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GE C39-8 p.56

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on a mid-size layout** p.36

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**Readers Choice
Awards** p.46

**A right-of-way fence
in two evenings** p.26

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Build an eye-catching scrapyard scene p.34

Quick & easy weathering techniques p.22

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On the cover: A run-through Maine Central freight makes an appearance on Tom Oxnard's HO scale Boston & Maine layout. Tom Oxnard photo



Next issue

In June, we visit great HO scale layouts set in Missouri and in the Pacific Northwest. Also, check out a scratchbuilt snowplow, build a wood trestle, and more!

MREXTRA

www.ModelRailroader.com
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Boston & Maine online extras

On page 36, you'll find an update on Thomas Oxnard's HO scale Boston & Maine. The 18 x 28-foot layout features city, country, seashore, and mountain scenes inspired by New England in the early 1950s. This month, visit our website to download the above photo to use as computer desktop wallpaper. Subscribers will also find video highlights of Tom's layout shot by contributing editor Lou Sassi. ModelRailroader.com/B&M

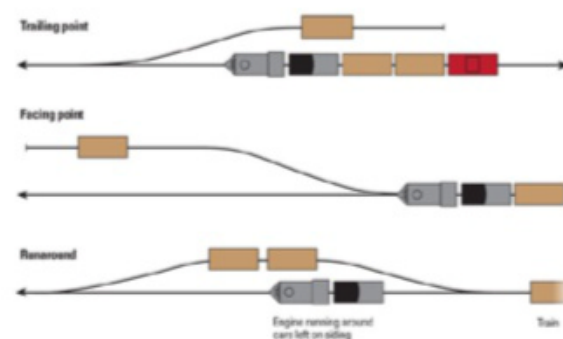
PRODUCT REVIEW



ScaleTrains.com C39-8 in HO

ScaleTrains.com brings a General Electric C39-8 to HO scale as part of its Rivet Counter series. See and hear the sound-equipped model in action in this video demo at ModelRailroader.com/STC39.

PROTOTYPICAL OPERATION



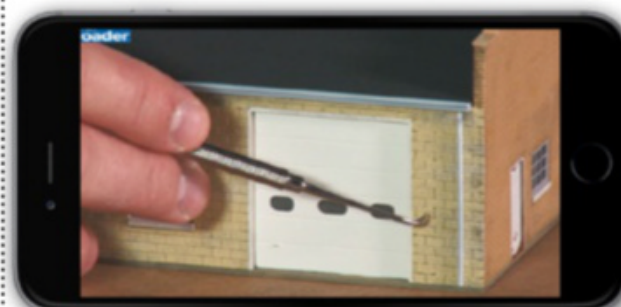
Basics of car switching

If you're new to model railroad operation, you may not be familiar with the basic switching moves for picking up and setting out cars and assembling trains. Check out this guide from our late executive editor Andy Sperandio. Find it at ModelRailroader.com/BasicCarSw



Rehab the MR&T

The popular Model Railroader Video Plus series returns, and this time the guys are tackling a waterfront scene on the Model Railroader staff's own layout, the HO scale Milwaukee, Racine & Troy. Visit MRVideoPlus.com/Jones1. Model Railroader Video Plus subscribers have access to exclusive HD videos covering all aspects of the hobby. Sign up today at MRVideoPlus.com/27deal.



▶ Group technical editor Cody Grivno shows you how to use a scribing tool to make more realistic structure models. Watch the how-to video at ModelRailroader.com/STUScribe

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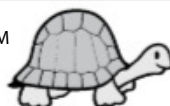
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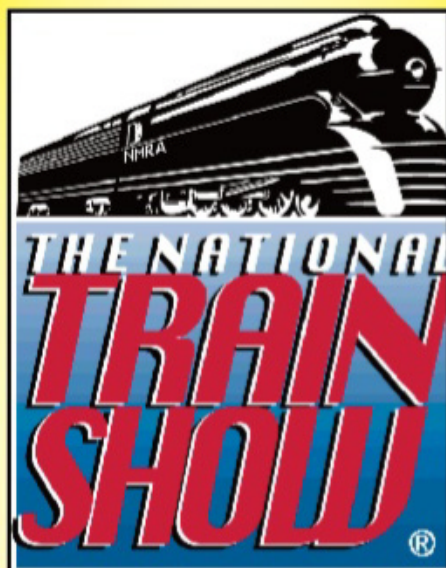
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The best in model railroading

You've made your decisions, the votes have been counted, and the results of the *Model Railroader* 2020 Readers Choice Awards are printed in this issue starting on page 46.

Putting together the annual awards is a task requiring a high level of coordination between various departments within Kalmbach Media and the many hobby manufacturers.

But each year, once we have the framework in place, the important work of deciding the year's best and most innovative products is placed in your hands.

That's the way it should be.

Al Kalmbach printed the first issue of *Model Railroader* in January 1934. From the start, he saw the magazine as a vehicle for an ongoing friendly conversation between hobbyists.

This sense of community has been a hallmark of the

magazine and its strength for more than 80 years.

A great many MR readers took the time to vote in this year's Readers Choice Awards. Thank you.

I got a kick out of Jerry Dziedzic's "On Operations" column this month, which decodes the language of railroad whistle signals. We are all familiar with the two longs, a short, and a final long air horn blast of a train approaching a grade crossing. Even today, with crews in constant radio communication, this and many other horn signals remain in use.

If you have sound-equipped locomotives, Jerry notes, using the prototype's audible signals can enrich your operating sessions.

The headline on his column, "Whistle talk," reminded me of a time when I really did whistle talk.

In the early 1980s I volunteered at the Bluegrass Railroad Museum. Today it's a tourist railroad located in Versailles, Ky., but back then it was little more than a collection of old railroad equipment temporarily housed at the Bluegrass Army Depot near Lexington, Ky.

Bright and early one Sunday morning I had an opportunity to learn how to run the museum's ancient and cantankerous ex-U.S. Army Alco MRS-1 switcher.

Under my instructor's watchful gaze, I released the brakes, notched back the throttle, and set off on a slow tour of the depot's vast network of trackage.

The instructor insisted I correctly use all the required horn signals, but there was a hitch. The commander, whose permission to use the base was absolutely essential to our fledgling museum's survival,



liked to sleep in on Sundays. No air horns allowed!

As our locomotive crept through the depot's many (and mercifully devoid of traffic) grade crossings, I was required to say, loudly and distinctly, "Hooonk! Hooonk! Honk! Hooonk!"

I said it again as I read Jerry's article. And smiled.

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HO scale



2-10-0 Russian Decapod steam locomotive. Bachmann offers this model decorated for Atchison, Topeka & Santa Fe; Erie; St. Louis-San Francisco ("Frisco," with doghouse); Western Pacific; and painted black but unlettered. The HO scale 2-10-0 features a dual-mode TCS WOWSound decoder; a

Keep-Alive capacitor; Chuffinity technology; a cog V-belt flywheel drive; separately applied stack, domes, cab, bell, whistle, pop valves, uncoupling levers, handrails, and stanchions; and painted crew figures. The Decapod is priced at **\$549**. Bachmann Trains, 215-533-1600, bachmanntrains.com

Locomotives big at 2020 Amherst show

Steam and diesel locomotives took center stage at the 2020 Amherst Railway Society Railroad Hobby Show. The two-day show was held in late January at the Eastern States Exposition Fairgrounds in West Springfield, Mass.

Bachmann displayed a production sample of its HO scale 2-10-0 Russian Decapod. The steam engine (above) features a TCS WOWSound decoder with Keep-Alive capacitor.

Athearn unveiled the Electro-Motive Division SD80MAC (opposite). The HO scale locomotive, scheduled for release in October, is the latest addition to the firm's Genesis 2.0 product line.

Rapido Trains showed pre-production samples of its HO scale Montreal Locomotive Works M420 diesel locomotive. The road unit (opposite) will be initially offered in two Canadian National paint schemes.

Tangent Scale Models made a big splash by releasing its first caboose model (p. 15). The Baltimore & Ohio class I-18 bay-window caboose is offered in several different paint schemes.

We didn't have space to fit all of the announcements from the 2020 Amherst show into print. To see the entire report and all of the product photos, as well as a video tour of the show, please go online and visit ModelRailroader.com.

HO scale



General Electric U28CG diesel locomotive. This Atlas Master Line model will be decorated for Santa Fe in the road's as-delivered and freight schemes. The HO scale model, scheduled for release in the third quarter this year, will feature all-new tooling, steam generator details, and metal couplers. Direct-current models with a 21-pin plug for Digital Command Control decoder will be priced at **\$189.95**. Versions with a dual-mode ESU LokSound sound decoder will sell for **\$299.95**. Atlas Model Railroad Co., 908-687-0880 atlasrr.com

O'Connell, founder of Chooch, to retire

Mike O'Connell, founder of Chooch Enterprises Inc., announced his retirement. Chooch was an early adopter of resin and vinyl items in model railroading. The Chooch line included resin tunnel portals and freight car loads, as well as vinyl sheets for coal loads, retaining walls, and streets.

Current Chooch products will be available from the manufacturer's website (choochenterprises.com) and dealers while supplies last.



HO scale freight cars

- **Bi-level auto rack.** Burlington Northern (green), BNSF Ry. (orange with post-2005 herald in six road numbers and yellow with blue-and-green circle-cross herald), Chicago & North Western (yellow), Denver & Rio Grande Western (orange), Ferromex (gray and red), Norfolk Southern (yellow), Soo Line (red), and Union Pacific/Missouri Pacific (yellow). Four numbers per scheme unless noted. Etched-metal see-through side panels, wire grab irons, metal wheel sets, and Kadee couplers. \$96.95. InterMountain Railway Co., 800-472-2530, intermountain-railway.com

- **Pullman-Standard/Trinity "Backpacker" five-unit articulated well car.** K-Line and Trailer Train (multiple road numbers per scheme). Die-cast metal body, photo-etched stainless steel see-through walkways, wire grab irons on side and end sills, Celcon corner uprights and vertical grab irons, multi-piece brake plumbing and rigging detail, and rotating bearing caps. Wells can carry one 40-foot or two 20-foot inter-modal containers; up to 48-foot container in top position (53-foot containers possible in top position, staggered every-other well). \$139.99. Summer 2020. Rivet Counter line. ScaleTrains.com, 423-299-3689, scaletrains.com

HO scale passenger equipment

- **Baltimore & Ohio 1940 National Limited.** Rebuilt heavyweight eight-car set: Baggage-dorm-lounge (nos. 1302 and 1305); modified heavyweight 54-seat chair car (nos. 3550 and 3557); modified diner with 28 dining and 12 lounge seats (nos. 1077 and 1080); 10-section, 1-drawing-room, 2-compartment sleeper (*Loch Doon* and *Loch Earn*); 8-section, 4-bedroom sleeper (*Emerald Falls* and *Emerald Brook*); 8-section buffet lounge (*Merchants Club* and *Queen City Club*); 12-section, 1-drawing-room sleeper (*East Norwood* and *East Akron*); and drawing room-compartment-buffet-sun room lounge (*Palm Islands* and *Capitol Escort*). Factory-painted and lettered brass models. The Coach Yard, thecoachyard.com

- **Illinois Central and Metra Highliner bi-level m.u. two-car set.** Resin kits with one-piece body shell, cast-plastic frame with underbody details, diaphragms and other modeler-installed

HO scale

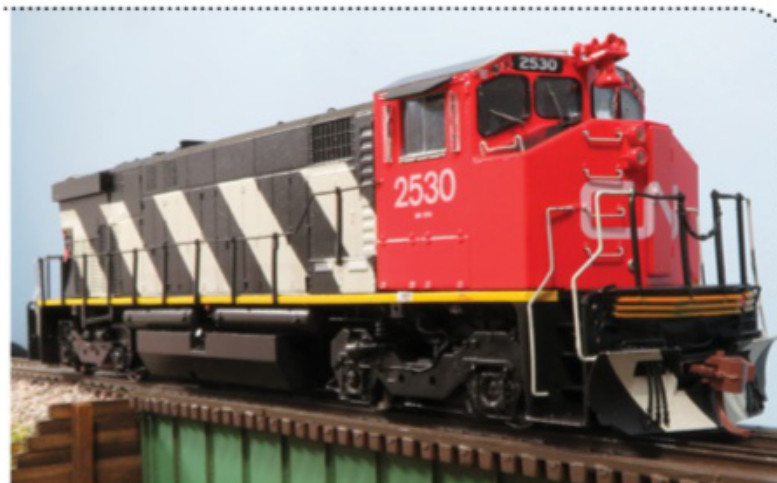


Electro-Motive Division SD80MAC diesel locomotive. This HO scale Athearn Genesis 2.0 model, due out in October, will be painted for Conrail, CSX, Electro-Motive Division demonstrator, and Norfolk Southern. Direct-current models with 21-pin NEM connector for Digital Command Control decoder will sell for **\$249.98**. Models with a dual-mode SoundTraxx Tsunami2 sound decoder will be priced at **\$339.98**. Athearn Trains, 800-338-4639, athearn.com

HO scale

Montreal Locomotive Works M420 diesel locomotive.

Rapido Trains showed a pre-production sample of this HO scale road unit. The M420 will be offered in two Canadian National schemes (delivery "stripes" [classes MR-20b and MR-20c] and stripes with red/orange cab roof [MR-20c only]). The HO scale model, due out in late 2020, will feature a detailed cab interior with optional open front door; louvered or large opening electrical cabinet door; open or closed truck bearings; and operating headlights, rear lights, tri-color class lights, and illuminated cab control stand. Direct-current models will be priced at **\$225**. Models with a dual-mode Rapido Sound by TCS sound decoder will sell for **\$335**. Rapido Trains Inc., 905-474-3314, rapidotrains.com



N scale



Suburban station. This injection-molded plastic kit is the latest N scale Cornerstone Series structure from Wm. K. Walther's Inc. The suburban station includes a ticket vending machine, station signs, a platform access ramp, a gas meter, an electrical panel, safety and security posts, a rooftop air conditioner and vents, and full-color printed signs. The kit (**\$34.98**) is typical of new stations built from 1970s to present and measures 5³/₄" x 3⁵/₈" x 1³/₄". Wm. K. Walther's Inc., 414-527-0770, walther's.com

HO scale

Pennsylvania RR GG1 electric locomotive.

Broadway Limited Imports has released a newly tooled version of this Pennsy classic. The HO scale GG1 is decorated for Pennsylvania RR (Dark Green Locomotive Enamel with brown roof, five gold leaf stripes, and Futura or Roman lettering in three numbers each; Dark Green Locomotive Enamel with buff broad stripe and Roman lettering in two numbers; and Tuscan Red with buff Roman lettering and five stripes in two road numbers) and Penn Central (black with white herald in two road numbers). The GG1 is also available painted Dark Green Locomotive Enamel and Tuscan Red but unlettered. The model (\$399.99) has a dual-mode Paragon 3 sound decoder with Rolling Thunder, two motors, prototype-specific vents, a flat pilot with fixed coupler, and a die-cast metal body and chassis. Broadway Limited Imports, 386-673-8900, broadway-limited.com



parts, black plastic window inserts, and 3-D printed stirrup steps. Kits do not include underfloor drive, trucks, or pantographs. Designed to use GSI Superliner trucks from Detail Associates or Train Station Products. Models represent as-delivered 1972 cars. \$145. Mass Transit Miniatures, a division of Imperial Hobby Productions, ihphobby.tripod.com

HO scale structures



• **Texas Trunk Line.** Laser-cut wood kit with signs and injection-molded plastic doors and window but no roofing material or detail parts shown in photograph. Based on prototype in Edcouch, Texas. Measures 2" x 2 3/4". \$19.95. Just the Basics line. Bollinger Edgerly Scale Trains, 603-267-1818, besttrains.com

O scale



Assorted fences. Rail, log, barbed wire, chain link, picket, and privacy are the new fence styles available from Woodland Scenics. The O scale fences (\$19.99 each) are hand-painted and weathered with gates, detailed hinges, and planter pins. Each pack contains 192 scale feet of fence. The fences are also offered in N scale for \$12.99 each and HO for \$14.99 each. Woodland Scenics, 573-346-5555, woodlandscenics.com

Large scale



Deutsche Reichsbahn class BR-50 2-10-0 steam locomotive. This German prototype is one of the latest offerings from PIKO America. The large scale 2-10-0 features a can-type ball-bearing motor, stainless steel drive wheels, a detailed cab interior with engineer figure, directional headlights, smoke deflectors, sand lines, number boards, hook-and-loop couplers, and steam pipes. Direct-current models list for \$1,399.99. Versions with a dual-mode sound decoder, smoke unit, and "disappearing" coal load are priced at \$1,699.99. PIKO America LLC, 619-280-2800, piko-america.com



• **Barrett's Fish Market.** Laser-cut wood craftsman kit with full dock assembly, 22-foot lobster launch kit (without figures), and Sylvan Scale Models reefer truck kit. \$225. Sea Port Model Works, 603-926-8518, seaportmodelworks.com

HO scale details and accessories

• **Military intermodal containers.** Olive Green and Desert Sand. Each pack will contain one 20-foot corrugated container, three tri-con containers, and four quad-con containers. Tri- and quad-con containers are interchangeable and reversible. Multiple container/road numbers. \$49.95. Spring Mills Depot, 443-744-0938, smd.cc

N scale locomotives



• **Motive Power Industries MP36PH diesel locomotive.** Locomotive only: Virginia Ry. Express (with Digital Command Control motor and light decoder), \$200. Bi-level commuter train four-piece sets (MP36PH diesel locomotive with DCC motor and light decoder, two gallery bi-level coaches, and gallery bi-level cab-coach): Chicago Metra and Virginia Ry. Express, \$305. Kato USA Inc., 847-781-9500, katousa.com

N scale structures

• **Old Dominion Broom Co.** Kit features 3-D mastered resin details, signs, and instruction manual. Based on George Sellios' HO scale version from his Franklin & South Manchester layout.

SoundTraxx celebrates 30th anniversary

SoundTraxx, a well-known manufacturer of sound decoders and HO/N3 narrow gauge trains marketed under the Blackstone Models label, is celebrating its 30th anniversary this year. The company is based in Durango, Colo.

SoundTraxx was founded in 1989 as the Throttle Up! Corp. in Pocasset, Mass., producing the Hyperlight lighting system. In the 1990s the company began manufacturing its line of innovative sound decoders. SoundTraxx announced it was entering the model train market in 2004.

"The two owners, myself and Steven Dominguez, felt as though we wanted to diversify the product offerings," Nancy Workman said. "Since we were both modeling the narrow gauge and living and working in Durango, Colo., home of the former Denver & Rio Grande, it seemed like a natural fit."

As SoundTraxx has continued to grow, it has used a variety of methods to reach its customers, including webinars, clinics at conventions, on-site seminars, and hobby shop visits. "We get tremendous feedback from all these events," Workman said. "We have lots of ideas to expand upon these efforts – stay tuned."

SoundTraxx has anniversary events planned for both national and local events, and it's having sales on the 30th of each month in 2020. Workman encourages customers to visit soundtraxx.com to learn more.

"We love that [our customers] appreciate our efforts," Workman said. "We love that we collectively make this hobby great and please, we really do want to hear your ideas."

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HO scale

Custom lighted River Point Station HO scale Ford F-350 mini pumper fire truck.

East Coast Circuits offers this illuminated vehicle (\$85) in multiple paint

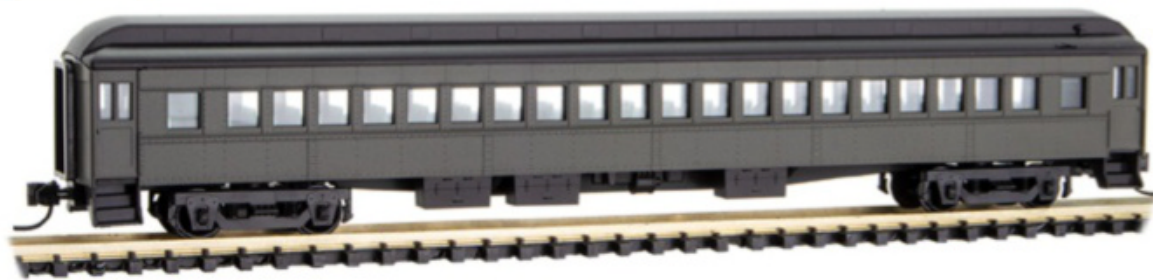
schemes. The Ford F-350 truck features more than 30 light-emitting diodes, including

headlights, grill strobes, a light bar, scene lights, taillights, and strobes. Power

for the lights is 9-12V DC only. East Coast Circuits, eastcoastcircuits.com



N scale



Heavyweight single-window coach. New York Central (\$29.95) and Pennsylvania RR (\$32.90) are the initial schemes offered on this new model from Micro-Trains Line Co. The single-window coach has extended vestibule steps, interior seating details, four- or six-wheel trucks with 36" plastic wheelsets, and body-mounted Magne-Matic couplers. Micro-Trains Line Co., 541-535-1755, micro-trains.com

HO scale



Rooftop details. City Classics offers this injection-molded styrene set (\$14.98) that includes two rooftop stairways with a choice of doors and horizontal or vertical siding, two skylights, four chimneys, eight access hatches, and 20 vent pipes. City Classics, cityclassics.biz

Price to be announced. Bar Mills Scale Model Works, 207-929-3400, barmillmodels.com

- **Empire Printing.** Laser-cut acrylic kit with tab-and-slot construction, instructions, and photos to help with assembly. Measures 7³/₄" x 3" x 8". \$135. Custom Model Railroads, 410-889-0010, custommodelrailroads.com



- **Coal bunker.** Kit features laser-cut wood walls, wall framing, and roofing. Measures 3³/₄" x 1³/₈". \$12. QuickKit line. The TrainMaster LLC, 740-405-4722, thetrainmaster.com

Electronics/controls

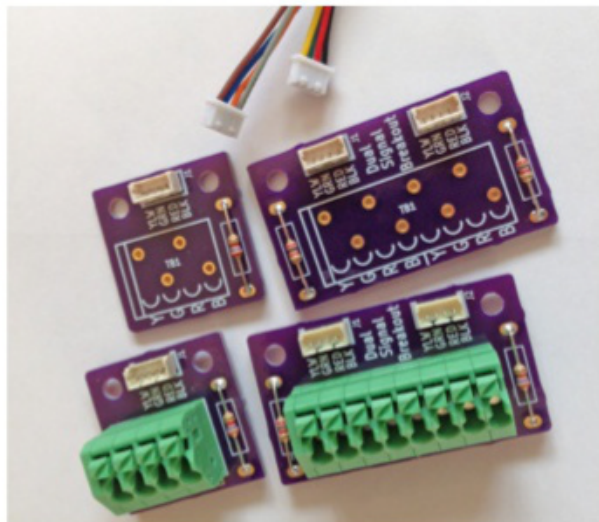
- **Billboards.** Three lights per billboard with 3 feet of 1mm fiber attached. Seven different billboard images to choose from. Billboards measure 3" high, 2³/₄" wide, and 1" deep. \$27.90. Dwarvin Enterprises, dwarvin.com

- **Sherlock detection board.** Position-detecting device specifically designed to work with the NCE Mini Panel. Can signal condition of up to eight photocells located between crossties. Provides eight triggers to the NCE Mini Panel (one per sensor). Light sources as small as a grain-of-wheat bulb are sufficient to operate the sensor. \$49.95. DCC Specialties by Tony's Train Exchange, 800-978-3472, tonystrainexchange.com

- **Tech 6 DC or DCC.** Direct-current power pack with sound controller that can operate all sound in a locomotive equipped with a National Model Railroad Association-compatible Digital Command Control sound decoder. 2-amp capacity. \$142.98. Model Rectifier Corp., 732-225-2100, modelrectifier.com

