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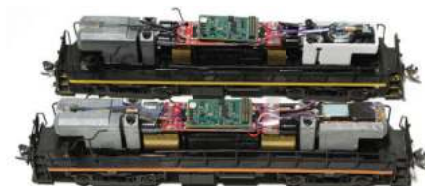
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Getting things running



On the cover: Visit the McKeesport Model Railroad Club as it celebrates 75 years in the hobby.
Steve Raith photo



Next issue

In **March**, we complete our T-Trak project; visit two great layouts, one of which will be open for the 2025 NMRA convention; share tips for photo backdrops; and more!

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Five tips for great rural scenery

Take a step away from the big city and focus on rural scenery with five great ideas compiled by Senior Editor Cody Grivno. Learn techniques for realistically modeling grain elevators, farm fields, and more. From ways to research small town industries like grain elevators to sourcing large quantities of N scale crops to create fields, there's so much to learn. Contributing Editor Pelle Søeborg provides insights on how to model a small town structure using leftover kit parts. Then frequent contributor Mont Switzer discusses tractor loads for flatcars. These ideas and more can all be found on Trains.com.



ScaleTrains N scale EMD SD40T-2

The ScaleTrains N scale EMD SD40T-2 diesel locomotive recently visited our Milwaukee, Racine & Troy State Line Route. Join *Model Railroader* Senior Editor Cody Grivno as he provides a short history of the tunnel motor locomotive and Union Pacific 8803; highlights the many prototype-specific details on the Rivet Counter line model; and demonstrates the sound and light functions on our review sample. The video concludes with UP 8803 leading a short freight train over the State Line Route. Scan the QR code above with a smartphone to watch this video and all of our reviews only on Trains.com.



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Making accurate models from reality

What does this mean, to model from reality? Is it making everything exactly to scale, without deviation?

Modelers who have been at this a while know that's rarely possible. Even at 1:87.1 or 1:160 full size, many aspects of the world outside our layout rooms are far too large to duplicate foot to foot.

And of course, our model trains don't duplicate the motive power of the prototype. Which is probably a good thing when you think about the effects diesel exhaust or coal smoke would have on the inhabitants of our homes.

But we do want to create something that looks real. Many modelers have said a favorite comment they get is "I recognize that scene." There's a lot of satisfaction in creating something that rings true to viewers, and it often helps make a connection with people who aren't modelers.

In addition to modeling recognizable scenes, modelers also strive to create scenes that look plausible even if they're not exact re-creations of a full-sized scene. Creating these views is the artistic part of model railroading.

Often times, this is the part that intimidates people. How do I make my models look like the real thing? Artists talk a lot about seeing the world around you. But it's seeing in an active way. Looking at each aspect and noticing similarities and differences. For example, next time you're at a grade crossing, look at the ballast. Notice how each stone is a slightly different color.

Modeling that variation can be tricky, but there's an easy way. Check out Lance Mindheim's story on page 49. He explains how to use photos to re-create intricate textures and patterns on structures.

He combines the images with 3D details to make convincing models.

But it's also looking at the bigger picture. How the land is shaped from place to place. Compare the rolling landscape of Iowa along Interstate 80 to the flatter fields of Indiana on the same highway.

The story on page 26 focuses on the geography of the Appalachian Mountains. Knowing how the landscape was created makes it easier to re-create the area in miniature. Of course, if you can't get to see the landscape of the area you're modeling, Google is your friend. Check out Google Earth or the 3-D feature on Google Maps.

The December Trains of Thought column from Tony Koester had some people wondering if they were experiencing déjà vu. I'm sorry to say you weren't. By December



2024, we'd published 469 columns from Tony, and I suppose we were bound to repeat one in that many tries, and so it came to pass.

We've made some changes to our processes to ensure this doesn't happen again for at least another 469 columns. I appreciate the good humor of the folks who reached out to let us know.



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N scale



General Electric U23B diesel locomotives. These four-axle road locomotives are available from Atlas painted for Delaware & Ohio, Chesapeake & Ohio, Conway Scenic, Lehigh Valley, Missouri Pacific, and Penn Central in one to three road numbers per scheme. The model is also available undecorated in three body styles. The N scale U23B features directional golden-white light-emitting-diode lighting, including a low nose headlight where applicable. Additional features include

two or four cab side windows as appropriate; separate, factory-applied plastic handrails and stanchions; and weathered grills on the side of the long hood. Direct-current models equipped with a speaker are priced at **\$129.95**. Models with an ESU LokSound decoder are **\$239.95**. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

HO scale locomotives



• **Alco 4-8-2 Mt-4 steam locomotive.** Southern Pacific and Athearn. One road number per scheme. Prototype-specific details. Factory-applied builder's plates, non-operating marker lamps, metal handrails, brass-painted bell and whistle, piping, uncoupling lever, and more. Light-emitting diode headlight and number boxes. Genesis series. Direct-current model, \$509.99; with DCC and

sound, \$609.99. Athearn Trains, 800-338-4639, athearn.com



• **Baldwin Locomotive Works BF-16 Sharknose diesel locomotive.** Pennsylvania RR, Baltimore & Ohio, and New York Central. Various fantasy schemes also available. Multiple road numbers per scheme. Light-emitting-diode lighting. ABS body with die-cast metal

chassis. All-wheel electrical pickup. Separately applied handrails, grab irons, horn, bell, wipers, and etched-metal grills. Direct-current A unit, \$199.99; direct-current B unit, \$189.99; A unit with DCC and sound, \$299.99; A unit and unpowered B unit two-pack, \$399.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com



• **Electro-Motive Division GP40 diesel locomotive.** Kansas City Southern and National Railway Equipment. One or two road numbers per scheme. Road-specific details including battery box doors. Underframe detail including traction motor cables and air filters. Separately applied grab irons and handrails. Light-emitting diode headlights, rear lights, white class lights, ditch lights, and beacons (as appropriate). Direct-current model, \$239.95; with DCC and sound, \$349.95. Rapido Trains, 905-474-3314, rapidotrains.com

HO scale

Liam's Frozen Custard.

This factory-assembled building from Menards features a detailed interior, a textured brick exterior, multiple factory-painted figures, parking bollards, Jack the German shepherd, window signs, a decorative ice cream cone, garbage cans, a tar paper roof with HVAC equipment, and an evergreen tree. The building **(49.99)** has interior and exterior lighting that requires a 4.5 volt power supply, sold separately. The structure measures 4⁷/₈" x 3¹/₂" x 2⁵/₈". You can order Liam's Frozen Custard online or purchase it at your local Menards store. Menards, menards.com/trains



HO scale rolling stock

• **Difco 45-foot dump car.** Alaska RR; BNSF; British Columbia Ry.; Duluth, Missabe & Iron Range; Helm Leasing; Norfolk Southern; Southern Ry.; and Union Pacific. Three road numbers per scheme; also available undecorated. Wire



grab irons and detailed underbody with pneumatic cylinders and brake gear. \$44.98. Walther's Proto. Wm. K. Walther's Inc., 414-527-0770, walther's.com



- **Pacific Car & Foundry B-70-69/71/75 class boxcars.** Southern Pacific; Lake State Ry.; ROLX; and St. Louis Southwestern. Multiple road numbers per scheme. Separately applied metal grab irons, uncoupling levers, and door tracks. Scale-sized draft gear with Hydra-Cushion underframe. Underbody brake rigging. Multiple door styles. Rapido semi-scale knuckle couplers and 70-ton trucks with metal wheelsets. Single car, \$54.95; six-pack, \$329.70. Add \$5 for SP/SSW patch-out cars. Rapido Trains, 905-474-3314, rapidotrains.com

HO scale structures



- **Transformer factory kit.** Includes factory, large overhead crane, office, and transformer. Roof-mounted cooling system. Transformer load, thread, nylon tulle, iron wire, and cast metal hook included. Molded in six colors. \$99.98. Walther's Cornerstone. Wm. K. Walther's Inc., 414-527-0770, walther's.com

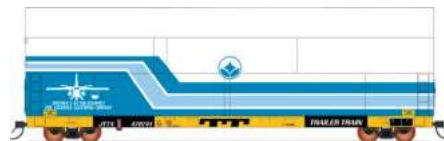
N scale locomotives

- **Electro-Motive Division SD40-2 diesel locomotive.** Burlington Northern

Santa Fe; CSX; Dakota, Minnesota & Eastern; Missouri Pacific; Norfolk Southern; and Union Pacific. Multiple road numbers per scheme. High- or low-short hood as appropriate. Detailed cab interior. Factory applied wire grab irons, windshield wipers, and train line hoses. Rivet Counter series. Direct-current model, \$159.99; with ESU LokSound V5 decoder, \$264.99. ScaleTrains, 844-987-2467, scaletrains.com

- **Electro-Motive Division SD70M diesel locomotive.** CSX and Union Pacific. Two road numbers per scheme. Road-number-specific details including UP excursion service and CSX "Spirit of Tampa" lettering. Light-emitting diode headlights and number boxes. Factory-printed number boards. HTCR Phase II trucks with all-wheel electrical pickup and blackened metal wheels. Five-pole Kato motor with dual brass flywheels. Kato magnetic couplers. Direct-current model, \$150; with DCC, \$250; with DCC and sound, \$350. Kato USA, 847-781-9500, katousa.com

N scale rolling stock



- **Thrall Sky Box for aerospace loads.** Trailer Train (early and late schemes); Atchison, Topeka & Santa Fe; Burlington Northern Santa Fe; Great Northern; NASA; Southern Pacific; and Union Pacific (ex-Missouri Pacific). Four road numbers per paint scheme. Updated hood with separate grab irons. Factory installed uncoupling levers, metal wheelsets, and air hoses on flatcar. \$42.95. InterMountain Railway Co., 303-772-1901, intermountain-railway.com

In Memoriam

John H. Tews, 1943-2024

Longtime Trainfest executive director

John H. Tews passed away on Oct. 10, 2024. He was 81 years old.



John, a resident of Sussex, Wis., since the mid-1960s, was a project manager for Wisconsin Electric for 35 years, retiring in 2006. His HO scale Timber River Ry. was featured in the January 1985, November 1992, and January 2019 issues of *Model Railroader*; the *Milwaukee Journal Sentinel*; and the PBS series *Tracks Ahead*. John was also building On30 and O gauge layouts at his vacation home. He was still running the Lionel Santa Fe F3 and Pennsylvania RR steam turbine he had as a child.

In 2011, John was the first recipient of the Spirit of Model Railroading Award named in his honor for his lifelong dedication to the model railroading hobby. The National Model Railroad Association Master Model Railroader retired as executive director of Trainfest, America's largest operating railroad show, in 2014. John served in that role for more than 20 years.

He also served in leadership positions in the village of Sussex, at Christ Our Savior church, and with Friends of East Troy RR Museum.

John is survived by wife, Nancy, and three sons.

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ScaleTrains N scale EMD SD40T-2



An Electro-Motive Division SD40T-2 is making its debut in the ScaleTrains N scale diesel lineup. The all-new Rivet Counter line model features plastic and die-cast metal construction, a five-pole skew-wound motor with dual flywheels, and all-wheel drive and electrical pickup.

Southern Pacific approached EMD looking for a locomotive that would address overheating issues at high altitudes and in tunnels and snowsheds. The builder came back with the SD45T-2 tunnel motor in February 1972. The units featured radiators on top of the long hood and air intakes at the bottom of the engine locker. The design was adapted for the popular SD40-2 in 1974, resulting in the SD40T-2.

Between June 1974 and July 1980, 312 SD40T-2 diesels were produced. Espee had the biggest fleet with 229, followed by Denver & Rio Grande (73), and St. Louis Southwestern (10).

Our sample is decorated as Union Pacific 8803. The prototype was built in May 1980 as Southern Pacific 8259. It became part of the UP fleet following the railroad's September 1996 acquisition of the SP. The 8259 was renumbered UP 8803 on Aug. 21, 2001. It was later repainted in UP's Armour Yellow and Harbor Mist Gray scheme. The locomotive was retired on April 12, 2010.

The ScaleTrains SD40T-2 has freestanding m.u. and train line hoses and plastic uncoupling levers on the front and rear pilots. A late SP-style snow plow with the grab irons

picked in white is attached to the front pilot. Spare knuckles painted a rust color are molded on the rear pilot.

The unit's Espee heritage is evident by looking at the front and rear headlight packages. The locations where the red Pyle-National Gyalites were located are plated over. Other telltales include SP blue flag brackets and a modified "L" front window on the engineer's side.

The star of the show is the radiator section. The air intakes feature see-through, etched-metal screens. The truck gear tower is visible through the front screens. The rooftop exhaust grills are also etched metal; the radiator shutters are visible underneath.

Our sample is neatly painted in UP's Armour Yellow and Harbor Mist Gray. The separation lines between colors are crisp, and the lettering placement matches prototype photos.

To separate the shell from the chassis, I removed the front and rear draft-gear boxes. The motor and flywheels are located above the fuel tank. A screw-mounted weight is attached to the top of the chassis. The motherboard and ESU LokSound V5 decoder are attached to the weight.

The model we received features an ESU LokSound V5 sound decoder. I first ran the unit on the test track with an NCE Power Cab. The model hesitated a bit at step 1. The SD40T-2 smoothed out at step 2, running a 3 scale mph. At step 28, the unit hustled along at 119 scale mph. The prototype had a top speed of 70

mph. The locomotive has a drawbar pull of .64 ounce, equivalent to 15 free-rolling freight cars on straight and level track.

I then took the SD40T-2 over to our Milwaukee, Racine & Troy State Line Route layout. The unit performed without issue on the layout's 18" radius curves and No. 6 turnouts.

The team at ScaleTrains knocked it out of the park with the N scale EMD SD40T-2. The level of detail is on brand with the Rivet Counter line; the realistic sounds are just icing on the cake. This is one of the finest plastic N scale locomotive models I've seen pass through our offices. — *Cody Grivno, senior editor*

Facts & features

Price: Direct-current model with E24 connector, \$149.99; with ESU LokSound V5 sound decoder, \$254.99

Manufacturer

ScaleTrains
4901 Old Tasso Rd. NE
Cleveland, TN 37312
scaletrains.com

Era: June 1974 to present (varies depending on paint scheme)

Road names: Union Pacific, Denver & Rio Grande Western, and Southern Pacific.

Features

- Body-mounted plastic couplers, at correct height
- Metal wheel stubs mounted on plastic drive axle gears, in gauge
- Minimum radius, 9¾", recommended radius, 11"
- Weight: 3.2 ounces



Trains.com members can see the SD40T-2 and ALC-42 in action with this QR code.

Bachmann N scale Siemens ALC-42 Charger



A **Siemens ALC-42 Charger** diesel locomotive is the latest N scale release from Bachmann Trains. The four-axle passenger hauler is based on Amtrak's new long-distance passenger unit and features factory-applied details, body-mounted E-Z Mate Mark II couplers, and light-emitting-diode (LED) lighting.

Siemens Mobility produces Amtrak ALC-42 Charger diesel locomotives at its plant in Sacramento, Calif. The prototypes, rated at 4,200hp, have Positive Train Control; a 16-cylinder Cummins QSK95 engine; a 2,200-gallon fuel tank (plus a 260-gallon DEF fuel tank); and AC traction.

Amtrak ordered 75 ALC-42 Chargers in December 2018. The locomotives are designed to replace the passenger carrier's aging fleet of General Electric P40 and P42 diesels.

The ALC-42 Chargers officially entered service in February 2022. Four months later, the national passenger carrier ordered an additional 50 units, bringing the total number of units in its fleet to 125. All of the locomotives, numbered 300 through 424, are scheduled to be in service by 2029.

The Bachmann model features a plastic shell and rides on a die-cast metal chassis. The model has a mix of molded and separate, factory-applied parts. Free-standing parts include the grab irons, windshield wipers, and air horn.

Some of the most distinctive features on Charger locomotives are the grills. The Bachmann model has simulated mesh grills on either side of the engine

cooling compartment's work corridor. Yes, the corridor is illuminated with LEDs. The lighting can be toggled on and off with F9 when the decoder is in light mode.

The rest of the grills on the model are molded. There's a bolted-on plate above and to the left of the Amtrak herald on the engineer's side that doesn't appear on the prototype locomotive.

The N scale model is decorated in the passenger carrier's phase 7 paint scheme featuring (from front) Amtrak Red, Midnight Blue, and Amtrak Blue separated by white stripes. Amtrak 309 was the first unit to wear the new phase 7 scheme. The locomotive was unveiled on April 15, 2022.

The paint on our model is neatly applied with crisp lettering. The placement of the graphics follows the prototype. However, the top of the white stripes between the red and Midnight Blue extends a bit too far down the long hood. The model's dimensions match those in Siemens' documentation.

Our review model features a dual-mode TCS WOWSound decoder, similar to the rest of Bachmann's line of N scale Charger locomotives. When testing the model at the workbench with an NCE Power Cab it crawled around at 1.8 scale mph at speed step 1. At speed step 28, the locomotive hit a top speed of 108 scale mph. The prototype has a maximum speed of 125 mph.

With a drawbar pull of .8 ounce, the locomotive should be able to pull around 8 to 9 free-rolling passenger cars on straight and level track.

The model has a host of LED lighting effects, including directional headlights, marker lights, and steady or alternate flashing ditch lights. An assortment of prototype-based sound effects complement the lighting.

If you're looking for a modern passenger diesel to pull your long-distance Amtrak passenger trains, the Bachmann ALC-42 Charger is a great choice. With an accurate paint scheme, a mix of molded and freestanding details, and all of the sound and light features that you would expect on a Siemens Charger, this locomotive will look right at home in your passenger diesel roster. — *Bryson Sleppy, associate editor*

Facts & features

Price: \$459

Manufacturer

Bachmann Trains

1400 East Erie Ave.

Philadelphia, PA 19124

bachmanntrains.com

Era: 2022 to present (as decorated)

Road names: Amtrak ("Day One" in one road number, phases 6 and 7 in two numbers each).

Features

- Body-mounted E-Z Mate Mark II couplers, at correct height
- Metal wheel stubs on plastic drive axle gears, correctly gauged
- Performs best on 11.25" or greater curves
- Weight: 3.7 ounces

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InterMountain HO Trinity covered hopper



The Trinity 5,161-cubic-foot capacity three-bay covered hopper is a new addition to the InterMountain Railway Co. product range. The HO scale model has an injection-molded plastic body, InterMountain metal wheelsets, and body-mounted Kadee couplers.

Since making its debut in 1995, the Trinity 5161 has become one of the most common three-bay covered hoppers on the rails today. The car is still part of the builder's portfolio. To date, more than 33,000 cars have been constructed to this design. Larger-capacity three- and four-bay cars also follow the lines of this car.

Over the years, Trinity has made modifications to the carbody, referred to by railfans as phases. The InterMountain model is based on a Phase I prototype. Identifying features include 10 body panels, 12 running board supports, folded jack pads, an overhanging arched roof, and double running board extension supports. You can learn more about the full-size cars in Patrick Lawson's article "Trinity's popular 5161 covered hopper" in the March 2023 issue of *Model Railroader* magazine.

The sample we received is decorated as Soo Line 121755, part of the railroad's 121700 through 121867 series built by Trinity Industries Inc. at its Greenville, Pa., plant under Job 2715 in January and February 1999. Many of the cars from this group are still in service today.

The InterMountain Trinity 5161 covered hopper has a plastic body. Features on the factory-applied end cages include plastic ladder rungs; wire crossover handrails; and see-through, etched-metal crossover platforms. The weld seams and end vents are molded. The billing card

holder, located to the left of the load limit and light weight data on both sides of the car, was omitted.

Freestanding details on the B end of the car include the air reservoir, brake cylinder, and control valve. Additional brake equipment can be found below the sill on the left side of the car. A sill-mounted air line runs the length of the covered hopper on the right side.

