

BUILD A WORKING OVERHEAD DOOR p.52



**Walthers' new
GEVO tested** p.62

May 2018
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Appalachian realism

This coal-hauling
railroad built for
operation spans
two buildings

p.42

Finding the ideal
configuration
for your layout

p.37

PLUS

England comes to Georgia p.30

Kitbashing a wood house p.24

Programming a LokSound decoder p.60

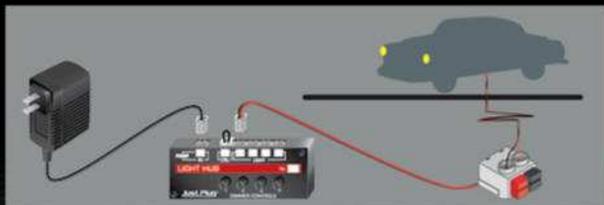
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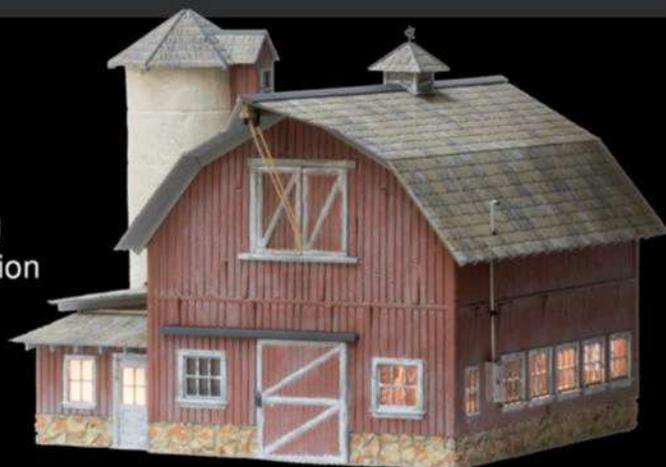


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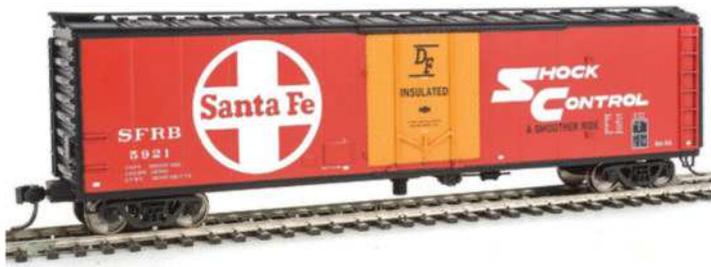
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Keeping the torch burning



On the cover: The Piedmont & Western has been entertaining its owner and his friends for six decades.
 Lou Sassi photo



Next issue

In June, Tony Koester leads an all-star crew with backdrop tips and techniques, we visit mountain layouts set in the Rockies and Appalachians, and more!

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 subscriber extra



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First built for Union Pacific in the late 1980's by General Electric, the DASH 8-40C diesel locomotives were identified by an enlarged exhaust stack and the mounting of the dynamic brake grids in a square-like unit behind the cab, which housed an enlarged equipment blower fan. These six-axle, 4,000 hp engines are still in service today in North America.

The 4,000hp Dash 8-40CW was produced by General Electric between 1989 and 1993 as a follow-up to the successful Dash 8-40C locomotive. The most distinguishing feature of this model was the introduction of GE's version of the wide-nose "North American Safety Cab." This style of cab would become a common sight on railroads across the country. These prototypically accurate, fun-to-run models are now available from Atlas at your local hobby shop!

ATLAS MASTER® HO DASH 8-40C LOCOMOTIVES



Chicago & North Western



Chessie System B&O*



CSX* YN3B

ATLAS MASTER® HO DASH 8-40CW LOCOMOTIVES



Canadian National (IC)



