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**ScaleTrains HO
SDL39 tested** p.56

June 2022 • Trains.com

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Passenger train parade

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masterpiece in HO scale** p.38

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based on
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the rails on Jason
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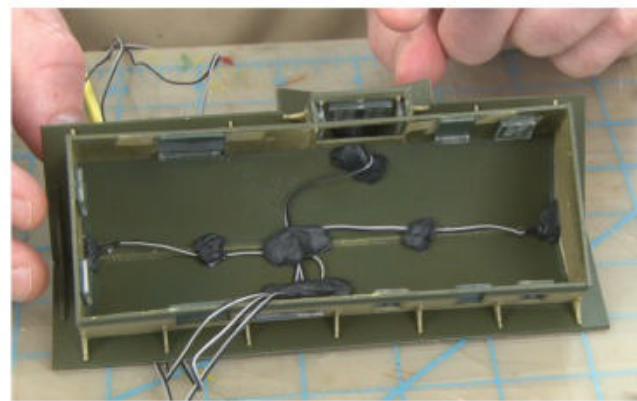
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On the cover: Rapido Trains founder Jason Shron unveils his three-deck HO scale VIA Rail model railroad. Jason Shron photo



Next issue

In July, Lou Sassi begins a two-part series on building a signature scene. Plus, visit a freelanced HO scale Canadian layout, evaluate track plan options, and more!

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Rehab My Railroad

Sometimes change is a good thing. When it comes to repurposing pieces of an old layout, you will undoubtedly face challenges. Just ask our hosts, David Popp and Cody Grivno, from the video series *Rehab My Railroad*. In the face of difficulties, they show you how to cultivate your modeling skills and adapt them as needed. If you are up for the challenge, visit Trains.com and type *Rehab My Railroad* in the search bar to access informative and entertaining videos by *Model Railroader's* staff. Check out what's new on the Jones Island section of the HO scale Milwaukee, Racine & Troy; it might just inspire you to rehab your own model railroad layout.



Meet the Modeler

Production editor Rene Schweitzer continues her popular Trains.com series, *Meet the Modeler* with Kathy Millatt. Kathy's book, *Building Realistic Model Railroad Scenery*, can be purchased at KalmbachHobbyStore.com. You can also check out her video series *Let's Make a Scene* online, along with Rene's complete Q&A.



Prototype Railroads

Is realism your style? On Trains.com, there's a collection of helpful articles on prototype railroads and how to best model them. Start with the article, "Research sources for prototype railroad information," and go from there. You can locate this article by going to *Model Railroader* on Trains.com and clicking on Prototype Railroads under the How To tab. Here you will find a plethora of railways and railroads to gloss over. Just find the one best suited for your workspace and dream genre, and get modeling!



Ask MR

Got a question or concern for senior associate editor Steven Otte? Get ready to have your modeling dilemmas solved, not only in the magazine, but on Trains.com. Maybe you have a noisy locomotive or a derailing issue, or you just need someone to bounce ideas off of. No matter the quandary, Steve addresses your modeling needs. Go to Trains.com, click *Model Railroader*, then the Beginners tab, and scroll down to the Ask Trains tab. If you can't find the answers you are seeking, send your questions to Steven Otte at AskTrains@Trains.com.

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A welcome step toward clarity

If you've been around the hobby for a while, you've noticed many manufacturers market their locomotives and rolling stock using a range of product line names.

Product lines can be a handy way to distinguish, for instance, value-priced models from models sporting better detailing and features.

This is fine, but if product lines continue to be added, understanding the differences between them can be confusing – especially for newcomers to model railroading.

Athearn has taken a welcome step toward clarifying matters. Previously, the company marketed its products under the category names

Genesis, Genesis 2.0, Ready-to-Roll, Roundhouse, Athearn N, and Athearn Precision Diecast.

In a sweeping reorganization, the company will now offer just three product lines.

To quote from Athearn's press release, "The 'Athearn Genesis' line will be the premium line of models. 'Athearn Roundhouse' is now focused on entry-level models, and 'Athearn' replaces everything in between."

You know you're on the right track when you can accurately explain your range of models in two simple sentences!

In this month's cover story, Jason Shron, founder of Rapido Trains, takes us trackside on his HO scale multi-deck home layout.

It's a fun read. For example, Jason reveals that most of Rapido's releases in its first 12



years just happened to be models needed for this layout. It's good to be the boss!

Jason shares his favorite techniques, ranging from building robust and flexible benchwork to creating custom photographic backdrops. Turn to page 38 and see for yourself – and stay up to date with this layout at facebook.com/KingstonSub/.



Jason Shron's HO scale Kingston Subdivision features models produced by his own company, Rapido Trains. Jason Shron photo

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HO scale



General Electric U30C diesel locomotive. Atlas offers this Master Line model decorated for Chessie System (with Chesapeake & Ohio reporting marks), Conrail, Delaware & Hudson, Reading Co., Pennsylvania RR, and Seaboard Coast Line, in three road numbers per scheme. Undecorated models with and without a nose headlight are also available. The HO scale model features new tooling based on the Phase I

prototype. The U30C has etched-metal grills; railroad-specific cab, headlight, and nose light variations; and newly tooled Adirondack truck sideframes. Direct-current models with an 8-pin plug for a Digital Command Control decoder sell for **\$189.95**. Versions with a dual-mode ESU LokSound sound decoder are priced at **\$299.95**. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

New N scale covered hopper from Atlas

Following on the success of the HO scale version, Atlas is bringing the Trinity 3,230-cubic-foot capacity Pressure Differential covered hopper to N scale. The Master Line Plus model is scheduled for release in the fourth quarter this year.

Chicago Freight Car, CIT Group, General American, Roanoke Cement, Trinity Industries Leasing, and TXI (with GBRX reporting marks) will be the initial road names offered on the covered

hopper. Each paint scheme will be available in four road numbers.

The newly tooled car features injection-molded plastic construction, etched-metal running boards, metal wheelsets, and magnetic couplers.

The Atlas Master Line Plus Trinity 3,230-cubic-foot capacity Pressure Differential covered hopper will be priced at \$47.95. For the latest updates on the model, visit the manufacturer's website at shop.atlasrr.com.



Roanoke Cement is one of six road names offered on the Atlas Master Line Plus Trinity 3,230-cubic-foot capacity Pressure Differential covered hopper. The N scale model is scheduled for release in late 2022.

Rapido to release Union Pacific boxcar in HO

Rapido Trains announced that it will be offering a Union Pacific 40-foot Alternating Center Rivet boxcar in HO scale. The release date has yet to be announced.

The boxcar will be offered in three classes: B-50-39 (1947 as-delivered scheme with "Road of the Streamliners" and "Serves All the West" slogans and 1956+ repaint with large name and "Be Specific – Ship Union Pacific" slogan, both with 4/4 early improved Dreadnaught ends and a straight-panel roof), B-50-41 (1950 as-delivered scheme with "Road of the Streamliners" and "Be Specific – Ship Union Pacific" slogans and 1956+ repaint with large name and

"Be Specific – Ship Union Pacific" slogan, both with R+3/4 early improved Dreadnaught ends and a diagonal-panel roof), and B-50-42 (1951 as-delivered scheme with "Road of the Streamliners" and "Be Specific – Ship Union Pacific" slogans and R+3/4 early improved Dreadnaught ends and a diagonal-panel roof). Each scheme will be offered in six to 12 road numbers.

Additional features on the UP boxcar will include American Steel Foundries Ride Control or Barber S-2 cast steel trucks, prototype-specific brake platform and running boards, and semi-scale couplers and draft-gear boxes.



Rapido Trains will be releasing a Union Pacific 40-foot Alternating Center Rivet boxcar in HO scale. The illustration above shows a B-50-39 car in the 1947 as-delivered scheme.

Single cars will be priced at \$54.95, and six-packs will sell for \$329.70. To learn more about Rapido's HO scale Union Pacific Alternating Center Rivet 40-foot boxcars, visit rapidotrains.com.

HO scale locomotives



• **General Electric AC4400CW diesel locomotive.** The CIT Group (blue and white), Chicago & North Western (green and yellow with Operation Lifesaver logo), CSX (yellow, blue, and gray), Kansas City Southern (*Southern Belle*), Southern Pacific (scarlet and gray with speed lettering), and Union Pacific (Primed for Grime Southern Pacific patchout, two road numbers). Three numbers per scheme unless noted. Prototype-specific details; light-emitting diode headlights, number boxes, ground lights (above front truck), and marker lights (as applicable); and McHenry scale couplers. 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. April 2023. Genesis 2.0. Athearn Trains, 800-338-4639, athearn.com



• **Alco RS-3 diesel locomotive.** Western Maryland (black-and-yellow scheme in two road numbers) and Pennsylvania RR (Dark Green Locomotive Enamel with train-phone antenna in three numbers). Prototype-specific details, can motor with fly-wheels, and RP-25 contour nickel-silver wheels. Direct-current model with 21-pin plug for Digital Command Control decoder, \$199.95; with dual-mode ESU LokSound Select sound decoder, \$299.95. Executive Line. Bowser Manufacturing Co. Inc., 570-368-2379, bowser-trains.com



• **ScaleTrains.com General Electric ES44AC diesel locomotive.** Based on Norfolk Southern 8000-series specifications with JEM Communications Positive Train Control antenna farm; light-emitting-diode front, rear, and

Popp, Grivno celebrate 20 years with MR

Trains.com executive producer David Popp and group technical editor Cody Grivno are both celebrating 20 years with *Model Railroader* magazine.

David joined the staff in November 2001 as an associate editor, later becoming senior editor and managing editor. In 2013 he was named producer of *Model Railroader Video Plus*. He became executive producer of *Trains.com* in August 2019.

Cody hired on in June 2002 as an assistant editor. He was later promoted to associate editor and group technical editor. In addition to writing and editing articles, he's appeared in more than 500 videos. Cody is a popular clinician, presenting at National Model Railroad Association events at the divisional, regional, and national levels. He also photographs layouts for the magazine.

rectangle side walkway lights; front and rear ditch lights; and 22 factory-applied etched-metal see-through radiator intake and exhaust grills on sides and top of radiator. Paint scheme designed by Jesse Gahrng. Direct-current model with 21-pin connector, \$199.99; with dual-mode ESU LokSound 5 sound decoder with Full Throttle, dual cube-type speakers, and two PowerPack super capacitors, \$294.99. Winter 2022/2023 release. Rivet Counter line. ScaleTrains.com, 844-987-2467, scaletrains.com



• **Electro-Motive Division SW7 diesel locomotive.** Phase II body and cab: Detroit, Toledo & Ironton (orange and

black); Conrail (blue with "can opener" herald); Kansas City Southern (white with red lettering and yellow sill stripe); Pennsylvania RR (Dark Green Locomotive Enamel); and Seaboard Coast Line (black and yellow). Phase I body and cab: Chessie System with Chesapeake & Ohio reporting marks (blue, vermillion, and yellow) and Southern Ry. ("tuxedo" scheme). Four road numbers per scheme (two each in direct-current and Digital Command Control); also available undecorated (DC only). Prototype-specific details, factory-installed grab irons, light-emitting-diode headlights, and Proto-Max couplers. Direct-current with Next18 Digital Command Control decoder plug, \$149.98; with dual-mode ESU sound decoder, \$209.98. Walther's Mainline. Wm. K. Walther's, Inc. 414-527-0770, walther's.com

N scale



Great Northern standard 30 x 60-foot combination depot. This laser-cut wood kit is the latest offering from American Model Builders. The N scale depot (**\$59.95**) has three-ply birch plywood walls, soffit, roof, and platform; laser-scribed siding, wainscoting, and platform deck; peel-and-stick three-tab shingles; and a cast-resin chimney. The depot measures 4⁵/₈" x 2⁷/₈" x 1³/₄" (including roof overhang); with trackside platform, the depot measures 5¹/₂" wide x 3⁵/₈" deep. American Model Builders, 314-646-8588, laserkit.com

HO scale



National Steel Car barrel ore hoppers. These new models from Rapido Trains are in hobby shops now. The 35-foot barrel ore hopper is decorated for Canadian National (Mineral Brown and Scale Test Car [single car and three-pack]) and Ontario Northland (Progressive Green). The 42-foot car is painted for Canadian National (Mineral Brown) and Ontario Northland (Chevron scheme). Both body styles are also available undecorated. The HO scale ore hopper has a detailed underbody, 100-ton Barber S-2 trucks with metal wheels, see-through etched-metal end platforms, and factory-installed grab irons. The cars are priced at **\$59.95** (single car); **\$179.85** (three-pack); and **\$359.70** (six-pack). Rapido Trains, 905-474-3314, rapidotrains.com

HO scale freight cars



- **Milwaukee, Racine & Troy 41-foot gondola.** Injection-molded plastic kit (era: October 1943+) with two sprues of modeler-installed parts, solid-bearing trucks with plastic wheelsets, and Accumate knuckle couplers with modeler-installed trip pins. \$27.99. Produced by Accurail, available from the Kalmbach Hobby Store, KalmbachHobbyStore.com



- **Canadian 66-foot bulkhead flatcar.** Pre-production sample shown. BNSF Ry. (BC Rail patchout and Mineral Red schemes); British Columbia Ry. (green with BCOL and BCIT reporting marks); Canadian National (Mineral Brown with CN and CNIS reporting marks); Canadian Pacific (black and Action Red schemes); Iowa, Chicago & Eastern (British Columbia Ry. patchout); and Ontario Northland (yellow). Laser-cut wood deck, etched-metal bulkhead end sheets, and Barber S-2-c trucks. Single car, \$54.95; six-pack, \$329.70. Rapido Trains, 905-474-3314, rapidotrains.com

• 1921 American Railway Association 40-foot single-sheathed boxcar.

1923/1925 production: Chicago & North Western (Hutchins roof, Murphy 7/8 end, wood side doors, and AB or K brakes). 1927 production: C&NW and Chicago, St. Paul, Minneapolis & Omaha (Viking roof, 4/4 Dreadnaught end, Youngstown metal side doors, and AB or K brakes). Cast-resin kit with one-piece body, detail parts, Hi-Tech rubber air hoses, Yarmouth etched-bronze corner steps and eyebolts, and proprietary decals. Kit (less trucks or couplers), \$47; with Tahoe Model Works trucks (code 110 or code 88 wheelsets), \$54. Westerfield Models LLC, 303-658-9343, westerfieldmodels.com

HO scale passenger equipment



- **General Motors Diesel Division steam heater car.** Union Pacific; Ontario Northland; Canadian National; Atchison, Topeka & Santa Fe; Amtrak;

Auto Train; Algoma Central; Canadian Pacific; Denver & Rio Grande Western; Great Northern; Milwaukee Road; New York Central; Northern Pacific; and VIA Rail Canada. One to five numbers per scheme; also available undecorated. Dual-mode steam sounds with user-controlled volume and high-bass speaker, express trucks, working backup lights (controlled by magnetic wand), and Macdonald-Cartier metal couplers. \$79.95. Rapido Trains, 905-474-3314, rapidotrains.com

N scale locomotives



- **Electro-Motive Division GP7 and GP9 diesel locomotives.** New paint schemes. GP7: Chesapeake & Ohio (Phase II, blue and gold), New York Central (Phase I, black and gray), and Rock Island (Phase II with rooftop air tanks, black and red). GP9 (with rooftop air tanks): Toronto, Hamilton & Buffalo (maroon and cream) and Wabash (blue and gray). New road numbers. GP7: Atchison, Topeka & Santa Fe (Phase I with rooftop air tanks, pinstripe scheme) and Erie Lackawanna (Phase II with rooftop air tanks, gray and maroon). GP9: Grand Trunk Western (with rooftop air tanks, black, red, and white); New, York, New Haven & Hartford (black, orange, and white); and Southern Pacific (with rooftop air tanks, gray and scarlet). Two numbers per scheme. Low-friction drive with dual brass flywheels; golden-white light-emitting-diodes; and Accumate couplers. Direct-current model with factory-installed speaker, \$139.95; with dual-mode ESU sound decoder, \$249.95. Fourth quarter 2022. Master Line. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

N scale freight cars



- **70-ton ore car.** New paint schemes: Great Northern (brown); Canadian National (brown with "wet noodle"

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HO scale



Pennsylvania RR class G38 ore car. Industry newcomer Oley Valley Railcars offers this ready-to-run freight car. The HO scale ore car is decorated for Pennsylvania RR and Conrail in multiple road numbers per scheme. The assembled, painted, and decaled model has a 3-D printed body and under-frame, Kadee couplers, and Crown Cast Trucks (Pennsylvania RR only). The pricing structure is **\$36** (single car), **\$140** (four-pack), and **\$400** (12-pack). Oley Valley Railcars, ovrailcar.com

herald); Canadian Pacific (black with "CP Rail" lettering); Duluth, Missabe & Iron Range (brown with conspicuity stripes); Milwaukee Road (brown with "Chicago, Milwaukee, St. Paul & Pacific" lettering); and Union Pacific (silver with red lettering). Three road numbers per scheme; also available undecorated.

Solid- or roller-bearing trucks as appropriate, plastic wheelsets, and Accumate couplers. \$18.95 (undecorated, \$14.95). Trainman series. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

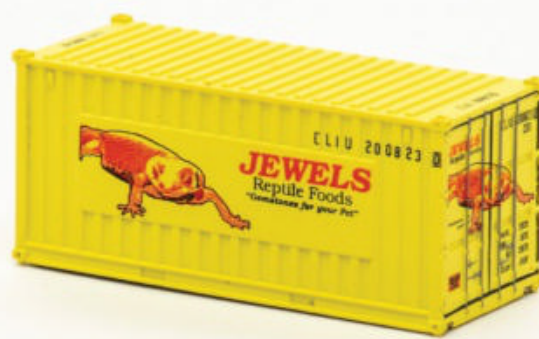
- **FMC 50-foot combination-door boxcar.** Burlington Northern (Cascade Green herald over three lines scheme); Minnesota, Dakota & Western (white and green); Railbox (early, late, and Primed for Grime late); and Missouri Pacific (brown). Three road numbers per scheme. Screw-mounted roller-bearing trucks, machined metal wheels, and body-mounted McHenry scale couplers. \$29.99 (Primed for Grime, \$34.99). March 2023. Athearn N. Athearn Trains, 800-338-4639, athearn.com



- **Milwaukee, Racine & Troy 50-foot double-door boxcar.** One road number. Limited-run model (era: July 1976+) features injection-molded plastic body with positionable doors and factory-installed brake wheel; molded ladders and grab irons; die-cast metal underbody;

and body-mounted Magne-Matic couplers. \$39.98. Produced by Micro-Trains Line Co., available exclusively from the Kalmbach Hobby Store, KalmbachHobbyStore.com

N scale details and accessories



- **Jewels Reptile Foods 20-foot standard-height intermodal container with sign sides.** Injection-molded plastic with inter-box connecting pins at scale ISO locations and JTC magnetic connecting system. \$16.95. Visionary Series. Jacksonville Terminal Co., jtcmodeltrains.com

Z scale locomotives



- **Electro-Motive Division SW1500 diesel locomotive.** New paint scheme: Union Pacific (Armour Yellow and Harbor Mist Gray). Three road numbers.

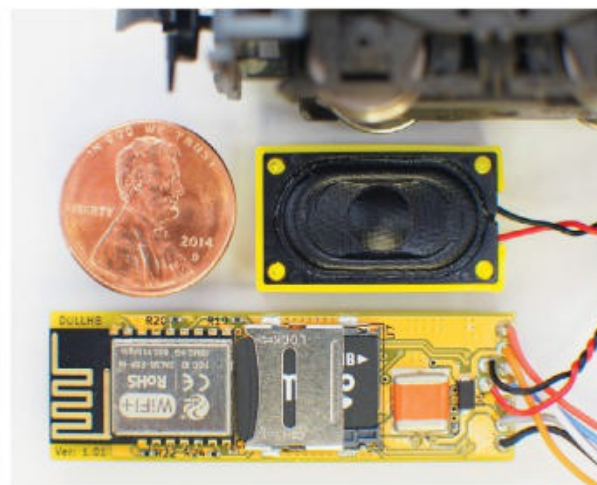
Club offerings



- **Toledo, Walhonding Valley & Ohio 50th anniversary 50-foot single-door boxcar.** Accurail HO scale kit decorated for the Associated Model Railroad Engineers of Coshocton. Two road numbers. Decal number jumble included. \$20 each (two or more cars, \$17.50 each). \$10 shipping regardless of quantity ordered. Send check or money order to Richard Jones, 214 S. 18th St., Coshocton, OH 43812.