The roof is a separate plastic casting. The longitudinal running boards, latitudinal "kink" boards, and end extensions are crisply defined on a one-piece, see-through etched-metal part. Wire corner grab irons, picked in red, are located above the full-height end ladders.

The Soo Line covered hopper features combination trough/round hatch covers. Those, along with the gravity-pneumatic outlets on the bottom, indicate the car is used in sugar service. I remember seeing cars from this Soo Line series at the American Crystal Sugar factory in Crookston, Minn. I also recall seeing a few cars from this group with a United Sugars Corp. logo above the reporting mark and road number.

The Soo Line model is neatly painted light gray with multi-color graphics. The lettering placement follows prototype photos I found online and in books.

Prototype drawings of the Trinity 5161 were published in the March 2023 MR. The InterMountain car closely matches the published dimensions. Though the model will negotiate 18" radius curves, the overhang isn't very realistic. The car would look better on 22" or broader curves.

Trinity's 5,161-cubic-foot capacity three-bay covered hopper has been a popular subject for model train manufacturers since the prototype car debuted in 1995. The InterMountain HO scale model is well done and has features that separate it from offerings by other manufacturers. If your layout is in need of some covered hoppers, you'll want to check this car out. — *Cody Grivno, senior editor*

Facts & features

Price: \$59.95

Manufacturer

InterMountain Railway Co.

P.O. Box 839

Longmont, CO 80502

intermountain-railway.com

Era: 1995 to present (varies depending on scheme)

Road names: Soo Line, Archer Daniels Midland, BNSF Ry. (Mineral Red with post-2005 herald; heritage cars [Burlington Northern; Ft. Worth & Denver; Great Northern; Spokane, Portland & Seattle; and St. Louis-San Francisco] in three numbers each), CSX, and Norfolk Southern. Six numbers per scheme unless noted.

Features

- 36" metal wheelsets, correctly gauged
- Body-mounted Kadee couplers, at correct height
- Weight: 5.4 ounces, .6 ounce too heavy per National Model Railroad Association Recommended Practice 20.1

MR&T HO scale caboose kit



A Milwaukee, Racine & Troy offset-cupola caboose kit is now available at Shop.Trains.com. The model, produced by ScaleTrains and part of the manufacturer's Kit Classics line, has an injection-molded plastic body with a separate cupola and underbody.

Steel cabooses like this were a staple on our HO scale railroad for many years. The model depicts what the cars would have looked like from the 1950s to the late 1970s, before they were repainted in the red-and-black scheme.

The easy-to-build kit uses former MTH tooling that ScaleTrains acquired in 2021. A hobby knife, small Phillips screwdriver, hobby glue, and tweezers are needed to assemble the caboose.

Most of the body details are molded, including the side and end grab irons, cupola handrail, and running boards. The running boards feature woodgrain and fastener detail. The smokejack is a separate, modeler-installed part.

The end railing and ladder assemblies, with modeler-installed brake wheels, are made of flexible engineering plastic. The formed-wire ladder loops are painted black to match the roof.

Factory-cut clear styrene is included for the side, end, and cupola windows. The manufacturer recommends using Canopy Glue, Woodland Scenics Hob-E-Tac, or Microscale Kristal Klear to attach the glazing; I used Canopy Glue.

The kit includes plastic semi-scale Type E knuckle couplers with separate metal centering springs. The draft-gear box covers are secured with screws. The couplers don't have metal trip pins.

Much of the model's 3.3 ounces come from a pair of steel weights. They're

secured to the top of the underbody with self-tapping ring-head screws with separate plastic washers.

The car rides on screw-mounted solid-bearing caboose trucks with metal wheelsets. Molded underbody details include the center sills, crossmembers, tool box, and brake appliances.

The model's dimensions match drawings of an Atchison, Topeka & Santa Fe steel offset-cupola caboose published in the September 1991 MR. The brown and black paint is neatly applied, and all of the lettering is crisp.

The HO scale MR&T caboose is offered in three road numbers. Head over to Shop.Trains.com to place your order. — *Cody Grivno, senior editor*

Facts & features

Price: \$29.99

Manufacturer

Produced by ScaleTrains

4901 Old Tasso Rd. NE

Cleveland, TN 37312

scaletrains.com

Available from Shop.Trains.com

Era: April 1950 to late 1970s

Road name: Milwaukee, Racine & Troy RR in three road numbers (1407, 1410, and 1423)

Features

- Body-mounted semi-scale plastic Type E knuckle couplers, at correct height
- 33" machined metal wheelsets with .110" wheel tread, correctly gauged
- Minimum radius, 18"
- Weight: 3.3 ounces, .1 ounce too light per National Model Railroad Association Recommended Practice 20.1

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Contemporary tank cars, such as Procor Limited No. 71526, are fitted with double-shelf couplers to prevent vertical separation in the event of a derailment. The inset photo shows a Wabtec SE60EE double-shelf coupler. Cody Grivno photos

Where to find HO double-shelf couplers

Q I would like to know where to buy double-shelf couplers for HO scale tank cars.

Joseph Kuepfer

A Before we look at what's available in HO scale, let's back up a step and learn what double-shelf couplers are. In his article "HO knuckle coupler guide" from the November 2007 *Model Railroader*, former Senior Editor Jim Hediger wrote, "In the 1980s, tank car safety concerns led to the addition of a top shelf, or hood, to the Type E and F [coupler] designs. This hood stops vertical separation of the couplers and prevents a derailed car's coupler of any type from riding up and puncturing the head of the tank car. Double-shelf couplers are made with either Type E or F head contours.

"Tank cars were originally fitted with Type E couplers until Jan. 1, 1971, when the use of Type F interlocking couplers became mandatory. The Association of American Railroads adopted double-shelf Type F couplers as the standard for all hazardous-material tank cars in 1975, and existing hazardous cars had to be retrofitted by Jan. 1, 1979. By 1995, double-shelf couplers were mandatory on all tank cars in interchange service."

There are a couple of options for double-shelf couplers in HO scale. Kadee Quality Product Co. produces metal SF (118) and SE (119) double-shelf couplers. The whisker-style couplers, which include insulated 242 snap-together draft-gear boxes and lids, are sold in four-packs (two pairs) for \$5.99.

I installed Kadee HO scale double-shelf couplers on tank cars used on the Jones Island section of our former Milwaukee, Racine & Troy layout. Because of the upper shelf, it's difficult to get a skewer, pencil, or other manual uncoupling tool between the knuckles to separate cars. A note on the Kadee packaging indicates that a 241 Dual Tool (sold separately) is required for manual uncoupling.

Athearn Trains, under the McHenry Couplers banner, offers plastic double-shelf couplers based on the AAR Type E prototype. A three-pack (MCH71) retails for \$8.99, and a six-pack (MCH712) is priced at \$15.99.

Q I have a question regarding using lichen to simulate vegetation on a layout. My basement is clean but unfinished, so the wood floor joists overhead and the concrete walls are all visible. The basement isn't particularly humid, but it isn't climate controlled either. There are the occasional spiders and cobwebs, as is normal in any unfinished basement. What I'm wondering is if lichen, over time, becomes an attraction to spiders? Do you know if there are any long-term issues with using lichen?

Brian Watson

A I'm not sure if lichen becomes an attraction to spiders. However, I can speak to how it fares on a layout. In the early and mid-1990s, lichen was used to scenic some locations on the second Milwaukee, Racine & Troy, our HO scale staff layout at our former headquarters in Waukesha, Wis. The model railroad was in a finished, climate-controlled interior room with a tile floor, suspended ceiling, and fluorescent lighting.

By the time I joined the staff in 2002, the lichen was already starting to fade after years of being under fluorescent lights. When David Popp wrote "Lake Beulah makeover" in the February 2007 *Model Railroader*, he reported the lichen crumbled to the touch. He removed the aging scenery material and replaced it with — among other items — ground foam, Woodland Scenics Clump-Foliage, and real pieces of deadfall.

If you're a fan of lichen, you can keep it looking good by spraying it with glycerin. 100% Pure Glycerine Concentrate is sold by Scenic Express as item number EX0070. The concentrate needs to be mixed per the instructions listed on the bottle. The web page for the product states "It is recommended that your scenery be treated periodically with Glycerine to retain its original suppleness and color." A 16-ounce bottle of Glycerine retails for \$10.49.

Q I will be starting my first model railroad soon, a small N scale layout. I want to use code 55 track, but I've read mixed reviews about it. Do you have any suggestions, or should I stick with code 80 track?

Damien Bouchey

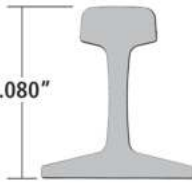


Send questions on model, prototype, and toy trains to AskTrains@Trains.com.

A There are three primary rail sizes in N scale, code 40, code 55, and code 80. The number indicates the rail height in thousandths of an inch, as shown in the graphic at right. Of the three, code 40 is the closest to prototype rail height, equivalent to 115-pound rail found on main and secondary lines.

Code 80, which until the 1990s was the standard for commercial track and turnouts, is noticeably oversized compared to full-size rail. The prototype equivalent is 227-pound rail.

Code 55, at .055 thousandths of an inch tall, has become an accepted middle ground in terms of appearance and function. It's equivalent to 156-pound rail. Flextrack, sectional track, turnouts, and specialty track (diamonds, etc.) are all offered in code 55 from various manufacturers with wood and concrete ties.

Much of the decision on whether you select code 55 or code 80 track for your layout will depend on the equipment you plan on running. Older locomotives and freight cars often equipped with wheels that have oversized flanges, nicknamed

N scale			
Scale size:	Code 80	Code 55	Code 40
Prototype equivalent:	227 pound	156 pound	115 pound
Use:	Oversize for all uses	Main lines (oversize)	Main and secondary lines

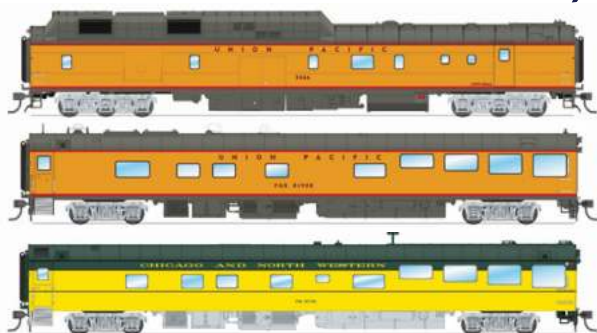
This illustration shows the height difference between codes 80, 55, and 40 N scale rail. Code 55 is equivalent to 156-pound rail, reserved for the busiest main lines on the prototype. When painted and weathered, code 55 track works for most applications. Firecrown Media illustration

“pizza cutters” because of their appearance. The models work great on code 80 track, but the flanges may hit the spike heads on code 55 track.

Newer locomotives and freight cars have wheels with shallow flanges. Many of today's locomotives feature metal wheel stubs mounted on plastic drive axle gears. Ready-to-run freight cars are

offered with either plastic or metal wheelsets. In addition, metal wheelsets in various prototypical diameters are offered as separate sale items by several manufacturers, including Athearn, Atlas Model Railroad Co., Eastern Seaboard Models Corp., Fox Valley Models, Inter-Mountain Railway Co., Micro-Trains Line Co., Rapido Trains, and Tangent

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Scale Models. The shallow-flange wheels perform well on code 55 track.

If you replace stock freight car wheelsets with aftermarket offerings, make sure the new ones will fit in the trucks. Most manufacturers indicate the axle length or the brands of trucks the metal wheelsets are designed for.

Q My light blue-gray walls look fine to the naked eye, but not so good in photos. Are there some tried and true formulas for the major paint brands that are a reliable “sky blue” for model railroad backgrounds?

David Provost

A To answer your question, I turned to *Painting Backdrops for Your Model Railroad* by Mike Danneman (Kalmbach Books, 2008). Mike’s N scale Denver & Rio Grande Western layout has been featured in the pages of *Model Railroader* magazine and in videos our website many times over the years. Here’s what Mike had to say about choosing a blue for your backdrop.

“To pick my sky color, I took home every paint swatch from the paint store that I thought looked reasonably like sky blue. I then laid all of them out on the benchwork surface to see if I could find one that was just right. It’s best to do this under your layout’s lighting conditions since this is where you’ll see it. It isn’t easy, and I ended up picking three shades for my layout.”

Later in chapter three, Mike continued, “The important thing is to get the right color and tone of sky blue latex for the area you are modeling. If anything, favor a shade of sky slightly lighter than you think you might need. Remember, latex paint tends to dry slightly darker.

“Why use latex instead of enamel or other oil-based paints? I prefer latex because it mixes perfectly with artist’s acrylic paints. It also tends to dry to a flatter sheen, which is perfect for sky and scenery on a backdrop.”

For even more information on backdrop painting, check out Gerry Leone’s article “Big sky, little trouble” in the September 2015 issue of MR (pp. 50-53). In



Gerry Leone used an airless sprayer to apply Behr Sleepy Blue flat latex paint to the tempered hardboard backdrop on his layout. He then tinted the blue with white paint and sprayed the bottom half of the backdrop to suggest atmospheric haze. Gerry Leone photo

the story, he shares tips on selecting colors, applying paint with an airless sprayer, and blending backdrop sections, among other topics. **MR**

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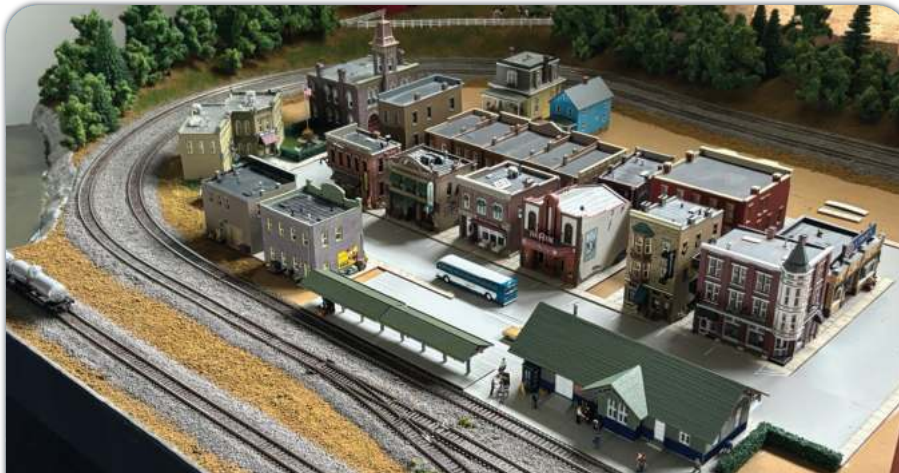
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John O'Connor has his N scale layout in his living room, so he's careful about how his modeling effects the home environment. John O'Connor photo

Where are the small layouts?

In your October issue, Erik Solhjell from Oslo, Norway, wrote regarding the status of our hobby. His opinion is that fewer people are enjoying the hobby today than 30 or 40 years ago. If this is true, I believe that part of that fault lays with us. If someone is interested in starting out in our hobby, and picks up one of the few magazines devoted to model railroading, it can be very intimidating. In just the October issue of *Model Railroader* alone, you will find articles that refer to a 3-D printers, DCC, a "small layout" that fills a room that's 9 x 11 feet, and a club layout. To a newcomer, this has to be very intimidating, plus the cost of some of these items can be prohibitive to a younger person.

I model in N scale and work on my sixth layout that is currently only 27 square feet (see photo above). I do not have a spray booth, everything is hand-painted and the only power tool I use is a drill. I have to be very aware of the environment since everything is located in a living space (and I do get the comment from my wife every once and a while that what ever I'm doing, stinks!).

I do read every issue from front to back because even at my age of 73 there is always something to learn. However, I believe a truly beginners column, that at one point the magazine had, would be very useful in introducing a newcomer to the hobby and maybe getting either he or she to start a truly small layout.

*John O'Connor
Oceanside, New York*

Club offers skills clinics

I recently read the article on keeping the hobby alive and I totally agree we must continue to pass on the hobby to the next generation.

I'm the president of the Belmont Shore Railroad Club here in San Pedro, Calif.

As of my first year as president I began programs by offering free clinics on airbrushing, soldering, weathering and all aspects of not just model railroading but model building.

I even began an outreach, taking it the streets, and going to youth groups in churches, schools and Scouts.

Yes we need to pass this fantastic hobby to the generation and doing efforts such as these will help to pass it on.

Jesse Munoz

Get the big guys involved

"Keeping the hobby alive" caught my eye.

You know, Erik Solhjell makes a good point: If we don't get our young audience engaged in model railroading, we're gonna lose 'em to the vast and overwhelming stuff they see online. I would take what Erik said one step further.

Maybe now is the time to draw the real life, full-size railway manufacturers and railroads into this. Imagine Union Pacific or BNSF sponsoring some hands-on rail shows where our youth can make a connection between full scale and taking that into model railroad construction. After all, model railroading is a copied small-scale version of the real thing. I'd think when the full-sized railroads get involved it's good PR for them and gives model railroading a much-needed booster shot.

Sometimes what seems far-fetched can fetch what's seemingly far away. Sometimes.

*Steve Gorsline
Colony, Kansas*

Erik Solhjell's letter sparked many replies, more than we could print here. We agree more model railroaders is a good thing. However, the topic of youth in the hobby is an old one. While the hobby is changing, there aren't any significant signs of it going away. — Eric White, editor

Don't hide your trains

Read Erik Solhjell's letter "Keeping the hobby alive" (MR Oct 2024). Very true.

My three layouts are all shelf layouts in different rooms in my apartment. When we have guests, they and their kids (especially) are fascinated. I let the kids run the trains while the adults are talking, but the adults want to run the trains to.

The next thing I hear from them is that they bought a small starter set and

that dad and son are busy playing together on the floor.

So, instead of building a layout in the basement or a spare room, build a point-to-point shelf layout (using reversing machines) in your living room. This way you get to enjoy your model railroad even when it is not in operation since you can always enjoy the view. And when guests come over, let them run some trains!

*Duane Phillips
Berlin*

Comments, suggestions, and additional information on *Model Railroader* articles and departments are welcome in this column. Every comment will be read, but not all can be printed or answered. Make your statement in 300 words or less, and send it to **Railway Post Office, Model Railroader magazine, 18650 W. Corporate Dr. STE 103, Brookfield, WI 53045**, or email editor@modelrailroader.com. Please include your name, city, and state.

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Doug Kirkpatrick noticed that his HO scale diesel locomotives were struggling with grades after removing weights for a WOWSound installation. Turning to sugar cube speakers proved to be the answer. Photos by the author

Install a sugar cube speaker

In the June 2016 installment of DCC Corner, Contributing Editor Larry Puckett presented an excellent article on installing a WOWSound decoder in an Atlas HO scale RS3. The Train Control Systems (TCS) kit includes all necessary parts to replace existing hardware with a new decoder and speaker system.

Following Larry's detailed instructions, I was able to have several of my RS3s humming down the tracks in no time. As with many things in life there are always trade offs. The TCS speaker and enclosure is a white plastic unit that fits in place of the metal weight.

Removing the weight does affect the pulling power of the locomotive. For local freight or yard assignments, the sound system didn't impact operations. However, out on the main line with grades, I was limited in the number of cars a single locomotive could pull. A fellow modeler showed me a sugar cube speaker that contained a built-in baffling system in a remarkably small space.

Doug Kirkpatrick, a frequent contributor to Model Railroader and its special issues, lives in Falls Church, Va.

STEP 1 THE SUGAR CUBE



I was able to locate a sugar cube speaker with an 11 x 30mm footprint that's 6mm deep. This will fill the need of having sound without the loss of pulling capability.

I placed the sugar cube speaker on top of the metal weight and marked where I needed to remove material **1**. Not having a milling machine, I approached the task using only a hacksaw and flat file. I turned the weight on end and using the hacksaw sliced down through it the depth



of the speaker until I came to the notch where the wires are run from the truck **2**. It became apparent that the metal weight was not lead but a very hard cast metal. Using a new hacksaw blade made the job a lot easier.

