The Keystone Modeler

Pennsylvania Railroad Technical & Historical Society

No. 114 Autumn 2020

Inside:

The Keystone Modeler
Pennsylvania Railroad Technical & Historical Society

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FRONT COVER

(Top) BLI's new streamlined K4s in dark green locomotive enamel. *(Tim Garner photo)*

(Middle) Doug Nelson's kitbashed X42 mail storage car in N scale. *(Doug Nelson photo)*

(Bottom) BLI's Phase II EMD F3 A-unit shows of its blunt end. *(Jack Consoli photo)*

The Keystone Modeler

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The pandemic has caused many of the events which we like to attend to be cancelled. As a result, virtual, on-line events have become part of the "new normal." For example, the NMRA's national convention this past summer was virtual, a virtual Naperville RPM was held, three virtual RPM meets were sponsored by a group under the title of *Hindsight 2020*, and a virtual PRR Day was hosted by PRRT&HS in early November.

These sorts of activities are great in that we can see presentations that are as stimulating as the ones we would attend at a meet. Our feelings of isolation are decreased, and we may feel more motivated to build a kit or work on our layouts. All this is good.

What is missing, of course, is the fellowship of being together. I can't go out for a beer or a coffee or have dinner with one of the other attendees to talk over what we just experienced. There are no vendors in a nearby room to tempt me with their wares. There is no model room to look over, in person, what fellow modelers brought to the meet. I miss those aspects of actual RPM meets, and so I continue to look forward to the time when we can again have an actual meet.

In this issue of *TKM*, Tim Garner presents a review of the BLI streamlined K4s and a simple fix for a BLI GG1 coupler height issue, Doug Nelson describes his N-scale kitbash of an X42, and Jack Consoli reviews the BLI F3.

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:

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McVeytown, PA 17051

The Keystone Modeler
NEWSWIRE
With Steve Hoxie

PRR Product News

BOWSER MFG.
https://www.bowser-trains.com/

Like many manufacturers, Bowser experienced a severe disruption to their production schedule. From their website, "This has been a long and expensive process, but we have turned a corner. Products are beginning to flow. We expect 2020 to be a great year with many long-awaited projects seeing completion, we appreciate the patience our customers have shown." Watch their website for information as they update it.

PRR F30A Flat Car—HO Scale

(Bowser Artwork)

The latest run of this popular **Bowser** flat car is now expected late in 2020.

PRR GLA 2-Bay Hopper Car—HO Scale

(Bowser photo)

This run of the popular and essential RTR HO GLA from **Bowser** is expected to be available late in 2020.

BLUFORD SHOPS
http://bluford-shops.com/
PRR H31C 2-Bay Hopper—N Scale

(Bluford Shops Artwork)

Bluford Shops is now expecting this hopper in the 1st Quarter of 2021.

BROADWAY LIMITED IMPORTS
http://www.broadway-limited.com/
PRR P70 Passenger Coaches – HO Scale

BLI is producing another run of the always popular P70 coach in several paint and lettering schemes. Models will be offered without air conditioning in 1931-1937 and 1939-1941 schemes. The 1945-1948 scheme will be offered on air-conditioned cars, class P70R. Delivery is expected in November 2020.

RAPIDO TRAINS
https://rapidotrains.com/
PRR X31A Boxcar—HO Scale

(Rapido photo)

In the last issue we reported that **Rapido** had announced that they will be producing the X31A round roof boxcar in both single door and double door versions. Now an ordering and production schedule has been established. The Order Deadline is now November 16, 2020, with delivery expected during Winter 2021. First sample models have been received and are currently being evaluated. Below are the preproduction models, hand painted by **Rapido.**

Additional photos of the preproduction samples are available on the **PRR** email list on groups.io at https://prr.groups.io/g/PRR/album?id=255538 .

PRR F30A, F30D, and F30G Flatcars – HO Scale

(Rapido photos)

In November, Rapido announced multiple classes of the F30 flatcar in multiple PRR schemes, plus Trailer Train, Lehigh Valley, Penn Central, and Conrail MOW. Each variation will have appropriate trucks. The web site shows each variation is available in 6-packs with unique numbers and single cars and may be pre-ordered from Rapido.

SCALETRAINS.COM
https://www.scaletrains.com/
PRR EF-36 (EMD SD45) Diesel Locomotive—HO Scale

(Scaletrains photo)

The Rivet Counter version of the **Scaletrains** SD45 is now in stock.

THE COACH YARD
http://www.thecoachyard.com/
PRR 1941-1968 Clocker Sets – HO Scale

(BrassTrains.com image)

On the hour, every hour. Although the announcement hasn't made it to **The Coach Yard's** website yet, BRASSTRAINS.COM has announced this project. Representative consists, sold as six car sets, as well as individual cars will be available for the 1941-1948 era as well as 1952-1968. Cars offered will be combines, coaches, parlor cars, and club cars. Models will be factory painted and lettered. An availability schedule has not been announced. Complete listings are available at:
https://www.brasstrains.com/NewBrass/Trains/Projects/1992/1941-1968-PRR-Clockers?showsold=True

Upcoming Events

In the ongoing saga of how we are dealing with pandemic issues, I would like to reiterate the opportunities available to interact with one another in new ways. Some folks in the prototype modeling community have gotten together and created a Virtual Railroad Prototype Modelers meet. An email group has been established for sharing information. If you have an interest in learning from others or acquiring prototype information, I encourage you to join the group, just a couple of clicks away from our **https://prr.groups.io/g/PRR.** Since these meets are digital, it is a relatively simple process to post presentation materials afterward for all to use and study at leisure.

The Files section of the Hindsight group at **https://groups.io/g/Hindsight2020** is being used for this. Future events will be publicized here, too. Also, plans for a virtual PRRT&HS "PRR Day" on Nov. 7 are well along. See below. And more, the NMRA has been doing virtual clinics live on Facebook, after which the presentations are archived on YouTube. See **https://www.youtube.com/c/NMRAORGModelRailroading .**

October 30-31, 2020 Naperville, Illinois **CANCELLED**
Chicagoland Railroad Prototype Modelers Conference
http://www.rpmconference.com/

November 7, 2020
Virtual PRR Day
https://auburn.zoom.us/meeting/register/tJUodeqsqTkjGNH5LMznLPfVqTrdrvt6Xt13

Advance Planning

January 2021 Cocoa Beach, Florida **CANCELLED**
Prototype Rails RPM
http://www.prototyperails.com/

Model Review: The Broadway Limited Imports Streamlined K4s in HO-Scale

By Tim Garner – photos by the author unless noted

Broadway Limited Imports has introduced an HO-scale model of this unique Raymond Loewy-streamlined K4s in three prototypical paint variations.

In the middle of this pandemic-tinged year, Broadway Limited Imports delivered its long-promised HO-scale model of one-of-a-kind, Raymond Loewy-streamlined, K4s #3768.

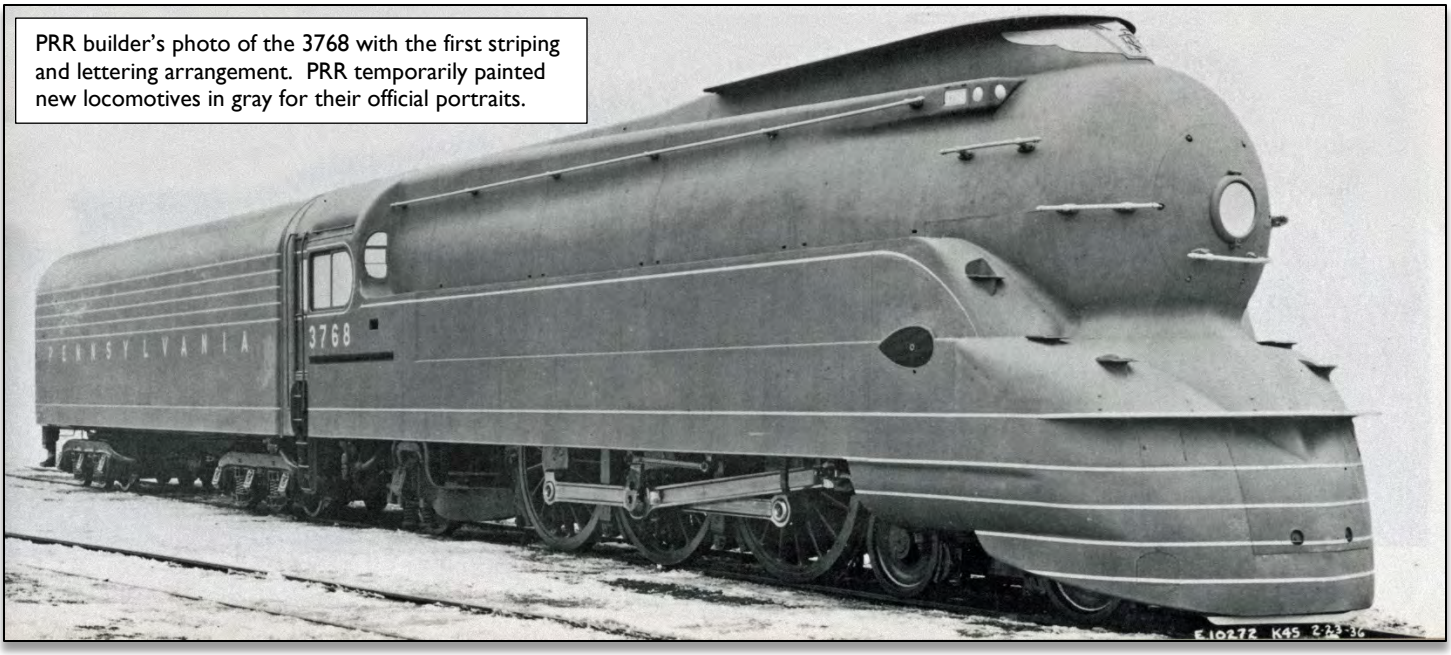
The Prototype

The Pennsylvania Railroad completed #1737, its first K4s 4-6-2 Pacific passenger locomotive, in May of 1914. It would be the first of an eventual fleet of 425 fast passenger locomotives, the last completed in May of 1928.

