painted units, the B unit is 5758B, a 'one-of-one' painted unit, and the rear A-unit #5752 is a 'one-of-the-remaining eight' A units. Question – did the paint shop crew not see the 'lettering, striping, and painting diagram here? Check the positions of the roof fan and the shaded keystone."

Francis Treves created this set of N-scale BP-20 passenger sharks as they looked hauling the *Trailblazer* and *Jeffersonian*. He kitbashed the chassis from a Life-Like Products DL-109. For the bodies he used four BF-16 freight shark bodies sanded smooth with built-up details. He used many detail parts. The paint is Polly Scale acrylic Brunswick green with Microscale decals.

Mike Crosby brought this HO-scale model of class OEW330A #4663 as it looked in 1941 on the Grand Rapids & Indian Branch. He built an interior for the passenger section. He added seats, floor treatments. He used Badger maroon Tuscan oxide red for the window band and Badger light Tuscan oxide red, and Scalecoat II black. He used PRRT&HS streamlined paint decals.

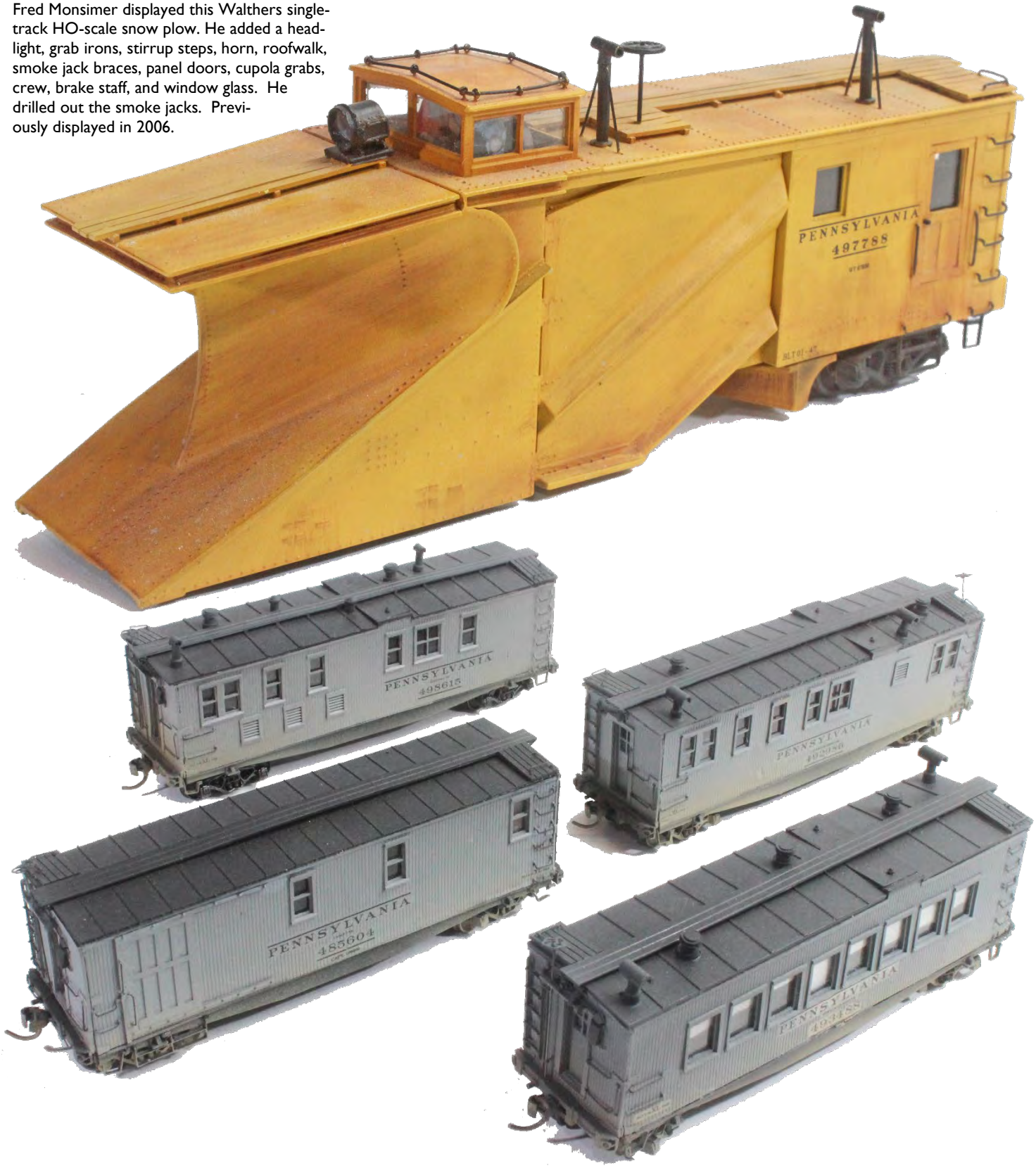
Claus Schlund displayed this N-scale N6B cabin car. He admitted, "I did very little work on this brass model – new trucks, paint, decals, window glazing."

These cabin cars are by Francis Treves. The N5C cabin cars are Gloor Craft kits with various paint schemes. The N6B is a Train Cat kit.

These are also by Francis Treves in N-scale. The N8 is a Key Imports model with extra details. The N5C is a Gloor Craft kit. The three N6B are also Gloor Craft kits.