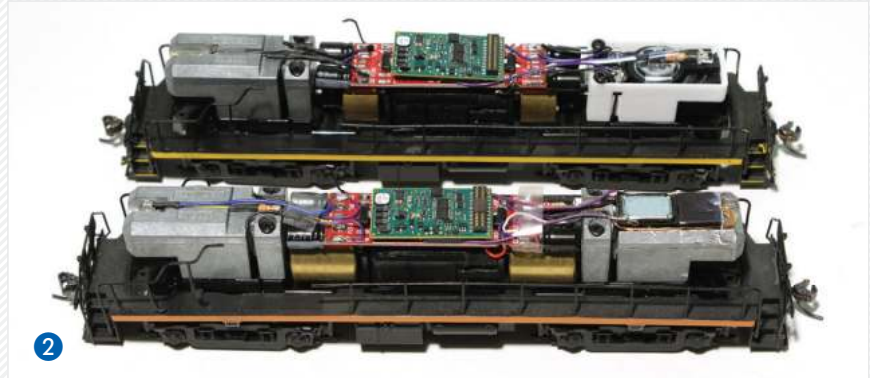
When cutting a weight like this, you want to make sure that you make your cuts with sufficient space for the speaker. Filing should only be done to clean up the edges after you're finished sawing.

STEP 2 CLEAN UP



I used a large, flat file to clean up the saw cut. Then I trimmed the pieces of metal I cut off in the previous step until they seated neatly alongside the speaker ①. Every bit of metal helps. The result is a pocket the exact size of the speaker.

I used a toothbrush and vacuum cleaner to remove all chips and filings from the weight. I applied a small dab of Walther's Goo to hold the speaker



in place, then glued the two side pieces in place. There's a small tab on each side of the speaker to solder wires from the decoder.

The new speaker requires that the master volume CV be set to about half of full volume before power is

applied. The sound level can then be adjusted from this level without risking damage to the speaker. I removed approximately $\frac{1}{16}$ " from the end of the baffle to accommodate the front headlight bulb. I used scrap styrene to reseal the baffle ②.

STEP 3 MORE PULLING POWER

I took a single RS3 to my local club layout, which has a 3.75% serpentine grade that challenges many locomotives ①. I compared the engine's pulling power with the kit speaker enclosure and with the updated speaker to determine if the result was indeed worth the effort. After making several test runs with 40 foot freight cars and a caboose, I was able to pull 10 freight cars versus 7 freight cars up the grade representing a 30% improvement over the kit installation ②. **MR**





Scenic hints for Appalachian layouts

Use geology to enhance your model railroad

By **Herm Botzow** • Photos by Mark Corliss

Herm's version of a horseshoe curve illustrates several scenic features of a railroad that traverses the Appalachians. The first of these is the relatively even ridgeline that encircles the valley at a height of 6 feet. Modeling your ridgelines at this height on a layout with several peninsulas allows you to visually isolate engineers from each other during operating sessions.

When our northeastern railroads built westward they had to overcome both construction and operational challenges to cross the Appalachian Mountains. From north to south, these challenges were resolved by constructing steep, twisting climbs at many places including New Hampshire's Crawford Notch, Pennsylvania's Horseshoe Curve, and the former Baltimore & Ohio Railroad's "Sand Patch".

Modeling the Appalachian Mountains is a great way to add interest to your layout and provide a wide range of operational opportunities. The first that come to mind are the challenges posed by formidable grades and sharp curves. These are the result of a geology that lends itself to modeling: steep, narrow valleys. Railroads often shared these

with a twisting highway; narrow, winding streams with rapids and small dams; dense, uniform, deciduous forests; and tiny villages whose single line of road-side buildings sat against the hillsides.

With a narrow valley floor, space is at a premium. In the photo above, two railroads, my Buckeye RR and the Baltimore & Ohio RR, are competing for the same space. Here, the Baltimore & Ohio RR is on the upper level as it was the first to ascend the valley. Constructed later, the Buckeye RR is closest to the aisle.

Note the watercourses along the table edges, the two villages tucked against the hillside on each side of the valley and the difference in track elevation between the right and left side of the photo as the right of ways climb to a mountain pass. In the photo, the Buckeye RR climbs from 45" above the floor to 49". The B&O

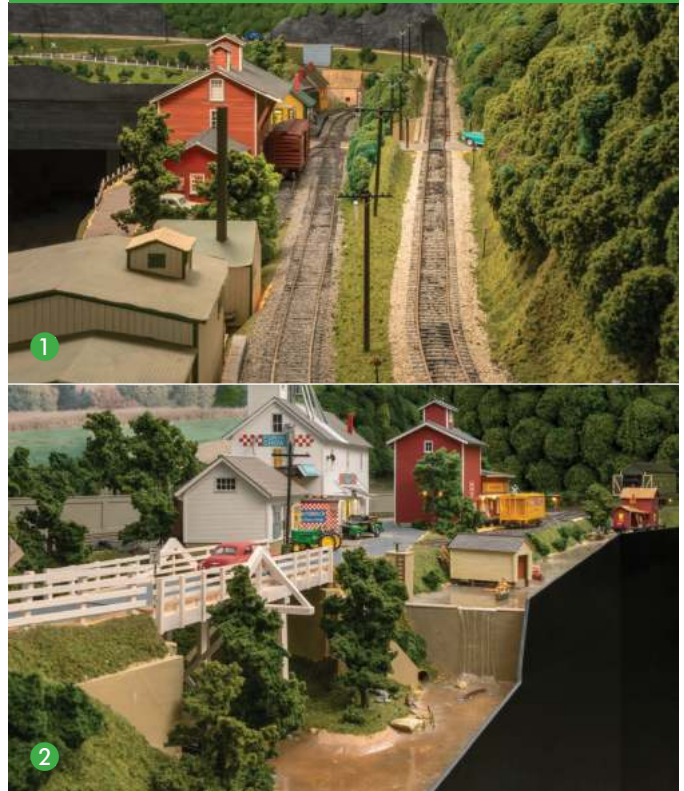
climbs from 45" to 51". Both lines originate and terminate their trips elsewhere on the layout in terminals that are at an elevation of 41".

The flat area at the front of your table is a good place to put a river if you are modeling this region. Dropping the flat area down several inches, adding an embankment and pouring resin are easy enhancements that show your railroad, like the real ones, follows a watercourse to reduce gradients. The following are more ideas for using the geology of the Appalachian Mountains to enhance your model railroad.

Herm Botzow and his wife, Judy Hildebrandt, live in southeastern New Hampshire. Herm's O scale Buckeye Railroad layout was featured in the April 2014 issue of MR.



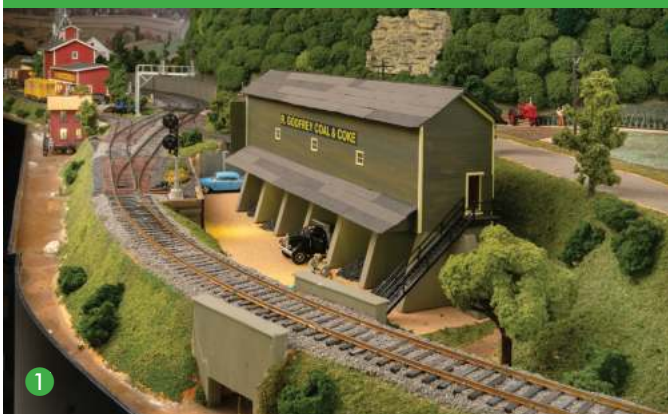
PARALLEL MAINLINES AND A DAM



Creating differences between the two railroads shown in the first photograph adds interest and authenticity ①. The two tracks for the two railroads are at different elevations, are not exactly parallel, and feature different size rails and different colored ballast. The lower track for the Buckeye RR serves two villages while the B&O tracks bypass the villages, further suggesting that they are different lines.

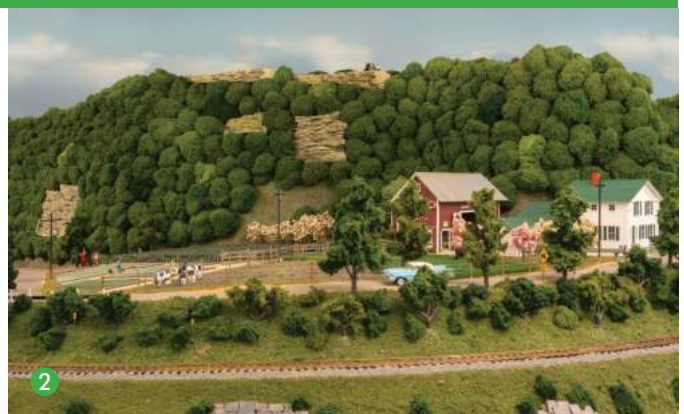
Add a dam to the steam along the front of your table ②. Create a pool behind the dam and then have the river narrow even more as the tracks follow the river upstream.

UTILIZE EMBANKMENTS WHILE AVOIDING A FLAT VALLEY



Inevitably, small watercourses will descend from the mountainsides and, because of erosion, create gullies and an irregular shoreline. The larger of these depressions can be utilized for an industry such as the enclosed coal trestle in ①. The trestle is modeled after a similar facility in Sayre, Pa.

One misconception is that the valley floor continually slopes upward from a watercourse to the base of a mountain. In older mountains, the valley first fills with sedimentary



deposits until it is nearly level. Then, the watercourse starts to erode the banks, making a trough for itself and, as it steals adjoining soil, creating a cross-section that becomes slightly rounded as it descends gently toward the watercourse. One way this can be simulated is by appropriately varying the height of the risers under your benchwork, screwing thin plywood over the top of them, and covering the plywood with a field ②.

ADD A PUSHER SIDING AND NARROW THE VALLEY



To increase the drama on your layout, consider locating a pusher siding at the base of a grade. You do not have to actually model pusher service. Instead, show an abandoned siding, suggesting that your railroad's motive power has been upgraded throughout the years ①. The single track main line shown in the photo above works best when simulating a narrow valley.

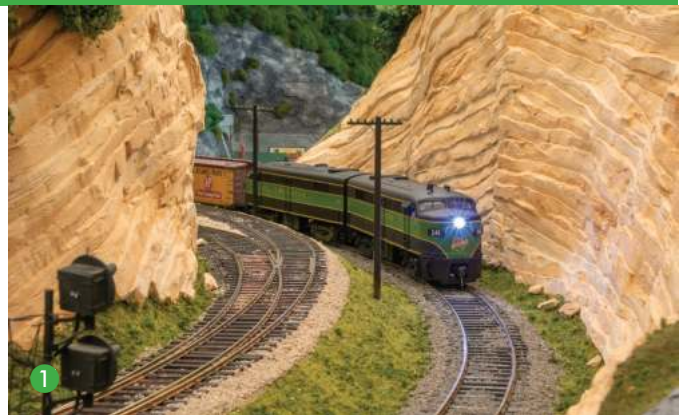


As your trains reach the top of the grade, the valley will narrow and the adjoining hills steepen. Narrow the stream that your track is following and, as the railroad approaches the height of land that you have created, model the source of the stream, perhaps as a mill pond with an adjacent track-side industry commonly found in the region ②. Consider including a water tank if you are modeling the steam era.

DEEP CUTS AT THE LAYOUT EDGE

At the crest of a grade, railroads often cut through a mountain to begin their descent into the adjoining valley. Consider placing this effect at a corner of your layout table. In this instance, as mentioned previously, the Baltimore & Ohio was the first to use the cut.

The Buckeye RR came later, widening and deepening the cut to ease its gradient ①. Separating the layout with this feature can add to the perceived length of the main line. [Adding cuts to the layout edge also adds easily-accessible drama to any layout photography — *Ed.*] Modeled in O scale, the right side of the cut extends 40" from the corner of the table to the spot where the scenery on the right descends to track level. In HO this would be approximately 20".



DISAPPEARING ROADS AND FORCED PERSPECTIVE



As the two railroads descend into the next valley they cross a rural highway. After crossing the B&O track, the highway climbs toward the next ridgeline and crosses into the next adjoining valley. This is possible to suggest in a minimum space if the road is shown disappearing behind a rock outcropping ①. Suggesting an adjacent valley adds depth and interest to the scene.



Finally, a forced perspective is used to simulate an extended valley in another location on the layout. To add depth, the foreground includes an O scale model of a former feed mill in South New Berlin, N.Y., the middle area shows an HO scale farm; and the distant area, an N scale farm ②. The progression for HO modelers could be from HO to TT and finally N. **MR**



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A photograph showing two men, Bryson Sleppy and Brian Schmidt, working on assembling T-Trak module kits for an N scale Colorado Plains layout. They are standing at a large wooden workbench. The man on the left, Bryson Sleppy, is wearing a dark blue shirt and a tan apron, and is focused on a piece of wood. The man on the right, Brian Schmidt, is wearing a plaid shirt and glasses, and is also working on a piece of wood. The workbench is cluttered with various tools, including clamps, a glue bottle, and pieces of wood. A large sheet of paper with instructions and diagrams is spread out on the table. The background is a solid blue wall.

Model Railroader Associate Editor Bryson Sleppy and *Classic Trains* Editor Brian Schmidt are deep in concentration as they work on assembling T-Trak module kits for our N scale Colorado Plains layout.

Putting the in T-Tr



Part 2: Benchwork, track, and wiring for our N scale Colorado Plains T-Trak layout

By Bryson Sleppy • Photos by David Popp



Scan the QR code to watch videos from our T-Trak series on Trains.com.

As I mentioned last month, even though we're building Colorado Plains to be its own layout with consistent scenery, we still want to be able to use our modules in other T-Trak layouts, so we had to adhere to standards. These standards focus heavily on benchwork, track placement, and wiring, which is the focus of this month's installment in our project layout series. We followed standards and recommended practices for T-Trak, set in place by the North American T-Trak Organization, that can be found online at ntrak.org.

While the MR staff had a lot of fun building our HO scale Free-mo layout in 2024 (that can be found in the January through April 2024 issues), I was excited to hear that all of the benchwork we needed for T-Trak could be purchased as laser-cut kits. This meant we could speed through the benchwork phase and get to the fun of laying track and placing scenery, right?

Though we planned to eventually weather and ballast our track, we appreciated that unlike Free-mo, T-Trak standards don't specify aesthetic features like ballast color or track weathering color. So all we had to do was ensure that each module was built properly with the correct dimensions, our track was laid according to the standard, and our wiring was completed in a way that was compatible with other modules.

Benchwork

David started this project for his new book, *Your Guide to N Scale Railroading*, by purchasing a corner, two straights, and a bridge module from RSLaserKits. After I joined in the fun, we ordered six more kits to make a complete loop.

When Rich from RSLaserKits sent the modules, he included two new beta-test kits as well. Instead of a flat wood top like the others, the beta modules were designed to use 1" and 2" extruded-foam insulation board inserts, but still have plywood track boards. This allows sections of foam to be cut away to make scenery below track grade. That's how David made the modules for the 2016 T-Trak Challenge (see the June 2016 MR), allowing Kent Johnson to build a river scene.

When David constructed the modules in 2016, he built them following plans on the info page at ntrak.org. Back then he had to cut and glue wood and foam. With these module kits, most of the work was already done for us.

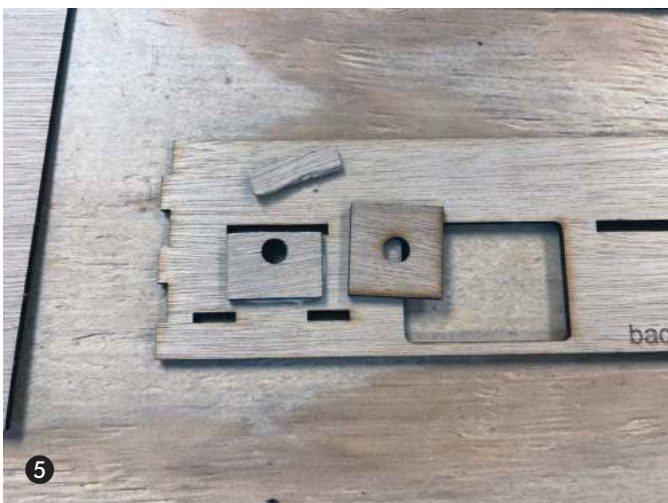
To start, we each built a straight module. For more detailed information, use your smartphone to scan the QR code shown above to watch David's construction video on Trains.com. Most of the components for a single module are shown in ❶ on the next page. The parts are laser-cut wood and require only minimal cleanup with sandpaper, as well as punching out some of the slots.

We started the project by building the corner braces. Each brace is made by gluing a triangle with tabs to a triangle without tabs. Use yellow carpenter's glue for this and be sure the holes match up. We used clamps to keep the plywood from warping. Be sure the holes are aligned. The feet need to be aligned to work properly.

The back of the straight section needs to have reinforcement blocks glued to the inside face. These are required if you wish to add skyboards (backdrops) to your module. Be sure the block clears the corner-brace slots below it.

track ak

Benchwork (cont'd)



Taking one module side and one end section, we applied glue to the interlocking corner tabs, as well as to the tabs on one corner brace. Then we plugged all three parts into position **2**. Note how the corner tab

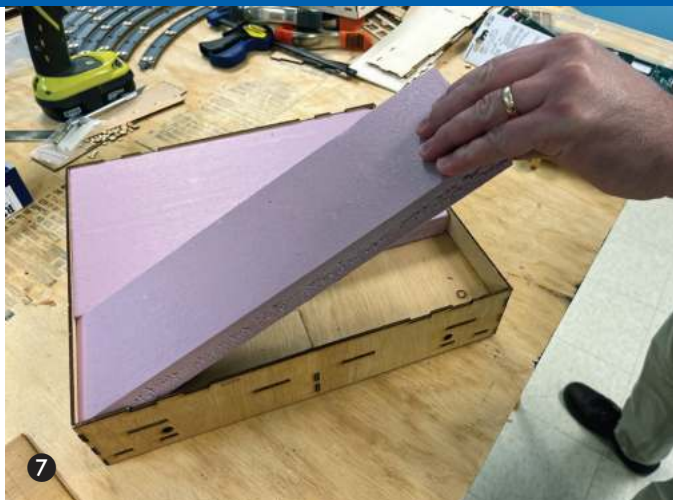
clears the reinforcing blocks on the back panel. We did the same for the second half, then let both module halves dry for about an hour.

Next, we connected the two halves of the box and glued the corner braces in

place. At the same time, we glued the center brace into the box **3**.

While the glue for the box frame was still curing, we installed the two top boards, being sure to apply glue to all tabs on both

parts. With the top in place, we used blue painter's tape to keep the parts locked tightly together and square. The technique worked better than clamps, which can deform the thin plywood parts.



After we finished each module, we set a heavy book on it to keep the top from warping **4**, opposite. We left the books and tape on the modules overnight to make sure the glue was completely dry.

The next day, David sanded the tops of the modules so that the edges where the frame tabs connected were flush. This was an important step as it allowed the track to lay flat. The kits include brass

threaded nuts. One goes in the hole of each corner brace. Ensure the nut goes into the hole straight. Overall, these module kits were pretty easy to build.

For non-standard modules like the one with the foam-top, some modifications were needed. The tops of the reinforcing blocks had to be trimmed to fit around the slot for the depressed wood top **5**.

Since the wood top is recessed in the module



frame, bar clamps were used to hold the pieces while the glue set up **6**. Once the glue dried, 1" foam board sections were cut to fit inside the box. For the 2" box, it was easier to use layers of 1" foam than try to work with a full 2" block **7**.

The double module that I built proved to be a little more challenging than the single. Before assembling the frame, I had to glue the front and backs together from multiple parts that

connected with reinforcement plates. Also, the top came as three separate pieces, not two like the single. It turns out that the double is also 1" shallower than the other singles.

