

REVIEW: ATHEARN'S ULTIMATE AC4400 p.12

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Youthful inspiration of 1950s American TV shows,
Western movies led to this HO layout in Tokyo p.42

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Learn how to
scratchbuild your
first structure model

p.48

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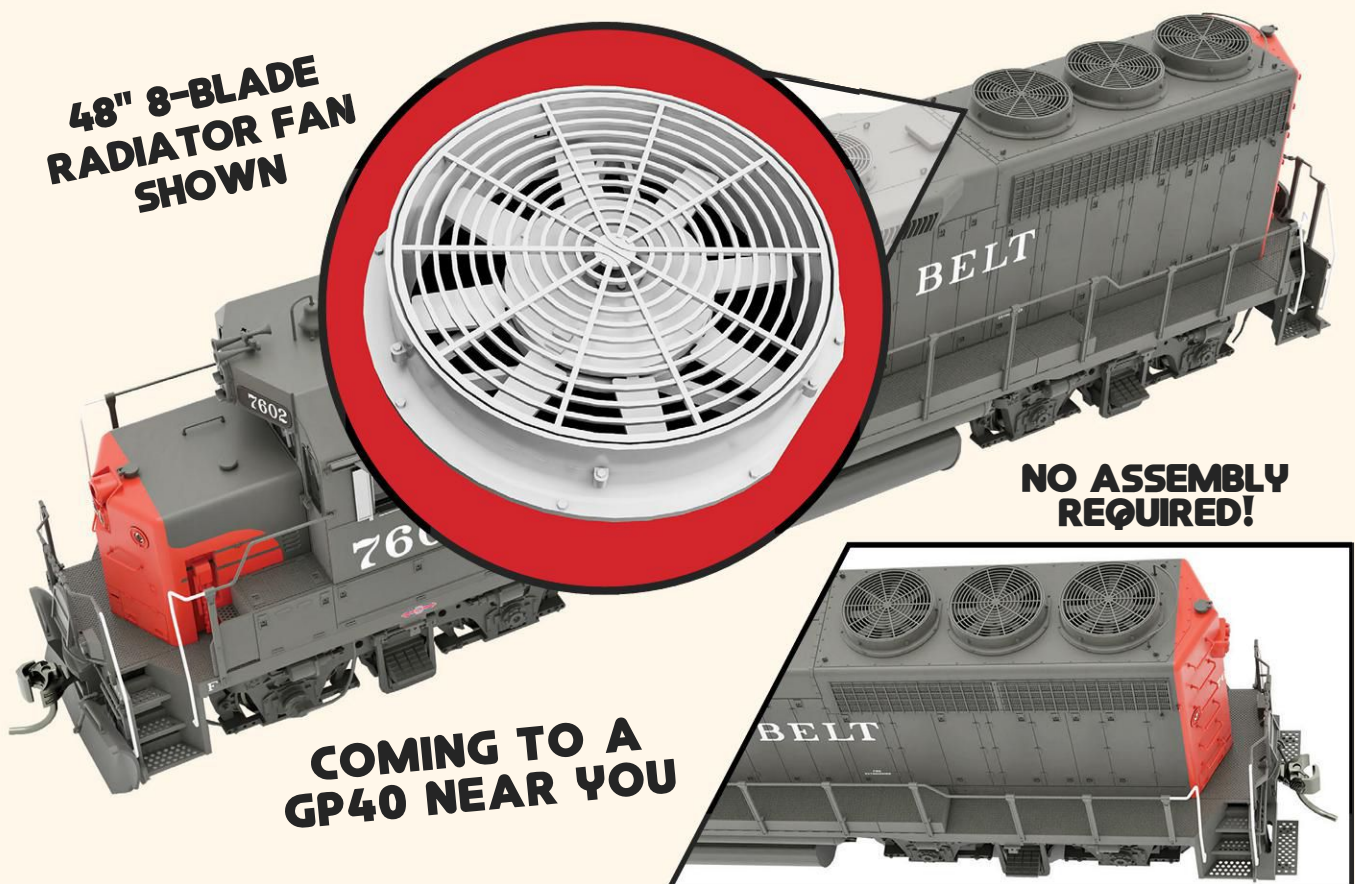
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Ultimate realism



On the cover: Inspired by old Westerns, Toyoji Sekine built an HO scale American steam-era logging layout in Japan. Kaori Komatsu photo



Next issue

In July, visit a Southern Pacific narrow gauge branch in On30. Plus, detail industries with Lou Sassi, 3-D print signal heads, see plans for an LV depot, and more!

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On Trains.com

Conducted by Bryson Sleppy



Building a laser-cut wood kit Part 1

with Steve Otte

Build a laser-cut wood structure kit, Part 1

For the single rail-served factory on our 2024 project layout, Senior Associate Editor Steven Otte selected a laser-cut wood kit. Steve takes you through his process of building this structure and explains helpful tips for building your own wood structure kit. Scan the QR code above to watch this video and keep an eye on Trains.com for the second part of this build.



Built by Others: Cody Grivno's Red Wing Division

Way before he was on the MR staff, Cody Grivno built an MR project layout for himself. The Soo Line Red Wing Division originally appeared in the December 1994 *Model Railroader*. After seeing the layout in that issue, Cody decided to adapt the 4 x 8 HO scale trackplan to model the Class I and shortline railroads in and around his hometown in northwest Minnesota.

In addition, read about Cody's model railroad upbringing and his modeling inspiration. See Cody's Red Wing Division along with other layouts built by others only on Trains.com.



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What are your other hobbies?

While some of us are hobby monogamists, there are others of us who have strayed. Sometimes, not too far — I also dabble in plastic model building. Mostly cars, a few trucks, ships, and aircraft, but it's still modeling with plastic. I'm always bugging the team at *FineScale Modeler* down the hall about new releases, as well as techniques I can adapt to model railroading.

Another related pastime is travel. The builders of both layouts featured in this issue put travel to good use. Drew James, page 32, took trips on Amtrak and Via Rail trains through the Rockies and Cascades, which confirmed that the Burlington Northern and Canadian Pacific were the railroads for him.

Drew isn't the only person to be inspired by vacations that included visits to sites of mountain railroading. I'm

almost afraid to visit the Colorado narrow gauge lines because I might be convinced I need to scrap plans for a Lehigh Valley layout and switch to narrow gauge. I'm already flirting with being a Someday Central modeler!

Our other layout owner, Toyoji Sekine, page 42, frequently attended National Model Railroad Association conventions in the United States. One year, Toyoji visited Railtown 1897 Historic State Park in Jamestown, Calif., on the way to Yosemite National Park. Railtown is the home of the Sierra RR's preserved shops, Toyoji's prototype. He was able to photograph trains and buildings for reference material to build his models. The trip to Yosemite is memorialized in the backdrop photos he took at the park.

Sometimes, our hobbies aren't so directly related to

model railroading. I've met a few modelers who are also hot-rodders. The skills needed to create and maintain a '32 Ford coupe hot rod might come in handy when trying to get locomotives and turnouts to work well, and each pursuit reinforces the occasional need for patience while we tell ourselves how we're doing this for our enjoyment.

Still others are musicians. I find it surprising sometimes when I see instruments in the same space as a model railroad, but they're both creative activities.

On a recent trip to the Seattle area to operate with the SoundRail group, the conversation of model railroading as a hobby came up a few times. A recurring theme was that it's a hobby that combines lots of hobbies.

If you're a woodworker, painter, historic researcher, electronics wizard, painter,



sculptor, or tinkerer, there's something about model railroading to capture your imagination. And if you're like me and many others in this hobby, it's a great pursuit for those who can't choose just one recreational pastime.

If you have another passion, let us know about it, and how it helps your model railroading. And keep having fun!

Model Railroader

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Photo of Engine #81 by Roger Van Alyne

HO scale



Electro-Motive Division E9A-Bm diesel locomotives. These six-axle passenger units for Union Pacific's Heritage Fleet are now available from Wm. K. Walther's Inc. The E9A-Bm set (both units are powered) is based on prototypes rebuilt in 1993 and still in service today. The A unit has a revised body with no nose door, working ditch lights on the passenger pilot, a Western-Cullen beacon, a short winterization hatch

with air conditioner, a brass Leslie S5T air horn with elevated base, and a firecracker antenna with wire conduit. Both HO scale units feature photo-etched metal Farr air grills. Two-unit direct-current sets are priced at **\$399.98**. Sets with a dual-mode ESU LokSound 5 decoder featuring non-turbocharged EMD 645 diesel sounds retail for **\$599.98**. Walther's Proto. Wm. K. Walther's Inc., 414-527-0770, walther's.com

Hattons, Model Train Stuff names to live on

In April's News & Reviews we reported that M.B. Klein, also known as Model Train Stuff, announced its closure after 111 years of operation. This came after Klein's acquisition by Hattons Model Railways in September 2023 and the subsequent announcement that Hattons would end operations in February of this year. While uncertainty has surrounded these two big names for months, it seems that the saga is coming to an end.

On March 12, Rails of Sheffield announced that it had bought the Hattons Model Railways brand. Per a statement released by Rails of Sheffield: "We are pleased to announce that we have now brought 'Hattons Model Railways' into the Rails family!"

"It was a shock to the modelling world earlier this year, when stalwart of the industry, Hattons, announced that it was to close.

"At Rails, we could not allow the legacy of this esteemed brand to disappear and we have sought a way to keep the spirit of Hattons alive.

"While the original Hattons store and business will remain closed, Rails of Sheffield will relaunch the Hattons website and directory, a resource which includes the history of thousands of models and the prototype information which inspired them."

Later the same day, Factory Direct Hobbies President Joe Grubba announced that M.B. Klein and Model Train Stuff will reopen as part of the Factory Direct Hobbies family.

Per a statement on the company's Facebook page: "... As we move forward, I want to assure you that our team is dedicated to not only bringing back the

(modeltrainstuff.com) you know and love, but also making it even better. We're committed to maintaining its unique identity and ensuring that it remains your go-to source for all things model trains.

"Plans for the revamped Model Train Stuff customer experience include

improved logistics, enhanced search functionality, and a reintegration of the Model Train Stuff rewards program.

Factory Direct Hobbies aims to maintain Model Train Stuff's identity as an independent website and brand."

Factory Direct Hobbies says updates are forthcoming and will be announced as available.

For more model railroad industry news, visit Trains.com.



HO scale locomotives



• **Electro-Motive Division FT diesel locomotive.** Milwaukee Road; Atchison, Topeka & Santa Fe; Boston & Maine; Chicago, Burlington & Quincy; Delaware, Lackawanna & Western; Great Northern; New York, Ontario & Western; Northern Pacific; and Reading Co. Multiple road numbers per paint scheme. Plastic body and metal chassis.

Direct-current two-pack, \$439.95; with DCC and sound, \$659.95. Direct-current single B unit, \$209.95; with DCC and sound, \$319.95. Rapido Trains Inc., 905-474-3314, rapidotrains.com



• **Electro-Motive Division SD70-series diesel locomotive.** SD70M: Indiana Rail Road, Arizona & California, Progress Rail Services Corp., RJ Corman, Western Pacific, and Union

Pacific. SD75I: Burlington Northern Santa Fe. Multiple road numbers per scheme. Road-number-specific details including equipment doors, radiators, horn, antennas, and paint. EMD HTCR early trucks with hidden bearings or late trucks with exposed bearings as appropriate. Separately applied uncoupling levers, lift rings, windshield wipers, and Celcon handrails. Direct-current model, \$199.99; with DCC and sound, \$286.94. Add \$8.70 for Primed for Grime. Genesis series. Athearn Trains, 800-338-4639, athearn.com

N scale



National Steel Car barrel ore hoppers. Now available from Rapido Trains, these unique-looking ore hoppers are painted for Ontario Northland, Railcar Limited (RMGX), Canadian National, GATX Capital (GACX), and GE Rail Services (NIHX). The cars, offered in long- and short-barrel versions as appropriate, feature see-through etched metal end platforms, detailed hopper bay gates, and a detailed underbody including separately applied air piping. Single cars are priced at **\$42.95**, three-packs are **\$128.85**, and six-packs sell for **\$257.70**. Rapido Trains Inc., 905-474-3314, rapidotrains.com

In Memoriam

William D. Volkmer 1936-2024

William D. Volkmer, 87, died on March 5, 2024, after battling cancer for two years.



Bill had a long and multifaceted career with a focus on railroad design, planning, technology, and operation. Through positions with the Pennsylvania RR Mechanical Department, General Electric, and Kaiser Engineers, he worked throughout the country gaining immense knowledge of the railroads. Always eager to share his knowledge and experience, he authored nine Morning Sun books on railroad and trolley subjects and served as editor for the Pennsylvania RR Technical & Historical Society's *Keystone Chronicles* magazine.

Not only a rail industry professional, Bill was a true railfan. He carried a camera in his pocket at all times and could often be found parked beside the tracks during family outings.

After retirement in 2007, Bill was active with the Electric Railway Clubs of Florida and served as the editor of its newsletter.

Southern Pacific; and Union Pacific. One road number per scheme. Lighted, detailed, and painted interior and sprung diaphragm. Broadway Limited Imports, 386-673-8900, broadway-limited.com

N scale locomotives



• **Budd Rail Diesel Car 1.** Amtrak; Baltimore & Ohio; Boston & Maine; BC Rail; Canadian National; Canadian Pacific; Metro-North; New York, New Haven & Hartford; New York Central; Reading Co.; Southern Pacific; and VIA Rail. All-wheel electrical pickup. Direct-current model, \$149.95; with DCC and sound, \$259.95. Rapido Trains Inc., 905-474-3314, rapidotrains.com

H0 scale rolling stock



• **Berwick 7580 appliance boxcar.** CSX, Louisville & Nashville, Railcar Limited, and Southern Ry. Multiple road numbers per scheme. Narrow-style draft box with shank wedges, striker castings,

and nut and bolt detail. \$47.99. ExactRail Platinum line. ScaleTrains, 844-987-2467, scaletrains.com



• **Greenville 6,000-cubic-foot capacity 60-foot double-plug-door boxcar.** Erie Lackawanna, Canadian Pacific, Conrail, Milwaukee Road, and Wabash. Multiple road numbers per scheme. Separately applied door rods, handles, tack boards, and door tracks. \$58.95. Tangent Scale Models, 828-412-3886, tangentscalemodels.com

H0 scale passenger equipment



• **Pullman PRR Z74D heavyweight business car.** Chesapeake & Ohio; Atchison, Topeka & Santa Fe; Canadian National; CSX; New York Central; Norfolk & Western; Northern Pacific;

Correction

The steps within the article "Scratchbuilding a 'lift-frog' turnout" in the October 2023 issue are incorrect and may result in confusion. The corrected article can be found on Trains.com. Use your smartphone's camera to scan the QR code to read the corrected article. We regret this error.



Athearn HO scale GE AC4400CW



A General Electric AC4400CW diesel locomotive has joined the Athearn Genesis lineup. And no, this isn't just an upgraded version of the "blue box" kit from the 1990s. The newly tooled six-axle road locomotive is available with prototype-specific details, a full cab interior, and light-emitting-diode lighting, among other features.

The sample we received is decorated as Chicago & North Western 8801, the class unit of the railroad's 8801 through 8835 series built in November and December 1994.

The 8801 was renumbered Union Pacific 6703 on November 7, 2003. The road locomotive operated in patched C&NW paint until late 2015-early 2016, when it was repainted in UP's "Building America" scheme.

The Athearn model features a multi-piece injection-molded plastic shell with a heavy die-cast metal chassis. The handrails and stanchions are Celcon, with a portion of the vertical railings in the stairwells painted white.

With 488 items in the parts list, this definitely is not a one-size-fits all model. There are more than 30 cab variations listed, more than 25 long hood options, and nearly 20 walkway versions shown in the exploded-view diagrams.

Features on our C&NW sample include a separate, factory-applied snow plow on the front pilot. Flexible rubber

m.u. and trainline hoses are woven through openings in the plow.

The flush-fitting window glazing is clear on the front and back and slightly tinted on the sides. Inside, the diesel has a detailed cab interior with three seats, a desk-style control stand, conductor's console, and rear wall.

Our sample is neatly painted C&NW Traditional Yellow and green with crisp separation lines between colors. The placement of the herald, warning labels, and other stickers matched prototype images that I found online. The stencils on the trucks look a touch oversize.

I compared our sample to prototype drawings in *The Car and Locomotive Cyclopedia of American Practice* (Simmons-Boardman Books Inc., 1997). The model's dimensions match or are within scale inches of published data.

The AC4400CW features a dual-mode SoundTraxx Tsunami2 sound decoder. I first tested the model in our workshop using an NCE Power Cab. The model moved at 4 scale mph at step 1. The locomotive achieved a top speed of 71 smph at step 28. The prototype had a maximum speed of 75 mph.

I then took the unit over to our Milwaukee, Racine & Troy for testing in a layout environment. The model pulled a train of 89-foot auto racks without issue on the main. The locomotive muscled 13 50-foot freight cars up the 3 percent grade between Bay Junction and Skyridge.

With more than 2,800 prototypes built between 1993 and 2004, the General Electric AC4400CW was a common prototype, and many examples can be found in service today. If you're looking for some big road power for your HO scale model railroad, you'll want to check out this newly tooled Genesis-series model from Athearn Trains. — Cody Grivno, senior editor

Facts & features

Price: Direct-current model with 21-pin NEM connector, \$264.99; with dual-mode SoundTraxx Tsunami2 sound decoder, \$364.99. Add \$10 for Primed for Grime models.

Manufacturer

Athearn Trains
2904 Research Rd.
Champaign, IL 61822
athearn.com

Era: November 1994 to November 7, 2003 (as decorated)

Road names: Chicago & North Western, The CIT Group, CSX, Kansas City Southern, Southern Pacific, and Union Pacific ("Primed for Grime" Southern Pacific patchout, two road numbers). Three numbers per scheme unless noted.

Features

- All-wheel drive and electrical pickup
- Body-mounted McHenry scale couplers, at correct height
- RP-25 contour metal wheel stubs on plastic axles, in gauge
- Weight: 1 pound, 5.5 ounces



Trains.com members can see the AC4400CW and ML-4000 in action with this QR code.

PIKO America HO Krauss-Maffei ML-4000



The much-anticipated Krauss-Maffei

ML-4000 diesel-hydraulic locomotive is now available from PIKO America. The newly tooled model, based on the 1961 prototype, has an injection-molded plastic body, die-cast metal chassis, and can motor with dual flywheels.

The PIKO America models are decorated as Southern Pacific 9000, 9001, and 9002 in their as-delivered appearance. The full-size units, originally part of the railroad's DF-800 class, were built in Munich, Germany, in June 1961 and delivered to the Port of Houston in October. The units, based out of the railroad's Roseville, Calif., shops, entered service in early November.

What is a diesel-hydraulic locomotive? The ML-4000 had two Maybach diesel engines that powered a pair of Voith hydraulic transmissions instead of generators and traction motors. Drive shafts connected the transmissions to the geared axles.

In October 1965, the engines were renumbered 9100 through 9102 and reassigned to the KF636A-1 class. The three units were retired between September 1967 and June 1968.

The plastic body, which has a separate nose, features a mix of molded and free-standing parts. Factory-applied parts include the wire grab irons, handrails, and lift rings; plastic air compressor intercooler pipes; and etched-metal fan and intake screens. The truck sideframes are based on the all-welded style used on the 1961 prototypes.

Our review sample is decorated as Southern Pacific 9000. The gray and scarlet paint is smooth and evenly applied, and the separation lines between colors are crisp. The decoration and lettering placement matches a photo in *Southern Pacific Motive Power Annual 1968-1969* (Chatham Publishing Co.)

The model's dimensions closely follow prototype drawings published in the October 1984 *Mainline Modeler*. The distance over the coupler pulling faces is a couple of scale inches long, but this is typical, as model couplers are oversized.

The sample we received is equipped with a SmartDecoder XP 5.1 sound decoder. Models sold through PIKO America and its dealers have 27-function decoders designed for use with NCE and other North American Digital Command Control (DCC) systems. Versions sold outside the United States have decoders that follow European DCC protocol.

Of note, F8 (motor sounds), F9 (number boxes and class lights), and F15 (lighting double traction) are multi-step functions. For example, if you press F8 once, a single engine starts. Press it twice and the second engine start-up sequence begins. A third press mutes the engine sounds; four turns all sounds off.

I tested the locomotive in DCC with an NCE Power Cab in our workshop. At step 2 the model moved at less than 3 scale mph. The engine achieved a top speed of 71 scale mph at step 28. The maximum speed on the prototypes was 70 mph.

I then took the model over to our Milwaukee, Racine & Troy layout for further testing. The locomotive led a train over the main line without incident. It was able to pull 14 50-foot boxcars up the 3 percent grade between Williams Bay and Skyridge.

For many years, brass imports or the Rivarossi/AHM plastic model were the only options if you wanted an ML-4000 in HO scale. Thanks to PIKO America, you can have a model with modern features. If you model the SP in the 1960s, this engine deserves a spot in your diesel fleet. — Cody Grivno, senior editor

Facts & features

Price: Two-rail model with SmartDecoder XP 5.1 and sound, \$399.99. Direct-current model with PluX22 decoder interface, \$279.99. Three-rail model with decoder and sound, \$409.99.

Manufacturer

PIKO America LLC
4610 Alvarado Canyon Rd., Ste. 5
San Diego, CA 92120
piko-america.com

Era: November 1961 to October 1965

Road names: Southern Pacific (scarlet-and-gray scheme, as-delivered details). Road numbers 9001, 9002, and 9003.

Features

- PIKO knuckle couplers, at correct height (trip pins slightly low)
- RP-25 contour wheels, in gauge
- Weight: 1 pound, 6 ounces

Aurora Miniatures HO scale gondola



The Aurora Miniatures HO scale

National Steel Car 3,650-cubic-foot capacity gondola is the latest North American freight car in the manufacturer's product lineup. The newly tooled car, available for the first time as a mass-produced model, was designed using a variety of prototype resources.

The sample we received is decorated as GNTX 295512, part of TTX's 295500 through 296099 series built by National Steel Car in Hamilton, Ont., Canada, between August and December 2012. Cars from this group are used to handle scrap metal; railway track material; and a variety of finished metal products, including bars, billets, blooms, pipe, plate, rods, and tubing. The gondolas in this series don't have lading anchors on the top chord tube.

The car is part of TTX Co.'s NSG21 class. N is for the builder, National Steel Car. S indicates service (steel or scrap loading). G stands for gondola. 21 is the design number (66-foot GNTX gondola with 6-foot-high sides).