During the Great Depression years of the 1930's, streamlining caught the fancy of the public. Automobiles, appliances, and railroad equipment appeared with smooth surfaces and rounded lines that implied modernism and speed. PRR caught the bug and hired industrial designer Raymond Loewy to bring streamlined styling to its equipment. One of his earliest PRR projects was the redesign of riveted GG1 electric locomotive 4800 into the sleek, welded five-stripe masterpiece its successors became. The first production models arrived in April 1935.

PRR wanted to apply a streamlined redesign to some of its K4s locomotives and asked Loewy to take it on. Locomotive #3768 was chosen to become the prototype. This engine was built in the Juniata Shops at Altoona in June 1920 with construction number 3721. In his book, *Industrial Design* (The Overlook Press, ©1979), Loewy related this story about the project.

> *"When the Pennsylvania Railroad asked me to prepare a design for the K4s steam locomotive, I suggested to my friend, chief engineer Fred Hankins, that we should pay attention to aerodynamics and try for reasons of safety to develop a system to lift the smoke over the top of the engineer's cab. The K4s was not to be just another locomotive; I wished to make some basic improvements, and he agreed to help me.*
>
> *"In order to find out exactly what happened to the air stream at speeds often above one hundred miles per hour, I suggested that I be allowed to ride in the cab of a speeding locomotive. Hankins arranged it, and I was given authorization to ride a stretch between Chicago and Fort Wayne, where the tracks were on a straight line. It was late fall and I wore a warm sweater, a fur-lined anorak, tweed cap, goggles, and heavy gloves. During the ride I held a short stick, like a bandleader's baton, to which a white ribbon was securely attached. With a good grip on the forward handrail, I moved the stick in the other hand in all directions and watched the ribbon behave in the airstream: a pattern became discernable.*



PRR builder's photo of the 3768 with the first striping and lettering arrangement. PRR temporarily painted new locomotives in gray for their official portraits.

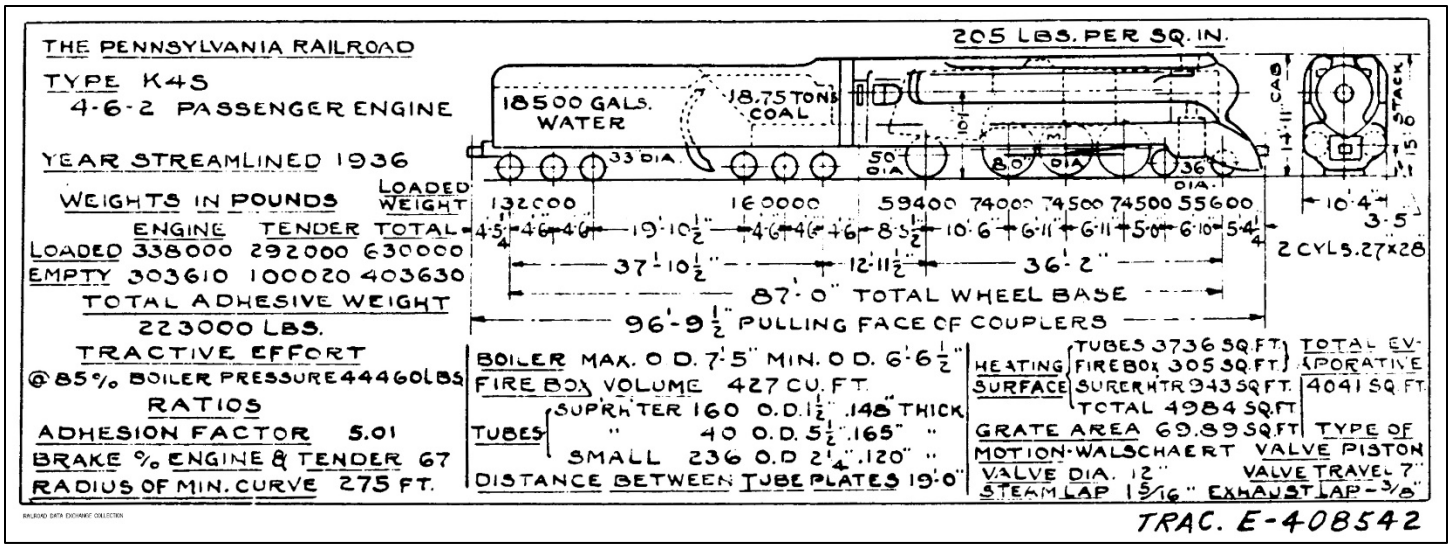
"This was most instructive, and when I got off at an intermediate stop, I had plenty of interesting data about air turbulence at high speeds and how to catch a cold in a few minutes! I rejoined the engineer and fireman in the cab up to Fort Wayne and made another discovery about locomotives – there are no toilets!

"In New York we started a scale clay model of a new steam locomotive. I had a hunch that a flat plane placed forward atop the locomotive, immediately behind the smokestack and flush with it, might help. By giving this plane a slightly streamlined configuration, like an airplane wing, it would create at high speed a depression over the engine and lift the smoke over the cab, improving forward vision of the track.

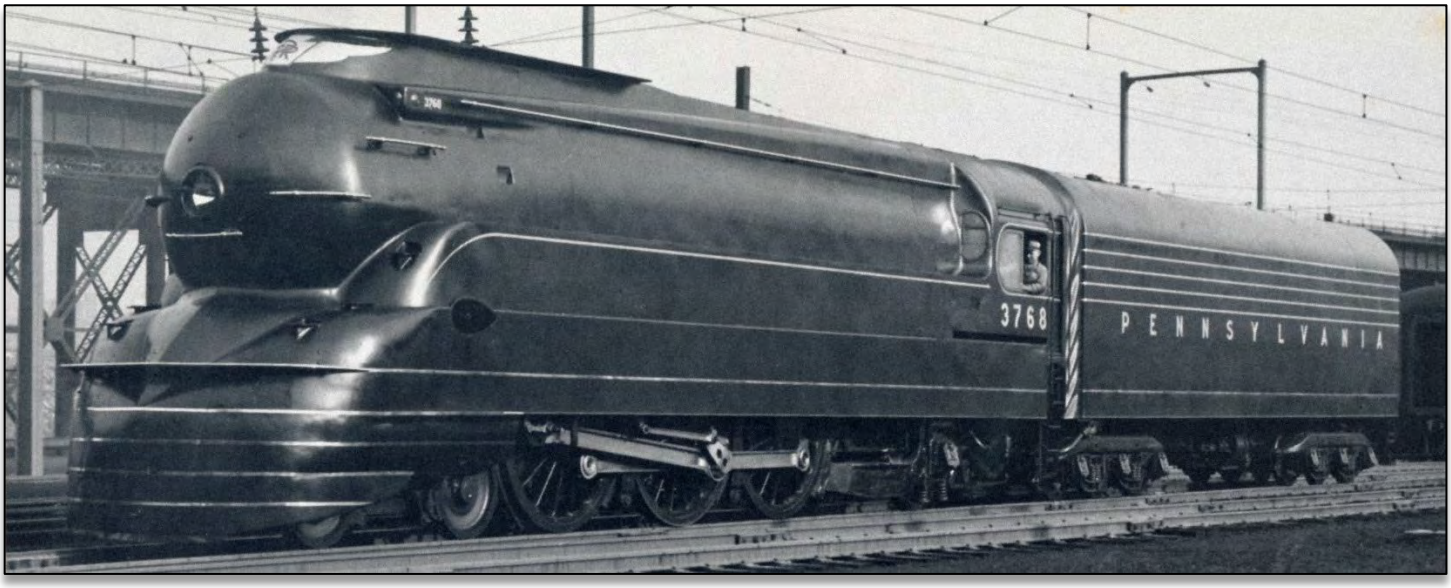
"Hankins went along with the idea and it worked."

The railroad performed wind tunnel tests that showed streamlining reduced wind resistance by 33 percent and added 300 horsepower to the locomotive when running directly into headwinds. Unfortunately, PRR also learned streamlining had no benefits regarding crosswinds and tailwinds which were more common. The road dropped plans to streamline a fleet of locomotives and only 3768 received this design.