I initially considered leaving it that way, but David figured out we could cut a 1 x 2 down to 1" wide and glue it to the back of the module **8**. This way all modules were the same depth. When we added the backdrops, they all lined up.

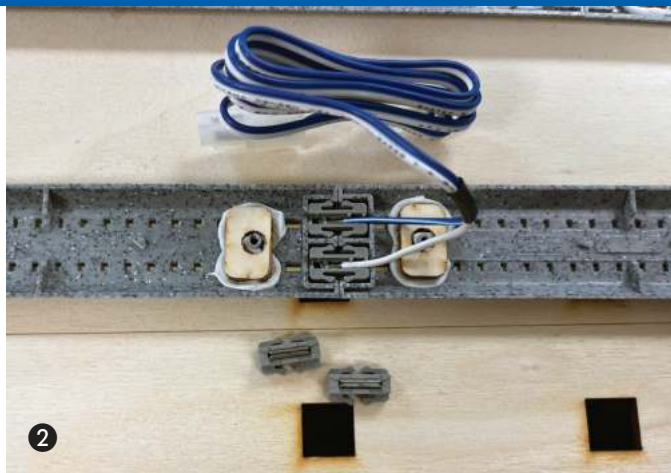
Track



One of the neat features of T-Trak is that the standards on ntrak.org give you a complete list of Kato Uni-track needed for each module. The single straight modules use two each of 20-010 (7⁵/₁₆" straight) and

20-020 (4⁷/₈" straight) sections. The double straight requires fewer pieces if you use four 20-000 (9³/₄" straight) and two 20-020.

We both have modules with spurs and industries on them, so we used Kato



20-220 No. 4 turnouts on the double modules. The recommended practice is to use No. 6 turnouts for passing sidings or crossovers, but ours are switching spurs, so the No. 4 turnouts worked better here. T-Trak requires

that you modify the Kato No. 4 turnout slightly by filing away a bit of the head and base of the rail, allowing the points to seat flush.

After marking the ends of the switch points on the stock rails with a felt-tipped

Track (cont'd)



pen, David carefully pulled the rails partway out of the plastic roadbed and filed notches in the rails. Check your work carefully.

After filing, he used needle-nose pliers to guide the rails back into position. Only use a pulling motion. If they're pushed, the rails may buckle where the notches were filed. The end result sees the point rails sitting in the notch where they won't catch wheel flanges and cause derailments. See ①, previous page.

The RSLaserKit modules include mounting tabs for attaching the plastic track sections to the plywood benchwork. The kit includes a wood sheet of oval tabs that need to be popped out.

Wood glue is used to bond the tabs together in pairs. We flipped a section of track over, applied DAP latex caulk around the mounting posts, and pressed the tabs in place. Let the caulk set overnight before applying the track to the module.

T-Trak recommends feeder wires on all straight module sections. The curved sections are larger and fit tightly together, leaving little space to run feeder wires. To remedy this, we used tweezer-nose pliers to remove the stock rail joiners. We replaced them Kato 24-818 terminal Unijoiners.

T-Trak standards are to wire the feeders for the two main lines with opposite polarity. As long as you



install the terminal Unijoiners with the blue wire on the outer rail of each main, you will have the polarity correct per standards ②.

Then we slipped the plugs and leads through the pre-cut holes in the deck of the modules. We applied wood glue to the tabs and positioned the track on the modules. Our kits came with a pair of alignment guides for the ends ③, as well as scribed lines on the deck, making it easy to get everything to fit properly.

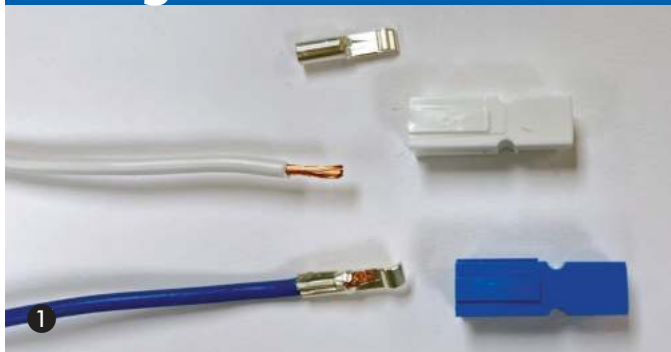
We had to ensure that the Unitrack was even at the ends and overhung the module by at least 1mm. Otherwise it would be difficult to join and separate the modules. While wood

glue works for the tabs under the track, we used caulk on the bottom of the turnouts as they're sealed on the bottom.

We also noticed that after connecting the modules and taking them apart again that the track started to come loose. The solution? Nailing blocks at the ends.

David cut 1 x 2 into 3" lengths so that each module could have blocks glued under both ends ④. From there we measured the location of the nailing post on a spare piece of track and drilled openings on the track sections already glued to the modules. Then we installed Atlas ATL2540 track nails with a hammer and a nail set. Problem solved.

Wiring



Unlike a home layout, where you can wire things anyway you want to, if you want to use your T-Trak modules with a club, you need to follow the rules. So we did exactly that. You can find the T-Trak standards

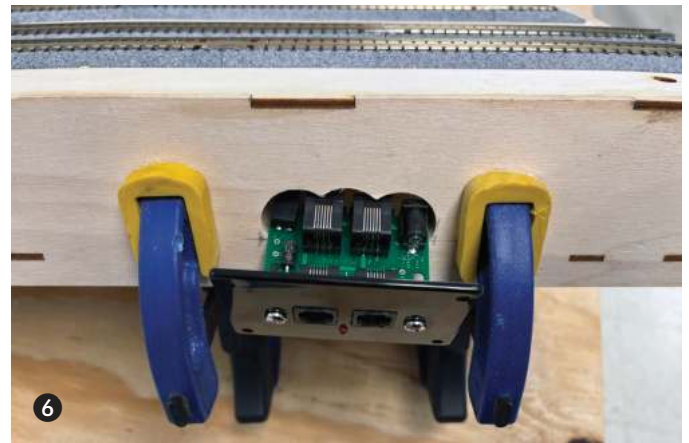
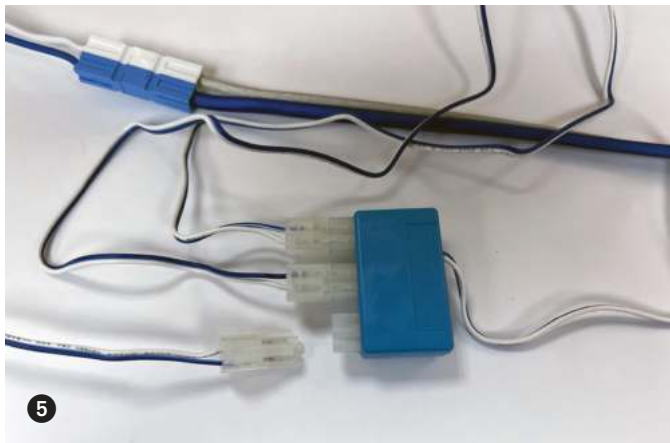
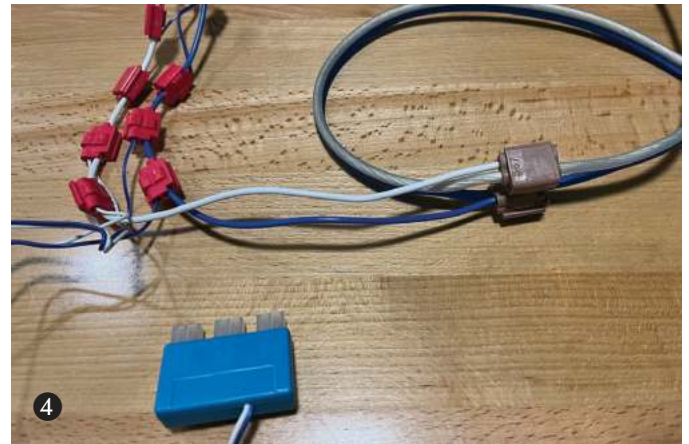
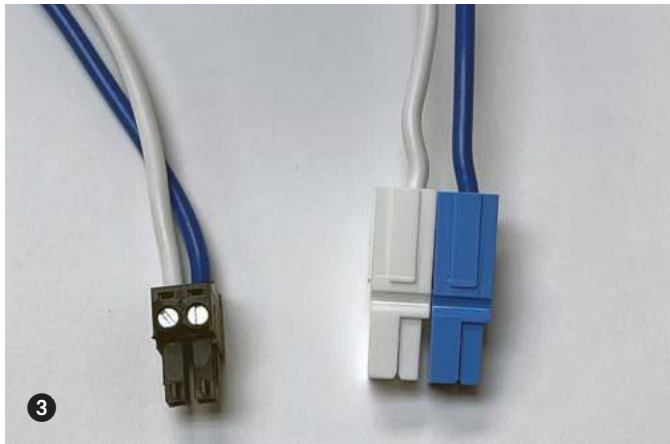
PDF, including wiring instructions, on ntrak.org.

As noted earlier, we attached the blue wire to the outside rail on both lines, with white wires on the two inner rails. Because of its portability, the DCC



power bus must be completely independent of the layout. To make the bus we needed Kato three-way sockets (24-827), 12AWG stranded wire, and color-coded Anderson Power Products Powerpole 30A connectors.

The bus is made by attaching the 30A connectors to each end, allowing it to connect to any other T-Trak power bus of the same colors ①. The simplest bus to build is with blue and white wires, which is used on



layouts with a single bus powering both main lines. T-Trak Standard 6.2.3 explains the correct orientation for the Powerpole connectors for each end of the different types of buses in order to prevent accidentally crossing polarity when assembling a T-Trak layout.

We used a special crimper that works with the 30A Anderson Powerpole connectors **2**, previous page. The plastic sockets have locking tabs and grooves on the sides and can be joined with each other in a number of combinations. For our application, the white socket was placed over top of the blue socket.

While David was crimping, he used a short piece of 16AWG blue and white wire to make a connector for our NCE PowerCab DCC system. On one end he placed Powerpole connectors that plug into the track bus. On the other end he installed a black screw terminal that

plugs into the DCC system **3**. The brand of DCC system is up to the you. We used an NCE system, but by using a jumper like this, you can plug it into any DCC system you wish.

Since we built our T-Trak modules with two main lines, David installed Kato extension cables every 2 feet, pairing up to a Kato three-way socket and a 24-825 extension cord, giving him the needed four sockets per installation. For solder-free connections, David used brown Scotchlok insulation displacement connectors (IDCs) to attach to the 12-gauge bus wire. However, the wire on the Kato power extensions is 20 gauge, which is too small to use with the connector. He had to place 16-gauge pigtail wires between the bus and the sockets, making the connection with smaller red Scotchlok IDCs **4**.

To use the bus, we laid it out behind the modules and



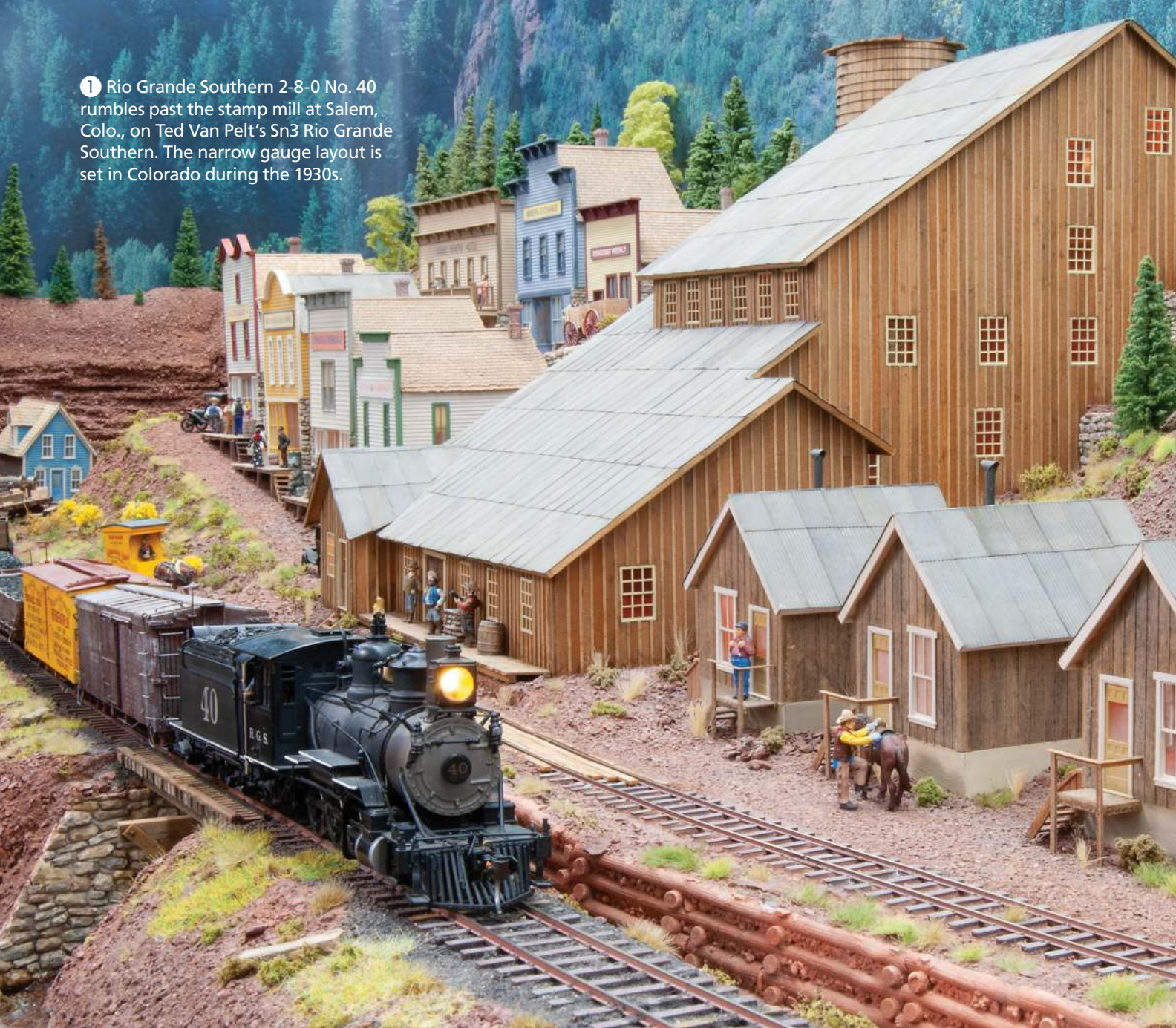
plugged the feeder wires into the nearest port **5**. Then the DCC system jumper was connected between the system and the bus.

Why did we use an NCE PowerCab system? We liked how the PowerCab system could be installed using a simple plug port as the base station. David reinforced the thin plywood used on the modules that hold the DCC cab plug ports with a small piece of 1/2" plywood. He

then cut an opening for the NCE panel and installed it with 1/2" screws **6**. The reinforced front is very strong, meaning the screws won't pull out of the module over time **7**. Now we can run some trains!

Be sure to check back next month for the finale of our 2025 project layout series. We'll show you how we turned these flat pieces of plywood into the Colorado Plains. [MIR](#)

① Rio Grande Southern 2-8-0 No. 40 rumbles past the stamp mill at Salem, Colo., on Ted Van Pelt's Sn3 Rio Grande Southern. The narrow gauge layout is set in Colorado during the 1930s.



Narrow gauge in the Centennial State

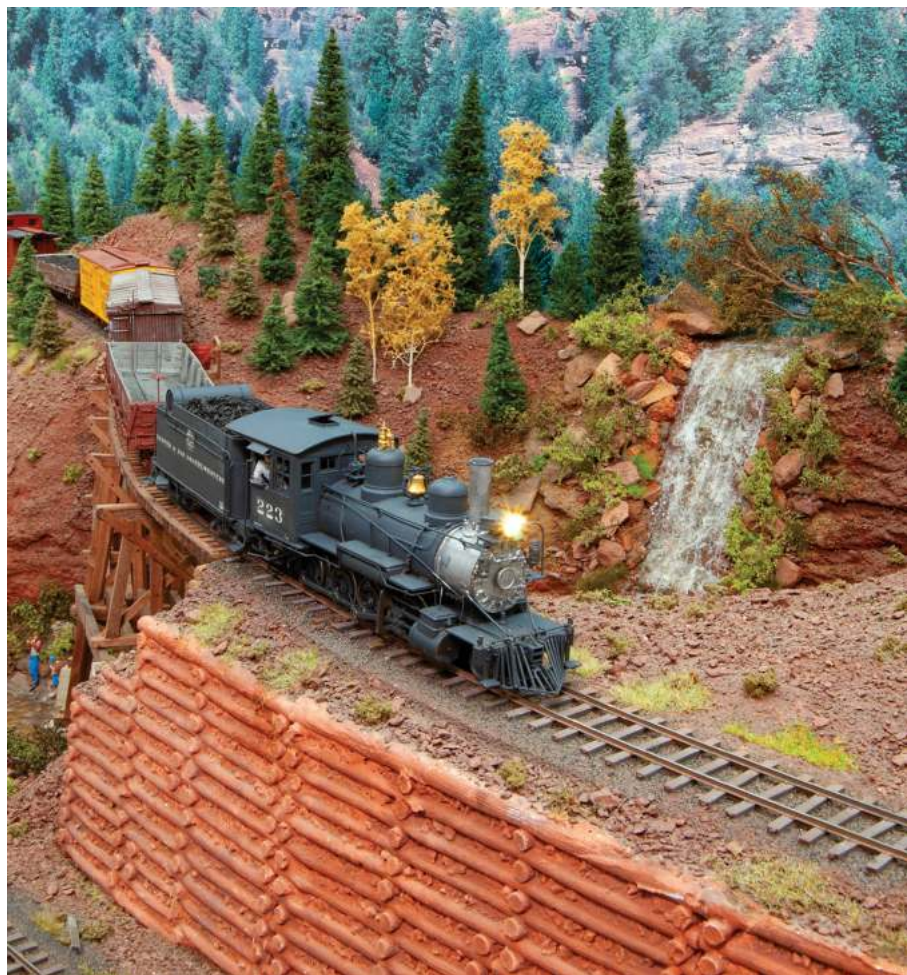
This Sn3 Rio Grande Southern layout is set in the 1930s

By **Ted Van Pelt** • Photos by Lou Sassi



Like many model railroaders, my hobby journey started at a young age. When I was around 4 or 5, I was given an American Flyer three-rail O gauge train set. Each Christmas, I asked for additional track and cars. Today, I model the Rio Grande Southern during the 1930s in Sn3. So how did a native of the Missouri Ozarks wind up modeling one of Colorado's popular narrow gauge lines while living in Florida? It was a long, winding journey.

I grew up in Salem, Mo., at the end of a St. Louis-San Francisco (Frisco) Ry. branchline with a roundhouse and locomotive servicing facilities. My maternal great grandfather worked on the Frisco for a while, as did his son (my grandfather). As a small boy, he took me to the



2 Denver & Rio Grande Western 2-8-0 No. 223 eases a freight over a curved trestle spanning a river. Jon Addison modeled the waterfall. The aspens were made using Scenic Express SuperTrees; the pines were made using the bottlebrush method.

roundhouse numerous times to visit his old friends. Relations on my maternal grandmother's side of the family also had various ties to railroading, including rerailling derailed cars and helping with construction of the new station in Louisville, Ky.

After I married my high school sweetheart, Joyce, we spent a year away from home to start our life together. We wound up in Telluride, Colo., and then Pueblo. There, she gifted me my first kit, a Silver Streak caboose, then three Model Die Casting ore cars.

Making many switches

We later returned to Salem, where I built a 5 x 9-foot HO scale layout in a garage. We then moved to another house, this one without a garage. There I constructed a small layout in our bedroom. However, modeling Ozark railroading left me wanting more in terms of scenery.