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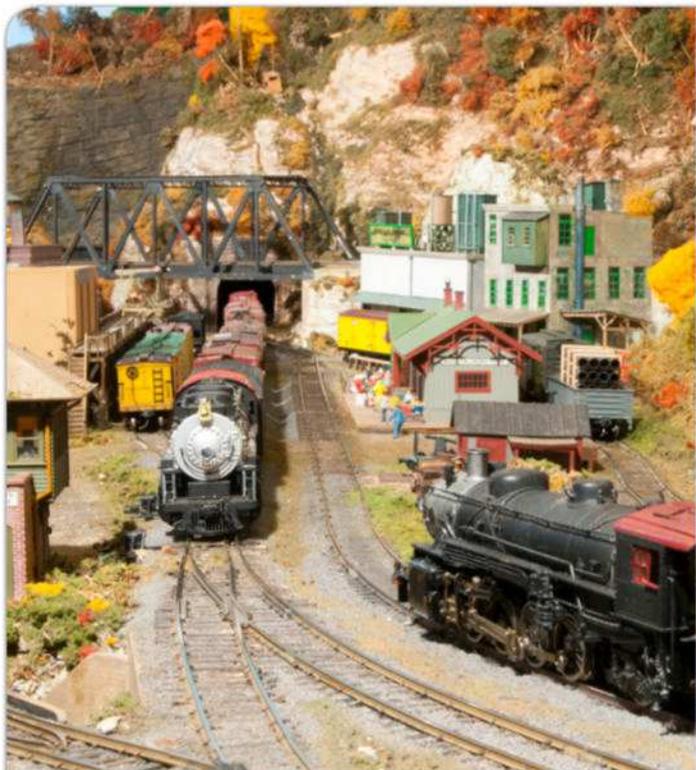
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Don't miss two new exclusive layout videos this month at www.ModelRailroader.com. Subscribers can check out signature scenes of Jack Parker's HO scale Piedmont & Western, a layout that's inspired by the Clinchfield RR in the 1950s. Then go "trainspotting" on the pastoral landscape of Chris White's OO scale British Rys.



Working overhead door

On page 52, **Thomas Klimoski** shows how he used a Lego gear mechanism to make a manually operated overhead door on his HO scale Georgia Northeastern RR. Click on the link under Online Extras to see the door in action on his layout.



Track Plan Database

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Some love for the 1970s

One of the fascinating things about model railroading is the time period hobbyists choose to model.

By far, most modelers choose the transition era of the late 1940s to 1960, when steam locomotive technology was at its peak, but was being supplanted by diesel locomotives nonetheless.

The next largest group is modern-day modelers, who enjoy capturing the look and feel of the last 20 years or so on their layouts.

That leaves a donut hole we'll call the 1970s. It doesn't get a lot of attention from modelers, but there are reasons it should.

Really, I would classify this era as the late 1960s to the early 1980s. It was a tough time for a lot of prototype railroads, and things would only get worse in the coming years. The lines of the

Northeastern United States were a mess; several in the Midwest weren't far behind. Things were a little better in the West, where railroads had neither the density nor the redundancy of lines of the other two regions.

All were under assault by crushing government regulation and the burgeoning trucking industry. Convoy!

To some, the period is best forgotten. But as far as I'm concerned, it was no less important to the railroad industry than steam-to-diesel transition. Further, from a modeling standpoint, it's no less interesting.

Oh, let me count the ways in which the '70s are very fertile modeling ground:

Mergers: The period saw the formation of Penn Central, Conrail, the Chessie System, Burlington Northern, Seaboard Coast Line/Family

Lines, and a larger Chicago & North Western as it acquired Chicago Great Western. This gives modelers wide license to mix power and other rolling stock as the railroads operated equipment in every paint scheme – sometimes for years – before they could pull together a unified look.

The establishment of Amtrak: The nascent National Railroad Passenger Corp. was pulling together old equipment from participating entities to put together trains that were the dog's breakfast to some and the greatest thing others had ever seen. No matter which camp you fall into, there's no denying it was more interesting than what came after.

Equipment condition: Bankruptcies and financial straits of many of the railroads make the era a paradise for modelers who like to modify and weather



equipment. Washing locomotives and repainting were out; replacing damaged parts like hood doors with those in other paint schemes was in.

I could go on with this list, but the metaphorical end-of-track is near. Think about giving the '70s a little love, because it just might love you back – from a modeling standpoint, of course.

