

SPECIAL: COMPACT LAYOUTS IN HO & N pp.38 , 44



**Atlas HO scale
U23B tested p.58**

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Model Railroader®

City scenery on a busy small layout

Building a finely detailed transition-era N scale railroad p.38

**7x8-foot Santa Fe
switching
shortline** p.44



Lance Mindheim's
1940s N scale Brooklyn
layout. See page 38

PLUS

Fold-down micro railroad in N scale p.50

Upgrading turnouts on our staff railroad p.26

Advanced automatic reversing controllers p.54



U25B

LOCOMOTIVE

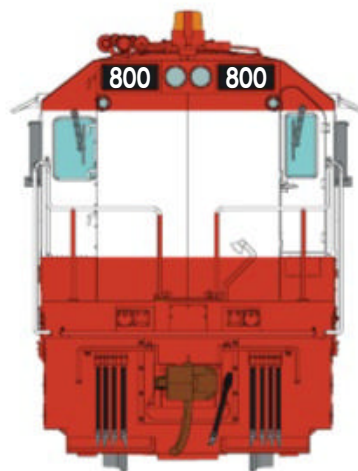
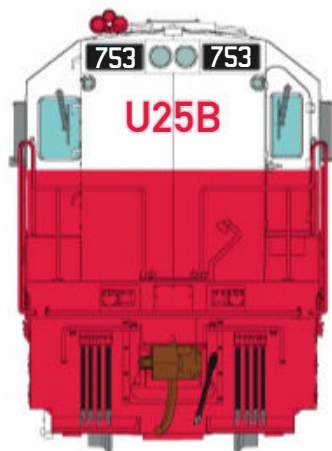
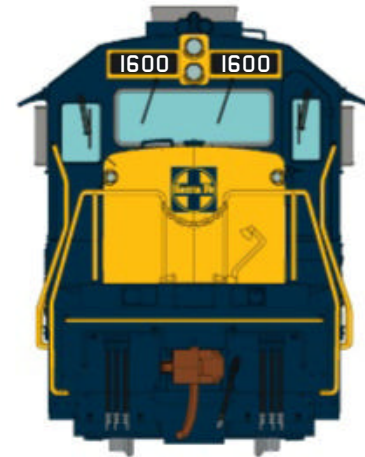
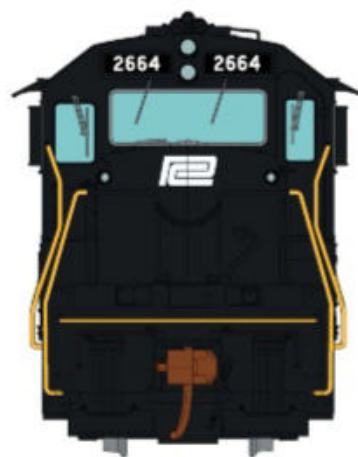
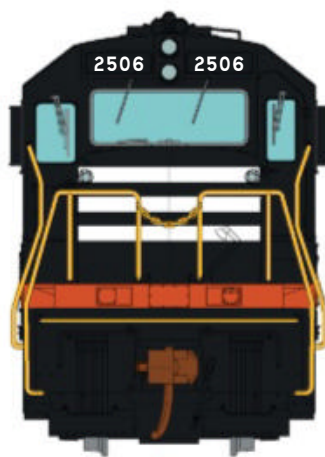
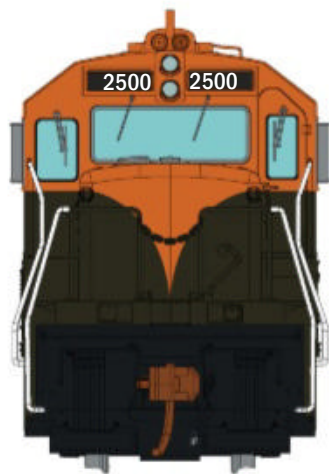
**HO
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U25B FEATURES:

- WORKING CLASS LIGHTS, IN THE CORRECT LOCATION!
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Preliminary artwork and 3D renders shown, subject to revision.



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Features



34 Blue signals to protect workers

Make operations on your railroad more realistic with commercial and scratchbuilt flags

by M.R. Snell



38 Back to 1940s Brooklyn in N scale

Model railroaders hate to see potential layout space go to waste

by Lance Mindheim



44 A simply satisfying Santa Fe short line

A small switching layout fulfills a childhood dream

by Ron Stallman

50 Hidden Epoxy River Railroad

One modeler's creative, space-saving solution

by Peter Waldruff

In every issue

6 On Trains.com

The latest features on our website

8 From the Editor

No room for a railroad? Think again

12 News & Products

Hobby industry news

18 Ask MR

Which way should rotary-dump gons face?

24 Railway Post Office

Letters from our readers



26 Rehab My Railroad

Upgrading the MR&T with Walthers' new turnouts

54 DCC Corner

Advanced automatic reversing controllers



56 Product Reviews

Rapido HO scale EMD SW1200, General Electric U23B in HO from Atlas, and more

62 On Operation

Tower mysteries revealed

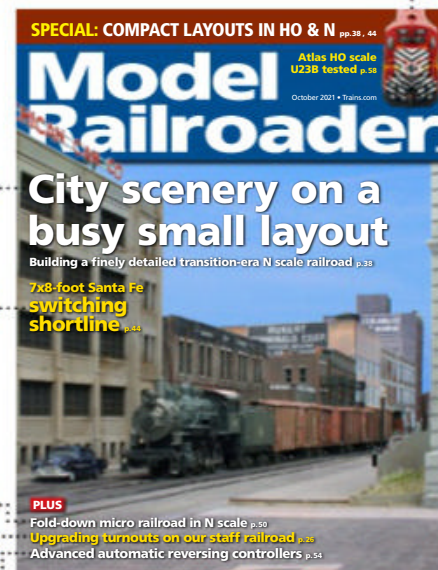
64 Trackside Photos

73 Index of Advertisers and Cartoon

74 Trains of Thought

The portal that led to paradise

56



38

City scenery on a busy small layout

Building a finely detailed transition-era N scale railroad p.38

44

7x8-foot Santa Fe switching shortline p.44

50

PLUS

Fold-down micro railroad in N scale p.50

Upgrading turnouts on our staff railroad p.54

26

Advanced automatic reversing controllers p.54

54

On the cover: An 0-6-0 steam switcher pulls a transfer run down 1st Avenue on Lance Mindheim's N scale city port layout. Lance Mindheim photo



Next issue

In November, see how to use LEDs to model fusees. Plus, visit two room-sized layouts, detail composite hoppers, preview *Great Model Railroads 2022*, and more!

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Painting and installing backdrops

Gerry Leone has returned for the eighth episode of his exclusive Trains.com video series, *Back on Track*, and this time he's working to install a hardboard backdrop on his new HO scale Bona Vista RR. Follow along with Gerry as he navigates through the painting and construction process, offering viewers his very own expert tips and tricks along the way. Don't want to miss a moment of Gerry's layout progress? Become a Trains.com member for unlimited access to all the *Model Railroader* video series.



Reader Photos

Railroads are full of more than just sleek locomotives and well-oiled consists – sometimes we come across an odd sight or two. If you're a railfan interested in seeing the offbeat, be sure to check out our new series, *There's a prototype for everything*. Here, we'll be sharing reader-submitted photos of some of the unusual sights captured by the tracks. Go to Trains.com to see the first submission of many, a photograph of a General Electric ES44C4 that appears to be hurrying to catch up with another train that may have forgotten something important!



Model Railroader staff layouts

Looking to start a layout but feeling frustrated by a lack of space? Check out Senior Editor Eric White's Pennsylvania RR Washington Avenue Branch, a switching layout that he built into one of the shelves of his family's living room entertainment center. Hurry on over to Trains.com to see photos of the layout and read about Eric's research for the project – as well as to draw inspiration for your own compact layout. Trains.com visitors get access to eight free articles every month.



Trackside Finds

Group Technical Editor Cody Grivno is back with the latest edition of *Cody's Trackside Finds*, an article series sharing some of the many interesting locomotives, freights cars, and structures he's happened across during his time railfanning. Read all about Cody's experience with the Independent Locomotive Service Electro-Motive Division NW2 no. 1019, a unit that's continued to catch his eye over the course of many years and several moves.



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ModelTrainStuff.com

No room for a railroad? Think again

This month we profile three layouts that make the most of modest space.

Lance Mindheim, whose N scale layout is on this month's cover, drew inspiration from 1940s Brooklyn.

Although huge cities offer more than enough inspiration to fill the largest model railroad empire, Lance looked at it another way.

"Because New York harbor railroads were small and dense," he writes, "they lend themselves to being modeled in a small space."

With good planning and a sharp eye for detail, Lance captures the flavor of a distinctive place and setting in just 5'-6" by 7'-4". Turn to page 38 to learn more.

Ron Stallman has been

interested in model trains since receiving a Lionel set at the age of 7. He set aside that interest while working as an educator and raising a family. However, good things come to those who wait, and at the age of 62, Ron began to build his first HO layout.

Ron's freelanced Santa Fe Shortline hosts regular operating sessions lasting up to two hours – and all in a space of just 7' x 8'!

As Ron says in his article starting on page 44, "It's never too late!"

Peter Waldruff took a different path to small layout happiness. He made a piece of art for his dining room wall that houses a secret. It folds down to reveal a 13½" x 60" N scale shelf layout.

The tight oval of track is just right for a Kato Pocket Line series steam locomotive and two cars.



This railroad is a creative way to enjoy the hobby when floor space is at a premium. Turn to page 50 to read details of this cleverly built small layout.

There's always room for a model railroad, but as these talented builders demonstrate, sometimes you have to think differently.



A newly painted Alco brings the morning mixed into Denton, Texas, on Ron Stallman's compact HO scale layout. Rich Hall photo

Model Railroader

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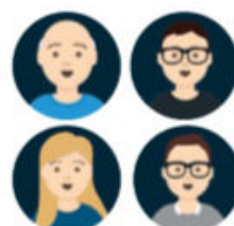
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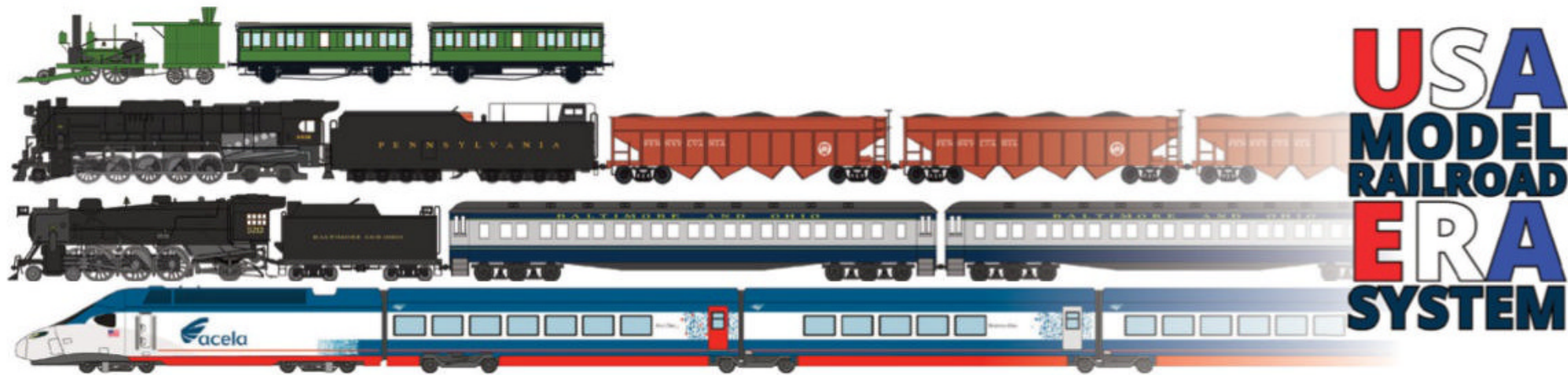
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Many thanks for the warm welcome you have given us. We have successfully negotiated hundreds of deals and we are ready for more. We apologize for the slight delay in processing some of your lists: we are now working on a **24-48 hour** response time to make you an offer.

Our era system has also a great response. Thank you for the applause and criticism, we understand this method of categorization is not to everyone's liking. We are reviewing all your suggestions and hope to improve it further.

I hope you are well and I look forward to getting the opportunity to meet with you, if you are at any of the events I hope for Hattons to attend over the next year.

Richard Davies
CEO

Shouldn't America have its own Era System?

Please join us at hattonsmodelmoney.com/US-Eras and give us your thoughts and opinions. We'd love your assistance in developing one!

Our proposed method of grouping products based on prototypes across nearly 200 years of railroads in the United States!

Era	Date	Name	Steam	Alco	EMD	GE	Passenger
1	1827-1880	Old Time	American 4-4-0s				Open vestibule wood cars <60ft
2	1880-1916	Turn of the Century	Atlantics, Moguls, Consolidations, Camelbacks				Closed vestibule wood cars 80ft
3	1917-1928	Golden Age	USRA to Superpower and Modern Steam				Steel Clerestory/Early streamliners
4	1929-1949	Superpower	4-6-4s, 2-8-4s, 4-8-4s, 2-10-4s and 2-6-6-4s	Small switchers HH, S and DL series	NW Series/Streamline Trainsets/Early E Series		
5	1949-1960	Steam/Diesel Transition	Steam Decline	FA/PA/S Series Early RS Series	E/F/SW Series Early GP/SD Series	U Series launched	Rise of the post-war streamliner
6	1960-1972	1st Gen	End of steam	RS27-36/Century Series	SW1000/1500, GP20 to SD45	U Series	Decline of the post-war streamliner
7	1972-1979	2nd Gen			GP/MP15, GP/SD50, GP/SD60, Dash 2 Series	Dash 7	Amtrak Heritage/Amfleet
8	1980-1989	Eighties			GP50/60 SD50/60	Dash 8	Amtrak Superliners/Amfleet II
9	1990-2010	Nineties and noughties			SD70 Early AC traction	Dash 9, Early AC	Amtrak Viewliner/Superliner 2
10	2010 to Present	Current			SD70 ACe-T4	AC Series, GEVO	Avelia Liberty (Amtrak Acela II)

Thank you to **Mr H. Fuller, Mr R. Shirey, Mr J. Agneta** and many others for their help in progressing the eras we proposed in our previous advertisements.

We welcome assistance in developing this resource - please contact our proprietor Richard Davies on richard@hattons.co.uk if you are interested in participating with this project.

www.hattonsmodelmoney.com/US-Eras

HO scale



Electro-Motive Division GP9 diesel locomotive. Walthers offers these four-axle road units decorated for BNSF Ry., Grand Trunk Western, Soo Line, Kansas City Southern (white), National Rys. of Mexico (green and orange), New York Central (lightning stripe scheme), Southern Pacific ("Kodachrome" scheme), and Union Pacific (Armour Yellow and Harbor Mist Gray with "Serves All the West" slogan on cab sides) in three

to four road numbers per scheme. The HO scale Mainline series models are based on Phase II prototypes. The GP9 has see-through steps, a die-cast metal chassis, and molded drill-starter points for grab irons (detail kit sold separately). Direct-current models with a 21-pin DCC plug sell for **\$139.98**. Versions with a dual-mode ESU sound decoder are priced at **\$199.98**. Wm. K. Walthers Inc., 414-527-0770, walthers.com

The General is next Walthers name train

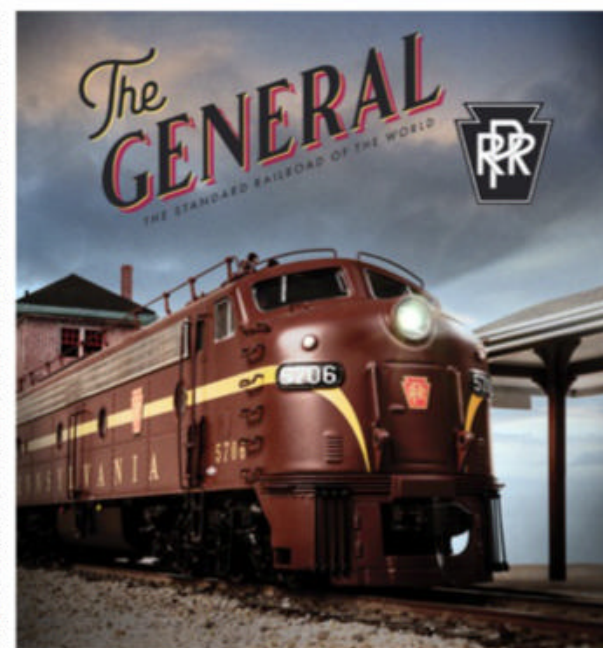
Wm. K. Walthers Inc. announced that Pennsylvania RR's *The General* will be its next HO scale name train. The following WalthersProto-series models will be part of the train: Class R50b express reefer (\$59.98); class B60b baggage car; American Car & Foundry 85-foot PRR-style baggage-dormitory, and class P85 coach; Budd 85-foot kitchen-dormitory, 21-roomette *Inn*-series sleeper, and 68-seat full diner; and Pullman-Standard 85-foot buffet-lounge-observation, 10-6 *Rapids*-series sleeper, 12-4 *Creek*-series sleeper, and *Falls*-series 6-double-bedroom sleeper. The cars will be priced between \$84.98 and \$94.98 unless noted

and are scheduled for release between June 2022 and April 2023.

Walthers will also be offering two 13-car deluxe sets (\$1,535 each) and a three-car Washington Section (\$380).

Power for the train will be Electro-Motive Division E8 diesels. The units will be offered in A-A sets and single A units in the Tuscan single- and five-stripe schemes. Direct-current models will be priced at \$199.98 (A units) and \$399.98 (A-A sets). Versions with a dual-mode ESU LokSound 5 decoder will sell for \$299.98 (A units) and \$599.98 (A-A sets).

To learn more about *The General*, visit walthers.com/thegeneral.



HO scale locomotives



• **Electro-Motive Division SD90MAC diesel locomotive.** Canadian Pacific, CIT Group (blue and black), Indiana Rail Road (red and white in two road numbers and 25th anniversary paint scheme in one number), Norfolk Southern (Primed for Grime series Union Pacific patchouts), and Union Pacific (Armour Yellow and Harbor Mist Gray, 3470-3775 series units in three numbers and June 2015 "Building America" scheme repaint in one number). Three numbers per scheme unless noted. Detailed cab interior; fuel tank with fillers, gauges, and breather pipes; and McHenry scale couplers.

Direct-current model with 21-pin NEM connector, \$259.99; with dual-mode SoundTraxx Tsunami2 sound decoder with dual cube speakers, \$349.99. June 2022. Genesis 2.0 series. Athearn Trains, 800-338-4639, athearn.com

• **Reading Co. class T-1 4-8-4 steam locomotive.** Chessie System Steam Special (one road number); American Freedom Train (early 1975 and 1976 versions, one number each); Christmas fantasy scheme (one number); Delaware & Hudson (Centennial locomotive, one number); Independence Day scheme (one number); Reading, Blue Mountain & Northern (one number); and Reading Co. (in-service and *Iron Horse Rambles* excursion schemes, three numbers each). Dual-mode Paragon4 sound decoder with Rolling Thunder, plastic boiler and tender body, die-cast metal chassis, and

rubber traction tires. \$549.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com



• **Electro-Motive Division SD45 diesel locomotive.** Erie Lackawanna (American Revolution Bicentennial scheme in one road number and maroon and gray in five numbers), Penn Central (black with white herald in five numbers and red-and-white herald in one number), Southern Pacific (scarlet-and-gray GRIP rebuild in six numbers plus unnumbered), Southern Ry. (high short hood with Dulux Gold and Gold lettering in three numbers per scheme), and VMV Enterprises (Southern Ry. high



short hood patchout in two numbers). Also available undecorated (low short hood). Factory-applied wire grab irons and lift rings, detailed cab interior, and light-emitting-diode headlights. Direct-current model with 21-pin connector, \$189.99 (EL Bicentennial, \$194.99); with ESU LokSound 5 sound decoder featuring Full Throttle, dual cube-type speakers, and two PowerPack super capacitors, \$279.99 (EL Bicentennial, \$284.99). Rivet Counter line. ScaleTrains.com, 423-299-2689, scaletrains.com

HO scale freight cars



- **Assorted freight car kits.** Reading Co. two-bay panel-side hoppers (single car, \$18.98; three-pack, \$55.98). Burlington Northern Santa Fe American Car & Foundry two-bay Center Flow covered hopper (Mineral Red with circle-cross herald: single car, \$20.98; three-pack, \$61.95). Milwaukee Road 40-foot double-door ribbed-side boxcar, \$19.98. Canadian Pacific 40-foot double-sheathed refrigerator car, \$20.95. Maine Central 40-foot double-sheathed wood boxcar, \$19.98. Injection-molded plastic kits with plastic wheelsets, trucks, and Accumate couplers. July/August 2021. Accurail, 630-365-1173, accurail.com



- **American Car & Foundry Coalveyor coal gondola.** New paint schemes: Reisner Scrap Metals (black, orange, and green with CMHX reporting marks), Chicago & Illinois Midland (black and blue, four road numbers), Cobra Trading (black and orange), David J. Joseph (blue and teal schemes), and Frontier Scrap

Metals (black, yellow, and blue). New numbers (four per scheme): Kansas City Power & Light (black and white) and Utility Fuels (gray and orange). Limited-edition three-pack: David J. Joseph Ltd. (one each blue, green, and yellow). Three road numbers per scheme unless noted; also available undecorated. Removable coal load, 100-ton roller-bearing trucks, and Accumate couplers. \$39.95 (undecorated, \$30.95); David J. Joseph three-pack, \$119.85. Second quarter 2022. Master Line. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com



- **American Car & Foundry 56-foot four-bay Center Flow covered hopper.** Great Northern (Glacier Green with "Great Northern Grain Loading" lettering) and Continental Polymers (red and white). One road number per scheme. Separate, factory-applied brake wheel; blackened metal wheelsets; and body-mounted couplers. \$35. Silver Series. Bachmann Trains, 215-533-1600, bachmanntrains.com

HO scale details and accessories



- **Miscellaneous detail parts.** Air filter assortment, all-weather window two-pack (three versions), Canadian winterization hatch, dynamic roof grid (base and cover, two sets), highway reefer unit with diesel fuel tank, steam generator exhaust stack two-pack, and X-style air filter eight-pack. All parts are injection-molded plastic. \$3.95 each. Bowser, 570-368-5046, bowser-trains.com

N scale locomotives



- **Electro-Motive Division F3A and F3B diesel locomotives.** Atchison, Topeka & Santa Fe (passenger warbonnet); Canadian National (Olive Green and Imitation Gold, A-B set and single A unit); Chicago, Burlington & Quincy

N scale



85-foot trash flatcar with municipal solid waste containers. New paint schemes in Atlas Trainman Plus line are Conrail, Covanta (gray and black), ECDC Environmental (gray, black, and white with RSGX reporting marks), and Southern Pacific (brown and white). The N scale car (\$56.95) is offered in three road numbers per scheme and features an open-deck design, 100-ton trucks with metal wheels, and weighted underframe. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com



HO scale

Modern Denny's restaurant. Summit USA has released another contemporary structure kit. The HO scale Denny's (\$89.95) has milled and laser-cut acrylic and styrene parts with self-adhesive micro-plywood and signs. The parts may need light sanding in joints for cosmetic reasons. The parking lot base, vehicles, scenery, and figures shown are not included. The structure measures 9½" x 7" x 3". Summit USA, 337-436-8481, summit-customcuts.com

(aluminum with black nose stripes); Florida East Coast (red and yellow); Missouri-Kansas-Texas (red, aluminum, and yellow, A-B set and single A unit); Pennsylvania RR (Dark Green Locomotive Enamel with single stripe); Grand Trunk Western (Olive Green and Imitation Gold, two A units); Soo Line (maroon and gold, two A units); and Union Pacific (Armour Yellow and Harbor Mist Gray). Each road name offered as single powered A and B units and A-B set [powered A unit, unpowered B unit] unless noted. Dual-mode Paragon4 sound decoder with Rolling Thunder, plastic body with die-cast metal chassis, and all-wheel electrical pickup. Single A and B units, \$249.99 each; A-B sets, \$329.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com

N scale freight cars



• **50-foot SIECO boxcar.** Primed for Grime: Atlantic & Western (Hutchison Northern patchouts) and Canadian Pacific (brown patchouts). Standard paint: Ashley, Drew & Northern (green and white); Boston & Maine (two-tone

blue); Norfolk & Western (black); and Virginia Central (green). Three road numbers per scheme. Photo-etched metal stirrup steps, screw-mounted trucks, and McHenry scale couplers. \$49.99 (Primed for Grime, \$54.99). August 2022. Athearn Trains, 800-338-4639, athearn.com