Remembering Colorado's narrow gauge lines and the beautiful scenery

around them, I added a narrow gauge section to the layout. Later, after moving to a house in Florida with a one-car garage to fill, I built an HO and HO_n3 layout with some dual-gauge track.

When we moved to a larger house in Florida with a two-car garage that my wife let me have for a model railroad, I built the Sn3 layout shown here. I picked a larger scale because my eyesight was failing. Little did I know that switching to Sn3 just added more tiny detail.

Developing a plan

My goal was to build an operating layout that took two or three people to run. Since I was the only Sn3 modeler within 60 miles, this never happened.

I worked from a very loose track plan that I'd drawn up, making my curves broad enough that a P-B-L Sn3 Denver & Rio Grande Western class K-37 2-8-2 could comfortably negotiate them.

As with my previous dual-gauge layout, I used open-grid benchwork on the Sn3 model railroad. I cut the plywood



3 Salem, Colo., at left, is the first thing visitors see when they enter Ted's layout room. Photo backdrops made from multiple trips to Colorado line the walls.

for the subroadbed with a band saw. Then I cut Homasote for the roadbed, gluing it to the plywood.

Originally, I used commercial code 70 flextrack and No. 6 turnouts. Then, after watching K-27 steam locomotives clunk through the turnouts, I slowly started replacing them with handmade turnouts built in place. Later, I purchased a Fast Tracks turnout assembly fixture.

I discovered a few more missteps along the way. First, I didn't have enough sidings. When I added more, I switched to code 55 track. This proved a big mistake as the smaller rail was harder to work with.

On previous layouts I used solenoid (snap) turnout motors. They soon began to fail on the Sn3 layout, so I switched to Tortoise by Circuitron slow-motion switch machines. This is a decision I've never regretted.

The first time I needed a three-way turnout, I couldn't find one that appealed to me, so I placed two regular turnouts close together in my first yard. However, this took up too much space.



4 Rio Grande Southern No. 40, a brass import from P-B-L, leads a passenger train out of Salem Yard. A painting of a country store Ted saw during a vacation in Missouri inspired him to scratchbuild the structure at right.

When I started my second and third yards, friend Greg Bedlek designed space-efficient three-way stub switches. They've worked perfectly for years.

Mountain scenery

Modeling the Rio Grande Southern meant I needed mountain scenery and

lots of trees. I shaped the mountains with small chicken wire form. Then I covered the forms with paper bags soaked in Hydrocal. The outcroppings were made using molding plaster and latex molds. I made some of the molds; others were commercial offerings.

When I first made pine trees, I used the old method of carving a trunk,



Rio Grande Southern

Sn3 (1:64, 3-foot gauge)
Layout size: 22 x 22 feet
Scale of plan: 1/4" = 1'-0", 24" grid
Numbered arrows indicate photo locations
Illustration by Kellie Jaeger

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

adding pieces of filter material for the limbs, spraying them with hair spray, and applying ground foam. I only recently replaced the last of those trees with ones made from hemp rope and wire.

A friend in Tampa, Fla., taught me how to make oak trees using a piece of rope, Scenic Express SuperTree material, fine green grass, hair spray, and super glue. It takes several hours to make one of these trees, but they do look good.

Colorado has a lot of log retaining walls. I noticed that the logs take on the color of the rocks and dirt behind them. Wanting to add some of these signature walls to my layout, I made three different latex molds. Then I used Hydrocal to

The layout at a glance

Name: Rio Grande Southern

Scale: Sn3 (1:64 proportion, 3-foot gauge track)

Size: 22 x 22 feet

Prototype: Rio Grande Southern

Locale: Colorado

Era: 1930

Style: walk-in

Mainline run: 154 feet

Minimum radius: 36"

Minimum turnout: No. 6

Maximum grade: 4%

Benchwork: open grid

Height: 34" to 56"

Roadbed: plywood and Homasote

Tack: code 70 flextrack with scratchbuilt turnouts

Scenery: plaster over chicken wire

Backdrop: photos

Control: NCE Digital Command Control

make the castings. Once Hydrocal had cured, I removed the castings from the molds and cut them to the appropriate size for each scene. Then I applied paint washes, matched to the color of the dirt around them, to the castings.

I used dirt from prototype locations for scenery, as do some others who model Colorado's narrow gauge lines. I joke that the Colorado mountains are

several feet lower than they were before model railroaders started taking sacks of dirt every time they visited.

When creating a scene, I first get a picture of what I want in my mind. For instance, I had a spot where I wanted to add a waterfall [See photo on page 37. — Ed.] I worked around it for years until one of my best friends, Jon Addison, asked me if I wanted him to build it. He



Ted's wife, Joyce, purchased multi-drawer metal cabinets that fit neatly under the layout. He installed four casters on the bottom of each unit and added labels above the drawer pulls.

Staying organized

Spending hobby time looking for tools and supplies can be frustrating. Fortunately my wife, Joyce, was very organized. She ordered two metal cabinets with drawers that measure approximately 9 x 12 inches and suggested that I keep my hobby materials in them. I quickly put casters on the bottom and labeled the drawers.

Over the years, Joyce ordered additional cabinets. Several of them contain magazines. Others are used for detail parts, scenery materials, and other model railroad supplies. As a joke, I labeled the drawer for my vise (the one that's open in the image) vice. The only one that caught it was Alex Zelkin, my late good friend and superb modeler from France.

I'm thankful to have these cabinets. Whenever I need something for a project, I know exactly where to look. — *Ted Van Pelt*



5 The platform at Vance Junction is busy as No. 404 eases a short passenger train up to the station. Ted scratchbuilt the station, designed but never built by the RGS because of the 1893 silver panic, from plans in a book.

is a genius with modeling water, so naturally I said yes.

We used a tag-team approach on this project. I added the rocks and dirt around the scene while Jon worked on the water, using liquid plastic and fish tank filter material. When the scene was completed it was exactly like I'd envisioned. I added fishermen to the scene, now a focal point on the layout.

Scratchbuilt structures

Over the years I collected many S scale structures. When I started to assemble the kits, I found that I didn't want my model railroad to have the same buildings found on other layouts. That led me to scratchbuild structures from photos we'd taken during our many trips to Colorado.

Having four children and eight grandchildren to take to Disney World, I noticed that the buildings there are about 80%, but no one ever noticed. I figured if Disney could get away with it, so could I. The exceptions are the structures that I built from Mike Blazek plans. If you're going to model western narrow gauge railroads and enjoy scratchbuilding, his plans are a must.

The depot at Vance Junction, shown at lower left, was one of my first scratchbuilt depots. The prototype was designed but never built because of the 1893 silver panic. The building was perfect for the space I had.

I used cedar cigar wrappers, cut to the appropriate size, for shingles. I normally don't keep track of time when working on models, but this time I did. Even with a jig, it took 8 hours to cut the shingles. I glued them on the roof while watching television with Joyce. That took another 60 hours. She suggested that I use laser-cut shingle strips for future projects.

I turned to molding plaster for the roundhouse and two-stall enginehouse. I started by purchasing molded brick and stone castings and making latex molds of them. Then I cut plastic blanks to the size of the commercial window castings I was going to install, placed them in the proper position, and poured molding plaster around them. When cured the next day, I knocked the plastic blanks out and finished the openings with a file.

I carefully painted the bricks and stones in a variety of colors. Then I glued the walls together, built the roof, added the smokestacks, and installed the window castings.

Before placing the structures on the layout, I cut inspection pits in the



Homasote and covered the floors with planks. I later added interior lighting. Since I'm modeling the steam era, I lightly airbrushed the tops of the door openings with black paint to represent soot stains.

Beyond the layout

The photo backdrops were made from images I took during trips to Colorado. The first one we worked on showed the Silver Plume area. It took me two trips to Colorado to get the lighting right.

Fortunately, we have an information technology man at the office who edited and stitched the various photos together. It was printed out and laminated with a dulling material. By the time the backdrop was finished, I was bemoaning the fact it cost so much.

My youngest son, then in his 30s, asked me how many P-B-L engines I had and how many of them were in boxes on the shelf. Then he pointed out that every time I went into the train room, I enjoyed the photo backdrops and that many of the engines I only took out a couple of times a

year. No wonder he is now the president of our family business!

With all four walls covered with photo backdrops, the first thing 95% of the people entering the layout room say is, "Wow!" It took three visits to Colorado, and several trips to Sawpit each time, to get the necessary images. The effort was worth it.

Into the future

The majority of the locomotives on the layout are by P-B-L with a few others that I've collected over the past 45 years. Most of the freight cars are P-B-L kits. I also have a string of V&T Shops drop-bottom gondolas and a lot of the company's open and closed passenger cars with P-B-L trucks and Richardson lights.

Recently I scratchbuilt two truss rod flatcars, using lengths of 2 x 8 stripwood for the deck. After assembly, I wound up with two extra planks. Though my skills have slipped over the past few years along with my eyesight and hearing, I still love the hobby and visiting with other modelers. [MIR](#)

6 As Shay No. 7 backs flatcars loaded with logs to be dumped in the pond, 2-8-0 No. 404 pulls a load of finished lumber from the sawmill. Ted sourced the logs from native bushes that grow in Florida. He scratchbuilt the mill from scrap lumber cut on a table saw.



Meet Ted Van Pelt

Ted Van Pelt and his wife, Joyce, worked in the printing trade until 1978 when they started manufacturing printing equipment. The couple worked together at the office and at home, raising four children. They also hosted eight exchange students. Joyce passed away on Feb. 2, 2022, three days after their 73rd anniversary.



Scan the QR code to see a video of trains running on Ted Van Pelt's Sn3 layout.



McKEESPORT MODEL RAILROAD CLUB

CELEBRATING 75 YEARS IN THE HOBBY

Seven railroads
work together to
create a transpor-
tation system

By Andrew Raith

Photos By Steve Raith

Since its informal origins in the late 1940s, and its later official establishment in 1950, The McKeesport Model Railroad Club (MMRC) has been dedicated to creating a small-scale representation of the history and scenery of Western Pennsylvania. The club has

been in five locations since 1950, with seven incarnations of its Mon Yough Valley layout. The story of the current layout begins in 1987 when the club purchased its own building after having been forced to relocate by termination of lease agreements in the other previous locations. The present layout is the

second one to inhabit the building, after the original layout was completely demolished and a new one constructed beginning in 2010.

A brief history

After several years of informal meetings in a local McKeesport hobby shop in



① The quiet of the farming community of Divergence is interrupted by a westbound freight meeting an eastbound passenger train, while off in the distance the narrow gauge Chestnut Ridge RR works up grade with a mixed freight. The McKeesport Model Railroad Club has been re-creating scenes of western Pennsylvania in HO scale since 1950, and this layout dates to 2010.

the late 1940s a group of model railroaders took out an ad in a local newspaper inquiring if other like-minded modelers wanted to join them in forming a club. From that inquiry, the club formally organized on Feb. 1, 1950. In 1954 the club moved into the second floor of the Pennsylvania RR (PRR)

freight station in downtown McKeesport. The club's first layout there was featured in the February 1966 issue of MR, even though the club had been evicted in 1964 when the PRR demolished the building to expand its yard. The club was homeless for a year with much of the disassembled layout being



Moving day 1966 has, from left, Charles Kent, NMRA secretary; Earl Bentler, club president; MR Editor Linn Westcott; and club member Robert Thornily, then president of the NMRA.



2 The Mon Yough Valley mainline passes by the large mill scene but doesn't directly serve the mill. The MYV interchanges raw materials to the Union Creek Industrial RR at the large Riverview Yard and the UCIRR in turn takes those inbound shipments to the mill.



3 The Falk Works Steel mill, and supporting coke works, mines, and railroads, helps to tell the story of the steel-making process that once dominated the region. The club has dedicated the entire center of the layout room to represent a tubular mill that once resided in McKeesport.

scattered to various members' houses. It then moved into its second home in Boston, Pa., where it remained until 1971. The club relocated to Coulter, Pa., from 1971 to 1979. Following another move in 1980 and eviction from Dravosburg, Pa., in 1986, the club decided to purchase its own building to avoid being evicted from rented buildings again. In 1987 the club purchased a former union hall building in McKeesport's

Christie Park section where it remains today.

The railroads

The club's fictional Mon Yough Valley (MYV) railroad and its connecting lines operating on today's layout share the best of a fictional version of Western Pennsylvania's landscape of rural, urban, industrial, and mountainous scenery. Alongside the MYV the club operates a network of

other railroads. The Union Creek Industrial RR (UCIR) is a switching road running from the joint MYV/UCIR Riverview Yard, serving several intermediate industries, then terminating at a large steel mill. A terminal switching operation serves the vast United Tube & Pipe steel mill and coke works that fills the entire center of the layout room. The South Penn Junction shortline makes its run from the suburban

namesake town to the rural farmlands. A streetcar line, Steel City Traction, serves the city of Steelton and the suburbs to the east and west with both passenger and freight service. There's even an HOn3 narrow gauge line, the West Chestnut Ridge RR, serving the communities hidden in the mountains, and their subsidiary line the Fallen Timber Lumber Co., which navigates switchbacks to climb to the top of a mountain. In addition there is a funicular or incline to transport the good people of Indian Falls to their homes high on a hill top.

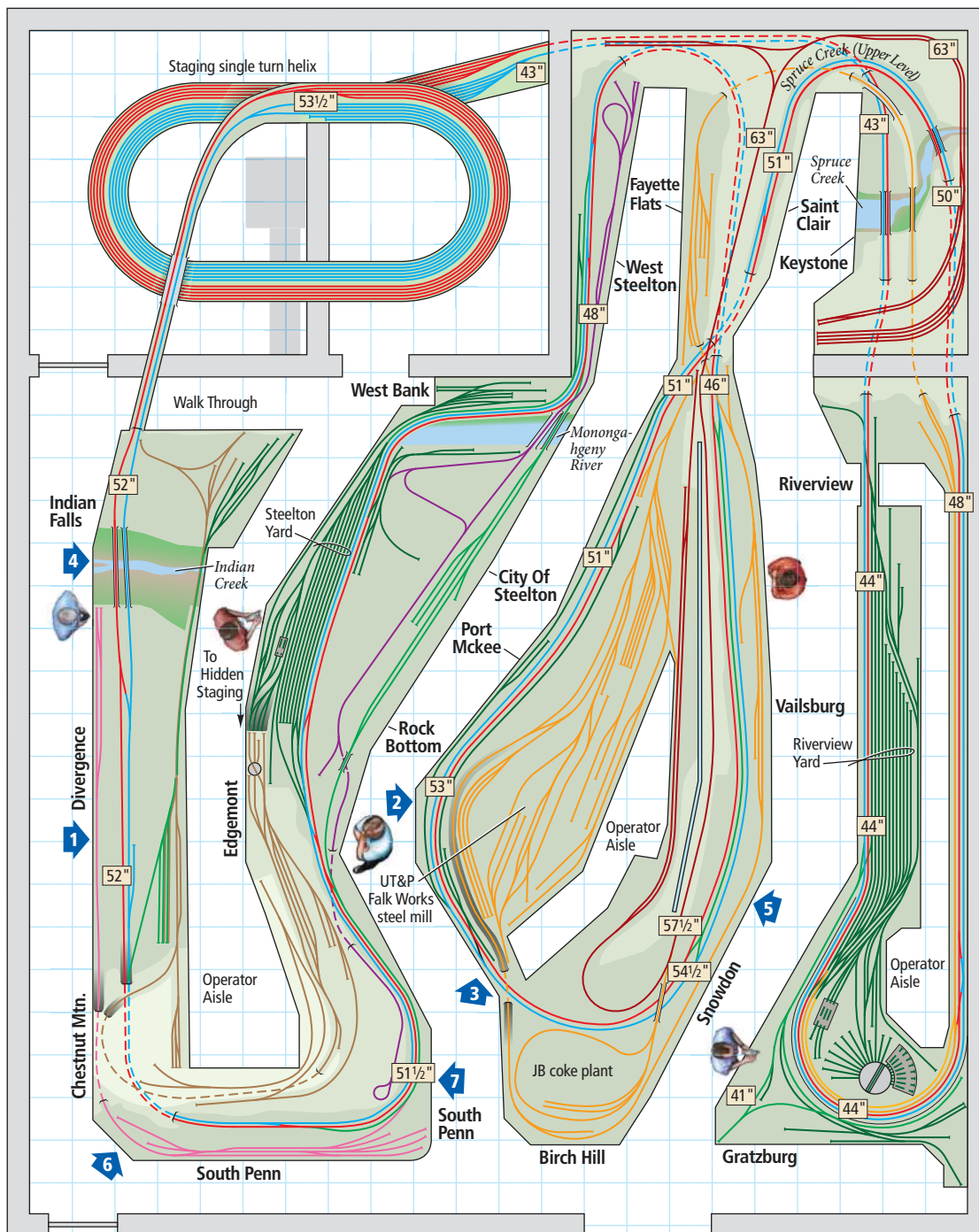
The layout depicts the Keystone Division of the MYV in the late 1950s to early 1960s as the portion of a hypothetical route from the Chesapeake Bay to Lake Erie ports that crosses through southwestern Pennsylvania. The six railroads on the layout work together in their various duties to form a transportation network during the club's monthly operating sessions.

The operations are based on a car card and waybill system that keeps the club's 1,200-plus pieces of rolling stock organized and ready for delivery to their destinations across the layout.

Passenger trains are scheduled between stations and are coordinated by the dispatcher. The club-owned locomotive fleet, most of which is purchased through crowd funding or donations, is era-specific from late steam through first generation diesels, and are all custom painted for their respective railroads.

When the layout isn't being used for ops sessions, members are free to run their own trains at leisure provided they are obeying the rules and signals. Passing a red stop signal will cost you a dollar donation to the club and some heckling by fellow members.

The model railroad covers approximately 2,200 square feet arranged into three



Mon Yough Valley Railroad

HO scale (1:87.1)
Room size: 44'-0" x 55'-6"
Scale of plan: 1/8" = 1'-0", 24" grid
Numbered arrows indicate photo locations
Illustration by Steve Raith and Kellie Jaeger

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



— MAIN EAST
— MAIN WEST
— SECONDARY
— YARDS & SIDINGS
— SPRUCE CREEK BRANCH



TRACK —

UT&P RR

TRACK —

SOUTH PENN
JUNCTION RR

TRACK —



TRACK —



WEST CHESNUT RIDGE
RAILROAD

FALLEN TIMBER
LUMBER CO.

(Narrow Gauge)
TRACK —

The layout at a glance

Name: Mon Yough Valley RR

Scale: HO and HO_{N3}

Size: model railroad: 41 x 53 feet,
room: 44'-0" x 55'-6"

Prototype: freelanced Class I and short lines

Locale: western Pennsylvania

Era: late 1950s – early 1960s

Style: walk around with operator aisles

Mainline run: combined double track main
of 13.5 scale miles.

Minimum radius: 32" (main), 22" (industrial
and branch lines)

Minimum turnout: No. 6 (main), No. 4
(yards and industries)

Maximum grade: 2.5%

Benchwork: open grid, L-girder, and
modular table top

Height: 43" to 53"

Roadbed: spline and 3/4" plywood topped
with Homasote

Track: code 100 (main), code 83 (sidings,
yards, and shortlines), and code 70 (HO_{N3})

Scenery: carved plaster, insulation foam
board, and spray insulation foam

Backdrop: photos and hand-painted

Control: DC/DCC hybrid system



4 The photographer looked up from the valley floor of Indian Falls just in time to catch three trains rumbling high in the air across their bridges. The Mon Yough Valley mainline briefly separates as it crosses the valley on two viaducts.

peninsulas, including a separate room housing a large, oval-shaped, single-turn helix and staging yard. The double-track mainline run of the MYV together totals 13.5 scale miles, with a minimum radius on the main line of 32". The track is code 100 on the main line, with 83 being used for sidings and yards; the trackage on the other railroads is code 83. The HOn3 line operates on code 70 rail and is dual-gauge in spots.