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HO scale



Siemens ACS-64 electric locomotive. This modern-era locomotive is decorated for Amtrak in four paint schemes and Southeastern Pennsylvania Transportation Authority. The HO scale model has a die-cast metal frame, selector switch for

pantograph or rail operation, and fully remappable light functions. The ACS-64 (\$349) features a TCS WOWSound decoder with Keep-Alive capacitor and Audio Assist. Bachmann Trains, 215-533-1600, www.bachmanntrains.com

2018 Amherst train show celebrates 50 years

The 2018 Amherst Railway Society Railroad Hobby Show was held at the Eastern States Exposition Fairgrounds in West Springfield, Mass. The two-day show, which celebrated its 50th anniversary this year, was held in late January. In addition to railroad historical

societies, vendors, and clinics, attendees got to meet manufacturers and see the latest products.

There was a healthy mix of locomotives, freight cars, structures, and track across the scales, and new layout and signal control devices were featured at the show.

We fit as many of the new items as we could into the print report. To see the full show report, including additional photos, visit our website at ModelRailroader.com. You'll find the report under the "News & Reviews" link at the top of the page.

Multiple scales



Walthers Layout Control System switch machine. New from Walthers is this servo-based slow-motion switch unit that's compatible with direct current and Digital Command Control. The switch machine, priced at \$24.98, features plug-and-play wiring (no cutting or soldering needed) and a drilling template. The switch machine will work on Z, N, HO, S, and O scale layouts. Wm. K. Walthers Inc., 414-527-0770, www.walthers.com

JL Innovative adds to HO detail line

JL Innovative Design, a Minnesota-based manufacturer of vehicles, details, laser-cut structure kits, and billboard signs, has purchased the HO scale Selly Finishing Touches line of cast-metal details from Bowser Manufacturing Co. Inc. of Montoursville, Pa.

During the next six months, products from the Selly Finishing Touches line will be phased into JL Innovative Design's lines of vehicle and detail sets.

David Proell, owner of JL Innovative Design, said the company will release many of the popular Selly individual unfinished detail packs under the Durango Press detail parts brand. He added that some of the more interesting Selly items will be added to JL Innovative's Custom Detail line of factory-painted and labeled detail castings.

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Conducted by Cody Grivno



HO scale locomotives

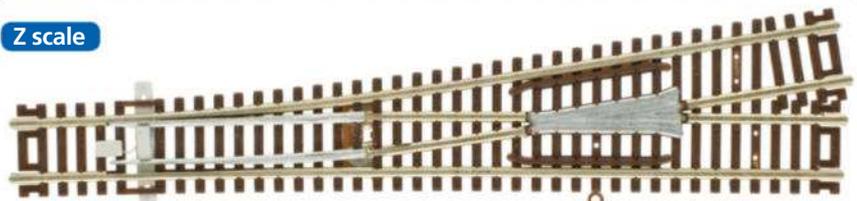
- **General Motors Diesel Division SD40 diesel locomotive.** Algoma Central (three road numbers); Canadian National (four versions, three numbers each); Canadian Pacific (13 versions, one to three numbers per scheme); Dakota, Minnesota & Eastern (name spelled out on long hood in two numbers, 20th anniversary scheme in one number); Quebec, North Shore & Labrador (three numbers); and St. Lawrence & Hudson (two numbers). Prototype-specific details, can motor with flywheels, and RP-25 contour nickel silver wheels. Direct-current model with 21-pin plug for Digital Command Control (DCC) decoder, \$209.95; with LokSound Select DCC sound decoder, \$309.95. February 2019. Executive Line. Bowser Manufacturing Co. Inc., 800-327-5126, www.bowser-trains.com
- **Electro-Motive Division SD40-2 diesel locomotive.** New road names and paint schemes: BNSF Ry. (Heritage I), Conrail, Electro-Motive Division Leasing (Milwaukee Road patchout and blue-and-white schemes, two road numbers each), Norfolk & Western, and Union Pacific. Four numbers per scheme unless noted. Railroad- and road-number specific details, see-through steps, and underbody frame rail with separate plumbing. Direct-current model, \$149.99; with ESU LokSound sound decoder, \$219.99. Summer 2018. Rivet Counter line. ScaleTrains.com, 844-987-2467, www.scaletrains.com