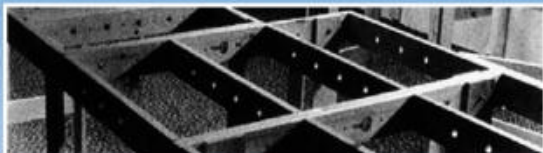
Prototype-specific details, traction tires, blackened-metal wheels, directional light-emitting-diode headlights, and AutoLatch couplers. Includes adapters for replacing AutoLatch couplers with Micro-Trains no. 905 Magne-Matic short-shank body-mount couplers. American Z Line, 614-764-1703, americanzline.com

Electronics/controls



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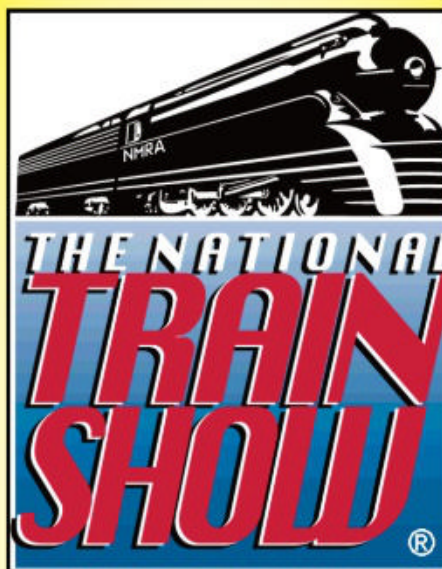
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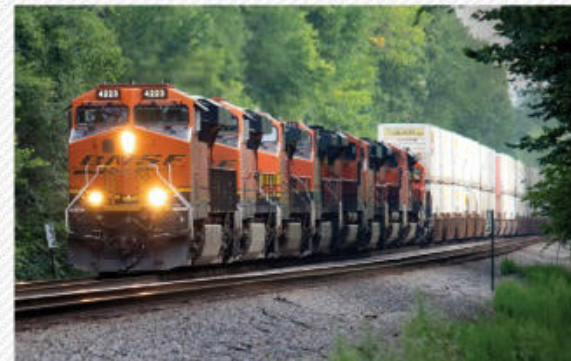
Conducted by Steven Otte

Diesels dead in tow

There are a lot of rules in railroad-ing, like how many powered axles are allowed on the head end of a train. There are other rules that deal with how often locomotives need to be serviced and inspected. There's a good chance the trailing locomotives in the consist pictured on page 60 of the February 2022 issue ("It's Prototypical") may be heading to one of the railroad's diesel shops for scheduled inspection and maintenance.

Those locomotives must be moved "dead in tow" to the maintenance facility for their mandated inspection and maintenance. The locomotives would then be moved back to their home yard or "outlying point" dead in tow when maintenance is done.

This gives model railroaders the opportunity to place four-axle local power or yard switchers in a road consist. As model railroaders, we



Reader Richard Shirey suggests another reason a seeming excess of diesel power might be seen on the head end of mainline trains, as shown in February's "It's Prototypical." Carl Swanson photo

can't move our model locomotives "dead in tow." But we can simulate this, if the locomotives are DCC-equipped, by turning off the sound and lights when the locomotive is added to the consist.

Richard Shirey, Baden, Pa.

Gas Turbine Encabulator fans

Thanks for the news on the Gas Turbine Encabulator ["Scientists discover new detail part," April 2022, page 15]. I'm an old *Road & Track* reader, and I've missed their April Fool's road tests for many years.

Paul Hauptly, Seneca, S.C.

A sure sign of spring was the April issue proudly featuring the Gas Turbine Encabulator on page 15 (yup, gotcha). Seriously, will someone please 3-D print these? I think it would be a great addition for my modified diesels that are equipped with hexagonal wheels to enhance tractive force. Good one, gang!

Morgan S. Long

I loved the bit on page 15 of the April MR regarding the "discovery" of the Gas Turbine Encabulator. It really took me back to reading MR in the days of my adolescence and my in-print pals such as Ray L. Rhodes and Gonpher Coughie.

It's great to see an occasional touch of goofiness return to the model railroad press. I take modeling seriously, but I think it's important to remember that we are, after all, a bunch of (mostly) grown-up people playing with trains!

Ted Waterhouse, San Luis Obispo, Calif.

Corrections

The photographs illustrating David Arrell's article "Modeling street life and streetcars" in our March issue were taken by Lou Sassi.

Also in the March issue, we incorrectly credited the construction of the downtown buildings on our State Line Route project railroad. The structure attributed to Steve Brown was built by Seth Puffer. Steve built another structure elsewhere on the layout.

The short-lived Auto-Train route to Louisville, Ky., mentioned in April's "Ask MR" answer connected Louisville to Sanford, Fla., not Lorton, Va.

We regret the errors. **MR**

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

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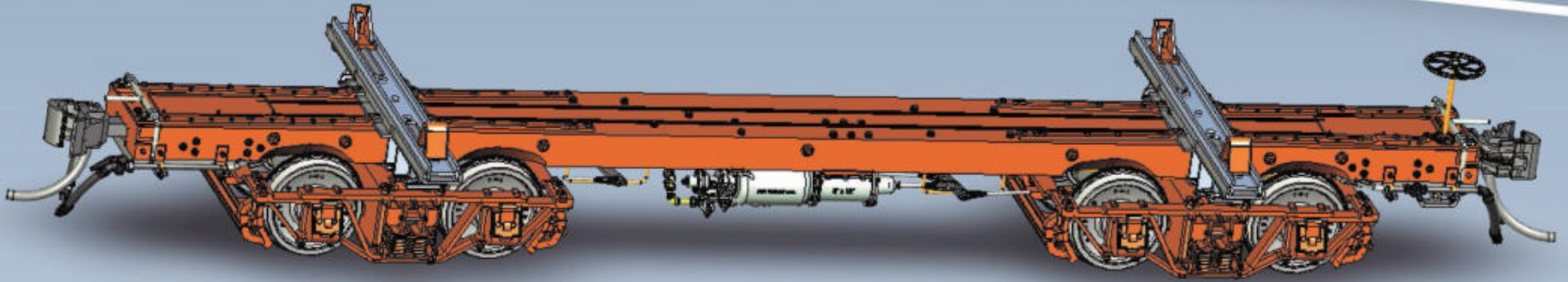


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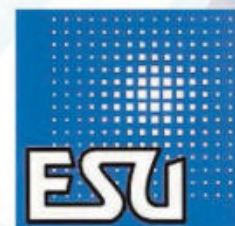
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We will announce further details as the project progresses.





Pacemaker Freight Service was the New York Central RR's name for its less-than-carload-lot (LCL) freight service. The railroad's fleet of distinctive red-and-gray LCL boxcars were kept in captive service on home rails. J. David Ingles collection

What roads had merchandise service cars?

Q I model the Missouri Pacific and am familiar with its fleet of dedicated Eagle Merchandise Service boxcars. These cars were not to be used in interchange service and remained on home tracks. How many other railroads had a similar service, and what were they called?

Carl Storms

A While relatively few railroads had fleets of captive-service boxcars decorated for the purpose like MoPac did, virtually all common-carrier railroads had their own version of less-than-carload-lot (LCL) service. Also called merchandise, package, and break-bulk freight, LCL service would ship small consignments – anything from a single case of breakfast cereal to a keg of nails to industrial equipment weighing several tons – via a network of depots, freight houses, and transfer terminals.

Such small shipments required a lot of personnel and handling, and merchandise cars often ran less than half full. But these parcels were billed at a much higher rate than carload freight, which meant that LCL was often an appreciable profit center for the railroads.

Merchandise freight operated on a hub-and-spoke system much like modern-day parcel services such as UPS and FedEx. Consignments would be collected at the local freight house or combination depot. From there, the daily local freight would pick them up along with parcels from other depots along its route and take them to the nearest large transfer depot. There, the boxcars would be offloaded and the parcels sorted for their destinations. They were then bundled up and sent off to the transfer house closest to the destination. There, the bundles would be broken down, sorted again, and shipped out on the daily local to be dropped at the freight house, depot, or team track closest to the destination.

Many railroads outfitted certain boxcars with special fastenings inside to secure the smaller parcels and containers. These cars were lettered for merchandise service and kept on home rails. A few larger railroads, like the MoPac with its Eagle Merchandise Service, came up with names and paint schemes to advertise their LCL service. Among those were New York Central with its Pacemaker service, Baltimore & Ohio's Timesaver, and Southern Pacific's Overnight service. Pennsylvania RR simply called its Merchandise Service, but still gave their LCL cars an eye-catching paint job.

For more information about LCL operations, check out Jeff Wilson's book *Express, Mail & Merchandise Service*, which is available at the Kalmbach Hobby Store.

Q I have re-entered the hobby after many years. My layout will be in a spare bedroom. As I plan my layout, I've seen various materials discussed for layout scenery, such as old newsprint, paper towels, foam board, screen, etc. I've not seen any mention of the concern for fire spread potential. Is this a concern for model railroaders? If so, what are the best practices?

George Brooks, Mount Vernon, Wash.

A Unfortunately, most of the materials we use to build model train layouts these days – lumber, extruded-foam insulation board, cork, Homasote, stripwood, ground foam, dried plant material – are flammable. I'm afraid there's not a whole lot that can be done about that, either, as the days of dyed asbestos ground cover are rightfully behind us.

However, I can't imagine that a model railroad is any more of a fire hazard than an equivalent mass of living-room furniture. And we can take some reassurance in the fact that today's model railroad electronics, including sensitive circuit breakers, make the risk of electrical ignition unlikely.

As long as we follow sensible precautions – build our layouts to follow current electrical codes, give a wide berth to heat sources like furnaces and water heaters, design aisles to allow safe and easy exit in emergencies, install emergency lighting, mount a fire extinguisher nearby, and shut down the power when unattended – we can rest easy.

Q How can N scale track that's already anchored to a layout be cut for block separation? What are the pros and cons of any methods suggested?

Pete Testa

A Track that's already fixed to a layout has to be cut very carefully to avoid pulling the rails out of the delicate plastic spike heads that hold it to the ties. With N scale, that's even more important. Don't use your rail nippers here; they'll leave a pointed end on one side of the cut and might displace the rails enough to cause them to pop out of gauge. I wouldn't recommend using a cutting disk in a motor tool either. Since the body of the tool is wider than the cutting disk, it's impossible to cut the rails

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



When cutting rails on track that's already glued to your subroadbed, use a fine-toothed razor saw and use light strokes to avoid wrenching the rails out of the ties. Jerry Dziedzic photo

straight up and down. Plus, it's easy for the tool to jump off course and cut more than you wanted. Instead, use a fine-toothed razor saw.

Choose a place for your gap where the track is straight, if possible. On a curve, the cut ends might try to straighten out, causing a kink at the gap. Hold the rails down firmly; you might even consider

adding rail spikes on either side of the gap. Draw the blade across the rails lightly and smoothly, letting the teeth do the work. You don't want the teeth to snag the rails and "roll" them out of the spike heads.

Once you've made your gap, cut a small square of styrene to fit the gap and use cyanoacrylate adhesive to glue it in place. After the glue is cured, use a hobby knife, jeweler's files, and sanding sticks to trim the styrene to match the rail profile. Now you've got an electrical gap, but solid rails, guaranteeing your rolling stock will cross the gap smoothly.

Q I have an HO freelance layout set in the late '70s, so my trains still use cabooses. I'm adding a mountainous section with helper service. Where would the pusher engine be placed? Is it proper to push the caboose, or should it be cut in before the caboose?

Byron Smith, Fournier, Ont.

A Unless they were converted from an old boxcar or the like, cabooses are

Reader tip

Get up your courage and venture into the beauty section of the drug-store. Tell them that you need to trim your manly calluses and ask for an "Emjoi Micro Pedi." When you get past the embarrassment, you now have a battery-powered drum sander with 1½" diameter x 1⅝" drums in a variety of grits and enough power to seriously sand model materials. And if you slip when using it, you don't cut yourself, you just improve your manicure! – *Will Schmidt*

generally not built on a frame capable of withstanding being pushed between a helper engine and a heavy train. As such, when a helper is to be tacked onto the end of a freight, the caboose is typically cut off and coupled onto the end of the train, behind the pusher.

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Q While browsing a railcar photo site, I came across an interesting Burlington Northern car. The photo's caption calls it an "air repeater car." What is its purpose? Where is it mainly used?

Tom Huffman, Fort Worth, Texas

A An air repeater car is used to keep up the pressure in brake air lines in very cold weather, when the temperature can cause metal brake line couplings to shrink and rubber air hoses and gaskets to become brittle, all of which lead to air leaks. As trains got longer in the 1960s, it wasn't possible to keep up with the leaks. Enter the air repeater car.

Great Northern converted a 40-foot boxcar into its first air repeater car, Air Car 3, in 1964, and two more in 1969. The cars contain a diesel motor, a fuel tank, an air compressor, and a thermostat that would automatically turn the system on when the temperature got low enough. The cars were stationed along the Hi Line, the former Great Northern line through Minnesota, North Dakota, and Montana.



Burlington Northern car BNH 4, seen at Grand Forks, N.D., in 1996, was built in 1955 as Great Northern boxcar no. 5158. It was converted to an air repeater car in 1971. Note the manway door and stirrup step on the side and the twin indicator beacons on the roof. Cody Grivno photo

The cars were a success, and BN built a total of 30 over the next 17 years, all converted from various retired boxcars. In addition to the "Air Repeater Car" stenciled on their sides, they were also identifiable by the manway door and stirrup step installed in the side and the indicator beacon on the roof. (The beacon was there to let the train crew know when the compressor was running.) All

were painted Cascade Green and white. Other railroads, such as Canadian National, Canadian Pacific, and Southern Pacific, built their own versions. You can see a picture of a contemporary CN version (called a "Distributed Braking Car") in the November 2021 "Ask MR" and read more about them on Trains.com by searching for "Cody's Trackside Finds." **MR**

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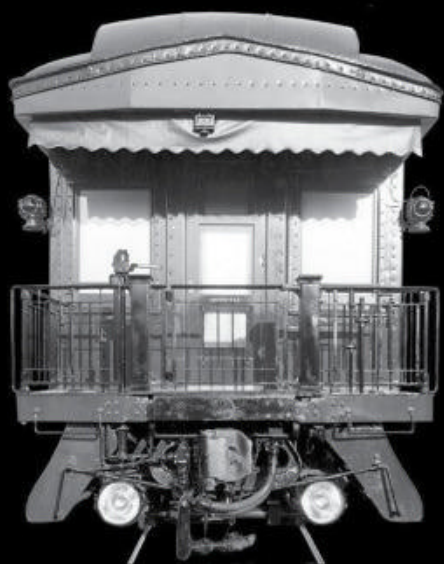
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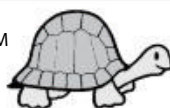
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Amtrak train No. 339 arrives for a station stop at Williams Bay, Wis. Cody Grivno and David Popp teamed up to detail this station scene on the N scale Milwaukee, Racine & Troy State Line Route. Cody Grivno photo

Detailing a station scene

Station scenes are almost always an attention getter on model railroads. Why? Because there's so much to take in. The station itself, passenger equipment, vehicles, figures, and more. Often times they're placed prominently on a layout, as was the case with the Williams Bay, Wis., station on our N scale Milwaukee, Racine & Troy State Line Route.

Production editor Rene Schweitzer built the Walther's Clarksville Depot kit early in the layout construction process. As work on the model railroad was winding down, Trains.com's David Popp and I came in to make the station the focal point of a detailed scene. Signs and lights on the building, an extended platform with passengers, and a parking lot with vehicles give visitors and operators plenty of things to look at. Oh, and there are Amtrak passenger trains and Myrt freights to watch.

In a small-town scene like Williams Bay, less is more. Three simple platform lights, a half-dozen figures, and a modest parking lot with a few vehicles looks right for a station of this size. Much

more than this and the scene would look cluttered, ruining the effect.

If you're looking to add an attention-getting location to your model railroad, consider a station scene. As you'll see in the following six steps, they're fun to build and they help draw visitors and operators into your layout.



Watch it on Trains.com!

Trains.com and Model Railroader Video Plus members can watch Cody Grivno and David Popp detail the Williams Bay station scene from start to finish.

STEP 1 STATION SIGNS



To identify the Williams Bay depot as an Amtrak stop, David designed 1980s-style station signs using Adobe Photoshop. David attached the signs, printed on a color laser printer, to oversized strips of .030" plain black styrene with Testor's Clear Parts Cement & Window Maker **1**.

After trimming off the excess styrene, David attached the finished signs to the building with the same clear parts cement **2**.

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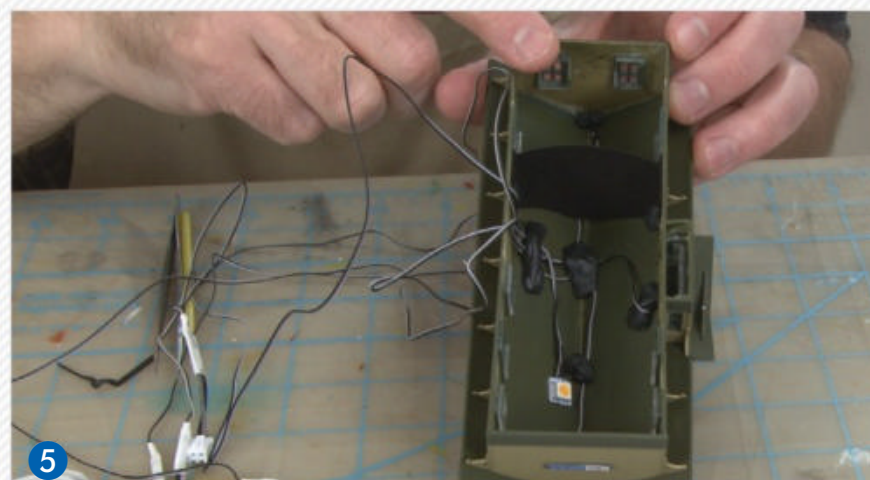
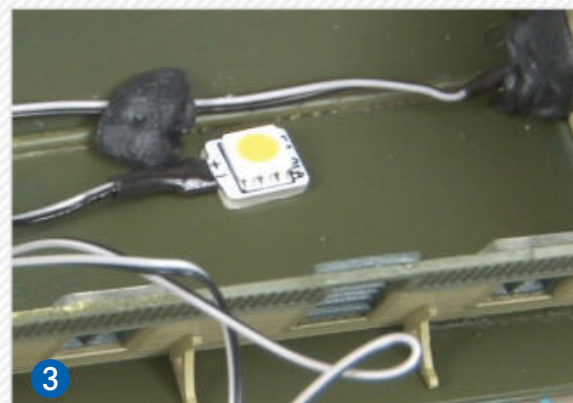
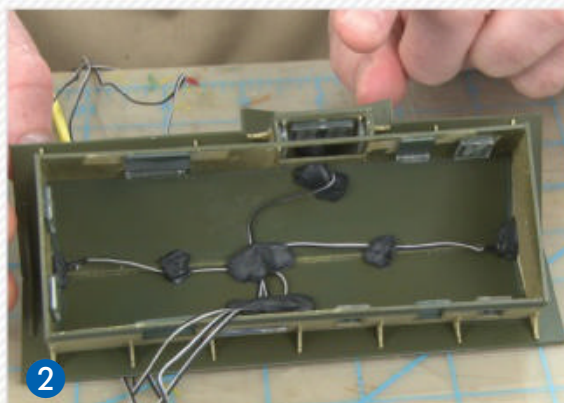
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STEP 2 LIGHTS INSIDE AND OUT



David turned to Woodland Scenics Just Plug light-emitting diode (LED) warm white nano lights (JP5743) to illuminate the station signs. He used a pushpin to make drill-starter points on the building's interior. Then he used a no. 53 bit in a pin vise to make the holes on each end of the station and above the operator's bay ①.

Next, David set the nano lights into the holes. The yellow LED should face down toward the signs. David used Woodland Scenics light blocking ribbon putty, included in kit JP5716, to hold the wires in place ②. The material stays tacky, allowing for easy repositioning if necessary.

To give the waiting room area a lived-in look, David added a Woodland Scenics LED Stick-On Light (JP5740) to

the interior. The LED has a peel-and-stick adhesive on the back. After removing the protective foil, David pressed the LED onto the bottom of the roof, ③, and used the existing putty to secure the leads.

Since there were wires for four separate LEDs coming out of the bottom of the depot, David elected to install a Just Plug Port Sharing Device (JP5681) under the layout ④. For more information on installing the Just Plug lighting system, check out the March 2022 issue.

Before placing the depot back on the layout, David installed a black cardstock view block ⑤. This prevents the light from the waiting room from spilling into the baggage area.

STEP 3 GROUND WORK



Next, I came in to extend the cork under the platform another three inches. To make room for the cork, I had to remove the existing scenery by wetting it with water and scraping it off with a putty knife ①.

To attach the cork to the plywood, I used DAP Alex Plus all-purpose acrylic latex caulk. After I'd applied a bead of the material, I used a putty knife to spread the caulk into a

thin layer. I pressed the cork into place by hand ②. David later feathered in the edges with drywall joint compound.