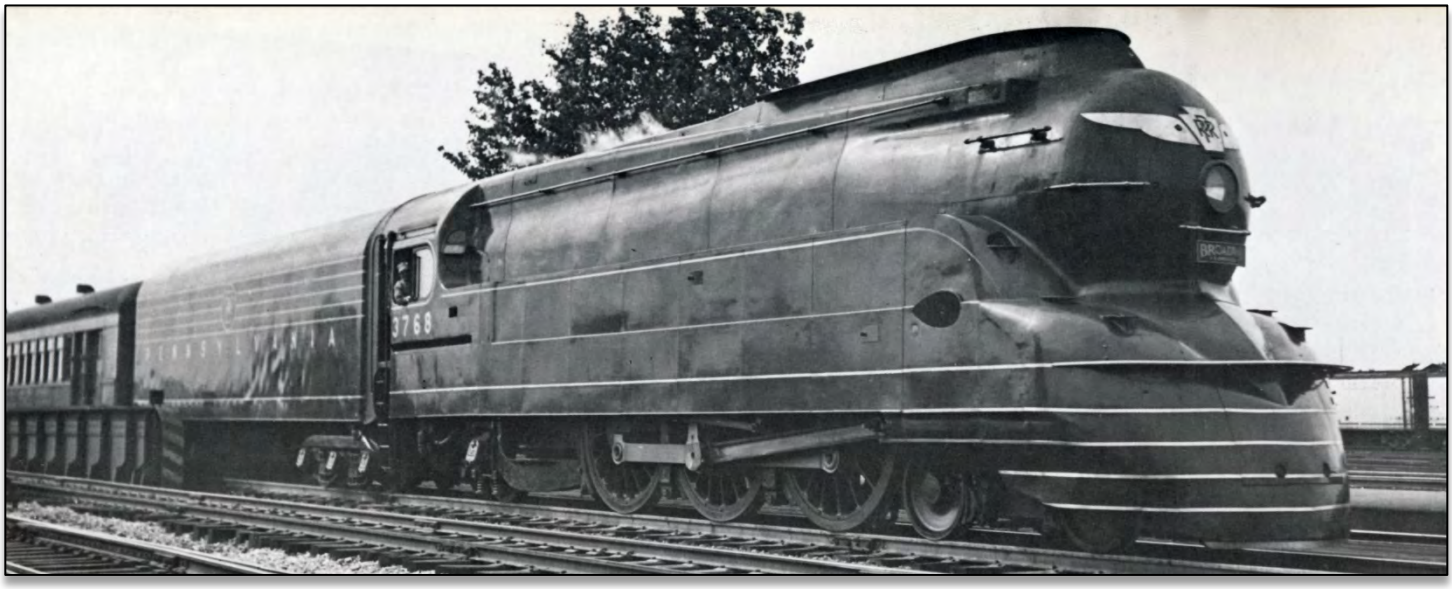
Part of the streamlining job was fitting the K4s with a larger tender. The tank selected was PRR's first tender with six-wheel trucks. It was built in 1927 as class 180F82 and was paired with an I1s 2-10-0 Decapod. For the K4s, the shop changed the tender's deck height, and added a streamlined shroud. Given class 180P75, the capacity was 18,000 gallons of water and 18 tons of coal. On the locomotive, the Duplex stoker was replaced with a Standard HT model.



Arrangement drawing with data for K4s #3768. *(Robert Schoenberg, http://prr.railfan.net)*



PRR publicity shot of #3768 in Philadelphia in the original bronze paint scheme. The winged monogram is on the stack and there is no keystone on the tender.



Here #3768 is hauling the eastbound *Broadway Limited* at Englewood station outside of Chicago in August 1938. The locomotive has the second lettering arrangement with the winged monogram on the bullet nose and a monogram in a circle on the tender. A *Broadway Limited* train sign is below the headlight. *(H. K. Volrath photo)*

The locomotive performed during the railroad pageant at the 1939 New York World's Fair. Due to color shifts in the original transparencies, it's difficult to see if the locomotive is bronze or dark green. *(Library of Congress, Gottscho-Schleisner Collection)*

Doors placed on either side of the cab allowed a flexible curtain to fill the space between the cab and tender. This gave the locomotive a smoother appearance and prevented exhaust from entering the back of the cab.

As initially fitted, the locomotive was painted a bonze color. Striping on the pilot and along the bottom of the skirting was 1" wide stainless steel. Striping along the running boards, around the cab windows, along the top half of the tender was gold leaf as was the Futura lettering. A winged stainless-steel keystone monogram was placed on the front of the stack. The letters and border of the keystone were Tuscan red. Handrails were stainless steel. This scheme was modified twice. First, the winged stainless keystone was moved from the stack to the bullet nose immediately above the headlight – a big improvement in visibility. A keystone monogram in a gold circle was added on each side of the tender in red with gold leaf letters and border. The third modification changed the bronze paint to dark green locomotive enamel.

PRR crews began calling the locomotive "torpedo".

PRR put the flashy locomotive on display in many cities across the system and photographed it at the head of important trains. It pulled the *Broadway Limited* out of Chicago on June 15, 1938 on its initial run as a streamliner. It was shot at the head of the "*Spirit of St. Louis"* on January 15, 1939 with the first passenger train to cross the St. Louis Municipal Bridge over the Mississippi River. It was on display at the 1939 New York World's Fair and participated in the live pageant.

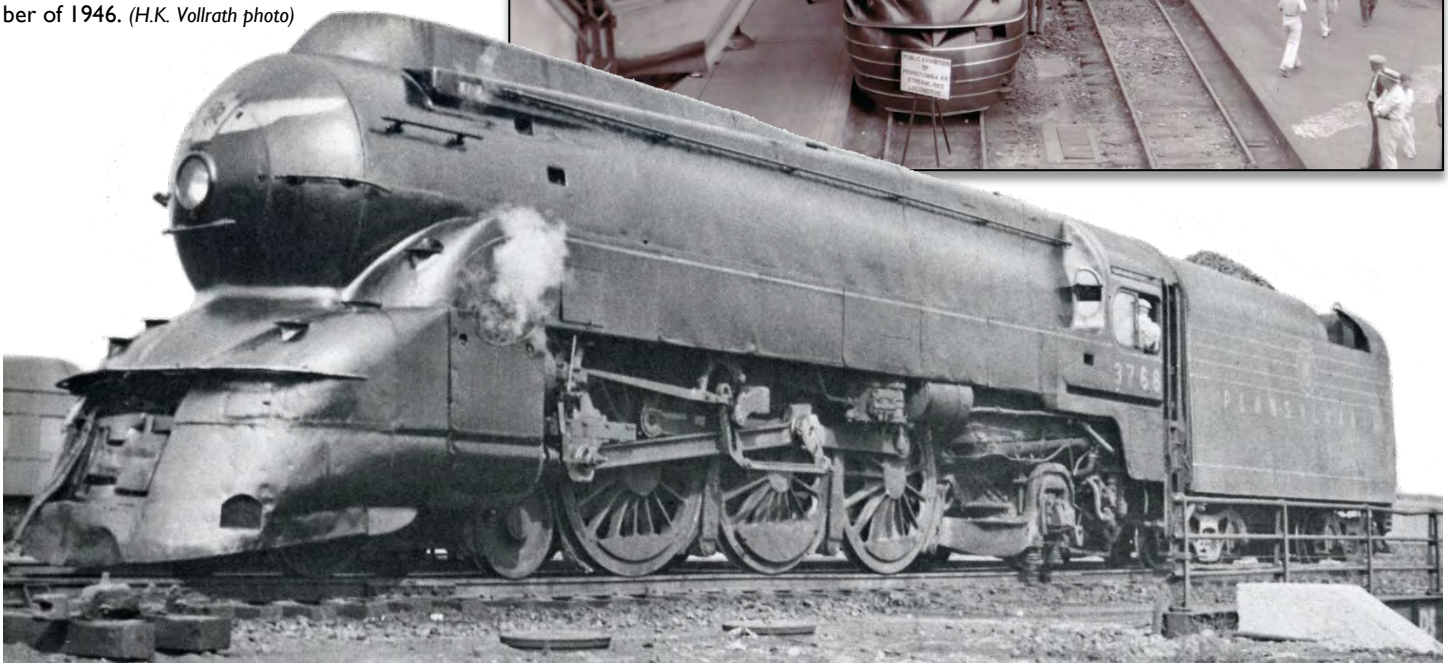
By September 1946, 3768 appeared with a shorter streamlined tender on two four-wheel trucks. The flat fin around the stack was gone. To ease maintenance, the skirting over the running gear had been removed. A later image shows the bulbous housing over the pilot and cylinders gone. After being swapped out, the original twelve-wheel tender was de-streamlined and assigned to an I1sA.

The simpler streamlining applied to K4s locomotives 1120, 2665, 3678, and 5338 in 1940 to haul the *Jeffersonian* and the *South Wind* avoided the maintenance access issues of Loewy's design.

All five streamlined K4s locomotives were ordered to have their streamlining removed in late 1948 after diesels had taken over all main line passenger trains. K4s #5338 managed to keep hers until it was retired in 1955. When K4s 3768 was dropped from the roster in October 1953, it was again a conventional K4s.