The Aurora Miniatures gondola features an injection-molded plastic body. A few details, like the route card holders and Automatic Car Identification tags, are molded. However, the majority of the parts are separately applied, such as the wire grab irons and handrails, reinforcement plates at the bottom of the triangle-shaped exterior posts, and see-through etched-metal crossover platforms. The handle end of the plastic uncoupling lever is attached to a bracket secured to the bottom of the car. The opposite end fits in a notch in the draft-gear box cover.

The gondola has 100-ton Barber S-2-HD trucks molded in a grimy black plastic with raised foundry data and brake beams. Features like the reporting mark and road number on the truck sides and rotating blue Brenco class K

bearing caps further reinforce the premium quality of the model.

A steel weight, painted to match the body color, accounts for a good chunk of the model's 4.5 ounces. The smooth interior is a blank canvas for adding some rust weathering with paints and washes. There's also plenty of room to add a load.

Our review sample is neatly painted flat black. The lettering placement matches prototype images that I found online. All but the tiniest stencils are legible under magnification. Following the prototype's lead, the yellow FRA-224 stripes closest to the side grab irons are 8 x 18 inches, while the intermediate stripes are 4 x 18 inches. The National Steel Car builder's decals between the first and second grab irons are nice touches.

The model is equipped with plastic AuroraJanney scale couplers that are .030" low on both ends. For those who use between-the-rails magnetic uncoupling, note that the couplers don't have trip pins. A painted plastic train line hose, with the glad hand and adapter picked in silver, is attached to the side of the draft-gear box.

The blackened, machined metal 36" code wheelsets are correctly gauged. At 4.5 ounces, the gondola is 1.1 ounces too light per National Model Railroad Association Recommended Practice 20.1.

I tested the car on our Milwaukee, Racine & Troy and Wisconsin & Southern layouts. The gondola ran without incident while being moved around the interchange yard at Jones Island on the MR&T and in a freight train on the WSOR main line. For the most part, the AuroraJanney couplers worked well with other couplers. There were a few times I had to coax the plastic scale couplers to work with standard couplers.

The gondola's dimensions match or are within scale inches of data published

in the April 2023 edition of the *Official Railway Equipment Register* (S&P Global, 2023). I was able to get the car to navigate the 18" radius curves on our Beer Line layout, but the overhang wasn't very realistic. At 9¼" inches long, the gondola will look and operate much better on 22" or greater curves.

Aurora Miniatures is the first company out the gate with an HO scale model of the NSC 3650 gondola, and the manufacturer has set the bar pretty high. The long gondola will certainly stand out in a train, and if your layout is near eye level, the underbody details will be appreciated by operators and visitors. Since these are pool cars, the gondolas can be found throughout the North American rail system. If you model any time from August 2012 to the present, you'll definitely want to take a look this contemporary freight car. — Cody Grivno, senior editor

Facts & features

Price: \$59.99

Manufacturer

Aurora Miniatures North America Inc.
1122 Brimley Rd.
Scarborough, Ont. M1P 3G3
Canada
na.auroraminatures.com

Era: August 2012 to present

Road names: TTX/RailGon (20 road numbers). Also available painted black with data only.

Features

- 36" metal wheelsets, in gauge
- AuroraJanney plastic scale couplers, .030" low on both ends
- Weight: 4.5 ounces (1.1 ounces too light per National Model Railroad Association Recommended Practice 20.1)

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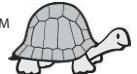
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The auto assembly plant on John Anderson's HO scale layout receives and ships freight in a wide variety of car types. John chose the industries on his layout specifically to use many different kinds of freight cars. John Anderson photo

Diversifying a freight fleet

I read with interest Steven Otte's response to William Schmidt's question regarding creating a diversified freight car fleet ("Ask MR," March). The industries on my HO scale CP Rail Alderwood Switching District were chosen with the idea of using a variety of freight cars. I thought my ideas might be of some use to your readers.

My layout is a 10 x 18-foot donut. An auto assembly plant occupies the southeast corner. Inbound traffic includes steel coil cars, gondolas, boxcars of parts and machinery, and cylindrical hoppers of plastic pellets. Outbound loads include auto racks, tanks of used solvents, parts boxcars, and gondolas loaded with scrap.

Next to the auto plant is a grocery wholesaler that receives and ships food and supermarket equipment using reefers and boxcars.

Across from the grocery wholesaler is a plastics manufacturer. While it does not ship via rail, it does receive plastic pellets in cylindrical hoppers. This manufacturer shares a siding with a bulk transfer facility, where traffic consists of chemical tank cars.

We then come to a tool and machinery plant that receives coil steel cars, gondolas, and boxcars. Flats and gondolas ship machinery, and scrap is shipped out in gondolas. A wood products firm receives gondolas, boxcars, and bulkhead flats. Its goods ship in gondolas and boxcars.

There are two team tracks, one with a rail crane. There is also a two-track intermodal area that handles truck trailers and containers.

Thank you for the opportunity to share my ideas.

John Anderson, Mississauga, Ont.

Park Elevator dates to 1874 and is the only remaining grain elevator in St. Louis County. It still operates today.

Dave Lange, Kirkwood, Mo.

Love those small layouts

As an avid reader (cover to cover every month) of *Model Railroader* who is working on a small freelanced HO scale layout, I was pleased to read the article on Andrew Dodge's 6 x 8-foot layout.

This was a special treat, especially after reading the previous article on Tom Thompson's giant 50 x 50-foot layout! I read the big layout articles with great interest, and I admire the work and creativity that goes into them, but I find it hard to relate to them.

My railroad is a U-shaped, 6 x 8-foot layout with a mainline run of about 25 feet. Small by any standard. But I enjoy creating scenery, building structures, and weathering. And every now and then, I just like running trains.

Thank you and keep up the good work you do on a great magazine.

Bill Dillon, Fincastle, Va.

Hall of Fame stirs memories

I just finished reading the March issue of *Model Railroader* cover to cover. One of the best issues I have enjoyed. Most of all, I am enjoying the nominees for the Model Railroader Hall of Fame.

I purchased my first copy of MR in October 1965, and I have nearly every issue since. I enjoy going back to those issues and rereading the articles by your nominees, and I'm always astounded at the quality of modeling 60 years ago.

Looking at the staff back then and your staff now, you have an excellent crew leading the magazine today.

Bill McKee, Rochester, N.Y.

Scanning April's fooler

Just received the April issue of *Model Railroader*. I didn't realize the American Concrete Institute (ACI) was interested in model railroading. I tried downloading the ACI scan app without success. Guess we will just have to wait till they get the bugs out by next April!

Dennis Nowicki, Naperville, Ill. MR



Dave Lange thinks this grain elevator in Valley Park, Mo., might have inspired one on Mike O'Connell's O scale layout (February). Dave Lange photo

That sign looks familiar

The February issue offered an enjoyable change of pace, with several features on O scale layouts. One image from Mike O'Connell's layout at the bottom of p. 43 piqued my interest. The sign on the Purina Chows Valley Park Elevator appears to have been taken from a local landmark — the Valley Park Elevator and Hardware Store in the St. Louis suburb of Valley Park, Mo. According to the City of Valley Park website, the Valley

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 editor@modelrailroader.com. Please include your name, city, and state.

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Jack Burgess graphic

Q Do you know of any software for producing a timetable for a model railroad? I would like to create a timetable that uses the same fonts and formats as prototype documents once used by the Milwaukee Road and Chicago & North Western.

A Java Model Railroad Interface (JMRI), the free package of open-source model railroad utilities, has a module (jmri.org/help/en/html/tools/TimeTable.shtml) that lets you plan a timetable for your model railroad. It lets you input your stations, the capacity of their sidings, and the distances between them; your trains and their characteristics, like class and average speed; and information about the schedule document. The software can output a speed-line graph that will let you visually plan meets. Once you're satisfied, you can output the timetable in comma-separated value (CSV) format that can be imported into a spreadsheet program.

While this is a great tool to plan a timetable (and the price can't be beat), the output won't look all that much like a vintage railroad document. However, if you import it into spreadsheet software like Microsoft Excel, the rows and columns can be arranged and resized as desired. Different kinds of borders can be applied to individual cells or groups of cells, and you can also change fonts to make it look more realistic.

The exported CSV file can also be imported into Microsoft Word or another word-processing program that supports tables. While Word might not be as easy as Excel at grouping and arranging a timetable's columns and rows, it's better suited for adding text, headlines, and font effects.

Q I recently added a Faller carousel to my HO scale model railroad. It is lighted and motorized. Now I would like to add a sound module to the layout to play carousel sounds. Any suggestions where I might find one?

A I couldn't find a sound module pre-recorded with carousel sounds, so you'll have to customize one for yourself. Luckily, it doesn't look like it would be too difficult.

What you'll need are a programmable sound module that will play .MP3 files and an .MP3 file of the sounds you want. Searching for "MP3 sound module" on Amazon.com turned up a large number of suitable players, all priced under \$20. You're looking for one with an attached speaker (the larger the better) and a USB cord for programming.

You also want one with a separate box for AA or AAA batteries rather than button batteries on the circuit board. You don't want to have to change the batteries all the time, so if you get a module with a separate battery box, you can cut the wires and splice in the leads from a wall-wart DC adapter of the same voltage (3V if the box takes two batteries, 4.5V for three, 6V for four).

I found that some players let you select what happens when you press the activation button. Based on your preferences, you can make the sound play once when the button is pressed, play as long as the button is held down, or play on a loop until the button is pressed again — all useful options for different applications. You might want to play the sound of birds chirping in a forest or water in a rushing stream on continuous loop, but play your carnival sounds only when the button is pressed.

Now for the sound files to put on your sound module. I found a website called Pixabay (pixabay.com/sound-effects/search/carousel/) that has free downloadable sound effects files in .MP3 format. One called “Carousel Ride” is just under a minute long and includes background sounds and voices as well as classic carousel music. “Carousel on English Beach” is pretty good, too. Click the “Download” button to save the sound you want to your computer.

If you want to expand your layout's sound profiles later, Pixabay has many

Send questions to Senior Associate Editor
Steven Otte at AskTrains@Trains.com.

other useful sound files available, including farm ambiance, sawmills, factory sounds, train station ambiance, grade crossing warning bells, and more. Just type what you want to find in the "Search" box on top of the page.

Once you've found and downloaded the sound you want, plug your sound module into your computer's USB port and follow the instructions that came with the module to copy the sound file into the module's memory. Then install it on your layout and enjoy.

Q I'm having some electrical problems with my N scale locomotives. My 6 x 8 layout is powered by Digital Command Control. My locomotives will roll a few inches, then stop. If I give them a push, they stutter on and off. When the locomotives are moving, the block occupancy detector's light-emitting diode (LED) is on, but when they stop, the LED is off, as if it's not sensing the locomotive at all.

I have cleaned the track and the wheels. I have performed a factory

reset on the decoders. I switched one power district to a different DCC system, and the problem persists. I put an RC filter (snubber) on each block. The power supply for my boosters is switchable between 12V and 13.5 volts; I tried both. I used my RRampMeter II to measure track voltage and got a constant measurement on every block. All track joints are soldered.

In case the problem was in my wiring, I cut the track feeders from all the existing wiring and strung a brand new power bus. But this didn't solve the problem, either.

To add to the mystery, I have one steam locomotive that runs mostly trouble-free. But even it stops once or twice in a full lap. My other locomotives all suffer equally.

Ron Chaffee

A Since you've already tried all the things I would usually suggest, I'm tempted to throw up my hands and say I can't help you. But there are some clues in your letter that may suggest a solution.



If you're having locomotive electrical problems and have already checked the obvious, look inside. The electrical pickups on your trucks may be dirty or corroded. *Jim Hediger photo*

If current were still flowing through the locomotive's circuits but the gears were binding, the block occupancy detector LED would stay on when an engine stopped. The fact that it turns off confirms that it's not a mechanical issue.

This power loss to the locomotive is intermittent, but you said that the

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RRampMeter returns a constant voltage. So the power is reliable from the DCC base station to the rails. That isolates the problem to the locomotives.

Assuming that the track and wheels are clean, the next place current could be dropping is the pickups that convey the electricity from the wheels to the DCC decoder. These can over time corrode, carbonize, or pick up dirt that interferes with their function. Open up your locomotives and check them. After manually removing any dust or gunk, polish the contacts with a pencil eraser or isopropyl alcohol on a Microbrush.

If the electrical connection from the pickups to the decoder also relies on wipers, clean those, too. Heavier rust like you see in the accompanying picture might require work with a sanding stick. And while you're in there, clean the axle bearings and gear towers and give them a drop of plastic-compatible light oil.

Q I'm aware that India ink-alcohol stain fogs Dullcote and similar lacquer products. But I've not been able to find

anything on the internet that discusses what happens if you spray Dullcote onto something that has previously had an alcohol wash applied, but the alcohol is dry. I assume there is no effect, and I've read that the clouding effect can usually be corrected by spraying on additional Dullcote, but I don't want to risk screwing up my model. What can you tell me?

Thomas Hiser, San Diego, Calif.

A Isopropyl alcohol stain fogs Dullcote because of a chemical reaction between the alcohol and the microscopically rough surface of the lacquer. But isopropyl alcohol evaporates completely when it dries, leaving no residue. As long as your wash is completely dry, there is no alcohol remaining to attack the Dullcote. So spray away.

But there are some situations where the fact that alcohol stain fogs Dullcote can be a good thing. Brushing or misting on 70% isopropyl alcohol (or an alcohol-based stain) over a model that's been sprayed with Dullcote is a good way to



Brushing or spraying isopropyl alcohol or an alcohol stain on Dullcote causes a white haze to appear. But that can be a good thing, as Mont Switzer demonstrated on this composite-sided war emergency hopper. Mont Switzer photo

simulate such weathering effects as sun bleaching and chalking paint. This "bloom" effect looks particularly good on wood siding, since wood naturally turns gray as it ages. It's also effective on cement hoppers, whose lading can run down the sides, leaving whitish streaks. MR contributor Mont Switzer demonstrated this technique in his article "Detail and weather war emergency hoppers" in our November 2021 issue. [MR](#)

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Thanks to a mechanism from a Broadway Limited Imports animated wood water tank, crews on Tony Koester's Nickel Plate Road can stop to refill their steam locomotive tenders with the push of a button. Photos by the author unless noted

Animating a steel water tower

Animation seems to be one of the next big things in model railroading. Thanks to a new model from Broadway Limited Imports, modelers now have access to a water tower with a spout that moves to fill steam locomotive tenders. This caught my eye after several of my crew and I finished installing interlocking signals at several junctions on the railroad.

Operationally, the interlocking plants and the operating water tower accomplish the same thing — slowing down our trains. Either a red home signal or the need to take water — which crews are more likely to do if there are some interesting actions and sounds involved — will extend the running times of even the fastest hotshots over our model railroads' obviously too-short main lines.

Steel water towers

By late 1954, there were no coal docks remaining between the division points of Frankfort, Ind., and Charleston, Ill., on the Third Subdivision of the St. Louis Division, which I model. And the only water tower in the towns I chose to model was a 100,000-gallon steel tank built in 1919 just east of Cayuga, Ind. The bad news is that the BLI water tower is based on a wood prototype; the good news is that both Tichy Train Group and Walthers make steel water tower kits

large enough to hold the internal spout mechanism and speaker. The Tichy kit closely matched the Nickel Plate Road prototype at Cayuga, so I used that one.

One catch: The Tichy kit employs a water column (standpipe) rather than a swing-down spout attached to the tank. I needed to change that. (Had the NKP used a water column at Cayuga, animating it to swing out 90 degrees laterally using a servo or slow-motion switch motor would have been relatively easy; in fact, I may do that at the terminals in Frankfort, Ind., and Charleston, Ill.)

The question at hand was whether I had the nerve to tear into a \$100 animated water tank in perfect working order and installing the parts in a different tower kit in the hopes of having them actually work again as intended. Embracing the “no guts, no glory” mantra, I forged ahead.

Like the working home signals at several of the foreign-road diamonds we have recently installed, the water stop at Cayuga now serves to slow the pace of



This vintage photo of the Nickel Plate's Cayuga, Ind., water tank and coal dock shows just enough detail to indicate the spout was supported by bracing between two of the tank's four legs. The pipe to the spout angles downward. Clyde Eyrse collection courtesy Steven Grigg

even the hottest steam-powered manifests, thus extending each crew's run over the division.

My sincere thanks to the Customer Service and Tech Support folks at Broadway Limited, who cheerfully and promptly answered my several questions about their interesting product, without which I never would have attempted this project. **MR**

STEP 1 OFF WITH THE ROOF!

Hooking up the BLI tank to test it is as simple as connecting the two power leads to the two rails of a DCC-powered railroad or a 12VDC power supply and pressing the push-button. Down comes the spout, and gushing water sounds are heard (along with some human voices I could do without).

The instructions that come with the BLI water tank helpfully include a drawing showing the inner workings. But the best bet was simply to remove the roof and peer inside, which is easily done by slipping the metal ladder rungs out of the holes in the roof and then lifting the roof straight up. It's held on by two loosely fitting tabs, so I went around the rim with my fingers and gently pried the roof loose.



Looking inside, I saw several small Phillips-head screws that held the servo, speaker, and electronics in place. I backed out the screws and

removed everything, with the servo still mounted to the round base. Maybe I could just drop that into the Tichy water tower and call it a day!

STEP 2 REFITTING THE MECHANISM

Fitting the round hardware base into the Tichy funnel-like base quickly revealed a problem. On a wood water tower with a flat bottom, the pipe feeding the spout comes out horizontally just below the base. But the Tichy kit represents a steel water tower with a conical bottom, so the pipe feeding water to the spout comes out much lower. There was no way to lower the mechanism that far down into the funnel.

I did the next best thing: I cut the round base holding the servo as small as I could and made an inverted triangular brace from .100" styrene to support it. I also drilled a series of 1/16" holes in a vertical line where the link attached to the servo arm would have to come out of the side of the tank's conical bottom. I figured I could lengthen this slot if needed once I saw how it worked. I was concerned that I would restrict the amount the servo was designed to travel, so I made the slot longer than I thought would be necessary and hoped the movement of the spout would replicate that on the BLI tower.

To test progress, I first cut off each corner of the base. Since the kit is

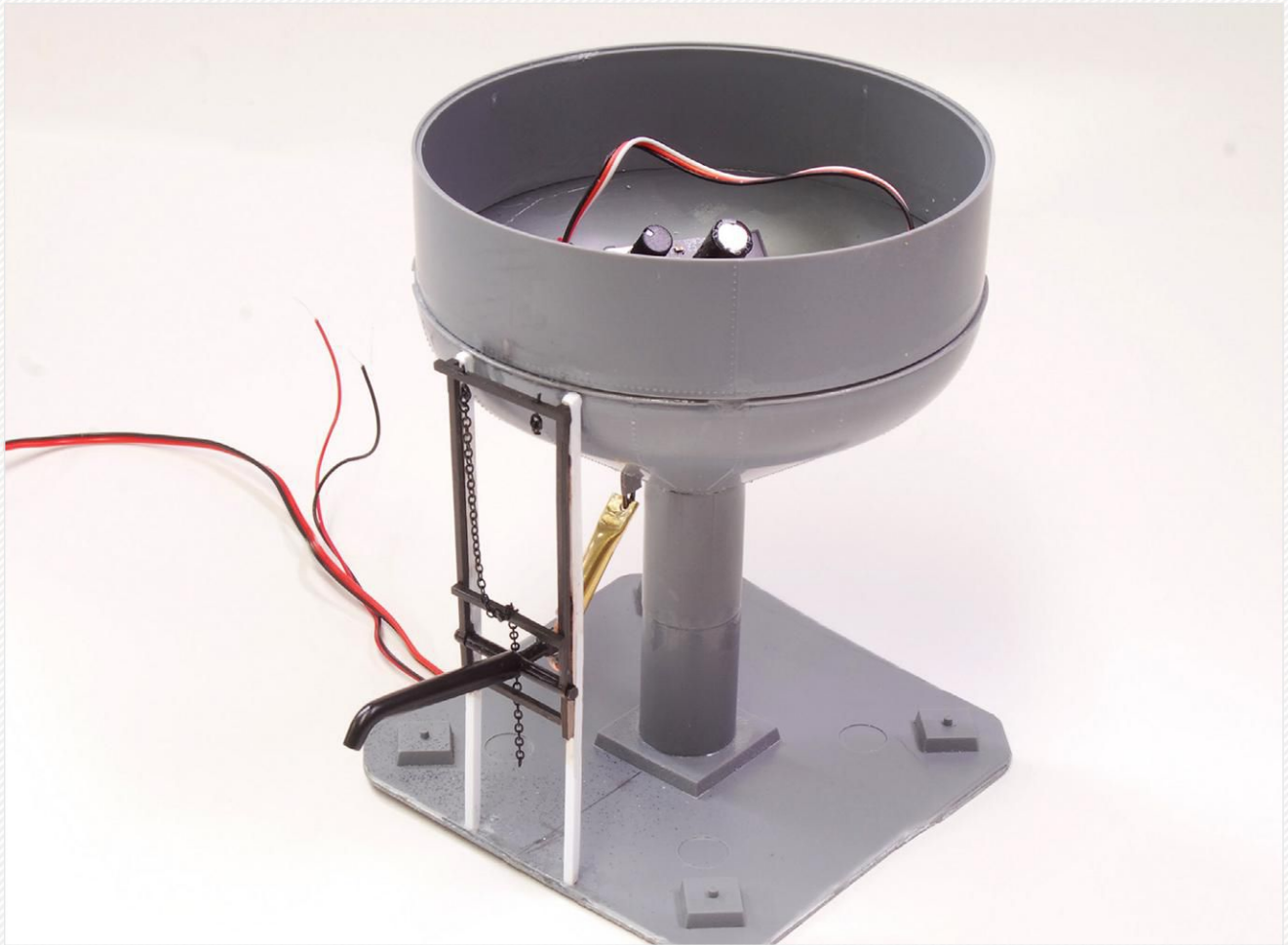


designed to be used with a water column, it doesn't need to nestle up close to the main line like a tank with a spout does. The base of the tank will be covered with dirt, cinders, and weeds, so the cuts don't have to be precise; I used tin snips. I then glued one ring of the water tank to the funnel version of the base to match the NKP prototype (a second ring and

conical top would be added later). These were glued to the base, and the servo with its new triangular support was glued into the tank.

Curiosity got the best of me, so I hooked the two power leads to the rails and pushed the button. It worked! Well, the servo moved, anyway. There was nothing for it to do yet, however.