The cork extension for the platform meant I had to modify the .030" plain styrene sheet I'd cut earlier. The styrene will serve as the parking lot and base for the platform extensions. The track bows away from the platform slightly, so I had to cut the extension at a slight angle ③.

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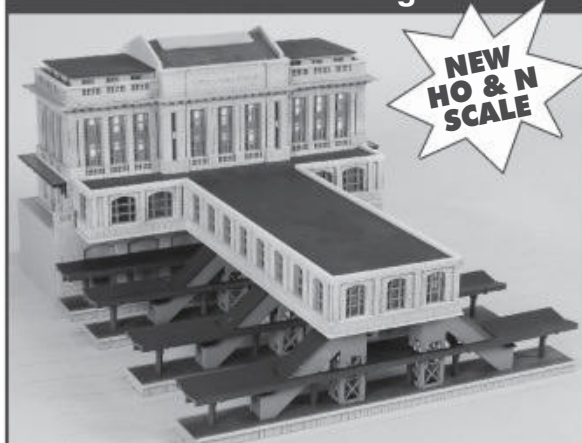
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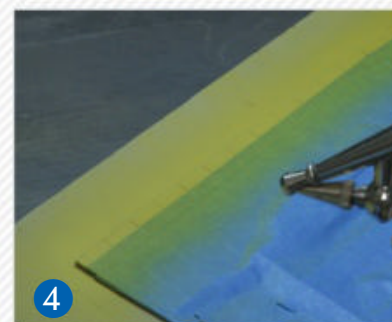
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STEP 4 EXTENDING THE PLATFORM



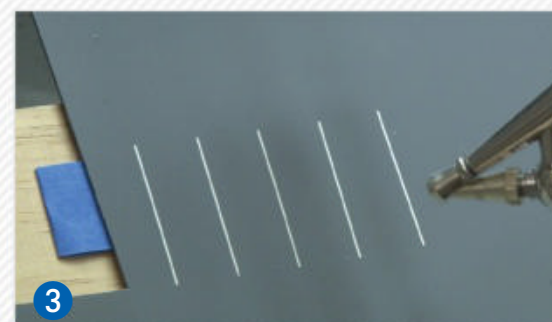
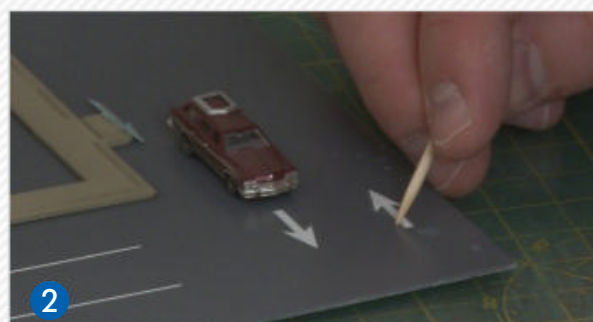
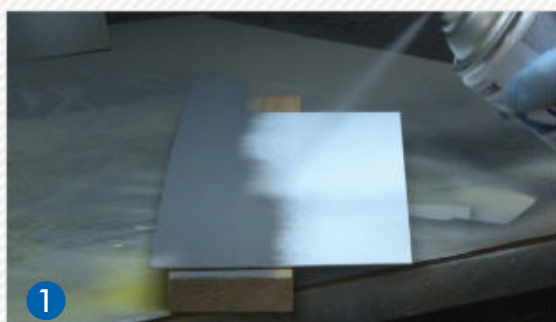
I grafted .030" plain styrene platform extensions onto the baseplate with plastic solvent cement. After the glue had dried, I added control joints to the styrene with a Flex-I-File ultra fine needle point scriber (Kalmbach Hobby Store no. 84165) ①.

The needle on the scribing tool leaves small ridges in the styrene. I used a scuff pad to remove them ②.

I spray-painted the platform with Rust-Oleum Khaki (no. 1917830) from the firm's Camouflage line ③. Use the paint in a well-ventilated area.

After the paint dried, I masked all but the front scale 2 feet of the platform with blue painter's tape. I air-brushed the uncovered surface with Vallejo Model Air IJA Chrome Yellow (no. 71.135) ④.

STEP 5 PARKING LOT



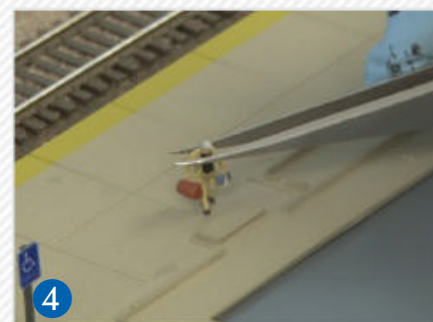
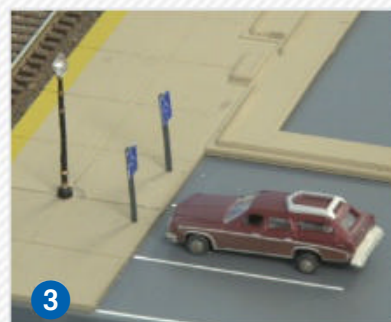
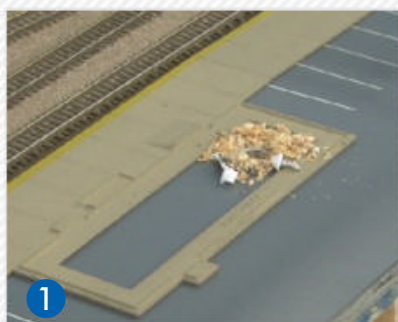
I spray-painted the parking lot with Rust-Oleum Painter's Touch 2X Flat Gray Primer (no. 249088) ①. After the paint dried thoroughly, I applied a clear gloss finish since I'd be adding parking stripe decals later on.

I decaled the lot with Summit USA's modern road markings, stripes, arrows, and railroad crossings (no. RSD-003). For the parking stall stripes I cut the white lines into 1½"

lengths. Each stall is ¾" wide. I also added directional arrows where the lot meets the street ②.

To tone down the gloss finish, David sprayed the lot with Testor's Dullcote. Then I used an airbrush to weather the lot with Vallejo Model Air IJN Ash Gray (no. 71.311) and Dark Gray Blue (71.054) ③. I thinned both colors to a wash with Vallejo's airbrush thinner.

STEP 6 INSTALLATION TIME



Before attaching the parking lot, David drilled a hole for the light leads ①. Then I used acrylic caulk, spread into a thin layer, to attach the lot to the cork. I ran a wallpaper roller over the lot to knock down any high spots ②. I used the same methods for the platform and station base.

Next, I worked on the platform. I installed Woodland Scenics Lamp Post street lights (JP5641) with a 1/16" bit. The

handicap parking signs (Blair Line no. 046) were set in 1/8" from the back edge of the platform. I used a no. 61 bit in a pin vise to make the holes ③.

Finally, we added some Preiser figures to the platform. Before installation, I sanded the bottom of the feet on the figures so they'd stand upright. I secured the figures with Testor's Clear Parts Cement ④. **MR**

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Clearance markers made from inexpensive styrene shapes solve a common model railroad issue by providing visual confirmation to crews on James McNab's HO Hills Line that equipment on sidings and spurs is in the clear. Inset photo: Prototype clearance markers, like these in use on the Iowa Interstate, use a combination of highly-visible materials to alert crew members of the clearance point.

Modeling modern CLEARANCE MARKERS

Prototype practices solve a common model railroad issue

By **James McNab** • Photos by the author

It's an all-too regular occurrence on an operating model railroad. A train will set out a car on a spur or siding without checking to see if they have enough room to do so. This is followed by the sound of plastic hitting plastic as a passing locomotive on the main sideswipes the car. The embarrassed operator sheepishly notifies the layout owner, who removes the damaged car to the workbench for repair.

To prevent similar accidents I needed a way for operators on The Hills Line, my HO scale layout depicting the Iowa Interstate's Hills Industrial Spur, to know if a car or train was in the clear. I turned to the prototype for answers.

A real-world solution

There are several variations of clearance markers currently in use on rail

lines around the country. Iowa Interstate markers are a combination of reflectors and painted indicators. Spurs and sidings have small metal L-angles covered in reflective material and placed on a tie both between and outside the rails. The sides of the rails are also painted yellow to visually reinforce the clearance point.

The markers are used in other areas along the right-of-way to indicate an area where no car or locomotive should



James tested a variety of freight cars to determine the best placement of the markers on each spur and siding. Enough space is needed to clear a crew member riding on both sides of the car without being struck.

intrude. This includes derails, industrial gates and fences, or any place that the track could be obstructed. The final result is an increased level of safety for the crew at a minimal cost.

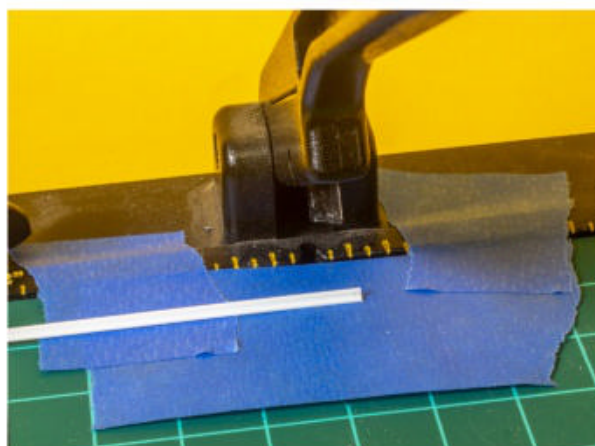
Inexpensive options

All I needed to make my model clearance markers was a package of styrene L-angles and some yellow acrylic paint. One package of styrene shapes was enough to cover my entire layout with material left over.

I first measured the distance between the rails to make sure the angles would not interfere with a car's wheels when placed between the track. I took that measurement and divided it in half to give me my final length for the inner marker, both as added insurance against possible derailment and to provide a better representation of the prototype's size and placement. I set up my NorthWest Short Line Chopper to mass produce the angles at a consistent length for use across the layout.

Then I measured the length of the tie outside of the rail, making sure to allow space for the tie plate, to get the proper size for the two outer markers. I reset the spacing block on my Chopper and cut additional lengths of styrene. I used small pieces of painter's tape, sticky side up, to hold the pieces while cutting so that they didn't fly off my workbench.

I applied inexpensive acrylic yellow craft paint to the cut styrene angles using a Microbrush and set them aside to dry. I chose a slightly pale color of



Making clearance markers is a straightforward project. James used L-shaped styrene strips from Plastruct, which he cut to length using a NorthWest Short Line Chopper. One strip is enough to complete nearly 10 turnouts. Blue painter's tape, sticky side up, keeps the parts from flying away.

yellow so that the markers would be visible for operators but not look too cartoonish when placed on the layout. The markers are meant to be noticed, so I did not weather or otherwise dull the pieces.

In the clear

Markers on the prototype are generally placed on the diverging leg of a turnout beyond the frog, but not on the point side of the turnout. Markers can also be found on the normal leg of a turnout as conditions warrant.

I marked the point closest to the frog where a car could safely be spotted on the spur or siding and temporarily placed a marker between the ties. I ran several cars back and forth to make sure the angled styrene pieces wouldn't interfere with the wheels while also making sure that the car was truly in the clear. Once satisfied, I attached the markers to the ties using gel-type CA.

My final step was painting the sides of the rails the same yellow as the



After painting the markers with a Microbrush and gluing them in place, James masked the rails at the clearance point with blue painter's tape and painted them with the same yellow craft paint used on the markers. After it dried, he used a track cleaning block to remove any paint from the railhead.

markers. I used tape to mask off a small square on either side of the rails the same width as one tie. Though I did paint both sides of both rails, I made sure to keep the paint off the rail heads. I ran an abrasive track cleaning block over each spot after the paint was dry to finish the project.

Helping your crews

Adding the clearance markers was a quick and simple project. My crews now have another piece of information to allow them to do their jobs safely and efficiently, just as crews do on the real Iowa Interstate. There's no longer any question about whether a car is in the right place when spotted on a spur. **MR**

James McNab is an award-winning producer and video editor with more than 600 production credits to his name. He served as a Contributing Editor for Model Railroader Video Plus, producing and hosting The Hills Line with James McNab.

Revisiting SOUTH STRONG

Over the years, while reading through my stack of hardcover books on the Sandy River & Rangeley Lakes RR, I would come across a photograph of South Strong Station taken by Newell Martin during the abandonment of the line in 1936. The photo depicts an empty main line with the small “flag-stop” station to the right of it, along with combine no. 15, which was purchased by a Mr. Jewett (a local farmer) and placed on the siding next to the building.

On the left in the photo are two apple trees, a snow fence, and dirt access road leading into a farm field. To the right of the farm road is a barbed wire fence extending into the distance along the main line. Maine Route 149, at the time a dirt road, crosses the railroad in the foreground and continues up the hill to the right. (Upon closer examination it looks as though the highway department has recently spread fresh sand over the surface of the road.) There’s a small wood building beyond the siding that

Jerry DeVos refers to as a “railroad maintenance building” in volume 1 of his book series *The Sandy River & Rangeley Lakes Railroad & Predecessors* (Stonybrook Press, 2007).

I found that photo, along with another taken by Newell, on page 176 of Jerry’s book. In the second photo, seen below, engine no. 18, with a scrap train, is stopped in front of the station while engineer Dana Aldrich kibitzes with Linn Moody and the scrap crew removes rail from the siding. You can see the



Sandy River & Rangeley Lakes engine no. 18, with a scrap train, is stopped in front of the station while engineer Dana Aldrich is kibitzing with Linn Moody. You can see the trucks from no. 15 sitting next to the first flatcar of the scrap train. Newell Martin photo



Build a model inspired by a photograph

By Lou Sassi

Photos by the author unless noted

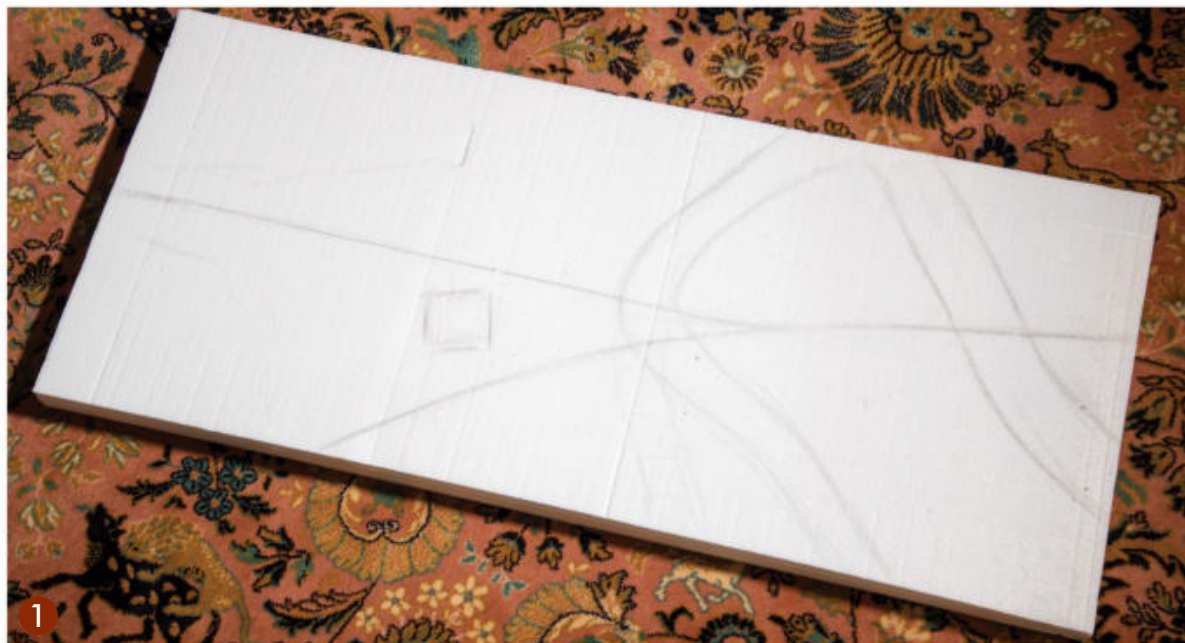
trucks from no. 15 sitting next to the first flatcar of the scrap train.

These photos intrigued me so much that in 2011, when *Model Railroader* editor Neil Besougloff asked me to prepare a clinic for a get-together at the MR offices, I decided to re-create South Strong in miniature. Since I was already modeling the SR&RL in On30, I had enough materials and equipment to build a module that would be a reasonable facsimile of the scene depicted in those photos.

Engine no. 15 rolls up to South Strong Depot on a summer afternoon in 1935. Lou Sassi built this On30 diorama for a clinic at the *Model Railroader* offices, inspired by photos in vol. 1 of Jerry DeVos's book series *The Sandy River & Rangeley Lakes Railroad & Predecessors*.



PLANNING AND TRACK LAYING



My wife, Cheryl, helped me construct the module. She also made the trees and brush for the project. We started by laminating two 1'-6" x 3'-0" sheets of 2" thick extruded-foam insulation board, just as I had on our railroad (see *Model Railroad Planning 2015* and *Great Model Railroads 2020*). I sketched the approximate centerline of the track directly onto the foam with a Woodland Scenics foam pencil ①.

Using white glue, Cheryl glued down 1/8" thick strips of Homabed diagonally across the scene for the mainline track and a tangent stretch where I planned to put the abandoned switch and siding next to South Strong Station ②. She pinned each section of roadbed in place with Woodland Scenics foam nails until the glue dried.

After spray-painting a length of code 83 Micro Engineering flextrack with Dupli-Color red primer, cleaning off the rail heads with a soft cloth dipped in paint thinner, and brush-painting the rails Model Master acrylic Roof Brown ③, Cheryl stained the ties with a mix of 2 teaspoons India ink to 1 pint 91 percent rubbing alcohol ④. The track was again cleaned, this time with a soft cloth dipped in tap water followed by a couple quick swipes with an abrasive track cleaner.



We glued the track onto the mainline roadbed using full-strength white glue applied to every other tie, and pinned it down with foam nails until the glue dried **5**. We also added a short length of code 70 track next to the station upon which we would place a combine similar to no. 15. I removed ties from another length of flextrack and trimmed off the cast-on spikes. I painted the ties with the red primer and glued them down individually, extending from the main to the siding where the car would sit.

I cut progressively shorter ties with a NorthWest Short Line Chopper and added those to the sides of the mainline track to represent the abandoned turnout. Note in **6** that we also added a piece of Homabed as a base, along with two tie extensions on the opposite side of the main line, upon which the now-removed switch stand would have stood.

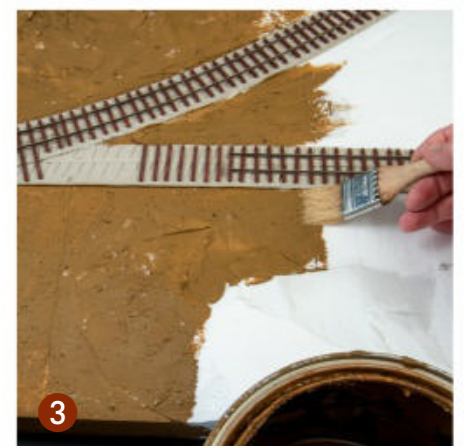


SCENERY CONTOURS AND BALLAST

Once the track and ties were in place, I glued down various thicknesses of foam, cutting them to shape with a Woodland Scenics hot knife **1** to replicate the undulations of the ground in the prototype photo.

After applying white glue to the underside of the panels **2**, I placed them in position and pinned them down with foam nails until the glue dried, then used foam putty to fill any voids and cracks. After the putty dried, I brush-painted everything Pittsburg Paints Tobacco Brown, my go-to earth color **3**.

I installed a wood crossing for the dirt road, but first ballasted the section of track it spanned **4**. I spread the ballast and wet it with full strength 91 percent rubbing alcohol. Then I applied a mix of 1 part white glue to 2 parts water **5**. I built the crossing using five 1/16" x 3/16" x 5" long strips of Northeastern Scale Lumber that I distressed with a razor saw, then stained with India ink and alcohol. I beveled the edges of the two planks that butted to the outside edge of the rail so they would clear the spikes. I glued the planks in place with Aleene's Tacky Glue, pinning them down with foam nails until the glue dried.



GROUND COVER



I used an artist's spatula to spread "Ground Goop" (see below), a concoction I've used as a ground cover base for years, about $\frac{1}{8}$ " thick onto the terrain. I then covered it with a blend of various textures of dirt that was run through a series of kitchen sieves ①. I spread all three textures of dirt along with some ground-up leaves onto the countryside, using only the finest texture dirt for the roads.