Layout control

Originally an all direct-current (DC) system, the club's fleet now has a mix of DC and Digital Command Control (DCC) locomotives. Additionally, the club provides a place for members to operate their own equipment, also a mix of DC and DCC. Because of this, the club developed a

hybrid DC-DCC system. The entire Mon Yough Valley main line and associated yards can be switched from DC control to DCC with the turn of a key in the dispatch office. The key switch activates relays at each power district that switch the track between DC and DCC sources. All of the branch and shortlines on the layout remain DCC all the time, but the main line is switched on a schedule determined by the membership. Of course, for the club's operating sessions the MYV is operated in DCC mode.

For DC control, the MYV main line is broken into seven power districts, each with an MRC Control Master 20 for each direction of the two-track, bi-directional main line and one for each yard for a total of 21 Control Master 20s.

For DCC operation, the MMRC uses a Digitrax



5 A crowd has gathered as firefighters work to put out a house fire in the village of Snowdon. Out on the mainline it's business as usual as two MYV trains pass hustling their freight to its destinations.



6 Workers are loading a boxcar as the South Penn Junction No. 2 rumbles by on its way back to its namesake town.

system. There's a DCS 240 in the dispatch room that's remotely connected to a rack in the electrical room with nine Digitrax boosters, each feeding a booster district that's further broken into smaller power districts. All power districts on the layout terminate at this booster rack allowing the club to change power districts to different boosters if need be.

The club uses Digitrax throttles including radio- and infrared-enabled models. For control the club has two separate LocoNets wired under the layout, one that feeds all of the throttle jacks around the layout, and one that feeds the switch and signal system. Both LocoNets are connected to a Java Model Railroad Interface (JMRI) server PC in the dispatch room.

The McKeesport Model Railroad Club uses JMRI to

monitor and control all turnouts and signaling on the layout. JMRI along with the Wi-Fi system in the building allow the use of mobile app throttles, such as WiThrottle and Engine Driver, to control trains. Members can also monitor signaling and control turnouts from those apps.

Over the past four years, the club has developed its own custom JMRI layout, giving the dispatcher access to all turnouts controls, as well as signal and track occupancy indications.

All 46 turnouts on the MYV mainline are decoder-controlled. These decoders are a mix of Digitrax and custom member-designed decoders. They can be controlled one of three ways: Local push buttons on the layout fascia, push buttons on operator aisle control panels, or via LocoNet from JMRI or



7 Horns and whistles sound their warnings as motorists wait at the crossing in the suburb of South Penn.

mobile apps. The operator control panels in the operator aisles have toggle switches to lock out the fascia buttons during operating sessions and public viewing.

The two-track (some locations up to four-track) MYV main line is bi-directionally signaled. There are more than 120 signal heads in use on the model railroad, almost all mounted on scratchbuilt signal bridges. Signal heads are three-light Unions Switch & Signal R2 style heads. The signals are driven by Digitrax decoders as well as member-designed decoders.

From JMRI the signaling system can be operated by a dispatcher similar to a CTC system during operating sessions or they can be set to run as automatic block signals when members are free-running trains.

Block detection is done with custom-designed block detectors located near each block. It is of note that the block detectors were designed so that the signaling system will operate when the track is running DC or DCC.

Benchwork and scenery

Benchwork is a mix of open-grid and L-girder construction covered in 1/2" and 3/4" plywood topped with Homasote. Most of the main-line runs are on continuous spline topped with a Homasote roadbed.

The scenery uses a variety of techniques that include traditional plaster cloth over cardboard weave and carved extruded-foam insulation board. The rock features are a mix of plaster castings, foam rubber, or hand-carved plaster or foam.

Another technique uses expanding spray foam insulation over window screen, which is carved to the desired terrain. It's ideally suited to making terrain under forests by means of pushing cuttings of twigs into the foam. The twigs are covered with poly-fiber that's been spray-painted and sprinkled with fine ground foam and leaf flocking while the paint is still wet.

Structures are a mix of plastic kits, craftsman wood and resin kits, and kitbashed

or scratchbuilt buildings to fit specific locations. The large Falk Works steel mill is 80% scratchbuilt, and based on US Steel structures in the Pittsburgh area. The mill is named after member Art Falk who scratchbuilt most of the structures in the 1980s.

Several of the city buildings are models based on structures from McKeesport's past and add a local flavor to the layout, even though the club is not specifically modeling the city itself. Many structures feature full interiors and lighting, with the goal to have all of the structures illuminated in the near future. The accessories are lit via a dedicated 12 volt bus line.

Promoting the hobby

The club has 45 members and offers junior, student, auxiliary, and regular memberships. Since its inception, MMRC members have been active in sharing our hobby.

Currently, the club has a semi-permanent model railroad at the Carnegie Library of McKeesport that's operated

for public display and school children during the holidays.

The MMRC holds annual open houses between Thanksgiving and Christmas as a fundraiser, and frequently opens its doors for NMRA convention layout tours and other model railroad events in the region.

Celebrating our 75th year, the club continues to promote the hobby of model railroading through a welcoming, family oriented approach, helping to foster the next generation of modelers. [MR](#)

Father and son team Andrew and Steve Raith have been members of the club for more than 10 years. Steve is a graphic and technical designer, edits a monthly column for Railpace Newsmagazine, and serves as vice president of the club. Andrew is a full-time student at the University of Pittsburgh Greensburg Campus, and studies industrial history. The Raiths would like to thank Conner Chinoy, Mike Pilyih, and the membership of the McKeesport Model RR Club for assistance with this article.



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SL-E8348 Electrofrog

#5 Turnout

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SL-E8351 Right Hand Electrofrog
SL-8352 Left Hand Insulfrog
SL-E8352 Left Hand Electrofrog
Unifrog in development

#6 Turnout

SL-8361 Right Hand Unifrog
SL-8362 Left Hand Unifrog

#6 Double Slip

SL-8363 Unifrog

#6 Diamond Crossing

SL-8364 Unifrog

#7 Curved Turnout

SL-8376 Right Hand Insulfrog
SL-E8376 Right Hand Electrofrog
SL-8377 Left Hand Insulfrog
SL-E8377 Left Hand Electrofrog

#8 Turnout

SL-8381 Right Hand Insulfrog
SL-E8381 Right Hand Electrofrog
SL-8382 Left Hand Insulfrog
SL-E8382 Left Hand Electrofrog
Unifrog in development

90° Crossing

SL-8390 Insulfrog

Hayes Bumper

SL-8340

Inspection Pit

SL-8356

Track Pins

SL-14

Rail Joiners

SL-111 Insulating
SL-110 Nickel Silver



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SL-7000 (Wooden tie type)

#6 Turnout

SL-U7061 Right Hand Unifrog
SL-U7062 Left Hand Unifrog

#8 Turnout

SL-U7081 Right Hand Unifrog
SL-U7082 Left Hand Unifrog

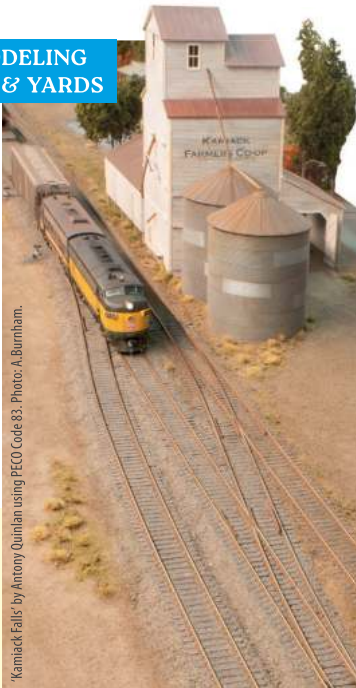
Transition Track

SL-115 Code 83 to Code 70
SL-116 Code 83 to Code 100

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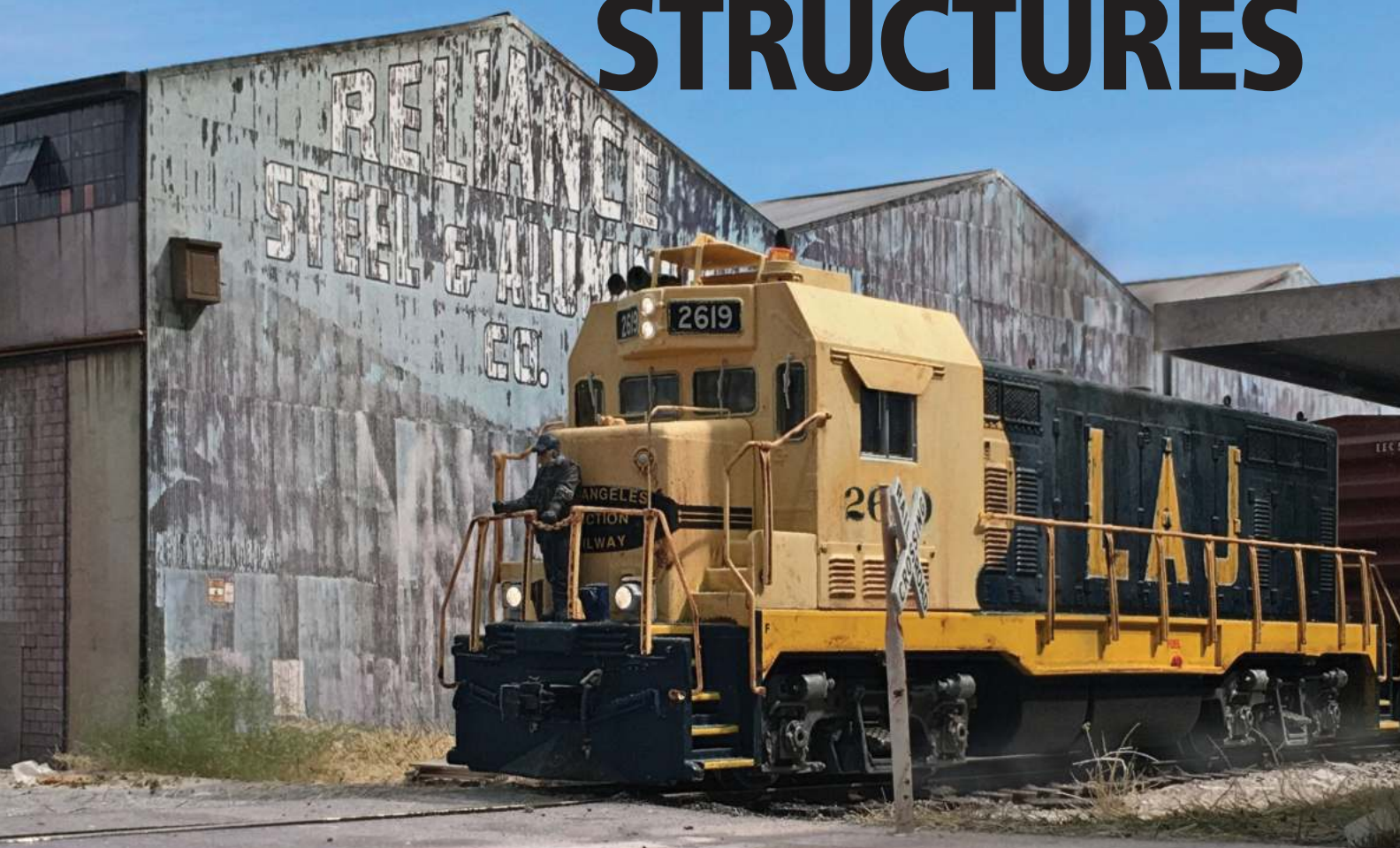
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HOW TO BUILD PHOTO-LAMINATE STRUCTURES



Lance Mindheim used photo laminates to model Reliance Steel & Aluminum Co. on his HO scale Los Angeles Junction. Taking prototype photos and gluing them to a styrene core is often easier than painting and produces more convincing results.

Prototype images and styrene yield buildings that would be difficult to re-create with tried-and-true techniques

By Lance Mindheim

Photos by the author

When it comes time to apply color to model railroad structures, our natural tendency is to reach for a bottle of paint. We soon learn, however, that some color patterns are tricky at best — and in many cases nearly impossible to represent — using paint. Examples include ghost signs on brick buildings, multi-hued brick courses, peeling paint, and graffiti. In these situations it's easier, and often more effective, to adhere a photo of the real thing to the model's surface instead of painting it. Welcome to the world of photo laminates.

The technique is fairly simple to learn, and the only limits are your imagination. I've used photo laminates for entire structures, roofs, windows, doors, streets, and shipping containers, to name a few things. The method is best suited for relatively flat surfaces with complex color patterns such as masonry and brick. It's not as effective for re-creating surfaces with more pronounced relief such as board-and-batten siding and corrugated roofing.

The three-step process involves finding photos, printing them to size, and gluing them to the model's

surface. Follow along as I share my techniques. **MR**

Lance Mindheim models urban industrial switching railroads and presently has three layouts. His main model railroad is based on CSX's Downtown Spur in Miami. He also has two smaller layouts, one based on the Los Angeles Junction in HO scale and the other a proto-freelance N scale version of the Bush Terminal in Brooklyn. He writes frequently for the hobby press and owns The Shelf Layouts Co. (shelflayouts.com), a custom layout building and design firm.

STEP 1 FINDING PHOTOS

Depending on what you're trying to accomplish and where you are on the learning curve, there are a variety of options available when it comes to photo laminates.

For newcomers, factory-printed sheets of common surfaces that are correctly sized for model use are a good starting point ❶. One supplier I often turn to is scenerysheets.com. The coloring of the sheets the manufacturer offers is excellent and the bricks

and blocks are already correctly sized. The downside is that you're limited to what's in the company's catalog.

Another option is to download prototype images from the internet. Here, Google is your friend. There are numerous websites, such as textures.com, that have photos you can use.

The advantage to images from sites like this is they've already been edited and adjusted for perspective. You will need to print them to the correct size, though.

I've also had luck grabbing images from manufacturer websites, such as companies that produce asphalt shingles ❷.

Finally, you can make photo laminates from images that you've taken yourself or found on Google Street View. I used screen captures from Street View, such as the one shown in ❸, to model Reliance Steel & Aluminum for my HO scale Los Angeles Junction.

The advantage of working with your own images

and those from Google Street View is you can get exactly the shot you want and get great matches for a specific prototype.

Going this route means you'll have to do some photo editing. The editing may be simple, such as correcting perspective and color. Sometimes it can involve more advanced work, such as removing vehicles, people, and anachronistic details [See the sidebar "Editing photos" on page 54 for more about this. — Ed.]



STEP 2 PRINTING THE IMAGES

When using photo laminates to build an entire structure, the first step is to construct a scale-sized core. I like to use .060" plain styrene sheet as shown in **1**.

Unless you've purchased factory-printed sheets, you will next need to print the images you've chosen to the correct size. To establish dimensions, I use features that I already know the size of as a guide. For example, a masonry block is 8" x 16" and a door is 80" tall. I don't

obsess over getting the image correct down to the exact millimeter. Good enough is more than sufficient with this technique.

I'm often asked if the photos fade over time. The answer is yes, if you aren't careful about the paper you select. I learned the hard way over the years that paper type is crucial, and not all brands are the same in terms of quality.

Through online research, I found out that matte and

gloss paper are different chemically. Gloss is far superior over time when it comes to color stability and resistance to fading **2**.

When it comes time to print the images, your home printer may ask you to select a few quality and specification settings. It's important to set the paper type to photo, not plain.

The printer will also ask what print quality level you want for the output. I like to use NORMAL as I've found

settings like MAX and BEST have a tendency to print overly dark and saturated.

After printing the photos, I cut them out with a No. 11 blade in a hobby knife. Make sure the blade is fresh. A dull blade may tear the edges of the photo. Use a straight-edge to prevent the blade from wandering off course.

The white edges of the photo paper will be visible after the images are cut. To remedy this, I color the edges with a light gray or tan marker **3**. Avoid using black markers. I find the color stands out too much and draws unwanted attention to the edges.

You can tone down gloss photo paper with several light passes of Testor's Dullcote. If you apply too much Dullcote, the image will have a noticeable frosted look. I've had no issues with the Dullcote reacting with the paper or causing discoloration.



GETTING STARTED WITH PHOTO LAMINATES

If the world of photo laminates is new to you, I suggest starting with simple subjects such as windows, doors, foundations, and roofs. As you gain experience, you can move on to entire structures.

Along the way you'll start to develop a collection of photos. Put them into a digital library, organized by

subjects that are easy to search for, so you can use them in future projects.

It's OK to mix and match. The photo-laminate technique isn't all or nothing. You can use traditional modeling techniques for part of a structure and use photos for windows, doors, foundation, and vents. — *Lance Mindheim*

You can combine photo laminates with traditional kit assembly and painting methods. Lance supplemented the HO scale Pikestuff warehouse shown here with photo laminate roll-up and personnel doors. He also used a laminate for the graffiti-covered dock foundation, which was much faster than modeling it with traditional modeling techniques.



ADDITIONAL APPLICATIONS

Once you become comfortable with photo laminates and have some projects under your belt, you can look for other applications for the technique. Don't be afraid to get creative. I photographed the sides and ends of a 20-foot Tropical intermodal container, attached the images to a styrene core, and set it on an HO scale chassis ①.

When I needed stacked intermodal containers for a scene, I again used photo laminates ②. Because of their simple shape, containers make a good starting point for

learning the photo-laminate technique. Though the faded paint, patches, and rust could be simulated with paint on model containers, it would be much more expensive and time consuming.

My Brooklyn Terminal layout is set in its New York namesake during the 1940s. I did an internet search for "ghost signs" and found the image shown on the N scale building in ③. Signs like these can be used to reinforce your layout's setting and era. — *Lance Mindheim*



STEP 3 MOUNTING THE PHOTOS

I primarily use 3M Super 77 spray adhesive to attach the photos to the model surface. Similar to photo paper, not all brands of spray adhesive are created equal. I've had good luck with the 3M product and have made it my go-to spray adhesive.

That said, spray adhesive isn't meant to last forever. I start by spraying the back of the image with the adhesive.

To prevent the corners from lifting over time, I place dots of cyanoacrylate adhesive (CA) at the corners and along the edges immediately after applying the spray adhesive ①.

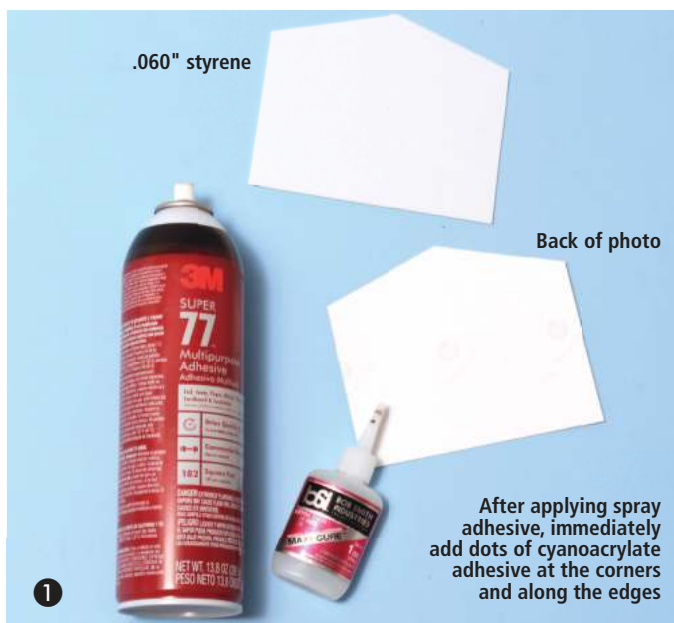
I wait approximately 30 seconds for the Super 77 to set. Then I carefully position the photo on the model surface and press it into place. The spray adhesive and CA

are very strong, so you don't get a second chance to reposition the image.