STEP 3 SPOUT TRANSPLANT



So far, nothing I had done precluded salvaging the BLI wood water tank for use as a static model elsewhere. That came to an abrupt end when I realized that I needed a heavy metal spout for my steel water tank. I didn't have good photos of the entire spout mechanism of the NKP tanks, but it was clear that I could not allow the spout support mechanism to hang down from the side of the tank without more support.

I therefore decided to slice off the nibs holding the spout frame from the BLI tank and attach the entire frame and spout to two 28'-6" lengths of .080"-square styrene that extend from the bottom of the main portion of the tank all the way down to the base. (I suspect the prototype tank had a horizontal beam between the two trackside legs that secured the spout; this could be made using

extra leg parts from the Tichy kit). I then glued the BLI spout frame to the two supports.

But I was nowhere near out of the woods yet. The end of the link dangling from the arm attached to the servo was much higher than the centerline of the spout. Reminding myself that this was both an experiment and a quest to animate the spout of a steel water tower more than a quest for absolute realism, I pressed on. (Besides, I told myself, the spout faces away from the aisle, so small transgressions may be overlooked.)

To connect the end of the link attached to the servo arm to the back of the spout would require a piece of something about 1" long. It occurred to me that I could use a length of $\frac{3}{16}$ " brass tubing, which would suggest a connecting water-delivery pipe.

I measured the distance between

the end of the link and the attachment point on the back end of the spout when the spout was at the height needed to rest on a Berkshire tender. That distance was indeed about 1". I crimped one end of the tube, drilled a hole in it with a $\frac{1}{16}$ " bit (the hole may need reaming out a little) to snap into the "tongs" on the end of the servo link, and cut the tubing. To hook over the "bar" on the end of the spout, I bent a length of 14AWG copper wire into a J shape, flattened it enough so that it easily slid into the back end of the water spout, and soldered into the tubing.

I then snapped the end of the link into the hole in the crimped end and, with some effort, managed to slide the wire hook onto the end of the spout. After squirting some Kadee graphite powder into the pipe connection, it was showtime!

STEP 4 DETAILING AND TESTING



I routed power to the servo by wedging the tips of the red and black power wires between closed switch points. I then took a deep breath and touched the two wires that would soon run to a pushbutton. The spout moved! I could finish constructing and painting the kit.

I attached the BLI spout-balancing chain and counterweights to the spout when it was in the down position by gluing an “ear” from a Kadee coupler-box lid to the top of the spout using canopy cement and looping a short length of fine wire through it and a link at the bottom arc of the chain. The conical roof is attached with dabs of Woodland Scenics’ Accents Glue, often used to temporarily position figures, so I can regain access to the electronics and servo if needed. I didn’t use the safety cage on the ladder, as despite the NKP’s reputation for safety, none of the water tank photos I have show one.

I then ran a Berkshire tender under the spout, and lo and behold, when activated the spout dropped right onto the deck of the tender. But this caused enough play in the spout mechanism to pop the J-shaped connection out of the end of the spout. I worked the hook back into its slot with tweezers and placed the tank base on shims that ensure the spout stops a scale foot or so above the tender deck. This also gave a foot more clearance between the spout in the raised position and any high-wide freight loads.

BLI’s factory sound is loud and sounds good, but I don’t care for human voices on layout recordings as a rule. So my intention was to use the Miller Models (now ITT Products) sound system I already had installed. An engineer would pull up to the tank and push the “Water” and “Spout” buttons, or maybe I could combine them with a momentary DPDT toggle switch.

But when I timed the two recordings, the BLI version played almost twice as long as the ITT products version — which is good, as the whole idea is to slow things down a bit. There was no way to synchronize them. Fortunately, there’s lots of room in the Tichy tank for the servo, electronics, and a speaker.

As an experiment — remember, this whole project was an experiment — I simply dropped the speaker into the tank rather than securely mounting it in an enclosure. I then popped on the conical roof and fired it up. It was still plenty loud enough.

I extended two pairs of wires down through holes in the scenery and benchwork and hooked them up to the DCC buses and the BLI push-button controller mounted on the fascia — and nervously pushed the button. Squeaking sounds of the spout coming down and motion in front of the tank spelled success!

Digging into



Adding subway operations to an HO scale layout

By Michael Collins • Photos by the author

When I was building my HO scale New York Harbor — Lehigh Valley RR, featured in the November 2018 issue of the *NMRA Magazine*, I decided to include a subway line. The loop of track under the Mott Haven neighborhood in the Bronx features a stop at the Grand Concourse Station, with two passenger entrances on the platform and two at street level.

There were no HO scale subway sets on the market when I started the project. I found an out-of-production Walthers Proto 1000 four-car R21/22 set on eBay. The direct-current models did a nice job depicting Metropolitan Transit Authority's (MTA) No. 2 train.

Later, MTH released a four-car R-17 subway set in MTA's sliver-and-blue

scheme with Digital Command Control and sound. I converted the layout to DCC and replaced the Walthers subway set with the MTH offering, calling it the No. 5 train.

Prototype history

The New York City subway system started in 1904 and grew into three rail networks, the IRT (Interborough Rapid Transit Co.), IND (Independent Subway System), and BMT (Brooklyn-Manhattan Transit). In 1965, all 25 lines became the Metropolitan Transit Authority.

Starting at the top of the Bronx, the Red Line (MTA train route 2) begins at Wakefield (241st Street). Nearby, the 5 route starts at Eastchester (Dyre Avenue). These two trains meet at East 180th Street, then the rail lines split at

Metropolitan Transit Authority R-17 subway car 6562 eases up to the Grand Concourse Station on Michael Collins' HO scale New York Harbor — Lehigh Valley. The scene is illuminated with a bookshelf light-emitting-diode fixture.

149th Street — Grand Concourse Station, not far from Yankee Stadium.

In Manhattan, the No. 2 line heads west, then south, while the No. 5 train goes straight down Lexington Avenue.

At the end of Manhattan, near City Hall and the Financial District (Wall Street and South Ferry), both trains cross under the East River to Brooklyn (Borough Hall), ending at Flatbush Avenue (Brooklyn College).

Grand Concourse Station

To model the Grand Concourse Station, I first cut an opening in the benchwork frame side and backdrop so visitors could view the below-layout scene. Then I pasted a stone wall sheet around the opening, as seen in the photo at the top of this page.

the Big Apple



This in-progress image shows how the subway line fits under Michael's HO scale New York Harbor — Lehigh Valley RR. The opening for the Grand Concourse Station is partially visible behind the craft paint bottles.

Next, I built the raised platform using poster board. I then installed a stamped foam sidewalk and painted it a weathered concrete color.

One hallmark of the station is the tile walls. I printed a picture of the tiles on

glossy photo paper. Then I used my computer to make appropriate signs. Three-dimensional details include benches and restroom doors.

I used Micro Engineering bridge parts to model the support columns.

I added N scale tunnel portals for the passenger entrances on both ends.

To further enhance the scene, I installed two Walther's newsstand kits (933-3773). One is named Wayne's World for my friend Wayne Sittner. The other is



Michael cut an opening in the benchwork and hardboard backdrop where the Grand Concourse Station scene would be located. The Budd Rail Diesel Car is making a test run on the subway track. The backdrop is in the lowered position.



The 149th Street subway entrance is visible to the left of the tunnel portal at Patriot's Plaza. Sidewalk artists, food carts, and a New York Police Department vehicle reinforce the Big Apple theme of Michael's layout.

called Chuck's Wagon for friends Chuck Davis and Chuck Huthmaker, complete with two horses to reinforce the Western theme. I populated the platform with an assortment of Preiser figures in various poses waiting for the subway.

In the viewing window [See bottom photo, opposite. — *Ed.*], I installed a third rail, station sign, dwarf signal, two electrical control boxes, a vent, and Atlas

HO scale hairpin fence (0774). I weathered the scene to capture the look of a well-used, underground train station. The scene is illuminated with a light-emitting diode bookshelf lamp.

The layout backdrop is attached with hinges and secured to the frame with wing nuts on screw studs protruding through the hardboard. If necessary, the entire backdrop can be lowered.



Running trains

When I give visitors a tour of my railroad, I run the subway without telling them. They hear the subway sounds, then I activate the station announcement and horn. I point out the surface vent on top of the layout as the subway rolls by. A 2 x 6-inch opening in the side affords a quick glimpse of the passing train.

Finally, I show visitors the station scene, which amazes them. As the train approaches the station with its horn blowing, it passes the platform and I again activate the next station announcement. Then I use the buzzer sound, also known as jingles, a few times to re-create "subway talk" between the motorman and conductor.

I stop the train halfway around the loop so visitors can hear the conductor apologize for the delay. Then I start the train, bring it up to the station, and ease it to a stop at the platform. You can hear the passengers depart and the conductor's safety comments.



Michael cut the sides off one of his MTH Electric Trains R-17 subway cars so visitors can see the seated and standing passengers inside. The open sides also provide a view of the station platform behind the car.

For variety, I cut open both sides on one of the MTH Electric Trains R-17 subway cars so the seated and standing riders are visible, along with the station platform. This often leads to visitors sharing their stories of riding subways.

Celebrating success

A picture of the platform was included in a 7-foot backdrop that I entered in the Celebration of Models contest at the 2017 National Model Railroad Association National Convention in Orlando, Fla. It earned second place in the Kit Built Display category.

In addition, a picture of the Grand Concourse platform took first place in the Photo-Model Print People's Choice Awards at the same event.



Tile walls serve as the background for the station scene. Michael used poster board to model the raised platform. He then added two Walthers newspaper stand kits and several Preiser figures to the scene.

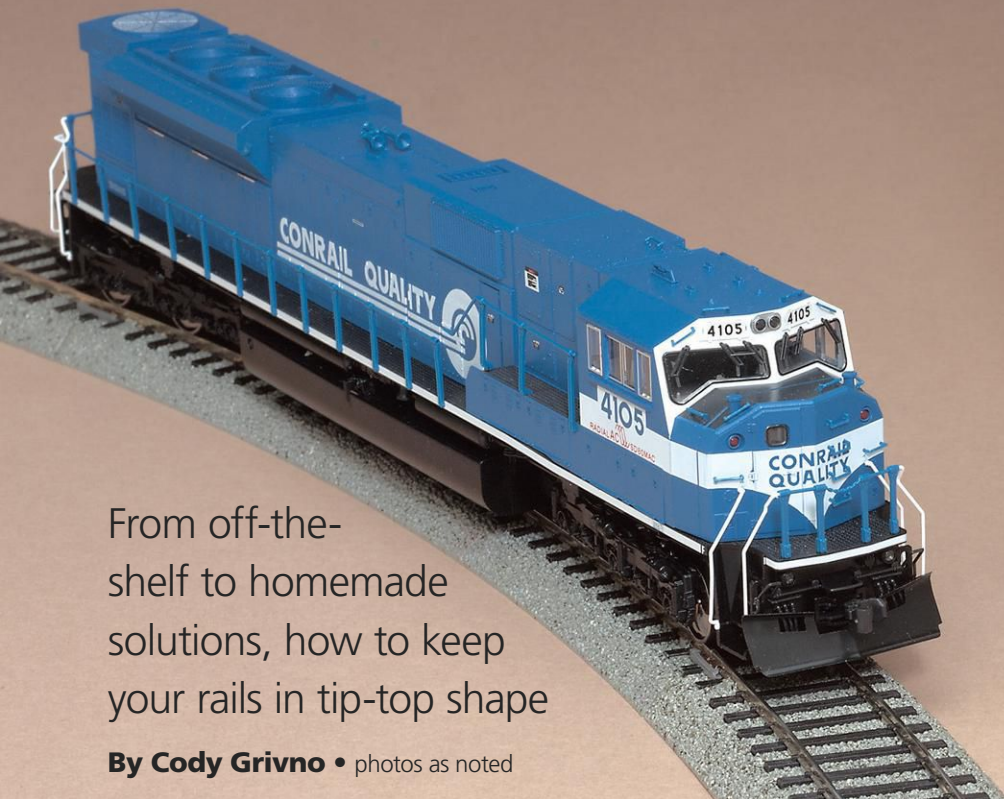
Adding a slice of the Big Apple's railroad scene to my HO scale layout has been an enjoyable project. If you're looking to try something different in the hobby, consider modeling a subway. [MR](#)

Michael Collins is National Model Railroad Association Master Model

Railroader No. 157. He lives in Pembroke Pines, Fla., and is an active member of the Florida Citrus Model Train Society (fcmts.org). You can learn more about Michael's HO scale New York Harbor — Lehigh Valley RR layout and see videos of trains in action on his YouTube page. Search for @michaelcollins9520.

5

ways to clean track



From off-the-shelf to homemade solutions, how to keep your rails in tip-top shape

By **Cody Grivno** • photos as noted

If you want to get a lively debate started amongst model railroaders, ask them the best way to clean track. Some prefer abrasive blocks, like the Bright Boy, while others turn to any number of cleaning solvents, homemade or commercial cleaning cars, or off-the-shelf cleaning systems. Which one is the best? That's a matter of personal preference.

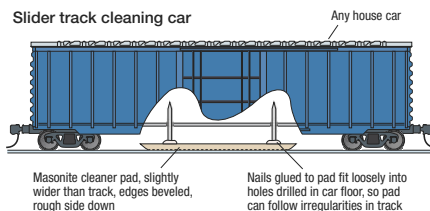
Cleaning cars



Bachmann makes this HO scale track cleaning car. The single-dome tank car is appropriate for the steam-to-diesel transition era. Bachmann Industries photo

There have been a variety of wet and dry track cleaning cars produced over

the years. Bachmann Industries offers an HO scale steam-to-diesel transition era single-dome tank car with a weighted, pivoted reusable pad between the trucks. The car can be used on straight track, turnouts, and curves.



Noted modeler John Allen made removable track cleaning pads for boxcars by attaching a tempered hardboard pad to two nails. The pad could then slide up and down to adapt to track height. Rick Johnson illustration

If you're more the do-it-yourself type, you can make your own cleaning car using a method developed by the late

Flitz Metal Polish (flitz.com) is an abrasive-free option for cleaning track. According to the packaging, the anti-tarnish formula lasts up to six months. Bill Zuback photo

John Allen, builder of the well-known HO scale Gorre & Daphetid model railroad. John attached a tempered hardboard pad, rough side down, to two nails with glue. The nails fit into holes that he drilled in the bottom of a boxcar. This allowed the pad to float in the underbody, reducing the chances it would snag on turnouts, crossings, or track irregularities. He cut the pad slightly wider than the track and beveled both ends.

A-Line produces a kit with components to make a tempered hardboard cleaning pad designed to fit an HO scale 40-foot boxcar. You can purchase the kit through the Kalmbach Hobby Store.

Abrasive blocks

An abrasive cleaning block is a popular method for cleaning track. The

Walthers SceneMaster Bright Boy has long been a popular choice for modelers. Similar blocks are produced by Atlas Model Railroad Co. and Peco.



An extra-fine Cratex block (top) and Walthers SceneMaster Bright Boy (bottom) are two types of abrasive blocks used for track cleaning. Paul J. Dolkos photo

In “Tune up your layout, Part one: Cleaning track and adjusting rolling stock” (May 2007 *Model Railroader*), veteran modeler Paul J. Dolkos wrote, “I reserve abrasive materials for only occasional heavy-duty cleaning. And whether you use sandpaper or a Bright Boy, avoid those that are extra coarse. These will scratch the rails instead of polishing them. Dirt and dust tend to collect in these scratches, making it more difficult to keep the rails clean.”

In place of coarse-textured cleaning blocks, Paul prefers an extra-fine Cratex block, such as Walthers No. 949-522. He also uses strips of basswood to clean tracks. The wood is abrasive enough to remove grime but soft enough to not scratch the rails.

Cleaning solvents



The Labelle No. 105 track conditioner kit includes a 30ml bottle of cleaning fluid, round cleaning pads, swabs, and applicator strips. The fluid is compatible with direct current and Digital Command Control layouts in all scales.

Bill Zuback photo

When I searched “track cleaner” on the Walthers website (walthers.com), I was surprised at the number of cleaning solvents on the market today. Among the offerings were:

- Atlas Model Railroad Co. track cleaning fluid
- Bachman Rail & Road track cleaner liquid
- Deluxe Materials Ltd. Track Magic liquid track cleaner
- Excelle Lubricants Rail Conditioning Fluid
- Labelle Industries No. 105 track conditioner
- Robart Manufacturing Inc. Rail-Zip track cleaning fluid
- Woodland Scenics Clean Track Solution

Though all of the products have the same goal of keeping track clean, the application process and frequency may vary. Read the instructions carefully and follow all manufacturer recommended safety precautions.

In our January 2003 issue, we ran Glen Scholey’s article “Polish those rail-heads!” In the article, Glen explained how he used metal polish to clean the rails on his model railroad. Glen turned to MAAS Polishing Creme for his layout, but the article also referenced Flitz metal, plastic, and fiberglass polish from Miracle Group Inc.

The Flitz packaging notes that the anti-tarnish formula lasts up to six months. Glen stated in his article, “Our experience has shown that cleaning the rails with metal polish is preferable to an abrasive track cleaner, with the added benefit that the polish significantly slows the buildup of oxidation.”

Cleaning systems



The Woodland Scenics Rail Tracker system includes the Rail Tracker tool and handle; cleaning, finishing, maintenance, and rescue pads; and a bottle of Clean Track Solution.

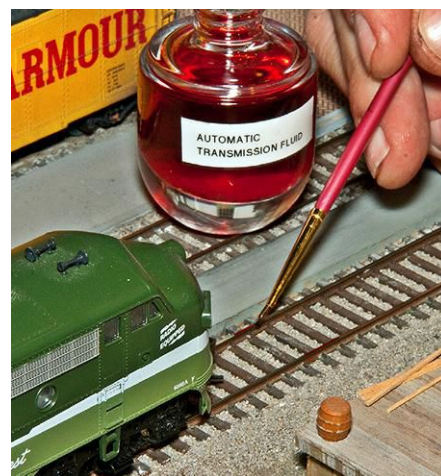
Bill Zuback photo

If you’re looking for an all-in-one cleaning solution, you’ll want to take a look at the Woodland Scenics Rail

Tracker cleaning kit, part of the company’s Tidy Track line. The kit includes the Rail Tracker tool, a 12” handle, an .85 fluid ounce bottle of Clean Track Solution, two each maintenance and rescue pads, and four each cleaning and finishing pads.

The pads included with the Rail Tracker are compatible with N, HO, and three-rail O gauge track. The handle fits into the Rail Tracker, allowing the track cleaning tool to reach into tunnels, under bridges, and other places where our full-size hands won’t fit. The handle pivots 180 degrees, handy for curved track sections. The manufacturer recommends locking the head when cleaning turnouts.

Thinking outside the box



The Puget Sound Model Railroad Engineers in Tacoma, Wash., uses automatic transmission fluid as both a cleaner and contact enhancer. A small application once per week is all that’s necessary. Steve Carter photo

We’ll wrap up our look at five ways to clean track with an outside-the-box technique. In our May 2011 issue, Steve Carter of the Puget Sound Model Railroad Engineers (psmre.org) in Tacoma, Wash., reported on how the club experimented with transmission fluid (ATF).

The group ran a train through a drop of ATF applied to 1” of rail to spread the fluid around the layout. The tests found that the ATF improved electrical contact on its HO scale layout. A small application once per week helped trains run smoothly on the club’s 25 x 95-foot model railroad.

They did find there was a slight loss of traction on a 2% grade. To work around that issue, the club shortened its maximum train length by two cars. **MR**

Bridge to the Pacific Northwest



The HO scale Canada, Spokane & Pacific joins Burlington Northern and Canadian Pacific in 1981

By Lou Sassi • Photos by the author

Drew James was introduced to model railroading at the age of 10 when his parents gave him an AHM train set. During his younger years he never put that railroad away. His parents weren't interested in trains, but they supported his hobby by driving him to model train shops, taking him on Amtrak trips, and giving him space in

the basement in which to build his first model railroads.

Some years later after Drew married his wife Karel he built two more layouts in their first home. Both were medium-sized direct-current-controlled railroads, and neither reached completion.

Then Drew read the "V&O Story" series of articles in *Railroad Model Craftsman* and adopted the concept of a

1 Northbound through freight SC44 passes Northport Station on its journey from Spokane to Calgary on Drew James' HO scale Canada, Spokane & Pacific. The EMD SD40-2 diesels are custom weathered Bowser models.

linear single-track walkaround railroad. In the mid-1980s, he took several trips on Amtrak's *Empire Builder* and VIA Rail's *Canadian*. These trips cemented his love for the Burlington Northern (BN) and Canadian Pacific Railway (CPR). Modeling the BN in this period allowed Drew to include equipment from its predecessor railroads, especially his personal favorite, the Great Northern.



Designing the CS&P

In Drew and Karel's second home he built his first incarnation of the Canada, Spokane & Pacific (CS&P). This was also a modest size, but similar in concept and design to the present layout. It incorporated Digital Command Control and was fully signaled, evolving into a railroad that could support four to six operators.

In this second version of the railroad, Drew modeled the Pacific Northwest between Calgary, Alb., and Spokane, Wash., in June 1981. His CS&P is jointly owned by the BN and CPR and is a bridge line connecting the two railroads in order to expedite north-south traffic.

The railroad also serves several towns and industries between Spokane and



② Crestwood Sawmill is a major customer of the CS&P and gets switched every day by the Castlegar Turn. The sawmill was modeled from multiple Walthers kits that were modified to fit the space.

Calgary. Lumber, grain, pulp, paper, and coal are the largest revenue generators, but there are also a significant number of industrial products shipped over the railroad. Canadian National has traffic rights between CN Junction, located just south of Boundary, and Castlegar. The CS&P continues to run passenger service over the line.

Drew learned a lot over the years that he incorporated into the layout you see here. With help from his good friend Dave Martini, he designed the railroad for operation, the top priority being a long single-track main line connecting several towns, providing plenty of switching opportunities.

The pair came up with two basic designs and chose the two-peninsula option, as it provided an additional 40 feet of main line. The primary compromise was that operators had to walk around the Castlegar peninsula in order to follow trains arriving or departing Nelson, but this hasn't been an issue during operations. It also introduced long runs between towns, giving operators a sense of traveling greater distances. While the town names are real, Drew has made no effort to model them prototypically. A 4-foot-wide aisle between Nelson and Castlegar provides operators plenty of room in this busy area.