While the goop-covered dirt was still wet, I rolled a set of truck wheels along the road to replicate ruts in the surface ②. I re-moistened everything with "wet" water (tap water with a drop or two of dishwashing liquid added) and applied more fine dirt by sifting it onto the road surface through an extra-fine-mesh screen ③. I applied more medium-textured dirt along the edge of the road, ④, to help delineate the traveled surface of the road from the sides. Using a pump sprayer, all the sand was again lightly moistened with wet water and glued in place with an eye dropper filled with a mixture of 2 parts water to 1 part white glue ⑤.

After this dried for a day or two, I added field grass. I applied a mix of 1 part water to 3 parts white glue with a brush wherever I wanted the grass to adhere. I filled a Noch Gras-Master static grass applicator with a mix of static grasses. I stuck a small finishing nail into the surface being treated and clipped the Gras-Master lead to it. I then held the Gras-Master about 2" from the surface, shaking it slightly to disperse the static grass ⑥. Once I was satisfied with the amount of grass applied, I used a small vacuum with some fine mesh wrapped around the end of its hose to vacuum up the loose grass ⑦, occasionally turning it off and dumping the grass into a container to be reused later. Once the adhesive dried thoroughly, I ballasted the remaining right-of-way.

Behind the station location, I created an eroded hillside. I cut a steep slope into the layer of foam forming the hill, then spread goop over the surface of the top, sloping side, and bottom of the hill, adding an overhanging lip along the upper edge of the slope. After spreading coarse to medium sand along with a few leaves on all the horizontal ground surfaces, I used a folded piece of typing paper to blow fine sand onto the hillside. As I had done with all the ground cover, once all the dirt was applied, I re-wet the surfaces with a pump sprayer of "wet water" and dropped on a blend of 1 part white glue to 2 parts water. After letting all this dry for a couple days, I applied some more static grass.

Ground Goop

This is my recipe for Ground Goop.

- 1 part CelluClay
- 1 part Vermiculite
- 1 part Pittsburgh Paints Tobacco Brown paint
- $\frac{3}{4}$ part white glue
- A capful of Lysol concentrate

While blending this together in a plastic storage container with a paint stirrer, add tap water until the mix is about the consistency of natural peanut butter.

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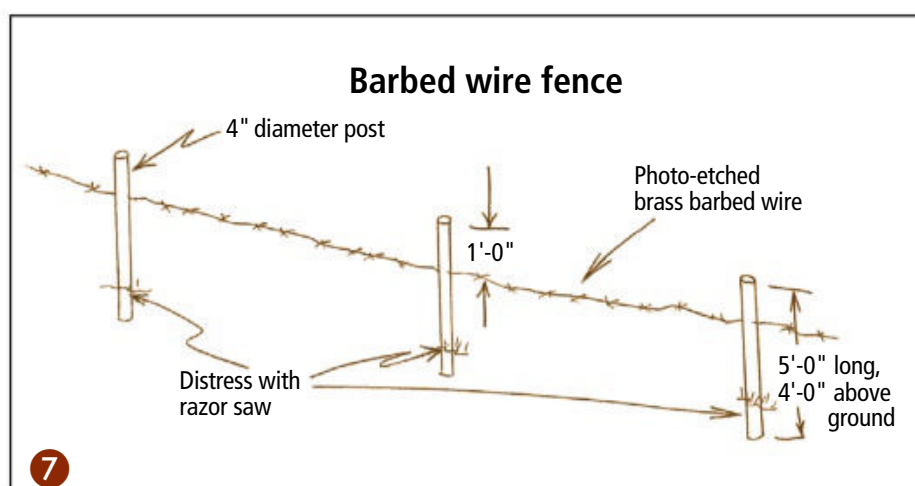
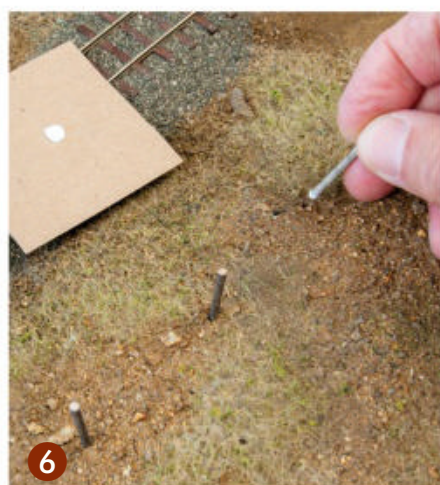
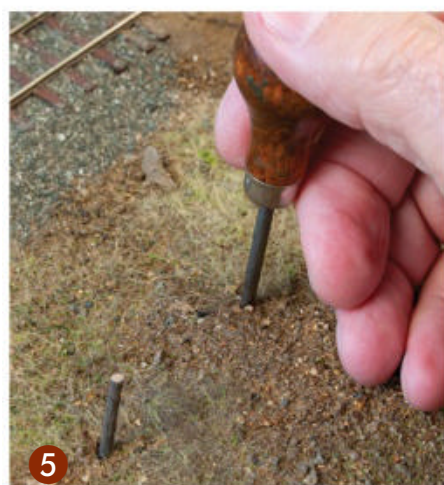
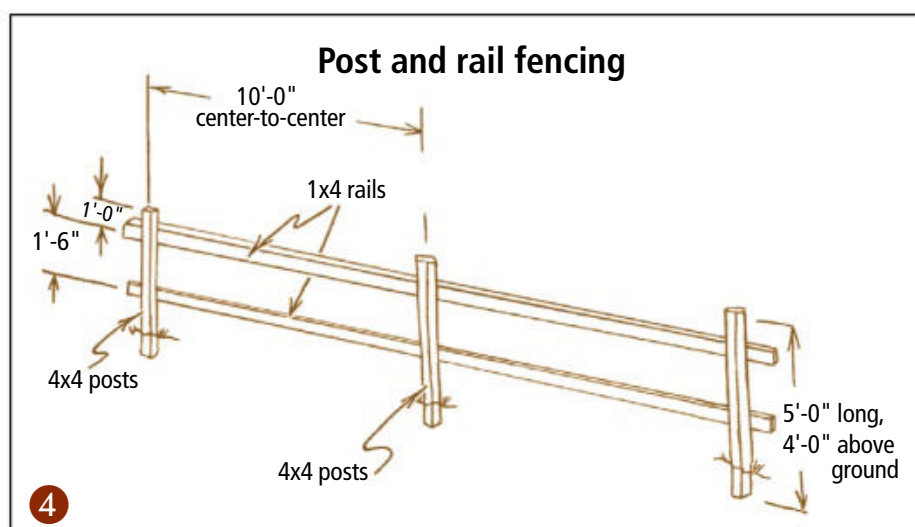
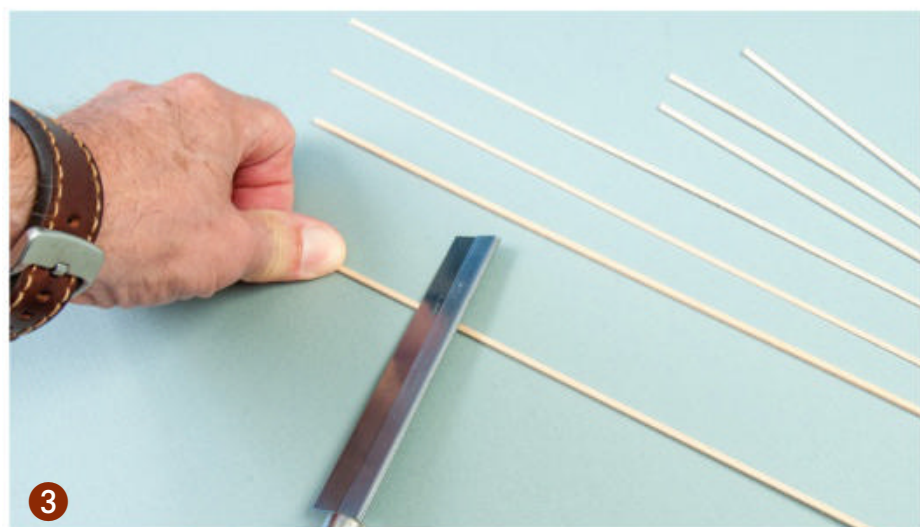
FENCES, BUILDINGS, AND TREES

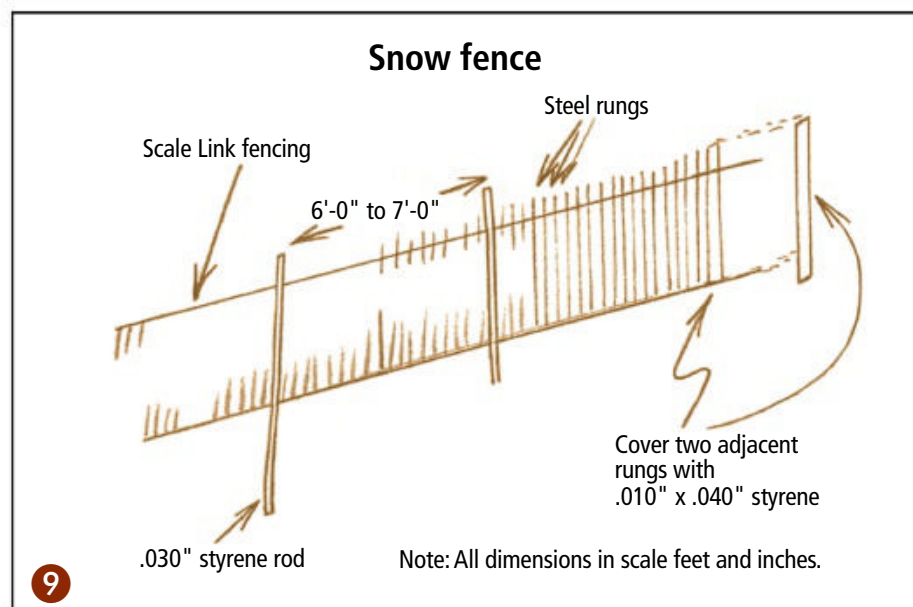
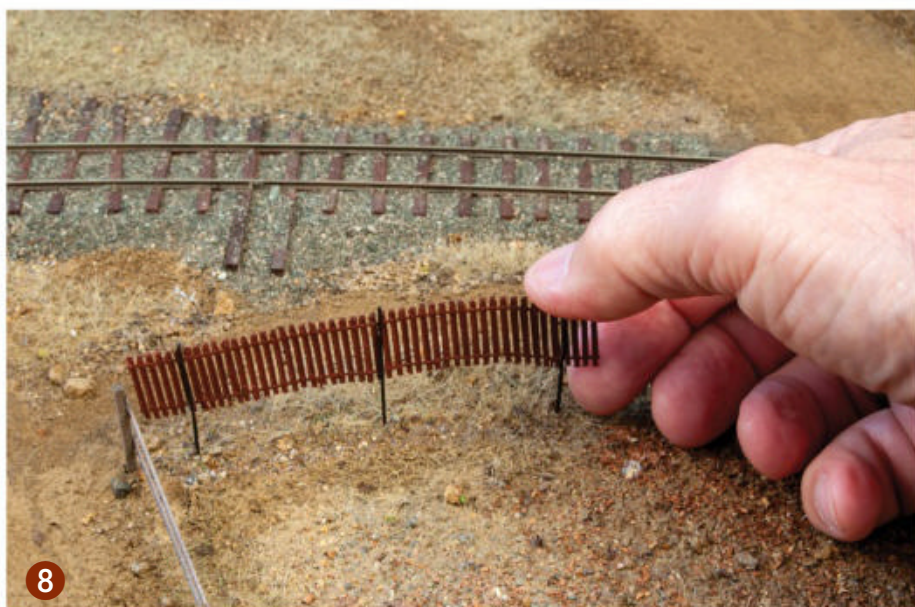
I **scratchbuilt the barbed wire**, post and rail, and snow fences **1**. In the case of the wood fences, I used an assortment of stripwood sizes. South Strong Station was scratch-built by friend Rich Cobb from photos I supplied, as was the flanger lift post. I weathered the station with chalks to reflect many years of service (the prototype photo was taken during abandonment of the railroad). The telephone poles are Good Cook no. 12 bamboo skewers with insulators from Berkshire Models.

I **scratchbuilt my version** of the maintenance shop with basswood sheet and strip and Grandt Line windows from my parts box. I built the lightweight spackle concrete foundation **2** using the same methods I described in my article "How to model a concrete retaining wall" in the August 2020 MR.

The **post and rail fence posts** are Kappler O scale 4 x 4s and 1 x 4s. As I had done with the line poles, I distressed all the wood pieces with a razor saw, **3**, then stained them with 2 teaspoons of India ink to 1 pint 90 percent alcohol. I then cut them to length using a NorthWest Short Line Chopper and assembled them. Drawing **4** illustrates the dimensions of each component.

The **barbed wire fence posts** are made from Horizon Products 4" diameter wood dowels, while the miniature barbed wire – which I attached to the posts with five-minute epoxy – is photo-etched brass produced in England by Scale Link Fretcetera. Its products are available online at scalelinkfretcetera.co.uk. The barbed wire is item SLF062. Both wood and wire fencing were built in place by first punching a hole in the dried goop with an awl **5**, applying a drop of Aleene's Tacky Glue **6**, pushing the post into the hole, then gluing on the barbed wire or wooden rails **7**.





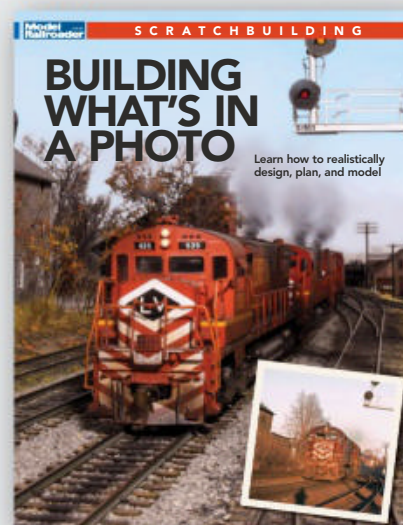
The snow fence was made using Scale Link Fretcetera SLAF 23 wrought iron fencing, over which I glued strips of .010" x .040" strip styrene. Every 8 scale feet I glued lengths of .030" styrene rod to the back of the fence to represent steel posts. (Since the fence is made from etched brass, it easily bends to conform to the undulations of the ground.) After assembly, I brush-painted the fencing with Model Master Boxcar Red and the posts Engine Black **8**. Once I established the location of the snow fence, I punched a hole in the goop with a foam nail, applied Tacky Glue to the base of the posts, and pushed the fence into place **9**.



Once all the ground cover **10**, buildings, fencing, and poles were in place, Cheryl, the "Company Arborist," added high field grasses along the snow fence **11**, brush around the shop building, and two apple trees **12**, replicating those in the prototype photo. Cheryl's tree-making techniques are described in the April 2019 and March 2020 issues of MR.

Now whenever we want to revisit South Strong, we can simply set up our diorama and save ourselves a 1,000 mile trip to Maine!

In closing I would like to take a moment to thank my good friend Jerry DeVos, who has, along with all his fellow authors and photographers past and present, strived to capture the images and save the memory of Maine's narrow gauge railroads for generations to come. **MR**



Building What's In a Photo, the latest how-to book from Kalmbach Media and *Model Railroader*, has more than 140 pages of easy to follow, fully illustrated projects like this one. The book is available now at hobby shops and in the Kalmbach Hobby Store, KalmbachHobbyStore.com.

Montreal to Toronto...

via the





Jason Shron likes Canadian railroading so much he founded a model company to make trains for him

By Jason Shron

Photos by the author

Some model railroaders take months or years deciding what scale, railroad, and era to model. Others, like me, have known all our lives.

When I was 2 years old, my family moved from Montreal to Toronto, and the vast majority of the train trips I have taken in my life have been between those two cities. Since I picked up my first model train at age 4 or 5, I knew I would one day build a model of VIA Rail Canada's operations on Canadian National's Kingston Subdivision between Toronto and Montreal.

When my wife and I bought our house in 2007, one of my requirements was a basement with a high enough ceiling to fit a full-size passenger coach (see the April 2021 MR). The rest of the basement wasn't large enough to accommodate the passenger-heavy layout I had always wanted. Thankfully, the garage was on roughly the same level as the basement, so I hired a contractor to smash through the garage wall to gain an additional 20 feet of length, making the total room size 12 x 45 feet.

The narrow footprint of the layout space precluded the typical "peninsulas and blobs" approach. I decided to build a multi-deck layout around the perimeter of the room, joined by a large double-track helix with a minimum curve radius of 36".

In total, there are three full decks – downtown Toronto on the lowest deck; Guildwood, Pickering, and Oshawa on

1 VIA Rail Canada train 62, the *Rapido*, arrives at Kingston Station en route to Montreal in late November 1980. Behind the GMD FP9A and F9B is a matched set of ex-Canadian National passenger cars that went to VIA in 1978. Jason Shron scratchbuilt the station using parts cut with a laser engraver.





② The power from the Montreal-Brockville/Toronto *Lakeshore* nips under Brockville Yard en route to the wye. Canadian National FP9 no. 6536 has been transferred to VIA Rail Canada but has not yet been scheduled for a repaint, so the shop crew has patched out the CN herald for now. The bridge and abutments were scratchbuilt from plywood.

the second deck; and Kingston and Brockville on the third deck. There is an additional deck for east staging above Brockville. The entrance is crossed by a swing bridge on deck two and a fixed nod-under on deck three.

The layout is set in November-December 1980. This is referred to as the “fifth season,” as most people model nice weather in spring, summer, or fall, while others model a lovely winter day in the mountains. Very few model the bleakness of late fall or early spring. The weather is always terrible on my model railroad, with overcast skies and bare trees. As a child I most often

traveled the Kingston Sub in the winter or early spring, and I love the experience of being in a warm and cozy train while the weather outside is uninviting. I’ve tried to re-create this on the layout.

Track and scenery

I believe that the brand of track one uses doesn’t really matter. What’s important is how you finish it. After laying track but before ballasting, I airbrush it with a grimy brown mix. After ballasting, I airbrush over the rails with a dirty rust mix, then down the center and along the edges with more of the

The layout at a glance

Name: Kingston Subdivision

Scale: HO (1:87.1)

Size: 12 x 45 feet

Prototype: VIA Rail Canada, Canadian National, GO Transit, and Canadian Pacific

Locale: Toronto, Ont., to Brockville, Ont.