As a safety measure, I wear latex gloves and work carefully to make sure I don't get fingerprints on the photos. Finally, I press everything firmly into place with a few passes of a Speedball soft rubber brayer ②. You can find this tool at art supply stores and online retailers.

They're available in various sizes, from 1½" to 6", which should cover most photo laminate projects.

To keep the structure from looking too flat, I apply downspouts, conduits, and door railings ③. Also notice in the photo that I propped open a few of the industrial windows below the gutters. The finished structure is now ready to place on the layout.



EDITING PHOTOS

The photos I use for most of my structures come from one of two sources: Images I've taken in the field or screen captures from Google Street View made using a program called HyperSnap.

When taking your own photos, try to get as square as possible to the subject so you're shooting at a 90-degree angle. The images will have some distortion that will need to be corrected with photo-editing software. The most common issues are keystoning and barrel distortion.

As the name implies, keystoning is when a rectangular shape (such as a door) looks wider at the bottom than the top. Barrel distortion is where items like roof edges appear curved.

Both of these issues can be easily fixed in just a few mouse clicks with common photo-editing software. I use Corel Paint Shop Pro, but other programs like Adobe Photoshop have similar features. In the edited photo at right, I squared up the door and removed the curved sides. Though you could also remove the shadows, I opt to leave them in for an extra touch of realism. — *Lance Mindheim*



Even though the photo of the roll-up door at left was taken at a square angle, it has some distortion. Lance fixed the keystoning and barrel distortion using Paint Shop Pro photo editing software, as shown at right.



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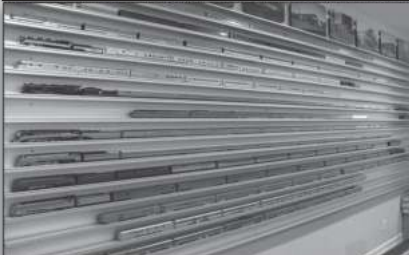
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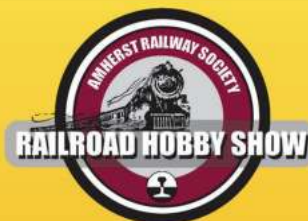
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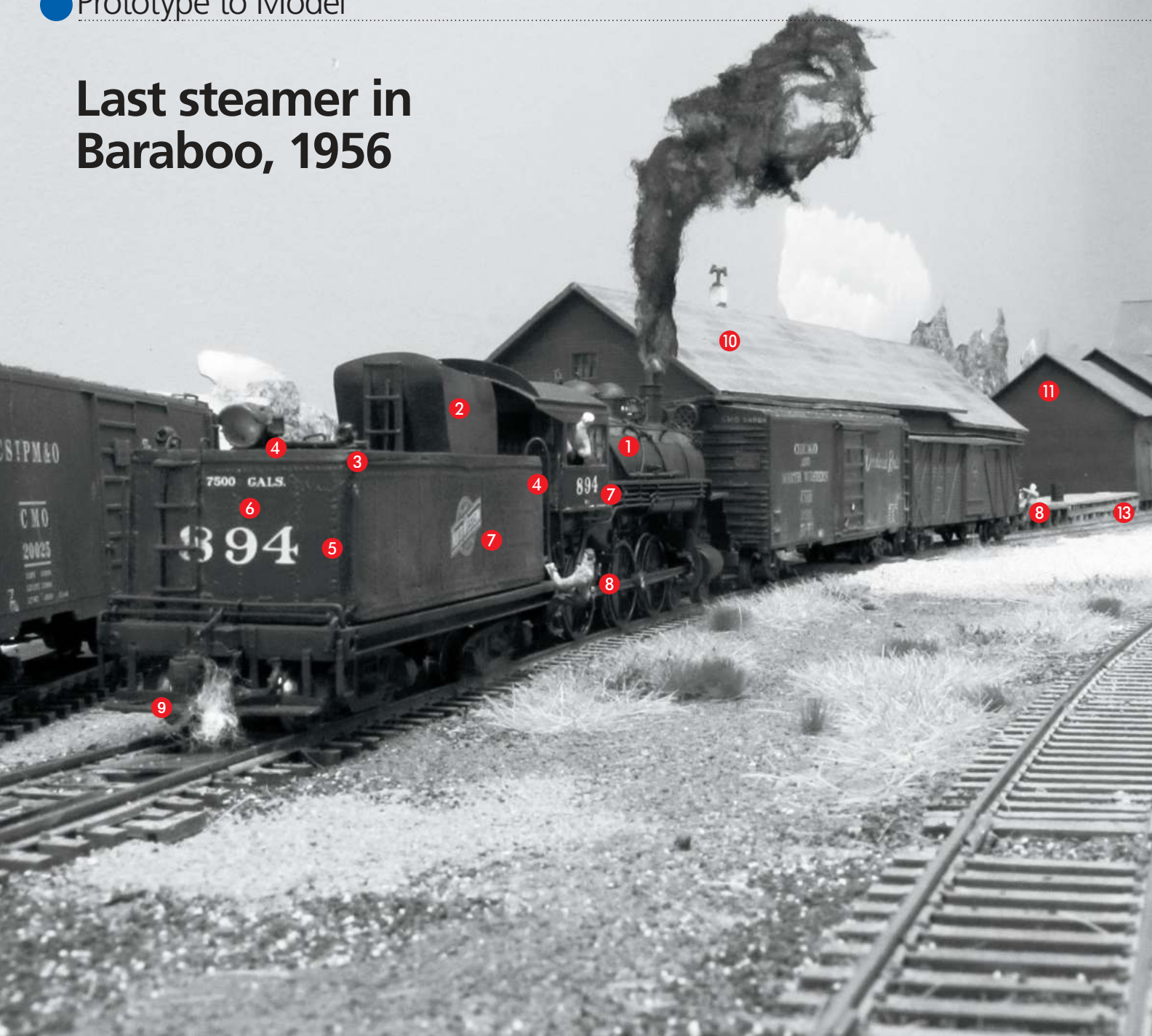
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Last steamer in Baraboo, 1956



Mark Carlson normally operates his HO layout in the diesel era, setting his time machine from 1956 to 1995 to relive memories of his hometown. The photo friend Ernie Mueller captured of an earlier day (right) was too irresistible for Mark not to reproduce. Mark Carlson photo

Professional photographer Ernie Mueller captured the “Baraboo Job” switching the house track at Baraboo, Wis., in early spring 1956. The weekday switch job was called 8:15 a.m. to handle the local industries in and around Baraboo. First a run was made east of town to serve the quartzite quarry at Devil’s Lake and then on to the Badger Ammunition plant. Once back at Baraboo, the Baraboo Job switched local

industries like the North Western Refrigerator shops in the morning. Normally, six to 10 cars would be delivered to the shops and a like number pulled. In the afternoon, the Baraboo Job would run to the quartzite quarries west of town on the main line at Rock Springs and on the La Rue branch. The clear-vision tender was a trademark of class R-1 locomotives assigned to Baraboo. This type of tender

was helpful for switching the curved Baraboo yard and leading the quarry runs, where the locomotive would not be turned. Chicago & North Western 894, a class R-1 4-6-0, would power the Baraboo Job until April 13, 1956, when it was replaced by a diesel, ending steam operations in Baraboo. Ernie’s photo of the Baraboo Job inspired me to turn the dial on my hometown time machine layout to



spring 1956, which was months before I was born. My layout already had the house track with freight depot and Halsted warehouses. But the star of the scene, Chicago & North Western class R-1 4-6-0 No. 894, would need to be modeled with its distinctive clear-vision tender,

The model of C&NW 894 **1** is a Hallmark brass import. I scratchbuilt the unusual clear-vision 10-ton coal tender **2** from styrene



Baraboo's steam era ended Friday, April 13, 1956, with class R-1 Ten-Wheeler 894 leading the switch job. Its final crew comprised engineer Jim Travers; fireman "Fritz" Reese; brakemen George Schmidt, Elmer Ebert, and Bob Fitzgerald; and conductor "Beeny" Fox. Ernie Mueller photo

strip and sheet and detailed it with Cal-Scale marker lights **3** and a tender headlight **4**. The handrails **5** are bronze wire. Rivets were added to the styrene body with Micro-Mark rivet decals **6**. Circus City decals **7** were used for the herald and lettering on locomotive and tender. I lightly weathered the model with chalk.

The switch crew **8** are Walthers figures with repositioned heads and limbs. Leaking steam at the air hose **9** is teased cotton; the smoke is teased and painted cotton on a wire armature.

The Baraboo Freight Depot **10** and Halsted warehouses **11** in the background were scratchbuilt out of styrene. A Classic Metal Works stake truck **12** loads from the white structure down the house track. The freight depot dock **13** is stained stripwood. Code 83 nickel-silver track from Atlas and Micro-Engineering was glued

Send us your scenes

Have you modeled a scene based on a prototype photo? Send both the prototype and model photos, along with a brief description of the scene and the modeling techniques shown, to: Prototype to Model, *Model Railroader* magazine, 18650 W. Corporate Drive, Suite 103, Brookfield, WI 53045; or reach out to us via email at editor@modelrailroader.com.

directly to the Homasote or Woodland Scenics Track-Bed. I then airbrushed the ties in place with Floquil Railroad Tie Brown. Individual ties were selectively hand-painted with shades of gray to capture the ravages of weathering on poorly maintained track. The rail sides were painted with Floquil Rail Brown and Rust. The track was ballasted with crushed cinders.

The layout's base ground cover is a mix of sifted dirt and sand with commercial ballast. Over this base is Woodland Scenics static grass

and ground foam turf and Walthers Tear and Plant mats.

My layout is one town with staging yards to feed model trains into Baraboo to perform their part in the daily dance of prototypical rail service. **MR**

Mark Carlson lives in northwestern Wisconsin and is a charter member of the Chicago & North Western Historical Society. His HO scale "Hometown Time Machine" layout appeared in the November 2022 issue of Model Railroader.

Dave Abeles' Onondaga Cutoff was designed for operations. The advice and assistance from other modelers helped save time in design and construction — and is a central reason for the railroad's success. Here, eastbound Amtrak train No. 276 meets Conrail TV-13 at Control Point 280.



The image shows a highly detailed model railroad layout. In the foreground, an Amtrak locomotive, numbered 227, is pulling a passenger train along a track that curves to the left. To the right, a blue Conrail locomotive, numbered 6416, is positioned on a parallel track. The tracks intersect and curve through a landscape of miniature trees, grass, and gravel. Several tall, black signal towers with red and green lights are visible, indicating a complex signaling system. In the background, more freight cars and additional track infrastructure are visible, all set against a backdrop of rolling hills and a clear sky.

The power of teamwork

A collaborative approach leads to progress on Dave Abeles' HO scale Conrail Onondaga Cutoff

By Dave Abeles • Photos by the author

As we get older, time becomes one of the most valuable assets we have. For most of us, time is allocated to model railroading as we find opportunity. And it seems that we could always use a little more time, from those of us just getting started to those working on a major layout. How can we find enough time to get started on a major layout, with all the different tasks and expertise needed for each?

The enormity of the task can be discouraging. Perhaps you're a person that will "just do it" by learning each component yourself. After all, clichés are part of everyday discourse on the railroad. But a big reason for the longevity of railroading and the long-term success of the companies involved is the camaraderie that has become part of the culture. Moving heavy equipment on railroads over long distances depends on many people working together. The relationships that form and the jargon that develops help people work together and improve cooperation.

Yet while the success of the prototype is derived from cooperation and a team approach to specialized tasks, modeling often seems to be a solitary activity. But this is an area where the prototype has something different to offer us. Part of the creative process can be working with others to learn new tricks or working simultaneously on different projects on the layout.

If time is the largest limit on our progress, we can achieve more than is done on some tasks with others than we can working alone. Like a gang watchman on a prototype worksite allows skilled workers to focus attention on the task at hand ❶, allowing others into the modeling effort allows more production in a given amount of time.

I followed this approach on my HO scale layout, the Onondaga Cutoff (OC) that models Conrail across central New York in 1994. From dreaming, to planning, to building, and then into operating a layout, the model railroad experience can be augmented when we involve others in our hobby.

Layout planning

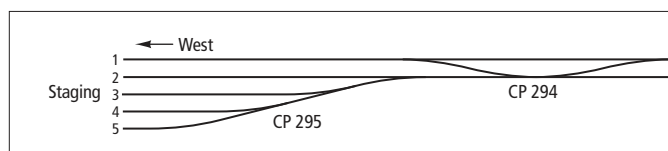
Following the prototype's lead, modelers can involve others in the layout planning process. How long should this siding be? How wide should the right-of-way be? Are these aisles too narrow? These are all good questions, and guidance is out there to help you answer them. There are a number of books by experienced authors on the subject. Firecrown Media publishes *Model Railroad Planning*, an annual magazine dedicated to layout planning and design.

After doing some homework, and while still early in the process of planning the Onondaga Cutoff, I reached out to non-traditional resources for assistance and opinions — knowledgeable friends and acquaintances I've met at local and regional meets.

The internet is also a valuable resource for guidance. Many top modelers post frequently in online forums or blogs, and some time searching will lead you to new knowledge, skills, and talents.



❶ **Learning from the prototype.** Norfolk Southern train 12G slowly descends the Allegheny Mountain grade at Bennington, Pa., under the careful eye of the gang watchman for a rail repair crew. Prototype railroads require all sorts of professionals to design, build, operate and maintain. Our layouts can benefit from that approach, too.



❷ **Helpful input.** On the Onondaga Cutoff, early track planning resulted in changes thanks to the advice and critical thinking of Jack Trabachino. One of his recommendations was the addition of crossovers at Control Point (CP) 294 in the track diagram. Kellie Jaeger illustration

Your available space will help dictate limits for your track plan, and the input of others can open our minds to different opportunities in a given space. Fortunately for me, I was able to get several friends to vet early sketches. Even better, several of these folks have professional railroad skills from working in Rail Service Planning.

Jack Trabachino was a key early contributor, suggesting extra crossovers and indeed an entire extra interlocking to facilitate operations ❷. My experience in maintenance pushed back and we settled on optimal locations for turnouts for both operation and maintenance.

Al Werner, a friend from upstate New York who constructed an HO layout of Pennsylvania RR's Horseshoe Curve with working signals, was an early influence and guide in my effort to include realistic signaling across the OC main line. He suggested robust construction planning including feeder wires to every piece of rail on the system.

Some of the best advice from Al was to plan for signal construction from the ground up, with block detection first, and to begin that process ahead of the installation of any scenery. Access and visibility of wiring below the layout are best and most quickly achieved before scenery begins to cover the plywood [See Dave's book *Guide to Signals & Interlockings*, available at the Trains.com Store (shop.trains.com) — Ed.]

From plan to reality

Getting a shovel in the ground is a key marker for any major construction project. On the prototype, such events are often publicized and include key members of the team that got the project moving. There's less fanfare for the typical model rail layout, but involving key people is an effective way to keep



3 Playing to strengths. Tom Schmieder works on making feeders for his sprawling staging yard, an effort that was expedited by the group that helped lay track and install the benchwork. Some people are best suited to certain tasks, and a layout owner can build a team to play to the strengths of each member.



4 Enhancing operations. Rich Wisneski, right, and Jack Trabachino work on the locomotive power assignments before a session on the Onondaga Cutoff while Joe Relation looks on. Collaboration in operations can extend the fun that surrounds each event.

morale high and construction moving along.

I met Rick Smirnoff while railfanning. I quickly discovered he was a guy who could fix anything. When I was beginning benchwork construction, Rick reached out and offered help. I learned to grade lumber, use power tools, and frame out a base-mat to support benchwork from him.

Most importantly, though, Rick taught me to improvise. When a direct connection wouldn't work, he turned to gusset plates made from scrap plywood. When the floor wasn't level, he created a level line from which to measure all heights. His ideas removed barriers to construction and allowed progress on the layout to continue.

That sort of teamwork is another form of collaboration. For instance, installing wire can be a daunting task when you're building a railroad. Tom Schmieder, whose Delaware, Lackawanna & Western is under construction, holds regular work sessions where others are invited to contribute to construction on his layout. Wiring an entire staging yard takes time, but allowing others to help makes the work go faster **3**.

Once trains were running on the OC, a friend at work offered to help with scenery. I was considering a photo

backdrop but was unsure about how to proceed. Jason Wormeck not only helped with installing backdrops on site but continued by offering to build certain scenes off site for drop-in installation. We met to plan ideas and general features of the scenes. Several weeks later Jason returned with masterpieces.

Running trains

Operations are an ongoing source for collaboration, starting with the schedule and freight forwarding plan and continuing to each session with switch lists, crew plans, and train sheets.

Rich Wisneski, a regular operator on the OC, noticed some trains were becoming too long for consistent operation. He and Jack discussed approaching the schedule and car movement based upon what industries and railroads I'd modeled on the layout. Eventually they devised a new system in which the layout re-stages itself every 24 fast hours. This saved set up and turn around time and also allows Jack and Rich greater insight into the paperwork.

Rich took things a step further and researched prototype Conrail paperwork in an effort to improve the appearance of OC train sheets, eventually developing an employee timetable for use by operators.

For every operating session on the OC, the management team works through a standard procedure to set up paperwork

4 Managers work together to create a turnover report with cars where they land during the session, which is used to create paperwork and switch lists to begin the next session. Once the sheets have all been drafted, a group email allows for review, correction, and revision ahead of the next session. This ensures that typos and confusion are minimized.

Working together

There may be some concern among many modelers that ceding control of parts of the layout or modeling to others will dilute the character of the layout or cause debate detrimental to the fun of the hobby. How can a layout be personal if it's sometimes a group effort?

This is a fine line and a point worth considering. For collaboration to work, good communication is needed. A layout owner needs to be clear with expectations about goals for construction and operation. For me, the benefit of the improved quality that came from skilled assistance over the years vastly outweighs any concerns I had.

Each of the people that helped bought into the vision that the layout was built to capture Conrail's operations, and the railroad's spirit, in the 1990s. With that vision, each modeler has worked towards realization of the vision instead of purely personal goals — much like the prototypes we model.

The strong central vision and general desire to see it come to life has been compelling enough to guide the work efforts, resulting in a layout that looks and feels like mid-90s central New York thanks to quality work from a variety of modelers and individuals.

We've found the collaboration and camaraderie aspects of the hobby to be some of the greatest assets it has to offer. Reaching out for collaboration may start another person into model railroading for themselves. Growing the hobby may be the greatest reward of all. **MR**

Dave Abeles is a frequent contributor to the pages of Model Railroader. His article "Bring a Turboliner to life" appeared in the September 2024 issue.

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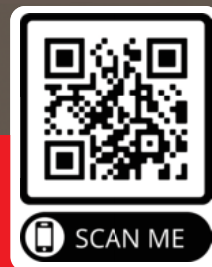
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Winter reading

Dark winter days give strong appeal to curling up by the fire in a comfortable chair with a good book. Here are four titles, thick with interesting prototype material, which threw themselves at my reading list.

Fred Gamst is a railroader turned anthropologist who is highly regarded for his studies of railroad operations. I mentioned his monograph *Highballing with Flimsies* in January 2001's "Reading Rooms and Rattlesnakes." *Highballing* is a railroader's account of timetable-and-train-order operation (TTTO) on the Southern Pacific. It makes enjoyable reading, even re-reading, because it describes his research on SP during its transition from TTTO to Direct Traffic Control between 1978 and 1988.

Several issues of *The Dispatcher's Office*, the Operations Special Interest Group's quarterly, carried a condensed version in 2002 and 2003; the National Transportation Library's website has the complete, unabridged text. Gamst's railroad experience also animates his *The Hoghead* (Holt, Rhinehart, and Winston, 1980). It describes working a tonnage drag so vividly one can almost feel how an engineer feels train handling — adjusting slack with throttle and brakes — through the seat of the pants.