The previous version of the CS&P had a double-ended open staging yard. This concept worked so well that it was carried over to this railroad. Drew likes how

it allows for continuous running during open houses, eliminates the need to back trains around the layout when restaging, and allows easy access when building trains between sessions.

The layout was designed using CADRail software. The main line has a minimum radius of 36" and a maximum grade of 2% (between Spokane staging and Kettle Falls). Number 6 turnouts are standard on the main, with a few No. 4 in the industrial areas.

Building benchwork

Work on the present railroad began in 2015. The basement room in which the layout resides was prepared by the home builder with the addition of dry-wall and a drop ceiling. Drew installed 66 light-emitting-diode spotlights to enhance the room's fluorescent lighting. A dedicated power sub-panel and extra outlets were added. Drew also installed remote wireless power outlets so the layout can be easily powered on and off using a single controller.

The benchwork was constructed with 3" pine L-girders. Roadbed in the flat and yard areas consists of a laminate of Homasote and 1/2" plywood. Spline topped with Homabed was used for the longer mainline runs between towns. All track and turnouts are Atlas code 83.

The photo backdrops were provided by Bill Brown's LARC Products. Some of the photos Bill used were taken by Karel



The layout at a glance

Name: Canada, Spokane & Pacific
Scale: HO (1:87.1)
Size: 32 x 43 feet
Prototypes: Burlington Northern, Canadian Pacific
Locale: Pacific Northwest
Era: June 1981
Style: walk-in
Mainline run: 260 feet
Minimum radius: 36"
Minimum turnout: No. 6
Maximum grade: 2%
Benchwork: L-girder
Height: 39" to 46"
Roadbed: Homasote
Track: Atlas code 83 flextrack
Scenery: plaster gauze over cardboard web covered with Structolite
Backdrop: LARC Products photo backdrops on tempered hardboard
Control: NCE DCC with wireless throttles

3 Drew operates on the Canadian side of the CS&P. Nelson Yard is on the left and Castlegar is on the right.

outside Glacier National Park. The backdrops in the towns are collages of photos from LARC's CD collection that were printed, cut, and pasted onto foam board or directly onto the walls. Behind many of the photo backdrops, distant mountains were painted onto the walls.

Mountain scenery

In addition to providing the backdrops, Bill shared with Drew his scenery construction knowledge and techniques. Drew chose the colors of his scenery materials to match the backdrops.

Basic landforms for the larger mountains were constructed using cardboard strip lattice covered with layers of Hydrocal hardshell. This was coated with a layer of Structolite. Smaller scenery areas were made with stacked and carved foam board.

A variety of Hydrocal molds were used for rocks, cliffs, and outcroppings. Rock formations were colored using diluted earth-tone latex paints and India ink/alcohol washes to accent the crevices. Flatter open areas were painted with earth-colored latex paints.

Drew used dried and sifted real dirt along with a variety of colors and textures of ground foam from multiple manufacturers as ground cover throughout the layout. Once applied, the ground foam and dirt were misted with isopropyl alcohol to break the surface tension and sprayed with either diluted white glue or matte medium. Static grass was



4 Southbound Train No. 1 slows for a station stop in Nelson on its way from Calgary to Spokane. The Burlington Northern EMD F45 is from Athearn and the passenger cars are Walthers models. The yard office is scratchbuilt.

applied in several scenes, particularly in flat, wet areas.

There are more than 1,600 trees on the layout, with more being added regularly. The vast majority are spruce, which were scratchbuilt using the bottle-brush method. The hardwood trees are Scenic Express SuperTrees. Additionally, there are more than 100 larger trees made from hydrangea blooms from Drew's backyard. All the trees were spray painted, then coated with adhesive and sprinkled with appropriate colors of Woodland Scenics ground foam and

Scenic Express leaf material.

Water was modeled using both Enviro-Tex two-part epoxy and Woodland Scenics Realistic Water. Drew prefers the Woodland Scenics product, as it has no odor. Woodland Scenics Water Effects was used to create ripples and rapids. The snow on the mountains above the snowshed between Northport and Kettle Falls is Woodland Scenics Soft Flake Snow.

Drew used an assortment of techniques to build structures. Several, including Martini Manufacturing, BC

Canada, Spokane & Pacific RR

HO scale (1:87.1)

Size: 32 x 43 feet

Scale of plan: $\frac{3}{16}$ " = 1'-0", 24" grid

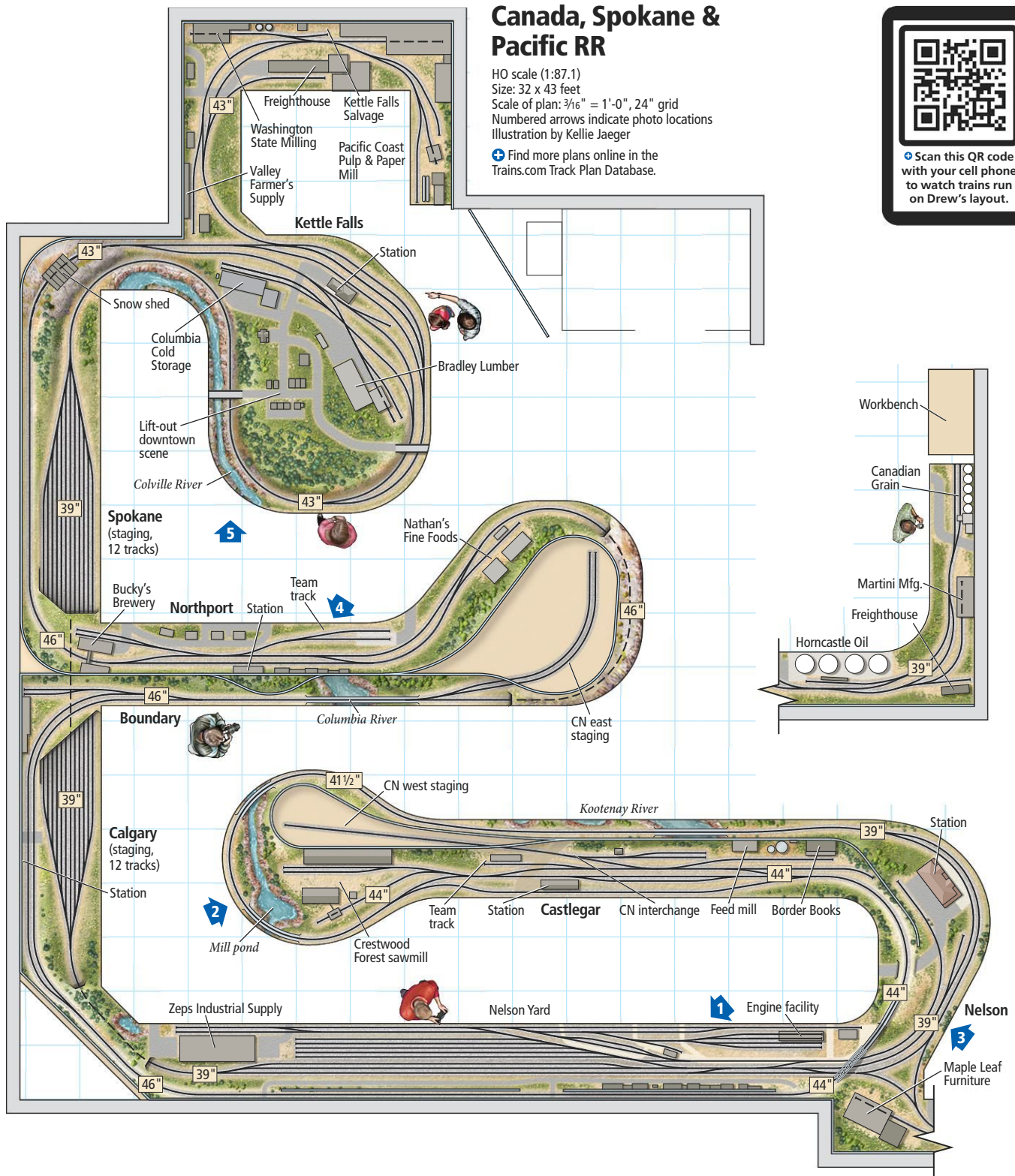
Numbered arrows indicate photo locations

Illustration by Kellie Jaeger

Find more plans online in the
Trains.com Track Plan Database.



Scan this QR code
with your cell phone
to watch trains run
on Drew's layout.



Power, and Washington Milling, were scratchbuilt using styrene laminated over foam board. The Castlegar, Kettle Falls, Boundary, and Northport stations were built from laser-cut wood kits. Most others are modified styrene kits. Typically, they were combined or added to in some manner to create a structure big enough to justify railroad service.

Drew used Walthers modular walls to

build Bucky's Brewery and to expand other kits. Most of the structures have some sort of interior detailing, either 3-D details and figures or interior photos, depending on how easily the interior can be seen by operators or visitors. Future plans include additional interior lighting for many of the structures as well as on the streets and in parking lots.

Drew's favorite scene on the layout is

the crossing of the upper Columbia River on the high bridge just north of CN Junction. The bridge was scratchbuilt by John Roche, as were the bridge and trestle in Nelson.

There are sound boards under the layout for continuous sound effects, such as running water. Intermittent sounds, including the sawmill and singing hobos, are controlled by Java Model



Drew James had a replica Union Switch & Signal Centralized Traffic Control (CTC) machine custom-built to control signals and turnouts on his layout.

Dispatching with a CTC machine

The Canada, Spokane & Pacific is dispatched with a replica Union Switch & Signal Centralized Traffic Control (CTC) machine.

Dave Martini designed the mechanical enclosure and sourced it to a local machine shop. The enclosure is made from aluminum except for the top model board, which is sheet steel so the dispatcher can track trains along the track schematic with magnetic markers. The light-emitting diodes, levers, and plates are commercial products purchased from CTC Components and Logic Rail. Drew developed a drawing of the model board track schematic that was then silk screened onto the sheet metal by a local print shop.

Layout Command Control (LCC) and Java Model Railroad Interface (JMRI) drive the machine. The LEDs and levers are connected to nine I/O LCC boards from RR CirKits. Although there are hundreds of connections, the wiring consists of two simple circuits repeated over and over. Ken Cameron implemented the CTC logic in JMRI.

Another friend, Andy Slaugh, modified a radio base station by adding a foot pedal and boom microphone to complete the dispatcher's office.

The CS&P now has a fully functional CTC machine. The dispatcher's job has become a popular one on the railroad and the challenge has been finding adequate time to train and certify new dispatchers. — *Lou Sassi*

Railroad Interface (JMRI) software to play at random intervals.

Locomotives and freight cars

Drew strives towards realism with his rolling stock while reflecting the layout's time and location. More than 60% of the road's 350 cars are owned either by the BN or CP due to those railroads' joint ownership of the line. Because of its interchange in Castlegar and trackage rights from there to Boundary, there are also many CN cars. Drew maintains an inventory of all the rolling stock to help guide his future purchases.

Freight cars are a mix of boxcars,

center-beam and bulkhead flatcars, and covered hoppers. One of Drew's favorite trains is Rapido's *The Canadian* streamliner (called the *Northwest Limited* on the CS&P), which Karel gave him for their 25th wedding anniversary.

There are 35 locomotives on the railroad, most of which are first- and second-generation Electro-Motive Division diesel-electrics owned by either the BN or CP. There's a mix of four- and six-axle units. All locomotives are equipped with Digital Command Control and sound.

All equipment is weathered prior to being put into service. Drew starts by applying a coat of enamel matte finish

followed by applications of PanPastel products, weathering powders, colored pencils, and thinned paints. Drew's friend Conner Hawes of CDH Weathered has recently started weathering the railroad's motive power using a mix of oil and enamel paints.

Layout and train control

Control of the layout, not including trains, is implemented with a 14-node Layout Command Control (LCC) network tied into JMRI. The LCC standard was released by the National Model Railroad Association shortly before construction on the railroad, and Drew recognized that it would be a good fit for his CS&P. The LCC network runs the signal system, turnout control, and accessories such as sound modules. RR CirKits is the supplier of the LCC hardware.

The dispatcher's office features a fully operational replica of a Union Switch & Signal Centralized Traffic Control (CTC) machine built by Drew, Dave Martini, and Ken Cameron (see "Dispatching with a CTC machine" at left). The fully operational signal system can be used in either Absolute Block Signal (ABS) or CTC mode. The signals are "G" type made by Atlas and Tomar Industries.

Mainline turnouts are controlled with Tortoise by Circuitron switch motors operated by pushbuttons on the fascia or from the CTC machine. Light-emitting-diode indicators for turnouts are on the fascia. All other turnouts have Caboose Industries ground throws. A few mainline turnouts needed by the local crews to perform switching may be locked by the dispatcher to respond to either local control using the fascia buttons or from the CTC machine.

Trains are controlled by an NCE Pro Cab DCC system. There are three 5A boosters in addition to the command station. There are 12 power districts, each protected by a breaker in order to minimize the impact of a short in any given area as well as assist in troubleshooting.

Drew installed detected sub-buses to power the main line and sidings which would be signaled and under dispatcher control. The sub-buses allow for multiple track drops to all feed through a single NCE BD-20 detector.

Freight and passenger operations

The railroad hosts a wide variety of traffic, including manifest and through freights, local switching, and passenger



service. Switch lists are used for car routing. Drew has developed a spreadsheet listing every car on the railroad and specifying its location, destination, and train. There is a six-day rotation, with day six rolling back to day one. The switch lists are built from a master spreadsheet. About 200 cars are moved in each session. Cars also rotate in and out of storage over the course of that six-day sequence.

Drew uses a GML Enterprises 5:1 fast clock. There are six clocks distributed between the train room, dispatcher's office, and crew lounge. Trains are scheduled to depart at specific times to space them out during a session. Whiteboards in the train room and crew lounge show train departing times and crew assignments. However, once out on the railroad, only passenger trains operate on a timetable.

A typical operating session lasts 2½ to 3 hours and can support up to 16 operators, including a dispatcher, Kettle Falls switch crew, Nelson yardmaster, and assistant yardmaster, along with six road crews consisting of an engineer and a conductor.

Crews use radios to communicate with the dispatcher. Andy Slaugh modified a RadioShack intercom system by

adding a foot pedal and boom microphone for the dispatcher.

The future of the layout

Although Drew's CS&P is essentially complete, he has what he refers to as an unending list of "fun tasks" waiting for him to tackle. There are many upgrades he wants to make on the structures, rolling stock, and scenery. He's removing anything on the layout that's not correct for the time period. Drew plans to equip many of his structures with interior lighting kits.

He's also considering backdating the layout's modeled period by a few years, possibly to 1978, and replacing his CP-equipped *Northwest Limited* with Amtrak rolling stock.

In addition, he's developing options for operating sessions that will use timetable and train order (TTTO) or track warrants rather than CTC dispatching in order to add more challenge.

Drew feels that model railroading is a hobby best enjoyed with others. By enlisting the assistance of his friends, Drew has been able to build a large layout in a much shorter period of time than it would have taken if he were working alone. **MR**

5 The *Northwest Limited* streamliner has left Spokane staging and is climbing the 2.5% grade toward Kettle Falls along the banks of the Colville River. The train is a Rapido Trains model of Canadian Pacific's *The Canadian*.



Meet Drew James

A retired business executive,

Drew lives with his wife Karel near Syracuse, N.Y. They have two adult sons, Bradley and Nathan. Besides model railroading, Drew enjoys traveling, sports, and reading about military history. Drew is active in the National Model Railroad Association and is currently the Superintendent of the Central New York Division.

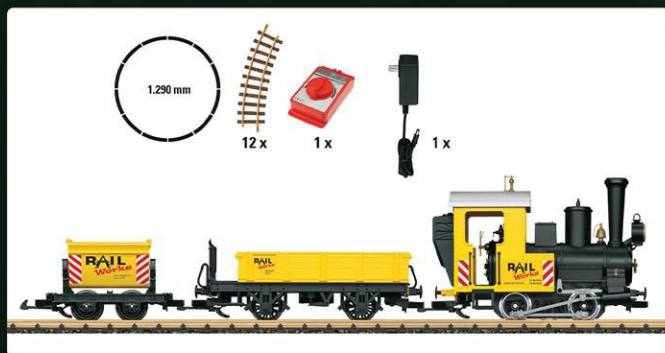


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TURNING ENGINES on a stub-end staging yard

A flip-up turntable sector plate makes a finicky task easier

By David Holl

Photos by John Burchnall

Several decades ago, with the advent of using staging tracks for model railroads, our miniature worlds suddenly became larger. With this concept, model railroading changed from moving trains around abbreviated circles to more of a point-to-point transportation network. Many MR articles through the years have compared the different styles of staging tracks.

Open-ended (or double-ended) staging yards allow trains to enter on one end and exit on the other. I used this concept on my prior layout, The Penn Valley Railroad (see the October 2008 issue of MR). That hidden staging yard was located behind a wall with remote cameras to view both ends. Physical access, when needed, required getting on my hands and knees to go through an opening in the wall under the layout. Fortunately, because it was a run-through staging yard, it didn't require individual engines and lash-ups to be turned between operating sessions.

A new model railroad

On my current layout I use a dedicated aisle within the layout room to easily access a 12-foot-long, stub-ended

In order to turn and restage steam locomotives, diesel consists, and passenger cars between operating sessions, Dave Wintermute built a flip-up turntable for David Holl's Pennsylvania RR Buffalo Line.

visible staging yard. On the other side of this yard is a long city scene. Both the city and the staging yard share a peninsula with a hardboard backdrop separating each. A problem with such stub-end yards is how to efficiently turn and/or run engines around to place them on the other end of trains to get them ready for the next operating session.

One way to do this is to manually pick up the engines after each operating session, turn them, and place them on the other end of the yard. Steam engines are particularly difficult to handle this



The turntable platform hangs down at the end of the staging yard peninsula during operating sessions, taking up negligible aisle space. It's so unobtrusive that most operators never notice it.



Raising the turntable is easy: Just slip off the panel covering the track opening and lift the platform — no pins or bolts are involved. The dangling pair of legs form a knee brace by inserting their ends onto a wood angle ledge attached to the vertical support wall.

way. It's hard to keep the drawbar and connector wires attached between the engine and tender while at the same time striving to rerail the leading, trailing, and tender trucks. Moving multiple-unit diesel consists prevents similar issues. Rerailing a steam engine and tender or a multi-unit consist of diesels in the midst of a 10-track staging yard full of rolling stock isn't very fun.

Searching for solutions

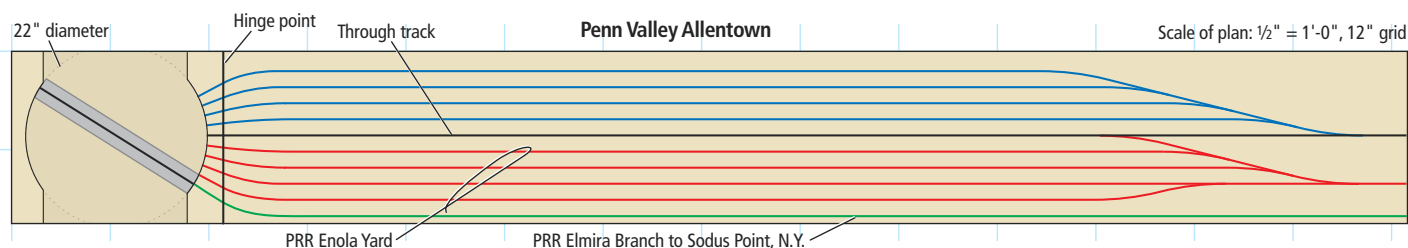
A turnout ladder with runaround and escape tracks could be used to reposition the locomotives. However, this would take far too much space, and the locomotives would still have to be turned. A pivoting sector plate could use less space, but again wouldn't allow for turning.

One of my friends, the late Dave Wintermute, came up with a better idea. His solution was to design and install a large flip-up turntable at the stub end of the yard with all 10 yard tracks flowing into it. Since this device is only used between operating sessions, it's not scene-icked, is turned manually, and never blocks the aisle during operating sessions. The single device compactly serves the escape and runaround functions of a sector plate and the consist-turning function of an extra-long turntable. Furthermore, its long length makes it suitable for turning both locomotives and passenger cars.

Time to build

To construct this ingenious device, Dave first built a 21" x 72" vertical wall at the stub-end of the yard. This wall conceals the end of the open staging and also provides support for the device. He then mounted a 17" x 26" piece of medium density fiberboard (MDF) to that wall using a 16" long stainless-steel piano hinge.

Dave used another layer of MDF to build the 22"-long turntable pit and bridge. A pair of hinged legs functioning as knee braces complete the flip-up assembly. A 4½" x 18" hole was cut through the wall, then short track





The turntable bridge is manually rotated. The center (Track 7) is always kept open to serve as the escape track for all locomotives and rolling stock needing to move to the other side of the staging yard.

extensions were laid to connect the staging tracks to the turntable. A 5½" x 21" piece of removable hardboard covers the hole during operating sessions.

Reliable wiring

My friend Gregg Heeter created a straightforward electrical setup. The turntable pivots on a two-conductor phone plug and mating socket. The positive and negative track power wires are routed through a manually operated double-pole double-throw (DPDT), polarity-reversing toggle switch, with the two output wires connected to the conductors on the pivot socket. Each wire from the plug is soldered to one of the turntable rails.

We painted the ends of the staging tracks white, one end of the turntable bridge white, and the corresponding side of the toggle switch white. When the white end of the turntable lines up with the white staging tracks, the toggle needs to be thrown to that white side.

You could also replace the toggle switch with a Frog Juicer or similar commercial electronic device to change the turntable polarity automatically. We opted instead for the low-cost toggle switch solution.



With the turntable lined on the correct track, locomotives or cars run on or off the turntable. A toggle switch is used to reverse its electrical polarity when the white marks on the end of the turntable don't match those on the lead tracks.

Ready when you need it

The turntable/sector plate hangs down 99% of the time until I need to turn and runaround or reposition locomotives. For those occasions, I simply lift the slotted hardboard off the screw "post" anchors on the wall and swing the platform up to a level plane.

I then rotate the turntable bridge manually to align it with the track of the engine(s) to be turned, run the engine(s) onto the bridge, manually spin the turntable to the always unoccupied "through

track" in the center of the yard, flip the DPDT toggle switch if the table was reversed, and run the engine(s) to the proper yard track.

When finished, I drop the table and reposition the cover plate, ready to host the next operating session. **MR**

David Holl is a retired government employee of the United States Air Force. His previous two layouts were featured in Great Model Railroads 1989 and the October 2008 issue of MR, respectively. David resides in the Dayton, Ohio, area.