▶ K4s #3768 is on display on track 28, the lower level of Union Station in Washington, D.C. in June 1936. GG1 #4874 is on display on track 29. The sign in front of the "Torpedo" reads, "Public Exhibition of Pennsylvania R.R. Streamlined Locomotive". *(Bob's Photos)*

▼ Near the end of its life as a streamlined locomotive, #3768 received a shorter streamlined tender and the skirting was removed over the running gear. Here she is in Chicago in September of 1946. *(H.K. Vollrath photo)*



Item #4432, K4s #3768 in the as-built bronze scheme with high-mounted keystone monogram. Note the boiler and deck plate are level and the stripes and tops align from engine to tender. *(Broadway Limited Imports photo)*

Item #4433, K4s #3768 in the second paint scheme with bronze paint, nose-mounted keystone monogram, and tender keystones. Note the boiler is dipping toward the cab. The deck plate is angled up and the stripes and tops do not align from engine to tender. *(Broadway Limited Imports photo)*

Item #4434, K4s #3768 in the dark green locomotive enamel scheme. Here again the boiler is dipping toward the cab. The deck plate is angled up and the stripes and tops do not align from engine to tender. The model I purchased also had this flaw. *(Broadway Limited Imports photo)*

THE BLI MODEL

Broadway Limited Imports offers its new model in five variations:

- #4432 – Bronze with the high mounted keystone
- #4433 – Bronze with the low-mounted keystone
- #4434 – Dark green with the low mounted keystone
- #4435 – Bronze unlettered
- #4436 – Dark green unlettered

BLI's suggested price is $549.99. I purchased the dark green lettered version at Trainworld for $359.99.

On its web site, BLI describes the features this way:

Physical and Mechanical Features

- New Paragon3 sound and operation system featuring Rolling Thunder™ with authentic sounds and prototypical operation in both DC and DCC environments
- Synchronized puffing smoke with chuff sound
- Variable puffing smoke intensity and timing
- Integral DCC decoder with back EMF for industry best slow speed operation in DC and DCC
- Precision drive mechanism engineered for continuous heavy load towing and smooth slow speed operation
- Powerful high torque motor with fly wheel
- Premium caliber painting with authentic paint schemes
- Prototypical light operation with golden white LED headlight, rear light
- Factory installed engineer and fireman figures
- Near-brass caliber detail at a plastic price
- Die cast body with heavy die cast chassis for maximum tractive effort
- Metal Kadee-compatible coupler
- Separately applied handrails, ladders, whistle, and brass bell
- Operating cab roof vents (not on this model)
- Will operate on code 70, 83, and 100 rail
- Recommended minimum radius: 18 inches

Sound Features

- Operates in DC and DCC (use DCMaster for DC sound)
- Record and play operation – records and plays back sounds and movements once or repeatedly for automatic operation
- 16-bit sample rate for exceptional high frequency sound clarity
- Playback whistle for multiple whistle lengths and patterns
- Choice of three selectable whistles
- Alternate whistle / horn where applicable for locomotive with air horn and steam whistle – both the main whistle and alternate can be easily played
- Adjustable bell ringing interval for faster or slower bell

- Numerous user-mappable functions with available keys
- Johnson bar or power reverse sound at direction change
- Passenger station ambient sounds – controlled with function key
- Freight yard related radio chatter – controlled with function key
- Lumber yard ambient sounds – controlled with function key
- Farm related radio chatter – controlled with function key
- Crew radio communications – controlled with function key
- Maintenance yard related radio chatter – controlled with function key
- Demo mode for display and demonstrations
- Grade crossing automatic signal
- Simple programming with integral DCC decoder
- Automatic forward / reverse signal – when activated, stopping triggers and stop whistle toot. When moving forward from a stopped position, toots twice. When moving in reverse, toots three times.
- Chuff sound intensity varies with load
- Individually adjustable sound volumes for most effects

None of the radio chatter sounds are appropriate for this locomotive since it was never equipped with a radio.

The locomotive is packed with the engine coupled to the tender, wrapped in clear plastic sheet. This is placed inside a folding vacuum-formed clear plastic piece which slides in a clear plastic sleeve. The sleeve is surrounded by gray foam within a long box. Packed with the locomotive are a black funnel for smoke fluid, a small zip-lock bag with two spare traction tires and a side rod wrench, an exploded view drawing, a 1-year warranty statement, and a Paragon3 manual.

Front and back of the dark green version. The painting and details are well done, though it looks like a rung of the tender ladder is missing. The headlight and markers on both the engine and tender are lighted when the headlight is turned on. According to PRR rules, the red markers would only be on if that end of the locomotive was the end of a train, and only at night. The lettering, badge plate on the tender cistern and badge plate on the tender frame are well done. All appropriate conduits, piping, and railings are present.

This is the back of the cab and the front of the tender. The cab includes two seated crew members. They are not dressed like a train crew, though. There are some cab interior details. Like BLI's conventional K4s models, the engine and tender are connected by a press-fit drawbar and an 8-pin JST wire harness.

Designing the packaging with to contain the locomotive coupled and plugged to the tender should help preserve the wiring harness. If you plan to take your locomotive to a club layout occasionally, you won't need to disconnect the locomotive from the tender when packing and unpacking.

The engine has some heft thanks to diecast bodies for the engine and tender and diecast chassis for both. It weighs 1 lb. 12½ oz. By comparison, BLI's most recent re-issue of the pre-war K4s weighs 1 lb. 7¼ oz. The rear drivers are equipped with traction tires.

The prototype had a swing-out coupler behind the pilot shroud. BLI chose not to model this, but I have yet to see a photo of the engine used with the coupler extended. Chrome plated rods add additional flash to the model.

The painting and lettering look neat and accurate, though the gold and silver paint are not as bright or reflective as gold leaf and stainless steel would have been. BLI continues to get PRR dark green right on steam locomotives to my eyes. BLI has chosen a matte finish for the locomotive, but many images show the prototype highly polished. After masking windows and headlight, I might give mine a coat of Testors Model Master Semi-Gloss spray to simulate some of that luster. The flexible fabric between the cab and tender is not modeled, though something along the lines of the diaphragms on Rapido's United Aircraft Turbo Trains would have worked nicely. BLI has done wide diaphragms for their Southern Pacific passenger cars, so I think they should consider doing so if they do future runs. The pilot and trailing wheels are bright silver. It would not be too difficult to paint them black.

The K4s chassis has the same level of detail as the BLI's non-streamlined K4s models. This includes brake rigging and shoes plus the trailing truck sliding bearings mysteriously left of their L1s 2-8-2 models.

BLI did an excellent job capturing the contours and personality of this distinctive locomotive.

Visually, the only major *faux pas* is that the locomotive body isn't level – at least on the one I purchased. It dips down slightly at the back of the cab. As a result, the stripes along the bottom of the skirting do not line up with the tender. Some of the model photos of the model on BLI's web site don't show this problem which suggest the factory may have left out a couple washers during assembly. I fixed this on my model by making two 1/32" spacers from styrene tubing. To install them, I turned the locomotive upside down and removed the pilot truck and the trailing truck. Next, I removed the screw in the middle of the bottom of the cylinder saddle and the two screws at the back of the ashpan. This allowed me to slide the entire chassis out of the boiler. I put one spacer between the chassis and the boiler where each the ashpan screws go. After screwing everything back together in reverse order everything lined up properly.

OPERATION

If you've used one of BLI's Paragon3 locomotives with Rolling Thunder, there are no big surprises here. Everything works the same. I find the default volume is too loud for my taste and I usually reset CV-133 for the master volume to 50 or 60. I will also run each engine a couple laps around the layout to see the smoke unit work before I turn it off. There is a slide switch on the underside of the ashpan on the fireman's (left) side of the engine for that purpose. I can't have several engines making smoke every time I turn my layout on. The smoke detector would go off.

The underside of the tender and locomotive include nice amount of detail. The side rods are plated. The sides of the wheels on the pilot truck, trailing truck, and tender trucks should be painted to match the drivers, then weathered accordingly. The rear set of drivers have traction tires. I recommend installing a BLI "GoPack" in the tender since not all wheels pick up electricity. This unit plugs into its own socket in the Paragon3 decoder.

I also am not a big fan of Rolling Thunder on steam locomotives. From my experience with live and recorded prototype steam, chuffs are more of a treble than a bass experience. Rolling Thunder makes BLI steam locomotives sound like the occasional motorcycles that pass down my street. The sound on equipped diesels is effective. The bass experience reminds me of ore trains crawling up the grade at Horseshoe Curve.

I noticed some issues with the engine stopping suddenly at certain switches on my layout. For smoother performance I installed a BLI "GoPack" Power Continuity Capacitor Pack with plug (#1682, $29.99 list). It plugs directly into the Paragon3 decoder in the tender. This does get the locomotive over rough spots, but the charge lasts about a quarter to a third as long as the Soundtraxx CurrentKeeper (#810140, $29.95 list).

Another pet peeve of mine with BLI locomotives is that the headlights are default on for all types of locomotives. That's not appropriate for most steam locomotives because daytime headlight use was not mandatory until 1956. If you turn the headlight off, it comes back on with every power blip. Default on would be appropriate for most diesels, particularly those built after 1956.

When the headlight is turned on and the locomotive is not moving, the headlight and back-up headlight are on dim. The front red markers and back red markers are also on. When the throttle is advanced forward, the front headlight brightens, and the back headlight goes out. All the red markers stay on. When the throttle is advanced in reverse, the back-up headlight on the tender brightens, the front headlight goes out, and all four red markers stay on. According to PRR rules, no red markers should be on unless they are at the back end of a train at night. On a steam locomotive, this was normally when it was running light (without a train or cabin car) or pushing a train from the rear. For the prototype streamlined K4s, both situations would be rare. They would never happen on my layout either. At some point, I will open the engine and disconnect all the marker lights.