- **Light Emitting Diode Scene Controller II.** Powers up to 64 LEDs. More than 100 pre-configured special effects (fade, flicker, flash, blink, beacon, and arc welding, among others). Each LED can be configured and controlled via a DCC handheld controller or software such as JMRI. No DCC current is used to power the LEDs. No soldering, extra resistors, or programming

required. With keypad, case, and 100 pre-configured animations, \$120; mounting bracket, \$10; with DCC and JST-style plugs, \$65; with DCC and terminal screws, \$75; keypad only, \$25. Model Train Technology, 407-242-5436, modeltraintechnology.com



- **Breakout connectors for Atlas Model Railroad Co. signals.** Adapter boards have a connector that accepts the Atlas four-pin signal plugs and a spring terminal block for easy wire connections

HO scale



Baltimore & Ohio class I-18 steel bay-window caboose. Tangent Scale Models has added a caboose to its lineup of highly detailed HO scale models. The class I-18 caboose is decorated for Baltimore & Ohio (1968+ original blue in four road numbers) and Chessie System (1973+ repaint with B&O marks in four numbers; 1973+ green and white safety schemes in one number each; 1980+ Raceland, Ky., repaint in one number; and 1982+ in two numbers). An undecorated kit with Pyle or "box" marker lights is also available. The caboose (\$89.95) has era-specific body details, illuminated scale-sized marker lights that can be turned on and off independently on each end, see-through etched-metal end platforms, 70-ton Gould roller-bearing trucks with separate brake beam part, Kadee scale couplers, and a full International Car Co. interior. Tangent Scale Models, 828-279-6106, tangentscalemodels.com

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Tools



Ultimation Sander. This manually operated sander is now available from Ultimation. The sander (\$225) uses standard self-adhesive 5" sanding discs and features a laser-inscribed protractor to ensure repeatable angles within ½ degree, a rubber-edged disc for fingertip control, independent 90-degree setting, and ball bearing movement. The tool can be bolted or clamped to a work surface. Ultimation, ultimation.ca

to any signal control circuit. On-board resistor in series with the "common" wire is included. Also available with solder terminals for wire connections. Single connection: with terminal block, \$6; with solder terminals (no terminal block), \$4. Dual connection: with terminal block, \$9.50; with solder terminals (no terminal block), \$7. Azatrax LLC, 303-775-2214, azatrax.com

DVDs

- **Just Trains Running – 2020.** Howard Zane's HO scale Piermont Division (Erie; Central of New Jersey; New York Central; Lehigh Valley; Delaware, Lackawanna & Western; Louisville & Nashville; and Chesapeake & Ohio), Tony Koester's HO scale Nickel Plate Road, and Ted Pamperin's HO scale Chesapeake & Ohio. Most scenes are runbys with a mix of panning, fixed, and pacing images. Some depot and switching sequences are included. 60 minutes. DVD, \$14.95. Nace's Videography, 800-285-8685, nacesvideography.com **MR**



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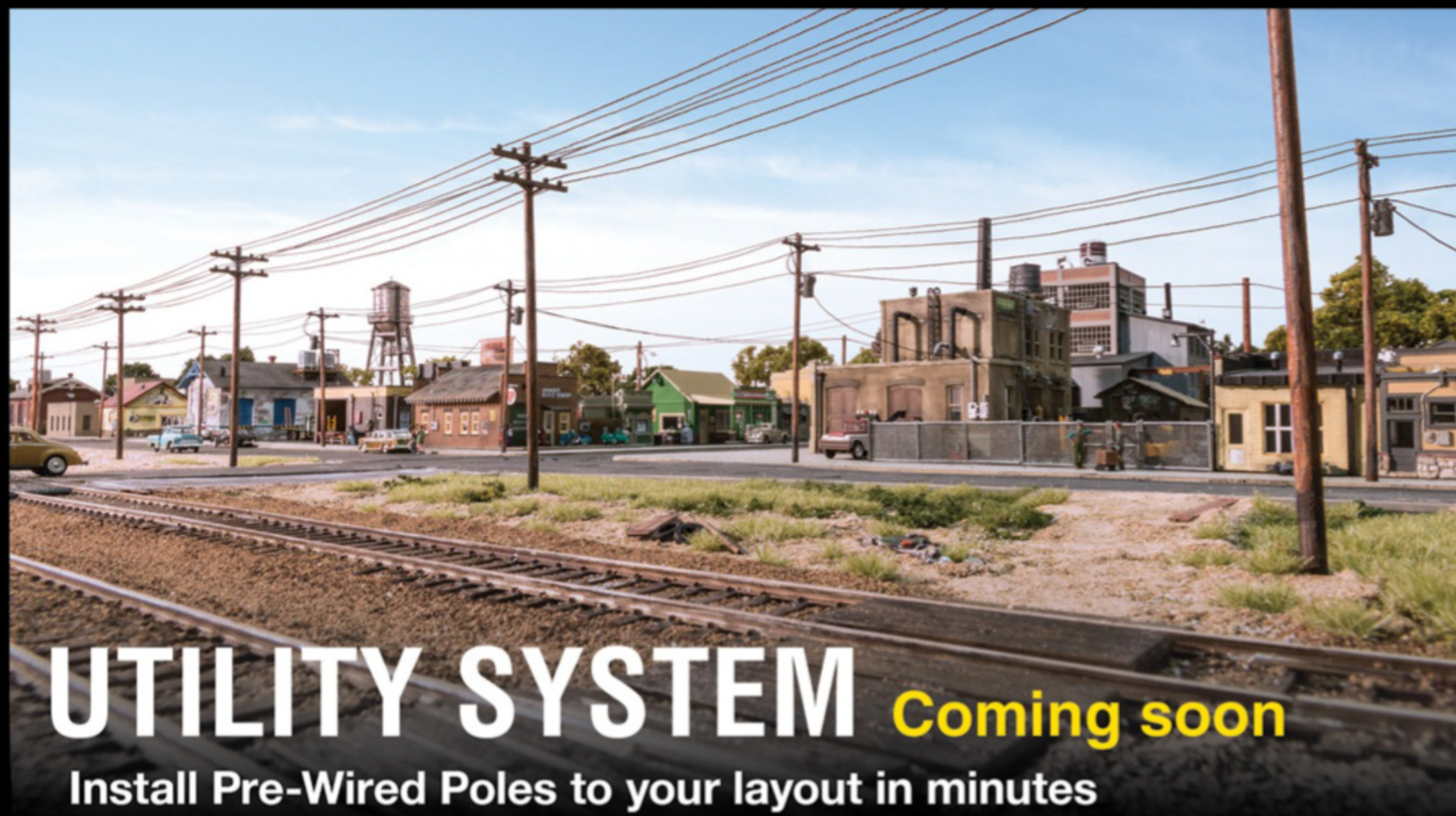
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HO scale models photographed.



If a trackside structure won't fit in the space available on the layout, turning it into a low-profile structure – like Corn Products International on our HO scale Milwaukee, Racine & Troy layout – could be a solution. Steven Otte photo

How best to shrink a structure's footprint?

Q I'm in a conundrum and would love to hear an expert's opinion. I'm planning to build a replica of an Alexandria, Minn., cold storage building for our club's HO scale layout. If the structure is to fit the space, it will have to be selectively compressed, compromising its accuracy. To remain proportionally accurate, it would have to be built in TT scale (1:120), which is about $\frac{1}{3}$ smaller than HO scale. In your opinion, which is better: to model the building "full size" in TT scale or to selectively compress the model and keep it in HO?

Lloyd Berger

A Selective compression is an accepted and common practice in modeling, and not something that needs to be avoided in the name of accuracy. It can be accomplished almost unnoticeably by omitting a few windows and doors or shortening the distance between them. Nobody's going to take a measuring tape to your building if it looks right to the eye.

Using smaller scale buildings is also common, though not for the reason you cite. Smaller scale structures are sometimes used in the background to force perspective, making that scene appear farther away in photos. But using a smaller scale structure trackside would look stranger than a selectively compressed building would. It would be shorter and therefore appear dwarfed by the HO scale rolling stock and figures alongside.

If you feel preserving the accuracy of this particular structure is crucial, consider omitting less important nearby structures to make more room for it or turning it to a background flat that would present a similar profile in less square footage. Cold storage buildings tend to be both large and visually uninteresting, so putting it up against the backdrop as a flat may be the way to go.

Q I recently received a large box of vintage HO scale rolling stock. One car especially caught my eye – a brown 40-foot stock car. What threw me is that it's lettered for the Pennsylvania RR. Did the Pennsy have livestock cars, or is this a bit of fantasy? I can't imagine livestock traffic originating in the eastern U.S., where there are no huge cattle ranches. And would they have strayed into the West?

Clarence Annett, Shawnee Mission, Kan.

A Sure, the Pennsy had stockcars. As of 1949, the *Official Railway Equipment Register* (Railway Equipment & Publication Co.) listed 2,431 of them bearing the PRR keystone. While stockcars often make us think first of cattle, most of those on the Pennsy were double-decked, designed to carry hogs.

Back in the 1800s, before the widespread availability of mechanical refrigeration, meat rode the rails on the hoof and was butchered in small local packing

houses. Most of it had to be sold fresh locally or preserved by smoking or curing. Since pork was better suited for such preservation than beef, pork accounted for about 90 percent of packing-house output in the 1870s. Though you're right that there weren't a lot of large cattle operations on the Pennsy, there were plenty of hog farms – so many that Cincinnati's meatpacking industry earned it the nickname "Porkopolis."

After mechanical refrigeration came along and dressed meat could be safely shipped long distances, the meat packing industry centralized near large union stockyards in Midwestern cities. Since the Pennsy served several of those cities, it continued to need stockcars long into the 20th century. And while it might have been rare to see a PRR stockcar west of the Mississippi, it's conceivable that a packing house situated beyond Pennsy rails would see a need for a car of Indiana hogs.

For more on how the railroads hauled meat and livestock, check out Jeff Wilson's book *Livestock & Meatpacking*, available at KalmbachHobbyStore.com.

Q I have a set of lineside signs from Bachmann, one of which I don't know the meaning of. The sign is a triangle with a black border. I noticed some pictures show the sign with a yellow or orange background and sometimes a black dot in the center. Where would I use this?

Mike Jones, Hamlin, N.Y.

A That's a "Lift Plow" sign. Used only in snowy territory, it tells a maintenance-of-way crew that they're coming up on a grade crossing or other track arrangement that could be damaged by the low-hanging blade of a snowplow in use. This sign would face the direction of the track and be far back enough from the grade crossing that the crew would have time to react and raise the blade of the plow.

Q It seems whenever an article describes model railroad operation, west is typically to the right and east is to the left. However, on a map, north is usually up, west is left, and east is right. Why do model railroaders typically reverse the directions?

Richard Reitz, Vestal, N.Y.

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

A That's not always the case. Most model railroads we've encountered are the opposite: east is right, west is left. One reason for this is because it feels natural for operators used to looking at maps with north on top. Another reason is that facing this way, the sun would be behind the operator (in the northern hemisphere, at least), matching the likely positioning of light sources in the room and illuminating the viewing side of trains and structures. There are exceptions, of course. So there is no fixed rule; build your model railroad as you choose.

Q I don't understand the purpose of white flags on locomotives pulling special trains. What personnel would learn that the trains were specials only because of the flags? And why would they need to know that?

Joe Mizell, Little Rock, Ark.

A The information conveyed by a white flag on a locomotive, "This train is an extra," is meant for any railroad personnel who sees the train, be they station



One of the signs in this HO scale Bachmann set mystified reader Mike Jones. The triangle with the dot in the middle tells snowplow crews to raise their blades because there's a grade crossing or similar obstruction coming up. Bachmann Trains photo

agents, dispatchers, or crew of opposing trains waiting to meet the extra train at a siding. And the point of it is to help the personnel identify the train.

Safe timetable-and-train-order operation depends on personnel knowing where every train on the system is at all times. This ensures two trains aren't cleared to occupy the same track at the same time. Usually this is accomplished using employee timetables that list when trains are supposed to pass every station along their routes.

Extras, on the other hand, aren't on the timetable, as their movements are assigned by a dispatcher and their schedules are created by train orders. These orders are issued to station agents along the extra's route and to the crews of every opposing train that's expected to meet it. The purpose of the flags is to help these personnel identify the train as an extra so they don't mistake it for another train that actually is on the timetable and accidentally mark off the wrong train as having passed. **MR**

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Bringing light into a black hole

The universe has its black holes, and we who model in N scale have ours: black locomotives and rolling stock. The details are lost, especially if our layouts aren't well lighted. Of course, black-painted models also occur in larger scales, and they're a challenge there, also. The difference, though, is N scale's small size. Surfaces are smaller and less in relief, making it more difficult to differentiate them. Put another way, there's a lot less room for light to bounce around on the surface of an N scale model.

Carbon black cars. I'm going to illustrate this article with the ScaleTrains.com 5750-cubic-foot carbon black covered hopper car released a year or so ago. This is a beautiful model and fits my 1985 time period, so I bought two, knowing scarcely anything about the prototype they represent. The car is a specialized Airslide hopper built by Thrall in the 1970s.

Why haul carbon? Carbon black is a by-product of the petroleum industry, and so carbon black plants are located near oil refineries. Their product is nearly pure carbon, and about 80 percent of it is shipped to tire manufacturers. You've probably seen vintage automobiles in museums and noticed that the tires were a light cream color, the color of natural rubber. Adding carbon black, beginning around 1917, made tires black – but far more important, it made them 10 times more resistant to wear and also more heat resistant.

The remainder of carbon black production goes to makers of hoses, machinery belts, gaskets, and anything else made of rubber. Some is also used as pigment in inks and paint.



Jim Kelly wanted to see all the fabulous detail on his new ScaleTrains.com carbon black covered hoppers. A few simple steps had them looking more like their full-sized counterparts.

Bill Zuback photo

Carbon black car features.

These cars are painted black because that's the color they'd end up anyway. Carbon black can be a fine powder or granular, depending on the manufacturing process, and it tends to go everywhere and get on and into everything.

Dust is a huge problem in handling carbon, not only for the mess it can create, but also for the health risk of airborne particles. That's why there are so many loading hatches on this model (22) and why they are small (16" diameter), so as to accommodate smaller and tighter-fitting loading chutes.

The ScaleTrains.com model.

The model features screw-mounted trucks and body-mounted couplers. Hooray! If I ruled the world, these would be standard on all N scale rolling stock. The model also features very nice metal wheels, another plus in my book.

Those three doo-dads on each side of the car are sampling spigots. Purity of the carbon is extremely important to manufacturers, and it's tested before accepting a

shipment. Carbon is quite caustic, and one problem can be rust from hatches and covers falling into the load. This can be solved by replacing the steel covers with ones made from plastic.

Bringing the detail to light.

You can find many photos of carbon black hoppers on the internet, and due to the wonder of sunlight and the talents of the photographers, most appear a dark gray with the detail highlighted nicely. This was the look I wanted.

I began by removing the trucks so I could paint them separately and maintain their free-rolling quality. Then I covered the couplers with masking tape so as not to gunk them up.

Next I lightly sprayed the car with Testor's Dullcote, using a rattle can. This is always a scary prospect, but a great timesaver.

Make very rapid passes from about 18" away and quit when you're way ahead. The idea is that you're adding a clear, slightly nubby texture that will give later paint applications some tooth to grab.

I don't know that this step was actually necessary, as the car has a rather flat finish to begin with, and the one I flat-coated looked about the same as the one still in the box. Still, it didn't hurt, and I'm finding it necessary on other black models that are shinier.

Then I sprayed the car with Floquil SP Lark Dark Gray

thinned 5:1 with Testor's Universal Enamel Thinner. I was delighted with the result and could have stopped right there and been happy. Instead, I added a light dusting of road grit along the bottom of the car, using Floquil Earth.

Voilà! Another black hole has seen the light. **MR**



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Contributing editor Pelle Søbørg shares how he weathered this Tangent Scale Models HO scale quad hopper with paints and powdered pastels. He completed this car in an afternoon. Photos by the author

Quick and easy freight car weathering

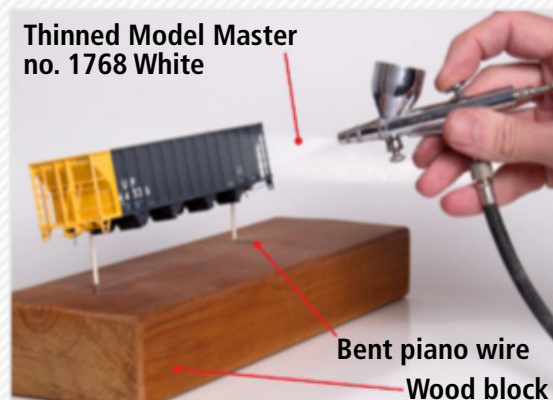
Though many modelers enjoy weathering freight cars and locomotives, some are intimidated by the notion of simulating grime, rust, and dust on their scale models. To a certain extent this is understandable, as some of today's ready-to-run models are quite expensive. But with some basic techniques, you can make your scale rolling stock look just like its full-size counterparts.

The model I'll demonstrate my weathering techniques on is a Tangent Scale Models HO scale Bethlehem Steel quad hopper. I weathered the car with a couple of soft paintbrushes, thinned enamel paint, powdered pastels, and an airbrush. I recommend using a dual-action airbrush for weathering, as you can regulate the air flow and color flow independently. This makes it easier to control where the paint hits the car and how much color you apply.

I find that my weathering looks best when I build up the effect in light layers. It's easier to add more weathering than to remove too much. When in doubt on how a freight car or locomotive should look, use prototype photos as a guide.

Follow along as I take you through the weathering process on this quad hopper step by step. This is an easy afternoon project. My techniques can be applied to any modeling scale.

STEP 1 FADE AND RUST



I first faded the factory paint. To do this, I removed the car's trucks and placed the hopper on a homemade jig made from a block of wood and pieces of bent piano wire. I drilled a series of holes in the wood to insert wires for various truck centers.

Then I used an airbrush to apply thinned Model Master no. 1768 White (light gray would also work) to the carbody. I thinned the paint to a wash, approximately 1 part paint to 3-4 parts Testor's no. 1789X airbrush thinner. [Do all painting in a well-ventilated area and wear proper personal protective equipment. —Ed.]

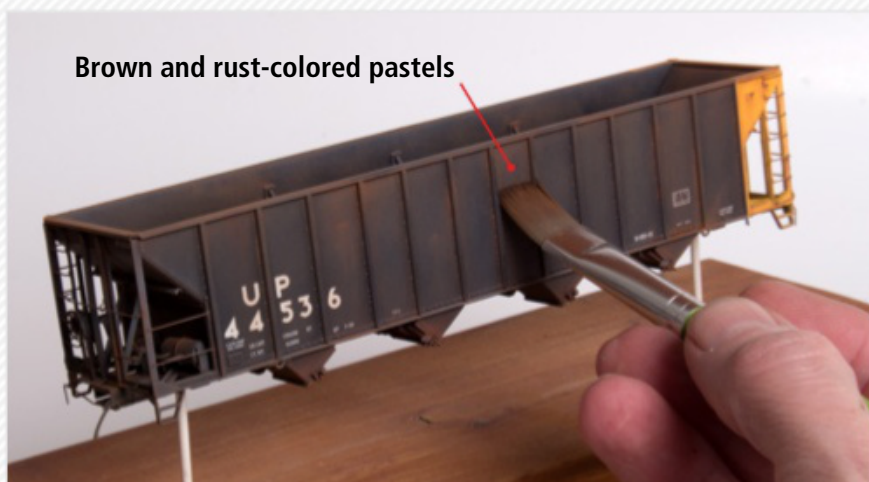
After the fade coat had dried, I airbrushed the lower third of the



carbody with Model Master no. 2125 Earth Gray. As with the previous color, I thinned the Earth Gray to a wash using the same mixing ratio as before.

The Tangent hopper is decorated as a Union Pacific class H-100-18 quad hopper that was repainted in 1989. My former Daneburg Subdivision layout, featured in the May 2017 issue of *Model Railroader*, was set in the present day. That meant the quad hopper would have been on the rails for more than 25 years since it was last painted. To simulate rust patches, I mixed rust-colored powdered pastels in clear varnish and applied them with a fine paintbrush.

STEP 1 FADE AND RUST (CONT'D)



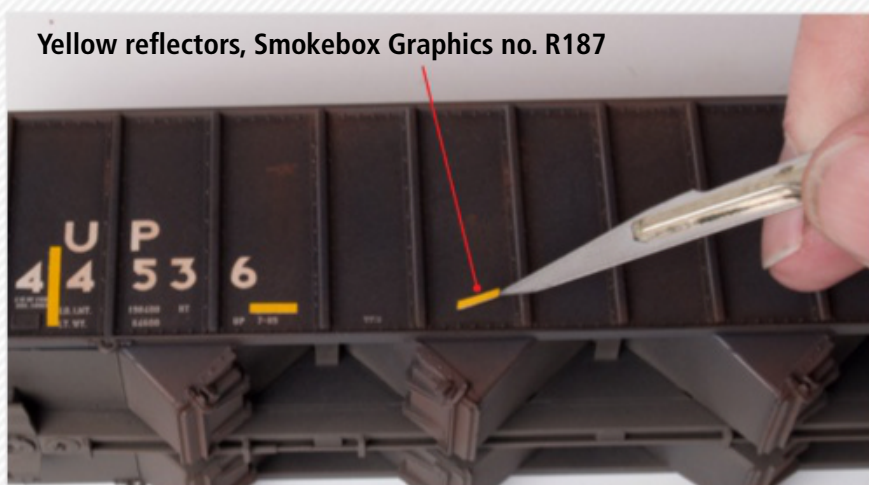
Next, I dabbed the rust spots with dry rust and brown powdered pastels. I then pulled the brush down in a swift, vertical motion. This creates the look of rust and grime that's been washed down the car side.

I also applied brown and rust-colored pastels on the sides of the car, keeping the brush parallel with the exterior posts. Most of the powder will disappear when the

clear varnish is applied. To avoid multiple rounds of weathering, I applied the pastels heavier than normal.

I sealed the weathering with a coat of Vallejo no. 27.651 polyurethane matte varnish. This is a sturdy clear coat that will stand up to normal handling. If the weathering effect is undone by the matte varnish, get the brush out and apply more pastels.

STEP 2 SAFETY FIRST

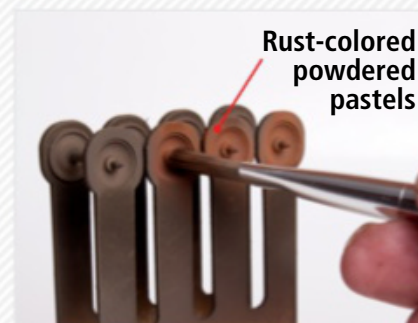
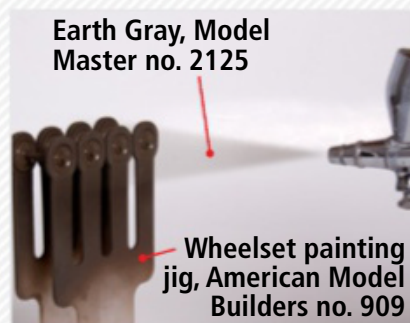
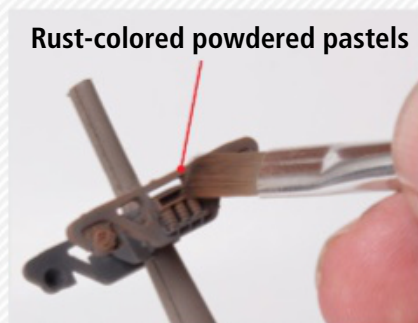
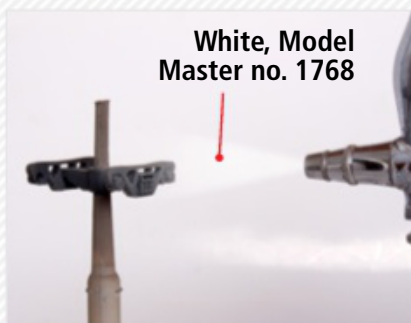


Federal Railroad Administration-mandated reflective stripes are required on all contemporary rolling stock and locomotives. Though decal stripes are available, I used self-adhesive reflector stripes from Smokebox Graphics. Not only are the stripes easy to apply, they're reflective like the prototype.