• **American Car & Foundry 5,701-cubic-foot capacity four-bay covered hopper.** New paint schemes. Plastics service (two road numbers per scheme): J.M. Huber Corp., ACF Industries (gray and orange), Cain Chemicals (red and white), Dow Chemical Co. (gray), Exxon-Mobil (gray), Residco (gray), and Union Carbide (gray). Grain service (three numbers per scheme): Archer Daniels Midland (gray and blue with molecule logo) and Interstate Seed Co. (yellow and black). Both body styles available undecorated. Etched-metal running boards, 10 20" hatches and pneumatic outlets (plastic hopper only), and Accumate couplers. \$29.95 (undecorated, \$22.95). Master Line. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

• **American Car & Foundry 50'-6" boxcar with exterior posts.** Canadian

National (brown with "wet noodle" herald), Conrail (Oxide Red with yellow door), and CSX (blue and yellow). One road number per scheme. Blackened metal RP-25 contour wheelsets, positionable door, and E-Z Mate couplers. \$36. Silver Series. Bachmann Trains, 215-533-1600, bachmanntrains.com

N scale details and accessories



• **20-foot standard-height intermodal container.** Harrison Line (white), Carpenters Shipping (yellow and black), EMSU (camouflage paint), Magellan (red), and Safmarine/CMBT Lines (blue). Injection-molded plastic with inter-box connecting pins and JTC magnetic connecting system (metal plates on top and magnets on bottom). Two-pack, \$29.65. Jacksonville Terminal Co., jtcmodeltrains.com

Large scale freight cars



• **Two-bay hopper with exterior posts.** Chessie System (black and yellow with Chesapeake & Ohio reporting marks) and Atchison, Topeka & Santa Fe (Mineral Red with circle-cross herald in square and "Santa Fe" billboard lettering). One number per scheme. Removable coal load, solid-bearing trucks with plastic wheelsets, and hook-and-loop couplers. \$73.99. PIKO America, 619-280-2800, piko-america.com

Z scale locomotives

• **Electro-Motive Division E7A diesel locomotive.** Pennsylvania RR (Dark Green Locomotive Enamel with five



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HO scale



New Look bus. Denver Tramways, Rapido Trains no. 3380, and Kansas City Metro are among the paint schemes on this HO scale bus from Rapido Trains. Standard and deluxe General Motors New Look buses have a detailed interior with separate seats and grooved flooring. Deluxe models include interior lighting and illuminated headlights, taillights, and front destination sign (lighting requires 12V direct-current power supply, not included). Standard models list for **\$49.95**, deluxe models sell for **\$69.95**, and undecorated kits are priced at **\$29.95**. Select paint schemes have \$10 premium due to licensing agreements. Rapido Trains, 905-474-3314, rapidotrains.com

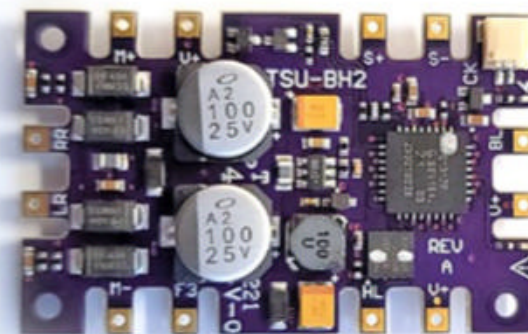
stripes). Two road numbers. Direct-current model with 7mm motor, dual flywheels, train-phone antennas, and directional light-emitting-diode lighting. American Z Line, 614-764-1703, americanzline.com

Z scale freight cars

- **General American Tank Car Co. 1917 8,000-gallon non-insulated tank car.** Koppers Coal Tar Chemicals. Seven road numbers (single car, two-pack, and

four-pack). Solid-bearing trucks and AutoLatch couplers. American Z Line, 614-764-1703, americanzline.com

Electronics/controls



- **Tsunami2 TSU-BH2 decoder.** Upgrade for Bachmann HO Sound Value 2-6-0, 2-8-0, 4-6-2, Norfolk & Western Class J, and Southern Pacific class GS-4 steam locomotives. Eight function outputs; 2A maximum motor stall current; 2 watt, 8Ω load audio amplifier; and 16 channels. Can be used on 7.5 to 22V Digital Command Control track voltage. Measures 45 x 28 x 7.5mm. \$115.95. SoundTraxx, 970-259-0690, soundtraxx.com **MR**

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A photograph of a black Shay steam locomotive, a geared steam locomotive, on a track. The locomotive has two large cylindrical tanks on top and a prominent smokestack. The background shows a clear sky and some distant structures.

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Two Union Pacific General Electric AC4400CW diesel locomotives are on the point of a Wisconsin Public Service unit coal train near Clyman Junction, Wis., on June 29, 2014. Note how the colored (rotary) ends of the coal gondolas all face forward. Cody Grivno photo

Which way should rotary-dump gons face?

Q When I run a unit coal train of Bethgon Coalporter gondolas, should the colored (rotary) ends face toward the front or the rear of the train? Which is most prototypical?

Nathan Penn, Monmouth, Ill.

A If possible, a double-rotary-ended car should be the first car in the train, since the coupler on the locomotive doesn't rotate. After that, it doesn't matter which direction the single-rotary-ended cars face, as long as they all face the same direction. If any cars facing the other way were mixed in, you'd end up at some point with two non-rotating couplers joined together, and that's trouble.

If no double-rotary-ended cars are available to head the train, the cars should all be oriented with their rotary ends toward the front, as seen in Cody Grivno's photo above. Distributed power in the middle or at the back of the train must also be isolated with double-rotary cars, or else cut out of the train when going through the rotary dumper.

Q I have a couple of questions about the benchwork construction of your Spartanburg Subdivision. How large did you cut the plywood sheet? Did you attach the 1x4s to the top of the plywood sheet, or at the sides? Where did the trim pieces go? How large was the sheet of foam you put in the middle of the frame? And where did the foam attach to the frame?

Joe Loll

A The article on my N scale Southern Ry. Spartanburg Subdivision project layout was published in our October 2011 issue. Since I designed the layout to be stored under a child's double bed, it was important to keep its height as shallow as possible. To accomplish this, I took the basic idea of an open-grid train table and flipped it on its head. Rather than stack plywood and extruded-foam

insulation board on top of a wooden frame, I put the plywood on the bottom and the foam board inside the frame.

The plywood sheet and the foam sheet were both cut to the same dimensions: 3 feet by 5.5 feet (36 x 66 inches). These were surrounded by a frame of 1 x 4 lumber. The ends of these four boards were mitered at 45-degree angles so they would meet at a neat joint. I reinforced this joint with an L-brace on the inside, so the outside would be unmarred by nails. Since 1 x 4 dimensional lumber is actually $\frac{3}{4}$ " thick, this means the outside dimensions of the frame came to $37\frac{1}{2}$ " x $67\frac{1}{2}$ ".

The $\frac{1}{2}$ " x $\frac{1}{2}$ " square trim pieces were glued and tacked inside the frame, at the bottom, in kind of a miniature L-girder. The trim pieces don't lend much rigidity to the sides, but rather, give the plywood something to rest on and attach to. The

plywood was glued inside the frame, on top of the trim pieces. Two layers of foam board went on top of the plywood, also inside the frame. It was attached to the plywood with foam-safe adhesive caulk. The surface of the foam came up just short of the upper edge of the frame.

If you want to read more about the Spartanburg Sub, including a series of Step By Step articles based on the N scale project, you can read them in the *Model Railroader* Archive by subscribing to Trains.com.

Q I purchased two Arnold N scale U25C locomotives off the internet. In the process of adding DCC decoders to these two locomotives, the couplers flew apart when I removed them to take the shell off. I need to replace these. I contacted Arnold (Hornby) for help, but they no longer have parts for these locomotives. Next I tried Micro-Trains, and that also was to no avail. Do you have an idea where to get couplers for these locomotives?

Don Survilas

A Micro-Trains offers a lot of locomotive coupler conversion kits, but only one of them says that it fits Arnold locomotives. It doesn't specifically mention the U25C, but it does list a bunch of other models (more than any of their other conversion kits), so it might be as close to a universal conversion kit as Micro-Trains offers. You might want to give it a try: micro-trains.com/index.php?route=product/product&product_id=347

If it doesn't work as is, you may have to remove the original draft gear, drill and tap a mounting hole, and replace the coupler and draft gear altogether.

Q I'm a fan of the Penn Central RR. While visiting my local hobby shop, I saw a model of a PC caboose with a white stripe down the middle. Is it prototypical? And why the stripe?

Mark Kroll

A Yes. Although it was uncommon, that was a prototypical scheme. I've seen it on a few steel cabooses originally built to Pennsylvania RR designs, including the N5A and N8. In fact, there's a picture of an N5 wearing the white stripe scheme on the cover of Robert Yanosey's book, *Penn Central Caboose Color Portfolio*

Send questions and tips to associate editor Steven Otte at AskMR@MRmag.com.

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(Morning Sun Books). Bowser and Atlas Trainman have both sold HO scale models of them in the past, and several manufacturers offer decals appropriate for decorating your own.

As for why? The white stripe might have been intended to make the caboose more visible in the headlights of cars at grade crossings. Or maybe the designer just thought it looked good.

Q I'm a big fan of the Athearn and Atlas 53- and 48-foot flatcars. They're very nice and run smoothly on the tracks. But what's a flatcar without stakes? Have you a good way to make little stakes for the cars? Then I can send many loads on these cars, like logs, pipes, and other such loads.

Michael Stiegert, Bremen, Germany

A You could make stakes for flatcars that have stake pockets from weathered stripwood, or from styrene strip painted to represent wood or metal stakes. But these stakes would only be used if they were needed to hold the load the car was



Penn Central class N8 caboose 23232, seen in this black-and-white photo shot at the railroad's Altoona, Pa., shops on Sept. 24, 1968, bears a white stripe down the middle. Louis A. Marre photo, *Trains* magazine collection

carrying, like pipes, logs, or poles. If the flatcar is carrying a different kind of load, like banded lumber or quarried stone blocks, the stake pockets might be left empty, or they might be used to otherwise secure the load.

A vehicle load, like farm equipment or military vehicles, might be tied down by chains secured to those stake pockets.

Custom-built wood cribbing used to secure a large, irregular load like a boiler, generator, or transformer might incorporate boards secured in some of those pockets. In the early days of railroading, wood walls that set into stake pockets might have been used to transform a flatcar into a temporary gondola. An empty flatcar can be turned into a more



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Port Henderson by Nigel Thomas. Photo: Derek Shore.

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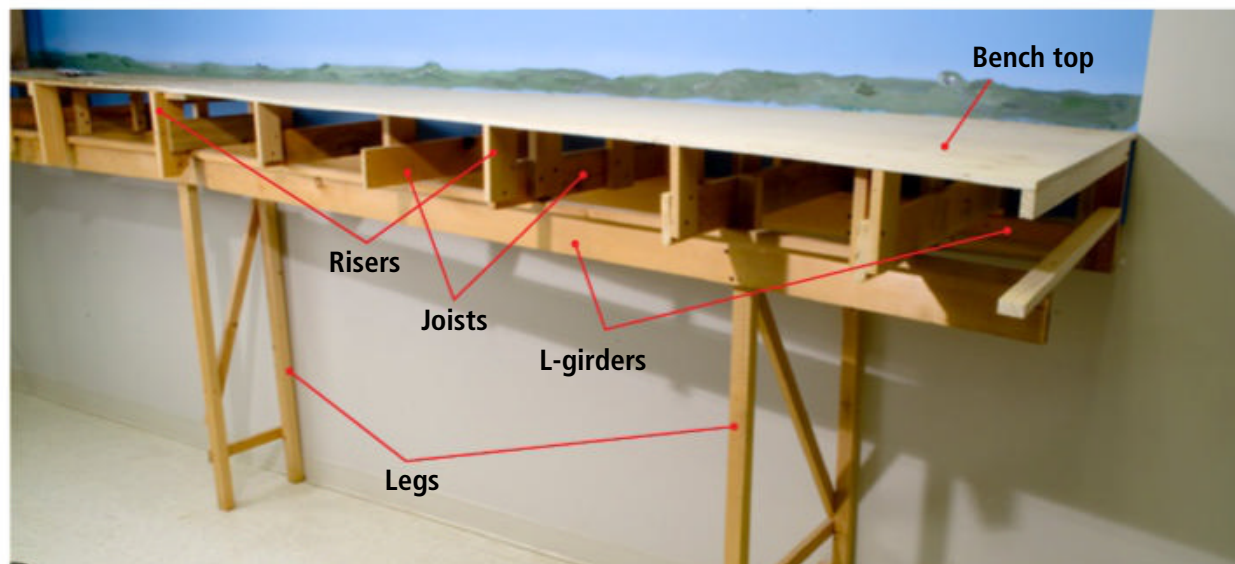
interesting model by leaving some stakes, chains, and other dunnage on the car. You don't necessarily have to use those stake pockets, but if you do, there are a lot of interesting ways to do so.

Q How do I uncouple Bachmann's HO scale Thomas & Friends cars?

Monroe Kleiderman, Clearwater, Fla.

A Bachmann's HO scale Thomas & Friends rolling stock is equipped with European-style hook-and-loop couplers. While these are easy to hook together and durable enough for little hands, they can be awkward to uncouple. To do so, the hooks on both couplers need to be lifted at the same time. There are small projections that extend down from the bottom of those hooks; you might find it easy to lift both hooks from the bottom with a flat screwdriver, coffee stir stick, or similar tool inserted from the side.

Q When building benchwork for a 24" x 6'-0" model railroad, how far apart should the L-girders be from each



Model Railroader's HO scale Wisconsin & Southern project layout is built on L-girder benchwork, the components of which are labeled above. Model Railroader staff photo

other? I was studying the graphic drawing of benchwork on the top of page 91 in the book *Popular Model Railroads You Can Build* (Kalmbach Books, 1977, out of print), and was thinking that 18" would be correct.

Richard Young, Norwalk, Calif.

A Your subroadbed and terrain will be supported by short joists mounted

perpendicular to your L-girders, and you can space those wherever you need to in order to avoid interfering with switch machines, wiring, and other under-table items. It doesn't really matter how far apart you put your L-girders, as long as they're far apart enough to provide stability to the joists. With a 24" shelf like you're planning, anywhere between 12-20" should be fine. **MR**

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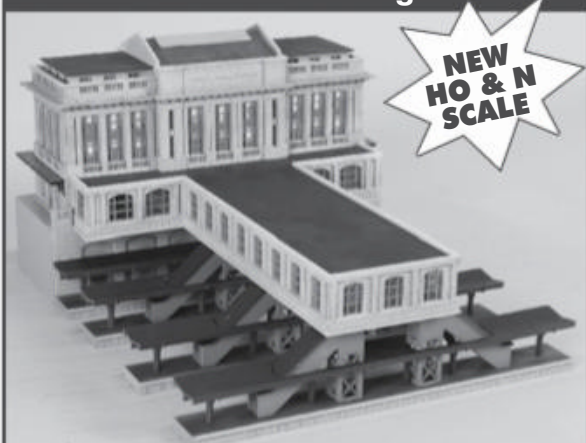
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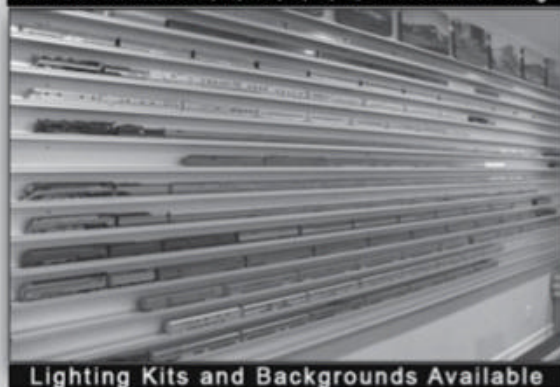
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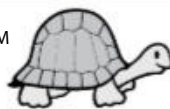
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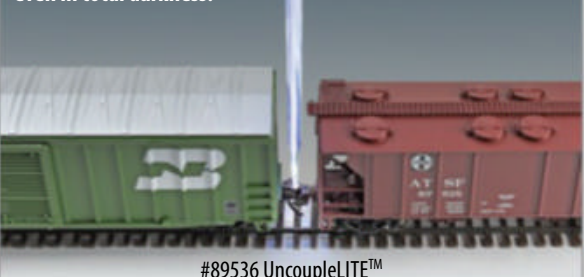


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Always love the V&O!

I always love to see the Virginian & Ohio, and Tony Koester's article about W. Allen McClelland and his V&O ["Seven milestones in model railroading," July 2021], as well as his article on freelancing vs. prototype modeling in the same issue, made for a nice day of reading.

Back in 1975 I was lucky enough to ride Amtrak from Los Angeles to Dayton, Ohio, with a train change in Kansas City. I was only 15 at the time. I went to Dayton to attend the National Model Railroad Association annual convention, but I really went there with the intent to visit and operate on the V&O. I got even luckier to be able to do that! It was my favorite model railroad, and I can't thank Allen enough for that opportunity. Some things in life you never forget, and operating on the V&O was one of them.

I was also inspired by Tony's Allegheny Midland, although I did not get to operate on it. Maybe one day I'll be lucky enough to get to operate on his Nickel Plate Road.

Frank Kenny, Los Angeles



W. Allen McClelland's ground-breaking HO scale Virginian & Ohio model railroad continues to inspire modelers today. W. Allen McClelland photo

confined even though it's a basic oval. If you stand in one place, you can't see the end of it. It looks terrific, due in large part to the three-foot-plus curve radius. Until I read the article I assumed it was an HO railroad, from the excellent rolling stock and layout details.

Thanks for your earnest and largely effective efforts to preserve the hobby into the new century, and I'll try to keep up. When I discovered your magazine, almost everything was built from kits – Zamac, wood, and cardstock. Now there are choices, choices that can and should be made. I needed the wake-up call.

Chris Reed

Have a lawyer check bylaws

I've been a reader of MR for more than 50 years and a trial lawyer for 40. Your response to Rick Robinson of the Walla Walla Valley Model RR Club [Ask MR, May 2021] started on the right track but omitted a critical piece of advice. Specifically, the club needs to consult with a competent lawyer who understands the hobby, the club, and its needs. Cookie-cutting a set of bylaws from another club may leave the club and its members vulnerable when it needs protection the most.

Some of the issues it will confront relate to where the club is housed. Will it build, own, or lease the property? Who will be legally responsible for paying the rent or mortgage? What types of insurance will the club have in order to protect the property as well as the investment in the layout and the trains? Who will be responsible if member-owned trains or tools are damaged? What about someone being injured while working on the layout? How will debt be allocated if the club fails? The list is endless.

These issues may be covered in the documents provided by other clubs, or they may not be. An attorney should review the bylaws to determine whether they meet the club's needs and comply with the laws of Washington state.

I know that the last thing a club wants is to spend precious dollars on a lawyer, but the members may be very sorry later if they don't deal with these issues.

*Rubin Guttman, Esq.
Beachwood, Ohio*

Ohio Southern deserves mention

In reading Tony Koester's informative article on freelancing vs. prototype modeling, I was surprised to see a former MR employee's layout not mentioned. Back in the 1970s when I first started in model railroading, there were three layouts that captured my eye and helped shape what I viewed as a complete and realistic model railroad. They were Allen McClelland's Virginian & Ohio, Tony Koester's Allegheny Midland, and Jim Hediger's Ohio Southern. When I received the July 1978 issues of MR, I came close to wearing out the pages reading and re-reading the article on Jim's model railroad. Then came Jim's double-deck version of the Ohio Southern. Though Jim's layout is now history, for me it will always live on as an inspiration for proto-freelancing.

Richard Shirey, Baden, Penn.

Admirable Trackside artistry

I just received the June 2021 MR and I had to drop a quick mail celebrating the marvelous trackside photo by Gary Hoover. His perfect emulation of O. Winston Link's classic nighttime photos of Norfolk & Western trains is spot on! This is by far the best Trackside photo I have seen in several years.

John Planting, Uppsala, Sweden

July issue a wake-up call

The July 2021 issue, by describing what all of us should think and do about planning a layout and how we might go about building it, reminds me how old-fashioned my ideas were. I was stunned by far-sighted Daryl Kruse's Geneva Sub. It has a very simple track plan, but it's very large and thus doesn't seem

Comments, suggestions, and additional information on Model Railroader articles and departments are welcome in this column. Every comment will be read, but not all can be printed or answered. Make your statement in 300 words or less, and send it to **Railway Post Office, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187**, or e-mail rpo@mrmag.com. Please include your name, city, and state.

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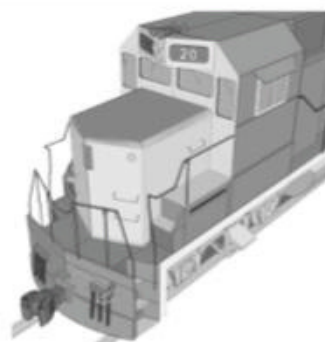
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A Milwaukee, Racine & Troy train prepares to cross over to take the interchange track with the Canadian National at Mukwonago. Senior editor Eric White recently replaced the turnouts in Mukwonago with the new Walthers Track turnouts. Ben Lake photo



Upgrading the MR&T with Walthers' new turnouts

We had a track problem on the Milwaukee, Racine & Troy. There were a bunch of turnouts that were 20 or 30 years old and they've long since reached end of life. Instead of trying to fix that, I replaced them with turnouts from the new Walthers Track line.

The new line of HO scale track comes in code 83 and code 100 profiles. So far, Walthers is offering code 83 flex track; bridge track; right- and left-hand turnouts in no. 4, no. 5, no. 6, no. 8, and no. 10; right- and left-hand curved turnouts in 20" and 24" radii, and 24" and 28" radii; a no. 6 double crossover; and no. 3 and no. 4 wye turnouts. The code 100 line includes flex track and nos. 4, 5, and 6 turnouts. Bare rail is available in both code 83 and 100 as well.

For our rehab, I used no. 5 and no. 6 turnouts to replace the Shinohara turnouts that were installed in the 1990s. Looking over the new turnouts, the first thing I noticed is the metal frog. I liked the way the pieces of rail were mortised

together there. You can power the frog with a metal contact that comes out the straight side of the turnout. The frog is insulated from the rest of the turnout.

The closure rails and point rails are all one piece, so there's no need for the points to pick up current by contacting the stock rails – nice! This was the point of failure on the old turnouts.

Flipping the turnout over, there are jumpers between the outside stock rails and the inside closure rails. And then likewise, the rails off of the frog are jumpered on the other end. That means these aren't power-routing turnouts, and you don't have to isolate the rails coming off the frog.

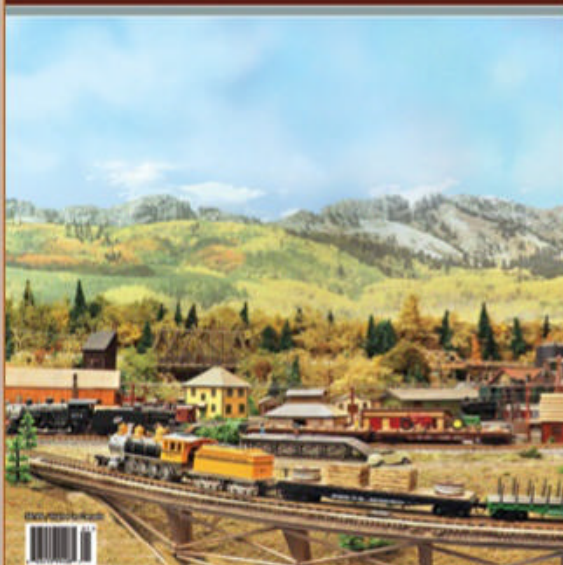
Another nice feature is the snap tie bar. A spring holds the tie bar in place. If you want to remove the spring, follow the enclosed instructions. Remove the small plastic retainer plate, then lift out the spring – easy! Because these parts are under the turnout, you'll have to decide if you want to remove the spring

before you install the turnout. I removed them as I didn't want them to interfere with switch machines I plan to install later. You'll also have to remove the last ties as pointed out in the instruction sheet to allow rail joiners to slip on the ends of the rails. Walthers sells packs of ties to slip under your rail connections, or you can thin the removed ties so they'll fit under the rail joiners after the track is laid. The replacement ties (no. 948-83101) are so easy to use, I chose that option.

Replacement was easy as the Walthers turnouts have the same outline as the Shinohara turnouts. There was only one modification I had to make. When the layout was designed, the track center-to-center spacing was set at 2". To make a crossover with the Walthers turnouts at this spacing, I had to modify the frog ends of the turnouts to make them fit closer together. Keep reading and I'll show you step by step how I did that.