HO scale



Altoona, Pa.,-rebuilt SD60E diesel locomotive. Athearn displayed a sample of its next Genesis series model. The HO scale SD60E is decorated for Norfolk Southern in four road numbers. The model has a Crescent cab with a detailed interior and railroad-specific long-hood parts. Direct-current models retail for \$219.98. Versions with a SoundTraxx Digital Command Control sound decoder are \$309.98. Athearn Trains, 800-338-4639, www.athearn.com

Z scale



Number 6 turnout. Following the success of its Z scale flextrack, Atlas is adding number 6 turnouts (left and right, \$19.95 each) and a 19-degree crossing (\$14.95) to its new track line. The track pieces feature a die-cast metal frog with power contact for optional powering, a built-in wire spring to hold turnout points without the need for a switch machine, and die-cast metal points. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

O scale



Letters, Parcels & Post. This factory-painted structure is now available from Woodland Scenics. The O scale post office (\$129.99) features interior and exterior light-emitting-diode lighting compatible with the Just Plug Lighting System. Woodland Scenics, 573-346-5555, www.woodlandscenics.com

N scale



Greenbrier (Gunderson) 5,188-cubic-foot-capacity three-bay covered hopper. ScaleTrains.com displayed test shots of its next N scale model. The Gunderson covered hopper, scheduled for release this summer, will be decorated for Kansas City Southern and three other railroads. The Rivet Counter line model (**\$31.99**) will be available in three body styles. ScaleTrains.com, 844-987-2467, www.scaletrains.com. Scene and photo by Ken J. Johnson

Multiple scales



Steel retaining walls. Chooch Enterprises has expanded its line of flexible vinyl sheets. The steel retaining walls are available for HO/O scales and HO/N scales. The sheets (**\$12.99**) measure 3¾" x 12" and can be cut with scissors or a razor knife. The vinyl can be attached with hot glue or Chooch Peel-and-Stick. Chooch Enterprises, 425-273-4794, www.choochenterprises.com

HO scale



General American 10,000-gallon 1917-design radial course tank car. Tangent Scale Models unveiled a new car at the Amherst show. The HO scale General American 10,000-gallon 1917-design radial course tank car (**\$44.95**) is lettered for Humble Petroleum Products (1935+), Hercules Powder (1949+), and Sinclair (1947+, six road numbers) in four numbers per scheme unless noted. Tangent Scale Models, 828-279-6106, www.tangentscalemodels.com



• **Electro-Motive Division GP35 diesel locomotive.** Atchison, Topeka & Santa Fe (blue and yellow freight warbonnet); Chessie System (Chesapeake & Ohio reporting marks); Conrail; Gulf, Mobile & Ohio (blue and white); Rock Island (maroon and yellow with small block lettering); and Southern Pacific (General Repair and Improvement Program rebuild). Four road numbers (two each in direct current and Digital Command Control). Based on Phase II prototype. Prototype-specific details, five-pole skew-wound can motor, helical gears with 14:1 ratio, and Proto-Max metal couplers. Direct-current models, \$199.98 (GM&O, \$219.98); with SoundTraxx Tsunami dual-mode sound decoder, \$299.98 (GM&O, \$329.98). Walther's Proto. Wm. K. Walther's Inc., 414-527-0770, www.walthers.com

In Memoriam

Bill (William) Miller, 1939-2018



Noted narrow gauge modeler Bill Miller died in Hagerstown, Md., on Jan. 29. He was 78 years old.

Bill and his wife, Mary, both National Model Railroad Association Master Model Railroaders, built the On3 and On30 Colorado & Southern Ohio Creek Extension featured in *Great Model Railroads 2009*. In addition to model railroading, Bill and Mary also operated Miller Models.

Bill's non-model railroad interests included studying movie history, watching and playing along with Jeopardy!, and following baseball. He is survived by his wife, Mary, and son, Michael.