With the reflective stripes in place on both sides of the car, I used the double-action airbrush to apply a second coat of varnish. This time I used Vallejo no. 70.520 matte varnish. The polyurethane matte varnish I used earlier dries with a slight sheen. The matte varnish dries to a flat finish.

STEP 3 TRUCKS AND WHEELS



I weathered the trucks using the same treatment I applied to the carbody. First, I sprayed the trucks with Model Master White and Earth Gray, both thinned to a wash.

Next, I randomly dabbed the trucks with rust-colored powdered pastels. I sealed the pastels with a coat of Vallejo matte varnish.

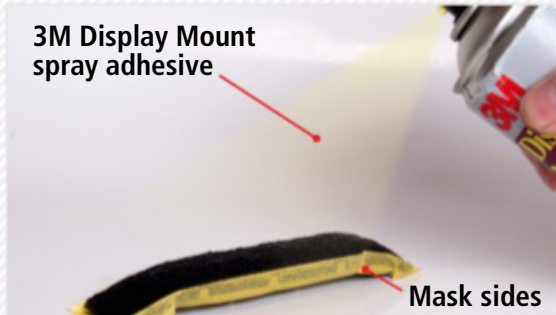
I replaced the factory wheelsets with ExactRail .088" nickel-silver wheels (no. EW-5071) [Tangent Scale Models offers semi-scale 36" all-metal wheelsets as item nos. 122 (12-pack) and 123 (100-pack). – Ed.] I placed the wheels in a laser-cut acrylic jig from American Model Builders, which

not only holds the wheels for painting but masks the wheel treads. I covered the needle-point of the axle with a dab of liquid masking adhesive before I airbrushed the wheels Model Master Earth Gray.

After the paint dried, I brushed rust-colored powdered pastels on the wheel faces. Then I peeled off the liquid masking adhesive from the axle tips. The sideframes largely protect the wheel faces, so I didn't seal the pastels with clear varnish.

The treads are more exposed on a hopper than most other car types, so the semi-scale wheelsets have a bigger visual impact.

STEP 4 LOAD AND FINAL DETAILS



The quad hopper comes with an injection-molded plastic coal load. I enhanced the load with Arizona Rock & Mineral Medium Coal (no. 1133). Before applying the coal, I masked the sides of the load and sprayed it with 3M Display Mount spray adhesive.

With the adhesive still wet, I applied the coal to the load. I ran the coal through a sieve so the pieces would be uniform in size. I shook the load to remove any loose

material. Then I airbrushed the load with Vallejo matte varnish to seal the coal and give it a flat finish. After 15 minutes, I removed the masking tape and installed the load.

The bottom two images show the coal hopper before and after weathering. I also installed North American Railcar Corp. MagnaLock brake lines and Sergent Engineering couplers.

In just a few hours time, I was able to turn a factory fresh hopper into a well-traveled coal hauler. 

Materials list

Arizona Rock & Mineral
1133 Medium Coal

ExactRail
EW-5071 .088" nickel silver wheels

North American Railcar Corp.
11-AIR-10H-run3 MagnaLock brake line

Smokebox Graphics
R187 reflector stripes

Testor Corp. Model Master enamel paint
1768 White
1789X airbrush thinner
2125 Earth Gray

Vallejo
27.651 polyurethane matte varnish
70.520 matte varnish
71.161 airbrush thinner

Miscellaneous
3M Display Mount adhesive
Brown and rust powdered pastels

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River birch branches provided the material for this fence along the right-of-way on Lou Sassi's On30 Sandy River & Rangeley Lakes. The inset photo shows what the scene looked like before the fence was added.

MAKE A RIGHT-OF-WAY FENCE

This two-evening project calls for branches, pruning shears, and white glue

By Lou Sassi • Photos by the author

I've been building my On30 Sandy River & Rangeley Lakes RR for nearly a decade. During construction and for many years prior, I read books and watched videos of the prototype. One thing I kept noticing was rough-hewn wood fencing along the railroad right-of-way. The fence both delineated the railroad's boundaries and kept people and livestock off the tracks.

I decided a stretch of similar fencing would look good on the south end of my layout. Here, Maine Route 145 from Strong to Kingfield passes in front of the Mountain View Hotel while paralleling the SR&RL main line.

A walk through the yard

The prototype fencing consisted of approximately 5-foot tall posts spaced every 8 to 10 feet. The fence rails are rough-cut timbers – perhaps lengths of softwood trees – nailed to the top of the posts **1**. Some fences had barbed wire strung about halfway up, but I re-created the basic post-and-rail style.

My dilemma on what to use for materials was answered one fall afternoon as I wandered the front yard picking up small branches that had fallen from the



1 Roughin' it. As seen in this prototype photo, the fence posts are rough hewn. The caps appear to be softwood nailed to the top of each post. From *The Sandy River & Rangeley Lakes and Predecessors: Vol. 4*. Newell Martin photo, courtesy Jerry DeVos

river birch trees my wife and I planted. River birch is a tree native to the southeastern United States, but is similar in appearance to white and yellow birch that are dominant in the northeast.

After I gathered a sufficient number of small branches, I brought them inside and started cutting them into smaller pieces with pruning shears **2**. I cut one batch of branches, which range from 6 to 8 scale inches in diameter, into scale 7-foot lengths for the posts. The rails are a scale 4 to 6 inches in diameter.

Simple installation

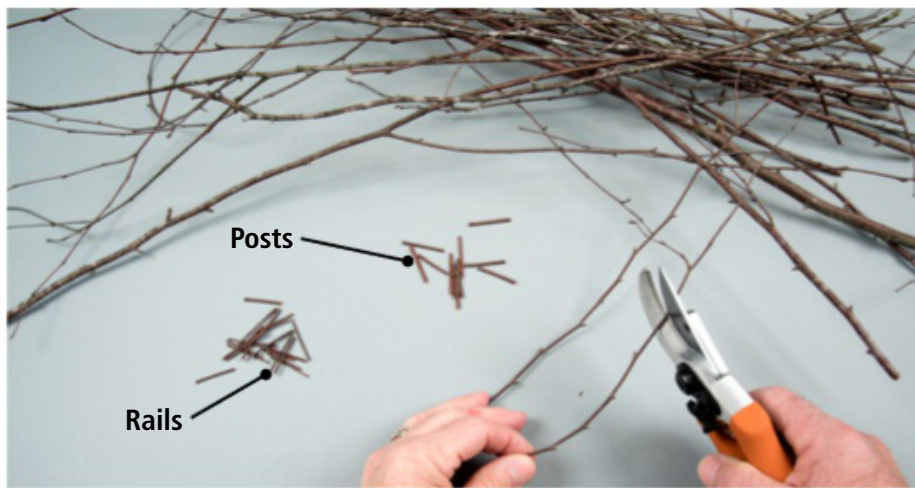
Installing the fence was a quick process. First, I used an awl to poke holes in

the “ground goop” and Styrofoam scenery base **3**. Then I dipped the posts in full-strength white glue and set them into the holes **4**.

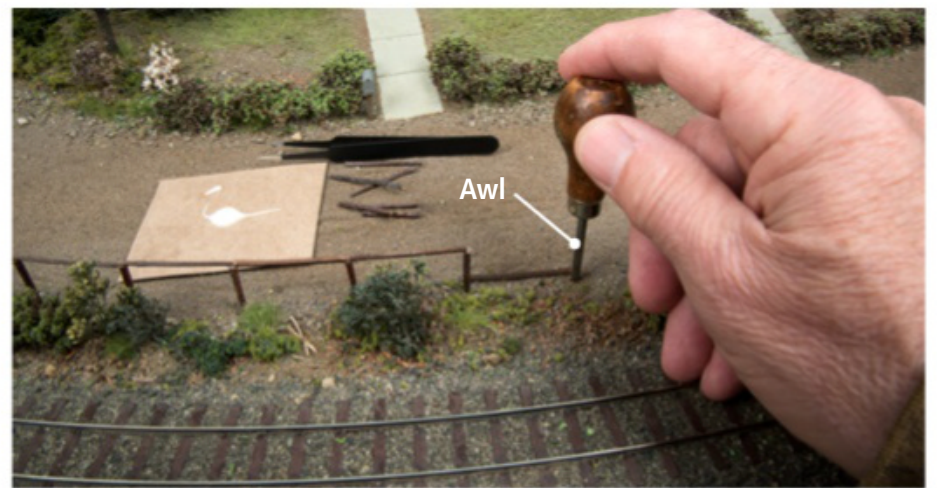
Next, I applied white glue to the top of each post. I set the rail on top of the posts, as seen in **5**. I repeated this process until the fence ran the full length of the track where it paralleled the road.

I also installed fencing through the fields and woods on the opposite side of the track. I didn't paint the fencing since the natural color of the branches resembled that of the prototype fence.

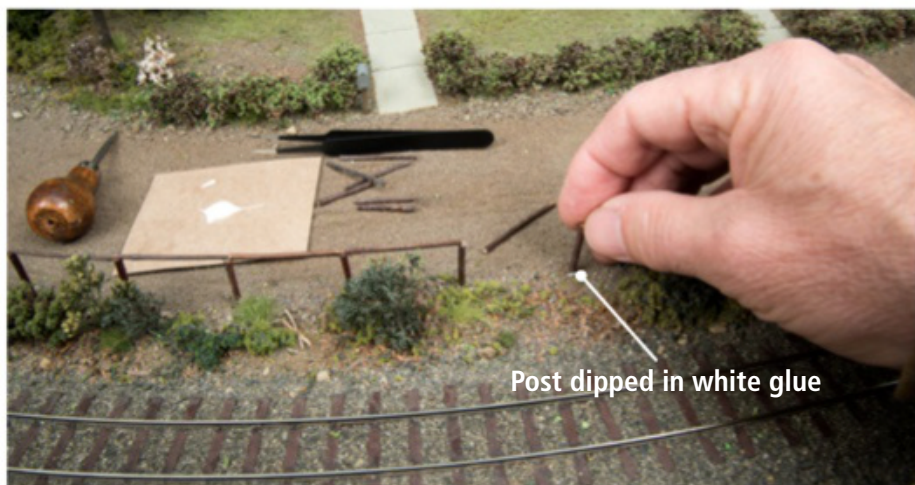
The fence project took about two evenings, cost next to nothing, and gave the right-of-way on my Sandy River & Rangeley Lakes a realistic look. **MR**



2 Just a little trim. After Lou gathered branches that fell from river birch trees in his yard, he cut them to appropriate O scale lengths with pruning shears.



3 Post holes. The scenery base on Lou's layout is Styrofoam covered with ground goop. An awl was all Lou needed to make the post holes, which are on scale 8-foot centers.



4 Planting posts. Lou dipped the 7-scale-foot-tall posts into full-strength white glue. When set in the hole, about 5 scale feet of the post should be visible.



5 Topping it off. Lou used a toothpick to add white glue to the top of each post. With the glue still wet, Lou used tweezers to set each rail in place.



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Rolling along THE BLUFFS



① A Louisville & Nashville train runs along the bluffs overlooking the Mississippi River on Joe Visintine's HO scale East Bluff Terminal RR (EBT). Transfer runs and interchange traffic from a wide variety of railroads are the heart of the EBT's operations.



Industrial switching and transfer runs are the heart of this freelanced riverside railroad

By Joe Visintine

Photos By the author

The East Bluff Terminal RR (EBT) in my basement in St. Peters, Mo., isn't my first layout set along the bluffs of the Mississippi River. My previous one, built in Salinas, Calif., was a 10 x 10 double-decker with a helix and duckunder. But even that wasn't my first.

My first East Bluff Terminal was two 6-foot modules I built and displayed at train shows with the Monterey & Salinas Valley RR Club. I enjoyed that club and the Bay Area S Scalpers for many years. The BASS group has an S scale modular setup that's exhibited at O Scale West and the S Scalpers' convention in Santa Clara each year.

But my new EBT is a vast improvement over either of the previous ones. My freelanced HO scale railroad is set in 1971, south of East St. Louis, Ill. As you look at the layout, north is to your left.

The railroad serves numerous connecting roads, represented by staging. The Chicago, Burlington & Quincy; Louisville & Nashville; and Gulf, Mobile & Ohio (GM&O) come in from the north. Trains from the south are the Southern Ry., St. Louis Southwestern (Cotton Belt), and the GM&O. There are also transfer runs from St. Louis with the Manufacturers RR (MRS) and the Terminal Railroad Association (TRRA).

An Archer Daniels Midland locomotive will arrive with a string of covered hoppers to exchange at the grain elevators and return to staging. A GM&O passenger train will stop by during an operating session, as will a train with a string of coal hoppers to exchange at the Peabody coal loader.

The layout has two yards. North Yard is the classification yard that breaks down incoming freight trains. Outgoing trains are moved to the departure yard just before the arrival of the locomotive that is to pick them up. The departure yard is also used for outbound cars for the MRS, TRRA, and separate runs to the north and south ends of East Bluff.

Benchwork and track

My wife, Denise, and I moved to Missouri from California in September 2012, but with our new basement loaded with boxes, I had to put off building a layout until I had walled off a small kitchen area, storage rooms, a crew room, a workshop, and a train room. Once that passed inspection, I was able to start the new EBT in January 2014.

The benchwork is made from 2 x 2s lag-bolted to the studs on 32-inch centers. Open-grid frames individually built with 1 x 4s to fit each area are fastened to the studs and supported with 1 x 4 angle

The layout at a glance

Name: East Bluff Terminal RR

Scale: HO (1:87.1)

Size: 14'-6" x 42'-6" plus 1'-5" x 32'-0" staging yard

Prototype: freelance

Locale: along the Mississippi River bluffs south of East St. Louis, Ill.

Era: 1971

Style: along the walls

Mainline run: 110 feet

Minimum radius: 34"

Minimum turnout: no. 6 (main), no. 4 (staging)

Maximum grade: 2 percent

Benchwork: open grid

Height: 52" to 56"

Roadbed: cork over plywood

Track: Micro Engineering code 83 (visible), Atlas code 100 with Peco turnouts (staging)

Scenery: extruded-foam insulation board, cardboard lattice with plaster cloth, ceiling tiles, and Sculptamold

Backdrop: painted on tempered hardboard and drywall

Control: NCE Digital Command Control with wireless throttles

East Bluff Terminal RR

Scale: HO (1:87.1)

Room Size: 14'-6" x 42'-6" plus staging yard

Scale of plan: $\frac{5}{16}$ " = 1'-0", 24" grid

Numbered arrows indicate photo locations

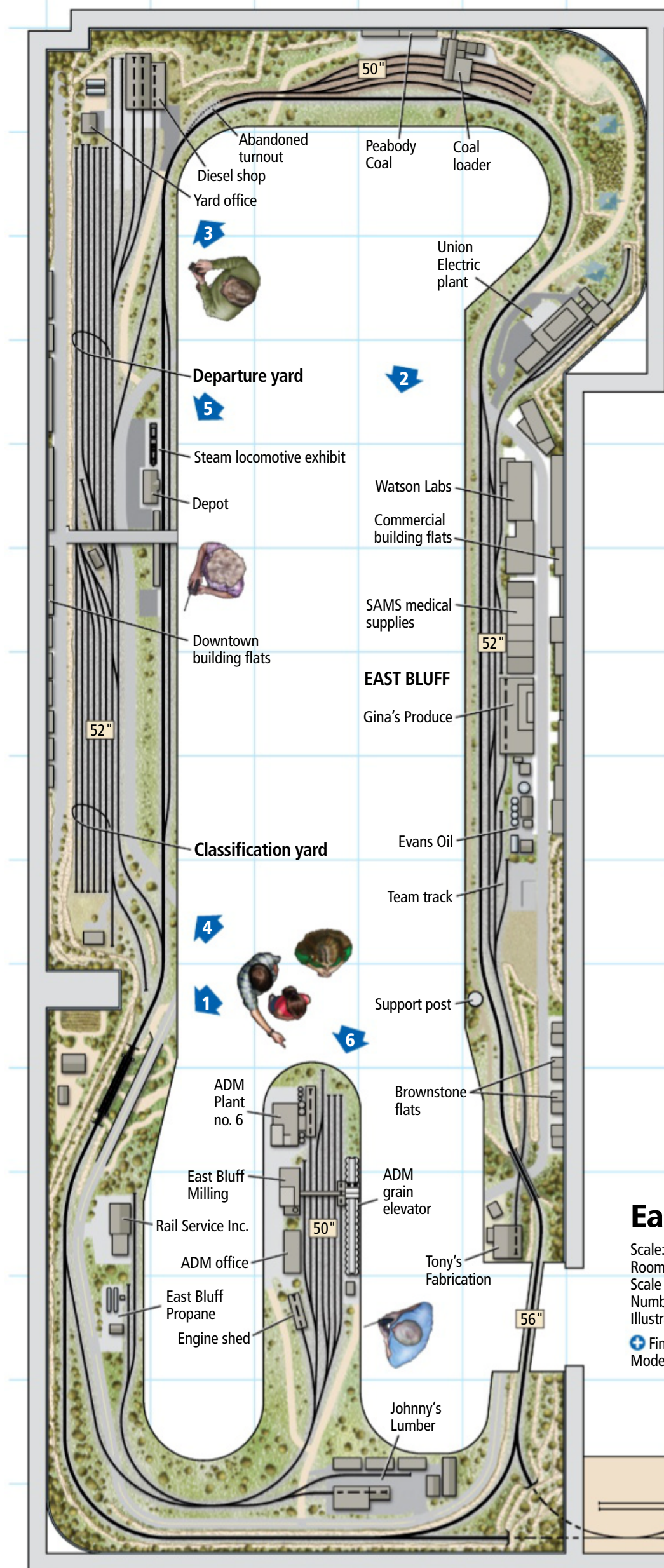
Illustration by Rick Johnson

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



Curved turnout
(all others are no. 4)

Staging yard





② This overall view of the layout room shows North Yard to the right and the ADM grain complex on the peninsula in the middle.

braces, eliminating the need for legs. Only the 10-foot grain peninsula has four braced legs for support. I cut ½" plywood as the base for structures, roads, and track. I added 1 x 2 framework on the front edge of the frames to attach the 14" hardboard fascia.

Track in the staging yard is code 100 Atlas flextrack with no. 4 Peco turnouts salvaged from my previous layout. Visible track is new code 83 track and no. 6 turnouts from Micro Engineering.

Wiring and control

I decided on NCE Digital Command Control using six wireless throttles and two NCE 5-amp boosters. One booster supplies four DCC Specialties circuit breakers and the other supplies three, for a total of seven power districts.

Separate power supplies are used to operate the twin-coil switch machines and Tortoise by Circuitron switch motors, lighting, and Digitrax DS64 stationary decoders. The turnouts in the 13-track staging yard use twin coil switch machines and are operated by push buttons that trigger a 52-diode matrix. Each staging track also has its own power switch. The engine service yard likewise has power off switches for each track, to keep idle sound-equipped engines from consuming power and making noise.

The wye is controlled by a DCC Specialties reversing unit and is operated by a three-position rotary switch. All



③ An assortment of custom-painted East Bluff Terminal RR motive power stands ready at the engine service terminal.

tracks in the grain yard, classification yard, departure yard, engine service yard, and Peabody Yard are pushbutton controlled using seven Digitrax DS64s. All yard turnouts are powered by Tortoise by Circuitron switch motors.

A couple of sidings have surface-mounted twin-coil machines due to benchwork supports. These are concealed under buildings. All twin-coil switch machines are protected by a homemade capacitor discharge circuit to prevent coil burnout in case a push-button shorts out.

The control panels are made of .080" aluminum, primed and painted using colored chart tape for track identification. Along with the switches and push buttons, I installed light-emitting diodes (LEDs) to indicate presence of track power and switch machine power. Panels also have red/green bicolor LEDs to indicate how turnouts are lined.

Scenery

I used multiple techniques for the base terrain. I've used cardboard strips covered with plaster cloth, carved extruded-foam insulation board, Sculptamold rock castings, and ceiling tiles. The latter are used to model the horizontal strata along the bluffs. I cut and glue ceiling tile strips together to fit the scene, then use a stiff wire brush to gouge the strata. I then carve cracks and voids. I start with a black diluted acrylic wash, then work up to lighter colors.

Woodland Scenics ground foam was used for ground cover. Countless trees made from Scenic Express SuperTrees armatures populate the layout, and the leftover material became bushes. Mainline ballast is sifted granite, and the yards and sidings are ballasted with either sifted paver sand or commercial ballast from Arizona Rock & Mineral.



5 A Gulf, Mobile & Ohio passenger train arrives in East Bluff for a quick stop before heading on to Mobile. Kids love to climb on the old East Bluff Terminal steam engine on display on the south side of the station.



4 Manufacturers Ry. Co. no. 211 and 212, both Alco S-2 diesel switchers, head back to Anheuser-Busch in St. Louis (represented by staging) with a train of empty beer reefers.

Industries and other structures

A peninsula on the north end, 2'-8" wide by 10 feet long, hosts a large grain complex consisting of silos, a mill, office building, a corn syrup operation, and a shed for the on-site switcher. Along the wall you'll find Johnny's Lumber, a propane storage facility, and a freight house.

The busy south end of town has Tony's Fabrication shop, an open loading dock, Evans Oil, Gina's Produce warehouse, S. Anthony Medical Supply (aka SAMS), Watson Labs, and a Union Electric power plant. There's also a Peabody coal loading facility on the main line. All rail customers except the Peabody site are off the main and don't interfere with through traffic.

At the end of the south departure yard is a five-track locomotive service area. A two-stall enginehouse with an added-on car repair shop keeps everything up and running. Fuel, sand, oil, and water are available trackside. The office, fuel tanks, and oil tanks are nestled against the bluffs, along with an open service platform.



6 The ADM grain complex is the largest single industry on the layout. It's busy enough that it requires its own dedicated locomotives.

Operations

I like using car cards and waybills for this layout and print my own. I use different color cards to quickly identify boxcars, hoppers, reefers, flatcars, gondolas, and tank cars. A few car cards refer to blocks of two to five cars that move together, such as coal and grain hoppers and tank cars.

A typical operating session may see all trains in the staging yard run, along with the locals. We operate by event and a schedule is printed for each op session. After a session, the trains are backed out of staging, turned on the wye, and backed into staging again, where the cars are checked and the waybills flipped for the next run.

There are red bad order slips that can be put in the car card if there is any problem with a car, and cars can be replaced or repaired while trains are restaged. I have a chest of drawers under the staging yard with extra cars, so I can switch out any car and its car card using the same waybill for routing. This prevents operators from looking at the same cars all the time.

Good enough

After all the track was laid and wired and working flawlessly, I started scenery at the duckunder and worked clockwise around the room. The standard I worked toward was "good enough for now." It enabled me to lay down all the basic scenery and structures where needed. I made some changes as I went along. These included replacing one building because I felt it was oversized, and also adding a turnout for the caboose track.