N-Scale

SEPTEMBER/OCTOBER 2021



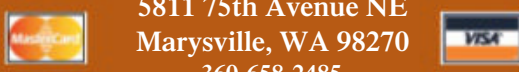
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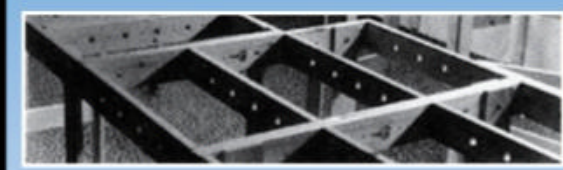
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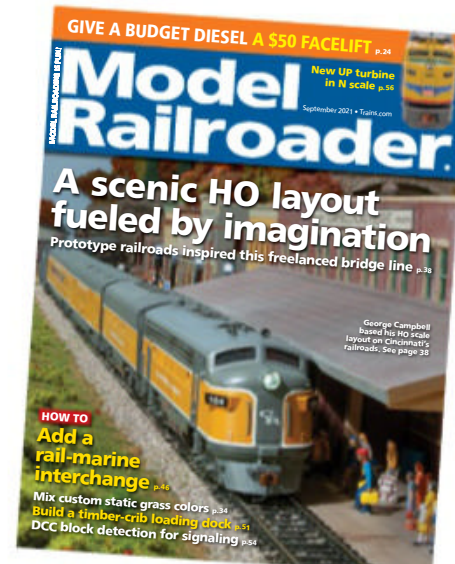
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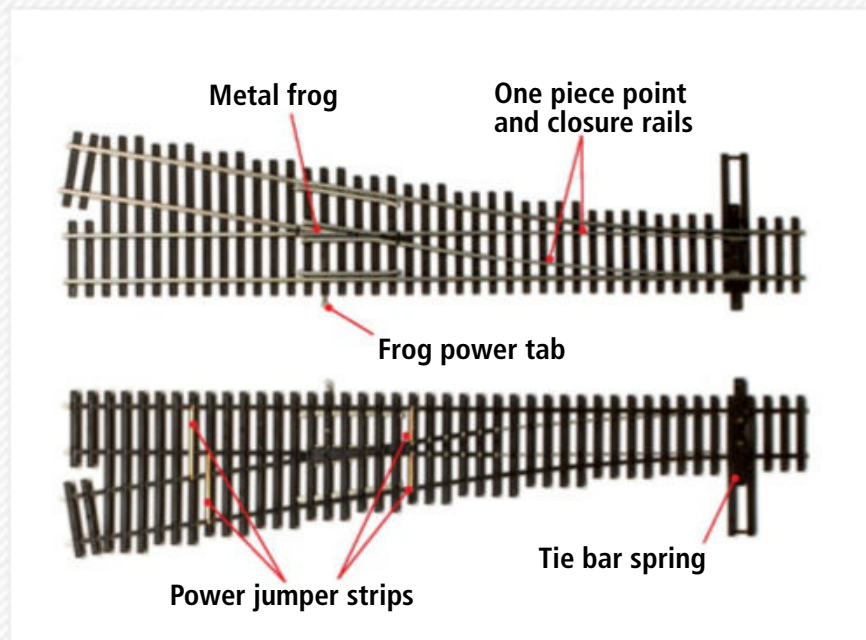
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STEP 1 PULLING THE FROG RAIL



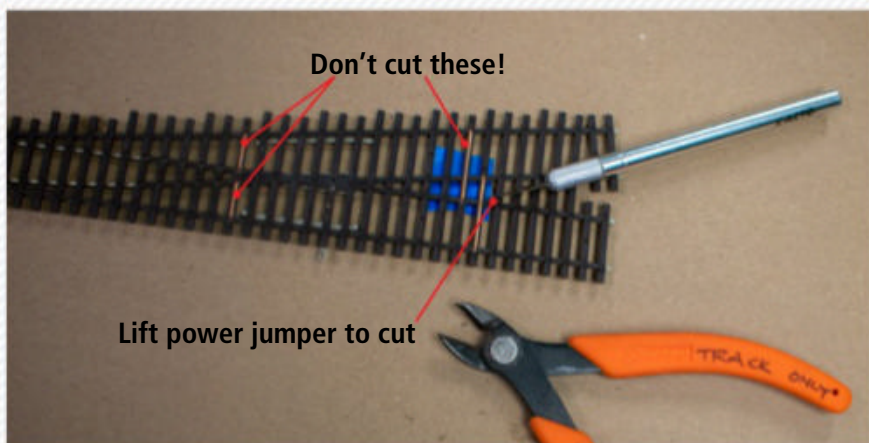
Walthers' new turnouts are available in code 83 (shown) and code 100 in several frog numbers, including no. 4, no. 5, no. 6, no. 8, and no. 10; right- and left-hand curved turnouts in 20" and 24" radii, and 24" and 28" radii; a no. 6 double crossover; and no. 3 and no. 4 wyes.



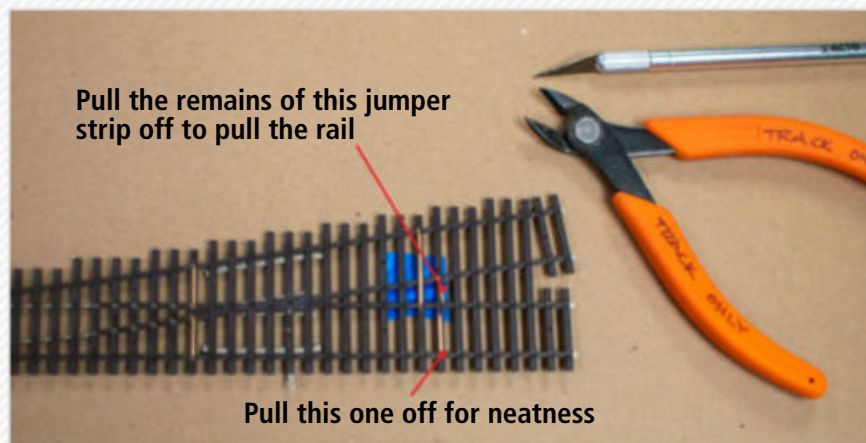
The point rails and closure rails are one piece, improving current flow through the turnouts. The metal frogs are isolated and include solder tabs for modelers who want to power their frogs. Jumpers on the bottom make sure power gets to all the rails. A spring on the tie bar holds the points in place without requiring a switch control.

Bill Zuback photos

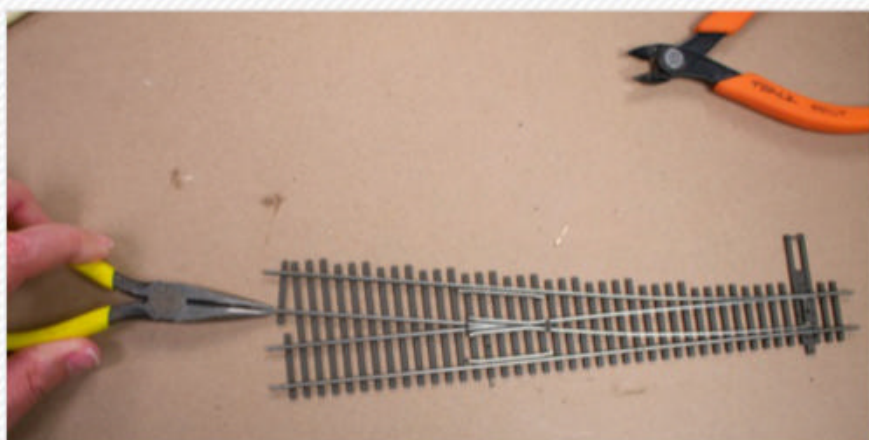
STEP 2 PULLING THE FROG RAIL



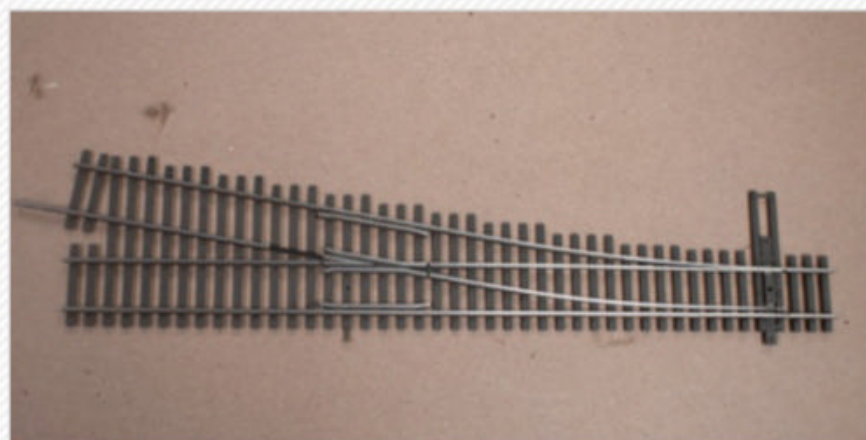
The first thing to do is remove the frog rail from the diverging route. Before I did that, I had to remove the jumper from the straight stock rail. I used a hobby knife to pick the brass jumper up, then cut the jumper with rail



nippers. Be sure to pull off the remaining bits of the jumper from the frog rail or it will be difficult to pull the rail out of the ties.



Flipping the turnout over, I grabbed the rail with needle nose pliers and pulled gently but firmly. I was careful to pull straight out so I didn't damage the spike head detail



that will help hold the new rail in place when I put the turnouts back together.

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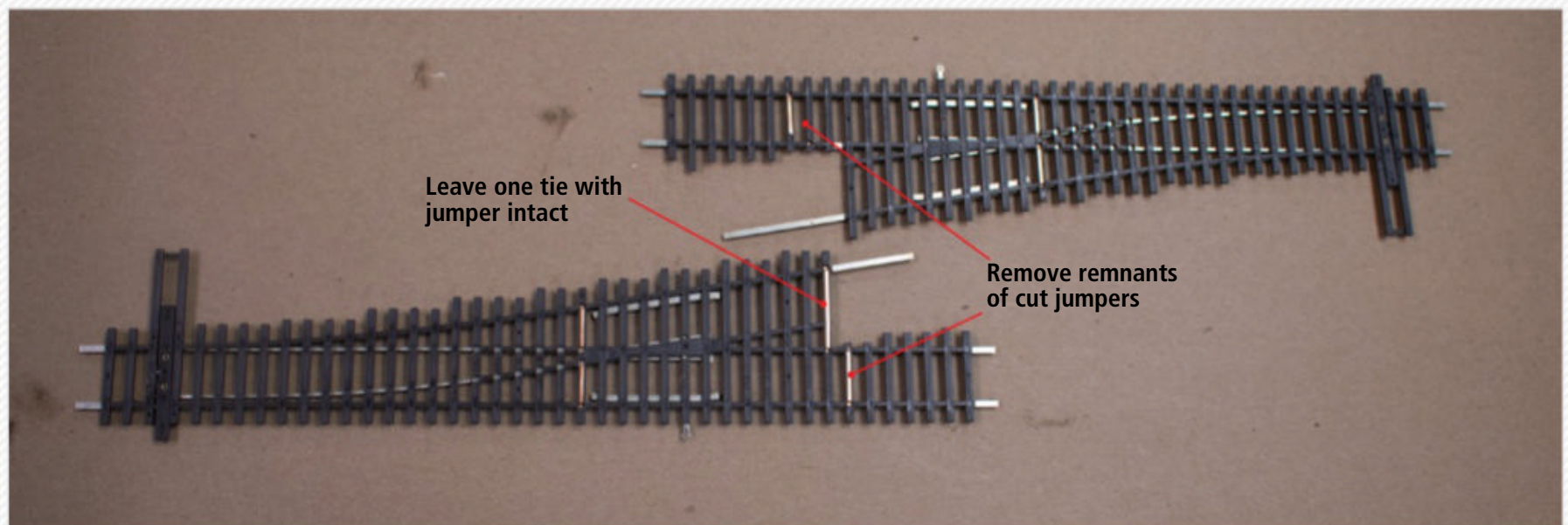
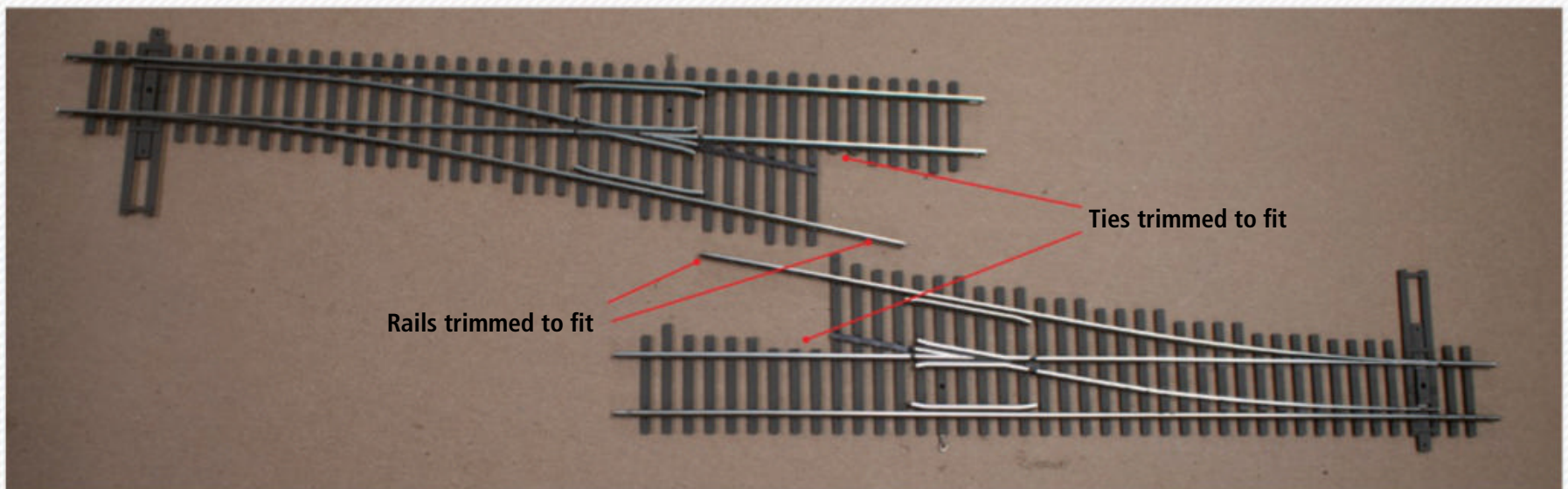
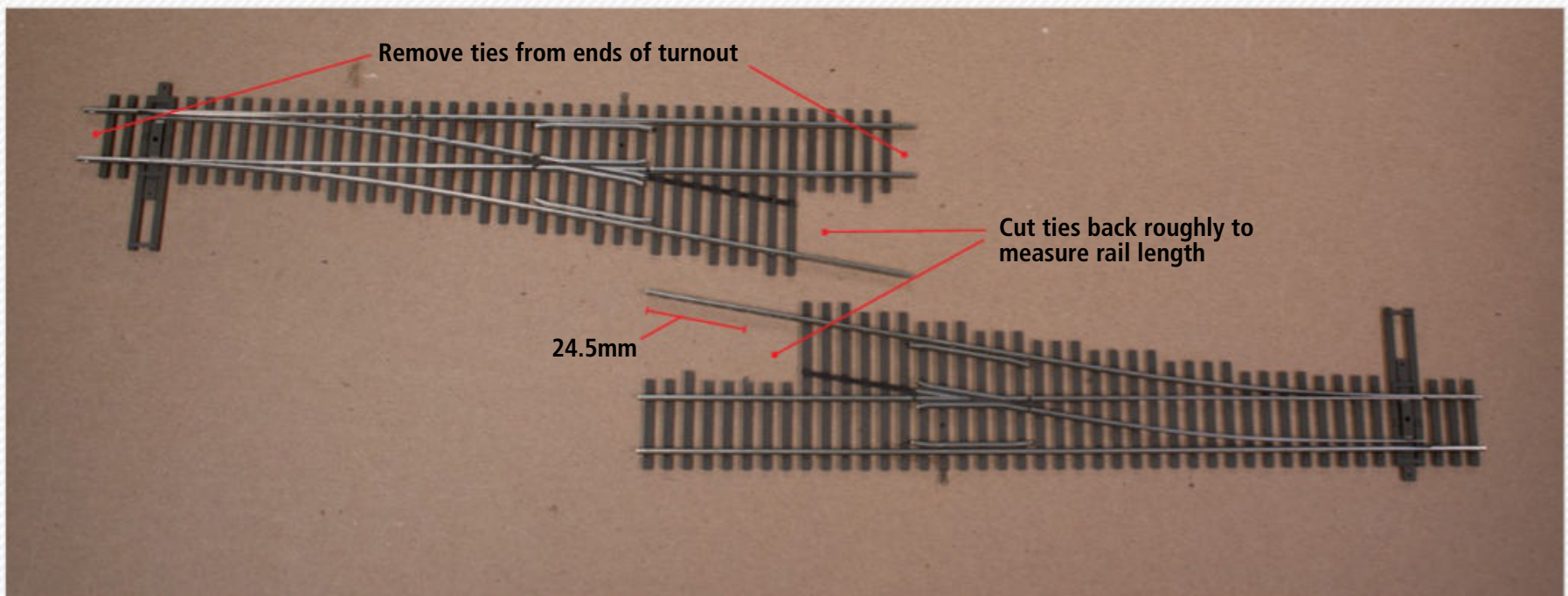


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STEP 3 TRIMMING THE STOCK RAIL AND TIES

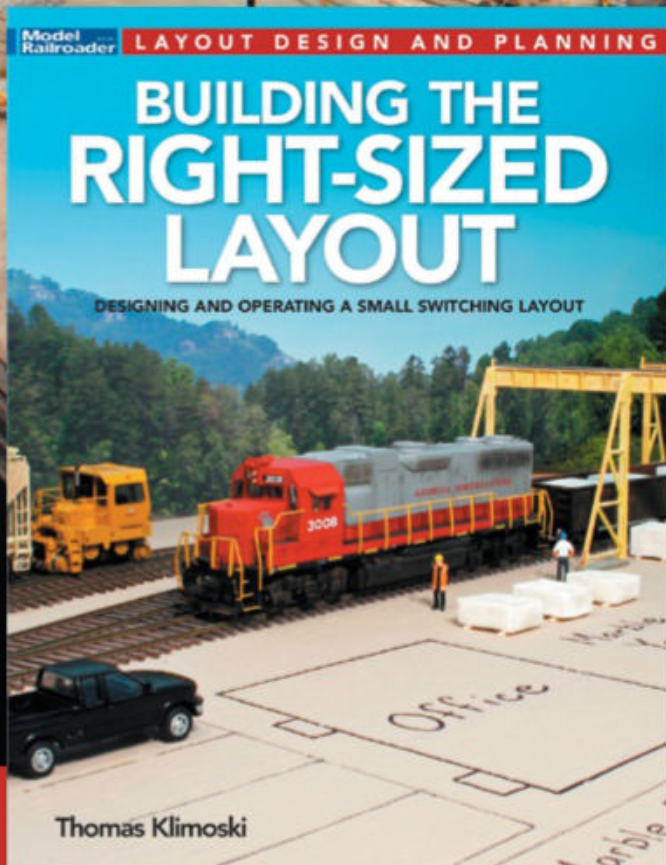


Once I had the frog rail out, I next had to trim the ties. I started by leaving the ties with the jumper strips running under them, and removed the rest of the ties, cutting them at about the halfway point between the straight frog rail and the space where the diverging frog rail would go.

I laid the turnouts on the track centers to see how long the diverging stock rail was going to have to be to mate with the frog correctly. I marked where the rail overlapped

the frog by nicking it with a hobby knife. In the end, I cut about 24.5mm off the stock rail to get the 2" spacing I wanted. With the rails cut, I again laid the turnouts one atop the other and used the upper turnout's ties as a guide to scribe a line to trim the lower turnout's ties. I cut them a little long using the rail nippers, then carved and filed them to get a tight fit. If you're careful, you'll be able to slip the rails into the spike detail a few times without it getting damaged.

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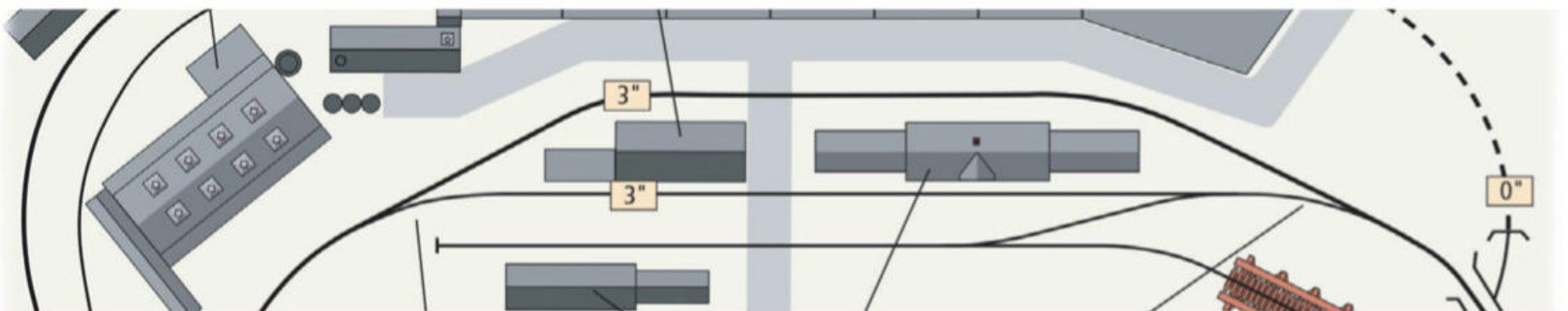
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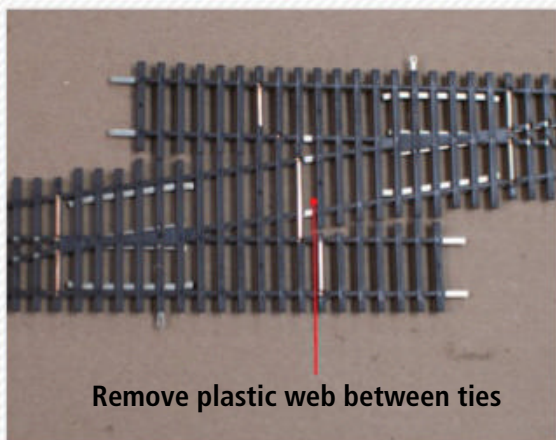


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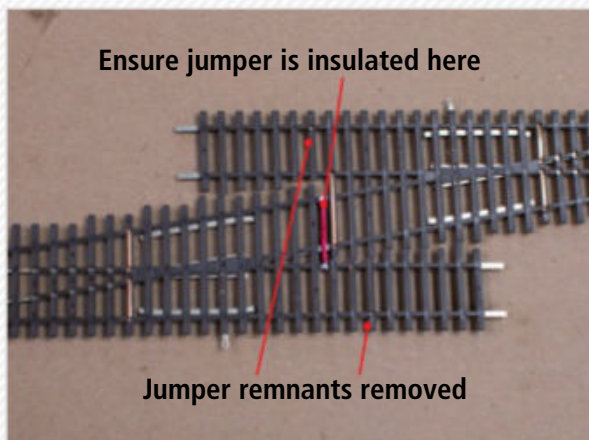
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STEP 4 REPLACING THE JUMPER

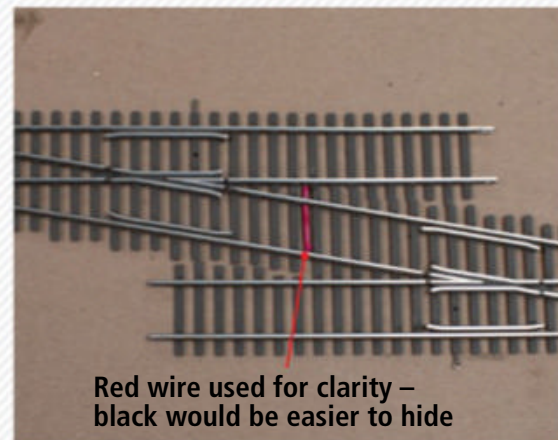


Remove plastic web between ties



Ensure jumper is insulated here

Jumper remnants removed



Red wire used for clarity – black would be easier to hide

Once I was happy with the fit, the last thing to do was to replace the lost jumper. I was able to save one, but the location of the jumpers overlap each other, so one had to go. I removed the plastic web between the ties that runs under the rails and soldered a short piece of wire in place as a jumper. Because I was crossing a rail of opposite polarity, I used insulated wire to avoid a short. I used red wire for visibility in the photos, but black wire would be easier to hide. With the jumper wire soldered in place, the crossover was one solid piece and ready for installation.