CALIFORNIA logging lines in JAPAN

This 20 x 23-foot HO scale layout features standard and narrow gauge operations

By **Toyaji Sekine**

Photos by Kaori Komatsu

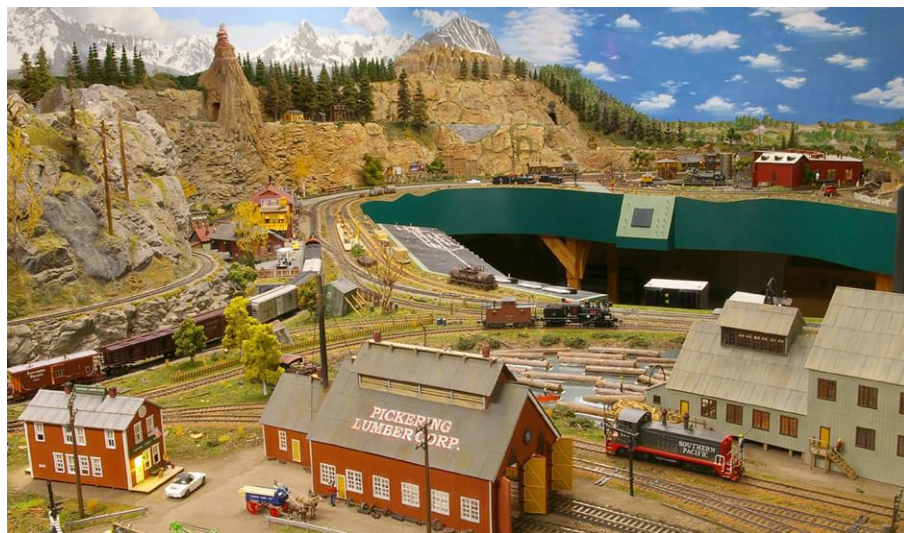
My journey in the hobby isn't the typical one you read about in *Model Railroader*. During the 1940s, when I was a small child, an O gauge train ran around the pond in my yard. It was a Japanese-style train made of tinsplate, as materials were limited after the war.

I fell in love with American railroads thanks to the 1950s syndicated television series *Casey Jones*. The program featured the adventures of the show's namesake and his co-workers on the Midwest & Central RR.

American Western movies further sparked my fascination with American railroads, specifically the Sierra Ry. in California. The railroad appeared in many of the motion pictures that I watched in my younger days.

My interest in logging locomotives can be traced to brass models offered in the 1960s. United Scale Models, produced by Atlas Industries Inc. of Kawaguchi, Japan, built brass logging locomotives for importer Pacific Fast

1 This spectacular bridge scene takes place on Toyaji Sekine's Pickering & Sierra RR. The 20 x 23-foot model railroad, set in the Sierra Nevada mountain range between 1920 and 1940, features HO scale standard and narrow gauge operations.



2 This view shows how the walk-in layout fits in Toyaji's train room. In the foreground is Pickering Lumber. His scratchbuilt Sierra Ry. roundhouse, based on the prototype in Jamestown, Calif., is visible in the background.

Mail, including Climax, Heisler, and Shay prototypes. In addition, the company manufactured a 2-6-6-2 that John Allen used on his well-known HO scale Gorre & Daphetid.

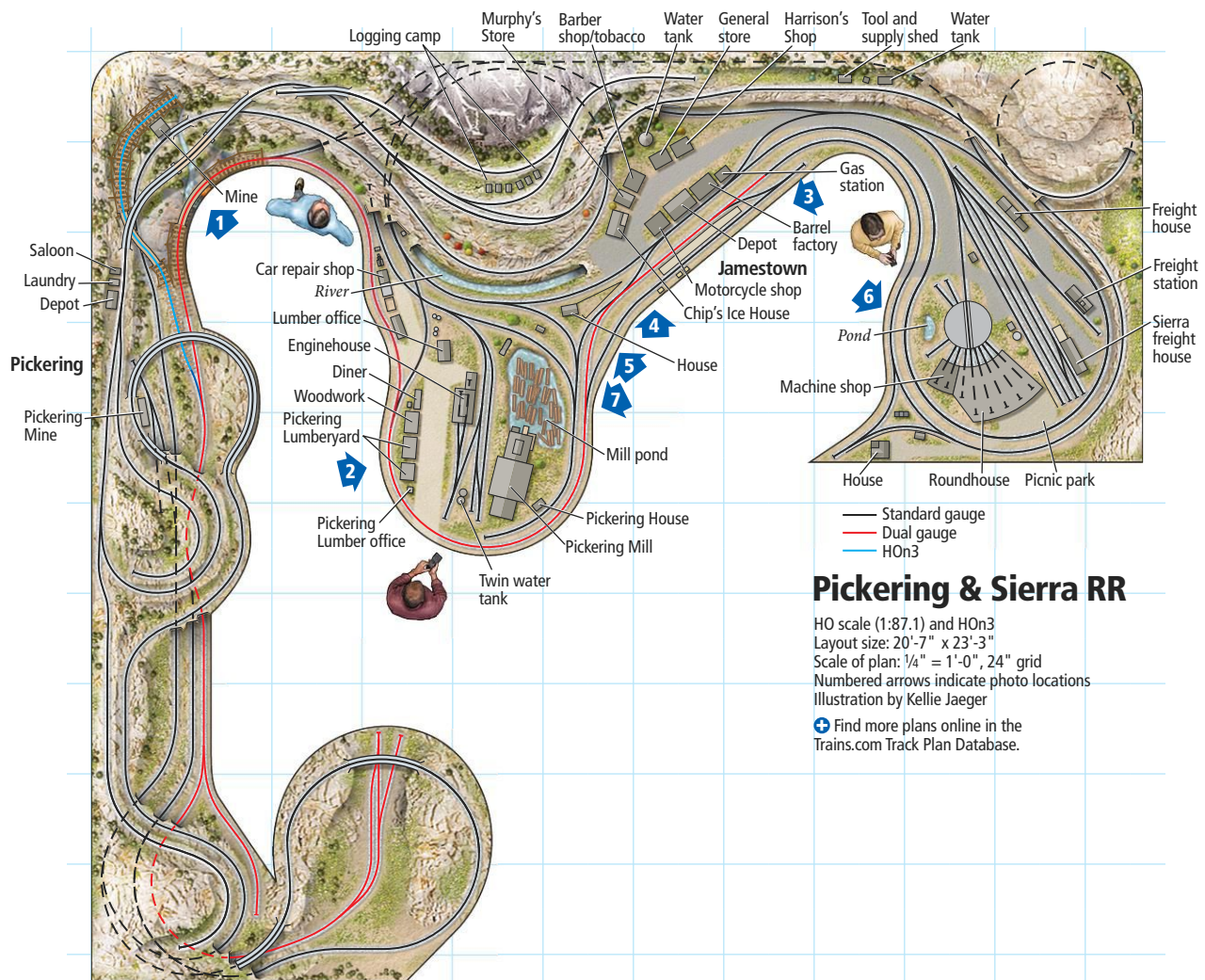
All of those memories culminated with the 20'-7" x 23'-3" HO scale (standard and narrow gauge) Pickering & Sierra RR shown here. The model railroad's name is a hybrid of the two California railroads that influenced my work: The Pickering Lumber Co., a

standard gauge logging railroad, and the Sierra Ry.

Lessons learned

The Pickering & Sierra RR is my fourth model railroad. Prior to this, I had two 9mm gauge layouts and one in HO scale.

I started construction on the Pickering & Sierra in 1994. I was still working at the time, so the initial



The layout at a glance

Name: Pickering & Sierra RR
Scale: HO (1:87.1), HO n3, dual gauge, and HO n2½ (dummy)
Size: 20'-7" x 23'-3"
Prototype: freelanced, inspired by Pickering Lumber Co. and Sierra Ry.
Locale: Sierra Nevada mountains
Era: 1920s to 1940s
Style: walk-in
Mainline run: 220 feet
Minimum radius: 17" (logging)
Minimum turnout: No. 4
Maximum grade: 4%
Benchwork: open grid
Height: 36" to 57"
Roadbed: plywood and Homasote
Track: Shinohara code 83 (Sierra Ry.), code 70 (Pickering Lumber Co. and dual gauge)
Scenery: plaster over Styrofoam
Backdrop: commercial, photos, and hand-painted
Control: DC and Digitrax DCC

progress was slow. Now that I'm retired, I have more time to spend on the layout.

The model railroad uses open-grid and L-girder benchwork. Based on experience with previous layouts, I made sure the legs supporting the benchwork were stable. The current model railroad is so sturdy that I can stand on the benchwork while working on the layout.

I used ¾" plywood for the tabletop. I added Homasote, a material frequently used as roadbed, on top of that.

Track and scenery

I installed Shinohara code 83 flex-track on the Sierra portion of the layout and code 70 on the Pickering and dual-gauge areas. At Pickering I installed a code 83 30-degree crossing. All of the turnouts are powered by Tortoise by Circuitron switch machines.

The track on the logging section has 17" radius curves. I also included a switchback, which was typical on

full-size logging lines. Both the Shay and 2-6-6-2 logging Mallet can comfortably negotiate the tight curves.

The Sierra section has broader curves, allowing me to run my Union Pacific Big Boy, Southern Pacific Cab-Forward, and other large locomotives.

I scenicked the layout using a variety of techniques. To model mountains, I applied plaster over Styrofoam. I used rock molds and plaster to model the various outcroppings. For color and texture, I used Woodland Scenics Earth Colors Liquid Pigments and casting powder. I modeled the pond, mill pond, and river using Woodland Scenics Realistic Water.

The trees were made from kits that I purchased while attending a logging railroad convention in Washington state. The instructions said the kits contained a filter material. I asked my sister-in-law, who lives in the United States, to send me a household furnace filter.

When I received the filter, it didn't seem right. I asked an acquaintance in



3 Passengers on the platform at Jamestown, Calif., are treated to a rare visitor today. Pennsylvania RR 9631, a United States Railroad Administration light Mikado, leads a freight train past the depot. The 2-8-2 is a Broadway Limited Imports model.

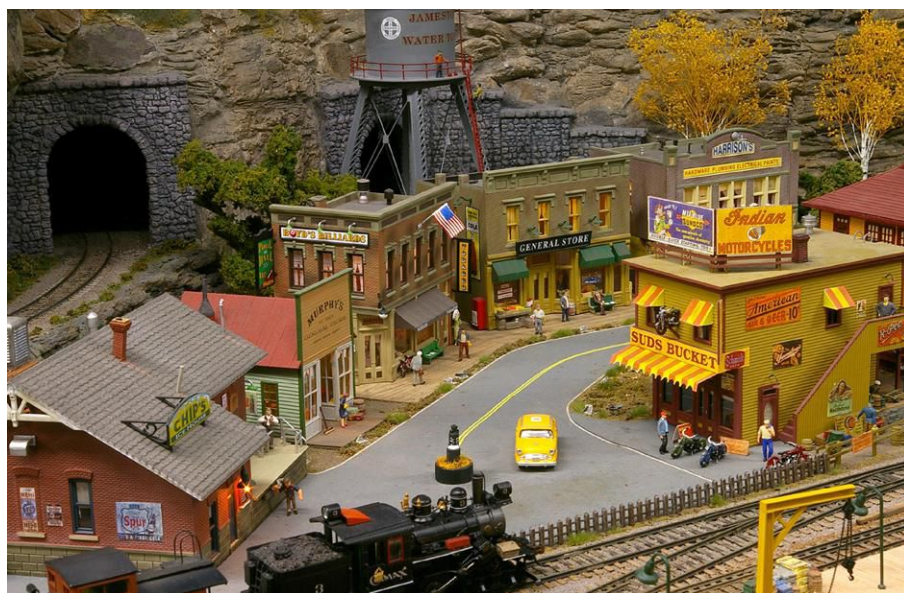
San Francisco to help me. He found out the kits used industrial filters, so he sent some over. This proved to be a huge savings, as at the time model trees were selling for around 3,000 yen (approximately \$20) a piece.

I was able to make several trees with the filters, and I still have some material left over. I further populated my wooded scenes with four dead Japanese bonsai trees. I also made some trees from dried flowers my mother gave me.

Visiting the prototype

My layout is closely tied to memories of trips to the United States. I used to attend National Model Railroad Association national conventions. During one of the trips, I wanted to visit Yosemite National Park, so I asked my acquaintance in San Francisco to help with our travels.

He picked us up at the airport and took me, my wife, sister-in-law, and a



4 The business district in Jamestown, Calif., features commercial structures from manufacturers such as JL Innovative and Woodland Scenics. Toyoji added pavement markings to the fine-grit sandpaper he used for the streets.

family friend to the national park. On the way, my acquaintance asked if I wanted to visit a preserved railroad. Of course I said yes.

To my surprise, it was the Railtown 1897 State Historic Park in Jamestown, Calif., home to the Sierra Ry. round-house and shops. I took numerous

pictures of the full-size trains and buildings for reference. We also got to ride on a train pulled by a Shay.

We then went to Yosemite for an overnight stay. He guided us to the top of the mountain, and I took a picture of Yosemite from there. The image was enlarged for free by a photographer



5 Above Jamestown is a logging camp scene. Toyoji used commercial rock molds and plaster to model the many outcroppings. He built the trees from kits and natural materials.

I know. This photo became the backdrop for the layout. El Capitan and Half Dome are also depicted on the backdrop.

Structures and sound

My layout features a mix of kit-built and scratchbuilt structures. The Sierra Ry. depot, two lumberyards, the lumber mill, enginehouse, three stations, and water tanks, among other buildings, are kits I ordered from the United States.

I enjoy scratchbuilding structures, especially from wood. Examples include the Sierra Ry. roundhouse, engine shop, car repair shop, and Pickering Woodwork and shed. In addition, I scratchbuilt three wood bridges.



6 The Sierra Ry. Jamestown, Calif., roundhouse is an example of Toyoji's scratchbuilding skills. Pickering Lumber four-truck Shay 41 is taking a spin on the turntable, a Wm. K. Walther's Inc. product.



7 Workers are busy positioning logs in the mill pond at Pickering Lumber. Toyoji scratchbuilt the donkey engine in the lower left of the frame. On the prototype, it was used to drop logs into the pond.



Meet Toyoji Sekine

Toyoji Sekine lives in Tokyo, Japan. He started purchasing *Model Railroader* magazine from local hobby shops in the 1960s. He enjoys taking his grandchildren for rides on his 5" gauge Atchison, Topeka & Santa Fe diesel in his yard. Toyoji's other hobby is driving a two-seater sports car. He thanks his sister-in-law, Misako Kawaguchi, for translating this article.

I further enhanced the buildings by adding nail marks to the walls, weathering the roofs, and applying period posters. All of the buildings are illuminated with light-emitting diodes.

While reading an issue of MR, I learned about sound modules from ITT Products in West Hills, Calif. I placed a module near the sawmill that plays the sounds of logs being cut. I have another module near a pasture where cows can be heard mooing.

Running trains

There are 116 steam and diesel locomotives and 164 freight and passenger cars on the layout. Being a logging railroad, it shouldn't come as a surprise there are Shay, Climax, and Heisler geared locomotives. I also have some locomotives from other railroads and eras, including a Pennsy light Mikado.

I scratchbuilt a log car and kitbashed an ore car (HOn3) and boxcar (HO). After that, I purchased kits and ready-to-run models from hobby shops in the United States.

I can run trains using direct current and Digital Command Control (DCC). Three operators can run trains using DCC. Sessions are informal, and the length depends on the day. I don't use a

car routing system or run trains following a sequence or timetable. There are no signals on the layout, and we don't follow a fast clock.

Into the future

We rebuilt our house on the same property and are in the process of moving the layout into a 24 x 31-foot room. My son-in-law, Hideyuki, who has helped with the construction of other layouts, is assisting with the move. We've safely packed the locomotives, freight, and passenger cars in cardboard boxes.

We're going to use a truck with a crane to move the model railroad. I have two saws specifically for cutting rail, which should minimize damage to the track during the layout relocation. When the model railroad is in its new room, I plan on raising the height slightly.

This layout has been a dream of mine since I was a child. There are a few things I'd do differently if I were to start over, primarily the wiring. But for now, I'm pretty happy with the HO scale Pickering & Sierra. **MR**



Modular yard offices can be found all over modern railroads. Follow along as M.R. Snell demystifies the art of scratchbuilding to create an easy HO scale structure like this.

Scratchbuilding demystified

How to construct a modular yard office

By **M.R. Snell** • Photos by the author

Model railroading has evolved dramatically over the years, transformed from a once-sparse desert to a plentiful bounty of products. The myriad of structure kits on the market enables us to easily model almost any scene. Yet occasionally a hole remains in the scale landscape, one of which is the modular office. Originally designed for temporary use, many of these modular offices have become permanent fixtures of the railroad environment in use as yard offices and passenger stations.

Constructed offsite and transported to their location, these modular structures can be found in various lengths up to 60 feet. One of the most common is the “double-wide” yard office. A cousin to the “double-wide” house trailer many of us are familiar with, each 12-foot-wide section is joined together onsite, then skirting is added to cover the open bottom area.

For those modeling the 1970s and beyond, the modular office is as common as the Electro-Motive Division

GP38. Yet there are no true modular office kits on the market, so scratchbuilding is the best option.

Considered by some to be an almost mystic craft, scratchbuilding is really nothing more than mixing basic shapes and combining them from individual pieces into a single unit. Join me as I scratchbuild a modular yard office for my HO scale layout. [MR](#)

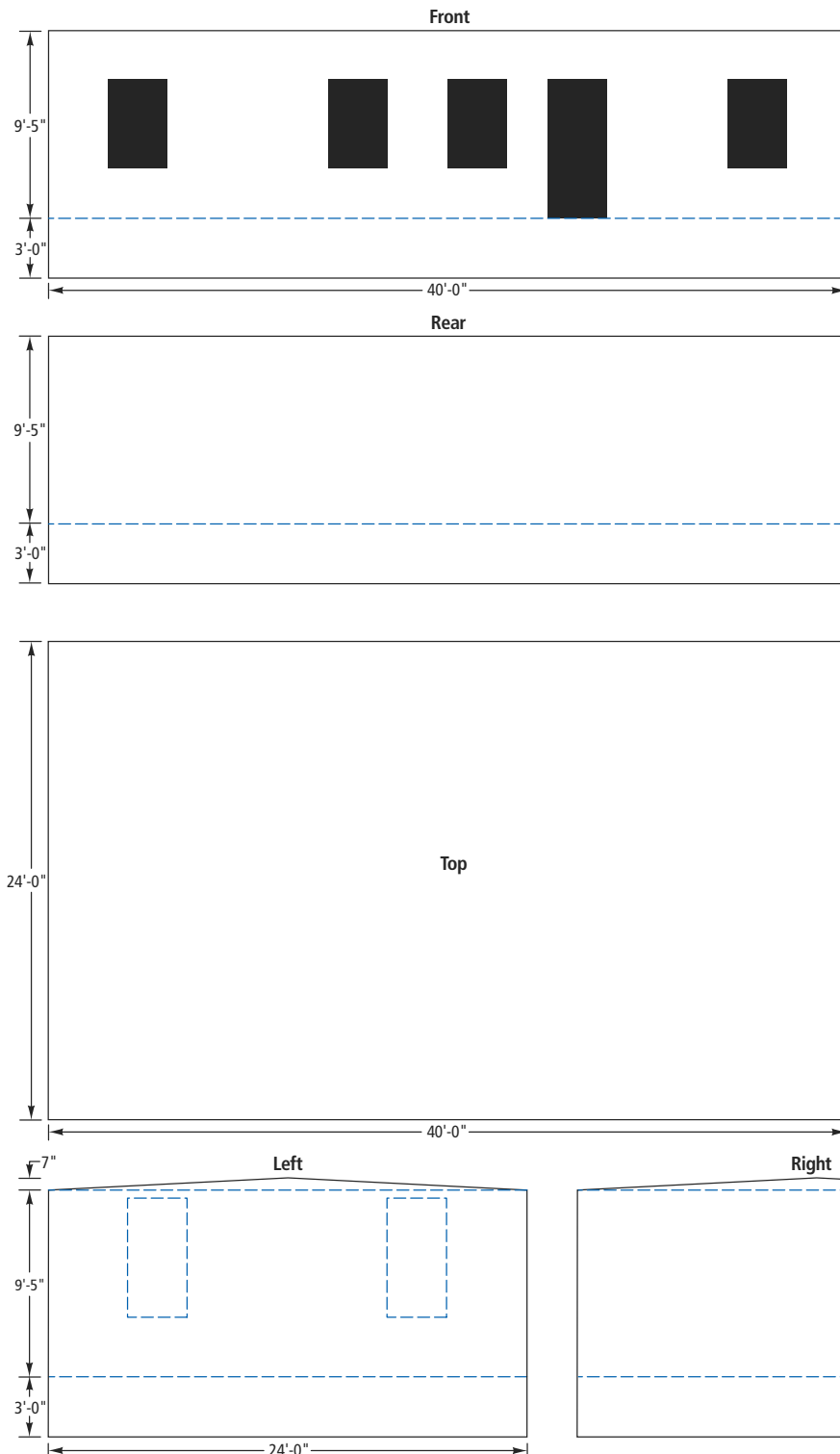
M.R. Snell is a frequent contributor to the pages of Model Railroader magazine.

STEP 1 DRAFTING A PLAN

The basis of any project is a plan, whether it's the exploded-view diagram included in a kit or one you draw yourself. A plan for scratchbuilding doesn't need to be fancy, nor does it require a computer. For this project I simply measured the trailer I wanted to construct, then drew it out on graph paper using a ruler and pencil. I scaled it so each grid square on the graph paper was 1 x 1 foot in HO scale.

With the basic outline of each wall drawn, I next added the windows, doors, and air conditioner units using the actual castings as guides.

Now that I had a plan, I could also use it as a cutting template by printing the plan and taping it to the styrene sheet that I used to build the office. After cutting the four walls from the template, I taped each template to a section of



Materials list

Evergreen Scale Models styrene

- 113 .015" x .060" strip
- 114 .015" x .080" strip
- 257 .125" x .250" rectangular tubing
- 4527 .060" corrugated siding
- 9005 .005" clear sheet
- 9015 .015" sheet

Pikestuff

- 541-1010 concrete steps
- 541-1114 staircase handrails

A-Line

- 50136 old style reefer unit

City Classics

- 209 90 degree corner braces

Custom Finishing

- 117 globe vent

Detail Associates

- 1902 flat air vents

Micro Engineering

- 80-162 warehouse personnel doors

Scale Structures Ltd.