Pulling power is comparable with BLI's other K4s offerings, though the maximum consist will vary with the size of your grades and the weight and rolling qualities of your equipment. Running as the lead engine in a K4s double-header would entirely appropriate for longer trains of the era.

The top photo shows the unlevel locomotive boiler as it came from the box. The deck plate is at an angle and the bottom stripes do not align. The bottom shows the alignment corrected after installing two 1/32" spacers made from Evergreen styrene tubing.

CONCLUSIONS

Overall, I recommend BLI's streamlined K4s. The one obvious boiler level issue is easily corrected and frankly this is a cool-looking engine. I have a couple of BLI's new P70 coaches with Futura lettering on order to ride behind it with my Walthers "Fleet of Modernism" cars. I would have preferred BLI produce PRR's other streamlined K4s design first because there were four of those and only one of these, plus one of the other design lasted until 1955. Unfortunately, Bachmann brought theirs out first (which typically have little pulling power) and who knows if a BLI version will ever come out.

RECOMMENDED READING

- Bert Pennypacker and Alvin F. Staufer, *The Many Faces of the K-4*, N.J. International Inc., ©1984.
- Alvin F. Staufer, *Pennsy Power*, Alvin F. Staufer, ©1962.
- Alvin F. Staufer and Bert Pennypacker, *Pennsy Power II*, Alvin F. Staufer, ©1968.
- Joe Welsh, *Pennsylvania Railroad's Broadway Limited*, Joseph M. Welsh, ©2006.
- Raymond Loewy, *Industrial Design*, The Overlook Press, ©1979.

Model Review – Broadway Limited Imports
PRR EF-15 in HO Scale
The EMD F3 Phase II Freight Road Units

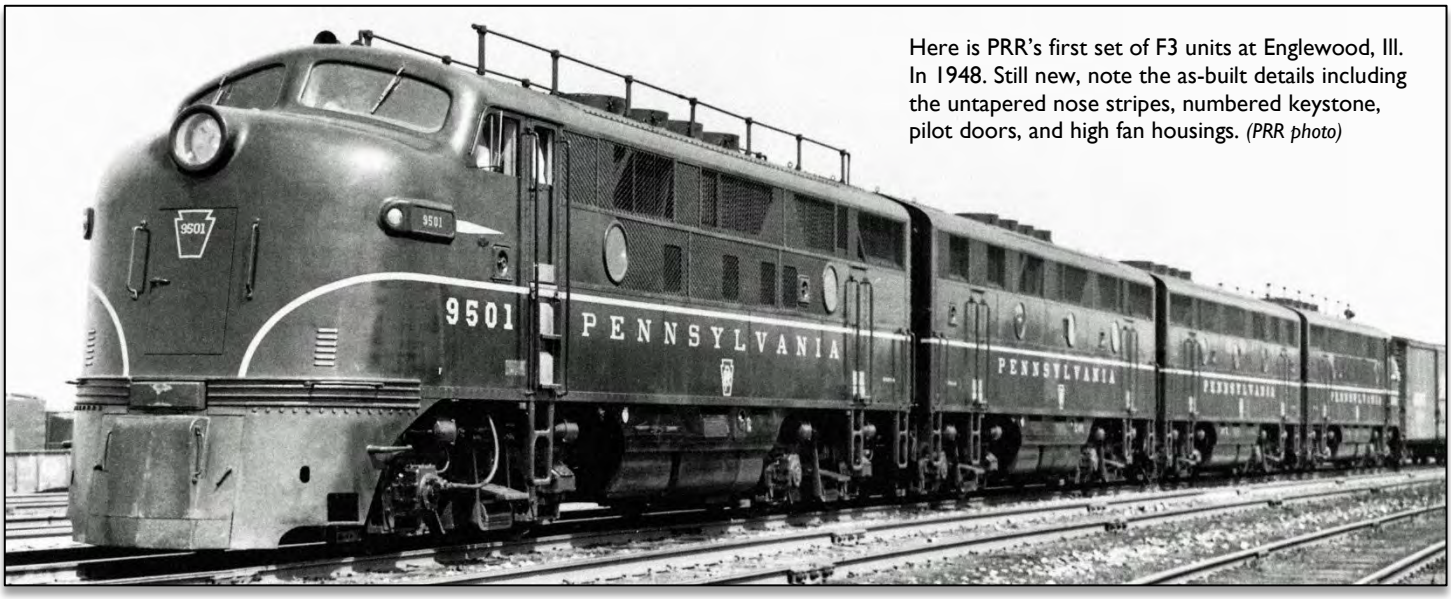
by Jack Consoli – All photos by the author unless noted

Out of the box BLI PRR class EF-15 A&B.

What's in the Box

This A-and-B-unit pair, 9501A and 9501B, are packed in separate boxes combined in another over-box for selling the units as a set. The A-unit is equipped with a Paragon3 Rolling Thunder ™ sound unit/DCC decoder while the B-unit is unpowered. In the box you'll find an operator's manual and a quick reference card of the default function key definitions for the DCC decoder and sound unit. The models are packed in foam carriers with clear vacuum-formed covers. The units are further wrapped in protective plastic wrap.

A zip-lock bag in with the A-unit contains a replacement pilot with closed coupler doors which appears to simply snap into place. PRR units were delivered with pilot doors that covered the coupler to help deflect obstructions on the track. These doors were removed several years after the engines were in service. The pilot assembled to the model represents one in which the doors have been removed. It does not represent a pilot with the doors still in place, but open, as when coupled to other equipment. If you wanted to model this realistically, you probably should scratchbuild one or modify the closed-door part. Moveable diaphragms are mounted to the square ends of the units as applied when the units were built. Operating instructions for the DCC/sound version and the DC/silent version are provided.



Here is PRR's first set of F3 units at Englewood, Ill. In 1948. Still new, note the as-built details including the untapered nose stripes, numbered keystone, pilot doors, and high fan housings. *(PRR photo)*

PROTOTYPE BACKGROUND

The Electro-Motive Division of General Motors Corp. produced probably the most famous of the first-generation multi-unit freight locomotives. These units were referred to as their F-series, and the PRR's first purchases were of their model F3. Their initial order was for two A-B-B-A double-ended freight "locomotives" to be delivered as order #E843, road numbers #9500–9503A/B on July 20, 1947. Under the newly revamped alpha-numeric class system instituted just prior to the delivery of these first 6,000 diesel-horsepower sets, these units were classified EF-4 (**E**MD, **F**reight, **4**-units).

In diesel spotting terms generated by railfans and modelers, these were all F3 phase IIa (or early phase II) units with EMD's early quartet of high shroud radiator cooling/ventilation fans. "Phase II" is primarily identified as A-units built with diamond mesh screen covering the openings along the upper segment of the car body, as well as the panels containing the four air filters set in between the two circular side engine room windows. The B-units differed by having the screening (commonly referred to as "chicken wire") only along the top segment of the body, not between the three side porthole windows. No air filters were placed between the portholes on the B-units as there was room for them in the upper screened segment that was longer than those on the A-units due to the lack of a cab. In the roof hatch, immediately ahead of the four radiator fans, these F3s all had two rectangular screened openings for exhausting the waste heat off the dynamic brake resistor grids. The F's, like all the other PRR diesels, were probably best known under the subsequent "unit"-based classification system introduced in June 1951 in which they became PRR classes EF-15, signifying: **E**MD as the builder, **F**reight service, **15**-hundred (1500) horsepower per unit.

I authored an extensive article filling two issues of the PRRT&HS's quarterly print magazine ***The Keystone*** (Fall 2004, Vol. 37 #3 and Spring 2005, Vol. 38 #1) covering the history of PRR's entire fleet of F-units in great detail complete with photographs, diagrams and a full roster. Please refer to this work for more detailed prototype information on all the PRR F-units.

The combination of details and painting and lettering applied by BLI to these models generally represents the units in the early years after their delivery to the PRR. Note that as with most equipment on the PRR, after several years of service, several modifications and upgrades were made to the units that resulted in changes to the external appearance.

MODEL DETAIL REVIEW

The basic overall dimensions of the units match the prototype:

- Truck wheelbase – 9′-0″
- Truck centers – 30′-0″
- Cab width – 9′-10″
- Height above rail at rear of carbody – 14′-0.5″

As with most "streamline" locomotive models, the curved nose contours are always subject to personal taste as to their conformity to the prototype shape. Rather than discuss every detail on the rest of the units, I will only mention items that deviate from the prototype in the sections below.

THE A-UNIT NOSE/CAB

The detailing on the nose section of the A-unit is well done; only a few minor items warrant discussion. The rear corners of the cab side windows should be square, rather than rounded; the number inserts in the numberboards protrude rather than being slightly recessed; the combination flag and marker light brackets under the cab windows are missing; the windshield "eyebrow" grab irons are mounted more or less vertically rather than being angled forward; the PRR-applied lifting lugs should have a longer taper below the eye and no tapered gusset above; the buffer block on the anti-climber is a style that protrudes noticeably farther than the prototypes; the pilot grab irons should be mounted in the upper slot rather than the center slot of the anti-climber; the edge and opening contours of the pilot with the doors removed and the flattened front do not match the prototype well; the front uncoupling lever handles that were mounted on the pilot are missing.