Era: November/December 1980

Style: multi-deck around-the-walls

Mainline run: 310 feet scenicked, plus 245 feet in helix

Minimum radius: 36" (main), 30" (freight-only lines)

Minimum turnout: no. 8 (main), no. 6 (freight-only lines)

Maximum grade: 2 percent

Benchwork: open grid (deck one), plywood shelf supports (upper decks)

Height: 26" to 59" (east staging at 72")

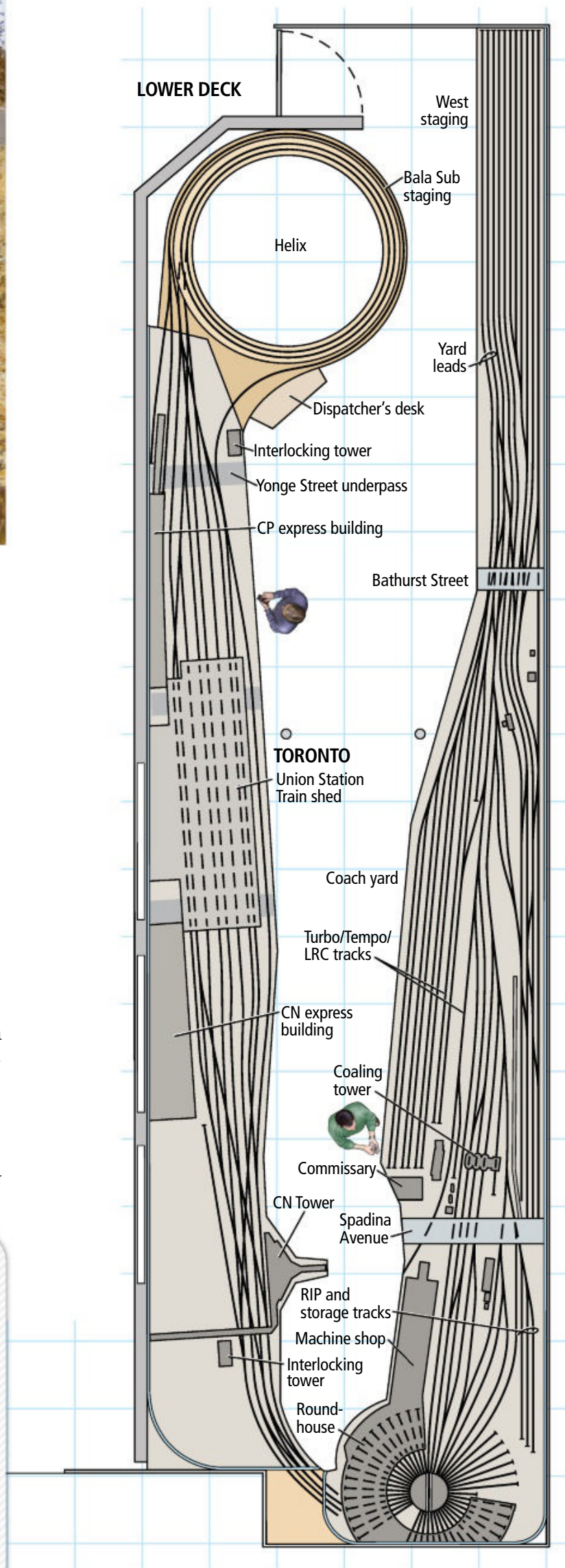
Roadbed: cork on EPDM foam sheet

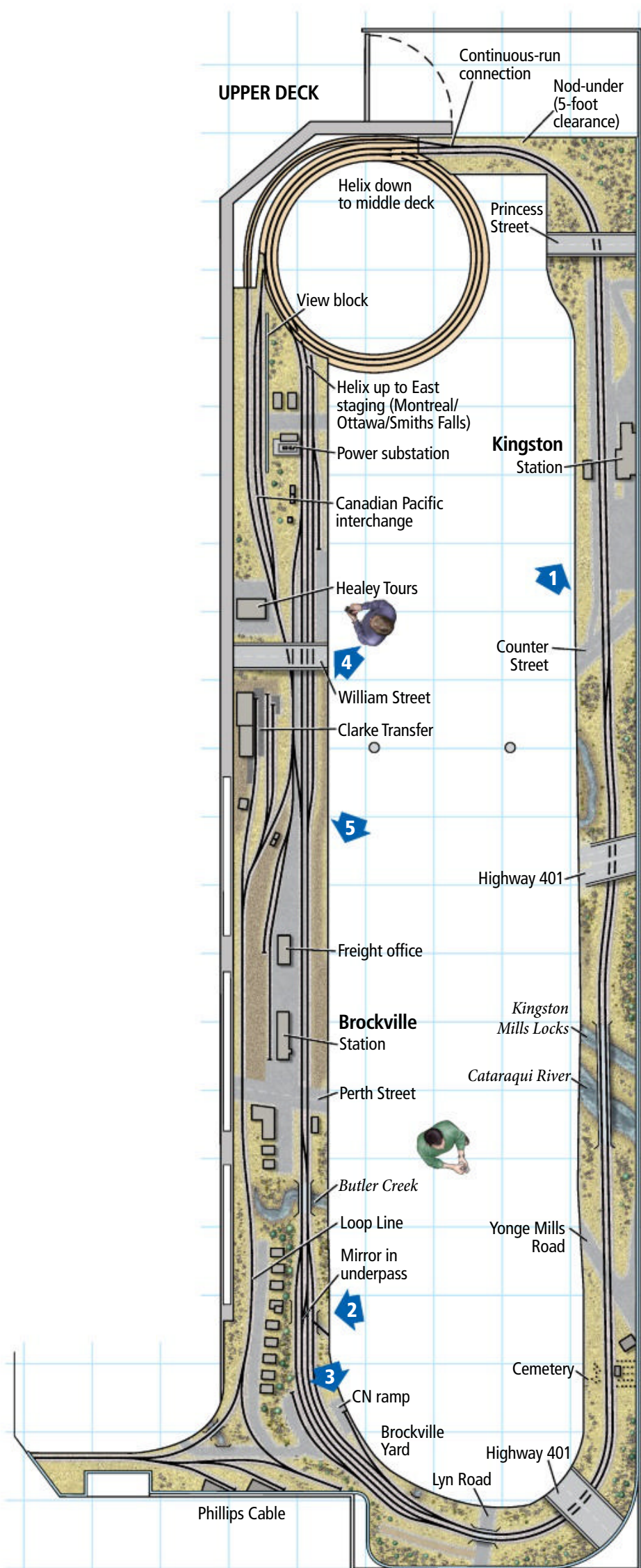
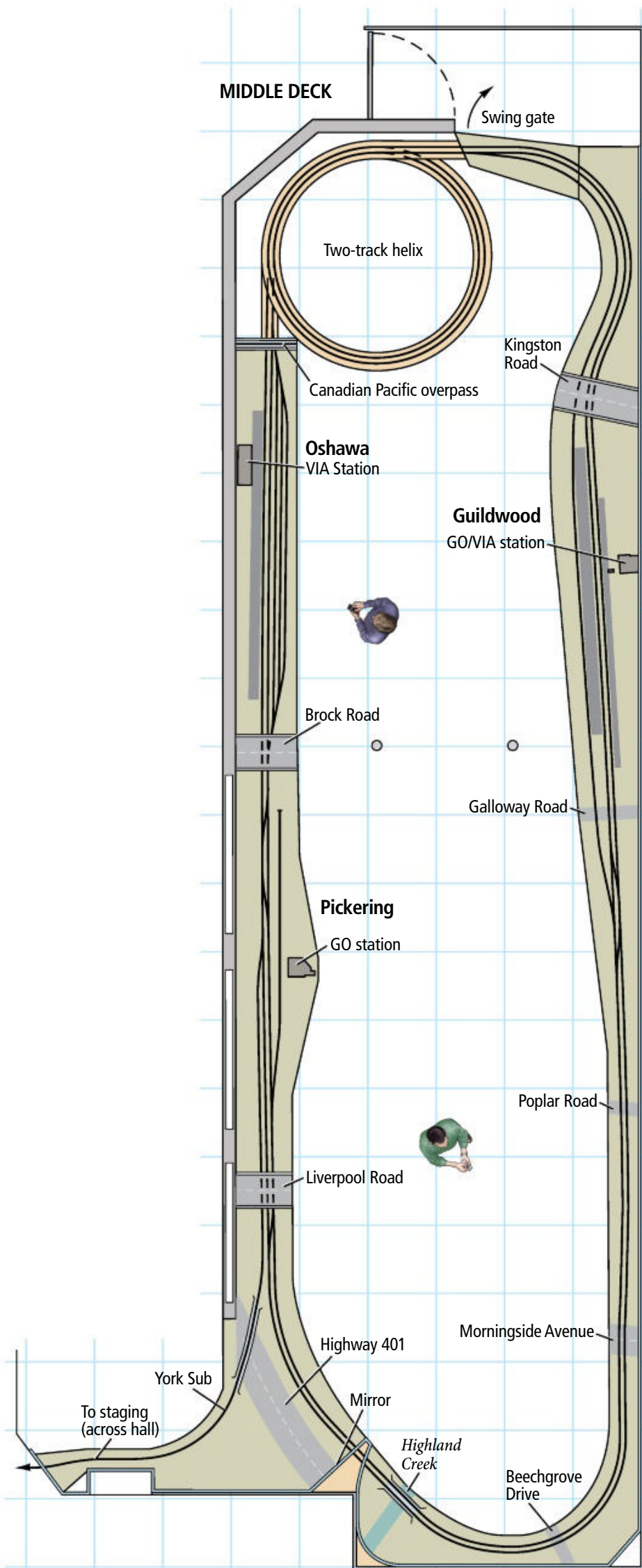
Track: Peco code 83 and code 70

Scenery: plaster and cellulose insulation material mix on aluminum window screen

Backdrop: photos on painted sheetrock or 1/8" MDF

Control: NCE Digital Command Control





Kingston Subdivision

HO scale (1:87.1)

Room size: 12 x 45 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
ModelRailroader.com Track Plan Database.



Jason covered the walls of his train room in plywood rather than Sheetrock so he could mount benchwork supports wherever they were needed.

Plywood walls

Knowing I was building a multi-deck layout, I wanted the freedom to mount supports for my benchwork anywhere. Rather than covering the walls with Sheetrock, I used 1/2" plywood I found on sale at a lumberyard. The plywood is mounted to the studs with wood screws, and the supports for the layout are attached to the plywood.

The bottom deck has legs, as it's very wide in places, but the upper decks are built on supports mounted to the plywood wall. I cut the supports out of 3/4" plywood and used shelf brackets installed horizontally to attach them to the wall using 1/2" pan-head wood screws.

This benchwork method has proved to be extremely robust. My deck three benchwork extends 33" out from the wall and is less than 4" thick. Were I to build this again, I would still use plywood for the walls, but I would use welded steel channel supports to gain even more vertical clearance between decks. Either way, thin benchwork is essential for a multi-deck layout, so traditional L-girder construction wouldn't be viable for the upper decks. – *Jason Shron*



grimy brown mix. I mix my colors to match the real Kingston Sub, as you should mix your colors to match the area you're modeling. I only use water-based paints and I open the doors to outside when I'm working.

My grimy brown mix is actually the basis for much of the coloring on the layout. Looking at prototype photos taken in late fall, you don't see a huge variety of colors; everything looks gray and brown. Any weathered wood on my layout, such as line poles or the Brockville Yard ramp, gets this same color.

Most of my structures and layout details are painted with inexpensive acrylic paints. Going a step further, I brought prototype photos to my local home improvement center and had them

mix concrete, asphalt, and dirt colors by the quart.

The landforms are mostly aluminum window screen covered in my home-made version of Sculptamold. I mix a 1:3 ratio (by volume) of dry gypsum plaster and cellulose insulation, after which I mix it with water in an old mixing bowl. How much water to use depends on how thick I want it for that application.

After the terrain solidifies, I paint the landscape, add sifted and baked real dirt, apply static grass (in a variety of dead colors), and then plant trees. My deciduous trees are SuperTrees by Scenic Express sprayed with two shades of gray paint. I poke holes in the scenery with a scribe, dip the trunk in clear latex caulk,

and plant the tree. I mix in some conifers made by Gaston Moreau, which I chop and trim as needed.

Roads are either sheet styrene or 1/8" medium density fiberboard (MDF). When building a road, I treat it just like laying track. If the road has grades, I use risers and gently bend the MDF to fit. Tacky white glue is usually strong enough to hold the roads to shape, but if the grade transition is relatively sharp, I'll use construction adhesive. Old bricks make great tools for weighing down roads while they dry.

Prototypical choices

Building recognizable locations requires scratchbuilding just about



everything. To ease the burden, my friend Jon Greggs built the apartment building, freight office, and Clarke Transfer in Brockville. I built the remaining signature structures, such as Kingston and Brockville stations, using my laser engraver [See “Scratchbuilding with a laser” on the next page. – *Ed.*] Walthers and City Classics houses fill out the Delhi and Park Street scenes.

Scratchbuilding has many advantages, the two primary ones being that your layout looks different from everyone else’s and that visitors to your layout recognize prototype locations.

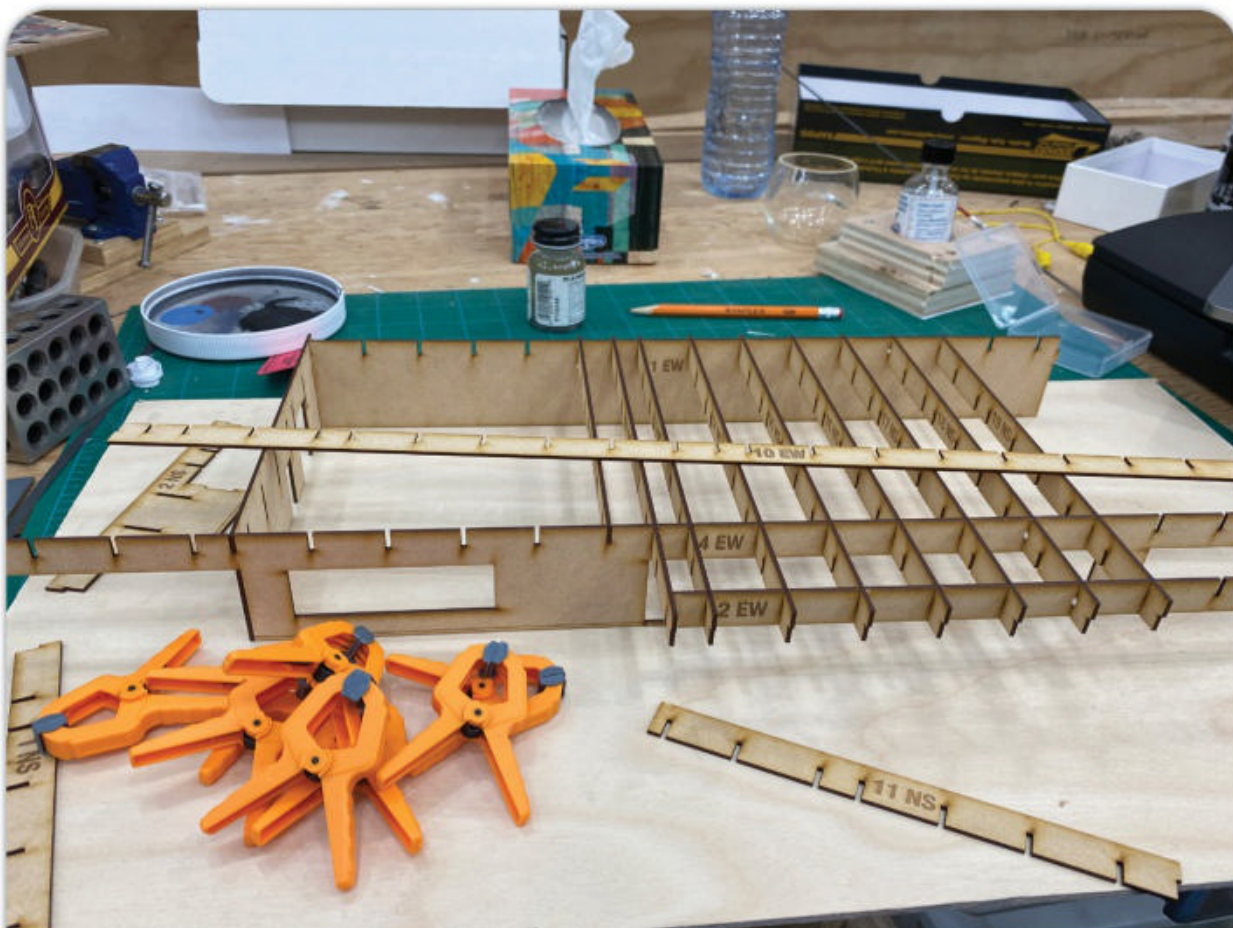
Some of the most challenging but most worthwhile structures to scratch-build are road bridges. Most model railroaders use the same commercially

available road bridge kits, but these kits are only suitable for the smallest and most lightly traveled roads. Even if you aren’t modeling a prototype, it’s worthwhile to copy real highway bridges on your model railroad. They often have a heft and a presence that’s lacking in commercial kits.

I often have to choose between being 100 percent accurate to the prototype or finishing the layout in my lifetime, so I will choose to be “close enough.” For example, while the power substation in Brockville is scratchbuilt, the transformer and insulators are a modified Walthers kit. I may return to it in a few decades and replace it with something more accurate, but for now I’m happy with the stand-in.

③ A manifest freight led by Montreal Locomotive Works M-420 no. 2530 is stuck behind a VIA train stopped at Brockville, so the fireman is catching up on the latest gossip in town. The locomotive is a Rapido Trains model.

Backdrops really complete each scene, and I design mine to scale in Adobe Photoshop. I use a combination of photos taken on site and screen grabs from Google Street View. I remove harsh shadows and modern details, then add in vintage car photos mined from the internet. I print them on letter-size matte photo paper, cut them out, and glue them to the backdrop. I then paint the backdrop colors on top of the photos right up to the buildings and treeline. The backdrops require considerable



A laser engraver has been invaluable in allowing Jason to scratchbuild so many signature structures. This is Kingston Station under construction.

Scratchbuilding with a laser

I design most of my structures in Adobe Illustrator and cut the parts on a laser engraver. These versatile machines can range in price from \$300 to \$30,000 and more. The price difference is related to size, power, speed, and features. But all can achieve the same results when it comes to cutting parts for HO scale structures.

Using the laser is essentially designing and cutting your own kit. You still have to assemble and paint the models. My preferred materials are $\frac{1}{16}$ " MDF for structural pieces and .035", .020", and .011" Laserboard for surfaces. Laserboard is a wood composite material used as an underlay for countertops.

The biggest benefit of using a laser cutter is that your work is repeatable. If you make a mistake, you can simply cut replacement parts. It's also a great tool for manufacturing structure kits. With a 3-D printer, a laser engraver, and the patience to learn how to use them, anyone can become a kit manufacturer.

– Jason Shron



4 Many of the signature structures on the layout, even those not served by rail, are still important to convey a sense of time and place. Healey Tours in Brockville is one such structure. Jason scratchbuilt this model based on prototype photos. The Toronto “fishbowl” bus being chartered by Healey is a Rapido Trains model.

cheating in terms of perspective, but the overall effect is very convincing.

Equipment and operations

Before I started Rapido Trains, my VIA passenger car fleet grew at a rate of about one car every five months. At the time I was an art history student living in England. I told my wife that model railroading can be an expensive hobby, to which she replied, “As long as it pays for itself, that’s fine.” She was thinking I would sell vintage stuff in online auctions, but I decided instead to start a model train manufacturing business.

Consequently, my fleet has grown much more quickly than it would have had I stuck with art history. Most of Rapido’s releases in the first 12 years after I formed the company were models I needed for my layout. My passenger motive power and rolling stock is all Rapido, as is much of my freight power. I also have freight locomotives from Bowser and Athearn. My freight cars are from numerous manufacturers, including Tangent Scale Models, Moloco, ExactRail, and of course Rapido. Many have been expertly painted and weathered by Dan Darnell and Mark Kaluza.

The vast majority of operation centers around Union Station and Spadina Coach Yard in downtown Toronto. Switching passenger equipment is like switching freight, only bigger! The other operational hotspot is Brockville on the third deck. Westbound VIA trains from Ottawa and Montreal would join in Brockville, with the Montreal-Brockville power turning on the wye and returning to the station to await the eastbound joined train from Toronto. The switching at the station varied from day to day, sometimes using the assistance of a Canadian National SW1200RS road switcher. Brockville also sees regular switching throughout the day by Canadian Pacific.

Brockville’s operations will be joined by express passenger trains (called, not coincidentally, Rapidos), the United Aircraft Turbo, Rail Diesel Cars (RDCs), GO commuter trains, and local and mainline freights. The layout has been designed with passenger operations in mind, so they’re the focus. The Brockville platform is almost 15 feet long!

The future

All the benchwork has been built and most of the track has been laid on the upper two decks. The scenery on the



5 It's December 1980, and VIA's United Aircraft Turbo trains are doing double duty on morning and evening runs between Toronto and Montreal. Here the Turbo blasts through Brockville as train 60 to Montreal; it will return to Toronto in the evening as train 67. The Turbo is an extensively upgraded Rapido Trains model from 2008.

upper deck is about three-quarters completed, with Brockville and Kingston almost ready for passengers.

I still have plenty of work to do on the layout. Once decks two and three have a basic level of scenery and structures, I plan to host operating sessions on those two decks. The lower deck will take a very long time to furnish with track, structures, and scenery. However, I'm eager to run trains on the other two decks in the interim!

The Kingston Sub is Centralized Traffic Control (CTC) territory, so I am wiring the layout for the signal system

made by Signalogic Systems. Electronics are not my strong point, but signals will be a worthwhile effort for the added realism.

Big thanks are owed to Josh Anderchek, John Chipperfield, Dan Darnell, Dan Garcia, George Johnstone, Bill Schneider, and Jordan Smith for all their help with layout construction so far.

I have had the dream to re-create VIA operations on the Kingston Sub in 1980 since I was a 5-year-old riding the Turbo and the *Rapido* in that very year. Though it may be far from complete, this layout has already allowed me to achieve that goal. When I see the HO scale Turbo pull into Kingston Station on my layout, I'm transported back to a time when there was nothing more exciting in the world than seeing a VIA train on the Kingston Sub. Despite being much older now and life being much more complex, I often feel that is still true today. [MR](#)



Meet Jason Shron

Jason Shron is president of model train manufacturer Rapido Trains Inc. as well as founder of the VIA Historical Association. He and his wife, Sidura, live north of Toronto with their three children. Apart from trains, Jason is also obsessed with buses and the TV shows *Doctor Who* and *Star Trek*. He proudly calls himself a huge nerd.

The Rio Grande expands

A fictional national wartime merger allows for a varied roster

By Bill Clancy • Photos by Dave Rickaby

The Rio Grande Pacific HO model railroad is the culmination of my long-suppressed passion. My interest in trains began in the early 1950s when my grandfather, who was the general passenger agent for the Rochester Division of the New York Central, gave me a NYC brochure with a die-cut picture of a lightning-striped diesel locomotive that could be folded into a cardboard model.

At age 10, I visited my cousin's large Lionel O gauge layout and thought it was nice, but it was a toy layout that I didn't think represented a real train-like picture. Two years later I saw several built-up Strombecker freight cars in a hobby shop window, which ignited my passion as these seemed to represent real railroad cars in miniature. I built several cars and buildings and a tiny layout.