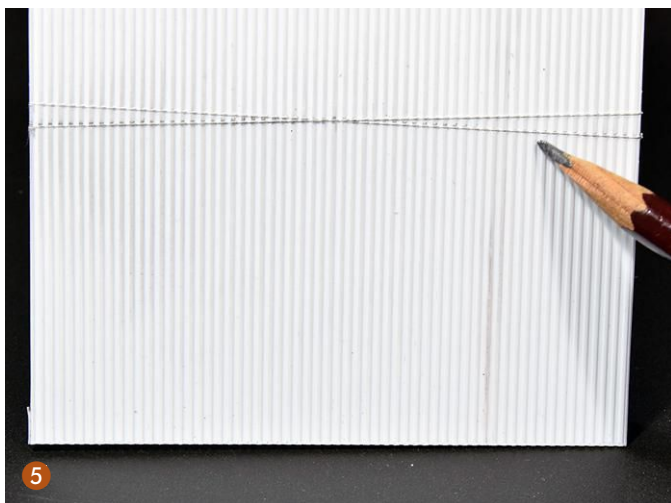
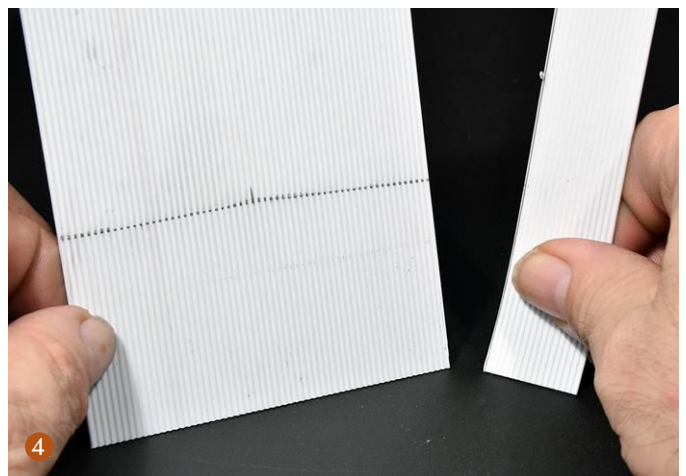
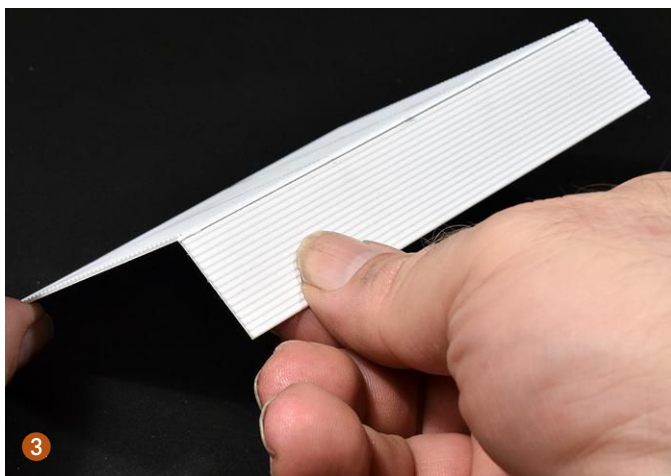
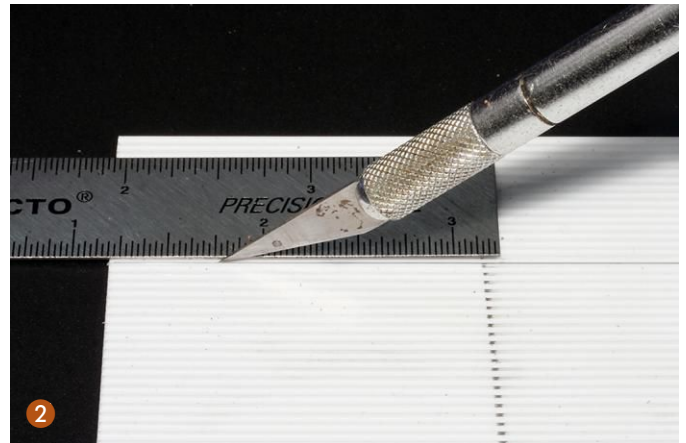
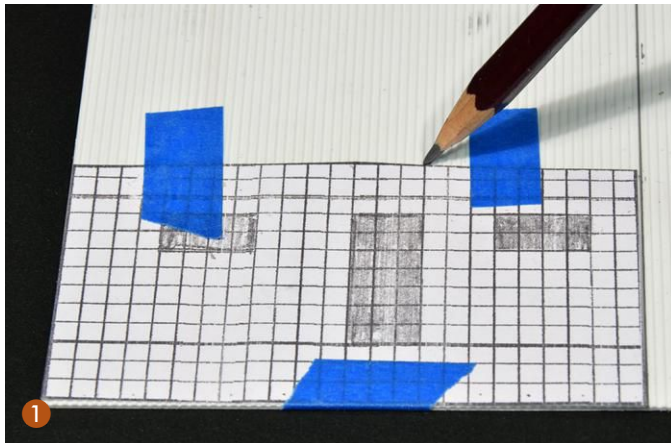
- 2423 globe vents

Ratio 1:87.1, HO scale

TO CONVERT HO SCALE
DRAWINGS TO YOUR SCALE
COPY AT THESE PERCENTAGES:

- N 54.4 percent
- S 136.1 percent
- O 181.4 percent

STEP 1 DRAFTING A PLAN (cont.)



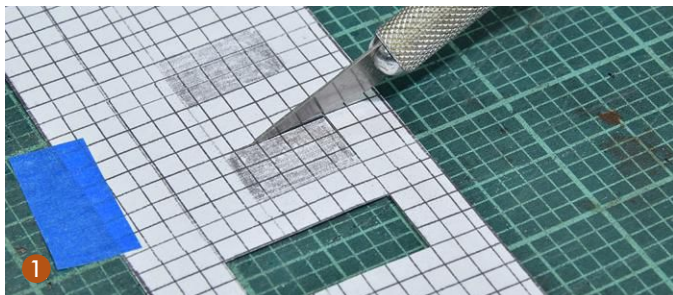
Evergreen 4527 styrene siding using painter's tape. Next, I outlined the cuts I needed to make with a sharp pencil and removed the templates. This left me with clean guidelines to cut along ①.

Using a metal ruler as a guide, I scored along each guideline with a No. 11 blade ②. Then, rather than trying to cut through the thick styrene, I bent ③ and snapped ④ the single sheet into two pieces. The score-and-snap method generally leaves a cleaner edge than trying to force a blade through the thick styrene.

While scoring and snapping is effective, there were still some situations where I was forced to use a knife to cut through the styrene, such as the ends. Since the ends of the trailer have a slight peak, I cut through them using a combination of both methods, which left some rough styrene across the edge ⑤.

The peaks of both ends must be identical, so I taped them together back-to-back and used a medium-grit nail file and fine-grit smoothing file to smooth out the rough edge and make the peaks flush with each other ⑥.

STEP 2 DOORS AND WINDOWS

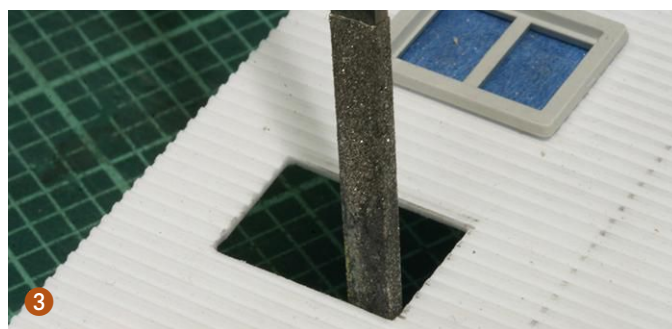
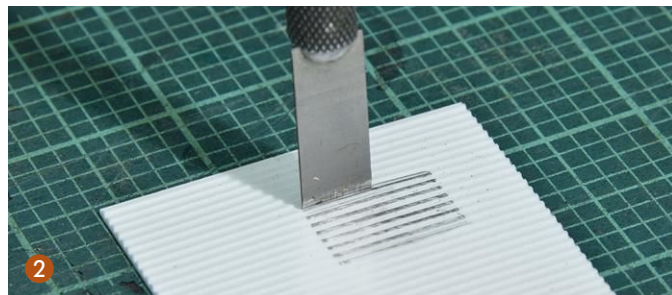


Next I turned my attention to the doors and windows. As before, I used a template and cut the openings. I taped the templates to each wall panel, traced the outlines for each opening, and shaded the openings to make them easier to see once the templates had been removed ①.

Before making the cuts, I placed each window and door casting on top of their respective locations to make sure that my markings were accurate and slightly smaller than the castings themselves.

Once I was satisfied that everything was properly sized and aligned, I began cutting the holes using Nos. 17 and 18 chisel blades. Holding the flat side to the outside of the cut, I rocked the blade back and forth. The pressure applied will pierce the styrene, causing minimal damage to the areas around the cut ②. Once each cut was completed, I moved the blade and repeated the process until all of the rough openings were cut.

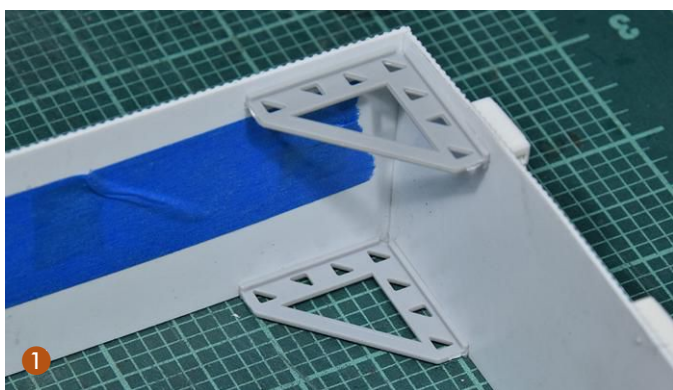
Since I cut the openings slightly smaller than the castings, I went back and enlarged each location with a chisel blade and file. This is an excellent way to maintain control over the work. Working slowly and continually test-fitting the castings ensured that the holes didn't wind up oversized ③.



Then I press-fit each door and window casting into its respective hole to verify the vertical and horizontal alignment was correct. After making some minor adjustments, I taped each casting in place from inside of the wall with painter's tape.

One issue we sometimes encounter on projects is a lack of parts that fit our specific build. In this instance I used two A-Line Thermo King reefer units for the building's climate control system. I removed the exhaust stack from each casting and turned the units upside down.

STEP 3 UP GO THE WALLS

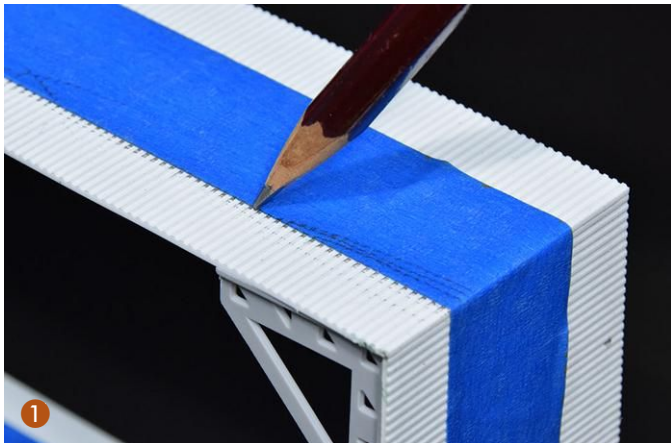


Next it was time to assemble the walls. I inserted the end walls inside the edges of the rear wall and tacked the joints with a bead of Plastruct Plastic Weld.

To make the building more robust and keep the walls square, I installed corner braces in the top and bottom of each corner joint ①. I installed the braces first along the rear and side walls, then added the front wall. I let the building sit overnight so the glue could fully set ②. Finally I added the roof, which I cut from .015" styrene. I scored it to represent where the two halves of the building connect ③.



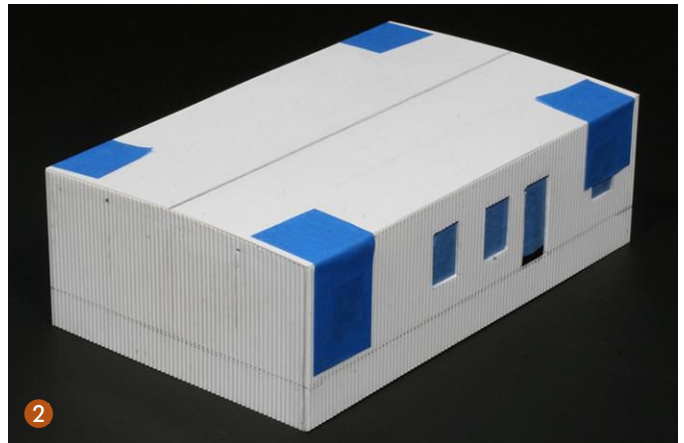
STEP 4 TIME FOR TRIM



Now it was time to add the trim. I cut several scale feet from each end of the template before taping it on the side walls. I marked the skirt location on the styrene and removed the template. I then applied tape to the trailer, aligning it with the marks from the template. Then I used a pencil to mark where the lower trim would be applied on all four sides of the building ①.

The trim along the roof edge didn't require any location marks. Instead, I placed the roof atop the structure and secured it to the front and rear walls with painter's tape. I then took a length of .015" x .060" strip styrene, cut it about an inch oversized, and gently bent it to match the slopes of the side wall ②.

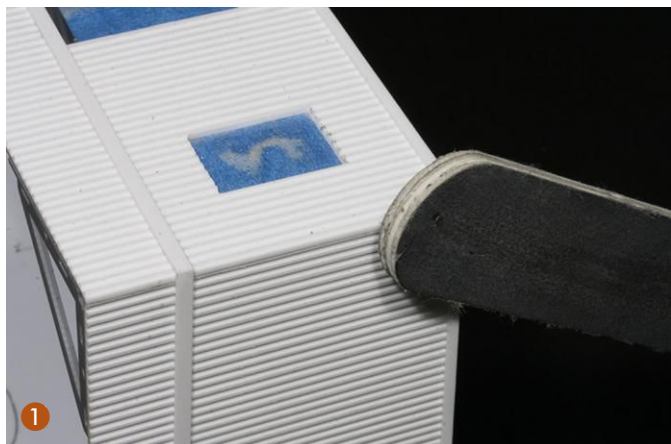
Working from the center outward, I placed a spare amount of gap-filling cyanoacrylate adhesive (CA) on the rear of the strips. I then placed the styrene on the side wall, aligning with the top edge of the roof. Since the CA would cure before the entire strip could be positioned, I worked in small sections, peeling the strip back and applying the CA



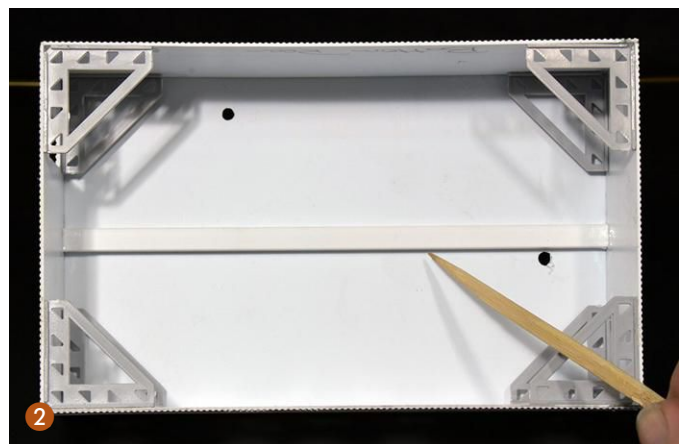
with a pointed skewer. This technique prevented excess adhesive from marring the ribbed surface of the structure.

I left the end pieces of trim extending past from the edges of the structure ③. Once the CA cured, I used a sharp No. 17 blade to trim the excess styrene flush with the end walls.

STEP 5 TRIM TOUCH-UP AND BRACING

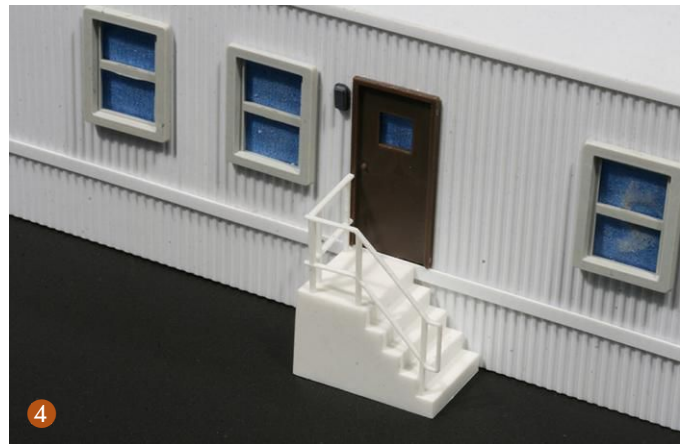


I removed the tape from the sides of the roof and repositioned it on the ends. Then I added the trim (.015" x .080" strip) to the two long sides using the techniques outlined in the previous step. When complete, I cut the styrene strip flush with the trim on the side walls. Then I used sanding sticks to smooth the corner joints ①.



Styrene roofs tend to sag after a while if not supported properly. Though the corner joints were braced, I needed to reinforce the middle of the roof to prevent it from sagging over time. I placed a length of .125" x .250" rectangular tubing under the roof along the centerline. This should keep the roof stable and straight for years to come ②.

STEP 6 BUILDING DETAILS



Next I added detail parts to the structure ❶. I first applied Scale Structures Ltd. globe vents on the roof, representing a small kitchen and bathroom ❷. Rectangular porch lights next to the doors are common on office trailers. I couldn't find a part that matched, so I used Detail Associates EMD

rectangular air vents as reasonable stand-ins ❸.

Finally, I installed Pikestuff stair castings and matching handrails by the doors. I trimmed the handrails slightly so the steps could seat as close as possible to the building with a minimal gap ❹.

STEP 7 TO THE SPRAY BOOTH

To wrap up the project, I used an air-brush to spray the trailer a Depot Buff color. I used Oxide Brown for the windows, doors, and trim.

I painted the roof a grayish color with a hint of green to capture the look of a membrane roof. Then I painted the vents a weathered black color so they would stand out against the light roof.

Before installing the reefer units, I painted them light gray. Then I added clear styrene from inside the building and attached tissue-paper window shades to hide the lack of an interior.

To complete the scene, I added an ice machine, trash cans, and a small Dumpster. Then I added a small radio tower at one end of the building.

A structure like this is suitable for layouts from the 1970s through the present day. I hope my techniques will inspire you to give scratchbuilding a try.



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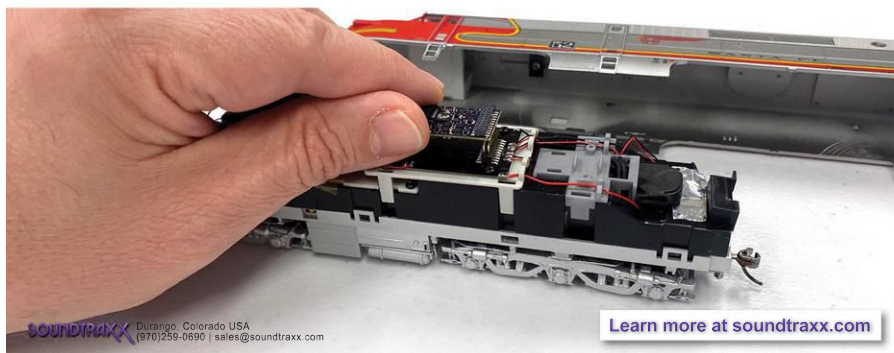
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Compact turnout control panels



Gerry Glancy shares how he designed and built these compact turnout control panels for his Dueling Gauges & Navigation Co. layout. The finished panels blend in neatly with the rest of his model railroad.

Push buttons and light-emitting diodes take the guesswork out of routing trains

By **Gerry Glancy** • Photos by the author

Being from the old school, I enjoy pushing a switch on a control panel, seeing the light-emitting diodes (LEDs) for the route change color, and piloting my train down the selected route. However, the optimal size of a control panel can be elusive. If it's too small, it's hard to read. If it's too large and complex, it imposes a significant learning curve on the operator. Looking for a happy middle ground, I designed and built compact panels for my HO scale and HOn3 Dueling Gauges & Navigation Co. home layout.

When designing the panels, I came up with the following criteria:

- Each panel will be directly in front of the group of turnouts to be controlled.
- It will be sized so the track diagram can be easily interpreted, but not so large that it protrudes into the aisle.
- The electrical switch controlling the turnout will be placed directly on the track diagram.

- There will be two bi-color LED indicators for each turnout. This eliminates operators having to guess which color is for the main line and which is the diverging route.

Furthermore, there's no need to visually ascertain turnout position. If the LEDs indicating a chosen route are all green, the train is ready to proceed. This is helpful with double-slip turnouts and compound ladders ❶ (opposite page).

- All turnouts can be controlled remotely using Digital Command Control (DCC) accessory mode.
- All turnouts can be placed in a DCC macro mode as desired.

Panel components

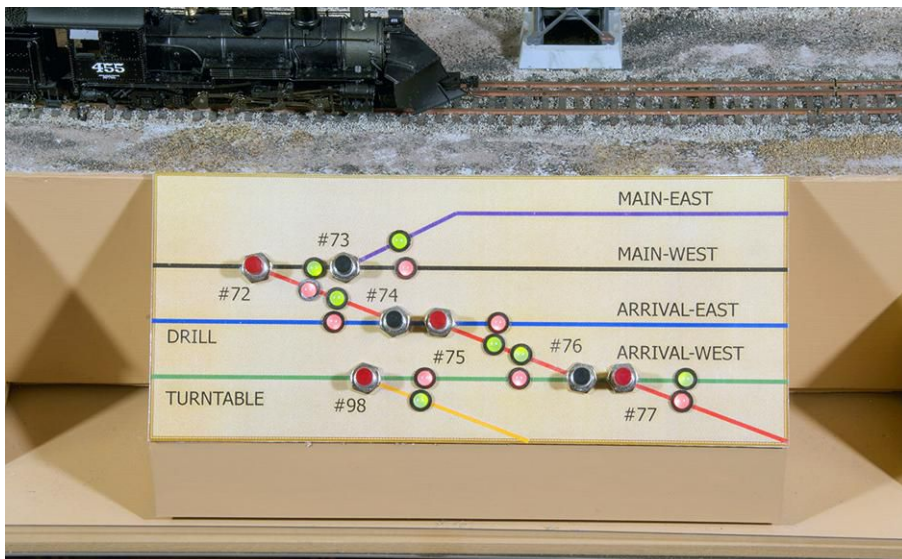
Each compact turnout control panel box has ¾" select pine sides (1½" or 2½" wide), an ⅛" tempered hardboard base, and a .080" styrene sheet front and top.