MORE ON THE WEB

Check out the video review and see a time lapse of the project on the videos/product reviews section of [Trains.com](https://www.trains.com)

Just to be sure I hadn't created any shorts, I used an Ohm meter to check for continuity where I wanted it, and an open circuit where I wanted that. I'm looking forward to years of service from these turnouts now that the project is finished. **MR**

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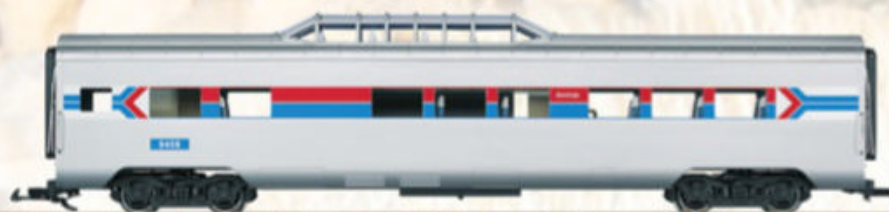
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A Conrail carman protects his work area with a clamp-style blue signal before starting work on a bad-order boxcar. M.R. Snell shares how he scratchbuilt three styles of blue signals for his HO scale model railroad.

Blue signals to protect workers

Make operations on your railroad more realistic with commercial and scratchbuilt flags

By M.R. Snell • Photos by the author

When you talk about signals with model railroaders, green, yellow, or red are likely the first colors that will be mentioned. But there's an equally important signal, and it's blue. Per the 1980 edition of *The Consolidated Code of Operating Rules*, "A blue signal signifies that workmen are on, under, or between rolling equipment and that the equipment must not be coupled to or moved." Having blue signals that are prototypical in appearance and placement can add to the realism of our model railroads.

Five pages in the Consolidated Code are devoted to blue signals, covering topics like authorized types of signs (a blue flag or light during the day and a blue light at night); who can display and remove blue signals; and how the signals are to be placed on locomotives, freight cars, and track.

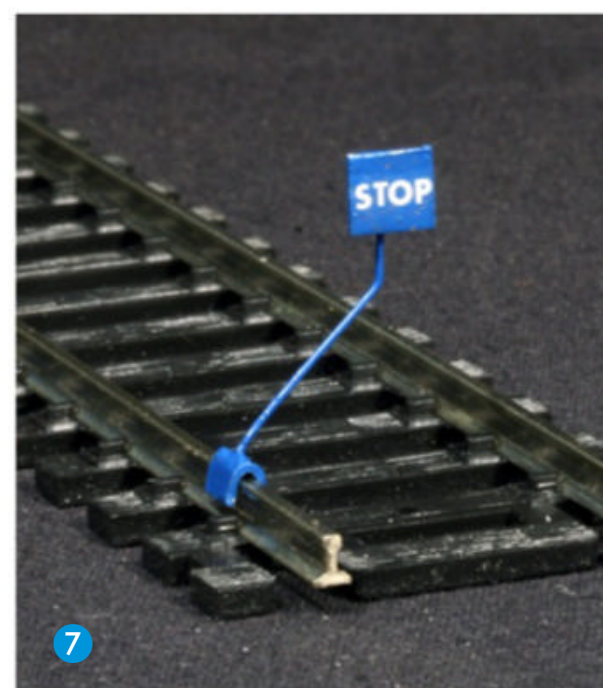
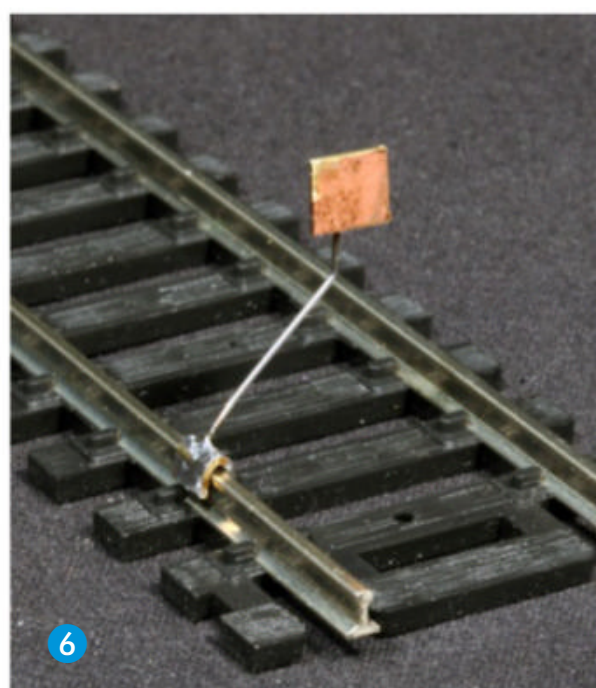
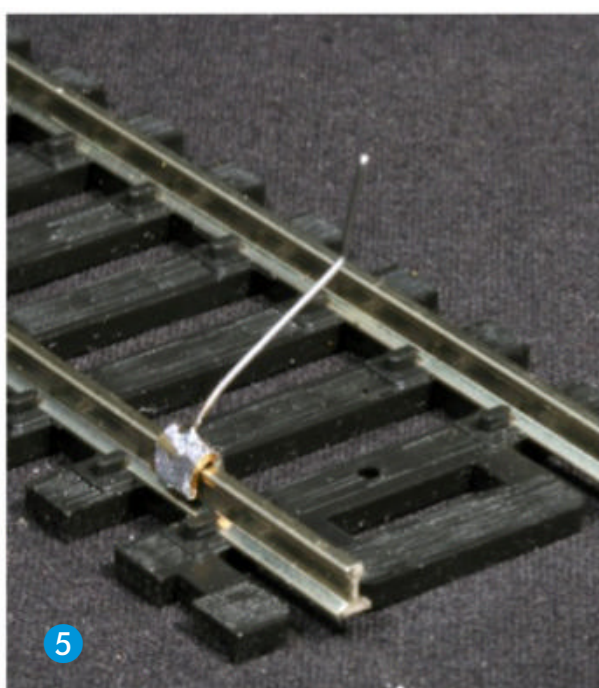
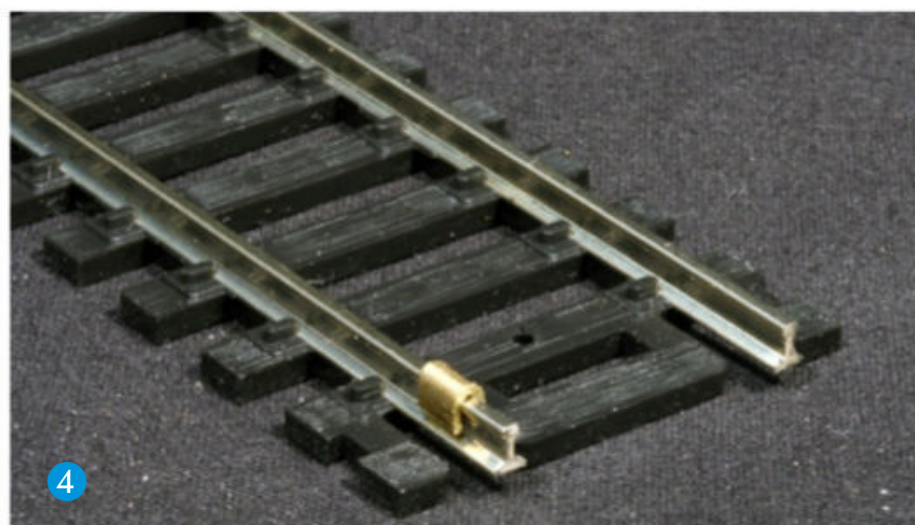
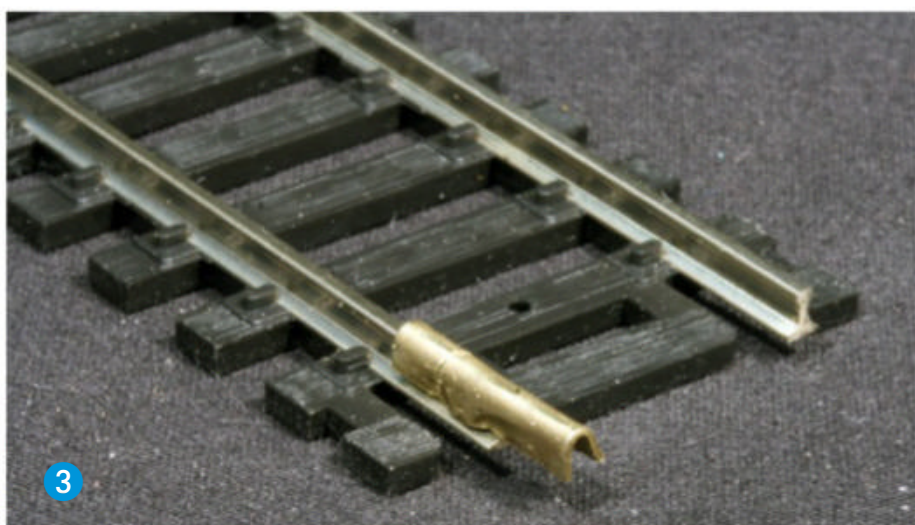
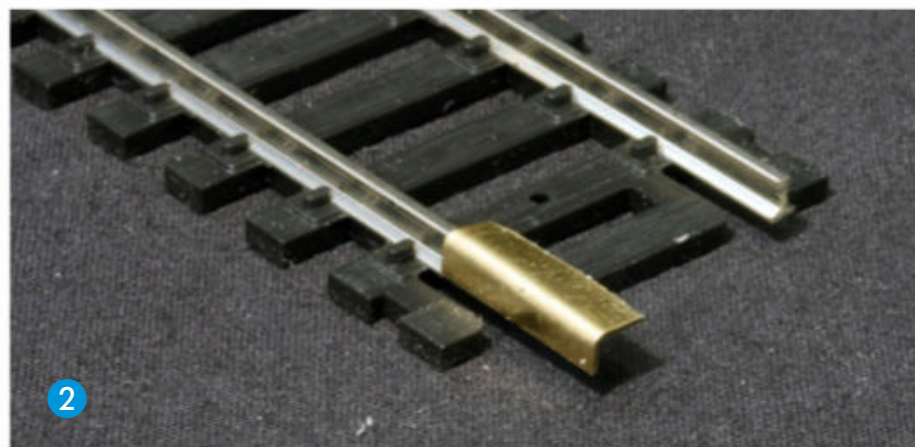
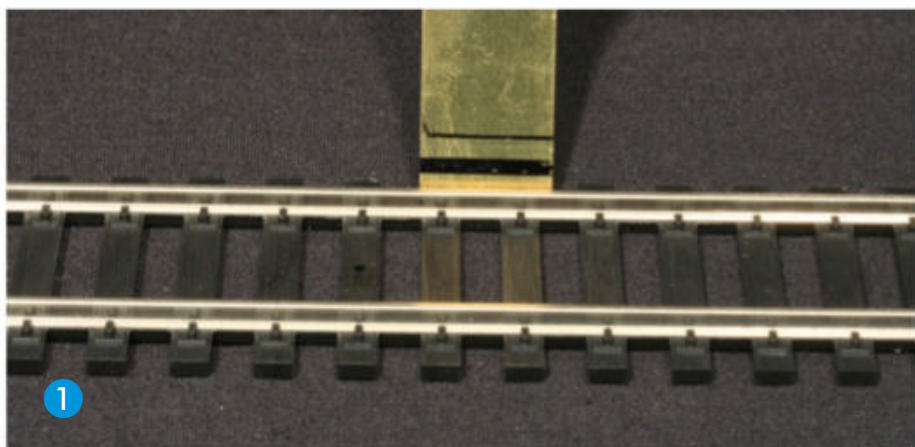
Commercial blue signals are available from Details West (HO scale) and NJ International (HO and O). I've also scratchbuilt signals for my HO scale Conrail layout using common modeling

materials. If you plan to use the signals during operating sessions, build them to withstand regular handling. Some commercial signals are made of soft metal that can easily be bent or broken.

Blue signals can be found on railroads large and small. Build one or more of the signals shown here and add them to your next operating session.

M.R. Snell is a regular contributor to Model Railroader magazine. He models Conrail in HO scale.

Portable clamp-style signals



Portable clamp-style blue signals consist of a 12 x 15-inch (or larger) sign mounted on a staff around 40" long with a clamp at the base that attaches to the rail. The staff is set at a slight angle so the sign is near the centerline of the track. This style of signal is common on industrial and terminal tracks.

Clamp-style signals are available in NJ International's maintenance blue signs set (no. 1308 in HO, no. 3308 in O). If you're unable to find this set, you can make your own in seven easy steps.

First, cut a length of .015" thick brass sheet into a rectangle that's twice the height plus the width of the railhead of the rail you plan to use **1**.

Next, fold the brass so it forms an upside down J shape extending down one side of the rail and over the top of the railhead **2**.

Fold the remainder of the brass down over the other side of the rail, forming a snug fitting upside down U shape **3**.

Once the brass has been shaped, trim it with a cutoff disc in motor tool (wear eye protection!) or a razor saw so it's approximately 1/8" long **4**. Clean any rough spots with a file or sanding stick.

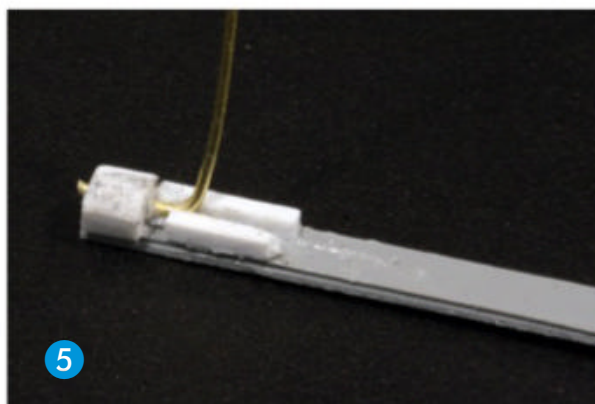
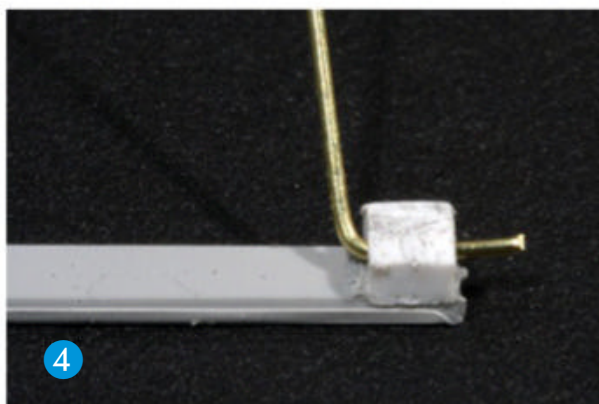
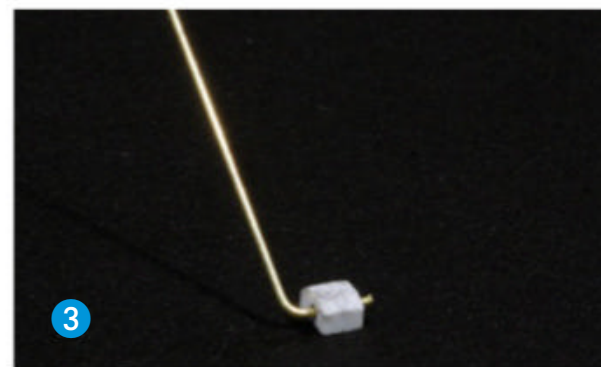
Then drill a no. 73 (for .024" music wire) or no. 76 (for .020" music wire) hole in the top of the brass. This serves

as the mounting hole for the scale 40" length staff. Other rigid wire could also be used. Secure the wire with solder. Once the solder has hardened, bend the wire so it extends inward over the center of the track.

Bend the top 1/8" of the wire to be vertical **5**. Then cut a scale 12 x 15-inch piece of brass strip for the sign plate and solder it to top of the staff **6**.

Finally, paint the entire assembly blue. The sign can be lettered with decals or text printed on label material **7**. The word STOP needs to be in scale 4" or larger letters. Any other words should be in scale 2" or larger letters.

Permanent fold-down and hinged signals



In situations where blue signals are used repeatedly and don't need to be moved, permanent fold-down and hinged signals are used. The design for both styles is similar. The main difference is fold-down signals lack the locking mechanism and springs found on hinged versions.

On both versions, a base plate is mounted on a crosstie between the rails. The signals can be raised and lowered as needed. Permanent fold-down and hinged signals are typically found in engine terminals, passenger layover tracks, and shop and car-inspection tracks.

I made my fold-down signal using a combination of styrene and metal

parts. Those with moderate or advanced metal working skills could fashion a sign using metal exclusively.

Start by cutting a short length of .060" x .060" styrene strip and drill a hole through it close to one end ①.

Next, cut the styrene to the width of a crosstie and bevel the top edges with a file or sanding stick ②.

Take a length of wire (any diameter between .019" through .028") and bend one end to a right angle. Insert the wire through the hole in the styrene block, allowing the short leg to extend through the other side. Cut the staff to a scale 40" ③.

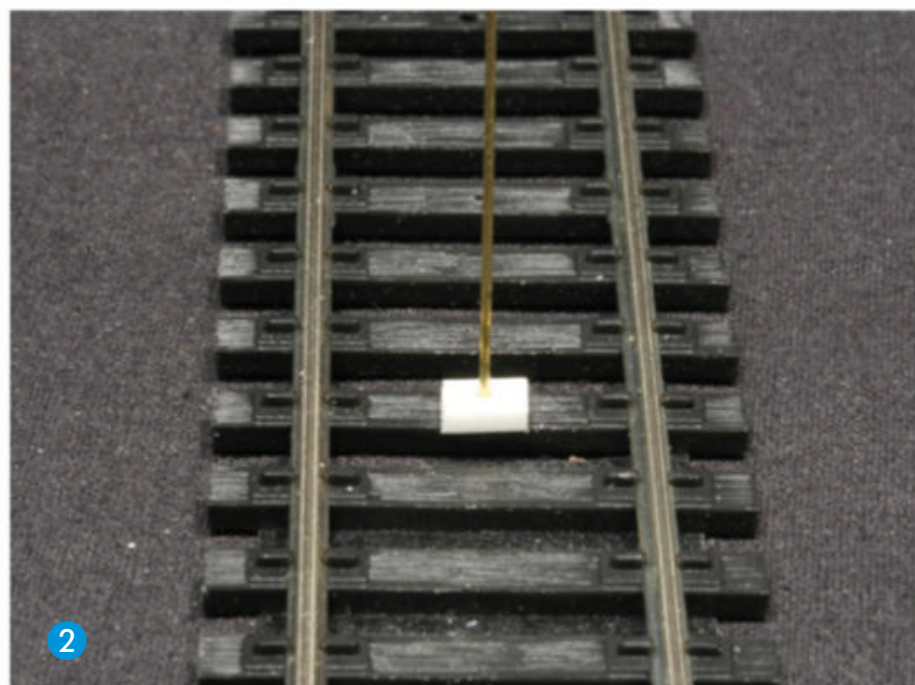
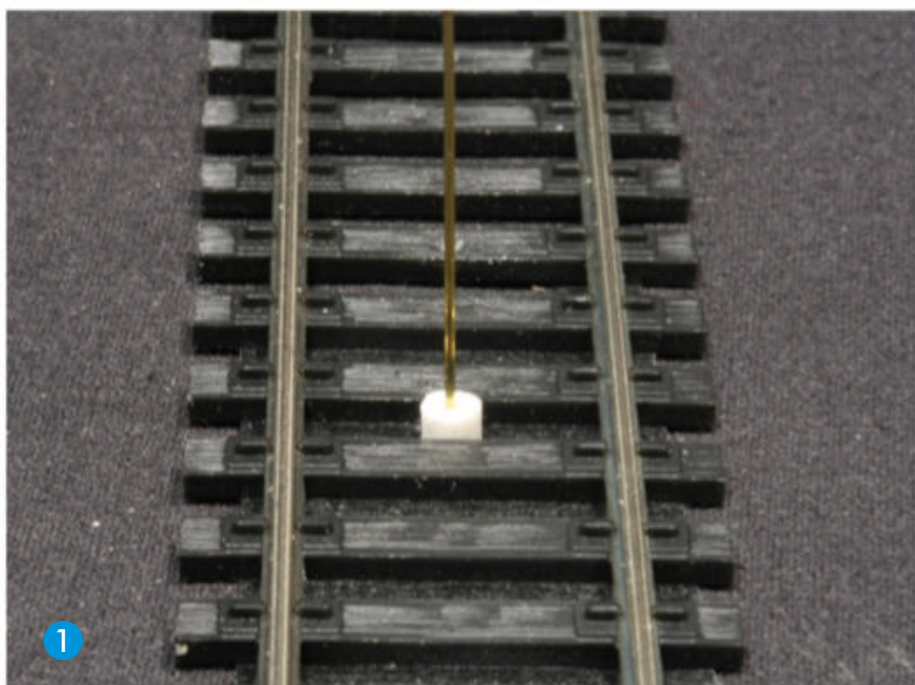
Mount the styrene block on a .015" styrene strip base the same

width as the crosstie using plastic solvent cement ④.

Hold the staff upright and pull it out slightly. Then attach two styrene strips to the base, one on each side of the horizontal section of the staff. Leave a small gap between the strips and the block so the staff can lay down flat ⑤. Then trim the styrene strips and the base so they're roughly the same size as the block ⑥.

Complete the blue signal by attaching a square or rectangular sign plate to the staff. Paint the sign and staff blue and the base weathered black. Once dry, secure the base to a crosstie using cyanoacrylate adhesive or plastic solvent cement.

Removable pole signal



Removable pole signal (cont'd)



The removable pole signal, uncommon in comparison to the other two signals, may be the most practical for model railroad use. It consists of a signal attached to a staff that mounts in a base atop or between the ties. When not needed, the signal is removed and stored, generally on the ground or in a length of pipe attached to the unloading apparatus it's associated with.

This style of signal is available from Details West as item no. 451. However, I've found the soft-metal part doesn't hold up well in regular layout use.

A sturdier version can be made using styrene and wire.

Start by cutting a scale 52" length of .019" through .028" round brass wire. This will form the scale 40" staff, and allow for a scale 12" to be inserted into the base.

There are a couple of options for the base. If you want the signal to go between the ties, cut a scale 12" length of styrene tube ①, opposite. If the sign will be mounted on top of a crosstie, use the Details West base or make a base plate from styrene channel. If you

use the latter, make sure to drill a hole for the staff ②.

Use metal or styrene for the sign plate and mount it to the staff. Paint the sign and staff blue and the base plate a weathered safety yellow. The sign can be lettered using scale 4" STOP lettering and scale 2" supplemental lettering, such as TANK CAR CONNECTED ③.

A scale 30" to 36" length of hollow tube makes a great sign holder. I painted mine silver and attached it to a nearby guardrail ④.



Practical applications



Now that you know how to make different blue signals, the next step is to implement them into operating sessions. There are numerous situations that require blue signal protection, including locomotive servicing ①, car repair, and any track where a car is connected to an unloading apparatus.

During operating sessions, I hang blue signals near locomotives being

served and set a designated time before they can be removed ②. I also signal yard tracks to suggest carmen are conducting inspections. I occasionally make local crews wait until an industry drops the signal on a car waiting to be picked up.

In addition to operational realism, there's also the practical aspect to blue signals on a layout. Broken equipment,

such as a locomotive that won't run properly or a freight car that needs work, can be tucked away on a track protected with a blue signal. I don't remove the signal until the equipment has been repaired.

No matter the size of your layout, odds are you can find your own situations awaiting blue signal protection, just like I did. **MR**





Back to 1940s **BROOKLYN** in N scale

Model railroaders hate to see potential layout space go to waste

By Lance Mindheim

Photos by the author



① A Brooklyn Terminal switcher hauls an eastbound transfer run up First Avenue on Lance Mindheim's compact N scale urban switching layout. Although it's not an exact replica of the area, this scene draws heavily from it for inspiration.

Many years ago, I bought Thomas Flagg's excellent books on New York Harbor railroads. At its peak, dozens upon dozens of pockets of activity lined the city's waterways. These tiny scenes featured trains running down the middle of cobblestone streets, tight-radius curves peeling off at 90-degree angles to dive into structures or run down piers, and an environment that just generally begs to be modeled.

In addition to the rail scene itself, there's also the fascinating interplay with

marine activity, such as tugs, car floats, and lift bridges. I quickly joined the legions that became captivated by the city's rail-marine scene. It would be hard to imagine an area that packs more scenic interest and fascinating operations into such small, self-contained areas.