Unfortunately, my railroad passion soon took a back seat as I entered high school. I got involved in athletics, resulting in a college track scholarship, then medical school and an orthopedic surgery residency. After serving in the Navy, I joined the University of Wisconsin at Madison, where I established a sports medicine program in 1974 and pioneered techniques in reconstructive knee surgery.

However, I had kept the candle burning by subscribing to all the model railroad magazines since 1974. After 42 years in orthopedics, I finally retired in 2014 at the age of 73. I then gutted my basement, put in a drop ceiling with light-emitting diode (LED) lights, tore down some walls, and put in a new floor.

I developed a layout plan that would satisfy my desire for long runs between cities and towns, yet provide many industries with complex switching to challenge the train crew. Having spent time in Colorado almost every year for 20 years, I selected the Denver & Rio Grande Western RR as the basis of my model railroad.

Fictional history

Origins of my fictional Rio Grande Pacific began at the outbreak of World War II, when President Franklin D. Roosevelt nationalized the railroads into regions. [Railroads in the United States were nationalized in World War I, but not WWII. – Ed.]

The Rocky Mountain Region consisted of the Rio Grande, Western Pacific, and the Rocky Mountain portions of the Great Northern and Spokane, Portland & Seattle.

After the war, the Rio Grande Pacific Railroad Corp. purchased all the track and facilities encompassing this region. It leased primary trackage rights to these predecessor railroads and secondary rights to the Union Pacific and Atchison, Topeka & Santa Fe in the western part of this region, and to the Missouri Pacific; Rock Island; Chicago, Burlington & Quincy; Colorado & Southern; and Fort Worth & Denver in the Denver area. This allowed for run through from the Pacific Northwest to Denver.

The era of my railroad is early June 1948, and the modeled route runs from the North Denver Yard through Denver, then Salt Lake City, the Keddie Wye, and finally into the Oro-Bieber staging yard. Except for the passenger trains, all locomotives running on the layout are powered by steam. The majority are Challengers, Big Boys, and 2-8-8-2s. The passenger diesels are PA-1s, F3s, F7s and E6s on the UP *City of San Francisco*.

The layout

The layout is 26 x 44 feet, with two-thirds being double decked. The upper level is 58" above the floor and the lower level is 42". It courses along the left wall of the main room, into a peninsula, then

node



① The eastbound *California Zephyr* is approaching Glenwood Springs depot with Denver & Rio Grande Western F7 no. 5591 in the lead on Bill Clancy's HO scale Rio Grande Pacific layout.



② Rio Grande 4-6-6-4 Challenger no. 3805 rounds the curve with an eastbound manifest in tow through McClimmon, Colo. Bill's Rio Grande Pacific combines operations of many western railroads after a fictional merger in the wake of World War II.



③ This view down the aisle shows the North Denver industrial area at left with Denver Union Station at right above Salt Lake City's downtown and station area.

through a wall into a side room. It passes through a small furnace room onto the helix and then back through these rooms to the lower level. It extends around the peninsula and along the right wall to the Keddie Wye, where it disappears into the Oro-Bieber staging yard and then back onto itself in a reverse loop.

Originally, the railroad was designed for continuous running. However, after operating on Bill Weber's extremely large layout in Madison, Wis., I too wanted a layout dedicated to operations. I added the North Denver Yard and staging to

accomplish this. Bill is a South Central Wisconsin Division National Model Railroad Association member.

Construction

North Denver Yard, North Denver and downtown Denver are on a 1'-6" x 36'-0" shelf. The Feather River Canyon area is on another shelf that's 1'-6" x 12'-0". The remainder of the layout uses L-girder design.

On top of the L-girders is 1/2" thick plywood, covered with 1/2" thick

The layout at a glance

Name: The Rio Grande Pacific RR

Scale: HO (1:87.1)

Size: 26'-0" x 44'-6"

Prototype: Denver & Rio Grande Western; Great Northern; Spokane, Portland & Seattle; Union Pacific; and Western Pacific

Locale: Colorado, Utah, and California

Era: June 1948

Style: walk-in

Mainline run: 544 feet

Minimum radius: 36"

Minimum turnout: no. 5 (industrial spurs), no. 6 (main)

Maximum grade: 2.5 percent

Benchwork: shelf and L-girder

Height: 42" (lower deck) to 58" (upper)

Roadbed: cork

Track: Peco code 83

Scenery: extruded-foam insulation board covered with plaster gauze

Backdrop: professionally painted and photo backdrops on tempered hardboard

Control: Digitrax DCC

fiberboard roof insulation. The fiberboard has all the qualities of Homasote, but when cut, produces only sawdust. It also held Peco track nails quite well. The fiberboard was caulked at the joints. I used cork roadbed held to the fiberboard with Peco nails, not glue. This



④ The sun rises on D&RGW no. 3805, casting it in shadow as it passes McClimmon Tower on the upper level of the layout.



⑤ Western Pacific 2-8-0 no. 736 basks in the sunlight at the coal and water facility at the western edge of McClimmon, Colo.

made it easy to reroute track during construction.

The track is Peco code 83. The main-line switches are Peco no. 6 and no. 8, with some no. 5 turnouts in the industrial areas. Curved 36" radius switches, six double slip switches, and one double crossover switch are Walthers Code 83.

In the design of most layouts, one is faced with compromise. In this case, I wanted the main line to have a minimum radius of 36", which meant that the aisle width at times is only 30" wide and not the desired 36". This turned out not to be a significant problem.

Structures and scenery

Building structures and modifying them is the most enjoyable aspect of model railroading for me. Almost all of the North Denver industrial area buildings are kitbashed. More than half of the structures on the layout are kitbashed at least to some degree, with the exception of the Fine Scale Miniatures and Fos Scale structure kits. A significant number also are lighted and have interiors.

All the cities have working streetlights, and downtown Denver has working traffic lights. There are numerous lighted billboards in a number of cities.

The Keddie Wye terrain was built using foam covered with plaster-impregnated gauze. The ground material and rocks (from Arizona Rock & Mineral) were glued in place. This technique was used for all the other hills and tunnels except for the Feather River Canyon. After placing rocks for the stream bed, I added blue dye to Enviro-Tex resin to create Spanish Creek.

The Feather River Canyon was built in five sections in the work room using Bragdon Enterprises' Geodesic Foam Scenery technique and rock molds (bragdonent.com/gfguide.htm). The sections were then fixed in place and painted with oils. The Feather River was also created with Enviro-Tex and dye.

The walls were painted with Benjamin Moore True Blue paint prior to construction. All the walls of the upper level in the main room were professionally painted by Holly Messer of Milwaukee. Tempered hardboard in the lower levels was covered with photo backdrops, as were the upper and lower levels in the side room containing the cities of McClimmon, Mack, and Glenwood Springs. I purchased the photo backdrops from Backdrop Warehouse, Backdrop Junction, and Train Junkies.



Control and operation

The railroad is powered by Digitrax Digital Command Control (DCC), and all locomotives have sound.

The layout is broken into seven power districts. Feeders are placed every 3 feet. Power runs on its own bus, while signals, block detection, and switches run on a separate bus. Snubbers are placed at the ends of all track buses that are more than 30 feet long.

For signaling, there are 55 blocks with block detection (Team Digital BlocD8). Digitrax SE8s control the signals. There are 172 powered turnouts with Tortoise by Circuitron switch motors – 69 dispatcher-controlled mainline turnouts and 103 locally controlled turnouts for yards and industries.

Track diagrams on the fascia have recessed toggle switches to control all the local turnouts. These switches are track numbered. Industry names are also printed on the fascia. Originally, control was with Digitrax DT402D radio throttles. I changed this to use four Digitrax WiFi boards, which allows 16 smartphones to control operations.

The operations are controlled by computerized software by Railroad & Co. Traffic lists are generated by Ship It! software from Albion. The layout graphics, including block detection, turnout position, and signals, are displayed on three computer monitors on the dispatcher desk. Each engineer is given the Ship It! manifest for their train with the list of towns, setouts, and pickups. Communication between the dispatcher and engineer is with a handheld radio.

Ship It! generates the jobs for each session and prints out the schedule for each train listed in the computer. It lists the starting and ending locations, as well as the arrival and departure times, on a 6:1 fast clock schedule for each town and industry where setouts and pickups are scheduled. It also prints out end car locations for the end of the session.

Ship It! requires destinations for each car, so I created fictitious staging cities beyond the confines of the layout with fictitious industries that are either shippers or consignees. There are 53 actual industries serviced on the layout.

The layout has six yards and 11 cities. Many of the industries require complex

6 The westbound *California Zephyr* eases over the bridge at the Keddie Wye as a westbound Western Pacific unit reefer train waits its turn. The passenger train is pulled by a trio of Western Pacific F3s.

switching with facing- and trailing-point switches. All but three industries can be switched from any direction.

Generally, 16 trains run in each operating session. There are two opposing passenger trains, the east and westbound *California Zephyrs*, and two opposing through express freight trains: the unit reefers and the unit tank cars. The remainder are locals and general second-class freight trains. These general freight trains take approximately 1½ hours each in real time to complete their run.

The official employee timetable, the dispatcher, and signals dictate when a train must take a passing siding. The signals and the dispatcher dictate at what milepost an engineer may need to stop. The engineer must ask for clearance from the dispatcher when leaving or entering the main line.

The computer software allows the dispatcher to see in which block on the



railroad each train is located. Each engineer/conductor must also notify the dispatcher when they arrive at any assigned milepost. The dispatcher will call the engineer/conductor via radio when the train is cleared for further progress. The signals will reflect the clearance.

Operating sessions are held every four weeks and last about three hours. The crew consists of a dispatcher, four yardmasters, and five to 10 engineers and conductors. In the first 20 minutes of the session, there are at least four trains on the railroad. This continues throughout the session. Switching to smartphones for train control throttles has had a significant positive impact on efficiency and locomotive control.

A tour of the layout

North Denver is in Ship It!'s fictitious city of LaSalle, Colo., on the upper level of the layout. The yard contains freight cars coming from and going to fictitious industries in cities north and east such as Kansas City, Omaha, and Chicago via interchange with other railroads, such as Union Pacific; Chicago, Burlington & Quincy; Missouri Pacific; and Rock Island. The Rio Grande Pacific then

carries these cars to Denver Yard to be classified or to continue on general freight trains west.

After leaving North Denver Yard, the main line branches off three tracks with multiple runarounds to service the 10 industries along the left wall of the layout in the North Denver industrial area. All of these three tracks rejoin the main line prior to entering downtown Denver.

After passing through downtown Denver, the main line splits into the main and a passing track at East Denver. The main line has multiple turnouts to serve seven industries. The passing siding rejoins the main line near South Denver, and a branch line serves five industries in South Denver. As the main line curves toward the peninsula, a divergent line called the Denver Bypass runs parallel to the South Denver line and then through West Denver. It reconnects to the main line running through the two-track tunnel through the side-wall to the town of McClimmon.

Denver Yard has two main lines and six classification tracks. It's also home to the RGP's 12-stall roundhouse and coaling facility.

Denver Union Station boasts three mainline tracks as well as one track for

7 Western Pacific 4-6-6-4 no. 407 leads its unit reefer train onto the Keddie Wye bridge over Spanish Creek.

U.S. Postal Service mail and the Railway Express Agency building. The freight main bypasses Denver Union Station.

The main line heads west upon leaving Denver Yard and passes through a tunnel to enter the side room containing the town of McClimmon. The main line splits into a passenger main and a freight main as well as a passing/transfer track for local pickups and setouts for the various industries. The freight main and passenger main rejoin before entering the east portal of Moffat Tunnel.

After passing through the furnace room, the main line exits the tunnel to enter Glenwood Springs, where there's a branchline track to Aversa Saw Mill and Planing Co. The main line continues past Glenwood Station, where a reverse loop re-enters the furnace room to connect the main line going east.

After passing Glenwood Station, the main line starts to descend the helix. Dante's Helix is suspended from the plywood base of Glenwood Springs and fixed to outriggers attached to the track plywood by threaded rods. The rods continue through these outriggers to the



8 An eastbound Union Pacific unit reefer train is leaving Denver. Today's train is being led by Big Boy no. 4013. The boys playing baseball on the sandlot don't seem to even notice the proud locomotive as it thunders by.

next lower level. Nuts supporting the roadbed were adjusted to maintain a 3" distance between the top of the rails, which is laid on Homasote. The grade is approximately 2½ percent.

The helix has four levels. The track leaves the bottom level, passes through the furnace room, and continues through a tunnel to enter the town of Mack, Colo., on the lower level under McClimmon. I added a passing siding to the lowest level, with block detection and signals to improve traffic flow.

Mack contains the largest industry, the Red Mill Milling Co., as well as Keene's Sawmill, Eastment Stockyard, and Lawrence Industries. The main line continues west through Mack and into the Wasatch Valley before entering Salt Lake City. The tracks then diverge into two passenger tracks and one freight track through Salt Lake Union Station, then merge into one main line.

After passing through Salt Lake Union Station, a double crossover allows

for divergence into a return loop back to Denver, into the Salt Lake Yard, or the main line westward.

The main line continues west as a single track, then divides into two before passing through a long tunnel to emerge into Feather River Canyon. The canyon is approximately 16 feet long, and the track runs between the towering canyon walls and the Feather River. The track reverts to one main line before entering the tunnel to Keddie.

The main line passes Keddie station and yardmaster's buildings. The track again divides with one track passing through a tunnel toward Bieber while the other crosses the Keddie Wye on its way to Oroville-Bieber staging.

The trackage to Bieber exits the tunnel and curves on its way toward Bieber. It then enters another tunnel that ends in a large open closet containing the Oroville-Bieber staging yard.

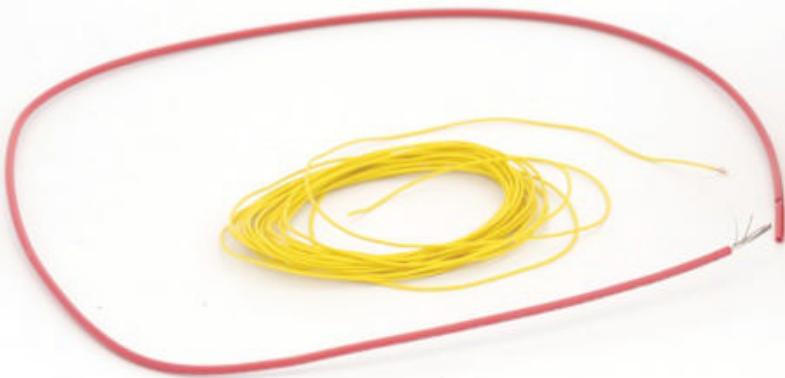
The tracks that pass over the Keddie Wye bridge enter a short tunnel, then enter the closet. The staging yard there allows for continuous running. Staging represents traffic going or coming from the west to industries on the Santa Fe in San Francisco or north to industries in Spokane, Seattle, or Portland. **MR**



Meet Bill Clancy

Dr. Bill Clancy and his wife, Kathy, live in Verona, Wis. He is Professor Emeritus in the Department of Orthopedic Surgery at the University of Wisconsin. He founded one of the first university-based sports medicine programs in the U.S. in 1974. In 1976, he invented the anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL) knee reconstructions that virtually every orthopedist in the world today uses. Besides model railroading, Bill enjoys golfing, bicycling, and fly fishing.

Wire and tools



Modelers have a need for a wide variety of wire. You may be bewildered by the choices from electronics distributors. To help you out, DCC makers sell what you need without overwhelming you with choices.

It can be difficult to find wire, connectors, and other accessories useful for layout wiring from electronics distributors. Digital Command Control manufacturers have recognized the need to help modelers obtain the supplies they need to install their equipment. You can avoid the difficulty of meeting an electronics distributor's minimum by buying from them.

It still takes a bit of effort to find out what each manufacturer offers. I visited their websites and compiled what I found in **table 1**. Products other than wire will be covered in future columns. Each company has addressed its customers' needs a little differently, no doubt based on feedback they have received. So it's worthwhile to see what all the

manufacturers are selling, not just the maker of your chosen DCC system. The widest variety of wire is offered by NCE. Even if you aren't using its system, you'll find products that will be useful on your layout. When wiring the power pickup and motor leads of

larger locomotives, you won't want to use tiny wires, especially on locomotives larger than HO. On the other hand, when wiring the LEDs in these locomotives, you can use very small wire. These are easier to route and easier to hide. Speakers can also use tiny wires.

With a decoder located in the tender and wires running to the engine, you have to choose whether to use all black wire or more visible colored wire. This is a personal preference. It's easier to keep track of individual colors. You can always blacken these wires when you are done. If you're very careful to keep track of which wire is which, you can use all black.

Manufacturers have listened to modeler's requests for easy-to-route wiring through their models. Several call their wire "ultra flexible." It's made with fine strands to be more flexible. Magnet wire is always solid, but due to its thin enamel jacket, it will go anywhere. The smaller the wire gauge, the more flexible I expect it to be. Also, the thickness and material used to make the jacket will also influence its flexibility.

SoundTraxx and Train Control Systems wire seems to me to be a little more flexible. TCS's wire is a premium offering that has fine strands and a thin, extremely flexible, and easy to strip insulating jacket. Depending on which

Table 1: Wire offerings		
Manufacturer	Product	Uses
Digitrax (digitrax.com)	Decoder wire: 32 AWG stranded wire, package of 10' lengths in 9 colors.	Installing decoders, including for speakers and LED lighting. Not for large scale motor and power pickups
NCE (ncedcc.com)	32 AWG, stranded, 10', 8 colors available – offered in a kit with heat shrink or each color individually	Installing decoders, including for speakers and LED lighting. Not for large scale motor and power pickups
NCE	25', 50', 100' 14 AWG, stranded bus wire, 22 AWG stranded feeders, and T-taps	Layout wiring kit. Bus wire, feeders, and T-taps are also available separately from NCE
NCE	24 AWG twisted pair, stranded, 3 color pairs available – green/white, red/white, and black/white	Connect control panel push buttons, toggles, and LEDs with DCC products like accessory decoders and other automation products. Also, wiring for passenger cars
SoundTraxx (soundtraxx.com)	30 AWG, stranded, 10', green and yellow. 11 colors available	Installing decoders, including for speakers and LED lighting
TCS (tcsdcc.com)	20 AWG, stranded, 100'	Large scale locomotives and track feeders
TCS	24 AWG, 20' and 100', stranded, 11 colors available	Large scale locomotives and track feeders for HO and smaller
TCS	30 AWG, 10', 20', and 100', stranded, 14 colors available. Also available in multi-color packs	Installing decoders, including for speakers and LED lighting. Not for large scale motor and power pickups.
TCS	32 AWG 10', 20' and 100', stranded, 10 colors available. Also available in multi-color packs	Installing decoders, including for speakers and LED lighting. Not for large scale motor and power pickups
TCS	36 AWG, 10' and 20', 3 colors available	LED wiring
TCS	34 AWG, 20' magnet wire, green or red	LED and signal mast wiring



1 This is my favorite stripper. It melts through the insulation, which just slides off. These are industrial devices and aren't hobbyist priced. I bought this one used at an auction. Digi-Key sells a PATCO thermal wire stripper for \$79.79 that looks similar to the hobbyist one that I saw in the past. You can also see what's available on eBay.

wire stripper I used, I found variability in how easy I thought the various wires were to strip. With such a wide variety of wire choices sold by DCC manufacturers, I couldn't really do an apples-to-apples comparison. All wires met my expectations for flexing and stripped easily with the appropriate tool.

TCS noted that its PVC jacket was a fire-resistant PVC. Electronics distributors also sell wire with insulation that has been certified fire resistant. This wire can be expensive. Avoid fires by using appropriate circuit breakers and adequately sized wire, particularly for your track bus and feeders.

When dealing with wire, the first thing you need to do is strip the insulation off. I have a thermal wire stripper 1 that does a great job and is particularly useful for small wires. It's great because it doesn't put a strain on the small wire. Even better, stripping a wire attached to a decoder doesn't break the tiny connection to the decoder. You can get very close to your decoder without damage. You also don't have to worry about nicking or breaking any of the fine strands.

Unfortunately, hobbyist thermal wire strippers are no longer made. Industrial models like mine are \$500 new. That's hard to justify if you don't install decoders for a living. You can probably find a used thermal wire stripper

on eBay. If you're fortunate enough to get one, avoid inhaling the nasty fumes from the insulation.

I have several common (non-thermal) wire strippers, none of which could strip 24 AWG wire. So I found myself on a search for strippers.

The few I found that can strip wires smaller than 24 AWG are often advertised for solid wire and can be more expensive than those for larger wire sizes. The diameter of stranded wire is larger than solid of the same wire gauge. Fortunately, it's often possible to strip stranded wire with a standard stripper by using the setting for the next larger wire size. For example, if stripping 30 AWG stranded, use the 28 AWG setting. Micro-Mark (micro-mark.com) sells a wire stripper for 20 to 30 AWG wires. It looks similar to mine, seen in 2. For a little more money, Digi-Key (digikey.com) sells the Molex wire stripper 3 (no. WM22685-ND) for solid or stranded wire, 26 to 36 AWG.