HO scale freight cars

- **Evans 5,100-cubic-foot-capacity double-plug-door insulated boxcar.**

Chicago & North Western, Evans Products, Florida East Coast, Fort Vancouver Plywood Co., Mountain Pine Lumber Co., Norfolk Southern, Penn Central, ScaleTrains.com, Southern Ry., and Wisconsin & Southern (six paint schemes, one road number each). Three numbers per scheme unless noted. Injection-molded plastic kit with cast underbody and brake system, metal wheels, and semi-scale couplers. \$14.99. Summer 2018. Kit Classics line. ScaleTrains.com, 844-987-2467, www.scaletrains.com

HO scale passenger cars

- **Union Pacific 1954 Portland Rose.**

Modernized heavyweight baggage car; American Car & Foundry lightweight 30-foot Railway Post Office; modernized heavyweight coach; modernized heavyweight coach with one vestibule;



N scale

Pennsylvania RR class M1a and M1b 4-8-2 steam locomotives. Broadway Limited Imports showed samples of its latest Pennsy steam engines. The N scale M1a and M1b are offered in three road numbers each plus decorated but unnumbered. The steam engines (\$369.99 each) feature die-cast metal and plastic construction and a Paragon3 dual-mode sound decoder. Broadway Limited Imports, 386-673-8900, www.broadway-limited.com

modernized heavyweight diner; modernized heavyweight dormitory-club; lightweight 6-section, 6-compartment, 4-bedroom sleeper; heavyweight 10-section, 1-compartment, 2-bedroom sleeper; and heavyweight 10-section, 1-compartment, 1-bedroom sleeper.

Train Nos. 17 and 18 feature different car numbers and names. Four-car add-on set and more than 25 separate cars also available. Factory-painted and lettered brass models with detailed interiors. The Coach Yard, www.thecoachyard.com

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N scale



Despatch Shops X65 boxcar. Eastern Seaboard Models Corp. displayed its next freight car. The N scale X65 boxcar is decorated for New York Central, Pittsburgh & Lake Erie (original and modern schemes, one road number each), and Lehigh Valley. The model (\$42.95) is offered in two numbers per scheme unless noted. The boxcar has body-mounted couplers and etched-metal crossover platforms. Eastern Seaboard Models Corp., www.esmc.com

HO scale



Fruit Growers Express 50-foot plate B insulated boxcar with centered 12-foot plug door. Moloco offers this model lettered for Central of Georgia (as-delivered scheme and yellow repaint, two road numbers each); Chicago, Burlington & Quincy (four road numbers, two different return routes); Great Northern (Glacier Green, four numbers); and Norfolk & Western (as-delivered scheme in three numbers, black sill scheme in one number). The HO scale model, which sells for \$56, has an overhanging Stanray roof with Morton running boards. Moloco, www.molocotrains.com

HO scale



Ford Super Duty truck. River Point Station showed samples of its latest HO scale Ford vehicles. The Super Duty truck is offered as a brush fire truck and in other variations. Additional details and price to be announced. River Point Station, 401-467-6907, www.riverpointstation.com

HO scale structures



• **Preston Printing.** Laser-cut clapboard walls, stucco walls, metal detail parts, plastic windows, and signs. Price to be announced. Fos Scale Models LLC, www.fosscalemodels.com

HO scale details and accessories

• **Assorted detail parts.** Compressor trailer kit with barricades, \$4.98. Custom tire tub/press, \$7.49. Farmyard detail set, \$17.95. Main Street detail set, \$11.95. Pre-1955 U.S. Mail street box (factory-painted three-pack), \$6.98. Post-1955 U.S. Mail street box (factory-painted three-pack), \$6.98. Railcar stops with derail, \$12.95. Vending machine detail set, \$7.98. Vintage luggage and trunk set, \$8.98. Unless noted, metal castings are unpainted. JL Innovative Design, 320-746-2358, www.jlinnovative.com

• **Wilson 43-foot grain trailer.** New paint schemes: Cargill (1966-2001 and 2002 to present logos) and Nutrena. Trailer is molded in silver plastic with painted white panels, decals, and bonus graphics to decorate a truck tractor. \$27.95 each. Lonestar Models, www.lonestarmodelsinc.com

• **34-foot pleasure cruiser built on lobster boat hull.** Waterline kit with solid resin hull, attached bulwarks, resin superstructure, and detail castings (pewter and resin). Figures not included. Measures 4⁵/₈" x 1⁹/₁₆". \$49.95. Sea Port Model Works, 603-498-3849, www.seaportmodelworks.com