If that alone were not enough, it gets even better. Some of this activity not only still exists but is a thriving railroad on its own. New York New Jersey Rail LLC still runs car float operations, still operates out of the old New Haven Bay Ridge Yard, and even runs right down

the center of First Avenue to reach a large scrap-metal recycler. It's essentially an evolved version of the old Bush Terminal RR. The February 2018 issue of *Trains* magazine has a detailed article on the operation.

Because the New York harbor railroads were small and dense, they lend themselves to being modeled in a small space, even moreso if you model in N scale. At least for me, the fact that some of these operations still exist and are easily railfanned makes it even more appealing. After reading the *Trains*



② The L-shaped, island-style Brooklyn Terminal layout fills an empty spot in Lance's home office.

Freelance vs. prototype

Satisfied that I had enough room for another layout, it was time for the planning phase. For many years I would have categorized myself as a prototypical purist. Over the years, though, I've come to realize that the disparity between the space the real railroads occupy and how little space we have in which to build our models makes such an approach very limiting. I now take more of a proto-freelance approach, where I try to capture the feel of the prototype while giving myself permission to take the liberties necessary to accommodate the realities of limited space.

The layout is based primarily on the Bush Terminal's run down First Avenue between 39th and 65th streets, but also borrows elements from The New York Dock Railway's Fulton Terminal.

The signature look of many of the New York Harbor railroads was a situation where the main line ran down the center of the street (single and/or double track) with leads peeling off at 90 degrees to serve the piers, float barges, and industries lining the street. With space at such a premium, they even went to such lengths as filling in portions of

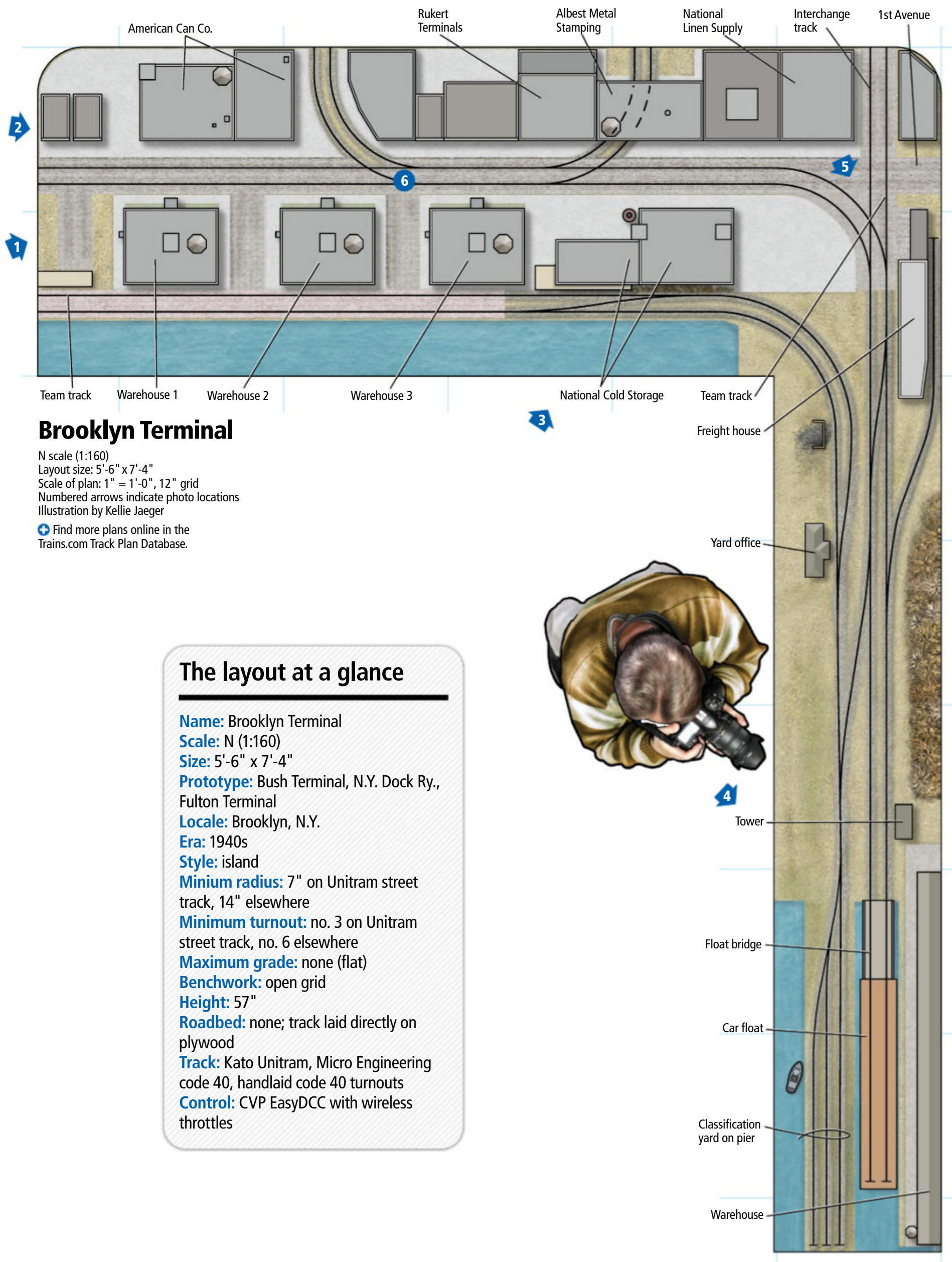


③ An iconic structure on the Brooklyn waterfront skyline used to be the huge National Cold Storage building. Lance's version is made from an Atlas Middlesex Manufacturing kit on the left and a scratchbuilt styrene box on the right.

article and making a visit to the area, I decided to take the plunge and see if there were a way to construct a miniature version of this fascinating aspect of railroading in my house.

My relatively small, L-shaped Los Angeles Junction shelf layout (*Great Model Railroads 2019*) nestles tightly into a corner of my home office. My desk

sits diagonally across the room in the opposite corner, leaving an open area in the middle. Ingrained in a model railroader's DNA is the impulse to fill any empty space with a layout. After doing some rough mock-up planning, I felt confident that if I modeled in N scale, a decent representation of a New York Harbor railroad could fit there.



Brooklyn Terminal

N scale (1:160)
 Layout size: 5'-6" x 7'-4"
 Scale of plan: 1" = 1'-0", 12" grid
 Numbered arrows indicate photo locations
 Illustration by Kellie Jaeger
 Find more plans online in the
 Trains.com Track Plan Database.

The layout at a glance

Name: Brooklyn Terminal
Scale: N (1:160)
Size: 5'-6" x 7'-4"
Prototype: Bush Terminal, N.Y. Dock Ry.,
 Fulton Terminal
Locale: Brooklyn, N.Y.
Era: 1940s
Style: island
Minimum radius: 7" on Unitram street
 track, 14" elsewhere
Minimum turnout: no. 3 on Unitram
 street track, no. 6 elsewhere
Maximum grade: none (flat)
Benchwork: open grid
Height: 57"
Roadbed: none; track laid directly on
 plywood
Track: Kato Unitram, Micro Engineering
 code 40, handlaid code 40 turnouts
Control: CVP EasyDCC with wireless
 throttles



4 Idler cars like the gondola being used above were employed to keep the locomotive's weight off of the car float. The water tank on the end of the pier is to service steam tugboats like the one in the foreground, which wears a New York Central-inspired paint scheme.

Photography standards

I enjoy close-up photography, and there are some aspects of N scale that, if not addressed, stick out like a sore thumb when the camera zooms in. Since most N scale rolling stock comes with truck-mounted couplers, the cars ride higher to accommodate coupler swing. The couplers themselves are also oversized. I body-mounted Z scale couplers to all cars and snipped off the trip pins. When Atlas acquired BLMA, they picked up their fine scale trucks (BLMA 9045) which, in addition to having a narrower tread width, also lower the car back to its correct height.

Finally, code 55 rail, which looks fine at a normal viewing distance, takes on an oversized look in images. To overcome these challenges I used code 40 rail



5 To model the Bush Terminal RR's 1st Avenue freight house, Lance scanned a photo of the building from a book by Thomas Flagg, straightened and edited it in Photoshop, printed it out, and glued it to a styrene core.

the bay to make space for small, stub-ended yards. Finally, all my previous modeling efforts had been diesel-based, never steam, so I thought it would be fun to give that aspect a shot, too.

Track arrangements for the New York Harbor railways, including Bush and

Fulton Terminal, are very well documented in print, so I relied on them as a rough guide. As the layout progressed, I realized I had more than enough track to keep me busy, so further design iterations involved trimming as opposed to adding more track.



on track that wasn't embedded in the street. (See "Street track" at right.) This required hand-laying all the non-street-track turnouts.

I used Micro Engineering code 40 on these parts of the layout. Deeper flanged locomotives tend to "hop" on the spikes of code 40 flex track. A few light passes over the inside spikes with a riffler file solved that problem.

There are no free lunches, however, and going the fine-detail route in N comes at a price. That cost is the extra labor needed to maintain reliable operating performance. Because of the smaller wheel-to-rail contact area, N scale is much more finicky than the larger scales, and even moreso when you employ smaller rail.

There are some things you can do to at least partially compensate for these issues. All my turnout frogs are powered by Tam Valley frog juicers. I add substantial weight to all of the freight cars, and I clean the rail much more often than I would on my HO layouts. Finally, I've found that N scale runs more reliably if you operate it frequently.



6 Kato's N scale Unitram track system was designed for trolleys, but after discovering short-wheelbase steam switchers could traverse it safely, Lance used it for his street trackage.

Street track

A signature feature of the area of Brooklyn I'm modeling was, and still is, street running (both single and double track). In early days the streets used a unique paving called Belgian block, much of which still remains in place, along with the old rails.

In any scale, modeling rail embedded in pavement can get dicey. If the pavement is even a hair higher than the railhead, the locomotive will lose electrical contact. In addition, neatly dovetailing the track into surrounding pavement can be challenging, even moreso around turnouts. For these reasons I prefer to use commercially made street track products if at all possible.

Kato makes a very high quality N scale street system called Unitram that's designed primarily for trolleys. A quick field test showed that, although the radius is very tight, small switchers will negotiate it. Having established that the Kato pieces would work, I used them both for the 1st Avenue street-running section as well as the pier behind the warehouses.

The next challenge was how to make the Kato product look more like actual pavement, especially in the Belgian block areas. Between site visits and Google Street View, I was able to get photos of the Belgian block streets. Using photo editing software, I printed scale images of the streets, cut them to shape, and laminated them over the Kato pieces using 3M Super 77 spray adhesive. If you go this route, make sure you leave enough of a gap beside the railhead so the wheels won't ride up on the paper and lose electrical contact.

I carefully studied the Unitram switches, including photocopy mock-ups, and felt making a street track crossover was doable with some kitbashing, but in the interest of simplicity I never built one. — *Lance Mindheim*

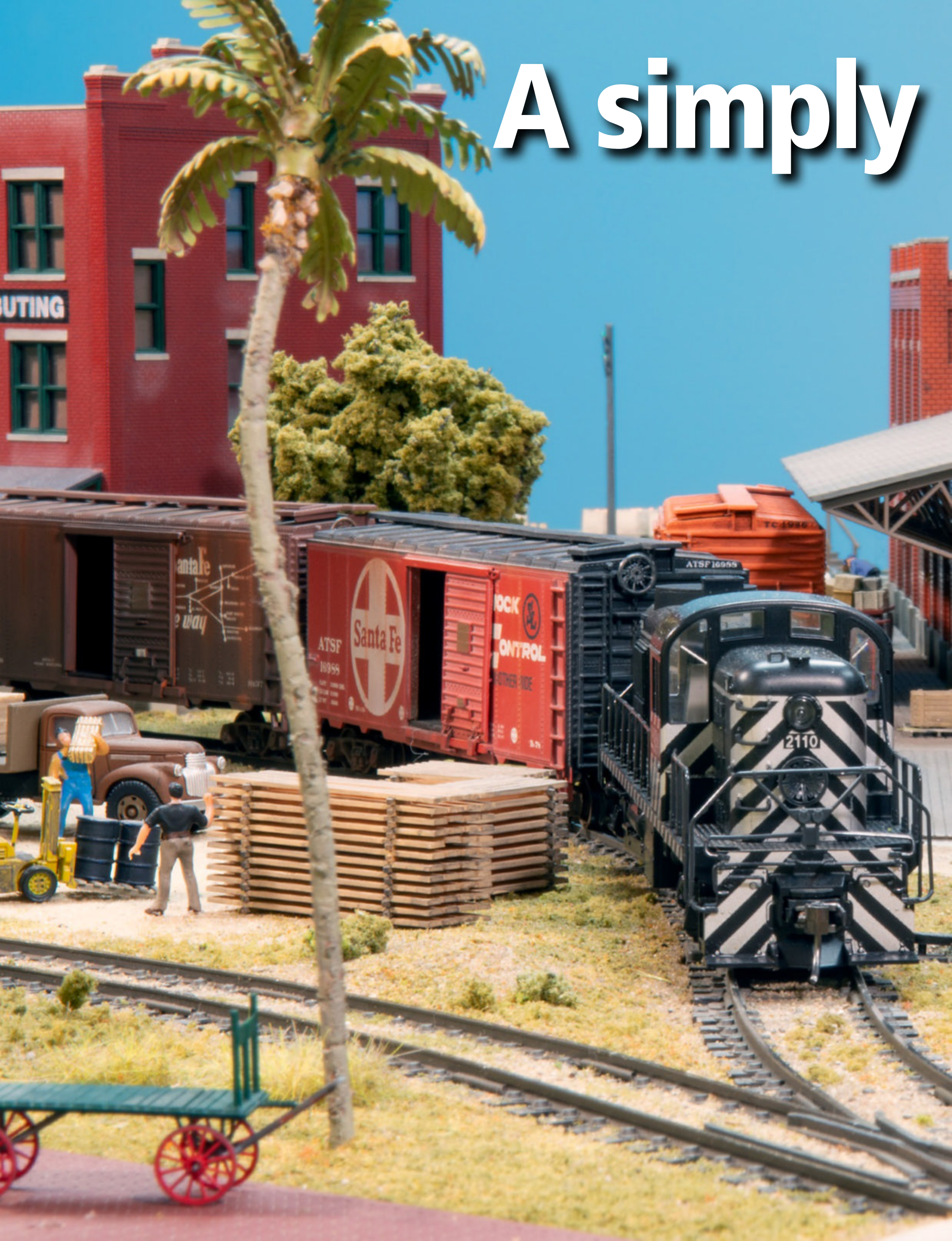
Operations

Designing for N scale operations can be misleading because it's easy to underestimate how long it takes a locomotive to go from point A to point B at switching speeds. Even small layouts such as this can take quite a while to work, even without complex switching maneuvers. Simply unloading the car float and getting the cars to the yard and organized takes well over a half an hour.

I'll often leave an operating session at that. If I want to run longer, I generally think of things in terms of two districts. I'll either work the three warehouses along the pier or the industries along 1st Avenue, but usually not both. **MR**

Lance Mindheim is a frequent contributor to Model Railroader and its special issues. He's the owner of The Shelf Layouts Co. (www.shelflayouts.com), a custom layout building and design firm.

A simply



satisfying **Santa Fe** shortline

A small switching layout
fulfills a childhood dream

Story by **Ron Stallman**
Photos by Rich Hall

1 The crew of the Denton Local works in close quarters as it switches Mustang Wood Products, Anchor Cargo & Distributing, and the Santa Fe freight house. The scene takes place on Ron Stallman's HO scale Santa Fe Shortline.



② On a warm spring afternoon, father and son rail buffs watch as the local prepares to pull a tanker from Sanger Fuel & Oil. Other folks apparently have their eyes set on treats from the Good Humor man, whose favorite spot is the parking lot at the Sanger station.

Growing up following Chicago, Burlington & Quincy way freights through downtown Aurora, Illinois, on my bicycle in the early 1950s, I dreamed of someday running my own miniature locals and replaying the actions of the engineers and switchmen I so fondly watched. But moving to seven different homes while raising three children, lacking adequate space, and sticking to a strict family budget postponed by almost 50 years my dream becoming reality. My freelanced Santa Fe Shortline (SFS), the only layout I've ever built, is the product of those years of dreaming and planning.

A dream becomes reality

After I retired in 2002, I began to build in earnest. I chose a corner of the basement, walled in an 11 x 12-foot space, and built an 7 x 8-foot island in the center of the room so all parts of the



③ The morning mixed, headed by Alco number 2099 in new paint, pulls into Denton to exchange passengers and drop off a reefer at the freight house dock.

layout could be viewed from all angles. The island is a 4 x 8-foot sheet of 1/2" plywood with two extensions, one for the town of Dalton Junction and a smaller one that houses a citrus exchange.

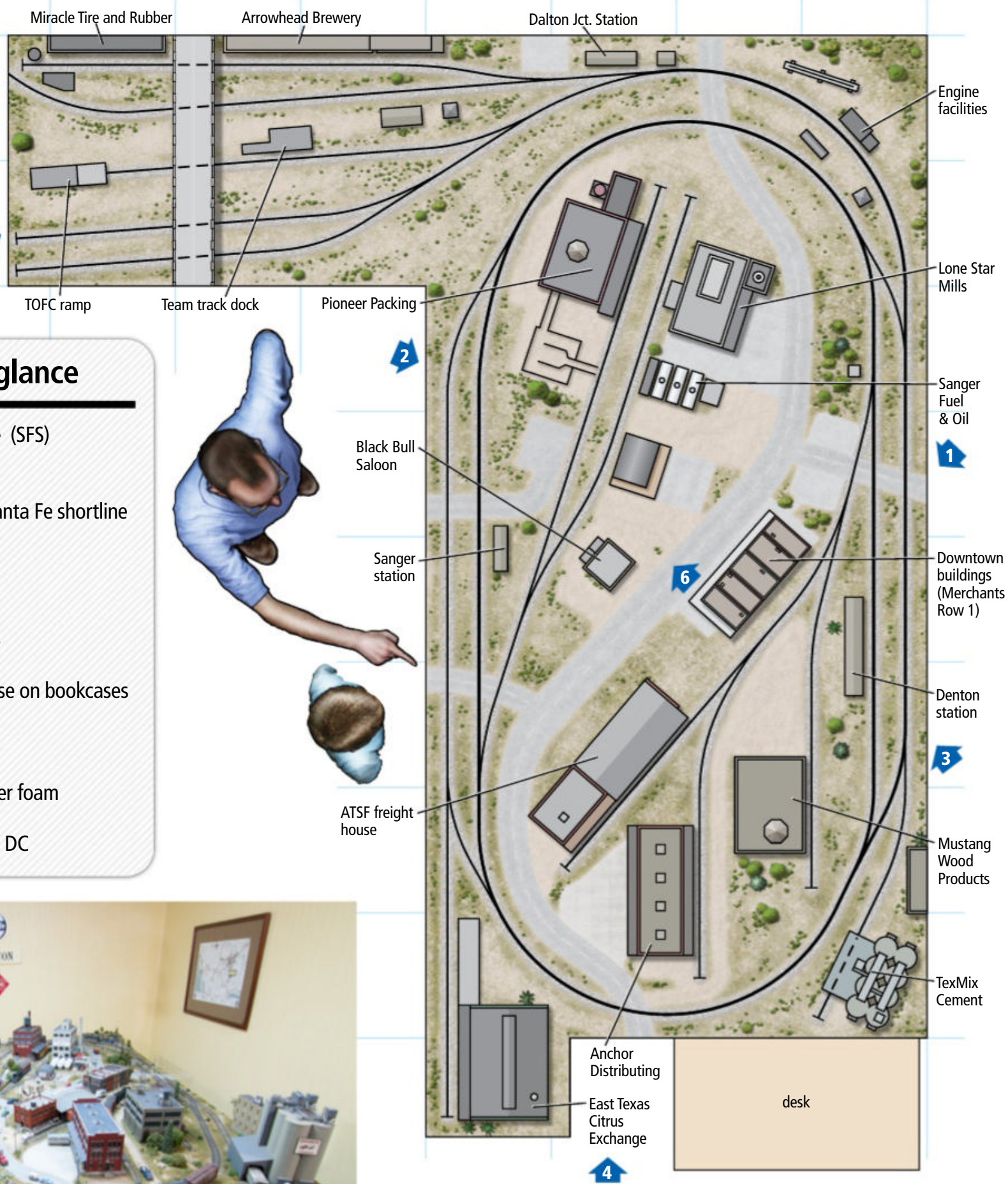
The layout itself sits on two home-made bookcases, an idea I drew from a back issue of *Model Railroader*. One bookcase is for magazines and books while the other holds rolling stock that's

not currently in use on the layout. To add a touch of realism, I painted the walls of the train room depot buff, the color the Santa Fe used on many of its small-town stations.

I designed my freelanced SFS for operation. It's loosely based on a short portion of the line the Santa Fe built in 1954-55 connecting Dalton Junction and Dallas, Texas, and passing through

Santa Fe Shortline (SFS)

HO scale (1:87.1)
Layout size: 7'-0" x 8'-0"
Scale of plan: 3/4" = 1'-0", 12" grid
Numbered arrows indicate photo locations
Illustration by Kellie Jaeger
Find more plans online in the Trains.com Track Plan Database.



The layout at a glance

Name: Santa Fe Shortline (SFS)
Scale: HO (1:87.1)
Size: 7'-0" x 8'-0"
Prototype: Freelanced Santa Fe shortline
Era: April 1961
Style: Island
Mainline run: 18 feet
Minimum radius: 18"
Minimum turnout: no. 4
Maximum grade: none
Benchwork: Plywood base on bookcases
Height: 37"
Roadbed: None
Track: Atlas Snap-Track
Scenery: Sculptamold over foam
Backdrop: None
Control: MRC Tech 4 220 DC



4 A view of Ron's 11 x 12-foot train room painted Santa Fe depot buff. In addition to the signage at the rear, a framed 1961 calendar from a Ft. Worth department store appears on the left and a Santa Fe Ry. map highlighting the layout area is on the right.

Denton. After my wife, Mary Lou, and I visited the area to research and photograph, I decided to include Dalton Junction, Sanger, and Denton in my plan. A 1961 calendar from a department store in Fort Worth and a Santa Fe route map with a "You Are Here" arrow hang on the walls of the train room to help set the time and place.

Still restrained by a limited budget after sending three children through college, I chose to build using a step-by-step

approach. After I completed construction of the layout board, I immediately laid and wired track, using Atlas code 100 Snap-Track and no. 4 turnouts. An MRC Tech 4 220 provided power. I'm probably one of the comparatively few model railroaders who still run on DC ... it's simple stuff for me! The 16 turnouts are operated by ground throws from Caboose Industries.

To make sure everything would fit, I then drew footprints on the plywood

base for each of the ten industries, a TOFC ramp, and a team track ... and I began operating. I was finally the engineer and switchman I had dreamed of being as a youngster!

Structures and scenery

As time and finances allowed I added, a step at a time, structures and scenery. Structures are painted and detailed kits from Wm. K. Walthers Inc., except for



5 Dalton Junction begins to stir as early morning traffic crawls across the bridge into town and semi drivers load trailers onto flatcars. Industries on the left are background buildings from Wm. K. Walther's, which allow space for an interchange track, a track serving two industries, a team track, and a two-track yard on the two-feet-wide extension.

one. The only scratchbuilt piece is Stally's Black Bull Saloon, a hangout for railroad crews in Sanger. The walls and roof are balsa wood. Windows and doors are leftovers from Walther's kits. I painted the walls tan and sprinkled them with sand to give them a stucco texture. After that dried, I added another coat of tan. A beer truck, a few empty beer cases, and a few friends complete the scene.

I was very free with my freelancing. In the mid-1950s Dalton Junction, so it is said, was a rural spot where the new line to Dallas left the mainline to Fort Worth. It was named after nearby Dalton Cemetery. I took the liberty of creating the small town of Dalton Junction. All the industries are fictitious, particularly the citrus exchange.

Although a few locals manage to grow orange trees for personal enjoyment, citrus on a large scale isn't found around this part of Texas. Since I liked the Walther's model, I put the citrus exchange in anyway.

Scenery, which mimics the landscape around Dalton Junction, Sanger, and Denton, consists of a few rolling hills of Sculptamold over foam, with roads, talus, grass, bushes, and trees from Woodland Scenics. Several small vignettes on the layout depict scenes common in small Texas towns.

In place of a view-blocking divider to separate the towns, I chose to use the main road as the divider between Sanger and Denton, and a line of low hills to separate Sanger and Dalton Junction.