The extra closed-door pilot part included is a fairly accurate representation of the closed coupler doors. The side contours are a bit off and the grabs are likewise in the wrong slot of the anti-climber, but the minimally protrusive buffer block is well done.

THE BODIES

The sides of the units are well-rendered. The "chicken wire" style screening on the sides are separate etched metal parts and afford a decent see-through effect when viewed at the appropriate angle and lighting. The clear plastic "glass" porthole windows are nicely mounted near flush within their circular frames, but unfortunately suffer from the look of the proverbial "coke-bottle eyeglasses" syndrome due to their stepped geometry near the rear inside.

▶ Stock F3 phase II nose section with the doors-removed pilot piece in place.

▼ F3 with doors-removed pilot in place and the replacement doors-closed pilot.

Right and left side views of the coupled A and B units.

The square ends of the units have the correct square passage door windows of the original equipment diaphragms. The standard PRR circular red marker lights at the upper corners of the ends, as well as the combination flag and marker light brackets, are missing. Back up lights are not applied, but these units were not so-equipped as built. Lifting lugs are applied at the top corners of the end door posts. These were retrofit to these early units and in the process the pointed sheet metal roof overhang was trimmed back to allow access to the lugs, but the models incorrectly retain the full un-trimmed roof overhangs. The hostler horn that was mounted on the square end of the B-unit front is missing on the model.

Rear ends of the B and A units showing diaphragms and lifting lugs. The stripes correctly wrap around the body with the side sheets onto the ends.

Rear top view of B-unit showing untrimmed roof overhanging the lifting lugs.

Rear top view of A-unit showing Trainphone apparatus.

The roof details are mostly complete and include etched metal screens over the dynamic brake opening ahead of the high radiator fan housings. The A-units have the PRR-specific Trainphone apparatus applied. They are well done except there is an extension off the front stanchion on the engineer's side that turns down to the cab roof which should not be there: the receiving conduit ended at the front stanchion.

The Blomberg trucks are nicely done, but all have the incorrect axle end bearings for the units as delivered. Originally the units had one square and one sloped-top bearing box on each sideframe. The model has the later style circular bearing caps at all locations on the trucks. Many of the trucks did receive this style cap later in service as maintenance changeouts. The speed recorder drive unit which was applied to the front axle of the front truck on the fireman's side of all the A-units is missing.

Painting and Lettering

The painting and lettering diagrams called for Dark Green Locomotive paint with buff lettering, 2" stripes, monograms and edging of keystone medallions. Background color in the keystones was toluidine red. Everything below the bottom of the side sills, except the pilot surfaces was to be black enamel. This was the standard paint scheme for the PRR's freight service cab units. The buff lettering specified included: 8" cab side numerals (on A-units) and "PENNSYLVANIA" road name; 1¾" "F" (designating the unit's front), side numerals with unit letter suffix at rear on A units and at front on B units; 14¾" keystones with monograms on sides and with 3" numerals on A-unit front end, inside the nose keystone. The 2" stripes were originally applied along the carbody and across the body side doors and turned down to the pilot anti-climber beam but did not taper to a point as they did in later repaints. The stripes ran to the end of the side sheet at the square ends and wrapped around the overlap of the side sheets onto the ends. The number boards originally displayed 3" white numerals and small white lettering appeared at several places along the side sills. The cab vent window frames and the body side step kickplates were left as bare metal as built.

B-unit side showing Blomberg trucks with circular bearing caps and sharply printed PRR Trust plate and correct early rectangular builder's plate.

After delivery and when repainted, several changes occurred to the painting and lettering scheme in the early years of their existence. The 3" numberboard numbers were increased to 5" starting November 1951 and the new monogram (intertwined "PRR") keystone on the nose was specified on the tracings on June 2, 1953.

The model A-unit has the monogram nose keystone and pointed nose stripes. The paint and lettering is well done, but as has been often the case with PRR locomotive models throughout the industry, the dark green is not as dark and the buff is too yellow compared to what is generally accepted to be correct, although the green here is closer than many other models. The small "WATER", "FUEL" etc., lettering along the side sills has been omitted. Pilot assignment symbol markings were left off to be added at the discretion of the modeler.

Operation

I was unable to put the locomotive through its paces due to a system problem on my layout. It did appear to operate similarly to most recent model offerings. It features the typical all-wheels powered arrangement, without traction tires and seems to have typical 4-axle diesel pulling power. It has working headlight, nose marker lights, lighted numberboards and a cab light that automatically turns off when the unit moves. On the prototype, the red marker lights were only used when the A-unit was running backward, not pulling any other equipment. The default horn sound is a decent representation of the correct Leslie A-200 horn originally installed on these units.

Conclusion

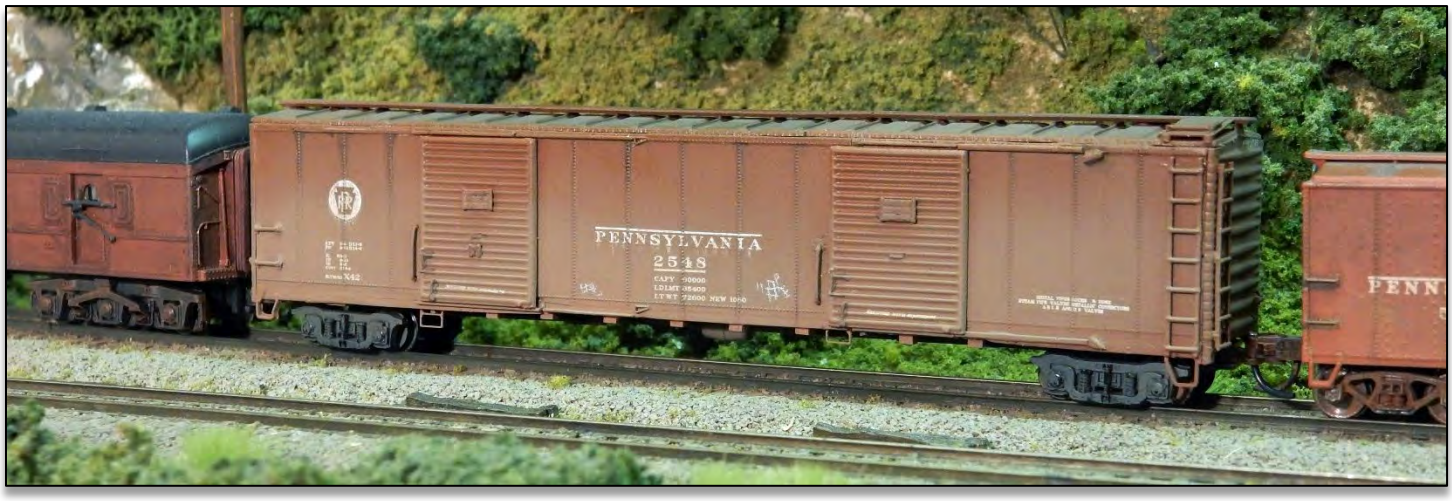
So what era are these models correct for, directly out of the box? The units have lift lugs that were added starting late 1949, ladder rest and windshield grab irons that were added starting in 1951, and the monogram nose keystone which was specified to be added starting June 1953. However, if it is to represent a mid-1953 or later model, it should have backup lights which were added circa August 1951 and 5" numberboard numbers added starting November 1951. The PRR authorized removal of the coupler doors from the cab units of all the builders in January 1955, so if you are trying to represent a period earlier than that, you should add (open) coupler doors to the pilot provided or use the alternate earlier closed-door pilot (if the model will only be a lead unit).

Overall, I would rate these as nice models. They have a few flaws as noted above, but *T*he *K*eystone *M*odeler should be able to make these a more accurate addition to their model roster with a bit of work (this is a *modeling* magazine, after all) to be appropriate for their modeling period.

Front view showing the later repaint pointed nose stripes and monogram Keystone.

Kitbash a PRR X42 Mail Storage Car in N Scale

By Doug Nelson – images by the author unless noted

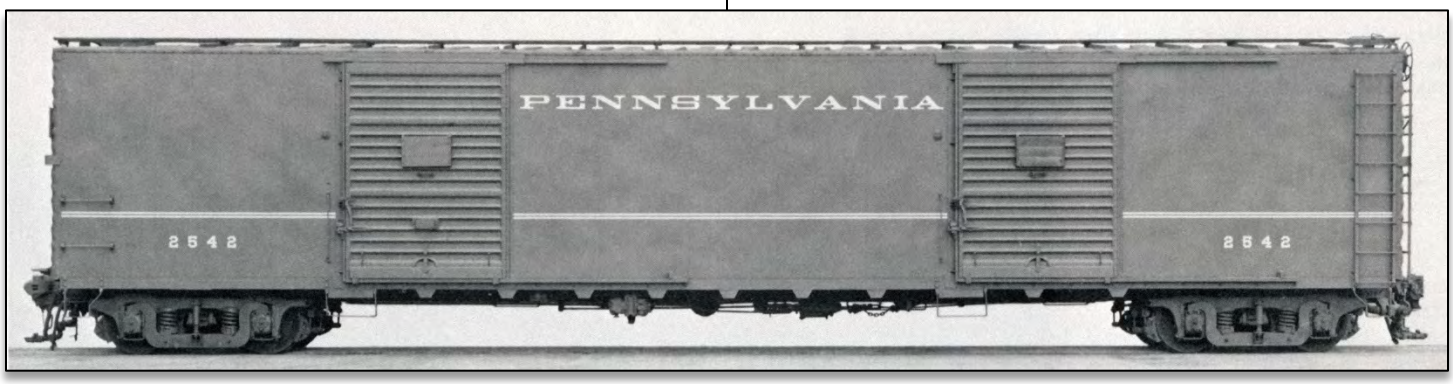


The PRR's X42 mail storage car was built from box car components in the configuration of a baggage car. The 60' cars carried mail in sealed bags between terminals and were built for use in passenger trains with express trucks and steam and signal lines.