Now that I've worked my way around to the starting point, the next round of construction will consist of adding more detail items to structures, scenery, and roads, and getting some lighting installed in buildings and along the streets. Locomotives and rolling stock need weathering. Signals and grade crossing lights are needed, as well. Power lines are also on the list of things to do. I guess it's true; layouts are never really finished, are they? [MR](#)



Meet Joe Visintine

Joe was born in East St. Louis, Ill. In 1971 he moved from Chicago to California on a job transfer with Western Electric. He retired from the City of Watsonville's water operations as senior water operator in April 2009. Now Joe and his wife, Denise, live in St. Peters, Mo., and have three orange tabbies running around their home. Their son, Roman, and his wife, Fatima, live in San Jose, Calif., and have one daughter, Audrey.



Meeting the SCRAPPER'S

Make an eye-catching scene of a locomotive being scrapped in just an afternoon

By Kim Nipkow
Photos by the author

A while ago I stumbled across an interesting picture of an HO scale diorama featuring an Electro-Motive Division (EMD) F unit being torched apart. I liked the idea so much I was inspired to build a similar model myself.

I got on the internet and started looking for parts. First, I needed a decent-looking locomotive model. It didn't have to be superdetailed; I didn't want to spend big bucks on a model I was going to cut apart. I was lucky to find a Life-Like F3 for \$60 on eBay.

Since the locomotive was going to be cut open, I needed to add prototypical interior detail, such as a diesel engine. Walthers offers a great kit called EMD 567 Prime Mover, part no. 933-3119.

In addition to the locomotive and diesel engine, it's a good idea to do some detail parts shopping for a scrapyards scene if you haven't already accumulated some usable things over the years. Pretty much anything goes: oil barrels, rusty cars, tires, even wood scraps from the last laser-cut structure kit you built.

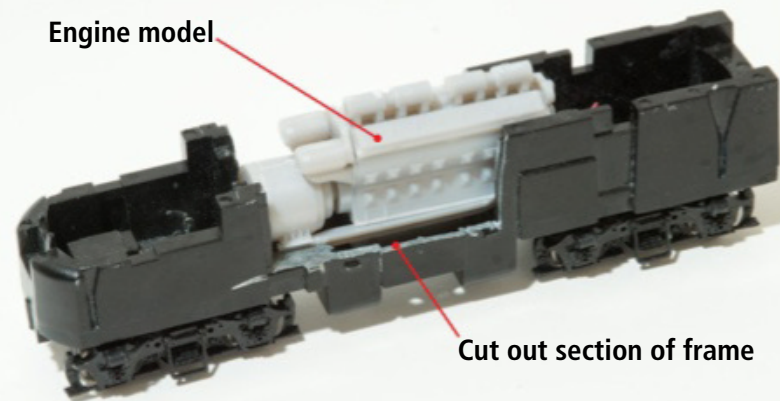
I added the cut-off pieces around the engine and a few figures busily working to bring the scene alive. I used techniques similar to those in my article "Weeds and junk" in the January 2018 *Model Railroader* to complete the scenery. 

Kim Nipkow is a regular contributor to Model Railroader. He lives in Switzerland and models U.S. prototypes.

A Western Pacific F3 is slowly disassembled in this scene by Kim Nipkow. A Life-Like diesel is the starting point for this project, which uses a Walthers EMD 567 diesel engine model to fill the carbody.



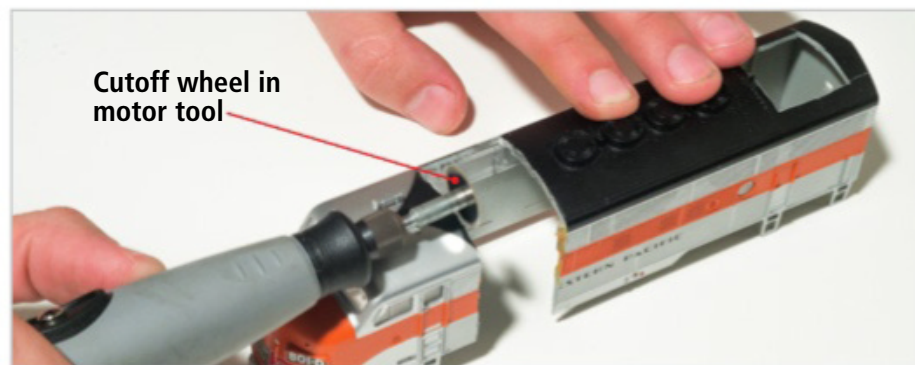
Engine model



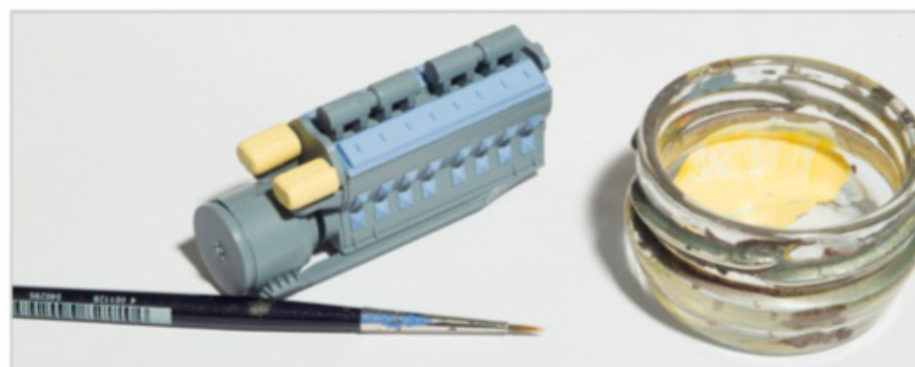
Cut out section of frame

Then I assembled the diesel engine kit and placed it in the frame. This helped me figure out what I needed to remove to fit the engine. I used a motor tool with a metal cutting disk to cut the frame, then removed sharp edges with files.

Cutoff wheel in motor tool



I cut out sections of the locomotive shell sides and roof to show interior details. Again, I used the motor tool to make the cuts, then removed the burrs from the edges. Since the plastic shell is too thick to look realistic in scale, I sanded some of the material to make the edges thinner.

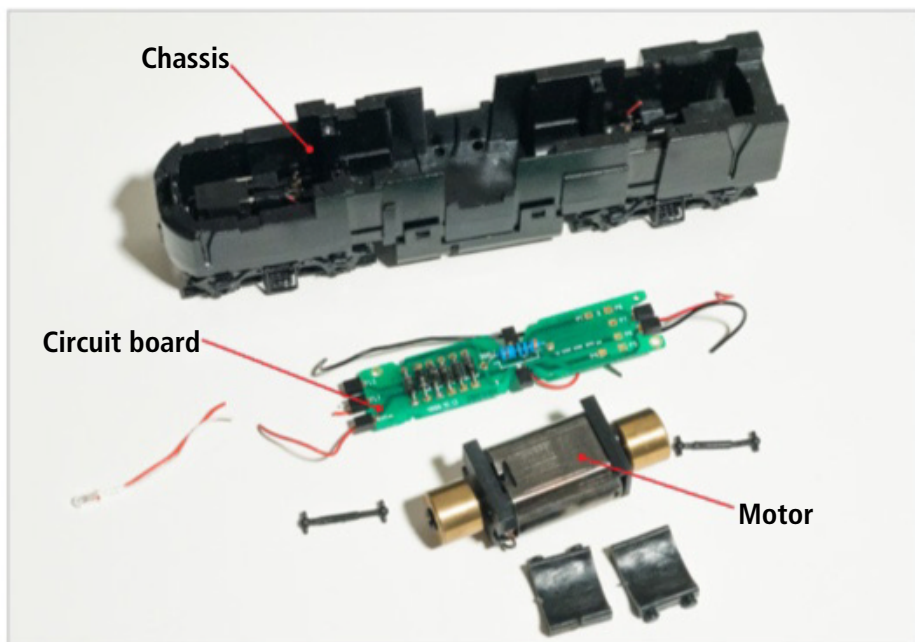


The Walthers diesel engine is easy to assemble. I airbrushed it a light gray color. Then, following prototype photos, I added some detail by painting some of the surfaces yellow or light blue. I gave the engine a dirty look by applying a light patina of brownish-gray paint using an airbrush.

Chassis

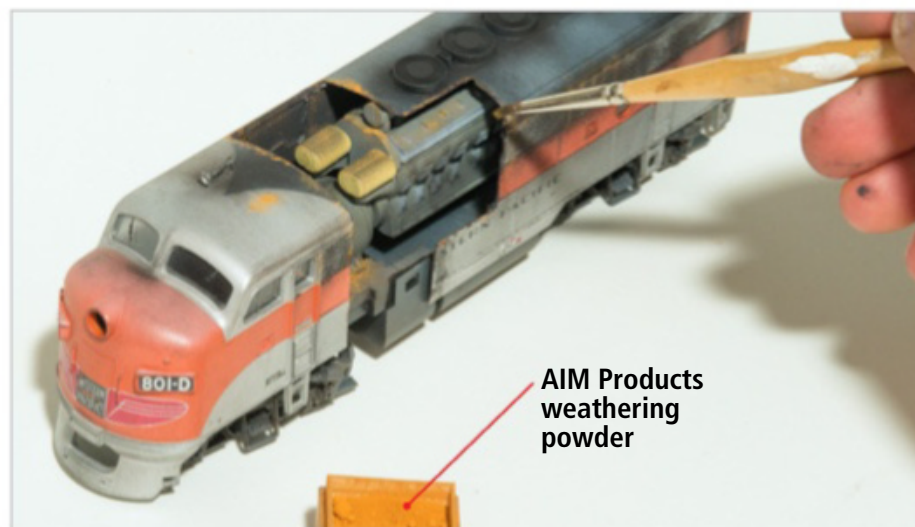
Circuit board

Motor



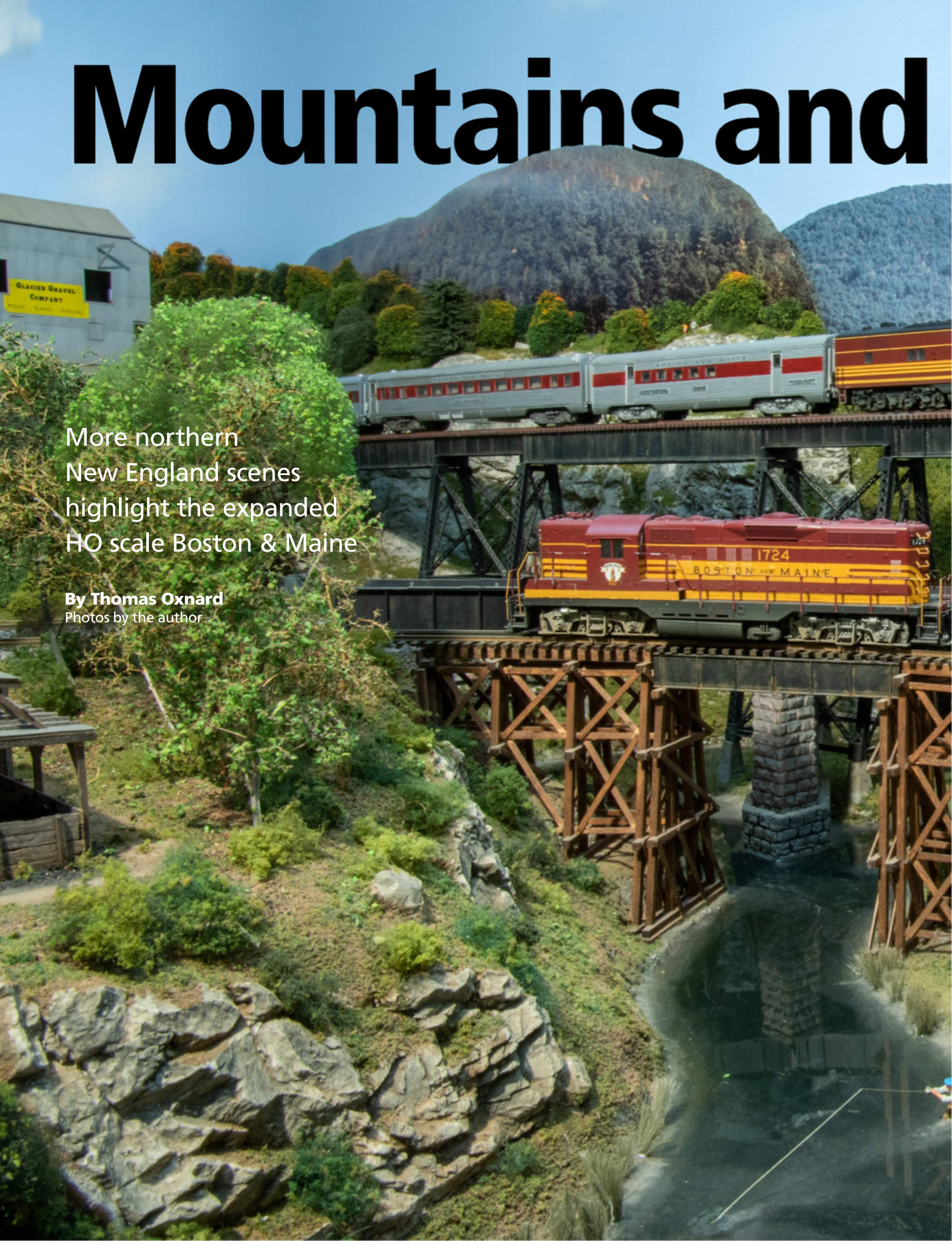
I started by disassembling the locomotive, then removing the circuit board, motor, and drive parts from the chassis.

AIM Products weathering powder



The F unit's shell also got some weathering. I followed the techniques of *Model Railroader* contributing editor Pelle Søbørg. At the end, everything was assembled together. I used AIM Products New Fresh Rust weathering powders to touch up where needed and to add some variation.

Mountains and

A detailed HO scale model train scene. In the foreground, a red and yellow diesel locomotive, numbered 1724 and labeled "BOSTON AND MAINE", is crossing a wooden trestle bridge over a rocky gorge. Above it, a silver passenger train with red stripes is crossing a steel truss bridge. The background features a large, rounded mountain and a building with a sign that reads "GLACIER GRAVEL COMPANY". The scene is set in a lush, green environment with various trees and rocks.

More northern
New England scenes
highlight the expanded
HO scale Boston & Maine

By Thomas Oxnard
Photos by the author

Minute Men



① At Lamprey River, Electro-Motive Division E7 no. 3811 leads a commuter train into Bristol while EMD GP9 no. 1724 hauls freight into Warrenton on Thomas Oxnard's HO scale Boston & Maine RR. Over the past 10 years Tom has added more scenes and extended the main line of his "finished" model railroad.



2 The medium-size HO scale B&M features seaport, city, country, and mountain scenes inspired by northern New England in the 1950s. The swing gate with the scenicked bridge scene and backdrop that leads to Bristol Yard is on the right.

Known as the Route of the Minute Man, the Boston & Maine RR (B&M) has been the focus of my model railroading efforts for more than 20 years. My HO scale layout was originally featured in the December 2009 issue of *Model Railroader*. It's a freelanced version of the B&M inspired by scenes of Boston, coastal New England, and the towns and mountains of northern New Hampshire.

As I've continued to work on the railroad, I've written numerous articles for *Model Railroader* and other hobby publications. Since my first layout story was published, I've expanded it to 18 x 28 feet, featuring more scenes and better prototype-based operation.

Beginnings and milestones

Just as my father's S gauge American Flyer layout sparked my interest in trains, I hoped to inspire my kids by building a small layout with them back in the 1980s. The layout grew from a 4 x 8 to 6 x 9. After my kids graduated

and left home, I thought it was time to build my own ultimate model railroad.

When I started this layout in 1996, I had no grand plan. I was only running one or two direct-current (DC) trains at a time with my kids, so I knew very little about train operation, especially Digital Command Control (DCC). I learned a lot by visiting local hobby shops and reading articles in MR and other publications. I was especially inspired by articles showing larger, finished layouts.

After reading layout planning books by John Armstrong and Don Mitchell, I designed my HO scale railroad to run with DCC and fit into my 15 x 18-foot space, which was limited by a furnace on one end and a sink on the other.

I chose the Boston & Maine as the theme for my freelanced railroad. The prototype had tracks running through my town and a long history in New England. I also really liked the B&M "Minute Man" paint schemes. My freelanced railroad runs from the city of Bristol (my version of Boston) north along the coast and then into the towns and mountains of New Hampshire.

The layout at a glance

Name: Boston & Maine

Scale: HO (1:87.1)

Size: 18 x 28 feet

Prototype: freelanced, inspired by the Boston & Maine

Locale: Boston, Seacoast region of New Hampshire into the mountains

Era: 1953

Style: walk-in

Mainline run: 194 feet

Minimum radius: 20"

Minimum turnout: no. 6

Maximum grade: 3 percent

Benchwork: L-girder and open-grid, freestanding on 2 x 2 legs; tabletop for yard and city areas

Height: 42" to 48"

Roadbed: Homabed and cork

Track: code 83 and 100 flextrack and handlaid

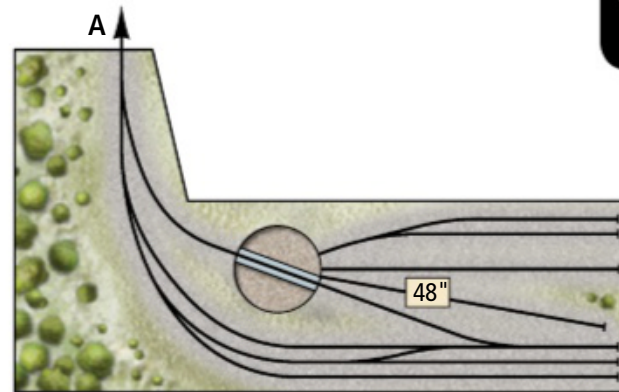
Scenery: carved extruded-foam insulation board

Backdrop: photos on 1/8" tempered hardboard or .040" styrene sheet

Control: Digitrax Digital Command Control with duplex radio wireless throttles

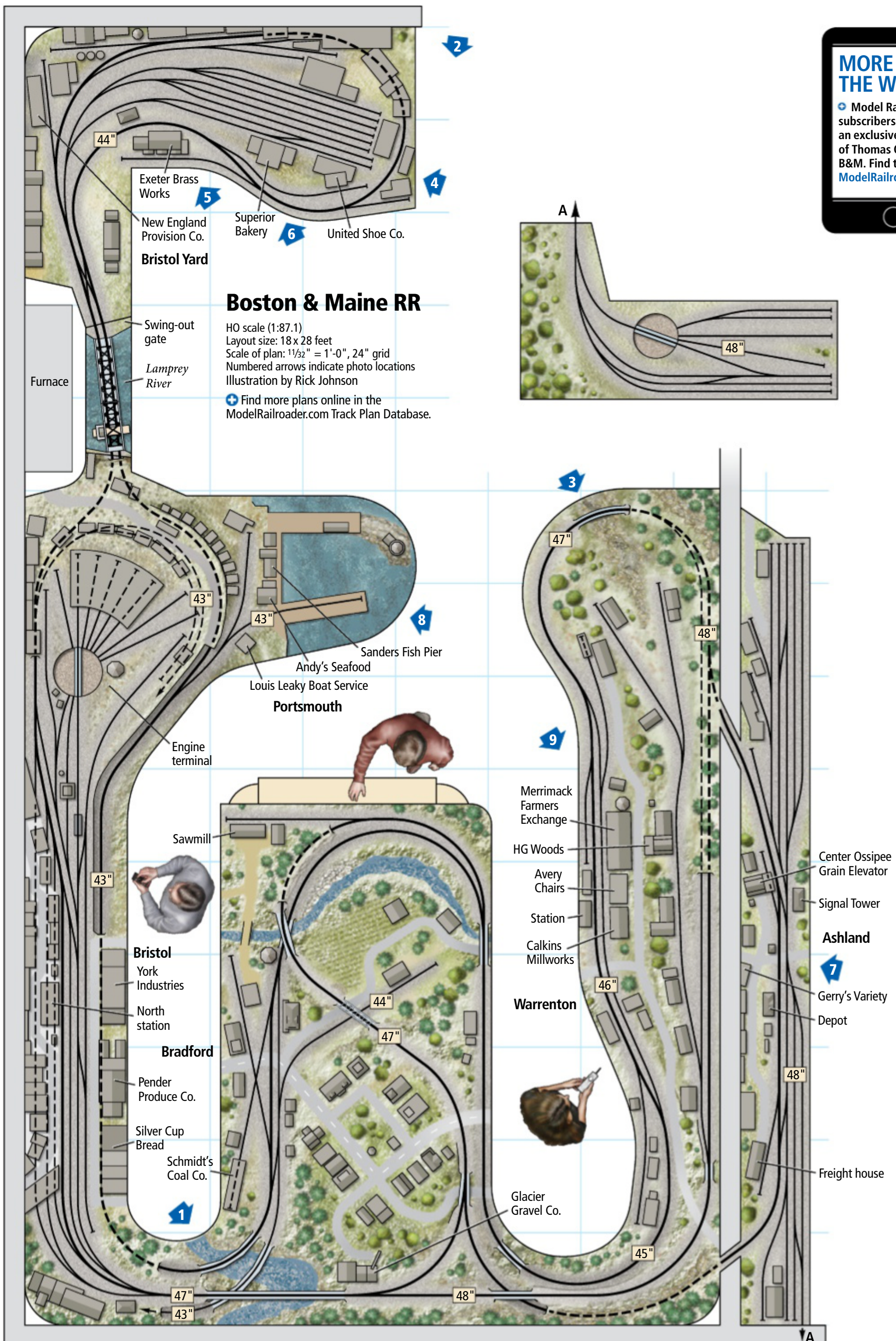
MORE ON THE WEB

Model Railroader subscribers can watch an exclusive video of Thomas Oxnard's B&M. Find the link at ModelRailroader.com.



Boston & Maine RR

HO scale (1:87.1)
Layout size: 18 x 28 feet
Scale of plan: $1\frac{1}{32}" = 1'-0"$, 24" grid
Numbered arrows indicate photo locations
Illustration by Rick Johnson
Find more plans online in the ModelRailroader.com Track Plan Database.





③ Alco RS-3 no. 1545 comes out of a tunnel from the White Mountains and crosses the bridge over the Pernigewassett tributary. All the mill buildings in the background are scratchbuilt.

My basement train room required removing some built-in closets and a cold cellar, as well as a freezer. Then I finished the room's walls and ceiling and installed a tempered hardboard backdrop with coved corners.

Initially I installed wall-to-wall carpeting in the train room. However, a water leak proved that well-intentioned idea to be a mistake. After removing the ruined carpet, I replaced it with 12" squares of vinyl tile.

Starting construction

The layout benchwork is freestanding on 2 x 2 legs. The benchwork combines L-girder and open grid. I used plywood tabletops for the yard and city areas.

I carved the scenery base from extruded-foam insulation board that I then covered with Gypsolite, a plaster product with a sand-like texture, and Sculptamold, a papier-mache-like product. I followed this with Hydrocal rock



④ Boston & Maine center-cab switcher no. 1100 (left) and an EMD SW1 (right) work Bristol Yard. One of Tom's last layout expansions, the yard provided a lot more operating potential and offered plenty of real estate for new modeling projects.

castings and real dirt, sticks, and stones from my yard for ground cover.

I modeled the water scenes with Enviro-Tex Lite two-part epoxy resin. The photo backdrops are from Realistic Backgrounds (sold through Scenic Express) and LARC Products, as well as my own photos of local scenes. For more about my approach to backdrops, see "Backdrops that add depth" on page 43.

After years of working on my own, I joined the National Model Railroad Association (NMRA) and the Boston & Maine RR Historical Society. In addition to attending local NMRA Division meets, I also participated in operating sessions. That helped me realize that there were many more possibilities to explore in the hobby. Another milestone was hosting my first layout open house in 2002.