The only scenic aberrations are a few palm trees that aren't found in that part of Texas. But I like palm trees!

Rolling stock and operation

My engine roster consists of two Alco RS-2s, one by Kato (zebra stripes paint scheme) and one by Walther's (blue and



Members of the SFS operating crews represent four generations of model railroad enthusiasts. Left to right are Henri Wesdorp, John Plummer, Sam Stallman, and Trevor and Riley Prince. Dr. Jeff Cain was absent when this photo was taken. Former crew members, Nathan Kimpel and Bob Davies, have moved away.

yellow paint scheme introduced by the Santa Fe in 1959); and one General Motors EMD SW9 by Life-Like. I built most of the rolling stock from Athearn "blue box" kits, adding other cars from Atlas, Branchline, InterMountain,



Kadee, Mantua, and Walthers. Total freight rolling stock, all of which I've had fun weathering with powdered chalk, numbers around 50 and reflects mostly western railroads. Passenger, baggage, and mail cars from Rivarossi round out the list.

As I said earlier, I built the SFS for operation. I enjoy operating alone, but it's even more fun with friends. During typical operating sessions, which can last anywhere from 45 minutes to two hours, we run a variety of trains from short locals that serve individual towns to the Sanger Turn, which involves switching at all three cities.

Dalton Junction hosts Miracle Tire & Rubber, Arrowhead Brewing, a TOFC ramp, and a team track dock. Sanger is home to Pioneer Packing, Lone Star Milling, Sanger Fuel & Oil, and the East Texas Citrus Exchange. Denton has TexMix Cement, Mustang Wood Products, Anchor Distributing, and the ATSF freight house. This mix of industries makes for interesting switching with a variety of rolling stock. Switch lists determine a crew's duties.



6 A MoPac cattle car is pushed into position at the Pioneer Packing pen behind two popular hangouts in downtown Sanger. Teenagers like to hang out and listen to Marty, the mechanic, tell tales about when his dad was an engineer during the steam days, and the Black Bull Saloon is the favorite gathering hole where oldsters gather to make up stories of their own.

All trains originate in Dalton Junction where there is an interchange track off the main line to Ft. Worth. Crews make up trains by pulling cars from the interchange track and sorting them in the small two-track yard. Short passing sidings on each side of the layout, one at Denton and one at Sanger, allow engines to get from one end of the train to the other for switching purposes. But sometimes a consist has more cars than a siding will hold, and it's fun to watch a crew find a way to prototypically accomplish their business. Operating rules prevent a crew from running an engine around the oval to get to the other end of the train.

Switchmen are required to use hand signals to communicate with engineers.

In addition to freights, a mixed daily carries passengers, mail, and milk from town to town. Crews consist of a dispatcher who prepares switch lists and oversees the operation, a switchman or two, and an engineer.

A dream come true

As my railroad has developed, four generations of relatives, friends, and their children and grandchildren have become part of the operating crews. Our



Meet Ron Stallman

Ron is a retired elementary school teacher. He and his wife, Mary Lou, live in Elkhart, Indiana. They enjoy three children and four grandchildren, all of whom live in the area. Ron has been interested in model trains since he was seven and received his first Lionel train set. He began to build his first HO layout at the age of 62. It's never too late!

youngest operator is Riley (10) who is a well-qualified engineer. I'm the oldest (80). In between are three other retirees, two young fathers, and one collegian.

I have a great deal of admiration for the model railroaders who exhibit their craftsmanship on a larger and grander scale in *Model Railroader* and at hobby shows. My circumstances have allowed me only a small portion of that experience. But inspired by other model railroaders, this octogenarian is still making his boyhood dreams come true. **MR**

This article would not have been complete without the expertise of photographer and good friend, Rich Hall.



HIDDEN Epoxy River Railroad

One modeler's creative,
space-saving solution

By Peter Waldraff

Photos by the author

When I was 27, I built my first N scale layout in a custom-built, glass-covered coffee table. It was the perfect solution to save space inside my 1,200-square-foot house and a project that kept me busy leading up to the birth of my first child. Unfortunately, that only lasted a few years before I realized,

after seeing my daughter climb on the glass, that it was a safety concern. With another daughter on the way, I disassembled the table.

Interest was sparked again 20 years later when my brother-in-law, Brian, asked me when the next train coffee table would be built. After collaborating with him, I went on and spent the next year building it. Loving how it turned

out, I realized this was the niche that I wanted to pursue.

For my next project, with the idea of saving space in mind, I decided on a shelf layout that hangs on a wall. It can be folded up and concealed by a piece of wall art when not being used. The layout would hang at the height of a typical picture (60"), and when folded down would be at the perfect viewing height (54").



Peter Waldruff's layout manages to fit landscaping, structures, and a working track all within the confines of a framed piece of wall art.

All I needed now was approval from my wife, Angela. So, one day, I casually asked her if she wanted a piece of art to fill our empty dining room wall. Without hesitation she replied, "Yes, that would be nice!" I decided there was no need to elaborate any further, and took that as all the approval I needed to start.

Building the frame and shelf

The framed layout only needed a moderate wall space. It measures 68" long x 20" tall x 5" deep and is attached to the wall using French cleats. The epoxy resin art piece is the foundation and platform for my layout. I determined 4³/₄" depth is the minimum I needed for the interior of the layout to allow all the structures and trees to fit when folded.

To make this piece look less bulky and not appear to be sticking out from



The art piece measures 60" x 12" and is made from ³/₄" maple with a glued ¹/₄" plywood backing and wavy epoxy resin poured in between.



The arms are needed to swing the track (art piece) away from the fixed track (attached to frame) when folded up. If normal hinges were used the track would have folded into itself and not worked.



In order to fold the layout shut while still having trees and buildings, Peter designed hinged terrain. The ground cover, trees, roadway, and fruit stand all can be folded neatly to the side.



The trees, soils, and grass are commercial scenery products, but the tall grass in the middle along the ocean coast were made from paint brush bristles cut, hot glued together, and painted.

the wall too far, I chose a 1 $\frac{3}{4}$ " depth reveal at the frame's edge and had the art work centered and stepped in from the frame's edge to give the illusion of a more flat appearance.

The most crucial part of this project is the hinged arms at the ends of the art piece. These arms are made from plywood and hold the art to the frame with $\frac{5}{16}$ " bolts and skateboard bearings. Gas spring lid supports are added for safety.

Designing the layout

The back side of the art piece is lined with 1" extruded-foam insulation board glued to the plywood. An on-edge vertical plywood wall is made from two laminated $\frac{1}{2}$ " thick pieces of plywood attached to the base with wood glue and screws. This keeps the layout flat and gives the structure for the rocky hillside terrain coverage I needed to conceal the back side of the track and train and give the illusion of the train traveling into the valley toward the volcano backdrop.



The layout follows the fictitious theme of a Pacific island resort with a short line passenger train to transport guests to some of the island's attractions. The background of the layout is inspired by a picture of Mount Fuji and painted over the plywood backing of the frame using acrylic. The ocean and river are made from epoxy resin and blue and green powdered pigments.

I carved the rocky cliff terrain from foam board, which I glued and scratched over with a knife, then painted with acrylic. All structures (barn, station, fruit stand, fence, and stairs) were scratchbuilt from scrap wood, hobby sticks, and toothpicks.

The track is Kato Unitrack glued directly to the foam base. The configuration is a simple dogbone-shaped continuous loop with 12" radius curves and one turnout for the train station. The most interesting part of the track is the two cut sections that allow the layout to fold up while allowing the back straight-away section to remain intact. This means the train can stay on the track when the layout is closed and eliminates the need for set up when folded down.

These cuts were made after the track was laid down, fully glued in place, and left to dry for 24 hours. When the shelf is folded down, including the 1½" area to hold the straightaway, the layout measures 13½" x 60".

The train itself is a steam locomotive with two passenger cars manufactured by Kato as part of the Pocket Line Series train line in Japan. It's the perfect size for this small layout and its ultra-tight radius. The operation itself is simple: forward, reverse, and a manual operation of the single turnout for a stop to pick up passengers.

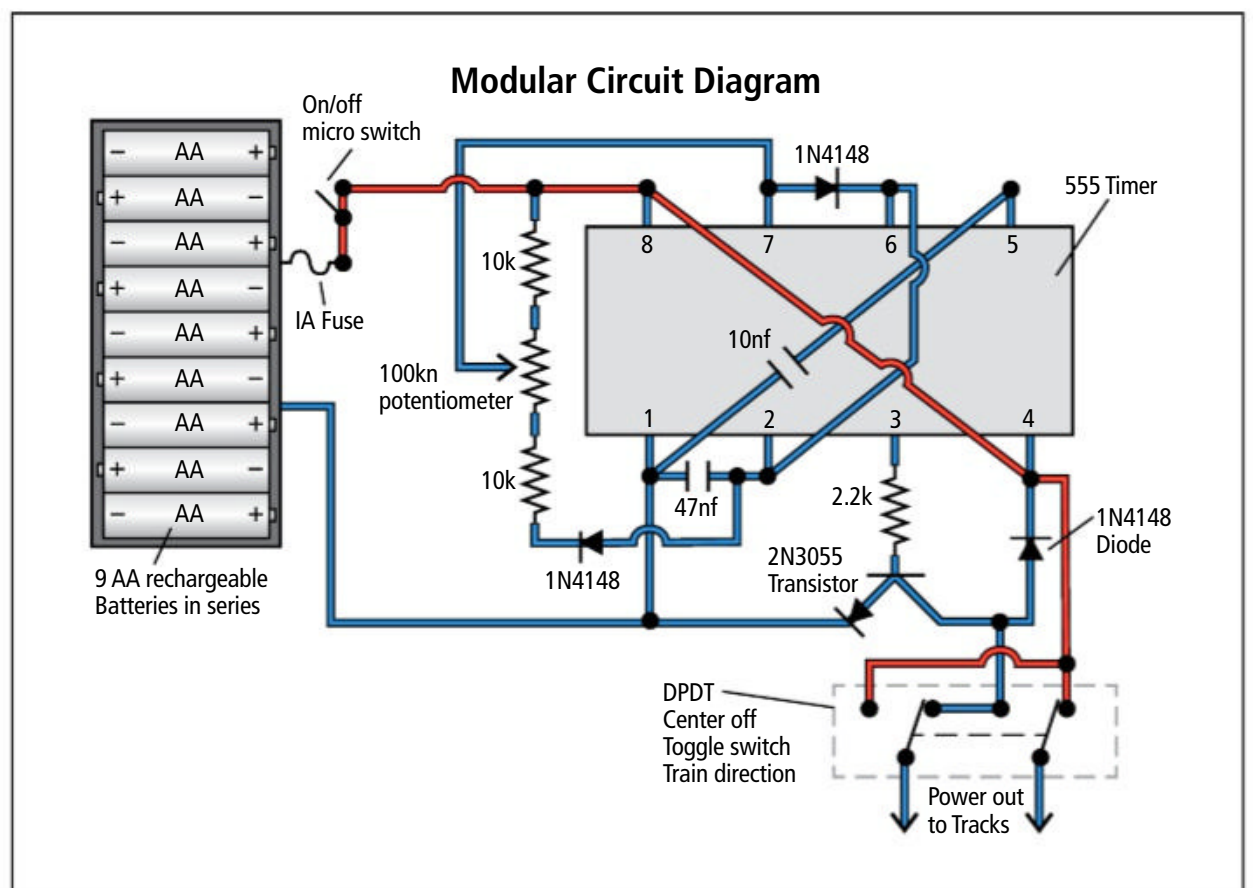
Power

There is no need for a power cord or transformer; the power comes from 9 rechargeable AA cells providing 10.8 volts for the lighting and train throttle, protected with a 1A fuse.

I control the train using a pulse width modulated circuit I built using a 555 timer and a few components. The circuit and controls are built into the right side of the terrain and allow me to run the train at a slow speed while providing maximum voltage to the locomotive.

The second circuit (Adafruit Audio FX soundboard) is used for the audio sound effects of thunder and train horn sounds. This circuit is triggered by my own homemade paperclip switch. When the train passes through the tunnel, it hits and drives through a free-hanging wired paper clip, causing the clip to make contact with another adjacent wired paper clip. This triggers the circuit and sends sound to two 1½" speakers hidden in the tunnel.

I connected a current meter in line where the fuse would go and measured 180 MA when fully loaded. This is



Some of the layout's electronics, along with Peter's homemade paperclip switch that controls the audio circuit, are hidden behind this landscaped wall.

enough power to run the train for 8.5 hours with the lights turned on or 22 hours with no lights. In the first year, I haven't had to charge the batteries yet.

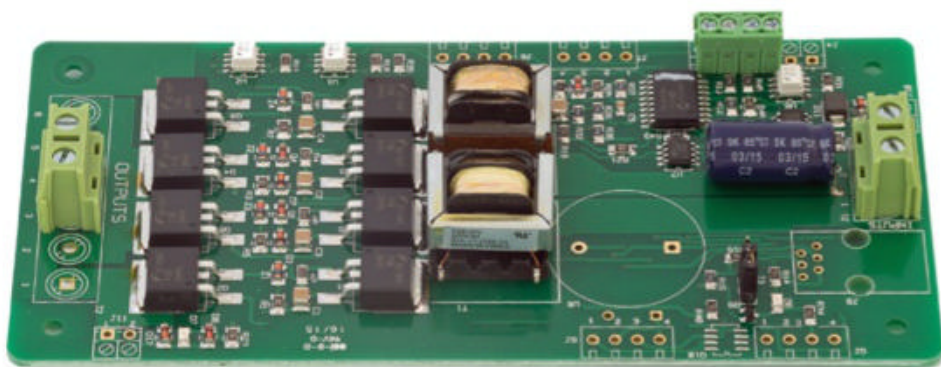
A hidden gem

One funny fact about this project is that my wife never knew about the layout until my teenage daughter pointed it out.

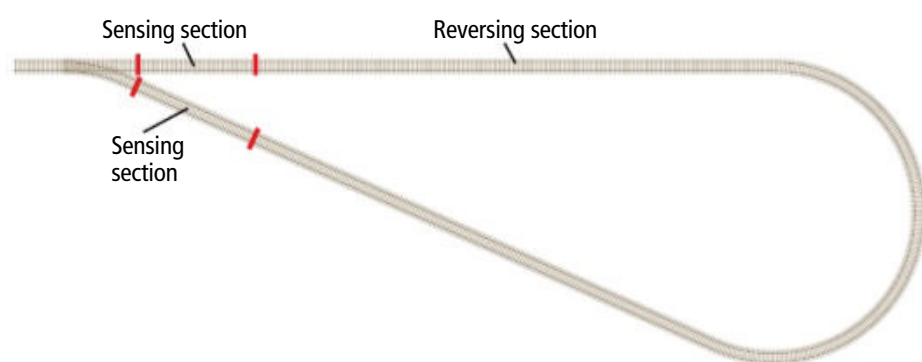
She was shocked and thought it was just a cool piece of art.

The project in total took me 8 months to complete from design to final details. This project is the fourth model railroad I have built in the last three years, and it motivates me to come up with better and more innovative ways to integrate model railroading into everyday living with limited space. 

Advanced automatic reversing controllers



1 The PSX-ARFB. To use the DCC Specialties PSX-ARFB as a basic auto-reversing section controller (ARSC), just hook up two wires to the track bus (input on right side of photo) and two wires to the reversing section (output on left side). It has many more features if you need them. Photos by the author



2 Time and space. Whether using the PSX-AR or the DR5013, the cautions are the same. When using a slow-motion switch machine, make sure your sensing sections are long enough that the machine has time to line the turnout before the train arrives. Your reversing section must be longer than your longest train. Illustrations by Kellie Jaeger

In the April 2021 issue of *Model Railroader*, I wrote about DCC reversing sections. I briefly touched on some automatic reversing section controllers (ARSC) that are available. This month I will focus on ARSCs that do more than just the basic reversing functions.

Have no fear, because all ARSCs still work with as few as four wires – two to your booster and two to your reversing section. But some can control turnouts to balloon tracks, support transponding or RailCom, have built in electronic circuit breakers (ECB), report their status to Java Model Railroad Interface (JMIRI), and yes, even more!

Most ARSCs use short-circuit detection to automatically reverse polarity. This process can compete with

ECBs and cause conflicts. If you plan on using ECBs to break up your booster districts for easier troubleshooting and will also be using an ARSC, I recommend looking for an ARSC that has a built-in ECB. You will then connect ARSCs discussed in this column directly to your booster and not after any other ECBs.

Many DCC devices have various outputs that are known as “optically isolated, open collector.” Some of the advanced ARSCs are so equipped. I like these outputs because you can hook them up to almost any input device without fear of damaging anything **1**. They depend on the input device or an external power source to provide power for them. Without either, you won’t measure anything with a meter.

The PSX-ARSC from DCC Specialties is both an ARSC and an ECB, but that’s not all. Its ECB has “adaptive load reset” capability, meaning it can sense sound-equipped locomotives and reset properly. Like other ECBs, it can automatically reset or be reset manually with a pushbutton. The ECB’s trip points can be set from 1.27A to 19.2A. You can also add an audio alarm for when there’s a short.

If you need to control a turnout for your balloon track, the PSX-ARSC can do that. It can line the turnout as the train goes around your balloon track. You’ll need a bit of isolated track on your balloon track that will trip the PSX-ARSC and give your slow-motion switch motor time to move **2**.

If you also need to control the power routing of your frog, you can use the switch inside your switch machine, if it has one, to do this. It can control both slow motion (like a Tortoise by Circuitron) or snap (twin-coil) switch machines. You can also line the turnout with DCC accessory commands or push buttons.

The PSX-ARSC contains outputs for light-emitting diode (LED) indicators to monitor input/output power and status. For low amperage boosters, there’s a provision to kickstart its restart.

Finally, you can use a photocell to detect a train in a reverse section and turn off its power. This is useful for staging a train. You can use a DCC command to restart it. Note that if you’re using stay-alive devices in your locomotives, the train will keep going for some distance, so don’t place your photocell too close to your turnout.

For a few more dollars, you can get the PSX-ARSCFB.

In addition to the above, it can provide block occupancy feedback for shorts and occupancy and report it to your Digitrax LocoNet, Lenz ExpressNet, or NCE Cab Bus.

A PSX-AR can be used for back-to-back reverse loops that may compete with one another. This seems simple enough, but use with caution to avoid strange results.

DCC Specialties products are available from Tony’s Train Xchange (tonystrains.com/manufacturers/dcc_specialties).

The Digikeijs DR5013 is a European ARSC that has several features not found in American-made units **3**. For example, it supports RailCom. It also has detection capabilities for three-rail trains. It can communicate with the rest of your layout and other Digikeijs products, as well as your computer, using LocoNet.

This ARSC also has an optional way of activating reversing. Usually this is done when the ARSC detects a short. It then reverses the polarity of the reversing section to correct the problem. If you don’t want to put even



3 The DR5013. The Digikeijs DR5013 has a few features not often seen in American DCC products. This includes support for RailCom and polarity reversing triggered by sensing sections rather than a brief short.



4 The BXP-A1. The Digitrax BXP-A1 works with trains equipped with transponders, which can tell your dispatcher not just which tracks are occupied, but by which train.

momentary shorts on your track bus, this ARSC has the option of using sense sections to reverse polarity instead.

It would be at home on any model railroad, particularly one where you want to automate your train operations or provide status to your computer running something like JMRI. You may want to download its manual to get a better idea of everything that it can do. It's 32 pages long, but each page is concerned with a single topic. Just find the page that applies to what you want to do and follow it. The manual is in English, but it does contain a few terms that Americans might not recognize immediately. For example, "magnetic article address" refers to your turnout address.

If you use sense sections, the reverse section, not including the sense sections, needs to be longer than your longest train **2** – see my April 2021 column. Think about it; you don't want the power-drawing sections of your train to be

in both sense sections at the same time.

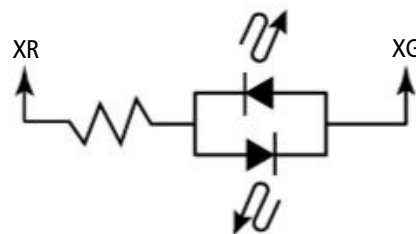
The DR5013 isn't equipped with an ECB, but it does detect shorts and can report this status to your automation system to tell your booster to shut down. See page 25 of the manual.

Digikeijs products are available in the United States from Iron Planet Hobbies (ironplanethobbies.com).

The Digitrax BXP-A1 (digitrax.com) is an ARSC with an ECB **4**. For layouts owners desiring automation, it can report track status over LocoNet to your computer or signaling hardware, and has

outputs for occupancy and reversing section polarity. It includes support for transponding, reporting over LocoNet not only occupancy of the reversing block, but also which locomotive.

To implement transponding, you'll need a transponder in the train to be identified. Digitrax decoders have transponders in



5 Track polarity signal. A track polarity indicator for the BXP-A1. You could use separate LEDs to show track polarity instead of a single bipolar LED as shown. Just hook up two LEDs like above, with one LED's leads reversed.

them, or you can add a low-cost transponder to existing engines or rolling stock. You'll also need block detectors that contain transponder receivers, like the BXP-A1 and the eight-block BXP88.

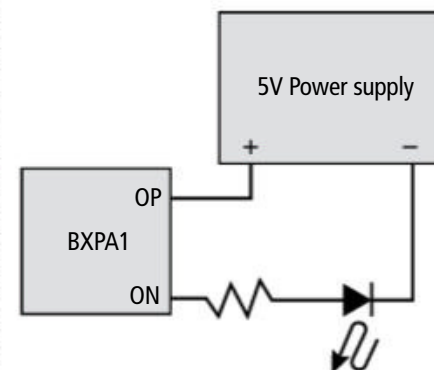
The BXP-A1 uses Digitrax's high-sensitivity current detection. It can detect cars equipped with resistors on their wheels as high as 22KΩ.

Trip speed and level are adjustable for the reversing and power management functions. Be sure to download Digitrax's KB1058 for advanced set up information from its tech support webpage (digitrax.com/tsd/KB1058/bxp-a1-advanced-setup/).

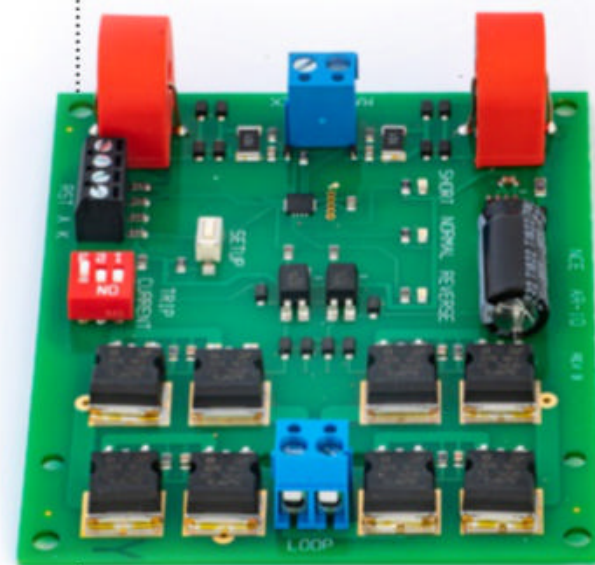
The KB1058 says that an "appropriate" resistor should be used with the external status outputs, XR and XG. I found that a 470Ω, 1/4W resistor worked well. If you want the colors to be reversed, just reverse the LED. You can also use separate red and green LEDs **5**.

The BXP-A1 has an optically isolated detector output for occupancy indication **6**.

The NCE AR10 (ncedcc.com) is both an ARSC and ECB **7**.



6 Occupancy indicator. This is an example of an optically coupled, open collector output showing an external occupancy indicator for the BXP-A1. Use a 330Ω, 1/8W resistor with a 5V power supply. If you want to use a 12V power supply, use a 1kΩ, 1/8W resistor.



7 The AR10. The NCE AR10 has LEDs that indicate the presence of a short and the polarity of the reversing section.

It has a trip current that's adjustable between 1 and 10 amps, an adjustable short circuit response time, and a selectable manual or automatic short circuit reset. It comes with trip current set to 1A and automatic reset after a short. It also has an output for a remote LED that lets you know when the loop track attached to the AR10 is shorted.

I hope this overview has given you some insight into ARSCs that do more than just reverse track polarity. For a convenient link to all links in this and my other columns, go to WiringForDCC.com/dcc_currents.htm. 



HAVE NO FEAR, BECAUSE ALL ARSCS STILL WORK WITH AS FEW AS FOUR WIRES – TWO TO YOUR BOOSTER AND TWO TO YOUR REVERSING SECTION.
– ALLAN



Rapido Trains HO scale EMD SW1200

An Electro-Motive Division SW1200

end-cab switcher joins the ever-growing lineup of HO scale diesel locomotives from Rapido Trains. The model has an injection-molded plastic body with railroad-specific details; a die-cast metal frame, chassis, and gearboxes; and loads of separate, factory-applied, prototype-specific detail parts.