There are such a wide variety of strippers and sources for them that it's impossible to cover them all here. Home improvement stores sell wire strippers for wires generally 22 AWG and larger in diameter 4. I noticed that Lowe's sells a stripper for telephone wire that will handle 23 to 26 AWG (no. 33-179).

For smaller wire, Micro-Mark has a few to choose from. Hobbyist electronics



2 This is a common, low-cost stripper. Similar ones are produced by multiple manufacturers, and the wire size it can strip varies by manufacturer. This one is 10 to 20 AWG. I noted that some strippers of this type are marked on one side for solid wire and the other side for stranded. Make sure you pay attention to which side you are looking at. Micro-Mark sells one that is similar to the above, as does All Electronics.



3 This wire stripper is available from Digi-Key. The wire size selector has detents that make it easy to set and stay set.



4 This is a popular style of wire stripper that clamps down on the wire and then slides off the insulation as you squeeze. This one, the Ideal Stripmaster, can strip 10 to 22 AWG solid wire. Find it at Lowe's, The Home Depot, and Menards.

suppliers like All Electronics (allelectronics.com) and Jameco (jameco.com) have several choices. Electronics suppliers like Digi-Key and Mouser (mouser.com) also carry a wide range of tools.

Before I close this month, I want to dispel a myth. Some people are saying that DCC is DC (direct current) rather than AC (alternating current). DCC is AC. Think about it. Modelers use bipolar LEDs to indicate that DCC track

power is present on status panels around their layout. Bipolar LEDs light green when power is flowing one direction and red in the other. Rapidly switching polarity results in an amber color. If DCC wasn't AC, this wouldn't work. Whether AC or DC, you always need two wires, and you can't cross them.

Visit my website for the links to all the wiring products mentioned in this column at wiringfordcc.com/dcc_currents.htm. 



ScaleTrains.com HO scale EMD SDL39

The much-anticipated Electro-Motive Division SDL39 diesel locomotive has arrived from ScaleTrains.com. The HO scale branchline unit is the second offering in the model manufacturer's Museum Quality line, the first being the Union Pacific General Electric gas turbine. Information on the back of the box notes that models in this product range are "historically accurate replicas of some of the most famous and unique locomotives in American railroading history. ... We also add enhanced sound, lighting, and animation effects to bring your locomotive to life."

Electro-Motive Division produced 10 SDL39s, all for the Milwaukee Road. Units 581 through 585 were built in April 1969. In November 1972, engines 586 through 590 joined the roster.

The Milwaukee Road used its fleet of 2,300hp SDL39s on branch lines where bridges and track conditions called for lightweight power. To help keep the weight down, the six-axle units were designed with compact frames; 1,200-gallon fuel tanks; export-style truck side-frames; and 12-cylinder turbocharged 645 engines.

The SDL39s were transferred to the St. Paul, Minn., area as the Milwaukee began abandoning its branch lines. SDL39 no. 581 was retired in 1983 after being involved in a grade crossing accident. The unit was scrapped in Milwaukee, Wis., in 1984. The remaining nine units went to the Soo Line after it purchased the Milwaukee Road in 1985.

The units wore the "bandit" paint scheme during their time on the SOO.

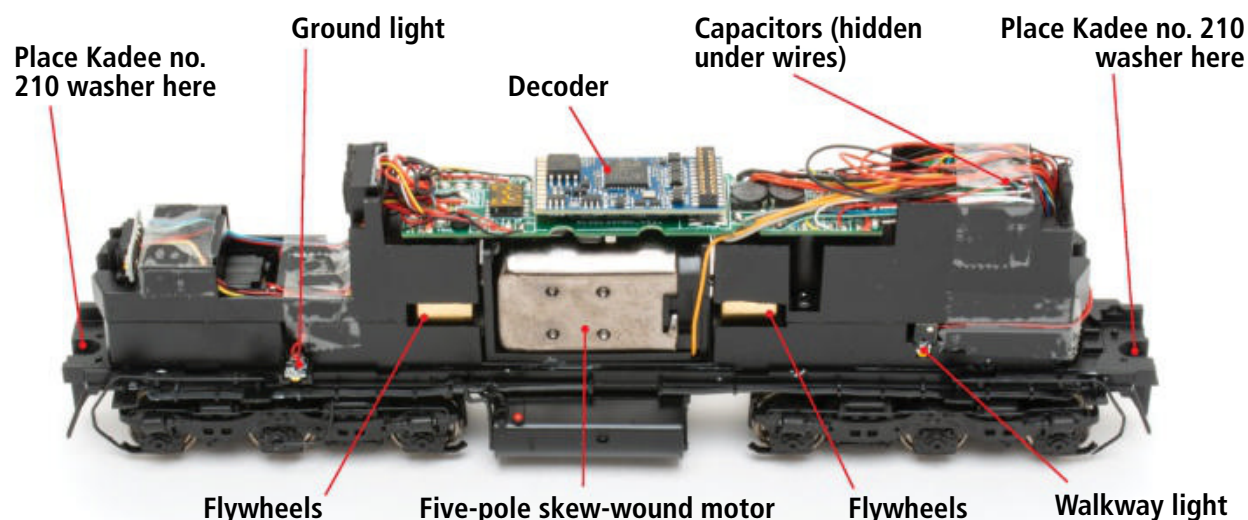
Limited use on the railroad led most of the six-axle units to wind up in storage. Wisconsin Central (WC) purchased the nine SDL39s shortly after it started operations in 1987. Not long after Canadian National acquired the WC in 2001, the SDL39s were removed from the roster. Ultimately, the units wound up being shipped to Chile for use on the FEPASA.

Our sample is decorated as Milwaukee Road no. 583, part of the April 1969 order of SDL39s. The model has an 81" low short hood with cab heater louvers and a 35-line cab with standard EMD arm rests and positionable cab windows. Inside is a multi-piece cab interior with a separate floor, rear wall, seats, and control stand. There's an all-weather window on the engineer's side of the cab and a short mirror in front of the window on the fireman's side.

On top of the cab is a brass Leslie S-3L-R air horn, a radio antenna, and a Prime PM-516 electronic bell. Below the cab are latched battery box doors with narrow louvers and latched cab sub-base doors with early hinges. The 23-ERS-6 stencil indicates 2,300hp, EMD, Road Switcher, 6 axles.

The pilots have four-hose m.u. clusters with the glad hands picked in silver, front and rear straight uncoupling levers, a late deck-mounted m.u. stand on both ends, and stepwells with see-through steps. Pilot face bracing detail is located behind the stepwells.

Our SDL39 has drooping front and rear pilots caused by the screw bosses for



The ScaleTrains HO scale EMD SDL39 has a five-pole skew-wound motor framed by flywheels. The light-emitting diodes for the fireman's side ground light and walkway light are also visible in this photo.

PERFORMANCE CHARTS

DRAWBAR PULL 2.88 ounces
40 free-rolling HO scale freight cars

SCALE SPEED (DC)

VOLTS	SCALE MPH
10	2
11	19
12	44
13	79

SCALE SPEED (DCC)

SPEED STEP	SCALE MPH
1	1
7	18
14	47
21	89
28	102

the draft-gear boxes being .027" too short. When the screw is tightened, it pulls the walkway down. This was on issue on some, but not all, of the models. ScaleTrains posted a video on its YouTube page with a fix for the problem using M1.6 washers or modified Kadee fiber washers.

Since the video was produced, the manufacturer offered another solution using Kadee no. 210 spacers. I tried that fix on our sample and it made the drooping much less noticeable. If you're not comfortable making the repairs on your own, or you need spacers, e-mail support@scaletrains.com.

The SDL39 rides on EMD C-C export trucks with Hyatt bearing caps. The brake cylinders, brake lines, and outboard sanding lines are separate, factory-applied parts. A speed recorder is attached to the middle axle of the front truck on the fireman's side.

The model also has several light-emitting diode (LED) lighting effects. Features that operate in both Digital Command Control (DCC) and direct

current (DC) include the directional headlights, illuminated number boxes, and ground lights. Features only available with DCC are the front, rear, and fireman's side walkway lights; cab interior lights; and control stand lights. The class lights can be toggled between white, green, and red using function 5 in DCC. In DC, only the white lights illuminate.

Measuring up. The model is neatly painted in Milwaukee Road's as-delivered orange-and-black scheme. The separation lines are crisp, and all of the lettering is opaque and legible. Herald, number, and stencil placement matches prototype photos published in multiple sources.

The Milwaukee Road herald is a separate piece applied with pressure-sensitive adhesive. It's easy to readjust if it slips out of position.

I compared our sample to prototype drawings in the September 1990 *Model Railroader* and a specifications booklet on the SDL39 published by EMD in September 1969. The model's dimensions closely follow published data.

Unscrewing and removing the draft-gear boxes is all that's necessary to lift the shell from the chassis. In the center of the chassis is a five-pole skew-wound motor framed by flywheels. The light board and dual-mode ESU LokSound V5 sound decoder are located above the motor. The PowerPack super capacitors and dual cube-type speakers are above the rear truck.

Since the SDL39 is a dual-mode model, I tested it in both environments. For DC testing I used an Athearn train set power pack. The sounds came on at 8.2V, which is typical of sound-equipped models. The model crawled along a 2 scale mph at 10V and achieved a top speed of 79 scale mph at 13V.

I turned to an NCE Power Cab for the DCC testing. At step 1, the model moved at 1 scale mph. By step 28, the model was clipping along at 102 scale mph, well above the prototype's top speed of 65mph. The speed range can be fine tuned using configuration variables.

With a drawbar pull of 2.88 ounces, the SDL39 should be able to pull 40 cars on straight and level track. The locomotive was able to pull 11 50-foot boxcars up a 3 percent grade on our Milwaukee, Racine & Troy layout.

Facts & features

Price: Direct-current with 21-pin connector, \$259.99; with dual-mode ESU LokSound V5 sound decoder, PowerPack with two super capacitors, and dual cube-type speakers, \$349.99

Manufacturer

ScaleTrains Inc.
7598 Highway 411
Benton, TN 37307
scaletrains.com

Era: April 1969 to late 1970s (as decorated)

Road names: Milwaukee Road (six road numbers), FEPASA (two numbers), Soo Line (three numbers), and Wisconsin Central (four numbers).

Features

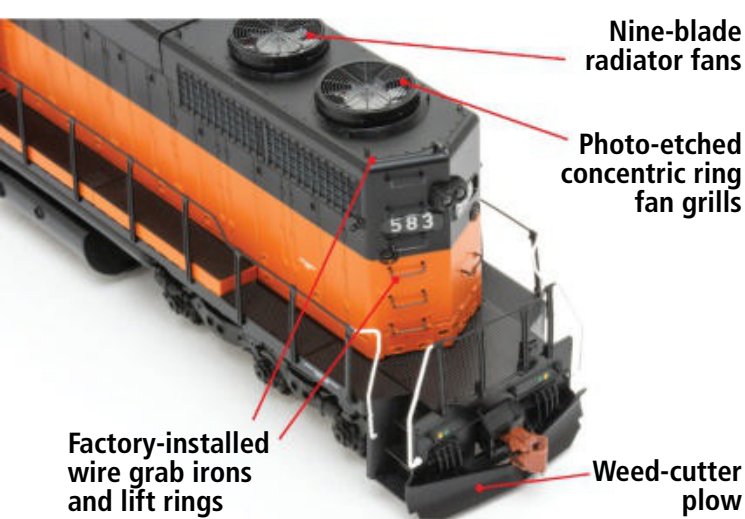
- All-wheel drive and electrical pickup
- Factory-applied sand hatch covers, trainline air hoses with silver gladhands, uncoupling levers, windshield wipers, and wire grab irons
- Five-pole skew-wound armature motor with dual flywheels
- Light-emitting-diode lighting
- Minimum radius: 18"
- Operates on codes 70, 83, and 100 rail
- Semi-scale metal Type E knuckle couplers without trip pins, at correct height
- Weight: 14 ounces

I did further testing on our Wisconsin & Southern layout. The six-axle unit performed well while building up a train in the yard and switching industries.

As of press time, there were a handful of Museum Quality EMD SDL39s in stock on the ScaleTrains.com website. Models can also be found at brick-and-mortar and online retailers.

Overall, I was impressed with the EMD SDL39. Yes, some models have drooping pilots, ours included. To ScaleTrains' credit, it has been transparent about the issue. The company has produced a video on how to fix the problem and offered parts for those who want to make the fix on their own.

With the Kadee spacers added and the pilots less droopy, I'm looking forward to watching our SDL39 work locals on the Milwaukee, Racine & Troy. –
Cody Grivno, group technical editor



Features on the rear of the long hood include photo-etched concentric ring fan grills, nine-blade radiator fans, and a weed-cutter plow on the rear pilot.



Atlas N 64-foot TrinityRail TrinCool refrigerated boxcar

Atlas is expanding its line of N scale TrinityRail 64-foot refrigerated boxcars with new road names and numbers, giving N scalers new options for building modern unit trains. Based on former BLMA tooling, these injection-molded plastic freight cars are finely molded and impeccably decorated. The refrigerator unit and end platform on the A end make them stand out in a sea of boxcars.

TrinityRail started building these cars in late 2003, equipping them with all the modern amenities to protect and ship perishable cargos like produce, orange juice, and wine. Each car has a Global Positioning System (GPS) beacon for tracking, and its temperature can be monitored and set remotely via satellite. The cars are still in use today.

For more information, read the article "A fresh approach" by Roy Blanchard in the February 2010 issue of *Trains* magazine. You can read all *Trains* (and *Model Railroader*) back issues by subscribing to our website, Trains.com.

How it's made. Our sample model is decorated for Union Pacific, with a small "Building America" herald and ARMN reporting marks. This release includes 13 new road numbers in that road name, plus new schemes for Tropicana, Naked Juice, and CIT Group/Capital Finance.

The carbody's sides and ends are a single injection-molded plastic part, with a separately applied roof. The under-frame and floor is one piece, molded in black, with separately applied brake gear. If you intend to remove the floor, say to add or remove weight, be aware that the brake gear is attached via a very short air pipe to the retainer valve, which is glued to the right sill of the body shell.

A modern Carrier refrigerator unit is mounted high on the A end of the car. Prototype photos taken up through 2012 show a different unit, with an all-black

top half, but a photo shot in 2015 shows the unit represented on the Atlas model. Below it is a well modeled flexible engineering plastic end platform with an etched-metal perforated walkway. Below this is a cylindrical fuel tank for the reefer unit. A smaller etched-metal crossover platform adorns the B end.

The deep groove around the edge of the plug doors made them appear to be separately applied, but they don't open and are solidly part of the sides. The locking bars and other door hardware are finely molded into the doors. Printing the large amount of tiny lettering around these details so accurately and cleanly was quite a feat.

Fine finish. The model's white paint was smooth and evenly applied. The lettering was opaque, straight, and legible under magnification, including the tricky white-on-black on the A end platform.

From the prototype photos I've seen online, the expansive white sides of these cars offer an irresistible canvas to graffiti artists. Graffiti decals like those available from Microscale (such as item nos. 60-1523 or 60-1534, Microscale.com) could help you transform these models into unique and colorful eye-catchers.

I checked the Atlas car's major dimensions against those listed in the 2010 *Official Railway Equipment Register* (R.E.R. Publishing Corp.), and they matched within a few scale inches. The car also resembled prototype photos I found online.

I coupled the car into a train and pushed and pulled it through our N scale MR&T State Line Route project layout's 14" curve without issues. Neither the car's packaging nor Atlas' website suggested a minimum radius. Although the trucks pivoted freely enough to in theory transit sharper curves, the car's length and body-mounted couplers might cause

Facts & features

Price: \$39.95

Manufacturer

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

Era: 2003 to present

Road names: Union Pacific (9 road numbers with ARMN reporting marks, 4 numbers with ARNM marks), CIT Group/Capital Finance (CEFX marks, six numbers), Naked Juice (TPIX marks, one number), and Tropicana (TPIX, 12 numbers). Also available undecorated.

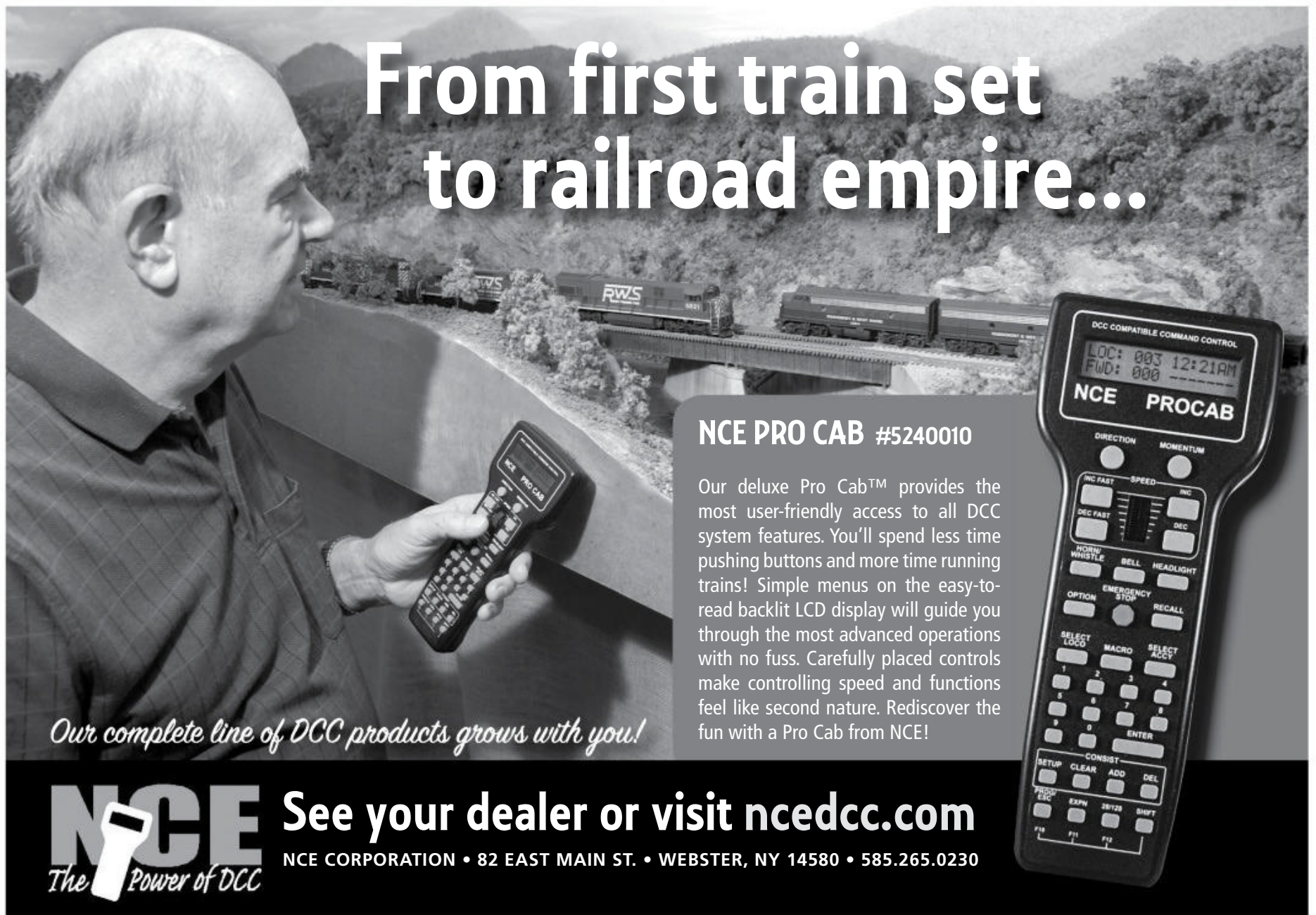
Features

- 100-ton trucks
- Blackened metal 36" wheelsets, in gauge
- Etched metal crossover platforms
- Flexible engineering plastic railings
- Minimum radius: 11" recommended
- Separately applied Carrier refrigerator unit
- Separately applied brake gear
- Scale knuckle couplers, at correct height
- Weight: 1.5 ounces (.2 ounces heavy according to National Model Railroad Association Recommended Practice 20.1)

problems on tight curves when coupled to shorter wheelbase cars. (Though it's called a 64-foot reefer, that's the inside dimension; it's 75'-1" long over the couplers, thanks to the end platform.) The car would operate more reliably and look better on 11" or broader curves.