Expanding the railroad

There have been a lot of changes and expansions to my B&M since the layout first appeared in the December 2009 MR. Initially I thought I had no more

room to expand the model railroad, but I was wrong.

I gained more experience operating on my friends' layouts. They also offered useful suggestions on where my railroad could become more operation-friendly and prototypical.

I was overjoyed to expand the railroad, as building scenery and structures are my favorite parts of the hobby. The first expansion occurred when I broke through the wall into an adjoining room where I built an unscenicked 12" wide shelf addition that became the new northern end of the layout.

The next improvement came after I retired and expanded a north end loop in Warrenton over the sink. This 16-foot area includes more scenery, trackside industries with spurs, and a 7-foot passing track. This expansion also gave me room to model a deep, rocky ravine below track level, as I described in the December 2012 MR.

During that time, I made more improvements to the north end, including widening the shelf from 12" to 18", adding more passing tracks, and installing scenery. This section eventually became the town of Ashland, N.H.

I also felt the southern end of the railroad at Bristol wasn't big enough for a good operating scheme. The yard was too small. However, the furnace blocked the way, which is why the layout stopped there in the first place. After seeing gates that worked well for large modular layouts at train shows, I explored various solutions to extend my layout 19 linear feet beyond the furnace. I eventually built a gate across the area that was easy for the furnace technician to open twice a year and also large enough to fully scenic. As I described in the December 2014 MR, this swing-out gate gave me enough room for a bridge scene with a backdrop.

The final expansion came when I cut a hole in the wall into a closet at the north end of the layout beyond Ashland. This section represented the line heading north to White River Junction and Montreal. This closet staging area includes a turntable and seven-track staging yard. With the expansion complete, the track plan now supports both point-to-point running for prototypical operating sessions and continuous running for open houses and visits with my grandchildren.

Track improvements

While expanding the layout, I took the opportunity to make some other



5 Exeter Brass Works is based on a prototype factory that still stands in Thomas Oxnard's town. Before scratchbuilding the structure, he used his own research to create a mock-up (top) to see how the model would fit the scene.

Prototype-based scratchbuilding

I enjoy scratchbuilding structures based on real-world prototypes. One example is an old trackside factory in Exeter, N.H., where I live. I pass this structure every week, and research at the local historical society has provided additional information, including photos of the factory from the B&M era.

For any scratchbuilding project, I first map out the available space that I have for the structure on a large sheet of paper. I make sure to show the track, fascia, and the borders of any adjoining scenes. Next I determine the structure's length, width, and height dimensions and try to visualize how it will fit into the surrounding scene.

If the prototype building is still standing and accessible, I'll photograph it from all sides. I also use Google satellite images to help me determine the structure's placement and size.

If the prototype no longer exists, I'll search Google Images for historic photos. Sanborn Fire Insurance maps are useful for providing basic footprints and dimensions of older buildings. Many of these maps are available online at historical societies and libraries.

After determining the dimensions and footprint, I'll then draft an elevation drawing of each wall. I'll also determine the position and size of any windows and other details, and how much the structure needs to be selectively compressed to fit the available space.

Using the drawing, I'll make a mock-up like that shown above. After making any adjustments, I'll build and detail the model. – Thomas Oxnard

6 A B&M 4-8-2 Mountain-type steam locomotive rolls past Superior Bakery in Bristol Yard. Tom kitbashed the bakery following a vintage article by Art Curren originally published in the January 1990 *Model Railroader*.



improvements. As I built new scenes, I installed code 83 track, either handlaid or flextrack, instead of the code 100 track I used on the original railroad. Eventually I replaced all the code 100 track on the older sections.

In Bradford I installed a crossover to the passenger station that created a 5-foot-long passing track. I also installed a diamond crossing that provided better access to rail-served industries. I'd originally laid a reverse loop that ran around the town, but it seemed an unrealistic arrangement, so I removed this track.

I've also replaced my Peco code 100 Insulfrog turnouts with lower-profile

Peco code 83 turnouts. On the shelf layout sections in Ashland, I manually line the turnouts with lengths of brass rod attached to the switch rods. In other areas I use Caboose Industries manual ground throws. For many of the turnouts that I've scratchbuilt using Fast Track Hobbyworks jigs, especially those with long frogs, I've installed Tam Valley Hex Frog Juicers to ensure locomotives run smoothly without stalling.

In hard-to-reach areas, turnouts are lined with Tortoise by Circuitron switch motors controlled from a large central control panel. As better operation became more of a concern, I struggled

with how to improve upon this single control panel arrangement.

I installed one local panel with the south end Bristol Yard addition, but the other aisles were too narrow for traditional control panels that used toggle switches or pushbuttons. At a local NMRA regional conventions, I saw layouts with control panels made using Touch Toggles from Berrett Hill Shop (berretthillshop.com). These flush-mounted touch controls save a lot of space. I installed a Touch Toggle panel at each end of Bristol City Yard, including one that's hinged so that it can be swung out of the way if needed.



Running trains

My motive power fleet consists of B&M and Maine Central (MEC) prototypes appropriate for my layout's era. My steam fleet features an 0-6-0 switcher, 2-8-2 Mikado, 4-6-2 Pacific, and a 4-8-2 Mountain. I also have two 2-8-0 Consolidations. My diesel fleet features Electro-Motive Division GP7, GP9, and E7 locomotives. I also have some Alco RS-3 and FA/FB engines.

Two notable detailing projects are my B&M 2-6-0 Mogul and an MEC F3 A-B diesel set. Recently I scratchbuilt a unique center cab diesel, B&M no. 1100.



7 Thomas uses a layered approach to his layout backdrops that adds depth to narrow scenes. Beginning with the gray building behind Gerry's Café, the backdrop images get smaller to force perspective and visually expand the scene.

Backdrops that add depth

Backdrops help expand a layout with scenes of mountains or fields leading into the distance. A sky backdrop is also important for adding the illusion of depth.

For my layout, I use a progressive approach. The scenes transition from partial structures to building flats to prototype photographs mounted on matte board in the last inch between the 3-D scenery and the backdrop. I also layer the photos on the backdrop, using progressively smaller images to force the perspective. I use hills, fences, vehicles or other details to help hide the seam between the 3-D scenery and the backdrop.

Many of the backdrops fill small spaces between my 3-D structure models, as shown in the photo above. I make these from a mix of images I cut out of commercially available backdrops and my own prototype photos. I especially like to use photos of recognizable town buildings and trackside structures.

I prefer to take backdrop photos on an overcast day. I usually keep the camera as horizontal as possible, unless I know that an angled shot is needed to add perspective to a scene. It's important to print the photos on matte paper to avoid giving the images an unrealistic shine under the layout room lights. I also paint over any anachronistic objects in the photo, such as late model automobiles, or cover them with trees or other scenic details. Digital images could also be modified using photo-editing software. – *Thomas Oxnard*

As I developed the operating scheme for my layout, I discovered that I didn't have enough passenger trains or milk cars to accurately represent the B&M of the early 1950s. I bought several inexpensive milk cars on eBay that I superdetailed. I found decals for local dairies from Highball Graphics. I also repainted some old New Haven passenger coaches in B&M paint schemes.

During a typical three- to four-hour operating session, I run 12 trains (six northbound and six southbound). Half are freight and half are passenger. The trains follow an operating sequence, and I use a timetable to set up meets. I've

learned that it's important to name and label every location, and that one can't have enough crossovers, passing tracks, or runarounds.

My trains are short (6 to 10 cars), as was common on the prototype B&M. Some are through trains while others are locals that work the industries in each of the towns and Bristol Yard.

Modeling structures

I've always enjoyed modeling more than operating. I discovered the joys of scratchbuilding at the 2009 NMRA National Convention in Hartford,



Meet Thomas Oxnard

Tom Oxnard and his wife, Sally, both retired pediatricians, live in Exeter, N.H. They have four grown children. In addition to model railroading, Tom enjoys skiing, woodworking, spending time with his eight grandchildren, and helping Sally breed Connemara ponies.

buildings I apply a mortar wash of paint, alcohol, and water.

Many of my structures feature detailed interiors illuminated by light-emitting diodes connected to a direct-current power supply. The buildings fit into styrene bases mounted on the layout and aren't glued down, so they're easy to remove.

Is it finished?

I've chosen not to expand my layout any farther. I'm also not adding any backdrops or view blocks to the center section. I enjoy looking across the layout, as the scenes all blend together well. The aisles separate the country-themed scene in the center from the city scene on one side and the mountains on the other.

I now concentrate on improving the scenery. As my craftsmanship improves, I strive to make a scene look just right.

I could call my layout complete, but I continue to add line poles with wires, crossing gates, and other details. I also continue to update my locomotives with sound decoders and stay-alive circuits.

If I were to build the layout over again, I'd make the aisles a bit wider and might perhaps choose a smaller geographic area to model. However, I'd still want to model city, seaport, country, and mountain scenes, so I have no regrets.

I host a public open house once a year during our area-wide layout tour. I also open the B&M a few times a year for our NMRA Division and other groups. As my layout is now practically "finished," I'm happy to inspire other model railroaders in this great hobby. 

8 At Portsmouth, B&M no. 1100 delivers a load of propellers on the wharf track. Tom scratchbuilt the center-cab switcher based on a unique B&M prototype.

Conn., where I learned how to scratch-build a turnout with a Fast Tracks jig. Scratchbuilding track, structures, engines, and rolling stock proved an essential skill and one that helped me earn my NMRA Master Model Railroader certificate.

My friends and I have taken many road trips through Massachusetts and New Hampshire to photograph interesting railroad structures. Some favorite prototype-based structure models on my layout include the Charles River

Drawbridge, Signal Tower A, Ashland station and freight house, and the Ossipee grain elevator. There's more information about my model of the Exeter Brass Works on page 41.

Over the years I've replaced many kit-built structures with scratchbuilt or kit-bashed models. I build models with a variety of materials, including styrene and wood. I weather my models with artist's pastels or weathering powders. I use a light hand, so my buildings don't look too run down. For brick-textured

9 Maine Central (MEC) motive power also makes an appearance on Tom's model railroad. He superdetailed the MEC F units shown here leading a freight through Warrenton.



★★★ **HEY READERS!** ★★★



✓ **YOU VOTED.**

HERE ARE THE WINNERS!

We had another year of great model railroading products for this year's Readers Choice Awards. From locomotives and rolling stock to scenery and structures to track and electronics and more, there were many worthy entries nominated by model manufacturers, but ultimately chosen by you, our readers. The only real limitation we put on the choices was that the products nominated had to be currently available as of this writing.

A big thank you to everyone who participated this year, both readers and manufacturers. You make the *Model Railroader* Readers Choice Awards possible!

DIESEL, STEAM & ELECTRIC LOCOMOTIVES

HO Scale Diesel Locomotive

WINNER ★★

Broadway Limited Imports, LLC
Paragon3 Baldwin Sharknose (Freight)

HONORABLE MENTION ★

ScaleTrains.com
Rivet Counter Electro-Motive Division
(EMD) SD40T-2 "Tunnel Motor"

N Scale Diesel Locomotive

WINNER ★★

Broadway Limited Imports, LLC
Paragon3 EMD NW2 / SW7 switchers

HONORABLE MENTION ★

Kato
EMD Union Pacific SD70ACe #1943
(The Spirit of the Union Pacific)

HO Scale Steam Locomotive

WINNER ★★

Athearn
Genesis Union Pacific 4-8-8-4 Big Boy

HONORABLE MENTION ★

Broadway Limited Imports, LLC
Paragon3 Union Pacific Late 4-6-6-4
Challenger

N Scale Steam Locomotive

WINNER ★★

Athearn
Union Pacific 4-8-8-4 Big Boy

HONORABLE MENTION ★

Broadway Limited Imports, LLC
Paragon3 USRA 2-8-2 Mikados

Electric Locomotive - Any Scale

WINNER ★★

Broadway Limited Imports, LLC
Paragon3 PRR P5a Electric, HO

HONORABLE MENTION ★

Bachmann Trains
HO scale Siemens ACS-64 (with DCC
Sound)

Narrow Gauge Locomotive

WINNER ★★

Bachmann Trains
On30 Baldwin Class 10 2-6-2T
Trench Steam Engine (with TCS
WOWSound DCC)



Item No. 29504 - The On30 2-6-2T Class 10 Trench Engine harkens back to the action of WWI.

HONORABLE MENTION ★

Roco
33238 - Steam locomotive 11°, RüKB

MODEL TRAIN SETS

HO Scale Train Set

WINNER ★★

Wm. K. Walthers Inc.
Trainline Flyer Express

HONORABLE MENTION ★

Bachmann Trains
Transcontinental (with Digital Sound)

N Scale Train Set

WINNER ★★

Bachmann Trains
The Stallion



Item No. 24025 - The Stallion stampedes through your N scale layout with tons of horsepower!

HONORABLE MENTION ★

Fleischmann

z21 Digital starter set: electric locomotive class 194 with goods train

Narrow Gauge Passenger Cars

WINNER ★ ★

Bachmann Trains

HOn3 Thomas & Friends red carriage

HONORABLE MENTION ★

Atlas Model Railroad Co.

Modern commuter cars locomotive & car three-pack



It's all aboard for fun with the beautiful Atlas N Scale Modern Commuter Trains.

PASSENGER CARS & SETS

HO Scale Passenger Car

WINNER ★ ★

Wm. K. Walthers Inc.

WalthersProto Union Pacific baggage car no. 5769 with Presidential seal decal as seen on the late Pres. George H.W. Bush commemorative train



Item No. 77205 - The Thomas & Friends HOn3 Red Carriage brings passenger service to your narrow-gauge layout.

HONORABLE MENTION ★

Atlas Model Railroad Co.

Heavyweight single-window coach

HONORABLE MENTION ★

Roco

34061 H0e Perswag. 4a. DR grün

N Scale Passenger Cars

WINNER ★ ★

Broadway Limited Imports, LLC

Pennsylvania RR P70 passenger cars

HO Scale Passenger Car Set

WINNER ★ ★

Wm. K. Walthers Inc.

WalthersProto Union Pacific commemorative executive train honoring the late President George H.W. Bush

HONORABLE MENTION ★

Kato

Amtrak Viewliner II baggage car



The Viewliner II baggage car is the latest N Scale Amtrak offering from Kato USA.

HONORABLE MENTION ★

Lionel Trains

Army Hospital train set

N Scale Passenger Car Set

WINNER ★ ★

Kato

Chicago & North Western Pullman bi-level "400" set

ROLLING STOCK

HO Scale Boxcar

WINNER ★ ★

Broadway Limited Imports, LLC

Stockcar with sound

HONORABLE MENTION ★

Atlas Model Railroad Co.

40-foot postwar boxcar w/6-foot door

HO Scale Boxcar Kit

WINNER ★ ★

ScaleTrains.com

Kit Classics HO Scale Evans 5100 RBL boxcar

HONORABLE MENTION ★

Tangent Scale Models

PRR Shops X58 class boxcar kit

N Scale Boxcar

WINNER ★ ★

Atlas Model Railroad Co.

Trainman 50'-6" boxcar

HONORABLE MENTION ★

Bachmann Trains

Old-Time boxcar

America's favorite decoders are **made in AMERICA**

For 30 years we've known our products are the best, and now you know!

We were proudly awarded **1st PLACE** for 2 products in Model Railroader's 2020 Readers' Choice Awards: Tsunami2 & Tsunami SoundCar Digital Sound Decoders.



SoundTraxx: More realism, more fun!

We are modelers just like you, and we appreciate your vote! Shop your favorite SoundTraxx Products online at www.soundtraxx.com



HO Scale Hopper Car / Covered Hopper

WINNER ★ ★

ScaleTrains.com

Rivet Counter Gunderson 5188 covered hopper

HONORABLE MENTION ★

Athearn

Genesis ACF 4600 Center Flow covered hopper

N Scale Hopper Car / Covered Hopper

WINNER ★ ★

ScaleTrains.com

Rivet Counter Gunderson 5188 covered hopper

HONORABLE MENTION ★

Athearn

ACF 4600 Center Flow covered hopper

HO Scale Gondola

WINNER ★ ★

Tangent Scale Models

Bethlehem Steel 70-ton riveted gondola

HONORABLE MENTION ★

Atlas Model Railroad Co.

Trainman Evans gondola

N Scale Gondola

WINNER ★ ★

Atlas Model Railroad Co.

Thrall gondola

HONORABLE MENTION ★

Bachmann Trains

40-foot gondola

HO Scale Flatcar / Intermodal Car

WINNER ★ ★

ScaleTrains.com

Rivet Counter Bethlehem Steel Co. F68AH bulkhead flatcar

HONORABLE MENTION ★

Wm. K. Walthers Inc.

WalthersMainline Thrall 5-unit rebuilt 40-foot well car

N Scale Flatcar / Intermodal Car

WINNER ★ ★

Atlas Model Railroad Co.

48-foot bulkhead flatcar

HONORABLE MENTION ★

Micro-Trains Line Co.

68-foot DODX flatcar

HO Scale Refrigerator/ Insulated Car

WINNER ★ ★

Wm. K. Walthers Inc.

WalthersMainline 40-foot early reefer

HONORABLE MENTION ★

Moloco

Fruit Growers Express 50-foot RBL boxcar

HO Scale Tank Car

WINNER ★ ★

ScaleTrains.com

Rivet Counter Trinity 31,000 gallon tank car with head shields

HONORABLE MENTION ★

Tangent Scale Models

GATC 8,000 gallon tank car

N Scale Tank Car

WINNER ★ ★

Atlas Model Railroad Co.

20,700 gallon tank cars

HONORABLE MENTION ★

Broadway Limited Imports, LLC

Cryogenic tank car

HO & N Scale Caboose / Maintenance of Way

WINNER ★ ★

Atlas Model Railroad Co.

HO & N scale extended-vision cabooses



The end never looked so good as it does with these colorful Atlas cabooses.

HONORABLE MENTION ★

Wm. K. Walthers Inc.

WalthersMainline HO scale I.C.C. extended wide-vision caboose

STRUCTURES, VEHICLES & FIGURES

HO Scale Structure Kits

WINNER ★ ★

Wm. K. Walthers Inc.

Cornerstone modern suburban station kit

HONORABLE MENTION ★

Woodland Scenics

Woodland Station

N Scale Structure Kits

WINNER ★ ★

Wm. K. Walthers Inc.

Cornerstone Merchant's Row III kit

HONORABLE MENTION ★

Woodland Scenics

Country Cottage

O Scale Structure Kits

WINNER ★ ★

Woodland Scenics

Deuce's Bike Shop

HONORABLE MENTION (TIE) ★

Bachmann Trains

Plasticville Union Station

Lionel Trains

Olson House

HO Scale Built-Up Structure

WINNER ★ ★

Woodland Scenics

Deuce's Parts & Repair billboard

HONORABLE MENTION ★

Menards

Sprecher Brewery

N Scale Built-Up Structure

WINNER ★ ★

Woodland Scenics

Rustic Cabin

HONORABLE MENTION ★

Bachmann Trains

Plasticville Country Church

O Gauge Built-Up Structure

WINNER ★ ★

Woodland Scenics

Old Windmill

HONORABLE MENTION ★

Menards

Piggly Wiggly grocery store

Vehicles - Any Scale

WINNER ★★

Atlas Model Railroad Co.

HO and N Ford pickup trucks

HONORABLE MENTION ★

Woodland Scenics

Cool Convertible

Figures - Any Scale

WINNER ★★

Woodland Scenics

Rail workers

HONORABLE MENTION ★

Wm. K. Walther's Inc.

SceneMaster UPS delivery personnel

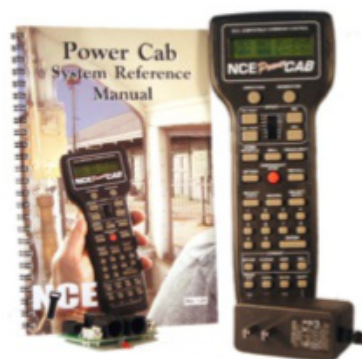
CONTROL SYSTEMS & ELECTRONICS

DCC System

WINNER ★★

NCE

PowerCab



An entire 2 amp DCC system in the palm of your hand.

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Digitrax

Zephyr Express

Non-DCC Command Control System

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WiFi Model Railroad LLC

LocoFi



WiFi enabled Sound Decoders with Smartphone App Controller for DC, DCC, and Dead Rail

HONORABLE MENTION ★

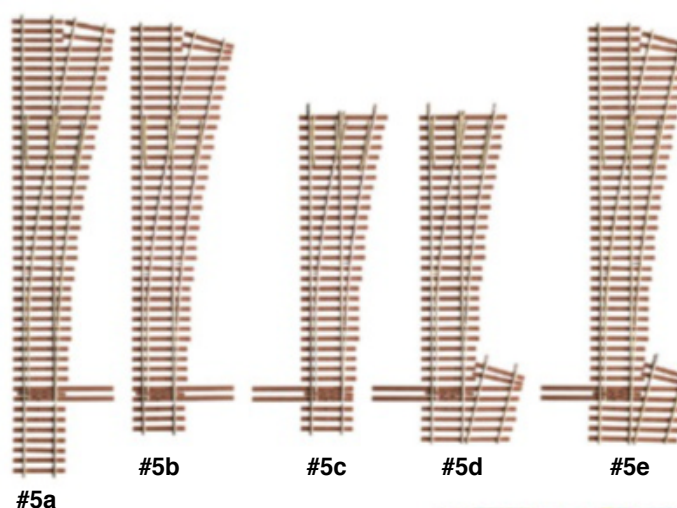
Ring Engineering

Rail Pro RPK-1 Starter Kit

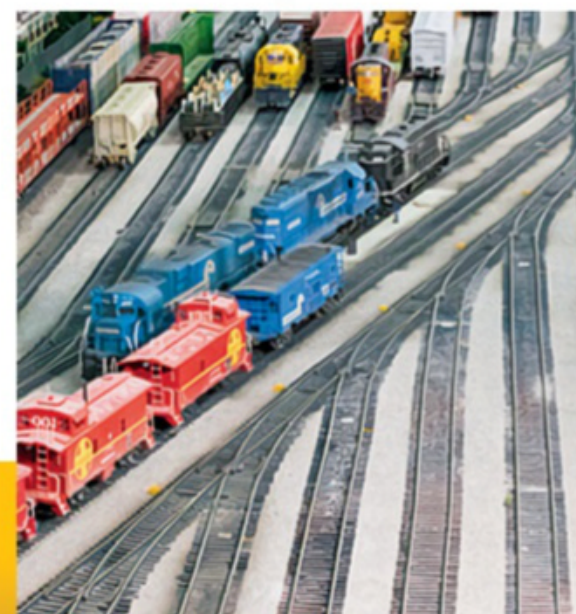


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Kato

Sound Box

DC Power Pack

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Model Rectifier Corp.

Throttlepack 9950

HONORABLE MENTION ★

Kato

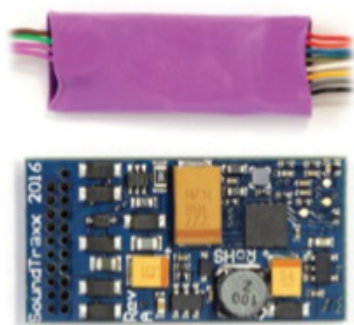
Smart Device Controller

DCC Sound Decoder

WINNER ★ ★

SoundTraxx

Tsunami2 Digital Sound Decoders



The most realistic sound for realistic models: Tsunami2 Digital Sound Decoders.

HONORABLE MENTION ★

ESU, LLC

LokSound 5 DCC

Switch Machines

WINNER ★ ★

Circuitron

Switch machines

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Wm. K. Walther's Inc.