The track diagram is bond paper that I print at home. I cover the diagram with .030" clear polyester sheet ❷.

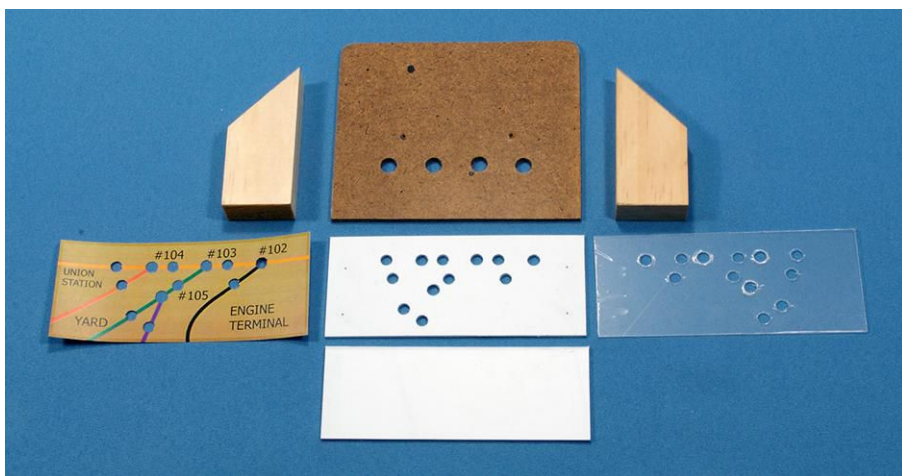
The electrical components are momentary contact, normally open push-button switches (RadioShack 275-1547); bi-color LEDs (Switch Master 1103 or Miniatronics Corp. 12-240-05); 470Ω, ½W resistors; European-style terminal strips (RadioShack 274-0680); and North Coast Engineering (NCE) Switch-IT MK2 stationary decoders. The use of stationary decoders presupposes the use of a stall motor, such as the Tortoise by Circuitron, for turnout activation.

Track diagram

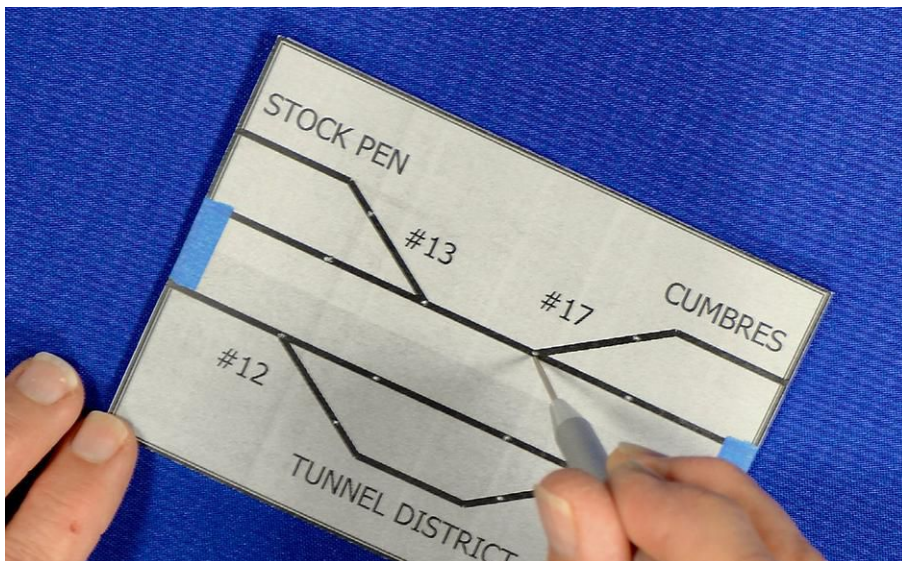
Before building the box, I draw the track diagram on my home computer. You don't need design software for this. Programs like Microsoft PowerPoint or Apple Keynote are sufficient.



1 Easy to read. Turnouts 74/75 and 76/77 are double slips. Red and green light-emitting diodes make it easy to see the routes the turnouts are lined for.



2 Build a box. Gerry used $\frac{3}{4}$ " select pine, $\frac{1}{8}$ " tempered hardboard, .080" styrene sheet, bond paper, and .030" clear polyester sheet to build each panel control box. He assembled the components with screws and glue.



3 Marking the spots. After designing this track diagram, Gerry printed a grayscale version for use as a template. He then attached the paper to a piece of .080" styrene sheet and marked push button and LED locations with an awl.

Using the ruler and grid, I start with a rectangle shape the intended size of the track diagram. The width is determined by the complexity of the diagram and number of turnouts. I recommend limiting the width to 8" and the number of turnouts to eight.

The height of the diagram is either $2\frac{1}{4}$ " or $3\frac{5}{8}$ ", based on cutting the $1\frac{1}{2}$ " or $2\frac{1}{2}$ " pine stock at a 45-degree angle.

With the width and height determined, I then draw the horizontal track lines. Parallel tracks should be at least $\frac{5}{8}$ " apart. Though black is a common color for the lines, I also use orange, green, and purple. Then I add diagonal lines depicting the turnouts.

Finally, I chose an easily legible font and type size to label the tracks and turnouts. Once I'm satisfied with the diagram, I save it. Then I print it in gray-scale (save the color ink for the finished version). The printout will serve as the working template.

Placing the push buttons

Next, I turn my attention to the push buttons, which are located at the intersection of the main and diverging routes. I first mark the LED position for each turnout. These should be spaced at least $\frac{3}{8}$ " apart and $\frac{3}{4}$ " from the switch. If things become too crowded, I modify the track diagram.

I then cut the top of the panel from a piece of .080" styrene sheet to the exact size of the track diagram template.

After I tape the template to the styrene, I emboss the push button and LED locations with a sharp awl **3**.

After the locations are marked, I remove the template and drill a pilot hole with a No. 60 bit. Then I enlarge the hole using a $\frac{1}{4}$ " brad point bit **4**, next page.

Next, I cut a piece of .030" clear polyester to the same size as the track diagram panel. Using the panel as a template, I drill $\frac{1}{4}$ " holes in the material. The push-button switches I use require a $\frac{9}{64}$ " hole. I use a rat tooth file to enlarge the openings in the clear polyester.

Satisfied with the track diagram, I print a final color version. Before cutting it out, I tape the clear polyester to it as a template to cut clean holes for the LEDs and push-button switches. Then I set the diagram and clear polyester aside until final assembly.

With the parts cut, I glue and screw the pine sides to the tempered hardboard base. Then I attach the styrene track panel to the sides with No. 4 flathead countersunk screws. I cut the front from

.080" styrene and glue it in place, as shown in **5**.

Terminal strips and decoders

For ease of accessibility, I mount the terminal strips and NCE stationary decoders to the bottom of the base. For panels on the main level, I drill $\frac{3}{8}$ " holes in the base, one for each turnout switch and LED group. This allows the wires to pass under the fascia.

For panels on the upper level, I prefer to mount everything out of sight on top of the base. An $\frac{1}{8}$ " shim just behind the side allows for wire passage under the fascia. In this case, drilling the $\frac{3}{8}$ " holes is unnecessary.

I attach the main terminal strip on the hardboard base. It should have two connections for each turnout. A second, two-connection terminal strip is added for the incoming DCC power source.

At the rear of the base I mount the stationary decoders with hook-and-loop fastener squares or short No. 4 screws **6**. One stationary decoder will control two turnouts.

Wiring at the workbench

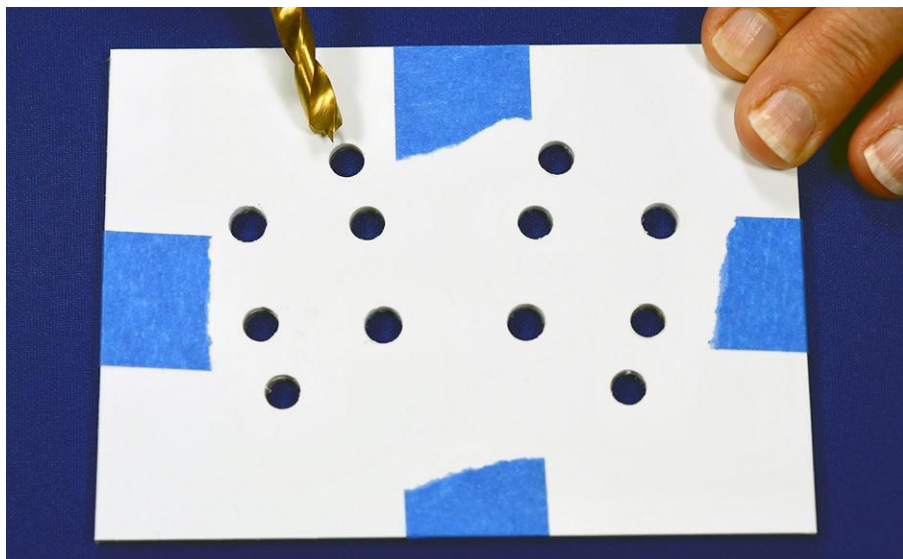
I use 22AWG stranded wire for all connections. I try to use a unique wire color for each turnout to help with subsequent identification.

First, I connect each stationary decoder power input to the two-position DCC terminal strip. I run a short wire from each stationary decoder turnout connection to one point of the main terminal strip. The incoming turnout motor connections will be subsequently connected to the other stationary decoder terminal and the adjacent point on the main terminal strip.

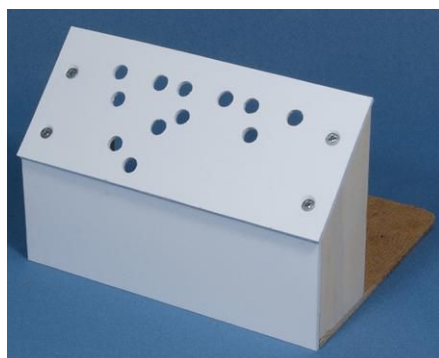
Next, I determine the distance from the push-button switch on the panel to the edge of the stationary decoder that has the momentary contact switch connection. This is usually about 6". Then I wire the push-button switch, selecting a distinct color for one conductor.

After that's completed, I measure the distance for each 5mm bi-color LED to reach from the panel, through the hole, to the main terminal strip. This is usually about 4" **7** (opposite page).

Although I keep track of which is the anode (positive) side of the LED and which the cathode (negative), when it comes to finalizing the connections, it's as much trial and error as anything else. I solder a 470 Ω resistor to both the cathode and anode side of the LED. This



4 Enlarging the holes. Using the awl marks as a guide, Gerry enlarged each hole using a $\frac{1}{4}$ " brad point bit. The tip prevents the bit from wandering off course.



5 The finished box. Glue and screws were all Gerry needed to assemble the box. He later painted it the same color as the fascia so it would blend in with his layout.

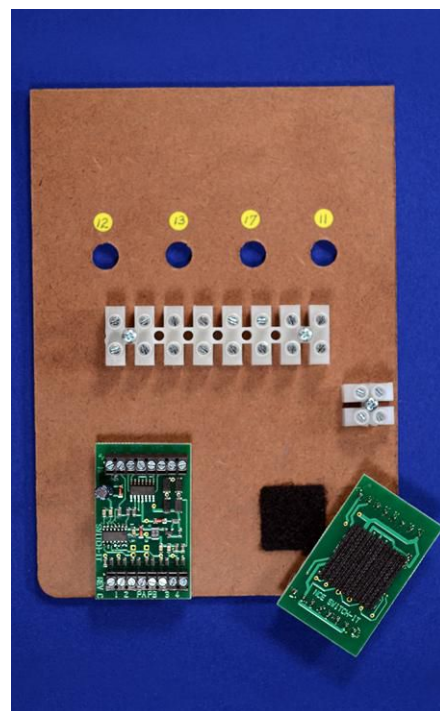
equalizes brightness.

I then insulate the exposed portion of the LED and resistor with a $\frac{1}{2}$ " piece of insulation stripped from the 22AWG wire. Before soldering, I slide a $\frac{1}{4}$ " piece of heat-shrink tubing between the LED and resistor. After soldering, I shrink the tubing over the connection. Again, color coding if desired, solder the appropriate length of 22AWG wire to the other end of the resistor **8**.

Two bi-polar LEDs are needed for each turnout. I push each LED through its hole in the track diagram panel. Then I route the LED wires through the holes in the base and attach them to the main terminal strip. Deliberately and arbitrarily reverse the polarity of one LED per pair **9**.

Final assembly

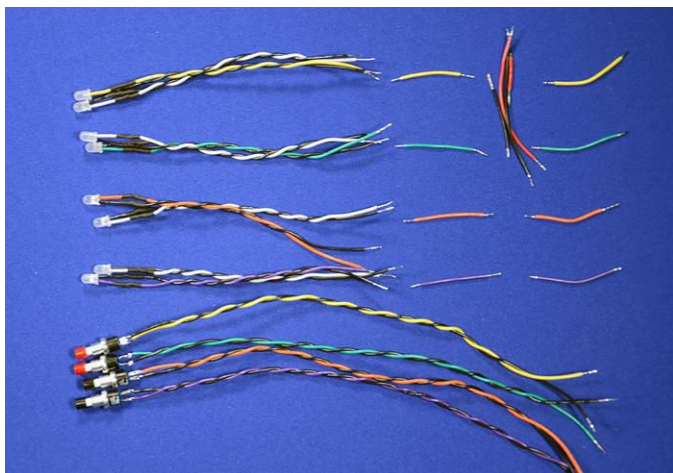
Once the wiring is complete, I put the printed paper track diagram and clear



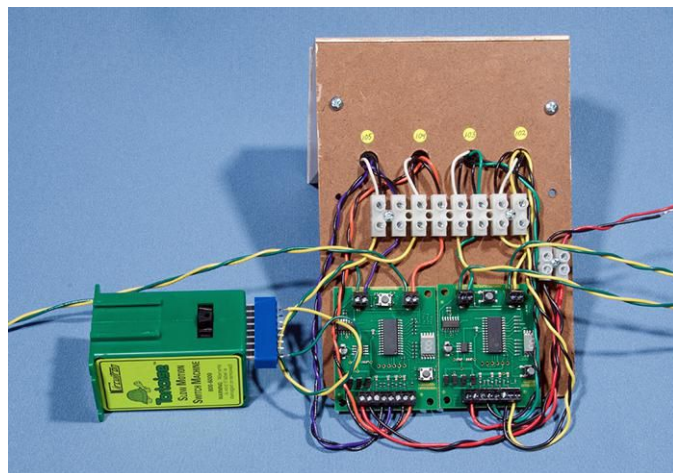
6 Base basics. Gerry drilled wire passage holes in the $\frac{1}{8}$ " tempered hardboard base. He attached the terminal strips with screws and the NCE stationary decoders with hook-and-loop fastener squares.

polyester on the panel. I then press the push-button switches up from behind and lock them in place with the hex nut.

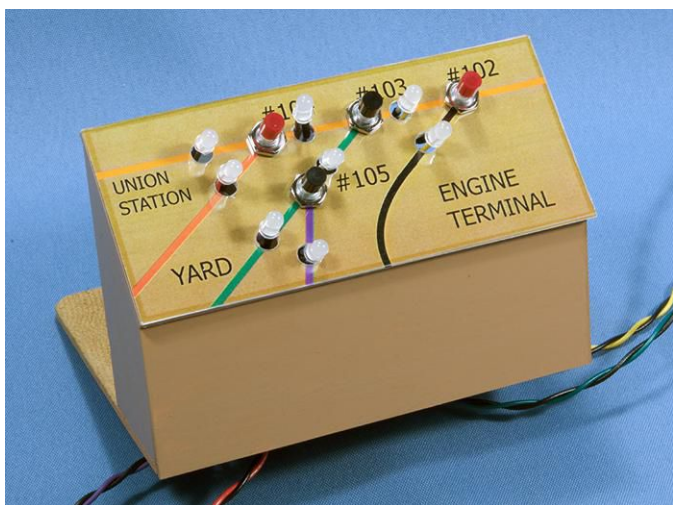
Next, I set the panel at its intended location on the fascia. I don't attach it yet, as I need to reach behind it for orientation and final placement of the LEDs. I connect each turnout motor to the panel. One lead of the turnout motor goes to the stationary decoder; the other connects to the main terminal strip.



7 Attaching wires. Gerry added 6" lengths of 22AWG wire to the push buttons and 4" lengths of the same to the LEDs. He tried to use a distinct wire color for each installation to help with identification.



8 Keeping it neat. Here's what a wired panel looks like after the NCE stationary decoders are in place. The Tortoise by Circuitron switch motor is shown to depict its relationship to the wiring.



9 Just about done. Gerry photographed this compact panel just before it was programmed and placed on the fascia. He left the LEDs loosely protruding through the panel to allow for adjustments during programming.



10 Ready to use. One option for attaching the panel to the fascia is running screws through the base and into the fascia. This mounting technique makes the panel easy to relocate in the future.

I then connect DCC power to the panel and start up the layout. All of the LEDs should illuminate. I program each turnout in accessory mode, following the NCE instructions. In order for the push buttons to toggle, it's necessary to program CV548 to 1 when programming output 1 of each stationary decoder.

Working sequentially, I adjust the LEDs for accurate relationship to the turnout position. If they're the wrong color, physically reverse them. If they're both the same color, reverse the wires of the incorrect one at the main terminal strip. I fasten the LEDs to the panel with Switch Master 5mm mounting rings.

Attaching the box

There are three ways to mount the box to the fascia. If you're absolutely sure

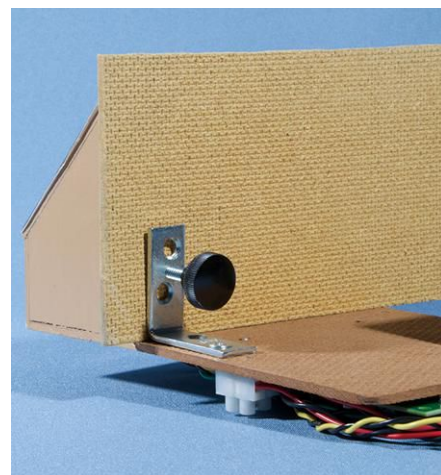
where you want it, attach it with screws from behind through the fascia.

If you want the option of shifting its position and your panel is thick enough, screw through the base into the edge of the fascia **10**.

If the fascia is thin, mount a 2" angle to the base, then drill and tap a hole to accept a threaded knob that will grip the fascia from behind **11**.

For those in search of trouble-free turnout control, try building one (or more) of these compact panels. The push buttons and LEDs will further draw operators into your model railroad. **MR**

Gerry Glancy and his wife, Karen, are residents of Littleton, Colo. His article "Scratchbuilding the art deco Salida Depot" appeared in the February 2023 issue of Model Railroader.



11 An alternate method. In locations where the fascia is thin, Gerry mounts a 2" angle to the base. Then he drills and taps a hole to accept a threaded knob that grips the fascia from behind.

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MODEL RAILROADER HALL OF FAME

Manufacturers' innovations shaped what the hobby would become

NOMINEES

By Steven Otte

Though all our Model Railroader Hall of Fame nominees so far have been hobbyists, sometimes an avocation becomes a vocation. That was the case for this month's three nominees, all of whom turned an

early interest in model trains into well-known businesses that are still going strong today. Irvin Athearn, Joshua Lionel Cowen, and William K. Walthers are names that modelers today will recognize. But how well do you know their contributions to the hobby?



Irvin "Irv" Athearn (1904-1991)

Irvin Athearn started building an extensive O scale layout in his mother's Southern California home in 1934. Several years later, though, his plans changed, and he took out an ad in *Model Railroader* in February 1943 to sell his accumulated collection of wheels, trucks, couplers, motors, and other parts.

The response was good enough to give Irv the idea to make selling model train parts a regular business. In April's issue, Irv took out a half-page ad offering O scale car roofs, screen-printed metal sides, wood bodies, and other car parts.

At first, Athearn Trains in Miniature was a distributor of other manufacturers' parts, but in 1948 the business started offering its own car kits. Athearn got into the HO scale locomotive business in 1955, with the Electro-Motive Division F7A and B units marketed under the Globe Models name.

Athearn was a leader in model technology. His company's "blue box" car kits and locomotives were ubiquitous in hobby shops.

Irvin Athearn died on July 4, 1991, at the age of 87.



Irvin Athearn

Joshua Lionel Cowen (1877-1965)

The Lionel name may be synonymous with three-rail and tinplate, but it's safe to say that the hobby of scale model railroading would look very different today were it not for Joshua Lionel Cowen.

Young Joshua Cohen (he legally changed his last name to Cowen in 1910) was interested in trains from a very young age. One account says that he built his first toy train when he was 7 years old, affixing a live steam motor to a hand-carved wooden locomotive.

The Lionel Corp. pioneered three-rail "Standard Gauge" track, which simplified wiring and eliminated short circuits. O gauge three-rail came along in 1915, and Lionel bought competitor Ives in 1928, giving it the ability to include the reversing unit in its locomotives. Other innovations, like the steam whistle, animated cars, magnetic couplers, and working accessories helped make Lionel the biggest toy manufacturer in the world by the 1950s.

Cowen sold his share of the company to distant relative Roy Cohn and retired to Florida in 1959. He died in West Palm Beach in 1965 at the age of 88.



Joshua Lionel Cowen

William K. Walthers (1892-1967)

Many modelers know William K. Walthers as the name of a Milwaukee-based manufacturer and distributor of model trains, supplies, and accessories.

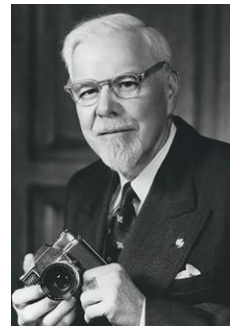
Fewer, though, know that the

man for whom the company is named got his start writing articles for the hobby press. In 1932, Walthers self-published what may have been the first ever model railroad how-to book, *Signal and Control Manual for Model Railroaders*.

When readers wrote to Walthers asking if they could buy the components he showed in his book, he took out an ad in the May 1932 *The Model Maker* (precursor to *Railroad Model Craftsman*), offering a 24-page catalog for 15 cents. By the end of the decade, Wm. K. Walthers Inc. was making its own O and HO scale locomotives, cars, and track.