Cold as ice. Atlas' TrinityRail 64-foot reefer is a fine looking model that will look great rushing perishables to market on your modern N scale layout. Even if you don't have a produce packing house or juice factory on your layout, these cars could make up a hotshot through freight your locals have to clear the way for. Check them out. They're cool. – *Steven Otte, senior associate editor*

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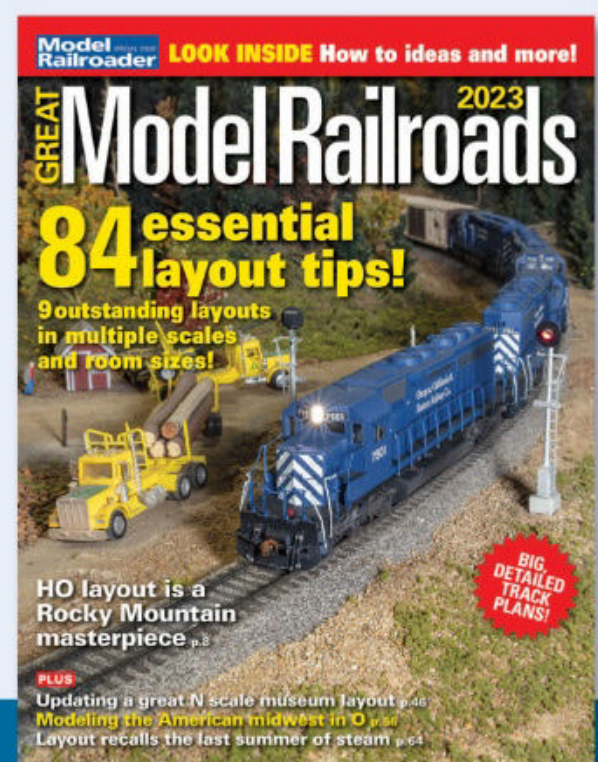
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Great Model Railroads 2023 will be available October 2022.



Rapido HO scale F30 flatcars

Flatcar fans rejoice! A line of highly detailed, and heavy, Pennsylvania RR class F30 flatcars is available in HO scale from Rapido Trains.

The PRR built its class F30 50-foot flatcars in 1929. The 100-car class was built at Altoona Car Shops with a riveted frame.

The following class, the F30a, was built on an integral steel casting from General Steel Castings. There were 1,500 cars in this class, numbered 473765 to 475264, built in 1934 and paid for with a Works Progress Administration line of credit for \$77 million.

The design proved so successful that the PRR ordered another 250 castings in 1950 to create the F30d class.

In 1954, PRR began modifying F30d cars for piggyback service, with 115 in service by the end of 1955. These cars had perforated side rails, end ramps for circus loading of trailers, and four tall stakes as backups to the chain tiedown system used on the early piggyback cars.

In 1958, PRR rebuilt 200 class F30a cars to class F30g. They received collapsible trailer hitches, side rails, and end ramps, and new roller bearing trucks. They were transferred to Trailer Train.

The F30a cars lasted well into the Penn Central era, and often into Conrail. Cars were modified for various maintenance of way duties with end bulkheads and other equipment. The Trailer Train

F30g cars were still carrying trailers in the 1980s.

Rapido's model copies the prototype with a cast metal underframe, which makes for a satisfyingly hefty car. We received six samples, which feature two different underframe castings, four different styles of trucks (two solid-bearing versions, one solid-bearing truck with roller-bearing inserts, and one roller-bearing truck), and multiple detail parts for the service intended.

The models feature wire brake line and linkage detail, along with separately applied AB brake parts including the brake cylinder, air reservoir, and control valve. Grab irons, stirrup steps, and the brake staff are also metal. The simulated wooden decking is separately applied.

All of the paint was smooth and opaque, and the lettering was sharp and easy to read. I compared the models with equipment drawings in the Pennsylvania Railroad Technical and Historical Society *Keystone*, Vol. 23, No. 1. All dimensions matched, including the 3'-5 1/8" distance from the top of the deck to the railhead.

I tested the cars on our Beer Line project railroad and found some cars would negotiate the 18" radius curves, but some experienced a bit of rubbing on underbody details. Some careful work with files or a motor tool would take care of that.

Facts & features

Price: \$49.95 each, \$299.70 (six pack)

Manufacturer

Rapido Trains Inc.
500 Alden Road, Unit 21
Markham, Ontario L3R5H5
rapidotrains.com

Era: 1934 to 1980s, depending on paint scheme

Road names: Pennsylvania RR, Conrail (MOW), Lehigh Valley, Penn Central, TTX (yellow, early red, and late red). Also available undecorated.

Features

- Die-cast metal chassis and deck
- Full brake rigging
- Kadee no. 158 semi-scale couplers, at correct height
- Piggyback details for class F30d and g
- Prototypically correct trucks (PRR 2E-F10, roller bearing converted or full roller bearing trucks)
- Separate grab irons
- Turned metal wheels, in gauge
- Weight: 2.9 ounces (1.6 ounces light according to NMRA Recommended Practice 20.1)

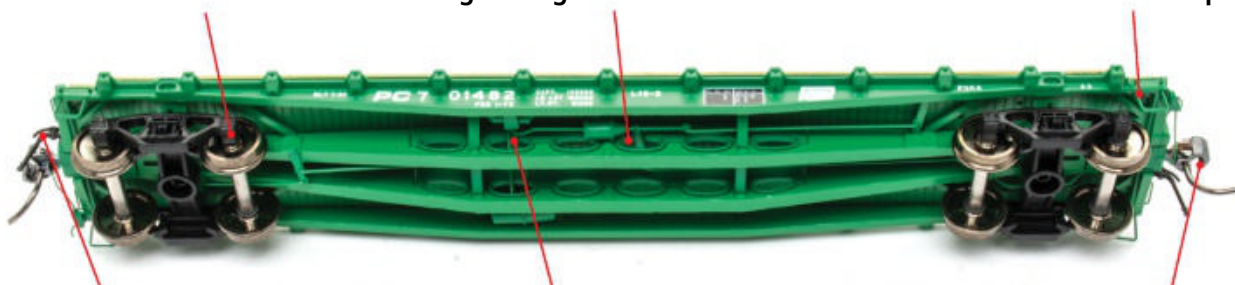
I also noted some of the cars' wheels rubbed on the underbody. Rapido suggests placing a red Kadee fiber washer between the truck and car bolster to provide clearance. Alternately, modelers could remove a little material on the underbody. Not all of the samples we received exhibited this issue.

Overall, these are impressive models of these long-lived cars. Anyone with a layout set from the transition era into the 1980s could find an excuse for at least one of these cars on their layout. – *Eric White, senior editor*

Turned metal wheelsets

Lightening holes cast in frame

Formed metal stirrups



Plastic air hoses

Plastic and metal brake details

Kadee no. 158 semi-scale couplers

The frame and deck of Rapido's F30 flatcars are die-cast metal for improved tracking. Brake rigging and piping are wire; details are plastic castings.



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A blooper, High Ball, and Porky Pig

Recent correspondence and the wonderful Donald Hof-sommer photo at right inspired me to another look in my mailbag.

December's column "Is superiority complex?" discusses the effect a right over order has on superiority. I described how such an order might have been used to arrange a meet involving Great Northern's Western Star at Vista, Mont., for a publicity photo. Jeff Hergert reminded me that my order making No. 4 superior would not force the meet at Vista, because the order didn't necessarily hold No. 3 there.

Let's make up a schedule to show why. Give No. 4 a 2:30 p.m. leaving time at Lupfer. Have No. 3 leave Vista at 2 p.m. and arrive at Lupfer at 2:20 p.m. By rule, no train may depart before its scheduled leaving time, and an inferior train must clear an opposing superior train by five minutes. No. 3 could run to Lupfer if on time, even though made inferior to No. 4 by the order. A 2:20 p.m. arrival clears No. 4 easily.

This makes a good lesson in situational awareness. I was so absorbed in the photo of the meet, the siding plainly evident, and which train takes siding that I made the mistake Jeff noticed. He believes the straight meet order I wrote was the better choice to set up the shoot. Mea culpa.

"Not your typical operating sessions"
(October 2016)
described professional railroader Greg Baker's use of an HO scale

module to train new-hire conductors in safe, efficient switching. A recent post from the Ontario & Western Railway Historical Society led me to "Photo Forensics." Author Dan Myers used high-resolution scanning and photo processing software to analyze an old picture in his collection. It shows a group of men seated stiffly around a table. He teased out details that revealed clockwork trains and semaphore signals on a high platform on the table. Telegraph keys and sounders are also seen. Other details reliably date the occasion of this operator rules school, the earliest operating session I know of, to April 5, 1916.

"Beef up operation with stock shipments" prompted other mail. Richard Shook asked about spray racks he remembers seeing douse the sides of single- and double-level stock cars in a train. What he saw was called "drenching." It differs from "watering" animals, which is allowing them to drink.

Drenching helped transport hogs safely. Hogs don't sweat, so they're unable to cool themselves. Shipment in hot weather distresses them

and causes losses. A 1942 AAR pamphlet Steve Sandifer sent me describes shipping hogs. It recommended wetting down sand and straw bedding before loading. Chunks of ice could be placed on each deck. Ice hung in burlap bags also helped cool them. After loading, and periodically in transit,



A Railway Post Office clerk pours mail from a bag the Burlington Northern's *North Coast Limited* snagged at St. Cloud, Minn., on April 16, 1970. Don Hofsommer photo

sprayers directed water into the bedding and at the sides and ends of cars, but not directly on the hogs. The pamphlet has photos of cars being drenched this way.

Terry Weldon referred me to an article from *Lines South*, the Atlantic Coast Line and Seaboard Air Line Railroad Historical Society's magazine. "Tales of the Rails" describes a Georgia blue law forbidding freight operation on Sundays, except when a train carried livestock. Atlantic Coast Line skirted this rule by keeping a bull named High Ball at Waycross, Ga. Sundays would see his car heading trains to the state line, where it was set out for the next train back to Waycross. Surely, there's bull in this story, if only we knew which kind.

Recently, one of my chat groups got carried away by a 1922 Erie special instruction it circulated: "Freight conductors will not allow attendants in charge of live poultry to throw dead poultry from cars in transit." Imagine standing trackside with a camera, the bewilderment of a sudden explosion of feathers, and a literal gob smacking an instant later!

This had the group's hard-boiled railroaders shell one another with tormented chicken and egg puns. The groaners, all fowl language, cracked us up. We egged each other on, from feather bedding to dismissing bills in poultry sums as chicken feed, until Porky Pig stepped in and ended the nonsense: "That's all, yolks." **MR**



I WAS SO ABSORBED IN THE PHOTO OF THE MEET AND WHICH TRAIN TAKES THE SIDING THAT I MADE A MISTAKE.
— JERRY



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The young railfan on his bicycle will long remember this lucky encounter with the B&O local as it rumbles through Franklin, W.Va., behind Electro-Motive Division GP7 no. 722. The scene is on the HO scale B&O Ridgley Division, built by Dale Ridgeway of Bishopville, Md. The locomotive is a Walthers Proto 2000 model weathered with chalks; the structures are scratchbuilt. Dale shot the photo.



It's harvest time on the Visalia Electric, so aging Electro-Motive Division GP40 no. 175 has been pressed into service to handle the early morning reefer run. Rick Sutton of Atascadero, Calif., grew up near Visalia, Calif., and still railfans the VE's successor, the San Joaquin Valley RR. Rick weathered the Atlas GP40 with chanks and photographed the scene on his HO scale layout. The reefer is a BLMA model with a decal Rick made from a photograph of graffiti on a prototype car.



Steam locomotives are rare on the Northern Highland these days, but two – including no. 6, still lettered for a previous owner – handle switching the car floats and rail ferries that bring in much of the line's revenues. Here, the tug *Celtic* moves in toward the car float in anticipation of another trip across the harbor. Rene Mack of Wyckoff, N.J., photographed the scene on his HO scale model railroad. The saddle-tank locomotive is a Bachmann model; the tug is from Model Shipways.



Brakeman Colpitts watches as Second 181, lead by 2-6-6-2 no. 1305, pulls empties bound for the mines through Callow Yard. Once the empties are in the clear, he'll align the switch so No. 154, a loaded coal train headed up by USRA 2-6-6-2 no. 1524, can depart. John Brown of Waubaushe, Ont., photographed the action on his N scale C&O layout. No. 1524 is a Rivarossi model; its fellow Mallet is a United Brass import. The town buildings are from Woodland Scenics.

Send us your photos

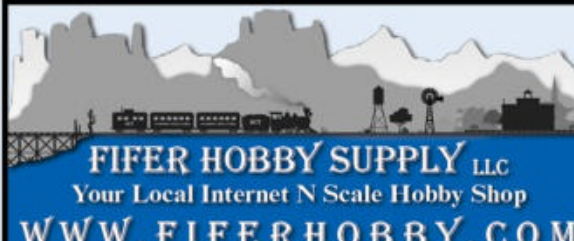
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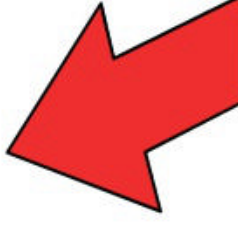
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Schedule of Events

AZ, GLENDALE: ARHS Model Train Swap Meet. Glendale Christian Church, 9661 North 59th Ave., Glendale, AZ 85302. Saturday, May 14, 2022, 9:00am-1:00pm. Everything Trains — Food — Fun. Admission \$5.00. Tables \$25.00 - to sign up send stamped envelope, check or money order to ARHS, PO Box 5816, Glendale, AZ 85312-5816. Contact: Craig Faris 623-340-3529

FL, OCALA: Lions Tri-Annual Train Show. First Christian Church, 1908 E. Fort King St., Ocala, FL 34471. Saturday, June 11, 2022, 9:00am-2:00pm. Model trains, accessories, detail parts and toys. Adults \$5.00, children 12 and under free w/adult. Bring two canned goods and receive \$1.00 off admission. Food/snacks available. Information: Bob 352-694-6381 or cell 813-203-3216

GA, ATLANTA: Scott Antique Markets (featuring Anton's Antique Toy & Train Show), September 8 — 11, 2022. Atlanta Exposition Center, 3650 & 3850 Jonesboro Rd., Atlanta, GA 30354. Thursday: 10:45am-6pm, Friday & Saturday: 9am-6pm, Sunday: 10am-4pm. Admission \$5, good all weekend. Contact: Anton 937-397-3499, or email: tweissmann6@gmail.com

IL, COLLINSVILLE: 15th Annual St. Louis Railroad Prototype Modelers meet. Gateway Convention Center. July 29-30, 2022, 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: John Golden at golden1014@yahoo.com or Lonnie Bathurst at bathurst@litchfieldil.com or 217-556-0314

IL, GREENVILLE: American Heritage Railroad Train Show @ American Farm Heritage Museum, 1395 Museum Ave., Greenville, IL 62246. 1-70 @ IL Rt. 127 (Exit #45). Saturday, June 11, 2022, 10:00am-4:00pm. Admission: \$5.00, under 12 FREE. Train ride with paid admission. Operating layouts. Dealers welcome, \$15.00 per table. Contact Jim @ 217-825-6230.

IL, ST. CHARLES: 46th Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, (Front Building), 525 South Randall Rd., Zip: 60174. Sunday, June 12, 2022, 10:00am-3:00pm. Admission: \$6.00 w/tax. Children under 12 FREE. Tables starting at \$60.00. Please visit our website for latest Covid updates. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

IN, INDIANAPOLIS: Indy Junction 2022 Train Show. 3 Days - May 20th, 21st & 22nd, Indianapolis Marriott East. Hosted by MWR, NCR, and MCR NMRA Regions & RPM Conference. Friday 5pm-9pm, Saturday 10am-6pm, Sunday 10am-3pm. \$8 Admission. 13 and under free. FREE Parking. Train sales & displays. Info@IndyJunction2022.org or IndyJunction2022.org

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 4-5, 2022. Saturday 9am-5pm, Sunday 10am-3pm. Admission \$7.00, under 12 free w/adult. 150+ vendor tables & numerous operating layouts. 25,800 sq.ft. of fun! Free parking (handicap accessible). Info: www.kansascentralmodelrailroaders.org

KS, KANSAS CITY AREA: Turkey Creek Division train show/swap meet. Saturday, August 6, 2022, Lenexa Community Center, 13420 Oak Street, Lenexa, Kansas 66215. 8:00am-3:00pm; Layout tours 3:30pm-8:30pm. Admission: \$10.00, NMRA members \$9.00 at the door. 12 and under free with paid adult. Pre-register to receive \$2.00 off admission. Vendors/registrants contact Jack Ferris, fhs1955@gmail.com, 816-804-0152. www.tc-nmra.org

PA, HARRISBURG: Harrisburg All Narrow O Summer Meet. New Hope Church, 584 Colonial Club Drive, Harrisburg, PA 17112. Friday, June 10th, 12pm-6pm and Saturday, June 11th, 9am-3pm. Admission: \$15.00 spouses and children under 12 free. Food available onsite. Sponsored by Narrow Gauge Modeling Company. millcreekrr@yahoo.com, call 570-651-5209, Facebook: Harrisburg Narrow O Summer Meet

VA, FISHERSVILLE: Annual Shenandoah Valley Model Train and Railroad Show. Augusta Expoland, 277 Expo Road, Fishersville, VA 22939. Sunday, June 5, 2022, 10:00am-4:00pm. Adults \$5.00, children under 12 free. Vendor tables \$22.00, or 3 or more \$20.00 each. Contact: Bill Kauffman at 540-209-2698, kauffmanb@gmail.com or visit: www.acrrm.org/annual-model-train-show

WI, LA CROSSE: Rail Fair, Copeland Park, Rose & Clinton Streets. Saturday, July 16, 2022, 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

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

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Tracks in the street



On May 2, 1928, crews were busy rebuilding a section of trolley track in downtown Grand Rapids, Mich. Modeling such a scene offers myriad detailing opportunities. Photo courtesy Grand Rapids, Mich., City Archives and Records Center

Modeling railroads that have tracks in the street is an interesting adjunct to any layout, as it provides a chance to slow the pace of even the hottest fast freight and the poshest streamliner as they negotiate alongside parked cars and occasionally even moving traffic. I clearly recall the Monon's long freights making their way along Fifth Street in downtown Lafayette, Ind., behind a massive Alco Century 628, an upgraded RS-2, and another hulking C-628, their syncopated exhausts echoing off the storefronts like the myriad steam locomotives that preceded them.

My favorite prototype, the Nickel Plate Road, had street running in Elwood, Ind., and Erie, Pa., but I didn't model the divisions that ran through those cities. My loss, as that would have afforded some splendid modeling opportunities.

Street trackage is a given for those who model interurbans and street railways (trolleys). That was the one advantage the electric railroads had over their steam counterparts: They typically ran right into the downtown of even the largest cities, making intercity travel convenient in the era before good highways and automobiles took over.

The tracks in the street received less maintenance as passenger revenues fell, and by the late 1930s the Interurban Era was clearly on a downward spiral. Some lines – notably those in Illinois, Iowa, Pennsylvania, California, and Canada – hung on a while longer. And Indiana's South Shore Line (formerly Chicago South Shore & South Bend) continues to transport passengers between the Windy City and South Bend, Ind., to this day. It does so over a considerable length of street running in

Michigan City, Ind. – track also used by South Shore freight trains.

As appealing as modeling an Iowa, Illinois, or Indiana interurban is to me, the thought of starting over and stringing all that overhead wire is not. I'd probably want to move up to O scale as well, better to capture the mass of one-car trains, and that introduces another set of challenges.

But for those who enjoy modeling detailed scenes, especially those with an urban setting, and would like to include some street trackwork on their layouts, perhaps the photo above that Bob Berggren came across in the Grand Rapids,

Mich., Public Library's photo collection will suggest a unique opportunity. It shows a scene photographed in 1928, in which it appears the trolley tracks in a downtown street are being rebuilt.

It looks like steel rods are holding the rails in gauge, which isn't a concern, as the track is grounded. It's not a concern for modelers, either, as the track is pure scenery, and most trolley models are powered by the overhead wire as one feed anyway.

The photo shows several blocks of the double-track street railway, but one might choose to model only part of a block. Have the tracks hang a hard right at the first intersection and cross the "steam road" at grade in the foreground.

There's a wealth of signs and other details to inspire the most fastidious modeler. There's even what I assume is a steam-powered cement mixer where the new pavement ends, plus streetlights, signs, and awnings galore.

This could even be the subject of one of those one-square-foot models I see in contests. That would require a little creativity and the use of storefronts rather than complete buildings, but I see nothing that would be a deal-

breaker when the scene is viewed from this angle. Instead of the street and tracks continuing straight ahead, the view could be blocked by a structure. An illuminated sign such as the Nichols Auto Equipment sign at right would be a nice touch. **MR**



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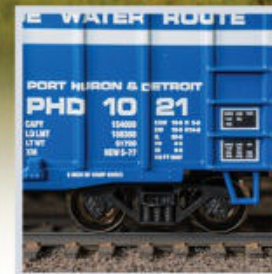
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