The prototype. Electro-Motive Division produced the SW1200 from January 1954 to May 1966. During the course of the production run, 737 diesels were built for railroads in the United States. Another 287 were produced by General Motors Diesel Division for Canadian roads. The switchers, used in heavy industrial, terminal, transfer, and yard work, were equipped with 12-cylinder 567B diesel engines.

Our sample is decorated as Milwaukee Road no. 638, one of 48 class 12E-S SW1200s rostered by the railroad. The first batch of units was built in January 1954 and numbered 1637 to 1642. The remaining diesels, 2020 through 2061 (no. 638 started life as no. 2033), were built in November 1954. All of the 1,200-hp locomotives were renumbered into the 600 series in 1959. Seventeen of the end-cab switchers were renumbered a third time into the 700 series in 1984.

The 638 was sold to A.O. Smith in July 1979. It was repainted and renumbered 200. The unit then went to Minnesota Commercial (MNNR) in the Twin Cities. The unit retained its A.O. Smith road number, but was repainted into the railroad's red-and-white paint scheme. As of May 2021, the switcher was in storage on the railroad's property with the stacks capped.

Disposition information in *The Milwaukee Road Diesel Power* by Frederick Hyde and Dale Sanders (The Milwaukee Road Historical Association, 2009) shows that some of the SW1200s were scrapped, while others went on to serve on Class 1, regional,

shortline, and commuter railroads. Some end-cab units were sold to locomotive leasing companies and to industries for use as plant switchers.

The model. The Rapido SW1200 features an illuminated cab interior detailed with a control stand, high and low voltage cabinet, two seats, a brake wheel, and a fire extinguisher. Crew figures aren't included with the model.

The front and rear pilots are plastic castings attached to the metal chassis with two screws concealed under the draft-gear box. U-shaped etched-brass walkways are attached to the top of the frame; our sample has a raised tread pattern. The steps are see-through etched-metal parts.

The combined handrail and stanchion assemblies, uncoupling levers, m.u. hoses, and trainline hoses are plastic. The standalone handrails and grab irons are factory-installed and painted formed wire parts. The windshield wipers are etched metal. Like other Rapido models, the switcher features plenty of underbody conduit and piping.

Additional factory-installed parts include a cab vent on the roof, a deck-mounted m.u. receptacle on each end, a single-chime air horn on the front of the cab, and a bell on the hood. Our sample



The Rapido SW1200 has an injection-molded plastic body. The cab interior is detailed down to a red fire extinguisher, seen in the lower right window.

PERFORMANCE CHARTS

DRAWBAR PULL	3.04 ounces
	43 free-rolling HO scale freight cars

SCALE SPEED (DC)

VOLTS	SCALE MPH
10	6
11	26
12	58
13	100
14	147

SCALE SPEED (DCC)

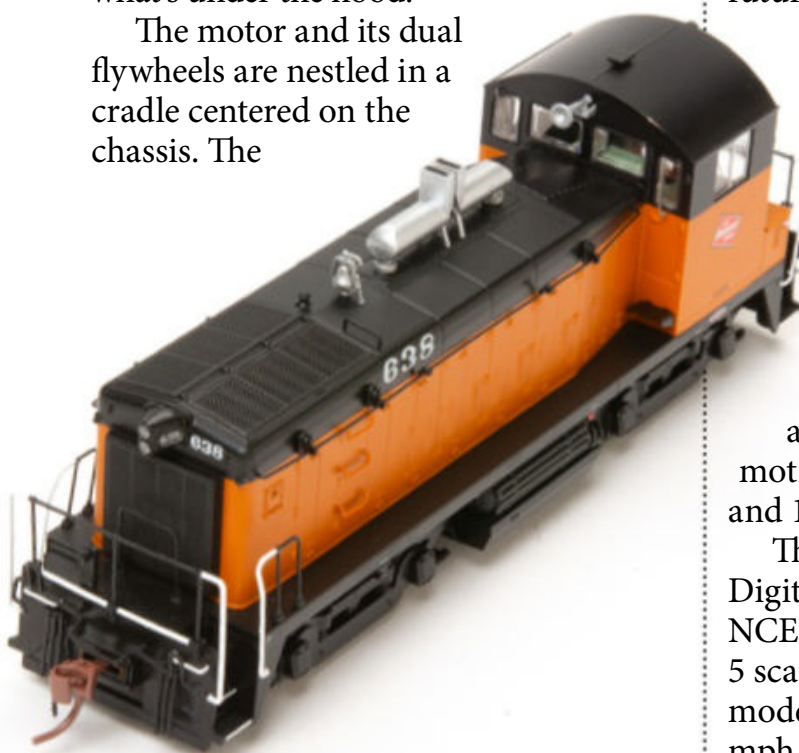
SPEED STEP	SCALE MPH
2	5
7	20
14	52
21	97
28	111

also included a package with two each of the following modeler-installed parts: all-weather windows with glazing, smokestacks, cab sunshades, and brackets.

Railroad-specific parts on the Milwaukee Road SW1200 include “trash can” spark arrestors, cooling coils in front of the air reservoirs, Type A solid-bearing trucks, and twin-beam headlights. The headlights are directional. The model also has working ground lights below the cab on both sides.

Under the hood. Pages six and seven of the operating manual take you through the steps (with some humor interjected) needed to remove the shell from the chassis. Since we needed the model for photography and video, I decided to rely on the exploded parts diagram to “see” what’s under the hood.

The motor and its dual flywheels are nestled in a cradle centered on the chassis. The



Rapido offers its SW1200 with railroad-specific details. The Milwaukee Road unit has the railroad’s distinct “trash can” spark arrestors.

printed-circuit board and the ESU LokSound Select sound decoder are mounted on top of the motor. The downward-facing speaker is located above the front truck.

Tale of the tape. The SW1200 tips the scales at 10.5 ounces. The couplers are approximately .020" high on both ends, but this didn’t pose any issues when pushing and pulling cars. The wheels are in gauge.

I compared Rapido’s model to prototype drawings in the 1956 *Locomotive Cyclopedia of American Practice* (Simmons-Boardman Publishing). The model closely follows the dimensions shown in the illustrations.

The orange and black paint is smooth and evenly applied, and the lettering placement matches a prototype image of the full-size locomotive I found online. One difference I noticed was the bell and bracket were painted black, not silver, on the prototype.

Our sample is equipped with a dual-mode LokSound sound decoder. When I first put the locomotive on the rails to test it, I struggled getting it to run reliably. It turned out the model was over-lubricated. After wiping off the excess lubricant and giving the wheels a thorough cleaning, the unit ran much better. Rapido president Jason Shron said, “We’re aware of the issue and we’re working to improve that on future releases.”

I first tested the model in direct current (DC) using an Atlas Right Track power pack (per the operating manual, do not use the Atlas 313 Universal power pack with this model). The sounds came on at 8V, which is typical on sound-equipped models in a DC environment. The locomotive ran at 6 scale mph at 10V and topped out at 147 scale mph at 14V. Rapido locomotives can safely operate between 0V and 16V.

Then I tested the end-cab switcher in Digital Command Control using an NCE PowerCab. The model moved at 5 scale mph at step 2. At step 28, the model achieved a top speed of 111 scale mph. The full-size SW1200 had a top speed of 65 mph.

You can adjust the minimum and maximum speeds using CVs 2 and 5, respectively. The LokSound decoder

Facts & features

Price: Direct current, \$225; with dual-mode sound decoder, \$335

Manufacturer

Rapido Trains
500 Alden Rd., Unit 21
Markham, ON, Canada L3R 5H5
rapidotrains.com

Era: 1959 to July 1979 (as decorated)

Road names: Milwaukee Road; Baltimore & Ohio; Burlington Northern; Chicago, Burlington & Quincy; Chicago & North Western; Conrail; Denver & Rio Grande Western; Grand Trunk Western; Great Northern; Missouri Pacific; New York, New Haven & Hartford; Northern Pacific; Penn Central; Pennsylvania RR; Rock Island; Soo Line; and Southern Pacific. Three road numbers per scheme. Some road names have paint scheme variations. Also available undecorated.

Features

- Correctly gauged wheels
- Illuminated headlights, ground lights, and number boxes
- Metal couplers (.020" high on both ends)
- Prototype-specific exhaust stack and battery box door styles
- Type A or Flexicoil trucks, as appropriate
- Underbody piping and conduit detail
- Weight: 10.5 ounces
- With or without positionable drop steps, as appropriate

manual can be found under the Product Support tab at Rapido’s website.

The locomotive has a drawbar pull of 3.04 ounces, equivalent to 43 free-rolling freight cars on straight and level track. The SW1200 was able to pull eight 50-foot freight cars up the 3 percent grade on our Milwaukee, Racine & Troy staff layout.

Covering all the bases. I applaud Rapido Trains for offering the HO scale SW1200 with railroad-specific details. A look at the exploded-view diagram reveals that this is definitely not a one-size-fits all model.

With paint schemes covering roads from coast to coast and border to border, there’s sure to be an SW1200 ideal for your model railroad. – *Cody Grivno, group technical editor*



Atlas HO scale GE U23B diesel locomotive

Atlas has re-released its HO scale General Electric U23B, this time with an available Electronic Solutions Ulm (ESU) LokSound V5 dual-mode decoder and several other refinements.

General Electric's (GE) U23B was produced from August 1968 to June 1977. Featuring a 12-cylinder FDL diesel engine, it produced 2,250hp.

Most of the 1960s was dominated by horsepower wars between GE, Electro-Motive Division (EMD), and Alco. But as per-unit horsepower crested 3,000hp and continued upward, railroads realized their older, lower horsepower locomotives would also need replacing, and the jobs they were doing didn't require high-performance diesel engines.

The response was to use smaller diesel engines, usually 12 cylinders instead of 16, which GE did by placing a 12-cylinder version of its FDL engine into what started out as a U30 car body. The shorter diesel engine required a shorter frame and two fewer doors to access the engine compartment, which are the two easiest to spot identifying features of the U23B compared to the U30B.

General Electric sold 481 locomotives to 17 original owners in North and South America (16 went to Peru). While not as popular as EMD's GP38 models (which sold more than 2,600), the U23B was the second most successful of the Universal series locomotives.

Most of the locomotives rode on AAR Type B four-wheel trucks, but in 1973,

GE delivered the first models with its Floating Bolster trucks to Louisville & Nashville. Locomotives for Chesapeake & Ohio and Western Pacific were equipped with rebuilt, traded-in EMD Blomberg trucks.

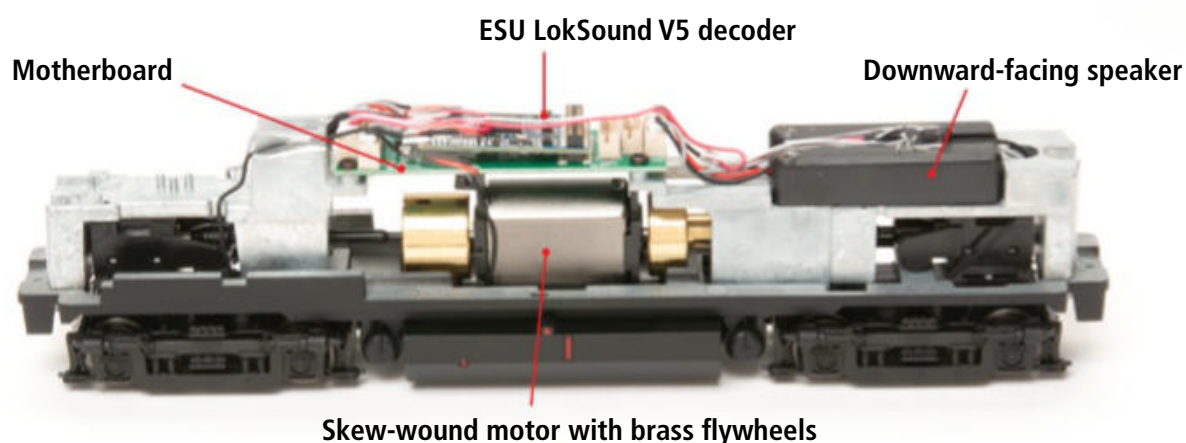
In North America, owners included Louisville & Nashville, which purchased 90 new units; Penn Central with 77; Southern with 70; and Santa Fe with 49. The first locomotives were delivered to Delaware & Hudson (16) in 1968 and the last to Conrail in 1977. By that time, Conrail had 99 U23Bs, inheriting all 77 of Penn Central's and the Lehigh Valley's 12 units in addition to 10 it bought new.

Although no Canadian railroads purchased new U23Bs, two railroads south of the border, *Nacionales de Mexico* and *Ferrocarril de Pacifico*, purchased 30 and 10 respectively.

After working most of their lives on Class 1 railroads, U23Bs went to work for regionals such as the Guilford lines and the Reading, Blue Mountain & Northern. A handful of U23Bs continue in shortline and tourist train operation.

Our model is decorated for the Lehigh Valley. These units were built for the bankrupt railroad in 1974, but were paid for under the legislation that would create Conrail, going to that railroad in 1976.

Trust plates on the rear end of the side sills, legible under magnification,



The Atlas U23B has a die-cast metal frame with die-cast metal weights over the trucks for additional tractive effort. The ESU LokSound V5 decoder rides on the motherboard attached above the motor.

PERFORMANCE CHARTS	
DRAWBAR PULL	3.04 ounces 43 free-rolling HO scale freight cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
10	1.7
11	10
12	43
13	55
14	84
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
2	1.8
7	13
14	35
21	66
28	75

indicate the locomotive is owned by the Consolidated Rail Corporation. The model is painted in a slightly “redder” Cornell Red than a Bowser locomotive I had to compare it with, but the exact shade of Cornell Red is hotly debated. It certainly looks to be in the ballpark based on photos I referenced in several Lehigh Valley color guides we have in our library.

The paint is smooth and opaque, and the yellow Lehigh Valley lettering covers the Cornell Red well with no voids over the car side doors. The black and white stripes on the nose and pilots are another highlight of the paint job, and the grab irons and handrails at the steps are all picked out in orange – good attention to detail!

Speaking of detail, there are flexible m.u. hoses on the pilots, and they thread through a plow on the front. The drop



The pilots feature neatly painted zebra striping, and the handrails at the stepwells and grab irons are picked out in orange.

steps on the end railings are positionable. The cab has a blade-style antenna on the roof and windshield wipers on its front. The trucks have separately applied brake cylinders.

The only things missing were cab sunshades and bearing caps on the trucks – the Lehigh Valley’s U23Bs didn’t have visible roller bearings as depicted on our sample’s AAR Type B trucks. The exploded view drawing packed with the model shows the covers as part no. 800312.

Since I have one of the early 1990s versions of this model, I compared them for changes. Two things stand out. The sand filler caps are now separate pieces, and the trucks now have separate brake cylinders. Windshield wipers and crew figures in the cab are other added details.

I removed the body shell by unscrewing the coupler draft gear boxes from each end and pulling them free. Then I used a small, bladed screwdriver to release the two tabs over the rear trucks. With those out of the way, I was able to wiggle the body shell free.

Under the hood is a die-cast metal frame. The five-pole, skew-wound can motor is mounted in the center of the frame with brass flywheels at each end. All eight wheels are driven and pick up electricity.

Metal weights are attached to the frame above the trucks. A motherboard is screw-mounted to the weights and has the ESU LokSound V5 decoder mounted to it with a 21-pin plug. A rectangular speaker is mounted facing down in an enclosure over the rear truck. While the new chassis looks largely the same as my earlier model, there are multiple changes to accommodate Digital Command Control (DCC) and sound options as well as other refinements.

I started testing the model using a direct current (DC) power pack. Sounds came on at 8V, and the locomotive started to move at just under 2 scale mph at 10V. At 12V, the model was moving at 43 scale mph, and by 14V, it had reached 84 scale mph. The GE U23B was available with gearing for 70, 75, or 79 mph top speeds.

A brake squeal sounded when I dropped the voltage quickly, and the headlight was directional.

On DCC, the model started moving in speed step 2 at just under 2 scale mph

Facts & features

Price: \$289.95 (DCC and sound) \$179.95 (DC, no sound)

Manufacturer

Atlas Model Railroad Co.
378 Florence Ave.
Hillside, NJ 07205
atlasrr.com

Era: 1974-1976 (as decorated)

Road names: Lehigh Valley; Atchison, Topeka & Santa Fe; Chesapeake & Ohio (Chessie System); Conrail Express (RBMN); Delaware & Hudson; Missouri Pacific; Southern Ry., and undecorated

Features

- 21-pin socket for DCC decoder (Silver Series model)
- Accumate knuckle couplers, at correct height
- Blackened metal wheels, in gauge
- Directional lighting with golden-white LEDs
- ESU LokSound V5 dual-mode decoder (DCC-equipped models)
- Five-pole skew-wound motor with dual flywheels
- Painted crew members in cab
- Snowplow and separately applied scale detail parts as appropriate per road name
- Weight: 14.5 ounces

and reached a top speed of 75 scale mph at speed step 28. The 14.5 ounce model produces 3 ounces of drawbar pull, equivalent to 43 freight cars on straight and level track. On our staff railroad, the Milwaukee, Racine & Troy, the Atlas U23B pulled 14 cars up the curving 3 percent grade to the top of the layout.

I also tested the locomotive on my home switching layout, where it easily negotiated the Atlas no. 4 Custom Line turnouts in the yard ladder. While these U23Bs never worked an industrial lead for the LV, the smooth operation and burble of the FDL diesel engine made it fun to shift a few cars around.

With new sound from ESU and upgraded painting and details from its first release, these mid-sized locomotives are worthy of a place on model railroads set in the ’70s and ’80s, and short lines up to today. I know I can find a home for a few pulling hotshot TOFC freights on my future layout! – *Eric White, senior editor*

Inter-Action Hobbies HO Schaaque Machine Works structure kit

With scribed wood siding, large windows and skylights, and a wealth of detail parts, Schaaque Machine Works is a distinctive new entry to the HO scale craftsman structure market. The kit, from Canada-based Inter-Action Hobbies, builds into a compact, eye-catching industry that would look at home on a layout from the early days of steam (if you omit the electrical meters and maybe replace the oil tanks with a coal bin) to the late 20th century.

The instruction packet includes a brief history of the prototype, an engineering firm built in New Westminster, B.C., in 1898. The building could represent the machine works as depicted, or with a change of signage it could just as easily be a box factory, a furniture maker, or a tannery.

What's in the box? The thick instruction packet is clear and well detailed, with lots of large photos and diagrams. Not everything has to be built in the order it's presented in the instructions; for example, assembling, painting, and glazing the dozens of windows first will speed assembly later. Also, don't glue the two annexes to their foundations until you've glued the foundations in place; this will ensure a better fit of the walls against the main structure.

The kit contains several sheets of laser-cut basswood siding, some etched



to resemble concrete block; mat-board foundation and floors; and resin-impregnated board (RIB) roofing, windows, doors, and detail parts. A sheet of clear styrene window glazing is likewise laser-cut, as are a pair of RIB stencils for painting the lettering on the front of the building. Separate packets contain cast styrene detail parts and windows, stripwood of different sizes, a couple lengths of wire, an aluminum smokestack tube, and a small box of 3-D printed details. There's also a parts identifier sheet (handy, since there are no identifying marks on the parts), a sheet of heavy black construction paper that can be used as roofing or an interior view block, and some printed paper signs.

Assembly. Just because the wood and matboard parts are laser-cut, don't get the idea that constructing this kit will be quick. This is a craftsman kit. It took me about 20 hours over three days to build, paint, and detail this kit, and I didn't build all the details. Expect to spend 25 to 30 hours doing a careful job.

The instructions recommend painting the parts before assembly, and that's a good tip when it comes to keeping your paint edges crisp. I brush-painted mine with an assortment of Testor's Model Master acrylics. But be aware that water- or alcohol-based paints and stains will cause warping. If you want to avoid having to play the Human Clamp while the glue dries, get some extra 1/8" stripwood and thoroughly brace the inside first. Painting both sides will also help.

The lack of locator tabs means that the modeler is free to attach the two single-story annexes to the main building almost anywhere, to suit the layout space. The instructions show these annexes both attached to the back of the main building and on either narrow end. On mine I put the shed on the back and the boiler house on the right side.

The one part of the building that does have to be assembled as instructed is the boiler house. Its wood walls are laser-etched to simulate concrete block, and the corners are notched so the courses fit into each other like a real block wall would. Although I've seen this done on other wood kits, I've not seen it done with this precision before. The corners of the boiler house came out excellent.

Schaaque, not shaky. The large number of windows and skylights makes this kit a good candidate for interior detailing and illumination. In addition to Inter-Action, Busch, Faller, and Preiser offer machine shop detail parts and figures that would make a realistic interior. Most of the doors are designed so they can be positioned open to stage an interesting loading scene.

Those who model the early- to mid-steam era, like me, will be glad to have another large, period-appropriate industry for their layouts. Even if you model more modern times, it would fit in fine in an older part of town. The kit's wealth of detail parts make it a standout.

– Steven Otte, senior associate editor

Facts & features

Price: \$79.95

Manufacturer

Inter-Action Hobbies

P.O. Box 1021

Chase, BC, Canada V0E 1M0

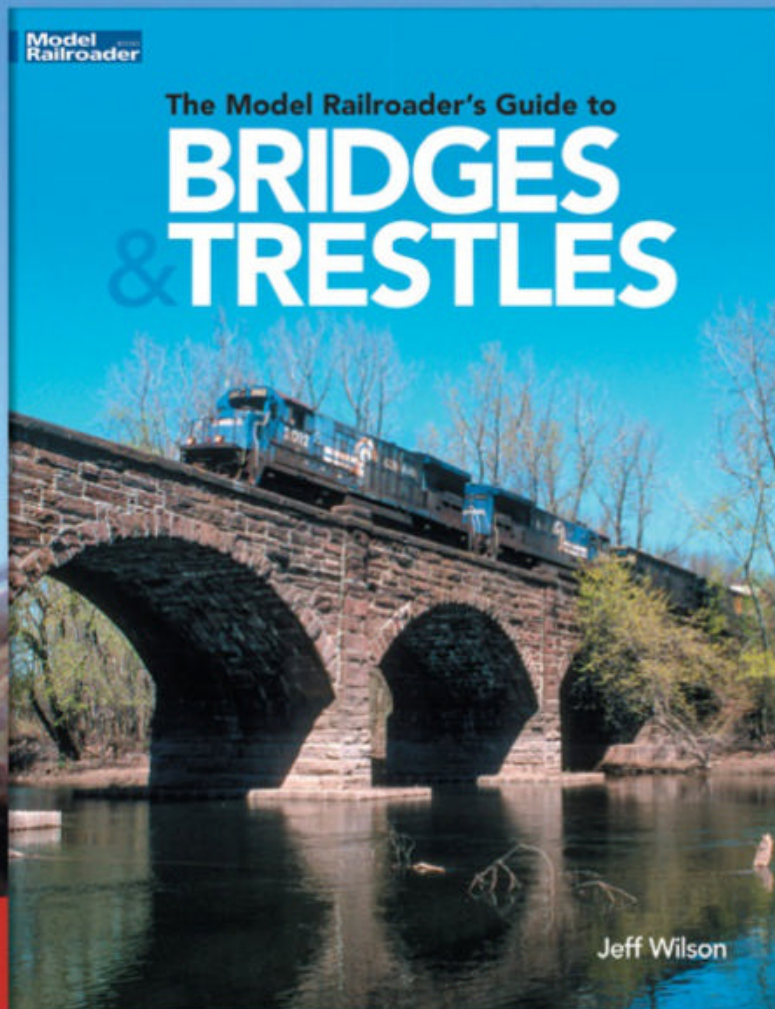
interactionhobbies.com

Era: early 1900s-present

Features

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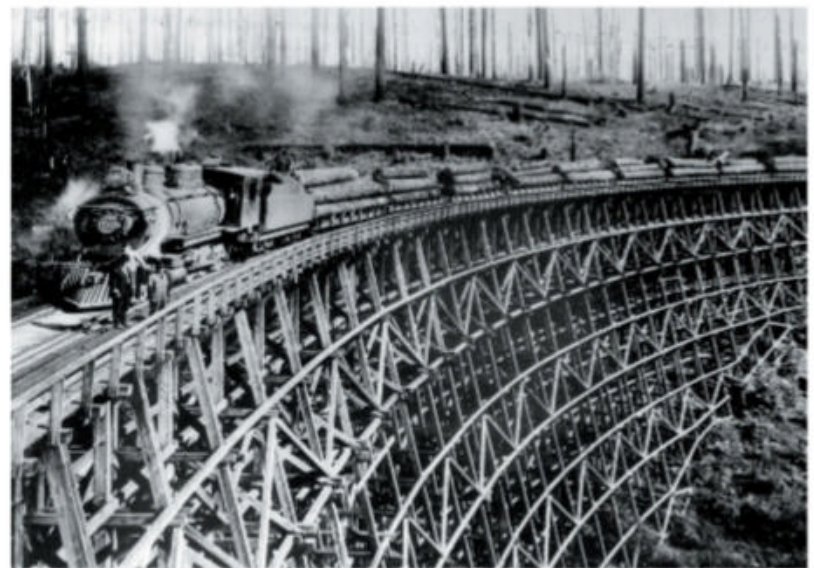


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Tower mysteries revealed

The word “mysterious” well describes interlocking towers, which have long fascinated me. Rising high above the rails, second-story windows darkened by awnings or shades, they suggested guards posted in observation points along a main line. Friendly waves often came my way from engines and cabooses, but rarely, if ever, from a tower. Nevertheless, I sensed importance in their placement at key junctions.