Edward Bley built these three HO-scale GPA ballast hoppers from Funaro & Camerlengo kits as they looked in the 1960's.

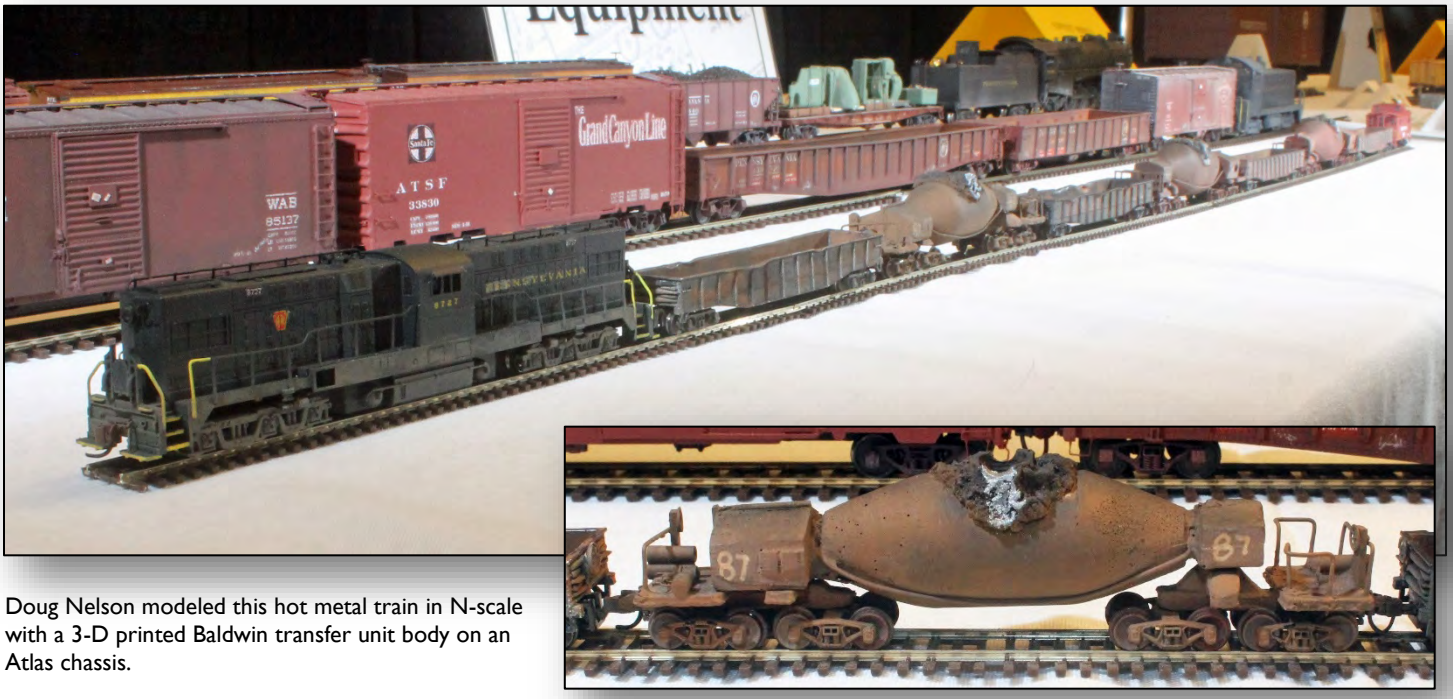
Fred Monsimer displayed this Walthers single-track HO-scale snow plow. He added a headlight, grab irons, stirrup steps, horn, roofwalk, smoke jack braces, panel doors, cupola grabs, crew, brake staff, and window glass. He drilled out the smoke jacks. Previously displayed in 2006.



David Wilson brought this collection of HO-scale camp cars built from Westerfield kits. He built and painted them to represent the camp train in Pitcairn Yard in 1948. He painted them with Floquil and Tamiya paints, weathered with earth on the wheels and trucks and grimy black overall.

Jim Stapleton, Mark Layton, and Ryan Bednarik brought a collection of Gauge 1 (1:32 scale) locomotives and cars. Most are electric, but some were live steam. The K4s, T1, and GG1 were hard to take our eyes off of.

Full freight trains are great to look at, but challenging to photograph for TKM. Bill Neale displayed the steam train as "Extra 8098 West". It features N2SA #8098, a Westside brass model with a Tsunami sound decoder, and a train of Westerfield, Funaro & Camerlengo, Red Caboose, Intermountain, and Bowser cars. It represents a Panhandle Division freight in 1939. J. M. Johnson brought the HO-scale local freight led by an EMD switcher circa. 1952.



Doug Nelson modeled this hot metal train in N-scale with a 3-D printed Baldwin transfer unit body on an Atlas chassis.

Fun with Photoshop Elements – Near the end of his HO-scale Willsburgh Division layout, Tim Garner stages a scene of an L1s and a K4s helping a T1 move a passenger train upgrade as was a frequent occurrence on Horseshoe Curve in the mid-to-late 1940's. To make up for the lack of scenery beyond the edge of the layout in the upper right, he deleted the background in the upper left and inserted a landscape image he found on Google. He painted in smoke and steam with the paintbrush tool. The L1 is a PFM brass model. The K4s and T1 are by Broadway Limited Imports.