But Walthers' story is not just one of business success. Walthers was also a founding member of the National Model Railroad Association (NMRA).

Walthers handed control of the company over to his son, Bruce Walthers, in 1958, but stayed active in the hobby. He died on May 1, 1967. **MR**



William K. Walthers

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493's Extra

Robert Frost, my favorite poet, painted New England in words so vivid that I can almost smell the smoky-sweet aroma of maple syrup drizzled over pancakes and bacon. New England beckons railfans, too: Boston & Maine's classic Moguls, Maine Central's Frankenstein Trestle, and Canadian National's unmistakable imprint in Central Vermont and Grand Trunk. Roger Cook's article about Island Pond, Vt., in last fall's issue of *Classic Trains* had me revisit my collection.

I labeled the slide seen at right with "power for No. 493," a daily Portland, Maine-to-Montreal through freight. But why is GP38-2 5551 resplendent in snapping white flags and class lights so typical of the region? A train with a schedule number is a regular train, not an extra. Roger gave the answer: while all Grand Trunk trains operated as extras, "all the GT men I met used their former timetable numbers." Here's another prototype practice we can polish our operations with.

Harold Krewer and I corresponded about this. In part, it comes from a subtle distinction between traffic and trains. Harold described Rock Island's auto parts hotshot ARRO. It ran extra on double track and didn't get a schedule number until it reached single track timetable-and-train-order territory at West Liberty, Iowa. However, "from the moment it left Blue Island (Chicago) it was always referred to as 57." Rock dispatchers rolled this traffic under two identities: Extra 295 West, for example, and No. 57.

Harold remarked that Toledo, Peoria & Western dispatchers often annulled



Bright, crisp sunlight bathes Canadian National GP38-2 No. 5551 one fall morning in the mid-'70s. Grand Trunk's office building rising in the background and other historic structures place the scene at the foot of India Street in Portland, Maine. Jerry Dziedzic photo

freight schedules to move traffic early. "No. 20 was carded between East Peoria and Logansport, Ind., but if No. 122 from Fort Madison, Iowa, had a good run and the through cars for Conrail were ready, then '20's Extra' was born." Annulling the schedule and running the extra expedited the traffic. This also allowed other trains to move more freely, not tied down by 20's schedule.

Harold tossed in two *Trains* articles detailing Rock Island and Katy operations, Ed Brunner's in July 1980 and Fred Frailey's in September 1986. Fred reported the dizzying example of CBL-8 operating as No. 109 from Ney (Fort Worth) to Bellemead (Waco) and No. 103, thence to Smithville. Consider a schedule as track space; its times reserve the space for a train. These two schedules were available when CBL-8's traffic was ready to move.

Railroaders color railroad-ing. "493's extra" evokes a time when 493 and its east-bound counterpart 490 ran behind handsome S-class

2-8-2's. *The Bootlegger* persisted long after Prohibition when Central Vermont railroaders bestowed it on *The Washingtonian*. Newsprint traffic made Delaware and Hudson's RW6 the "Paper Train." There are more nicknames in a 1952 pamphlet published by the Association of American Railroads. Southern's "Spark Plug" between Cincinnati and Atlanta and "Jack-Pot" between Jacksonville, Fla. and Potomac Yard outside Washington, D.C., describe their traffic well. Illinois Central's CC-6, better known as the Meat Train than as No. 76, also drew "Hot Shot" and "Pork Chop." JG1/GJ2, Jersey Central's service between Jersey City and Phillipsburg, N.J., earned "Maybe." A CNJ employee I asked in the early '70s explained: "Maybe it'll get there and maybe it won't." But IC's "Naked Lady" from Centralia to Chicago stumps

me. It handled BC-4 traffic, and let's leave it at that.

As pleasing to the ear as these were, each operated as a regular train or an extra, addressed that way on train orders and clearance forms and so entered on a dispatcher's train sheet. Today, however, symbols make a train's formal identity. A dispatcher might refer to a Z-train as "BNSF 8330" on the radio or in a track warrant, but it's Z-KCMDEN23 in official railroad records.

I tried to re-create a wonderful Phil Hastings photo by catching 493's extra on the Casco Bay bridge during my Portland visit. I savored the prospect over a steaming, buttery lobster dinner on Commercial Street; afterward, the film proved mine a meager attempt. Well, the meal sure didn't disappoint, though I wonder why Robert Frost never got around to lobster. **MR**



CONSIDER A SCHEDULE AS TRACK SPACE; ITS TIMES RESERVE THE SPACE FOR A TRAIN. — JERRY

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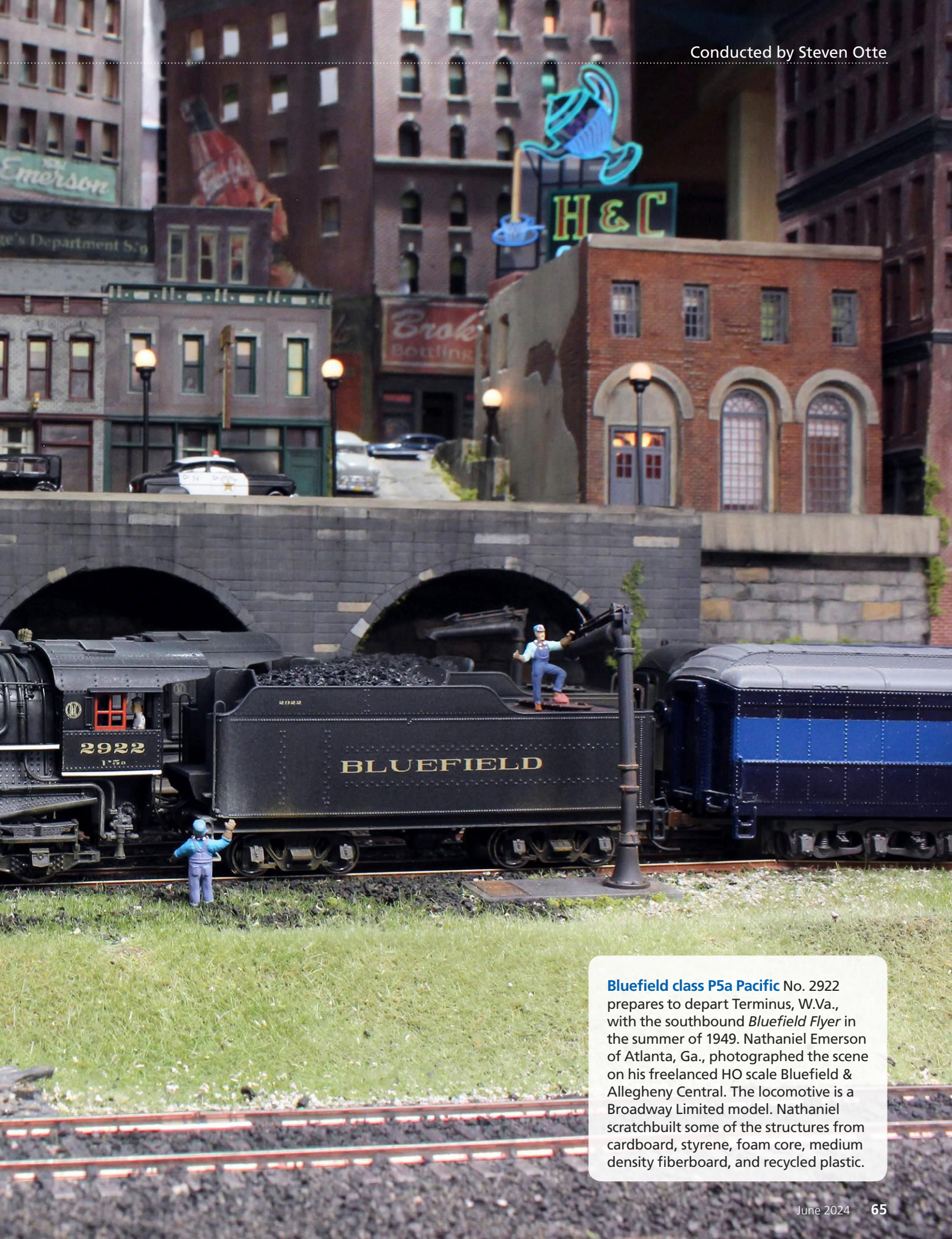
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Bluefield class P5a Pacific No. 2922 prepares to depart Terminus, W.Va., with the southbound *Bluefield Flyer* in the summer of 1949. Nathaniel Emerson of Atlanta, Ga., photographed the scene on his freelanced HO scale Bluefield & Allegheny Central. The locomotive is a Broadway Limited model. Nathaniel scratchbuilt some of the structures from cardboard, styrene, foam core, medium density fiberboard, and recycled plastic.



A pair of Milwaukee Road

Consolidations are working hard as they pull Extra 1342 past the station in Denton, Mont., in September 1953. Dan Lewis of Rochester Hills, Mich., follows the prototype on his N scale MILW North Montana Branch layout. The locomotives are Bachmann Spectrum models. The cars are by Fox Valley Models and Micro-Trains Line. Dan shot the photo.

Send us your photos

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Granson RR No. 1430, a 4-4-2 Atlantic, pulls up to Granson Station with a trainload of tourists. The freelanced HO scale railroad was built by Edward Biegas of Sterling Heights, Mich. The depot is a 1960 Revell kit Edward built for his first layout. Dan Lewis photo



A Ma & Pa K Railway passenger train steams to a stop at the platform to pick up some holiday-goers who have spent a beautiful summer's day picnicking among the redwoods. The scene was staged and photographed by Ken Kirkwood of Yucaipa, Calif., whose HO scale layout represents a tourist line in the deep woods of northern California.



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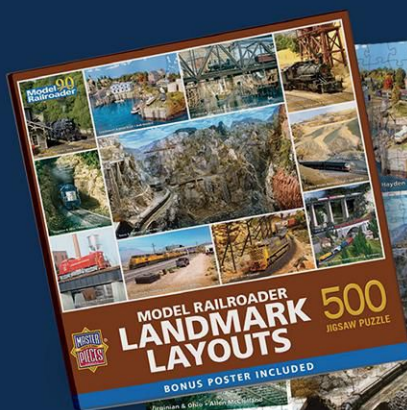
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Schedule of Events

AZ, GLENDALE: ARHS Model Train Swap Meet. Glendale Christian Church, 9661 North 59th Ave., Glendale, AZ 85302. Saturday, May 11, 2024, 9:00am-1:00pm. Everything Trains — Food — Fun. Admission \$5.00. Tables \$25.00 — to sign up send check or money order to: ARHS, PO Box 5816, Glendale, AZ 85312-5816. Contact: Craig Faris, 623-340-3529

CA, CARMICHAEL: Sac-Sierra TCA Train Show. Elks Lodge, 5631 Cypress Ave., Carmichael, CA 95608. Saturday, May 25, 2024, 10am-3pm. Admission \$10.00, children 12 and under FREE w/paid adult. Buy/Sell/Trade, operating layouts, free parking, food. Free train set drawing for 17 and under (must be present to win). Contact: Bryan Stanton at brsta@comcast.net

CA, LONG BEACH: Join us by the Pacific Ocean in Long Beach, California for the SurfLiner 2024 NMRA National Convention, August 4 - 11, 2024! Clinics, Layouts, Prototype Tours, General Interest Tours, and more. Bring the family to beautiful Southern California! Register today! www.SurfLiner2024.org

FL, MELBOURNE: The Melbourne Train and Toy Show. Azan Shrine Center, 1591 West Eau Gallie Blvd, Melbourne, FL 32935. Saturday, June 1, 2024, 9am-2pm. Admission: \$5, kids under 10 FREE. Vendor tables \$25 each or 3 or more \$20 each. Join us for trains, toys, and fun! Lunch/snacks available. For more information: SchultzSpaceCoastTrains@aol.com or 321-805-1963

FL, OCALA: Lions Tri-Annual Train Show. First Christian Church, 1908 E. Fort King St., Ocala, FL 34471. Saturday, June 8, 2024, 9:00am-2:00pm. Model trains, accessories, detail parts and toys. Admission \$5.00, children 12 and under free w/paid adult. Bring two canned goods and receive \$1.00 off admission. Food/snacks available. Information: Bob 352-694-6381 or cell 813-203-3216

FL, PINELLAS PARK: Regal Railways presents Toy Trains & Hobby Show. Lopez Inc. Hall, 7177 58th St. North, Pinellas Park, FL 33781. Saturday, June 15, 2024, 9:00am-2:00pm. Admission: \$6.00 adults, children under 12 free. Vendors and operating layout. Lunch available. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

FL, TALLAHASSEE: 33rd Annual Tallahassee Model Railroad Show and Sale! 2-DAYS! June 22-23, 2024. Saturday, 9:00am-5:00pm & Sunday, 9:00am-4:00pm. Leon County Fair Grounds, 441 Paul Russell Rd., Bldg. 2 & 4. Admission: Adults/Children 13 and over, \$10 BOTH DAYS! Scouts in uniform/children 12 and under FREE! Scales Z-GI Food! Contact: Andy Zimmerman, 850-524-4399. Email: GNTrainman@comcast.net

IL, COLLINSVILLE: 17th Annual St. Louis Railroad Prototype Modelers Meet. Gateway Convention Center, 1 Gateway Dr., Collinsville, IL 62234. July 19-20, 2024, Friday 9:00am-9:00pm and Saturday 9:00am-5:00pm. Admission: \$35.00 for both days; \$25.00 for Saturday only. For information, www.stlrpm.com or Contact: Lonnie Bathurst at bathurst@itchfieldil.com or 217-556-0314

IL, GALESBURG: 2024 Galesburg Train Show. June 29-30. Saturday 10am-4pm, Sunday 10am-2pm. Knox College, T. Fleming Fieldhouse, 199 East Knox Street. Admission \$5, under 12 free. 400 tables of model trains, books, videos, t-shirts, memorabilia. 90+ vendors and exhibitors. Operating layouts. Tables: \$30 each. Refreshments available. Handicap accessible. Show Directors: Greg Norris 309-335-2634, John Manderscheid 563-349-0134

IL, GREENVILLE: American Heritage Railroad Train Show @ American Farm Heritage Museum, 1395 Museum Ave., Greenville, IL 62246. I-70 @ IL Rt. 127 (Exit #45). Saturday, June 8, 2024, 10:00am-4:00pm. Admission: \$7.00, under 12 FREE. Train ride with paid admission. Operating layouts. Dealers welcome, \$15.00 per table. Contact Karl @ 618-699-5244.

IL, ST. CHARLES: 48th Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, (Front Building), 525 South Randall Rd., St. Charles, IL 60174. Sunday, June 9, 2024, 10:00am-3:00pm. Admission: \$6.00 (includes tax). Children under 12 FREE. Tables starting at \$65.00. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

KS, HUTCHINSON: Kansas Central Model Railroaders, Center of the Nation Model Railroad Expo. Kansas State Fairgrounds, Pride of Kansas Building, 2000 N Poplar, Hutchinson, KS 67502. June 1-2, 2024. Saturday 9am-5pm, Sunday 10am-3pm. Admission \$8.00, under 13 free w/ adult. 125+ vendor tables & numerous operating layouts. 25,800 sq.ft. of fun! Free parking (handicap accessible). Info: www.kansascentralmodelrailroaders.org

NY, DUNKIRK: TCA Upstate NY Chapter Toy Train Show. Dunkirk Fairgrounds, 1089 Central Ave., Dunkirk, NY 14048. Saturday, May 11, 2024. TCA Members: 8:30am. General Public: 9:00am-3:00pm. Admission: Adults \$5.00, Children 12-17 \$3.00, Upstate Chapter Members & children under 12 FREE. Tables are \$20, for reservations email: tcaupstatechapter@gmail.com. Mike: 716-913-4195 or Dave: 716-208-5842

WI, LA CROSSE: Rail Fair, Copeland Park, Rose & Clinton Streets. Saturday, July 13, 2024, 10am-4pm. Admission \$5.00, under 12 free with adult. Railroad Show-Flea Market-Swap Meet. BUY/SELL/TRADE. Model, Toy & Antique Trains & Memorabilia, Railroad Exhibits & Displays. Information: 4000 Foundation, PO Box 3411, La Crosse, WI 54602, 608-781-9383 or 608-498-9522. www.4000foundation.org

WI, MINOCQUA/ARBOR VITAE/WOODRUFF: Northwoods Model Railroad Club Train Show, June 15-16, 2024. Arbor Vitae Town Hall, 10675 Big Arbor Vitae Drive, Woodruff, WI 54568. Saturday 9am-4pm and Sunday 9am-3pm. Free Parking, Free Admission for all. Operating train layouts, model train vendors, collectibles. Contact Skip Tosch 715-614-6656 or email: northwoodsmodelrailroadclub@gmail.com

WY, CHEYENNE: Sherman Hill Annual Train Show. Event Center at Archer. (I-80 East, exit 370) 3801 Archer Pkwy, Cheyenne, WY 82009. June 29 & 30, 2024. Saturday 9am-5pm; Sunday 10am-3pm. Admission: Adults \$10.00, Children under 12 free. All Scales, model train vendors, operating layouts, door prizes. For info call: Rick Caldwell, 307-321-3644 or email: shmrcts@gmail.com

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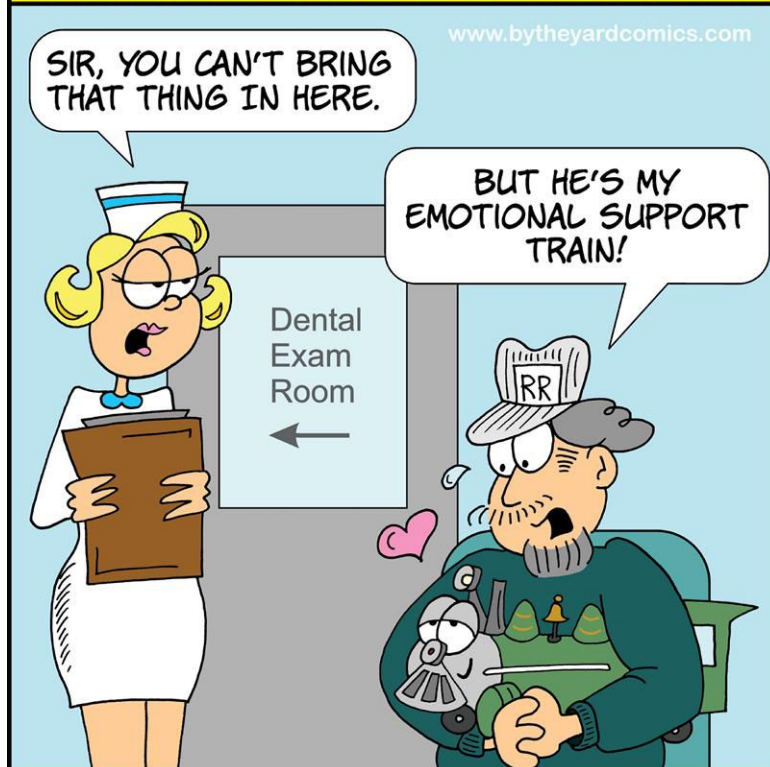
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Ultimate realism



The lead units escaped a trip into the creek bed when the trailing GE U25B and Alco C420 were yanked off the rails by a shifting load in a car that wasn't even supposed to be in this Allagash Railway coal drag. Mike Confalone photo

There are some aspects of prototype railroading that we'd prefer not to model. Among the ones that come to mind are working outside on a hot, muggy day or frigid, snowy night; getting a call to work in the middle of the night; working 16 hours a day for weeks on end; or maybe fighting off mosquitoes.

Having our train roll into the ditch is another.

But, regardless of scale, stuff happens. If we've done a good job while laying track, cleaning wheels, installing couplers, and attending to normal maintenance chores, our operating sessions are usually free of such untoward events. Usually.

When things go wrong, it's often a minor glitch, such as a short caused by running through a misaligned switch. Or maybe a low-hanging coupler "glad hand" snags a road crossing and causes a rather sudden stop.

In that vein, Mike Confalone, builder of the Allagash Railway, a freelanced

railroad set in the backcountry of Maine, was running a coal train out of Madrid Yard. Unbeknownst to him, the train had been backed onto a cut of cars that included a pulpwood car. The load in that car had shifted sideways.

"As those cars tried to navigate the cross-aisle duck-under at Madrid Junction," Mike reports, "the pulpwood load got caught hard, and it string-lined some of the coal hoppers on the head end. The force was so severe that it flung an ex-Lehigh Valley Alco Century 420 into the river below. A Maine Central GE U25B was also toppled, while the rest of the power drifted on toward Weld."

The results of that event are shown in the photo above. I don't recall ever seeing a more realistic-looking derailment!

Several observations come readily to mind: The first is that, as we have seen before, Mike is a superb modeler. Studying his work at length leads one to the conclusion

that there really is a full-size Allagash Railway tucked away up in Down East country. Further, it's clear that well-thought-out and well-done freelancing has not gone out of vogue.

There are some more subtle aspects of what happened — and what didn't happen. No equipment was harmed during this event, which was partly a matter of good fortune, but also due to there being plenty of scenery between the track and the edge of the layout. I like to keep 6" of elbow room between the track and fascia for just this reason. It also makes realistic photography easier.

I used to run trains of hoppers filled with "live" coal loads, and Mike would have had a major cleanup chore on his hands if he followed my example.

Fortunately, no loose coal or even diesel fuel was spilled as a result of this accident.

There's a social aspect not evident in this photo. Jack Ozanich's Atlantic Great Eastern was another HO railroad that followed prototype practices to the letter. This isn't surprising, as Jack was a retired locomotive engineer. When he and Mike compared notes, they discovered their interests overlapped.

Jack operated the AGE in the steam era when he could round up enough crew members. When attendance was lighter, as in the summer months, he shifted to the diesel era, when trains were longer and hence fewer. Those sessions included trains coming off the Allagash that had trackage rights over part of the AGE. Atlantic Great Eastern equipment like that pulpwood car also showed up on the Allagash, but as Mike moved the modeled year to 1984, the Allagash became part of the Guilford railroad family. Then we lost Jack.

Derailment aside, there's a lot to look at in the accompanying photo. Mike pioneered in the use of authentic photo backgrounds, for example. He plotted the Allagash's mythical route through the woods, then shot on-location images that were printed out in long rolls and attached to the backdrop.

Off-track excursions in any scale aren't enjoyable, but we can thank Mike for sharing an evocative photo of this rare event with the rest of us. **MR**



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