• **1954 Buick Special sedan.** Two- and four-door versions. Resin kit. \$13.95 each. Sylvan Scale Models, 519-294-6601, www.sylvanscalemodels.com

N scale locomotives



• **Norfolk Southern SD60E diesel locomotive.** Horsehead silhouette in two road numbers, Honoring Our First

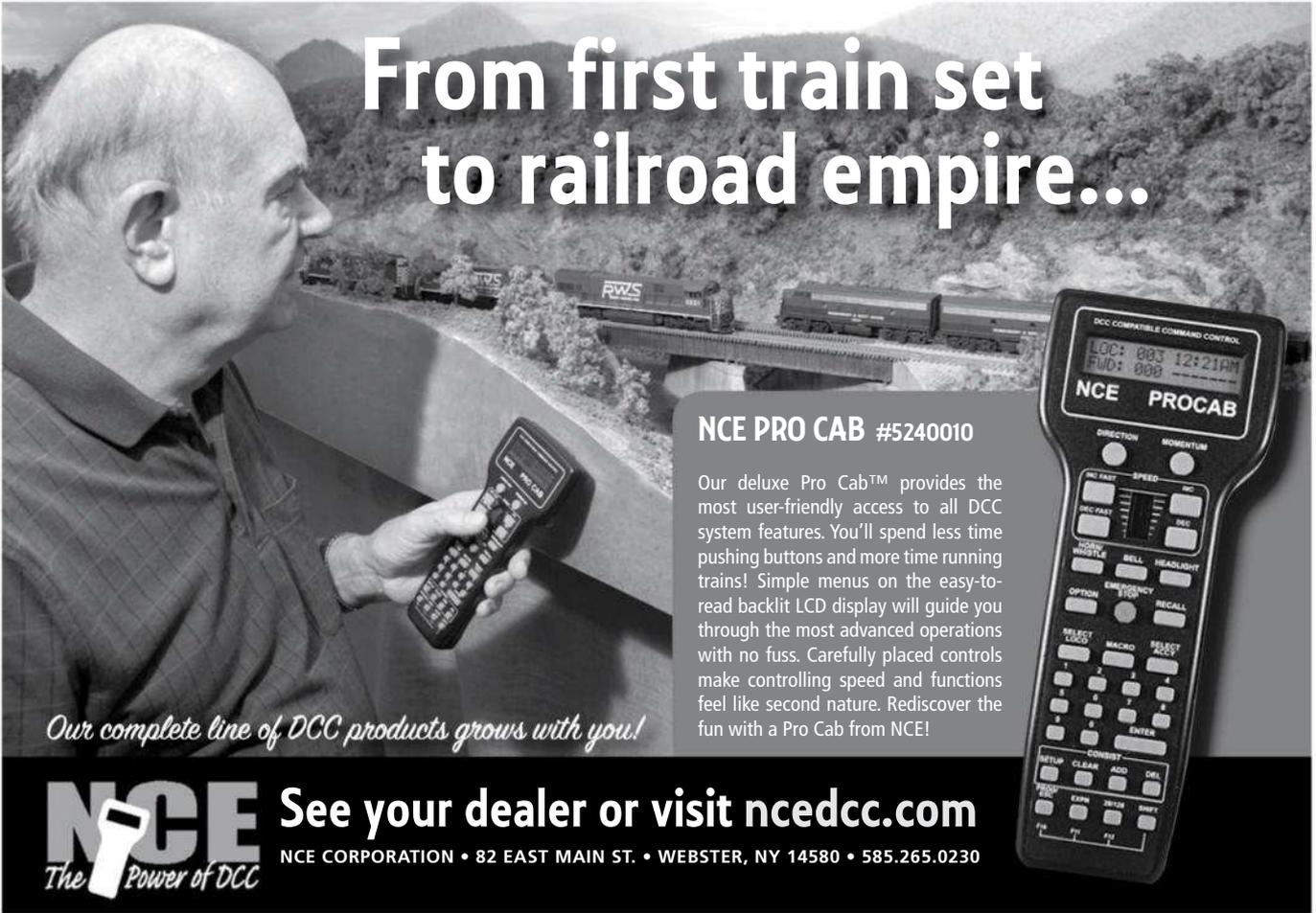
N scale

Stone Wall Panel System.