Switch machine 5-packs

Signal Control

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Atlas Model Railroad Co.

All-Scales Signal System - HO signals



Bring prototypical signaling to your layout with the Atlas All-Scales Signal System.

HONORABLE MENTION ★

Azatrax, LLC

TS2 block signal control circuit with infrared train detection

Lighting

WINNER ★ ★

Woodland Scenics

Medium U.S. Flag & Pole w/Spotlight

HONORABLE MENTION ★

Model Rectifier Corp.

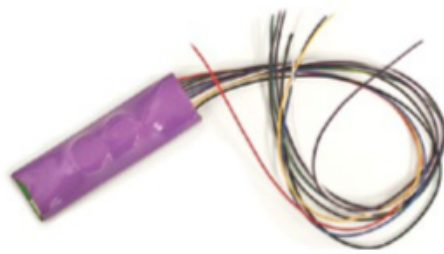
Light Genie

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Bring your whole train to life with Tsunami SoundCar!

HONORABLE MENTION ★

Train Control Systems (TCS)

KA1 Keep-Alive Device

SCENERY & TERRAIN

Trees

WINNER ★ ★

Woodland Scenics

Cherry Blossom Trees

HONORABLE MENTION ★

Bachmann Trains

5"-6" Pine Trees with Snow (HO Scale)

Grass Applicators

WINNER ★ ★

Woodland Scenics

Static King

HONORABLE MENTION ★

Noch

GrassMaster 2.0

Terrain

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Woodland Scenics

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Cornerstone Concrete Culverts Kit

Backdrops

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Wm. K. Walther's Inc.

SceneMaster Backgrounds

HONORABLE MENTION ★

Affordable Model Railroads / Railroadbackdrops.com

Backdrops

TRACK & TURNOUTS

HO Scale Flextrack - Favorite Brand

WINNER ★ ★

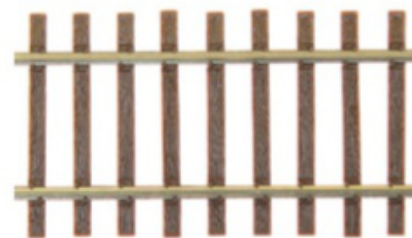
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HONORABLE MENTION ★

Micro Engineering



HO Code 83 Flex-Trak, model track with so much detail, many modelers prefer it to hand laid track.



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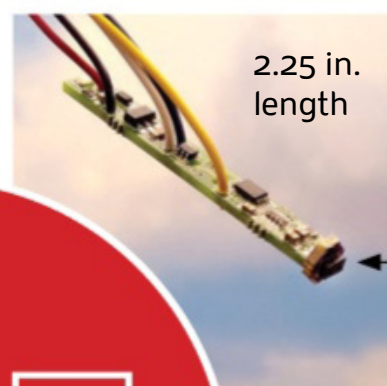
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N Scale Flextrack - Favorite Brand

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Atlas Model Railroad Co.



Take your layout building to the next level with Atlas N Code 55 Flextrack.

HONORABLE MENTION ★

Micro Engineering



N scale Code 70 Flex-Trak with wood grain detail and scale size spikes and tie plates.

HO Scale Sectional Track

WINNER ★★

Kato

Unitrack

HONORABLE MENTION ★

Bachmann Trains

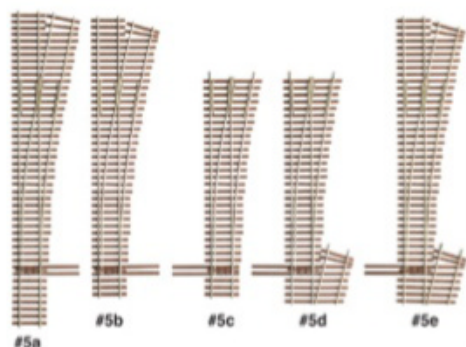
E-Z Track

Turnouts - Any Scale

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Micro Engineering

Ladder Track System



The HO Ladder Track System for compact yards, utilizes five no. 5 turnouts, 5a thru 5e, code 83 or 70 rail.

HONORABLE MENTION ★

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Northeast Region

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Southwest Region

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Papa Ben's Train Place

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Western Region

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Dwarvin's Lamplighter system provides the unique no-wiring solution for N, O, and HO scale.

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Block detection, why and how



Larry Puckett wrote about using Rob Paisley's crossing gate detection and control system on his HO scale Piedmont Southern layout in his book *Wiring Applications for Your Model Railroad*. Larry offers a few more methods of detecting trains in this month's column.

Block detection has been around on model railroads in various forms for decades. But what's it for and how do you do it?

It's used for three main purposes: to control crossing gates and similar devices, to control signals, and for feedback to a control panel for dispatcher operations or to a computer system for layout automation. And within each of those, there are various methods of detection, so let's break it down with a look at the various methods.

One older approach is to use magnets and reed switches. With this method, a magnet is installed on the underside of locomotives and/or cars, and when the magnet passes over the reed switch, it makes an electrical connection that can turn on a light or trigger a crossing signal or other device.

Because this kind of system is electrically isolated from track power, it's a good

choice for layouts powered by Digital Command Control (DCC). However, possibly due to the need to install magnets on locomotives and rolling stock, reed switches are no longer popular and can be hard to find (except on eBay).

Another method to provide electrically isolated detection uses phototransistors. These electronic devices, embedded in the ballast between the rails, detect when a train blocks light from overhead **1**. They can also be installed trackside to be triggered when a train obscures a source of light placed on the opposite side of the track.

The great thing about both magnetic and phototransistor methods is they can be used within blocks that also use track power detection. For example, on my Piedmont Southern I use phototransistors to control signals for a gantlet track bridge crossing (which I described in the

May 2015 issue of *Model Railroader*) and for crossing gates and signals (described in my book *Wiring Projects for Your Model Railroad*, available from Kalmbach Books at your hobby shop or at KalmbachHobbyStore.com).

One problem with some optical detection circuits is there may not be enough

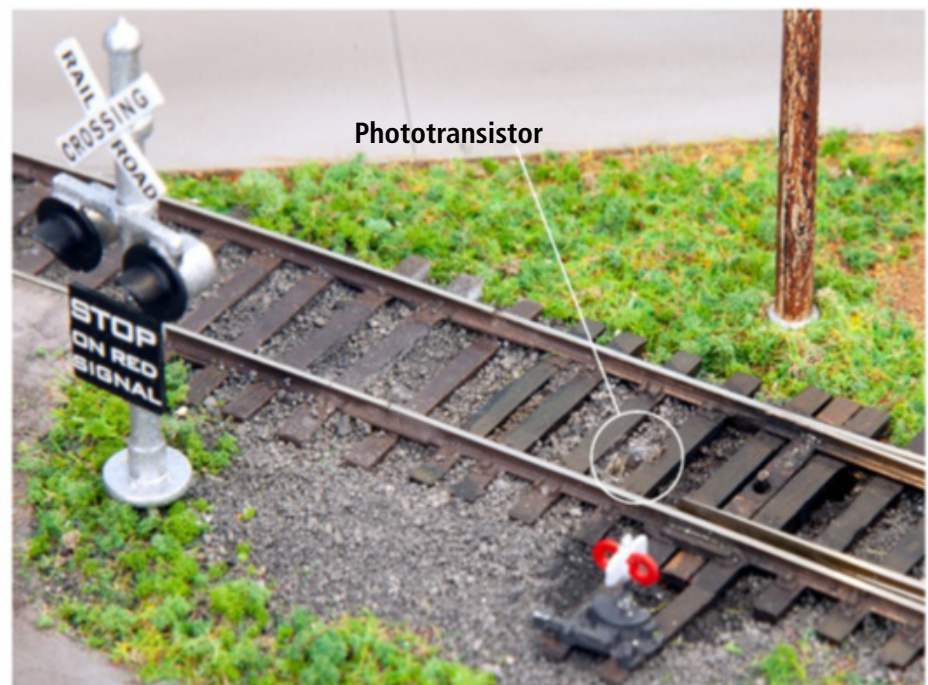
direct overhead light for them to operate reliably. I had the opposite problem when I installed Rob Paisley's crossing gate detection system on my Piedmont Southern layout. Unlike the older optical detection circuits, his works so well in low-light settings I had too much overhead light at one point.

Rob has an excellent website on detection methods and circuits that he sells at circuitous.ca/CircuitIndex.html.

One drawback of both the magnetic and optical detectors is they only detect when a locomotive or car passes over them. This means if a locomotive, car, or train is sitting on a section of track within a block, but not over one of these sensors, it will go undetected.

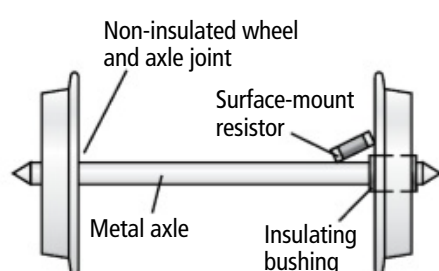
I've seen latching circuits that remember when a train enters and leaves a block, but even with those methods, a stray locomotive or car won't be detected. A system that detects the presence of locomotives and rolling stock anywhere is more desirable. Let's take a look at those.

The most common systems used today depend on detecting the flow of current through the rails of isolated blocks of track. This works



1 Light switch. A phototransistor placed between the rails activates this crossing signal when trains block overhead light.

Wheelset resistor installation



2 Resistance is useful.

Surface-mount resistors can be added to metal wheelsets to allow current to flow from rail to rail and complete a detection circuit.

because when a locomotive enters a block, its light(s) and motor allow current to flow from one rail to the other, completing the circuit.

You can also install resistors (usually about 10KΩ) between the metal wheels of unpowered rolling stock 2, which will also allow current to flow from rail to rail. This current flow can then be detected using two popular methods – current flow produced by diodes placed in the electrical circuit, or by current-sensing transformers.

The diode method works based on the principle that when track power is passed through a diode, it generates a current of about .7 volts (V) across the diode leads. With two diodes, which is the typical arrangement, 1.4V can be passed through a companion circuit that in turn generates a detection signal. This reduces track voltage by the same 1.4V, which really isn't an issue as long as all your track has such detectors installed, or you plan for it and adjust your track voltages accordingly. If you don't, you'll see a change in locomotive speed and light brightness when

going from a block with detection to one without and vice versa.

One popular commercially available diode-based detection system is manufactured by Digitrax (digitrax.com/search/?q=detection). As the name implies, Digitrax's BD4 circuit boards 3 can detect occupancy in four blocks, while its BDL168 circuit boards can detect occupancy in 16 blocks.

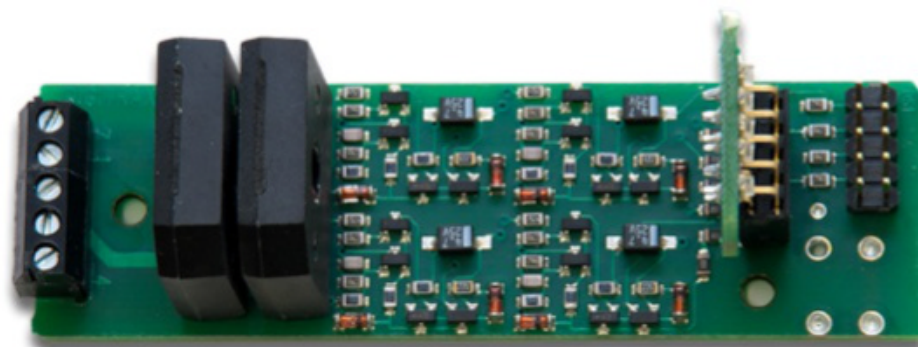
The outputs on these can be used to power LEDs on control panels or, when combined with its SE8C circuit boards, to power signals. Digitrax detector circuits were used in the Model Railroader Video Plus Canadian Canyons project layout and described in an article in the April 2019 *Model Railroader*.

Another more modern and commonly used detection method is based on current-sensing transformers. These devices use the principle that when a current is passed through a wire wrapped around a specially designed transformer, it will generate a small current that can be used for detection.

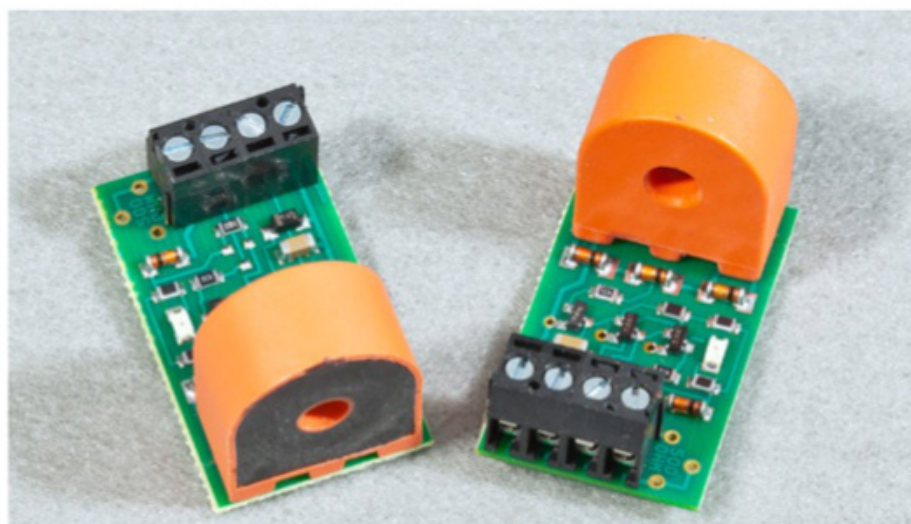
Consequently, any locomotive or car with a light or resistor-equipped wheelset will be detected. Because these detectors are isolated

from track power, there's no drop in voltage like there is with diode-based systems.

Several manufacturers produce detectors based in current-sensing transformers. For example, the NCE BD20 4 is a simple and relatively inexpensive detector that can be used with a variety of detection circuits. Ben also used these on the



3 **Digitrax detection.** Ben Lake used Digitrax BD4 block-occupancy detection boards on the *Model Railroader* and Model Railroader Video Plus Canadian Canyons project layout.



4 **NCE detection.** Larry uses NCE BD20 block-occupancy detectors for controlling signals on his Piedmont Southern HO scale layout.

Canadian Canyons layout. Ben had to use the LED/relay circuit on the NCE BD20 to work properly with the other Digitrax equipment on the layout.

Bruce Chubb's C/MRI system is also built around current-sensing transformer detectors, as described in the January through April 2004 issues of MR. His DCC Optimized Detector, which uses current-sensing transformers, was covered in the May 2004 issue. Bruce has a website, jlcenterprises.net, with information on the system. The Java Model Railroad Interface (JMRI) website, jmri.org/help/en/html/hardware/cmri/CMRI.shtml, provides information on using it with JMRI.

Finally, Dick Bronson at RR-CirKits (rr-cirkits.com) markets a complete detection and signaling system that's compatible with the new National Model Railroad Association (NMRA) Layout Command Control (LCC) protocol. His products

include current-sensing transformers, detector boards, signal control boards, computer interfaces, and everything in between for a complete detection and signaling system. He also has a good section on the NMRA LCC protocols and a tips page on a variety of subjects.

All of these systems come with their own strengths and weaknesses and require a bit of study to put together a working detection and signaling system. For the most part you can purchase off-the-shelf components and avoid the time-consuming chore of building complicated circuit boards. Most of these systems use quick-connects to avoid soldering a lot of wires. If you're truly interested in installing your own detection and signaling system, I suggest spending a few hours reading over the material in the websites I provided, then decide which might be right for you and your model railroad. 



ONE PROBLEM WITH SOME OPTICAL DETECTION CIRCUITS IS THERE MAY NOT BE ENOUGH LIGHT FOR THEM TO OPERATE PROPERLY.
— LARRY



Atlas Trainkids Amtrak Acela passenger train set

Atlas Model Railroad Co. hopes to recruit a new generation of hobbyists into model railroading with its new Trainkids line. The first offering under this new brand is a passenger train set inspired by Amtrak's high-speed Northeast Corridor train, the *Acela Express*. The set comes with a battery-powered locomotive/first-class car set, two more passenger cars, and a dummy trailing locomotive; a wireless remote control with direction, speed, sound, and lighting controls; and an oval of snap-together plastic track, ready to set up on the kitchen table or under the Christmas tree in minutes.

But this is more than just a toy; it's designed to be a steppingstone, filling the gap between fanciful steam engines with smiling faces on their smokeboxes and prototypical scale models. Although the locomotive and cars aren't to scale – they're foreshortened and have only four wheels each – they're depicted realistically, not cartoonishly. And best yet, the flanged wheels are gauged for HO scale track, so a youngster who starts out with

this set can run them on dad's HO layout, then graduate to scale model trains.

Appearance. The set is eye-catching, with bright silver paint and the abstract multicolor blobs of Amtrak's Acela paint scheme (which Amtrak calls "mobiles"). As I mentioned before, the cars aren't to scale and therefore the paint schemes can't be, either. But they are fairly faithful to the original schemes, and it's possible to identify the different classes of car by the colors and placement of the mobiles. The paint is smooth and evenly applied, and the printing is crisp and straight; the tiny "Welcome" printed next to each door isn't quite legible under magnification. The windows aren't see-through, but rather, molded into the bodies and painted black.

The cars seem rugged, with one-piece bodies molded in high-impact plastic and wheels with sturdy metal axles. They ought to stand up to rough play. (What kid doesn't like to see trains crash?)

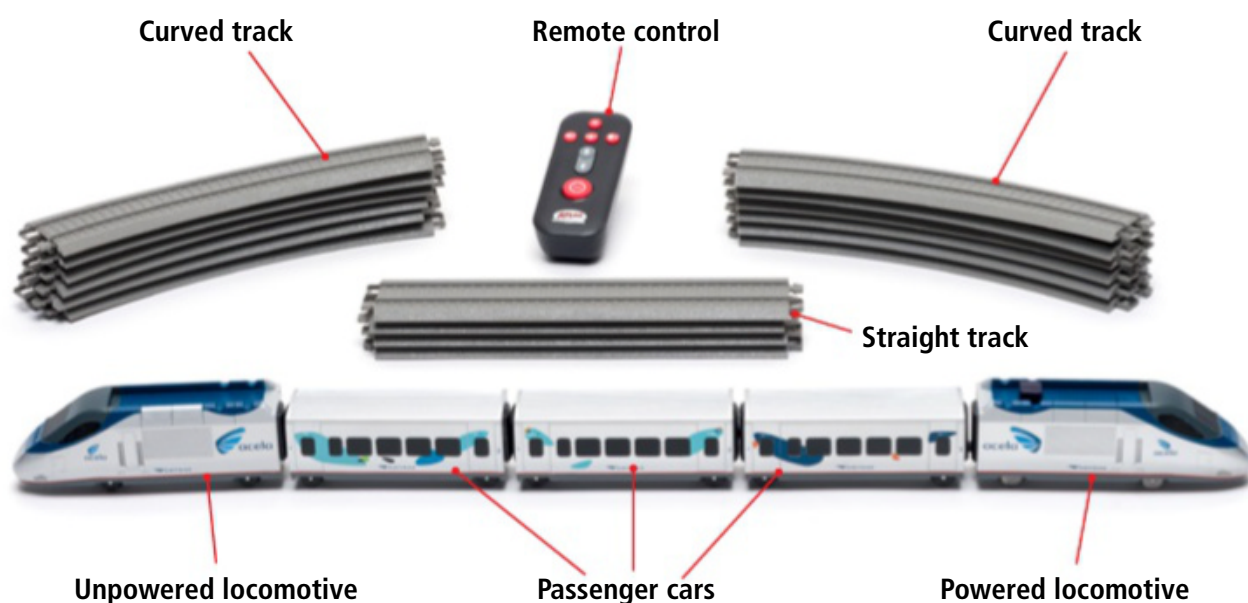
Instead of couplers, the cars are joined by magnets. They're housed in

slightly curved, pivoting black rectangles, mounted where there should be end doors. When the cars are joined, these give the appearance of being diaphragms. It seems like the magnets are mounted to move freely inside these pseudo-diaphragms, since no matter which way I oriented the cars to each other – even turning one upside down – the magnets still engaged and stuck. That's one less potential source of frustration for little engineers.

Battery control. Eliminating the awkwardness of stringing wires across the floor and under the roadbed, Atlas made this train set battery powered, with a wireless remote control. The engine is powered by four AA batteries (not included). These fit into a battery holder that screws into the bottom of the first class car, which is permanently drawbar-coupled to the locomotive. The locomotive contains the motor, control circuitry, a speaker, light-emitting diode headlights, and the infrared receiver for the remote control. The power button is on top of the locomotive.

While the wheels on the battery car and all trailing cars are plastic, the locomotive's wheels are blackened metal. The ones on the locomotive's left side are insulated from the axle, which means it can be run on a powered layout without creating short circuits. The motor drives only the locomotive's rear wheels, which have rubbery traction tires.

The remote control works out to a range of about 10 feet and doesn't need a direct line of sight if the infrared beam can bounce off the ceiling or wall. It has four small red pushbuttons at the top, labeled with universal icons, to control the headlights, horn, bell, and "welcome aboard" announcement. Below them is a



The set contains everything a little engineer needs to get started running a train in minutes, except for four AA and two AAA batteries.



gray up-down rocker switch to control the speed; the locomotive has three speed settings in each direction, forward and backward. At the bottom is a large red stop button to stop the locomotive immediately.

On both the remote and the bottom of the locomotive is a small toggle labeled "A-B." This chooses which channel the remote and locomotive communicate on. Selecting opposite settings would let you run two Atlas Trainkids train sets independently.

The remote needs two AAA batteries (also not included). When I removed the screw that holds the battery cover on, I heard something click inside. The nut that engages the cover screw had fallen off and was rattling around loose. In order to reattach the battery cover, I had to disassemble the halves of the remote, tape the nut in place, then reassemble it.

The track. Even though each section is a single piece of gray plastic, it's finely molded and detailed well, with a rocky ballast texture, wood-grained ties, and tie plate and spike head detail on each tie. Mold lines and ejection pins were confined to the bottom of the sections. A little paint wash and drybrushing to make it look even more realistic might be a fun parent-child project to introduce the little one to the wonders of weathering. And since the locomotive is battery-operated, it doesn't matter if a little paint gets on the railhead.

The sixteen track sections – twelve 30-degree 18"-radius curves and four 9"

straight sections, which assemble into a 38" x 56" oval – snap together precisely, with the joint hardly visible. Joining the sections might be a little tricky for those on the lower end of the recommended 4-and-up age range, but a second-grader should have no problem figuring it out.

The connectors on the ends of each section look a little fragile, but with the way they're designed, if a section is bent upward at a joint, it merely comes apart rather than breaking. That ought to save some headaches down the road. (Bending the track down would still be a bad idea, though.)

The only thing this track doesn't have that I'd like to see is drill points or bosses for permanently tacking it down to a tabletop. But I suppose that when a kid is ready for that, he's ready for Atlas True-Track, anyway.

Off to the test track. I assembled the curved sections of track on my office floor and placed the locomotive and cars on the rails. After pressing the power button, I tested the lights and sound effects, then set it going at medium speed. I intended to let it go until the batteries died to test the battery life, but it turns out Atlas was too smart for me. The engine automatically shuts off after an hour of continuous running to save the battery. (Any kid who lets the train run for an hour without touching the remote isn't paying attention, anyway.)