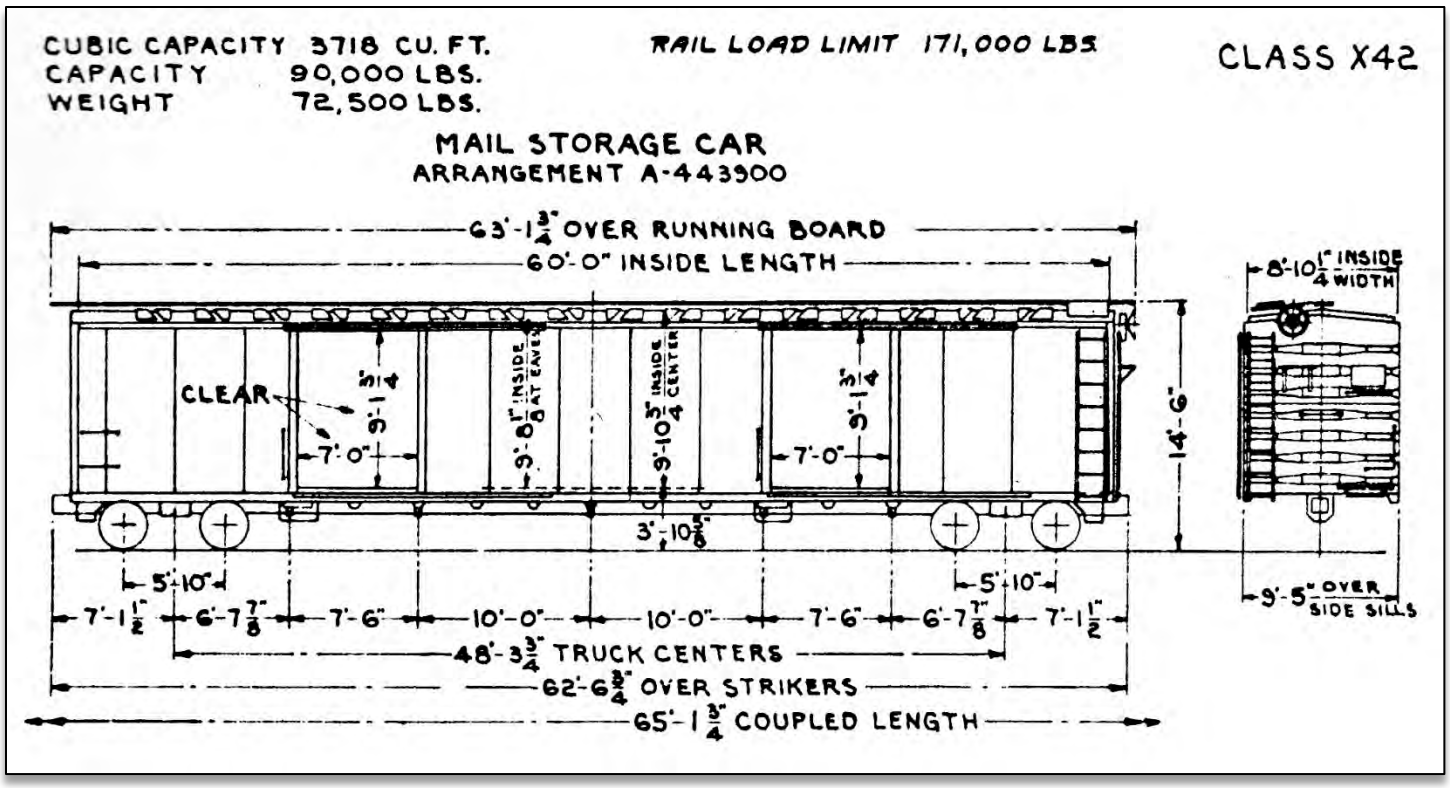
In the post-WWII years, the PRR experienced growth in mail and express business. The workhorses of this business were the B60B baggage express cars and the many X29 boxcars set up for express service. By 1950, the PRR had not built a baggage car in twenty-five years, and passenger car technology had transitioned from heavyweight cars to lightweight cars. Rather than design a new baggage and express car from scratch, the mechanical department had the idea to construct one from standard box car parts, likely at considerably less cost than a traditional baggage car design.

They came up with a 60' box car design that had two doors on each side like a baggage car but constructed with box car components. Ten cars were built in 1950 to this design and designated class X42. The cars were designed for use in passenger trains, so they were fitted with roller bearing express trucks, and steam and signal lines. The cars as built were painted standard PRR freight car color and lettered in the *circle keystone* freight scheme in use prior to 1954. They were numbered 2540 through 2549. At least one car, #2542, was painted in a modified PRR passenger scheme. The experiment was not repeated, likely due to declining passenger traffic during the 1950s which may have reduced the numbers of mail and express cars needed.

With only ten cars, they were not commonly seen, but my interest in head-end cars and mail and express trains made this a temping subject. The unique geometry of the X42 meant that this would not be just a simple splice job. Finding the right N scale box car to start with was the first challenge. I needed to find a boxcar with similar side panels, car ends, roof, and doors. It turned out that the Intermountain 50' AAR Standard double door boxcar had all of the needed criteria. The Intermountain car had the added benefit that it was readily available in kit form (at train shows) for modest prices. To provide the components for a 60' car, two donor 50' cars were needed. The Intermountain kits come with separate car ends, doors, roof, roof walk, and underframe. This really simplified construction and the surgery needed for the kitbash. Another benefit of Intermountain kits is that the door spacing of these cars meant that the body splice points could be hidden behind the car doors, also simplifying construction.



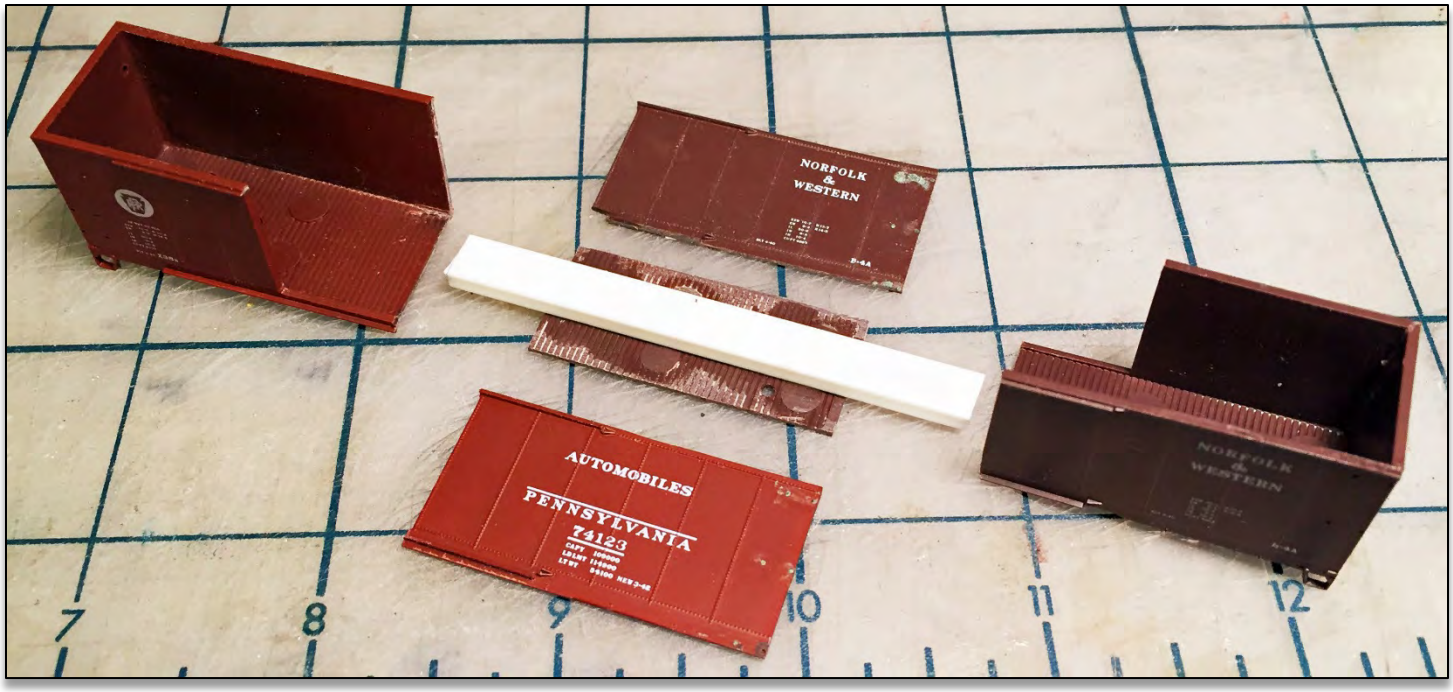
Builder's photo of X42 #2542 in the modified passenger scheme. *(PRR photo)*