The N Scale Architect has released this kit, which builds an 11" x 5" x 2" half-relief structure. The N scale Stone Wall Panel System (**\$59.95**) includes three laser-cut wall panel sheets; two each laser-cut self-stick stone sheets and Taskboard sheets; one each peel-and-stick stone detail sheet, door and trim sheet, and slate roofing; Quick-Cut glazing; and more than 65 arched windows. The components can be arranged in different ways, and the building can be expanded or enclosed with additional kits. The N Scale Architect, 607-746-8416, www.thenarch.com



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Northeast T-Trak at Kato booth

At the Amherst Railway Society Railroad Hobby Show, Northeast T-TRAK Group founder Fay Chin (left) displayed eight of his T-TRAK modules at the Kato USA booth.



A lifelong model railroader, Fay also founded the Northeast N-TRAK Club in 1976. For more information on the clubs, visit www.nenscale.org/TTRAK and www.nenscale.org. Pictured with Fay are fellow T-TRAK Group members Julia and Chris Saari-Franks, who helped run trains and answer questions during the two-day show.

Julia and Chris only recently got into model railroading. At last year's show they bought a Kato N scale Unitrack set and some equipment to run, then discovered the T-TRAK group. "T-TRAK provided an easy way to get started," said Chris, "The club proved a good way to get some guidance."

In August, Fay and fellow club members plan on displaying modules at the National Model Railroad Association National Convention and National Train Show in Kansas City, Mo. (www.kc2018.org). "We look forward to having some Midwestern T-TRAK enthusiasts come and join the fun," Fay said.
— Dana D. Kawala

(NYC only), \$29.99; four-pack, \$99.99. Broadway Limited Imports, 386-673-8900, www.broadway-limited.com

N scale structures

- **50-foot queen post truss covered bridge.** Kit includes basswood strip and ties, nut-bolt-washer castings, and shake shingles. N scale version measures 3 1/4" x 1 7/16" x 4 3/16". Nn3 version measures 3 3/4" x 1 5/16" x 4 3/16". \$75 each. Hunterline, 866-934-4174, www.hunterline.com

O scale structures



- **Oakboro Hay & Grain.** Laser-cut wood kit with stripwood, adhesive-backed windows, signs, and tar paper. Measures 7 1/2" x 6 1/2". \$132. Banta Modelworks, 800-653-8214, www.bantamodelworks.com

O scale details and accessories



- **Custom-lighted vehicles.** Police and fire equipment. Prices start at \$80 (more depending on complexity of installation). East Coast Circuits, 201-506-1448, www.eastcoastcircuits.com

Electronics/controls

- **Universal signal control board.** Compatible with N, HO, and O scales. Backward compatible with existing Atlas signals. Common anode or common cathode signals can be used with board. Board can be used on its own or as part of an integrated block system. Includes options to enable approach-only

Multiple scales

Tsunami2 digital sound decoders.

SoundTraxx is offering these sound decoders with new software version 1.2 for Alco, Baldwin and other diesels, Electro-Motive Division, and General Electric diesel locomotives. The decoders include Cummins QSK19C x3 GenSet sounds (Baldwin and other diesels), a Prime electronic bell, Leslie S3LR and RS3K airhorns, updated General Electric dynamic braking effects, GEVO G12 Tier 4 diesel engine (GE diesels), and gas turbine electric features (Baldwin and other diesels). Gas turbine sounds are configurable for "Slab Side," "Veranda," and "Big Blow" locomotives. Prices are TSU-4400, \$179.95; TSU-21PNEM, \$109.95; TSU-PNP, \$109.95; TSU-2200, \$124.95; and TSU-1100, \$129.95. SoundTraxx, 970-259-0690, www.soundtraxx.com