Curiosity finally had me climbing the stairs of Erie Lackawanna’s tower at Newburgh Junction. Its remote location appealed; I reasoned that towers in lightly populated areas were less likely to greet intruders with a boot in the seat of the pants. I eased the door open and let myself in, expecting the worst. Instead, I found a welcoming operator, happy for some company.

Train and engine movements at busy places such as terminals, yards, and junctions were made more practical if a single location controlled the switches and signals governing them. The more complex, the more likely an error by an operator, so interlockings required numbered switches and signals to be operated in certain order to prevent collisions and derailments.

The first interlocking machines were entirely mechanical, relying on sliding bars and dogs which interfered with one another. This interlocking action kept the



A sultry July 3, 1975, finds Frisco no. 706, an Electro-Motive Division GP35, leading a westbound past Kentucky Street Tower. Frisco GP35’s carried their air reservoirs on top of the long hood because the extra-large 3,000-gallon fuel tanks the railroad specified left not enough room under the frame. Jerry Dziedzic photo

operator from mistakenly creating a conflicting movement by using the wrong lever. Like the sequence required of a combination lock, only when all the switch levers were in proper position for a given route could he operate a particular signal lever and clear a signal for movement through the plant. Electrical circuits, relays, and today’s microchips replaced the mechanical devices as technology evolved. Dave Abeles’ new Kalmbach book, *Guide to Signals and Interlockings*, goes into detail.

as he swiveled in his chair and answered my greeting with “The *Star* just hit the bell at Burn.”

The operator observed movements on a model board, typically mounted atop the machine. It was a line diagram of the plant’s tracks and signals on which track occupancy lights and other illuminated indicators were displayed. Letters designated entrances and exits from the plant. Manipulation charts, one in each direction, were also displayed. The charts gave the lever numbers required for routing between any given entrance and exit, for example, “A to E 18 26 7.”

And towers came in all sizes. Fourth Street Tower at Southern Pacific’s Third & Townsend terminal in San Francisco preceded air traffic control tower designs, its top floor capping two thin-waisted stories like a mushroom. At the other end of the

spectrum is the nondescript shanty in the photo above, simply adorned “Kentucky St.” But its size belies its importance. Look closely and you’ll see train order forks at the ready, an out-of-service order board mast, and a tangle of communication and signal wires. Kentucky Street funneled Missouri Pacific, Frisco, Rock Island, and Cotton Belt movements over the two Mississippi River bridges into Memphis.

A quick web search for “interlocking tower” can turn up enough reading to make a rainy day fly by. Two sites I like are Carsten Lundsten’s (lundsten.dk/us_signaling/) and Jon Roma’s (jonroma.net/towers/). Carsten illustrates how movements proceed through plants and Jon has posted a comprehensive amount of prototype material. You’ll find enough information to inspire an interlocking plant for your layout that suits any budget. **MR**



THE FIRST INTERLOCKING MACHINES WERE ENTIRELY MECHANICAL, RELYING ON SLIDING BARS AND DOGS WHICH INTERFERED WITH ONE ANOTHER.
— JERRY

Timetables, line-ups, and communication with the dispatcher and other operators helped an operator, sometimes called a towerman, plan his actions on the machine. Annunciator bells also alerted him to a train’s distant approach. I remember how Mike Bednar’s smile lit up R Tower in Allentown, Penn.,



Dave Abeles’ new book, *Guide to Signals and Interlockings*, is available now in the Kalmbach Hobby Store, KalmbachHobbyStore.com/product/book/12824.



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A pair of dusty Electro-Motive Division F3 diesels in the Atchison, Topeka & Santa Fe's blue-and-yellow "cat whisker" freight scheme roar by with a time freight while, in the background, reefer cars are iced to receive the citrus grove's harvest. John Parrish of Upland, Calif., photographed the action on his 2 x 4-foot HO scale module. The locomotives are Athearn Genesis models; the packing house is a modified Walther's kit. The icing platform was scratchbuilt from stripwood and Evergreen styrene.

It's the summer of 1957, and Nicholas Morant, company photographer for the Canadian Pacific, has his large-format camera set up on top of a boxcar to get the best vantage point for this official portrait of the last steam locomotives still in service on the CP. Jean Montour of Terrebonne, Que., set up the shot on his HO scale layout. The Royal Hudson on the turntable is a Rapido model. Jean rigged the roundhouse doors to open remotely, using wire linkages and Tortoise by Circuitron switch motors.



Wisconsin & Southern train T008, led by patched-out ex-Burlington & Northern EMD SD40-2 no. 4012, clears the restricted-speed zone and gets up to track speed just east of Spring Green, Wis., on a muggy July morning in 2012. The HO scale scene was staged and photographed outdoors under natural light by R.G. Hough V of Mount Morris, Ill. The locomotive is a custom-decorated Scaletrains.com model.



The signals are dark at Batavia, N.Y., but they won't be for long, as this is New York Central's busy main line east of Buffalo. Russ Weis of Louisville, Ky., kitbashed the freight house from a Kibri kit, following plans in a June 1988 *Model Railroader* article by senior editor Jim Hediger. Russ' friend Steve Lasher scratchbuilt the bracket mast signal and Russ shot the photo.

Send us your photos

Trackside Photos is a showcase for the work of *Model Railroader* readers. Send your photos (digital images 5 megapixels or larger) to: Model Railroader, Trackside Photos, P.O. Box 1612, Waukesha, WI 53187-1612; or upload them to <http://fileupload.kalmbach.com/contribute>. For our photo submission guidelines, contact senior associate editor Steven Otte at sotte@mrmag.com.

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All ads must be prepaid and pertain to the subject of model railroading.

Schedule of Events

CA, CARMICHAEL (SACRAMENTO): TTOS-Sacramento Valley Division River City Toy Train Meet. Saturday, November 13, 2021, 10am-3pm. Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA 95608. All gauges — all ages! Admission: \$5 per adult or child over 12. Children 12 or under, free with adult. Food and refreshments. Free parking. Contact: John DeHaan, 707-483-9053

DE, ROXANA: Indian Summer Train & Toy Show. Roxana Fire House, Route 20, between Millsboro & Fenwick Island. Saturday, September 25, 2021, 9:00am-3:00pm. Admission: \$5.00 adults, children 10 and under free. Operating layouts, refreshments, door prize. For information contact Bill Ziegler, 302-537-0964 or www.delawareseasiderailroadclub.com Check our website in September for latest show updates. Masks may be required.

FL, PINELLAS PARK: HR Trains & Toys, Inc., presents the 73rd (original) Train Show. October 16 & 17, 2021. Both days, 10am-5pm. 7900 49th St. N., Zip: 33781. All sizes from Garden Scale to Z Scale. Trains for under the tree, vintage trains, trains for kids, and toys! Competition ribbons/prizes awarded for best layouts! 727-526-4682, www.HRTrains.com

FL, PINELLAS PARK: Regal Railways Presents a Toy Train, Collectible and Hobby Show/Sale. Lopez Hall, 7177 58th St. North, Saturday, October 23, 2021, 9:00am-2:00pm. Adults \$5.00, children under 12 free. Vendors, videos & operating layout. Serving lunch items. Contact Joe: 727-244-1341 or visit www.regalrailways.com for more information.

GA, CARTERSVILLE: The Piedmont Division Model Train Show. Clarence Brown Conference Center, 5450 Hwy 20. October 2-3, 2021. Saturday 10am-5pm & Sunday 10am-4pm. Admission: \$9 for adults, kids 9 and under are FREE. NMRA 2-Day Event, Free Parking, 150 vendor tables, 6 operating layouts, White Elephant, Raffle Layout! Information: www.piedmont-div.org or leave a message at 404-550-4816

IA, DAVENPORT: John's Trains & Hobbies Model Train Sale. October 15-17, 2021. Friday 12pm-6pm, Saturday 10am-4pm, Sunday 10am-2pm. N, HO, O27 & O...NEW & USED. FREE admission & FREE parking. American Legion, 702 West 35th Street, Davenport, IA 52806. Questions, call John at 563-349-0134 or email: JOHNSTRAINSHOBBY@AOL.COM

IL, ST. CHARLES: 30th Annual Chicago Railroadiana and Model Train Show. Kane County Fairgrounds, 525 South Randall Rd. Sunday, October 17, 2021, 10:00am-3:00pm. Admission: \$6.00 (includes tax). Tables \$60.00. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

MA, TAUNTON: OLD COLONY MODEL RAILROAD CLUB 21st ANNUAL MODEL RAILROAD SHOW AND SALE. Taunton Holiday Inn, Myles Standish Industrial Park, Exit 25 (old Exit 9) from Route 495. September 19, 2021, 10:00am-3:30pm. Adults \$5.00, children under 12/scouts in uniform free. Contact Dennis Ingalls, 508-558-9883, email: dingalls@comcast.net

Schedule of Events (cont.)

MI, WYOMING (GRAND RAPIDS): The Greater Grand Rapids Fall Train Show. Saturday, October 9, 2021. HSB Inc., 5625 Burlingame Avenue SW. 10:00am-3:00pm. Adults \$5.00, under 12 free. 203 vendor tables of trains and supplies. See Thomas the Train and Lego play area. Fun for kids of all ages! Contact Ken Skopp, 616-667-9680, kwsopp@gmail.com, www.grvrrc.org

MN, WOODBURY: Newport Model RR Club Flea Market & Train Show. We are back in business, most popular scales represented! Woodbury High School, 2665 Woodlane Drive, Woodbury, MN 55125. October 23, 2021, 9:00am-2:00pm. Admission \$5.00. Club Address: Newport Train Club, PO Box 0061, St. Paul Park, MN 55071. Contact: Ed, 651-233-3310 or Mark, 651-207-7747

MO, CAMDENTON: Lake of the Ozarks Train Club Show. October 23, 2021. 9:00am — 3:00pm. 1064 N. Business Rt 5, Camdenton, MO 65020. Vendors - \$15 per table. Call Stan Schroeder, 573-286-8921

MO, SEDALIA: Sedalia Rails Train Show. November 6, 2021, at Liberty Park Convention Hall, 3rd Street & Highway 65. 8:30am to 3:00pm. Operating layouts, rides on an outdoor railway, door prizes, food, sales of all types of models and railroad items. Individuals and dealer tables are \$15.00 each. Admission \$5.00, under 12 free. Call 660-668-0899 or Email: klbird530@gmail.com

MO, ST. LOUIS: 30th Annual Greater St. Louis Metro Area Train Show by Mississippi Valley N Scales. Kirkwood Community Center, 111 South Geyer Road, Kirkwood, MO 63122. October 9-10, 2021, Saturday 10am-4pm; Sunday 10am-3pm. Adults \$7.00, kids 12 and under are FREE! All scales-swap tables-layouts-great door prizes! Free parking. David Johnson, 636-225-2405, visit: seetrains.com

NC, HENDERSONVILLE-ASHEVILLE: Autumn Rails 2021 Train Show, French Broad e'N'pire MRC. October 1-2, 2021, Friday 12:00pm-6:00pm and Saturday 10:00am-4:00pm. WNC Agricultural Center, Expo Building, 785 Boyleston Hwy. (NC 280), I-26 Exit 40, Fletcher, NC 28732. Admission \$6, children 12 and under/scouts in uniform FREE. Dealer tables \$35. Free parking. Contact Ray Baldwin, FBEAutumnRails@aol.com or 607-727-9694.

NJ, WAYNE: ECTP and Collectibles LLC presents The Wayne Train Show. P.A.L. Hall, 1 Pal Drive, Wayne, NJ 07470. Sunday, October 10, 2021, 9:00am-2:00pm. Admission: \$6.00; under 10 free with adult. John LaLima 732-845-5966. Go to www.eastcoasttrainparts.com and click on The Wayne Show.

OH, DAYTON: Dayton Train Show, The New Montgomery County Fairgrounds, 645 Infirmary Road, Dayton, OH 45417. November 6-7, 2021. Saturday, November 6, 11am-5pm and Sunday, November 7, 11am-4pm. Admission: \$8.00 per adult, children 12 and under free with paid adult. Gail Yarnall, PO Box 341233, Dayton, OH 45434, NMRA.Div.3@gmail.com. Go to <http://www.DaytonTrainShow.com> for updates.

OH, MT. HOPE: CJ Trains Fall Train and Toy Show. Mt. Hope Event Center, 8076 St. Rt. 241, Zip 44660. Saturday, November 6, 2021, 10:00am-4:00pm. Admission: \$5.00, under 12/FREE. \$25/dealer table, 600+ 8' dealer tables. Contact: Jon Ulbright, PO Box 446, Wooster, OH 44691. 330-262-7488, cathijon@sssn.net www.cjtrains.com (GPS info: 8076 St. Rt. 241, Millersburg, OH 44654)

OK, BIXBY: Greater Tulsa Area Train Show. Saturday, October 9, 2021, 9am-3pm. Bixby Community Center, 211 N. Cabaniss Avenue, Bixby, OK 74008. BUY/SELL/TRADE. Table sales, operating train layouts of all scales, door prizes. Admission: \$5.00 adults, kids under 18 free. For information: Ron 918-869-7228 or www.ttos-soonerdiv.org

PA, HAWLEY: Model Train Show & Sale. Hawley Fire Department, 17 Columbus Ave., Hawley, PA 18428. Sunday, October 10, 2021, 9:00am-3:00pm. Admission \$3.00, under 12 free with adult. Only 88 tables available. Bill Delling, 618 Fern St., Hawley, PA 18428, 570-226-3206.

TX, TEMPLE: 39th Annual Temple Model Train Show by Centra Mod Inc. Central Texas Area Model Railroaders, Frank Mayborn Convention Center, 3303 North 3rd St., Temple, TX 76501. September 18-19, 2021, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$7.00, Seniors & Military \$6.00, under 12 Free. FREE Parking! Contact: Craig Caddell, 254-760-3761

WA, BATTLE GROUND: Southwest Washington Model Railroaders, 47th Great Train Swap Meet. Battle Ground High School Gym, 300 W. Main St. September 25th, 9:30am-2:30pm. \$10.00 Beat-the-Crowd (9:00am), Adults \$5.00, Students \$3.00, under 6 free with adult. Vendor tables \$25.00. Contact Larry 360-619-8899, Larry.sprekel@gmail.com

WA, CHEHALIS: Lewis County Model Railroad Club, Annual Fall Train Show and Swap Meet. Southwest Washington Fair Grounds, Blue Pavilion Building, 2555 N. National Ave., Chehalis, WA 98532. October 9-10, 2021. Saturday 10:00am-4:00pm and Sunday 10:00am-3:00pm. Admission \$5.00. Free parking. Contact information: Ted, 360-985-7788 or TedsTrains@LewisCounty.com

WA, SPOKANE: River City Modelers Fall Train Show, Spokane Fairgrounds, 404 N. Havana. Sunday, October 10, 2021, 9:30am-3:30pm. Admission \$6 for adults, 12 & under free. 200+ tables of Railroad related items for sale, operating layouts, Free-MO, Operation Lifesaver & more. Free Parking. For table rental or general info, contact: Shirley Sample, 509-991-2317 or email: shirley@busnws.com

All listed events were confirmed as active at the time of press. Please contact event sponsor for updated status of the event.

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Albion Software	9	Model Railroader Bridges & Trestles	61
Atlas Model Railroad Co., Inc.	5	Model Railroad Planning 2022.	29
Axian Technology	23	Model Railroader Tips and Projects.	32
Bachmann Industries, Inc.	76	N Scale Magazine	27
Circuitron	23	NCE Corp.	22
Custom Model Railroads	23	Nicholas Smith Trains	27
Digitrax	20	PECO Products.	21
Dwarvin Enterprises	9	Piko American	9
Factory Direct Hobbies	25	Rapido Trains.	2
Great Midwest Train Show	23	Right on Track Models	27
Great Model Railroads 30-Year Archive DVD-Rom	29	Showcase Express.	23
Great Train Expo	23	Sievers Benchwork	27
Greenberg Show	23	SoundTraxx	21
Halfpricehobby.com	27	Spring Creek Model Trains	25
Hattons Model Railways, Ltd.	10-11	The Coach Yard	23
Kato USA, Inc.	75	Train Collector's Association	25
KR Models Ltd	17	Train World	21
LayoutPrinting.com	69	Trains.com	63
LGB.	33	Trainz.com	9
Loco-Boose Hobbies	25	Trix Trains.	16
MB Klein	7	Wm. K. Walther's	3
Menard, Inc.	19	Woodland Scenics	15
Micro-Mark	23	Yankee Dabbler	21
Modelers Marketplace	68-69	Z Stuff for Trains	9

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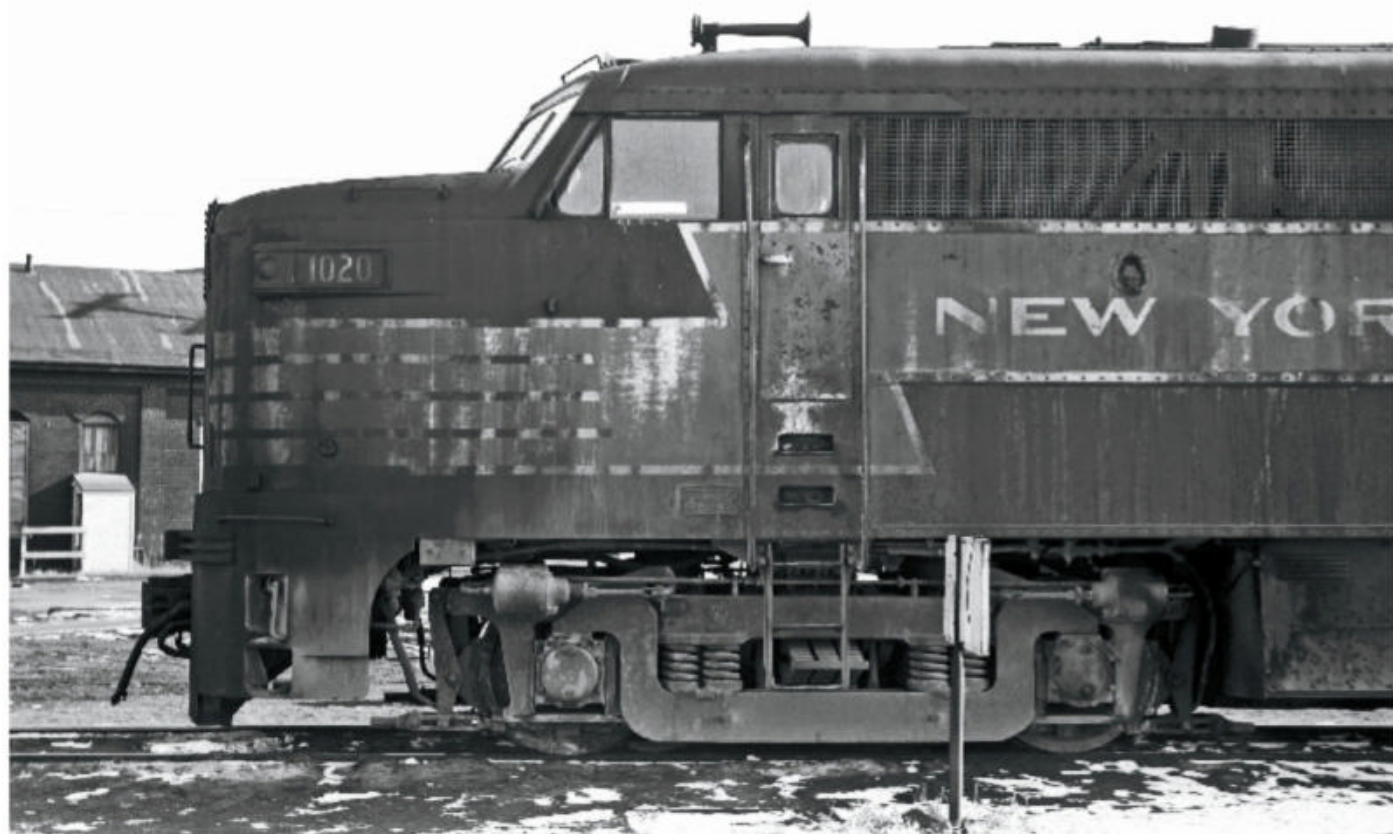
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The portal that led to paradise



Doug Leffler photographed this New York Central FA-1 in 1963 just before the hostler took pity on the young railfan and invited him through the portal to paradise – inside the cab for a ride around the wye. Douglas Leffler photo

There was a time when a young lad could stand at trackside and look up at the fellow who had what we considered a dream job – that of a locomotive engineer or even a hostler. If he were lucky, he might get invited through the door that led to paradise – the inner sanctum of the locomotive, its cab.

If the occasion was the first cab ride in a favorite locomotive, be it steam or diesel, so much the better. Put another way, if in the excitement of the moment we remembered to record the number and type of locomotive, it probably became our favorite at that very moment.

The accompanying photo was taken by Doug Leffler at the New York Central engine facility in Jackson, Mich., in March 1963. “I was fortunate to have had cab rides in GP9s before,” Doug recalls, “but never in an Alco FA-1 cab unit, which was somewhat of a rarity on the Michigan Division. The image shows the distinctive nose of the FA

and was taken just before the hostler invited me up for a short ride.

“The cab unit was part of a three-unit set: the FA, an FB, and an RS-3. The power had arrived on a freight from the east (Detroit or perhaps Toledo) and had to be turned for a return trip. The easy way to turn the set was a trip around the wye just west of the engine terminal. The hostler let me ride for the turn.”

Those days are long past.

Today, even strolling onto railroad land, let alone looking for a cab ride, is almost certain to earn you a rapid escort off the property, if not a legal encounter. We’ve learned to admire professional railroaders doing their jobs from afar. They have enough on their minds without wondering what we’re doing so close to the railroad.

But those of us of a certain age can reminisce. I’ve previously written about my first cab ride in a Rock Island F7. It was perhaps a half-mile or

so in duration on a south-bound freight that had taken the siding at Sheffield, Iowa. From my perch looking over the fireman’s shoulder, I was convinced that our locomotive hung more than far enough out over the main line to be sideswiped by the onrushing northbound freight. But it didn’t.

Ride number two was a Chicago & Eastern Illinois EMD BL2 in Cayuga, Ind., and I’ve been a fan of those strange-looking beasts ever since.

I lost track of cab rides after that, but they have included a Gulf, Mobile & Ohio E7 zipping northeast toward Chicago at 70 mph, a massive Western Maryland Shay loping along the Greenbrier River at maybe 15 mph, a Nickel Plate Berkshire capably

handling a long passenger train upgrade in West Virginia’s New River Gorge, and a narrow-gauge General Electric U-boat tackling the grades between Christchurch and Greymouth on New Zealand’s South Island.

Before you come to the conclusion that I’m rubbing your nose in this, I want to point out that being in the cab of a locomotive is not always the dream job that it seems. The GM&O E7 ride was punctuated by a heart-stopping moment as a station wagon filled with a family on their way home from church almost pulled out in front of us as we raced out of a cut on a curve. The Berkshire trip taught me a lesson as I watched the fireman duck behind the backhead when we met a coal train on the Chessie’s double-track main.

Times are different. We can’t go into a depot or climb the stairs to an interlocking tower to get a lineup or just to visit with a friend, because that’s trespassing – and there aren’t many depots or towers still manned, anyway.

Offsetting that are better cameras and even drones that, when used responsibly,

allow us to photograph scenes from vantage points that we couldn’t get close to not that long ago. They represent new portals to the world we want to see and replicate in miniature.

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