Gamst acknowledges that actual prototype practice sometimes bends the rules. "Turn off that bell, will ya?" rings true, doesn't it? He also reflects on the demanding world of a railroader, whose family "consists of a husband, a wife, several children, and a telephone." Internet auction sites turn up copies of *Hoghead* readily.



Build up any bookshelf with reading about high-horsepower freight in the American desert, the industry's uneasiness with telegraphy, and railroading, family style. Jerry Dziedzic photo

Benjamin Schwantes' *The Train and the Telegraph* (Johns Hopkins Press, 2019) challenges the conventional wisdom that railroading and telegraphy were natural partners, paralleling each other's technological development. He describes how early telegraph unreliability troubled railroads. Later, competing for priority over the wires, first with military dispatches during the Civil War and then with commercial messages, reinforced railroads' reluctance to rely on telegraphic train orders.

Ironically, telegraphic dispatching was still being debated in 1879 when telephone dispatching first took place. One passage startled me because it undermines credit given to Charles Minot for the first train order in 1851. Schwantes describes how

riots in Philadelphia in 1844 had its mayor send a request for federal aid by express train. When it arrived in Baltimore, B&O President Louis McLane telegraphed an order to Washington to hold a northbound train to expedite the report to the capital on the southbound. Schwantes' thorough research makes him persuasive.

Our Favorite O&W Stories

is the Ontario & Western Railway Historical Society's latest. The New York, Ontario & Western was a beloved anthracite road, the first Class I abandonment when it gave up in 1957.

Stories, however, serves universal appeal in its family-style helpings of how much small-town flavor railroading delivered. Three writers contributed, each of whom

recite hand-me-down history they collected from O&W veterans and neighbors.

The railroad followed such a tortuous route that its profile looks like a two-man crosscut saw blade. "Making the Grade" is an enlightening discussion of using adjusted tonnage ratings to assign power. Enjoy "The Fagan Family of Engineers." Seven members of the extended Fagans served as O&W engineers between 1876 and 1956. An astonishing collection of memorabilia remains in the family, making the story read like thumbing through an heirloom photo album.

Another is "Accord Agent Mike Palmer,"

who started his O&W career in 1907 as a 17-year old. Like so many then, he fell under the tutelage of his hometown agent, learned telegraphy, and earned a job on the agent's recommendation. The story rests on an interview Mike gave in 1973 so it's a first-hand recollection of laboring over an Oliver No. 9 typewriter to handle rural traffic in dairy products, Sears Roebuck, and hundreds of crates of eggs on express wagons. Who can help wondering how many hens were behind this? By the way, pronounce Accord with an accent on the first syllable: ACK-ord.

Stories is well-illustrated with railroaders at work, their mementos such as uniform caps and Brotherhood buttons, neighbors who waved at passing trains, and compelling small town scenes that beg modeling.

To order a copy of *Stories*, visit the society's webpage at ontarioexpress.org/sales-table. When it arrives, settle down with a warming beverage and discover that Beaverkill trout are too big for the creel. **MR**



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Canoers on the Huron River pause as Alco FA2-powered northbound Ann Arbor freight TF-3 (Toledo, Ohio to Frankfort, Mich.) passes overhead. Below, New York Central's "City Switcher," pulled by a USRA 0-8-0, passes on its Chicago-Detroit main line with a load for Fingerle Lumber. This early 1950s summer scene is on Jay and Brook Qualman's HO scale Michigan Lines railroad. Jay Qualman photo







Georgia & Florida EMD GP7 No. 704 switches the paper plant near Valdosta, Ga., with a flatcar load of boiler plate on Charles Trevey's HO scale layout, featured in the May 2024 issue of *Model Railroader*. The Geep is an Athearn Genesis model, and the paper plant is kitbashed from Woodland Scenics DPM and City Classics parts. Charles Trevey photo

Send us your photos

Trackside Photos is a showcase for the work of *Model Railroader* readers. Send your photos (digital images 5 megapixels or larger) on a flash drive to: *Model Railroader*, Trackside Photos, 18650 W. Corporate Dr., Suite 103, Brookfield, WI 53045; or email them to us at editor@modelrailroader.com.



On a cloud-covered late October day in 1972, Canadian Pacific Alco S2 No. 7091, an Atlas model, is making its last drop, a load of lumber and machinery for JAG, which manufactures outdoor wooden furniture. The action takes place on Lloyd Henchey's HO scale model railroad, featured in the July 2022 issue. Lloyd Henchey photo



On Paul Brennecke's N scale Grand Road, double-stack train LADNST (Los Angeles to Denver Stack) leaves Terror Creek on the western slope of the Rockies heading toward Denver. The signal at the nose of No. 2142 is a scratchbuilt "deep hood" as if it were found on the Moffat Road today. Paul took the photo.



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Schedule of Events Rate: \$45 per issue (55 word maximum). Ads will contain the following information about the event: state, city, sponsoring organization and name of event, meet, auction or show, dates, location, times, admission fee, name and/or telephone number and/or email of person to contact for information. Name, daytime telephone number and street address of the person providing the information is also required but need not be included in the ad. Unless otherwise requested, ads will be published in the issue month that the event occurs in. Please specify issue date(s). **Word Ad Rates:** per issue: 1 insertion — \$2.03 per word, 6 insertions — \$1.89 per word, 12 insertions — \$1.77 per word. \$40.00 MINIMUM per ad. To receive the discount you must order and prepay for all ads at one time. Count all initials, single numbers, groups of numbers (i.e. 4-6-0 or K-27), names, address number, street number, street name, city, state, zip, phone numbers each as one word. Example: John A. Jones, 2102 South Post St., Waukesha, WI 53187 would count as 10 words. For MR's private records, please furnish: a telephone number and, when using a P.O. Box in your ad, a street address. *Model Railroader* reserves the right to refuse listing. **All Copy:** Set in standard 6 point type. First several words only set in bold face. If possible, ads should be sent typewritten and categorized to ensure accuracy.

Send your submissions to: Model Railroader — Classifieds, 18650 W. Corporate Dr., Ste. 103, Brookfield, WI 53045. Phone: 414-600-9285, E-mail: classads@firecrown.com
All ads must be prepaid and pertain to the subject of model railroading.

Schedule of Events

AL, MOBILE: Model Train Show sponsored by South West Alabama Railroad Modelers (SWARM). Via Health, Fitness and Enrichment Center, 1717 Dauphin Street. March 8-9, 2025. Saturday 9:00am-5:00pm; Sunday 11:00am-4:00pm. Admission \$8.00, family \$15.00, under 10 free. Operating layouts, demonstrations, and dealers. Contact Charlie Boyer, 251-454-0572 (before 9pm CST), email: charlieboyer66@att.net, or Glenn Samuel, 205-914-0693, email: gasamuel@aol.com

CO, COLORADO SPRINGS: Train Expo Colorado (TECO) hosts its next model train show on February 22-23, 2025. Saturday 9am-5pm and Sunday 10am-3pm. Colorado Springs Event Center, Hall B 3960 Palmer Park Blvd., Colorado Springs, CO 80909. Admission: \$11/person, children 12 and under are free, senior and military discounts available. Contact Elizabeth 915-491-4819 or visit www.tecoshow.org

FL, NEW PORT RICHEY: Regal Railways presents a Toy Train, Collectible and Hobby Show/Sale. Elks Lodge, 7201 Congress Street, New Port Richey, FL 34653. Saturday, February 22, 2025. 9:00am-2:00pm. Admission: \$6.00 adults, children under 12 free. Vendors and model train layouts. Lunch available. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

IA, MONTICELLO: 2025 Train Show. 2 Days, February 1-2, 2025. Saturday 10am-4pm and Sunday 9am-2pm. Bernides Center, Jones County Fairgrounds, 766 N. Maple St., Monticello, IA 52310. Tables \$30. Admission: \$5, children under 12 free with paid adult. Monticello RR Club, PO Box 169, Monticello IA 52310 or email Ron Ackermann at rack611@gmail.com

IA, SIOUX CITY: Sioux City Cosmopolitan Train Show, February 8-9, 2025. South Sioux City Marriott Riverfront, 485 E. 5th St., South Sioux City, NE. Saturday 9am-4 pm, Sunday 9am-3pm. Adults \$8, kids 12 & under free. 170+ vendor tables, 12+ layouts, 2 seminars & activities for all. Plenty of free hard surface parking. Contact: John Koskovich, 712-898-6935, johnkoskovich@aol.com

IL, SPRINGFIELD: Springfield Railroad Society Annual Train Fair. Orr Building on the Illinois State Fairgrounds. Sunday, March 9, 2025. 10:00AM-4:00PM. Early bird shopping starts at 9:00AM for \$10.00. Admission fee \$5.00 from 10:00AM-4:00PM. Free parking. Largest show in downstate Illinois! For info call Mike at 217-899-3100 or Ray at 217-544-4295 or visit www.springfieldtrainfair.com

IN, LA PORTE: La Porte County Train Show and Swap Meet. La Porte County Fairgrounds Community Building, 2581 In-2. Sunday, February 23, 2025. 9:30am-2:00pm (Chicago time). Adults \$5.00, youths 6-12 \$1.00, 5 and under free. Contact: Dave Novak at trains86@myyahoo.com or 219-778-3195.

KS, WICHITA: Train Show and Swap Meet co-sponsored by Chisholm Trail Division, NMRA. February 1st-2nd. Cessna Activity Center, 2744 S. George Washington. Saturday 9am-5pm, Sunday 10am-4pm. Adults: \$8 for both days, 10 and under free w/paid adult. Door Prizes. Train Set Giveaway. Operating Layouts, Vendors, Clinics and Model Contest. NMRA Judging available. Info: Phil 316-259-5190 or aylward@cox.net

MN, ST. CLOUD: Granite City Train Show and Sale. River's Edge Convention Center, 10 4th Ave S. St. Cloud, MN 56301. Saturday, March 8, 2025. 9:00am-3:00pm. \$6.00, kids 10 and under FREE! Buy/sell model/toy trains, books, videos, railroad collectibles. Operating model & toy train displays. Win a LIONEL train set! 612-558-6484; GraniteCityTrainShow@gmail.com or visit: www.GraniteCityTrainShow.com

NC, NEW BERN: 29th Annual Train Show. New Bern Riverfront Convention Center, 203 S. Front St. New Bern, NC 28560. February 22-23, 2025. Saturday 9:00am-5:00pm; Sunday 10:00am-4:00pm. Admission \$10.00 (good for both days), under 12 free w/adult. Operating layouts, over 90 vendor tables, food concessions. George Creathorne, 201-213-6907, or visit CarolinaCoastalRailroads.org for more information.

OH, TOLEDO: Greater Toledo Train & Toy Show. Owens Community College (SHAC), 30335 Oregon Rd., Perrysburg, OH 43551. Sunday, March 9, 2025. "Early Birds" - 9am-10am. General 11am-57. Children 12 and under are FREE with paid adult. Show runs until 3pm. Contact: Randy Ramsey, 1566 South Ave., Toledo, OH 43609, 419-215-4181, email: toledotoymasters@gmail.com, website: www.toymasters.org

OK, STILLWATER: The Heartland Toy Train Show. February 14-15, 2025. Friday 5pm-7pm, Saturday 9am-3pm. Payne County Fairgrounds Expo Hall. 3 miles east of Stillwater on Hwy 51. 4518 Expo Cir E, Stillwater, OK 74075. Operating layouts and door prizes. Admission: \$5.00, kids under 18 free. For information: www.heartlandtoytrain.org

PA, ALLENTOWN: ATMA Spring Thaw Train Meet. Allentown Fairgrounds Agri-Plex, 1925 W. Chew Street, Allentown, PA 18104. February 22-23, 2025. Saturday 9am-4pm, Sunday 9am-3pm. Admission: \$10. Advance tickets \$15, admitted at 8am. 12 and under FREE with adult ticket purchase. For more information visit www.allentowntrainmeet.com or call 610-442-2859

PA, BEAVER FALLS: BLRHS Frosty Rails Train Show. Saturday, February 8, 2025. 10:00am-3:00pm. Chippewa Township VFD Social Hall, 2568 Darlington Rd., Beaver Falls, PA 15010. Adults \$5.00 (\$4.00 if you mention Model Railroader ad). Children under 12 free. Tables \$25 each. For show info: blrhinc.org or table reservations: Tom Bianculli, tjbian64@gmail.com or 412-585-3614

SC, EASLEY: CRMHA MODEL TRAIN EXPO 2025. February 14-15, 2025. Friday, noon-6pm, Saturday, 9am-3pm. Impact Center at Rock Springs Church, 207 Rock Springs Road, Easley, SC 29642. Admission: \$8.00 Adult, good for both days. Children under 10 FREE w/adult. Trains of all sizes, operating layouts, model train vendors, a Kids Zone and more! Visit: www.crmha.org

TX, HOUSTON: Greater Houston Train Show presented by the San Jacinto Model Railroad Club. Saturday, February 15, 2025. 10:00am-4:00pm. Pasadena Convention Center, 7902 Fairmont Parkway, Pasadena, TX 77504. Operating Layouts, Classes on Railroads and Modeling Subjects, NMRA Contests, and Vendors from across the Southwest. Admission: \$5, under 12 FREE, \$10 Family. Concessions and free parking. Visit: http://sanjacmodeltrains.org/

UT, OGDEN: 35th Annual Hostlers Model Railroad Festival. Ogden Union Station, Historic 25th St. & Wall Ave. February 28, March 1-2, 2025. Friday 3:00pm-8:00pm; Saturday 9:00am-6:00pm; Sunday 9:30am-2:30pm. Admission: adults \$8, weekend pass \$12, 12 and under FREE. Layouts - all scales, many vendors, LEGO layout. Biggest train show in the Intermountain West. Information: Robert Cannon 801-589-7928, www.hostlers.info

WA, SPOKANE: River City Modelers Spring Model Train Show, Spokane Fairgrounds, 404 N. Havana. Sunday, March 9, 2025. 9:30am-3:30pm. Admission: adults \$8, 12 & under free. 200+ tables of Railroad related items for sale, operating layouts, Free-MO, Operation Lifesaver & more. Free Parking. For table rental or general info, contact: Shirley Sample, 509-991-2317 or shirley@busnws.com

WI, LA CROSSE: The 33rd Annual Great Tri-State Rail Sale. La Crosse Center, 2nd & Pearl Streets. Saturday, January 25, 2025. 9:00am-3:00pm. Admission \$8.00, under 12 free. 300 vendor tables. All Scales: Model, Toy & Antique Trains & Memorabilia. Information: 4000 Foundation, PO Box 3411, La Crosse, WI 54602, 608-781-9383. Visit: www.4000foundation.com

WI, MADISON: Mad City Model Railroad Show. February 15-16, 2025, Alliant Energy Center. 100,000 square feet of layouts, clinics, exhibits and vendors. Adults \$14, Seniors \$13, Children (5-15) \$6, under 5 Free. Two-day pass \$18. Saturday: 9am-5pm, Sunday 9am-4pm. Ticket deals: nmra-scwd.org

WI, STEVENS POINT: Central Wisconsin Model Railroaders 27th Annual Model Railroad Show. Holiday Inn Convention Center Hotel, 1001 Amber Avenue, Stevens Point, WI 54482. January 11-12, 2025. Saturday 9:00am-5:00pm. Sunday 10:00am-3:00pm. Adults \$5.00, kids 12-17 \$2.00. Many layouts, swap/sales tables, vendors. Contact Jim Miller, 715-340-0265; email: jimbro67@gmail.com

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

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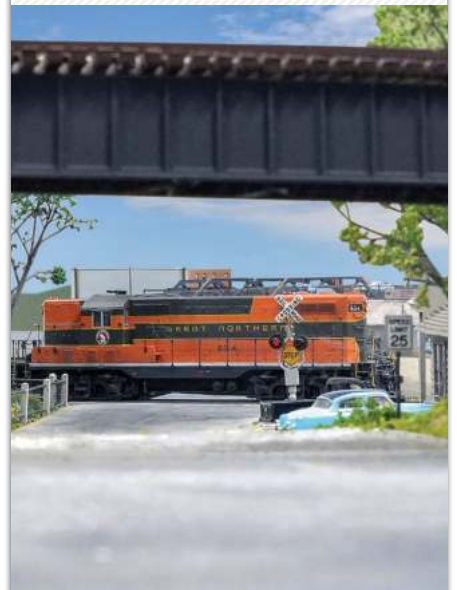
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Getting things running



For Dave Olesen to get his railroad fully signaled in a reasonably short time required taking some shortcuts such as making “signal bridges” by bending cables and using signal heads from Model Railroad Control Systems. Tony Koester photo

One of the questions we all face as we build our model railroads is what shortcuts will prove to be a good idea in the long run, and which ones will simply show themselves to have been a waste of time and/or money. Take structures, for example.

As you extend your main line through Centerville, your research shows that a spur branched off to the northwest to serve a canning plant. So you insert a turnout and run a few lengths of flex track toward the planned location of the cannery. Before too long, enough of the main line has been completed to start basic operating sessions.

Among the most sought-after jobs is that of the Valley Local, which switches all of the towns including Centerville. The crew pulls into town, rechecks their waybills, and discovers they have a boxcar loaded with tin cans for the canning plant. They see a track diagram posted on the fascia, find the

turnout that leads back into the cannery, note that it’s a facing-point switch, and run around the boxcar so they can shove it into the cannery. They back clear of and line the switch, then shove the car up to — what?

If you’re especially mindful of conserving time, money, and energy, and you haven’t had time to build the cannery yet, the crew will shove the car up to a bare spot alongside the industrial spur. If you have some empathy, you might place a sign or card along the spur that says Del Monte Canning Centerville Plant.

If you don’t mind spending some time and money that others may consider wasteful, there’s probably a suitable canning plant kit on the market that you could build as a stand-in. If you’re lucky, it might even be kitbashable into a structure resembling the prototype plant that resided in Centerville.

Running undecorated locomotives is another shortcut that can allow a railroad to become operational more quickly. That subterfuge is not called upon as often today as it once was, as the manufacturers and importers have blessed us with factory-painted-and-lettered diesel and steam locomotives for an astonishingly wide variety of railroads.

Usually, the railroad-specific details match the paint schemes. I was delighted when Overland imported brass Alco RS3s detailed, painted, and lettered for the Nickel Plate Road; I was astonished when Bowser made the same locomotive in plastic.


Which brings me to Dave Olesen’s “signal bridges.” As you can see at top right in the

photo, some of his signal bridges are installed and operational. But for the railroad to be fully signaled, every signal location must be working, and that takes time. So Dave devised a shortcut: He simply bends the wire cables into an L-shaped signal bridge-like form and solders some of Seth Neumann’s Model Railroad Control Systems simplified signal heads to the ends (see the Simple Signaling and Accessories product category at modelrailroadcontrolsystems.com).

When a road crew encounters such a signal, the last thing on their minds is how realistic it is. They need to know what it’s telling them: continue ahead, stop, or expect to take a diverging route. The aesthetics can be enhanced later.

You might consider installing temporary signals a waste of time. I see it as a means to get crews used to the entire signal system — where the signals are, what information each one conveys, where they’ll need to watch hands and elbows as the actual signal bridges are installed. I’d say that’s a worthwhile investment.

Did you enjoy the rerun of the July column in the December issue? It was so popular that we thought you’d like to read it again.

Naw — we goofed. During recent procedural changes, we started from scratch, and a duplicate column worked its way back into the lineup. I should have caught it. My apologies. 





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(Heritage 4; with dynamic brakes)
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CHESSIE SYSTEM® #4806
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MILWAUKEE ROAD #355
(without dynamic brakes)
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NORFOLK SOUTHERN #5612
(with dynamic brakes)
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Dynamic Brake Version



Non-Dynamic Brake Version



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Arriving Spring 2025



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