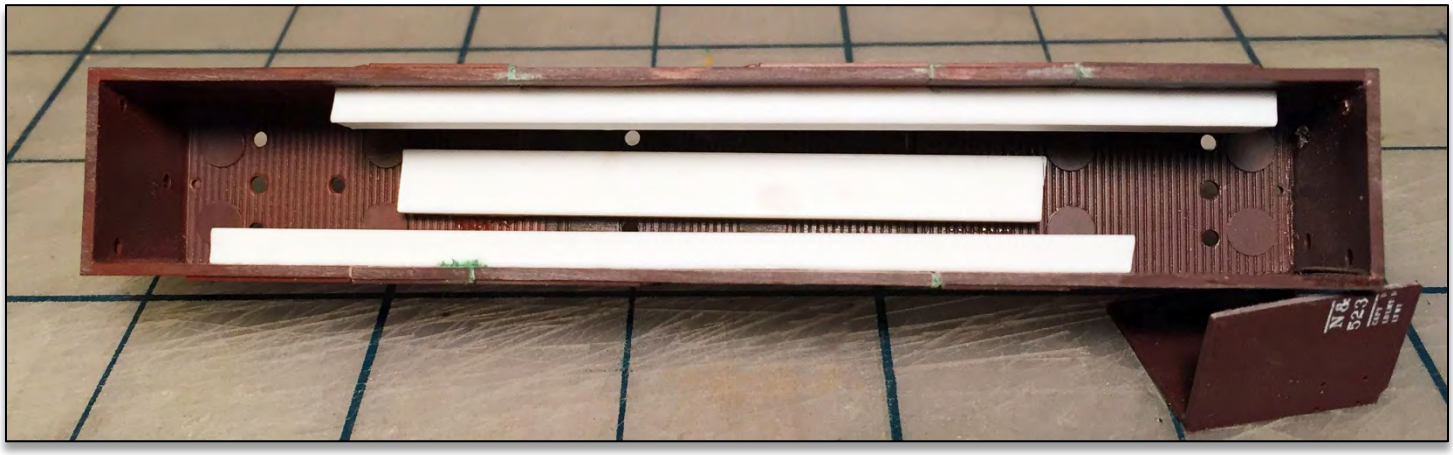
PRR X42 arrangement drawing. *(PRR, author's collection)*

Components of the Intermountain N scale 50' double-door box car kit were just right for kitbashing the x42. It requires two kits for the X42 body panels.

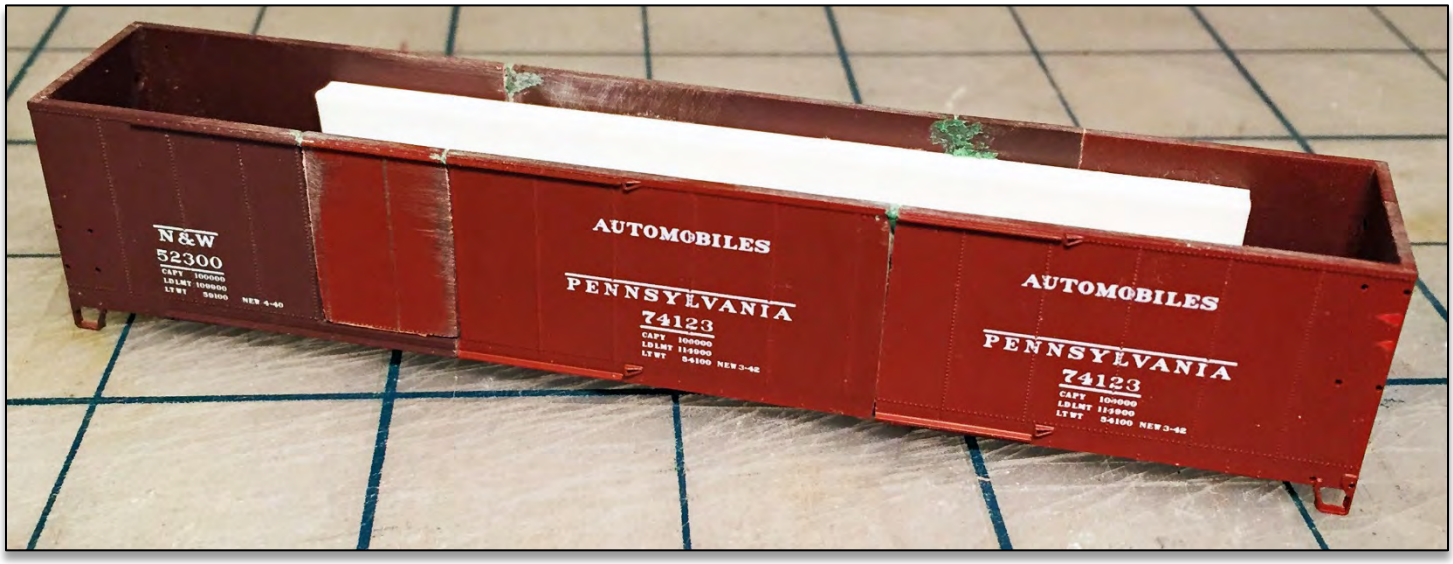
I started by converting both a prototype photo and a car diagram to N scale to ensure that measurements were accurate. I then cut the bodies into the needed components – two car ends, two middle side panels, and a floor section (see photo). I typically make cuts so that the pieces are slightly oversized. I then use a sanding jig to make all cuts as square as possible. When I was satisfied that all parts fit together for the correct overall car length, I glued the car ends to the center floor section. To improve the structural strength, I spliced the components together with styrene rectangular tubing (.125"x.250", Evergreen #257) on both the floor and sides. I used Walthers Goo to join the parts. The center side panels where then attached to the rectangular tubing. The splices were located where the doors would cover them.



Two car ends, two center panels, and a floor section are needed for the body. the white styrene rectangular tubing was used as internal bracing to securely connect the parts.



The internal bracing is used on the car sides and floor.



The body in progress with all components joined. All the splice joints will be covered up by the car doors.

The completed car prior to paint and lettering.

One thing that needed changing was that the doors on the prototype all slide open to the right. The left- hand door on each side of the model had to have the molded-on door guides removed. New guides in the correct position were added with small brass bar stock. The center side panels had holes intended for the ladders, so these were filled in with putty and sanded smooth. The roofs were then cut, sanded squared to exact length, and glued together. I used one of the roof ribs to hide the splice joint. The separate underframes were also cut to size and glued underneath the body. Other body parts – car ends, side doors, grab irons, and ladders were then added. Before the roof was glued on, I added weights in each end of the car. Additional details are the grab irons and stir-rup on the left side of each door. One small compromise with this model is that the doors are about 6" too wide, but I did not find appropriate 6' wide doors available in N scale.

Micro-Trains Line BX express trucks (#1141) are a perfect match for the PRR 2D-X32 trucks used on the X42. Micro-Trains couplers were body mounted. The car is painted PRR freight car color (Badger Modelflex Light Tuscan Red Oxide). Decals were made by Mount Vernon Shops (https://www.mountvernonshops.com/). After decaling, the car was weathered with an India ink wash and then sprayed with grime and an earth dusting on the lower parts of the body and the trucks. Head end cars were not frequently washed, so the weathering can be heavy. The PRR X42 is an interesting and unique car that is right at home in a mail and express consist.

Mail bags await loading into an X42 mail storage car.

Bill of Materials

- Intermountain 50′ Double-Door Boxcar kit (2).
- Evergreen Scale Models #257 styrene rectangular tubing (.125"x.250").
- Micro-Trains Line BX Express trucks
- Micro-Trains Line couplers.
- Mount Vernon Shops decals.

BLI GG1 Coupler Height Fix

By Tim Garner

I purchased several of Broadway Limited Import's flat pilot GG1 locomotives for the Baltimore Penn Station portion of my HO layout. I had been running them regularly on the layout for a few weeks when I started having problems with them uncoupling from their trains.

Upon examination I discovered a problem common to all of them. Each power truck has a plastic piece that serves as the power truck frame and pilot. Both the coupler and the pilot truck are attached to this piece. Because the plastic has some flex to it, the spring on the pilot truck pivot screw pushes the frame upwards toward the bottom of the body. That flex moves the pilot and coupler out of vertical alignment.

After a little experimentation, I discovered cementing a stack of styrene strips ¾" long by 1½ scale feet high under the body as a sliding bearing would prevent the coupler from moving out of alignment without adversely impacting the locomotive's performance.

The photos here show the problem, the fix, and the result.

Continuous upward pressure from the front truck spring on the frame pushes the coupler out of alignment leading to random uncoupling from trains.

A ¾" by 1½ scale foot stack of styrene strip creates a sliding bearing that stops the pilot from rising.

The bearing keeps the coupler in vertical alignment with no impact on locomotive performance.