Just for fun I also set the train up on the Milwaukee, Racine & Troy, our HO scale staff railroad. The Trainkids track sets available don't include turnouts (yet), but I wanted to see how the set handled them. The no. 5 turnouts in Bay Junction Yard presented no difficulty, forward or backward, even at high speed. (High speed is quite speedy on this train, by the way – no doubt to appeal to kids who like to see 'em go fast.) And the little engine that could,

Facts & features

Price: Train set, \$99.95; add-on powered locomotive and first-class battery car, \$49.95; add-on business class car, \$13.95; figure-8 track expansion pack, \$29.95

Manufacturer

Atlas Model Railroad Co.

378 Florence Ave.

Hillside, NJ 07205

atlastrainkids.com

Also available at

KalmbachHobbyStore.com

Road names: Amtrak

Era: 2000 to present

Features

- 16 segments of molded plastic track with roadbed (assembles into 38" x 56" oval)
- Ages 4 and up
- Blackened metal wheels on locomotive (plastic wheels on unpowered cars), all in gauge
- Infrared remote control
- Light-emitting diode lighting on powered locomotive
- Magnetic diaphragm coupling
- Powered locomotive/first-class car combo
- Unpowered trailing locomotive, diner car, and business class car

did, successfully climbing the curving 3 percent grade to Skyridge without hesitation at medium speed. (The drive wheels slipped at low speed, though.)

Lowering the barriers to entry. I like to call trains like this set "gateway" models, because they're designed to get impressionable young newcomers hooked on the hobby. It's easy to set up and run and is practically foolproof. And despite its necessary trade-off of scale fidelity in favor of durability, economy, space, and play value, there's enough realism in this set to get a kid jonesing for a scale model of his or her own. Can you say "prototype," boys and girls? I knew you could. – Steven Otte, associate editor



The locomotive is drawbar-coupled to the first-class car, which holds the batteries. Since the engine's metal wheels are insulated, the train can run on a regular layout.

MORE ON THE WEB

• Model Railroader magazine subscribers can watch a video demonstration of the Atlas Trainkids set at ModelRailroader.com



ScaleTrains.com HO scale GE C39-8 diesel

An HO scale General Electric C39-8 diesel-electric locomotive gets the ScaleTrains.com Rivet Counter treatment. As with the N scale version that I reviewed in the August 2019 issue, this HO scale locomotive features roadname- and road number-specific detail. Our review sample also came equipped with an ESU LokSound V.5 decoder for authentic sound and lighting effects.

The prototype. Among the first of General Electric's Dash 8 locomotive series was the six-axle C39-8. The locomotive featured microprocessor control and a 16-cylinder 7FDL16 engine that produced 3,900 horsepower.

General Electric produced 161 C39-8s from 1984 to 1987, with 139 going to Norfolk Southern. The remaining 22 went to Conrail. In 1998, when Norfolk

Southern (NS) and CSX purchased Conrail, the two roads split up Conrail's C39-8 fleet. Four of the nine CSX units received a new paint job, but the rest retained their Conrail blue liveries and were "patched" with a new number.

The model. The HO model matches the dimensions of a prototype C39-8 as shown in the *Car and Locomotive Cyclopedia of American Practice, Fifth Edition* (Simmons-Boardman, 1984).

Our review sample is meticulously detailed to match CSX no. 7484. The prototype was originally built as Conrail no. 6009 in 1986 and repainted into CSX livery in the early 2000s. All paint is smoothly applied. Logo and lettering placement match prototype photos.

The model's plastic body shell is accurately detailed for its phase III prototype,

including a six-panel radiator grill, square corner cab doors, and a separately applied brake wheel. Air intake and other grills are see-through. All handrails and grab irons are separately applied, as are sand lines, m.u. hoses, and uncoupling levers. Our model of no. 7484 matches the prototype's early 2000s era with a retrofitted antenna and electronics equipment on its cab roof.

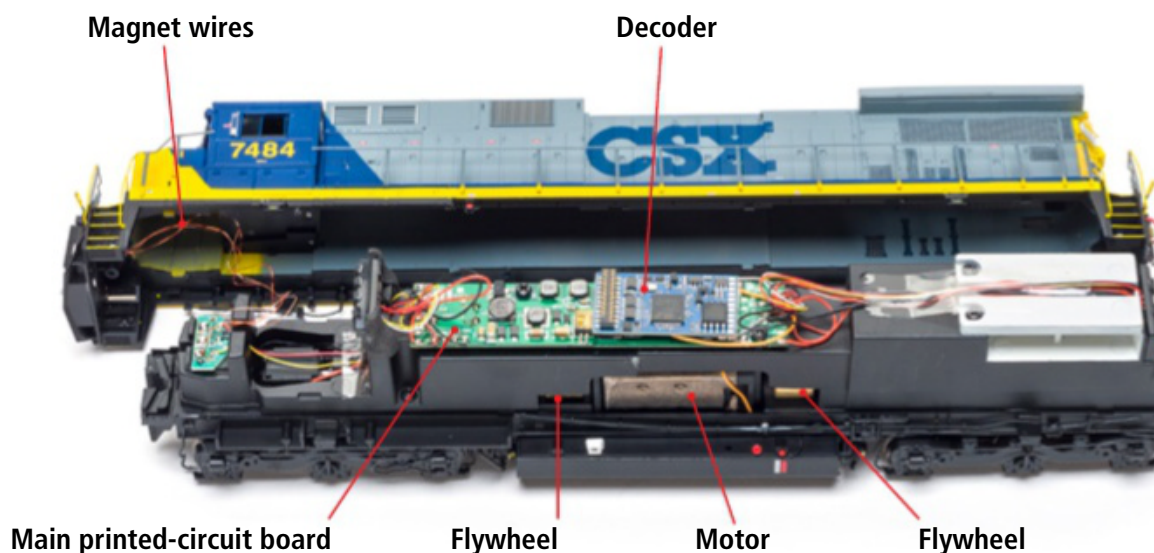
The plastic truck sideframes match prototype Adirondack (AD) trucks with cast-in serial numbers and AD logo. They also feature separately applied cylinders and rotating bearing caps.

The mechanism. After removing the coupler boxes, I lifted off the body shell. Note the instructions state there are no wires between the body and the chassis, but that's incorrect. There are magnet wires connecting the lighting board to LEDs in the body shell. Care should be taken not to inadvertently tug these very fine wires loose.

A die-cast metal weight runs the length of the locomotive, partially encasing the flywheel-equipped motor. Truck-mounted gear boxes power all six axles. All 12 metal wheels pick up track power.

Mounted atop the weight, the main printed-circuit board has a 21-pin socket with the ESU LokSound V.5 decoder plugged into it. Two cube-type speakers are enclosed above the rear truck.

Performance. During DCC speed tests, the locomotive didn't move until speed step 2, so I adjusted the starting voltage



The decoder plugs into a 21-pin socket on the main printed-circuit board. When removing the shell, be careful of the magnet wires that connect it to the chassis.

PERFORMANCE CHARTS

DRAWBAR PULL	
Drawbar pull 5 ounces 70 HO freight cars	
SCALE SPEED (DC)	
VOLTS	SCALE MPH
11 (start)	<1
12	14
13	29
14	50
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
2	1.5
7	11
14	29
28	54
28	70

by programming configuration variable (CV) 2 to a value of 2. The locomotive then began rolling at less than 1 scale mph in speed step 1. The C39-8 accelerated smoothly to a prototypical top speed of 70 scale mph.

I also put the C39-8 on point of a freight train on our staff layout, the Milwaukee, Racine & Troy. The locomotive's heft and pulling power let it haul a 15-car train up a winding 3 percent grade without stalling. The model also includes an ESU PowerPack capacitor system that keeps the lights and sound steady and motor running smoothly during brief power interruptions, like those due to dirty or uneven track.

User-triggered features include the bell, coupler, a dynamic brake sequence, and the Leslie air horn. Function 10 applies the independent brake that stops the locomotive, with appropriate sound effects. Function 9 triggers DRIVE/HOLD, where the locomotive speed remains steady and the throttle knob can be used to manually notch the engine RPM.

Lighting effects include headlights, number boxes, ditch lights, and red marker lights. All can be triggered independently. The ditch lights also alternate when the horn is sounded.

Every sound, lighting, and performance aspect of the decoder can be adjusted with CVs. I programmed the decoder address to the locomotive cab number, added momentum, and increased the braking rate. I appreciated that the volume level of each sound effect can be adjusted independently. In addition to the included quick start guide, an extensive user manual can be downloaded for free at loksound.com.

I find it easiest to program LokSound decoders using an ESU LokProgrammer computer interface (MSRP \$179.99) and

Facts & features

Price: \$324.99 (DCC, sound);

\$209.99 (DC, no sound)

Manufacturer

ScaleTrains.com

7598 Highway 411

Benton, TN 37307

scaletrains.com

Era: 1984 to 2000s; 2001 to 2005 as detailed and decorated for CSX no. 7484

Road names: CSX (YN2 scheme and ex-Conrail patch in "Quality" and "can opener" schemes), Conrail, General Electric demonstrator, Norfolk Southern, Pennsylvania Northeastern, Savage Ry., and Southern Alberta Ry. Multiple road numbers and paint scheme variations.

Features

- All-wheel drive and electrical pickup
- Blackened metal wheels, in gauge
- ESU LokSound V.5 decoder
- Five-pole, skew-wound motor with dual brass flywheels
- Light-emitting diode headlights, number boxes, ditch lights, and red marker lights
- Metal knuckle couplers at correct height
- Minimum radius: 18" (22" recommended)
- Operates on codes 70, 83, and 100 rail
- Weight: 1 pound 5.3 ounces

the free LokProgrammer software. Note that even if you don't purchase the interface, you can still download the user-friendly software to provide you with CV values that you can then enter manually into your DCC system.

On our direct-current (DC) test track, the model didn't move and its sounds didn't start until I applied 11V to the track. I remedied this by using my LokProgrammer to lower the analog starting voltage (CV 125) to a value of 53. At that setting, the sounds started at 6V, and the model crept along at 1 scale mph when I applied 7V to the track. It accelerated smoothly to 50 scale mph at 12V.

The only sounds available on a DC layout are the engine and squealing brakes, unless the model is operated with an analog DC sound controller, such as an MRC Tech 6.

Available in several prototype-specific versions, this HO scale C39-8 makes a fine addition to the superdetailed-out-of-the-box Rivet Counter series. – Dana Kawala, senior editor

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Facts & features

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Manufacturer

Model Rectifier Corp.
360 Main St., Suite 2
Matawan, NJ 07747
modelrectifier.com

Features

- 125VA output
- Liquid-crystal display screen

From the factory the momentum is set to 15. To increase or decrease the steps, hold the MOMENTUM button down and turn the power switch on. The LCD screen will display "PROG xx". Release the MOMENTUM button and tap the DIRECTION button until you reach the desired step. To exit, press the MOMENTUM button.

DCC operation. The Throttlepack 9950 can also operate locomotives equipped with DCC sound decoders.

To run trains with MFX sound decoders, press the BRAKE and MOMENTUM buttons simultaneously. To operate locomotives with National Model Railroad Association-compliant sound decoders, press the BRAKE and DIRECTION buttons. The display will read ACCY for MFX decoders and LOCO for DCC decoders.

When using the Throttlepack 9950 to run DCC sound-equipped locomotives, the decoder's address must be set to 3. Engines with DCC sound decoders must be stopped before changing direction.

When the locomotive is in motion, the MOMENTUM button turns the headlights on and off. On sound-equipped locomotives, the BRAKE button activates the horn or whistle and the DIRECTION button rings the bell.

Two in one. The Model Rectifier Corp. Throttlepack 9950 is a two-in-one power pack for those who model in multiple scales. Though the box says it's a DC high-power train controller, it's more accurately described as a dual-mode controller. For those with a sizeable DC locomotive fleet who also want to run DCC sound-equipped engines but don't want to buy two separate control systems, the Throttlepack 9950 is worth a look. – *Cody Grivno, group technical editor*

MRC Throttlepack 9950

The Throttlepack 9950 isn't a new face in the Model Rectifier Corp. power pack lineup. However, the train controller, designed for N, HO, O, and G scales, now has the ability to operate Digital Command Control (DCC) sound-equipped locomotives.

Setup. The rocker switch on the left side of the cabinet is the main on/off switch. A scale/gauge slide switch on the bottom changes the controller's voltage output. When the switch is in the forward position it's set for O and G scales (18V DC output). To change it to N and HO scales (15V DC output), slide the switch toward the back of the cabinet. Turn the device off before changing the switch's position.

Setting up the Throttlepack 9950 is straightforward. Insert the green

four-terminal plug into the receptacle on the back of the cabinet. Two of the terminals are variable direct current (DC) for track power. The other two terminals are accessory DC terminals. The accessory terminals are polarity sensitive, with left negative and right positive.

Once the wires are connected to the track and/or accessory terminals, attach the wall cord to the back of the power pack and plug the opposite end into a wall outlet.

DC operation. When the power pack is turned on, the liquid-crystal display (LCD) screen illuminates. The screen shows voltage (power pack to track), current load in amps, locomotive direction, and momentum (on or off).

The throttle control knob on the left of the cabinet controls locomotive acceleration and deceleration. To change directions, bring the engine to a stop and press the DIRECTION button.

The front of the cabinet has a jack for an optional DC handheld tethered throttle. The throttle (MRC no. 0001325) is sold separately.

The BRAKE button brings the engine to a slow stop. When the button is released, the locomotive will go back to the speed set on the throttle control.

For more prototypical starts and stops, use the MOMENTUM button. The momentum has 31 adjustable steps.



The green plug on the back of the cabinet features terminals for track power and accessories.

Walthers 40-foot HO single-sheathed boxcar

Modelers of mid-20th century railroading have a new piece of rolling stock to add to their fleets in the Walthers Mainline 40-foot American Railroad Association (ARA) standard single-sheathed boxcar. This ready-to-run car is modernized with AB brakes and has metal ends and doors.

An adaptable standard. The 1923 ARA XM-1 single-sheathed boxcar was a standard that allowed variety. Roofs, ends, trucks, doors, and brake gear could all be customized to meet a railroad's preferences. Ultimately, the standard came down to dimensions for the height and length of the car.

The other standard was the use of a steel Pratt truss for side reinforcement. In a Pratt truss, the diagonal members are in tension, which makes better use of the steel material. Most double-sheathed wood boxcars used wooden Howe trusses, in which the diagonal members are in compression.

The Louisville & Nashville was the largest purchaser of ARA single-sheathed cars with more than 3,000. Boston & Maine had 2,000, including 25 for its subsidiary Mystic Terminal Co., and Rock Island had 1,000. The cars lasted into the 1960s on some railroads, and later in maintenance of way service.

The model. Walthers' model has a one-piece plastic body shell with separately added running boards, brake staff and wheel, and brake step. The underbody has a separate frame section attached to the floor with screws that also secure a flat steel weight inside the car. AB-style brake gear is a single separately applied



piece consisting of the brake cylinder, air tank, and control valve, all connected with simulated piping.

Metal knuckle couplers are body-mounted at the correct height, although one of the uncoupling pins on our sample was hanging a little low. The draft-gear boxes have plastic covers secured with screws. The Andrews trucks are screw-mounted and carry blackened metal wheelsets that are in gauge. The car weighs 3.7 ounces, about .1 ounce lighter than National Model Railroad Association Recommended Practice 20.1.

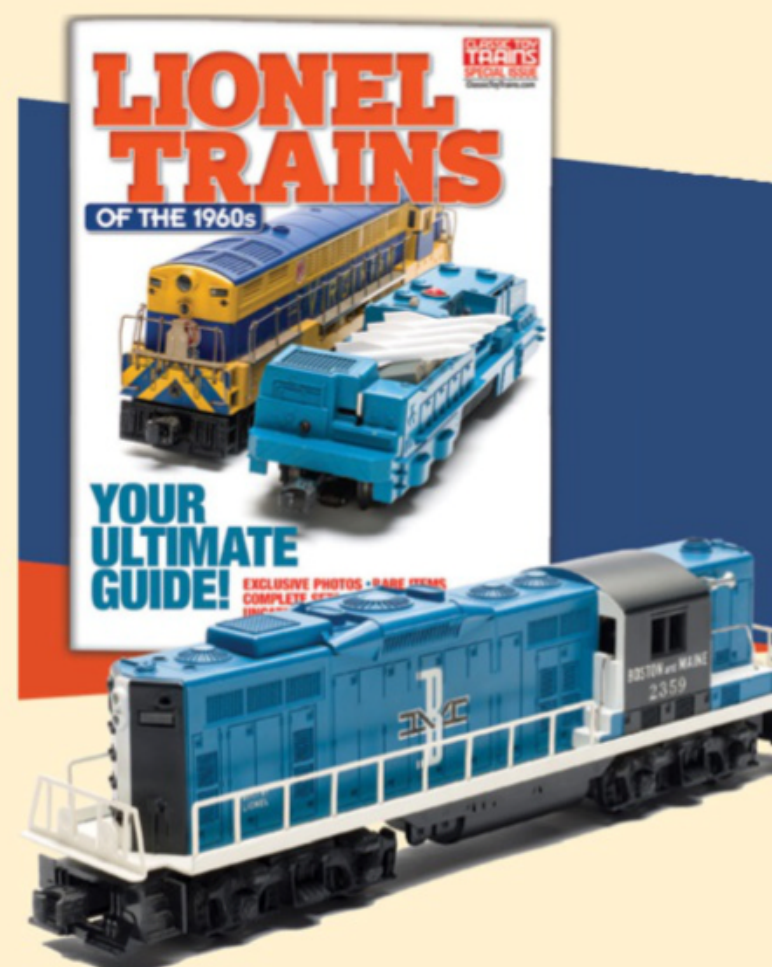
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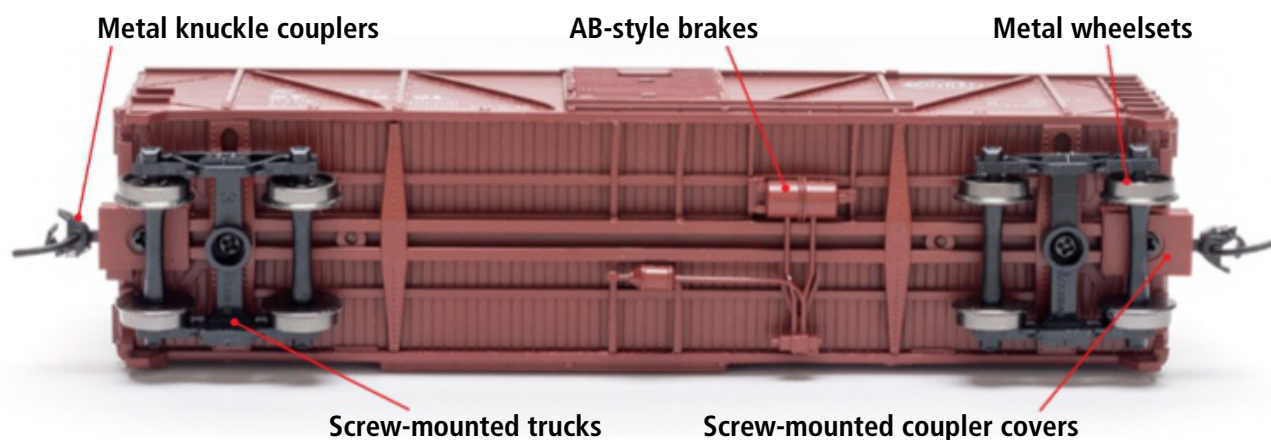
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Facts & features

Price: \$27.98

Manufacturer

Wm. K. Walther Inc.
5601 W. Florist Ave.
Milwaukee, WI 53218
walthers.com

Era: 1920s to 1960s, 1940s as detailed and decorated for NYC no. 277361

Road names: New York Central; Chicago, Milwaukee, St. Paul & Pacific (Milwaukee Road); Baltimore & Ohio; Maine Central; Pennsylvania RR; and Southern Pacific (all with multiple road numbers). Also available undecorated.

The WaltersMainline ARA single-sheathed boxcar features enough underbody detail to make it interesting from normal viewing angles.

Counting the rivets. Our sample XM-1 was decorated for the New York Central as a class 376-B single-sheathed boxcar. According to diagrams on the website canadasouthern.com, class 376-B cars had eight panels per side instead of the six on the model.

The car isn't an exact replica of a particular prototype, but captures the flavor of the XM-1 and its variations. The overall length over the strikers, the flat plates above the couplers, measured 42'-4". Height from railhead to running board was 14'-4". The distance from truck center

to striker plate measured 5'-0". Overall width at the eaves was 10'-3½". All are within scale inches of various prototypes.

The boxcar red paint was smoothly applied, and the white lettering was all opaque and legible, although there were a few gaps over the molded separations between the wood boards that make up the sheathing.

I tested the car on our Wisconsin & Southern project layout and had no trouble pushing and pulling it through the yard and industry tracks at Troy. It also performed well at the head of a train

climbing a steep grade on our Milwaukee, Racine & Troy staff layout.

Walther's model fills a niche in the transition era, and with its lower roof and trussed sides, will certainly add a bit of variety to long trains full of boxcars.
— Eric White, associate editor

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Whistle talk

The best railroading, in my opinion, happened just before I was old enough to experience it. I'm lucky that my Aunt Rose walked me to a park in northern New Jersey to watch Erie Pacifics in commuter service on the eve of dieselization, creating my earliest memory. Steam isn't extinct, but it's rare to experience full immersion in the sights and sounds of steam.

The Cumbres & Toltec Scenic RR (C&TS) is a treasure, a 64-mile National Historic Landmark that operates a former Denver & Rio Grande Western narrow-gauge line straddling the Colorado-New Mexico border. Its engine terminal in Chama, N.M., usually has at least two ex-Rio Grande Mikados in steam; frequently, there's a third Mike and sometimes other engines. Where else can one wake to soft whistling by hostlers shuffling engines from ash pit to water tank to coal dock, a gentle breeze scented with coal smoke rustling the room's window curtains?

Railroading's grade crossing warning – two longs, a short, and a long – is heard everywhere.

However, there's much more to whistle talk, and C&TS railroaders practice it faithfully. Whistle signal rules, such as Rule 14 in the Standard Code, contain a couple of dozen audible codes using distinct patterns of longs (–) and shorts (o). Exploring a few of them can enrich operating sessions on our layouts.

The C&TS hostlers signal proceed, stop, and reverse by whistling –, o, and o o o. Proceed and reverse are sounded before moving, acknowledging a trainman's hand signal and warning others. Stop is sounded upon doing so, indicating that the engine's throttle is closed, its brakes are set, and it won't move until the next hand signal. Two engines moving about in the yard make a pleasing tune, each signal delivered in its engineer's unique style.

Cumbres & Toltec crews adhere to rule 14(n), – – o, required one mile away from meeting or stopping points. When a schedule or a train order identifies such a point, the signal alerts the train's conductor that the engineer is preparing to stop. Absent the signal, the conductor must use his brake valve to pull the air and stop the train.

Rule 14(m) demands one lo-o-ong when approaching a station, a query to its conductor. If the conductor acknowledges by waving a highball, indicating proceed, the train may continue past the station; if not, or if the conductor's signal isn't seen, the train

stops. It's fun to listen to whistle talk that combines these two signals: a prolonged – followed by a pause and then the second signal, – – o.

My February 2018 column discussed operation of sections, two or more trains following one another on the same schedule. All sections except the last



Sunlight gleams on the whistle of Black River & Western 60, a former Great Western 2-8-0 built by Alco. Jerry Dziedzic photo

carried green flags or lights, warning opposing trains of a following section. Rule 14(k) requires sounding – o o to call attention to these signals, to be acknowledged by the opposing train's engineer with 14(g) o o. When passing freight trains, 14(k) was repeated for the caboose, alerting all crew on board. The opposing train's conductor answered with a highball.

Rule 14(j), the well-known grade crossing warning, deserves more attention. Today's – – o – is relatively recent. Its original form, two longs and two shorts, was common on many roads until the mid-50's. Check the applicable rulebook for the whistle signal used in your era.

The duration and volume of the long and short sounds is another variation. A train running at high speed will begin its signal a quarter mile ahead of the grade crossing,

the engineer stretching each sound to give plenty of warning. He'll use full volume, too. By contrast, a slow branchline local's engineer might begin near the crossing, using shorter bursts blown softly.

The rules don't cover this whistle talk tradition. I once saw Steamtown's Baldwin No. 26, an 0-6-0 switcher, and a modern Norfolk Southern six-axle road diesel start toward a meet in Scranton, Pa. The Baldwin's engineer pulled a note with the whistle cord, quilling it airily. The other answered, both engineers admiring one another's power and continuing their salutes as they passed.

Today's layouts might well see a Big Boy, a Nickel Plate Berkshire, or a Norfolk & Western Greenbrier meet modern power of any kind. Remember to salute! **MR**



**TWO ENGINES
MOVING ABOUT
IN THE YARD
MAKE A
PLEASING
TUNE, EACH
SIGNAL
DELIVERED IN
ITS ENGINEER'S
UNIQUE STYLE.
-JERRY**



A Canadian Pacific GMD-1 pulls the local past Gallagher Thorold Paper Co. in St. Catharines, Ont. The action takes place on an HO scale switching module belonging to the Railview Historical Society in Markham, Ont. Dan Darnell kitbashed the mill from four Walthers Redwing Flour Mill kits. The locomotive is a Rapido Trains model.

Vince Pugliese photo

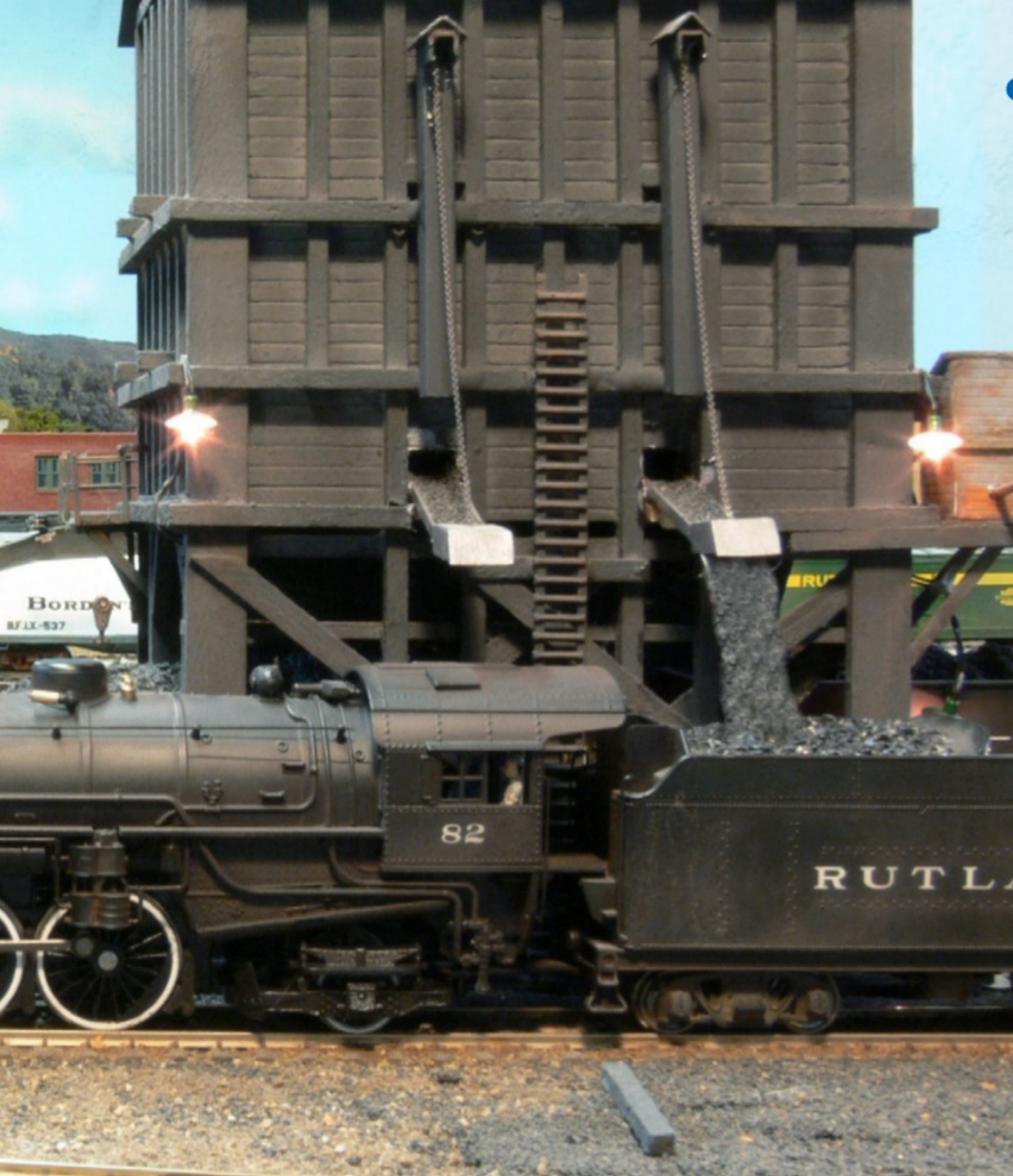


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A railfan turns to get one last photo as a Santa Fe Railroad Police officer tries to explain private property laws to him and his fellow photographers. John Vavra of Escondido, Calif., shot the photo on his HO scale Santa Fe layout. The General Electric C44-9W diesel is a Kato model; the police car is from East Coast Circuits, with decals John created himself.



Rutland 4-6-2 Pacific

no. 82 takes on coal for what may be its last time. Soon the coaling tower will be emptied and the few remaining steamers will be sent to the scrapper, as the Alco diesel in the background heralds the future. Steve Anderson of Saddle River, N.J., photographed the scene on his HO scale layout.

Boston & Maine no. 3003, a class S-1a 2-10-2, heads west out of Boston toward Mechanicsville, N.Y., with a freight in tow. John VanDenburgh of Rotterdam, N.Y., photographed the HO scale locomotive on his B&M Fitchburg Division layout. The locomotive is an NJ Custom Brass model to which John added decals, weathering powders, and a TCS WOWSound DCC decoder.



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CLOSING DATES: June 2020 closes Mar. 23, July closes Apr. 20, Aug closes May 22, Sept closes June 19, Oct closes July 16, Nov closes Aug. 20, Dec closes Sept. 21.

Schedule of Events

AZ, GLENDALE: ARHS Model Train Swap Meet. Glendale Christian Church, 9661 North 59th Ave. Saturday, May 16, 2020, 9:00am-1:00pm. Admission \$5.00. Tables \$25.00 to sign up send stamped envelope, check or money order to ARHS, PO Box 5816, Glendale, AZ 85312-5643. Contact: Craig Faris 623-340-3529

CA, SAN PEDRO: Belmont Shore Model Railroad Club Open House. May 16 & 17, 2020, 10am-4pm. Free Swap Meet Saturday 8am-Noon. Come see our 2000+ sq.ft. N scale layout. Angels Gate Park, 3601 South Gaffey St., Building 824, San Pedro, CA 90731. Free Entry. www.belmontshorerr.com

CO, COLORADO SPRINGS: Train Expo Colorado (TECO) hosts its next model train show in Colorado Springs, CO, at Chapel Hills Mall Saturday, April 18, 10 AM-5 PM and Sunday, April 19, 10 AM-4 PM. Entry: \$7 per person, senior and military discounts apply, children under 12 are free. Contact Elizabeth 915-491-4819 or visit https://www.tecoshow.org

DE, ROXANA: Spring Fling Train & Toy Show. Roxana Fire House, Route 20, between Millsboro & Fenwick Island. Saturday, May 2, 2020, 9:00am-3:00pm. Admission: \$5.00 adults, children 10 and under free. Operating layouts, refreshments, door prize. For information contact Bill Ziegler, 302-537-0964 or www.delawareseasiderailroadclub.com

FL, BROOKSVILLE: Regal Railways presents Toy Trains & Hobby Show. Hernando Fairgrounds, 6436 Broad St. Saturday, May 23, 2020. 9:00am-2:00pm. Adults \$5.00. Vendors and operating layouts. Serving lunch items. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

FL, JACKSONVILLE (REGENCY-BEACHES): The First Coast Model Railroad Society Meet-and-Greet, 3rd Sunday of every month. 750 sqft double level freelance HO layout 50% complete. On30 modular layout. Gated location, contact Stu Shef stushef@yahoo.com 571-215-5475 24-48 hours in advance. Check out www.FCMRS.club; youtube.com search "FCMRS"

IL, COLLINSVILLE: 14th Annual St. Louis Railroad Prototype Modelers meet. Gateway Convention Center. July 31-August 1, 2020, Friday 9:00am-9:00pm and Saturday 9:00am-5:00pm. Admission: \$25.00 for both days; \$20.00 for Saturday only. For information, www.icgdecals.com/stlrpm 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 I-70 @ IL Rt. 127 (Exit #45). Saturday, June 13, 2020, 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, PEORIA: Midwest Region NMRA Convention-Peoria Rocket 2020. May 14-17, 2020. Holiday Inn Hotel & Suites, 101 Holiday Street, East Peoria, IL 61611. 309-698-3333. Activities: Model Contests with NMRA judging, clinics, layout tours, operating sessions, Linus project, and banquet. Additional information at www.peoriarocket2020.org

KS, HERINGTON: 2nd Annual Herington Railroad Days and Kansas Central Division NMRA Meet. May 2 & 3, 2020. 9am-4pm both days. Herington Community Building, 800 S. Broadway, Zip: 67449. Admission by donation. Clinics, contests, learn about the hobby, special A&SVRR excursions onsite! Food available. Visit the Historical Museum and Railroad Annex to see Herington's Rail History. heringtonrailroaddays.com

MI, WYOMING (GRAND RAPIDS): Greater Grand Rapids Spring Train Show. Saturday, April 18, 2020, 10:00am-3:00pm. HSB Inc., 5625 Burlingame Avenue SW. Adults \$5, under 12 FREE, 203 vendor-display tables, RR Books & Photos, Trains in all scales, Food, Lionel "Thomas-the-Train" drawing, door-prizes and free parking. Vendor tables \$18 each. Contact Ken Skopp, 616-667-9680, kwsokopp@gmail.com or www.grvrrc.org

MN, ST. CLOUD: Granite City Train Show and Sale. River's Edge Convention Center, 10 4th Avenue South. Saturday, May 9, 2020, 9:00am-3:00pm. \$6.00, 10/under free. Buy/sell model/toy trains, books, videos, railroad collectibles. Operating model & toy train display. Children's railway play area. Win a LIONEL train set or FSM structure kit. 320-255-0033; edwardolson@cloudnet.com or www.GraniteCityTrainShow.com

MN, WOODBURY: Newport Model RR Club Flea Market & Train Show. Woodbury High School, 2665 Woodlane Drive, Zip: 55125. April 25, 2020, 9:00am-2:00pm. Admission \$5.00. Club Address: Newport Train Club, PO Box 0061, St. Paul Park, MN 55071. Contact: Ed, 651-233-3310 or Mark, 651-207-7747

MO, JOPLIN: Museum Complex Train Show and Swap Meet. Saturday, April 25, 2020, 9:00am-3:00pm. Schifferdecker Park, 7th Street & Schifferdecker, between the golf course and pool. Adults \$3.00, under 12 free. Rick Gardner, 11486 County Lane 214, Oronogo, MO 64855; 417-673-4888 or e-mail rickgardner4449@gmail.com

NC, SPENCER: Model Train and Railroadiana Show at the North Carolina Transportation Museum. May 16-17, 2020. Saturday 9am-5pm. Sunday 12-5pm. Dealers, layouts, clinics, train rides, and more for the whole family! Details: nctrans.org or 704-636-2889 ext. 251

SC, CHARLESTON: Charleston Area Model Railroad Club Annual Train Show, Danny Jones Armory Complex, 5000 Lackawanna Blvd., North Charleston, SC. April 25-26, 2020. Saturday 9:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$7.00. Active military families are Free and children under 12, Free. Additional information or table rentals, contact: trainshow@chamrc.com or www.chamrc.com

TN, JOHNSON CITY: George Carter Railroad Museum Train Show. East Tennessee State University MINIDOME, 1081 John Robert Bell Drive. June 5 & 6, 2020. Friday Noon-6:00pm and Saturday 10:00am-4:00pm. Admission \$6.00, under 12 free. Free garage parking. Vendors, working layouts, live steam. Contact Roger Tienart 423-791-4937 or Gary Emmert 903-452-5012.

TX, AUSTIN: Austin Area Train Show, Williamson County Expo Center, 5350 Bill Pickett Trail, Taylor, TX (just minutes past Dell Diamond). May 2-3, 2020, Saturday 10am-5pm, Sunday 10am-3pm. Admission: \$7 (includes both days), children 12 and under FREE w/adult. Vendors, model and lego railroads, home tour included. Concessions and free parking. For more info, visit austintrainshow.org

TX, NEW BRAUNFELS: Annual Model Railroad Jamboree. New Braunfels Civic Center, 390 S. Seguin Ave. April 18-19, 2020. Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults (over 14) \$8.00, children (5-13) \$2.00. 300 vendor tables, layouts including Legos, silent auction, refreshments, museum open house. Info: www.nbrrm.org Jim Edmondson 830-629-2071

VA, FISHERSVILLE: 34th Annual Shenandoah Valley Model Train and Railroad Show. Augusta Expoland, 277 Expo Road. Sunday, May 17, 2020, 10:00am-4:00pm. Adults \$5.00, children under 12 free. Vendor tables \$20.00. Contact: Bill Kauffman at 540-209-2698, kauffmanb@gmail.com or visit www.acmrrc.org/annual-model-train-show

WY, CHEYENNE: May 13-17, 2020. Cheyenne Railroad Heritage Days, including the Sherman Hill Train Show (May 16-17), UPHS Convention (May 13-16). The Show has many Vendors and Layouts and BIGBOY 4014 TOUR. Show hours Saturday 9-5/Sunday 9-4. \$8 for adults, 12 and under free. Frontier Park Exhibition Hall, 1312 W. 8th Ave. Free parking. Shermanhillrails.org, shmrrcts@gmail.com. Sandy 307-634-1617

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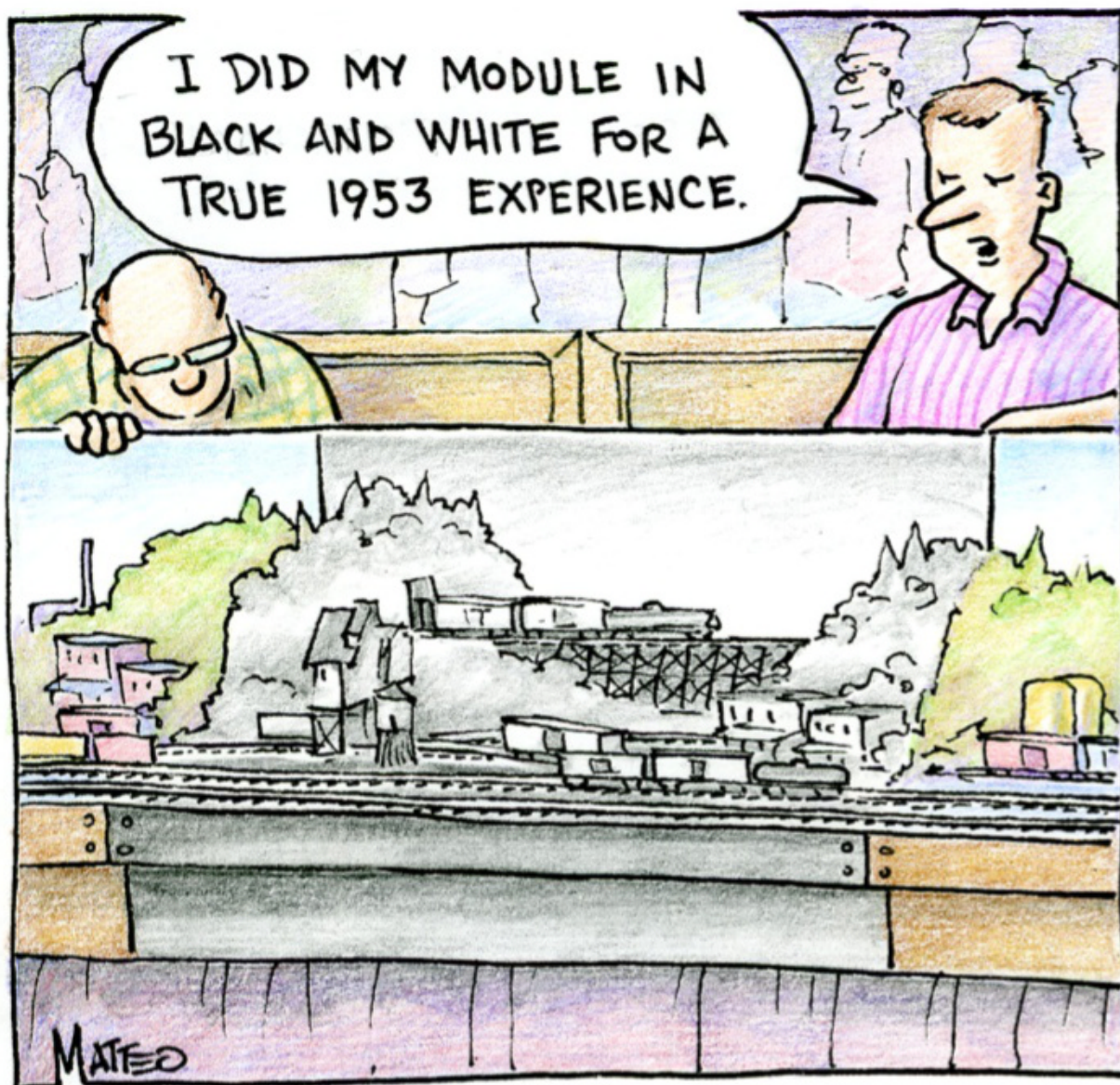
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How bad do you want it?

In a February 2020 *Road & Track* column titled “How bad do you want it?” Ross Bentley recalled the countless times someone had said to him, “I’ve always wanted to be a race car driver.”

Sound familiar? Change a few words and you get, “I’ve always wanted to build a model railroad.” Ross went on to observe that his first reaction to that comment was rather blunt: “No, you haven’t.” But he didn’t actually say that, as he tried to be polite, especially since the person making that comment was often as not sharing a seat next to him on an airplane.

The bottom line, Ross concluded, is that if someone really wanted to be a race car driver, they would have become one. But they didn’t want it badly enough. To race at any level, he said, requires sacrifice and commitment.

His views reminded me of Bill Darnaby’s comment to the effect that if you really want a model railroad, you’ll have one. Bill’s a retired mechanical engineer, and engineers are not known for waffling when it comes to making hard-nosed decisions. When he decided decades ago that he was going to have a basement-size model railroad, all subsequent decisions from the type of home he and his wife would buy (ranch with an L-shaped basement) to when they would acquire a TV (after the railroad was operational, to avoid distractions) were based on Job One.

My own career decisions were similarly aimed at ensuring that model railroading assumed a prominent role. It still does. Those decisions have directly or indirectly provided a comfortable home and lifestyle, and Judy and I have traveled almost literally around the world to attend model railroad-related events or visit with model railroad friends.

That’s one side of the coin.

By far the majority of you see the hobby of scale model railroading as something far less intrusive into your lifestyle. You may be a loner who enjoys building a few kits and running trains on a layout that fits along a wall or two of a spare room. Or you may have a few friends over now and then to socialize while the trains run. Perhaps you hop into someone’s SUV to attend a local National Model Railroad Association convention or train show.

As long as you derive value from the time you spend on the hobby, it’s doing exactly what it should be doing for you: making a fair return on your investment.

Where things start to go wrong is when someone plans well beyond his or her means: “I’ve always wanted to be a race car driver.” That’s not going to get anyone anywhere and is bound to lead to frustration and inaction. The hill ahead looks too steep to climb, and no other hill looks worthy of climbing. So nothing is attempted.



YOUR JOB IS MAINLY ONE OF DECIDING WHAT TYPE OF RAILROADING YOU MOST ENJOY AND FINDING A PLACE FOR IT TO RESIDE.
-TONY



Doug Tagsold has built several railroads in HO, On3, and 1:72 narrow gauge (see *Model Railroad Planning 2018*). Obviously, enjoying scale model railroading is a high priority for him.

Doug Tagsold photo

Today is the best of all days to be a scale model railroader. Almost anything we don’t want to do has been done for us or can be done for us by outsourcing. Want a Digital Command Control sound-equipped locomotive? It’s as close as your nearest hobby shop. Want someone to design your layout? That service is available. The same firm may build it for you to the benchwork level, or with track already wired, or even with scenery and structures.

Your job is mainly one of deciding what type of railroading you most enjoy and finding a place for it to reside. Don’t overlook a simple industrial switching layout that nestles up against a wall

or two in your TV room, spare bedroom, or garage. You don’t need a basement to enjoy model railroading.

If you’re not sure how long you’ll be residing in your current abode, or you’re renting, build the railroad as one or a series of layout design elements (see the Wingate series in the January through April 2020 *Model Railroader*) that can easily be moved.

There’s only one thing that you absolutely, positively must not do. It’s a common mistake, one that most of us have made at one time or another in our quest to build a model railroad.

Just don’t say: “I always wanted to build a model railroad.” Instead, build one. **MR**



Modern Movers - Classic Styling New BNSF SD70ACe Equipment

Kato USA continues to be the preferred provider of premium modern freight diesel locomotives in N scale with the newest release of the EMD SD70ACe model in BNSF "Swoosh" paint! Built on the newest cab variation of the locomotive with an Isolated cab and relocated headlights, the new run of SD70ACe locomotives is primed and ready to go into work on your layout with its shock absorber truck design and heavy metal frame!

The EMD SD70ACe is available in standard DC as well as with factory-installed DCC and Special-order DCC+Sound courtesy of a high quality ESU LokSound decoder! Order yours from your preferred hobby store today and start enjoying the latest freight locomotive from BNSF in N scale today!



The Isolated Cab design of the latest SD70ACe release mirrors some of the newest (as of 2020) modifications of the SD70ACe as used by the BNSF. These variations differ from past releases of the BNSF SD70ACe not only in the cab details on the side and roof, but also in the location of the headlight, which has been moved down to the nose of the locomotive from above the cab windows.

These newest BNSF SD70ACe's will fit right in with modeler's other modern engines like the ES44AC or even previous release SD70ACes!

Item Number	Description	MSRP (USD)
#176-8523	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8400	\$135
#176-8523-DCC	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8400 w/ DCC	\$215
#176-8523-LS	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8400 w/ ESU LokSound	\$335
#176-8524	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8527	\$135
#176-8524-DCC	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8527 w/ DCC	\$215
#176-8524-LS	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8527 w/ ESU LokSound	\$335
#176-8525	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8574	\$135
#176-8525-DCC	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8574 w/ DCC	\$215
#176-8525-LS	NEW N EMD SD70ACe BNSF "Swoosh" Nose HL #8574 w/ ESU LokSound	\$335
Recent SD70ACe releases also available!		
#176-8521	N EMD SD70ACe UP Flag #9066	\$135
#176-8521-DCC	N EMD SD70ACe UP Flag #9066 w/ Pre-Installed DCC	\$215
#176-8521-LS	N EMD SD70ACe UP Flag #9066 w/ ESU LokSound DCC	\$335

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