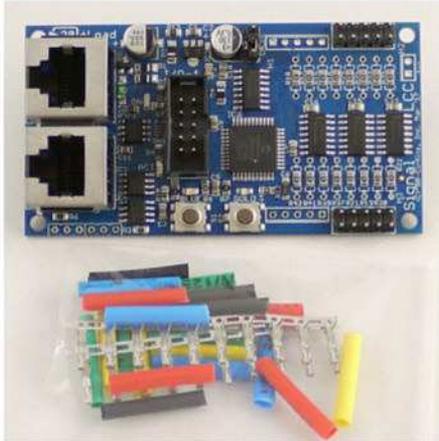


Responders, GoRail, and Honoring Our Veterans in one number each. Also available undecorated. Golden white light-emitting-diode headlights, blackened metal wheels, Positive Train Control antenna array, and operating front and rear ditch lights. Direct-current model with speaker only, \$149.95; with ESU Digital Command Control sound decoder, \$259.95. Second quarter 2018. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

N scale rolling stock

- **New York Central 40-foot steel boxcar.** New road numbers: Boston & Albany (pre-1955 Roman lettering), Peoria & Eastern (pre-1955 Roman lettering), and New York Central (pre-1955 Roman lettering and post-1955 extended Gothic lettering). Also available painted Boxcar Red but unlettered. Injection-molded plastic model with separately applied details and underbody brake system. Single car

operation, two- or three-block indication, and Pennsylvania RR and Baltimore & Ohio-style position/color lights. Additional details, price, and release date to be announced. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com



• **Layout Command Control signal mast drivers.** With pin connections or miniature screw terminals. Drives up to 16 signal lamps on miniature masts.

Includes eight auxiliary input/output lines for connections to external block detectors and turnout drivers. Individual lamp controls allow for special effects, including brightness and cross fade. Internal logic allows boards to operate in layout only mode, or they may be controlled with JMRI or other LCC-aware software as their control logic. Boards communicate and get power over the CAN bus version of the National Model Railroad Association LCC standards and work with other LCC products available from the manufacturer and other suppliers. \$73.95 each. RR-CirKits, 704-843-3769, www.rr-cirkits.com

• **Illuminator scenic lighting decoder.** Works on Digital Command Control and direct current (limited on DC). Locomotive, accessory, and signal addressing. Built-in warm white light-emitting diode. Up to three LEDs may be controlled separately. Built-in resistors. Compatible with Woodland Scenics Just Plug lighting system. \$16.95; five-pack, \$79.95. NCE Corp., 585-265-0230, www.ncedcc.com

Scenery

• **Folded "rock" beds.** Sharply folded sedimentary or metamorphic layers. For Z to G scales. Textured rubber casting can be cut with scissors. Measures 24" x 12". \$50. Cripplebush Valley Models, 518-868-2218, www.cripplebush.net

Miscellaneous

• **USB thumb drives.** Bullet train (\$8.50) and steam engine (\$10.50). Drives include Model Railroad Software (2.1.42). Features libraries for communication with Chubb and Lenz XPressNet networks. Deepwoods Software, 978-544-6933, www.deepsoft.com

Correction

• **The review of Bachmann Trains' FRED-equipped boxcar** in April's issue incorrectly stated that the boxcar was molded in color rather than painted. The model is molded in color, but also painted Railbox Yellow. **MR**



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Three Union Pacific units lead a freight on the left-hand side of former Chicago & North Western rails in Rochelle, Ill., in May 2006. The overhead signal bridge makes signals visible to engineers on both sides of the tracks. Cody Grivno photo

Does UP run to the left on ex-C&NW rails?

Q I grew up riding Chicago & North Western commuter trains, which ran its trains on the left-hand track, unlike most North American railroads. In the Chicago area, Metra still runs its trains on the "wrong" side on former C&NW track. Does the Union Pacific also run its freight trains on the former C&NW outside Chicago on the left-hand track? How do crews deal with that?

George M. Beilke, Chicago

A The UP does run its trains on the left side on former C&NW track in the Chicago area. The track is set up that way because the line was originally single-tracked, and most passenger stations were built on the north side of the track. When a second east-west track was built, it went in south of the original track, where there was room without moving the depots. The railroad didn't want to force inbound (east) commuters to cross the outbound track, which was busy with freight in the mornings, so the northern track was designated for eastbound trains.

As for how crews "deal with it," left-hand running isn't much more complicated than right-hand running – they just follow the signals. The only problem with this scheme is that engineers on the right side of a locomotive couldn't see lineside signals on the left side of the train. The C&NW solved this issue with overhead signal bridges.

Q I'm recently retired, want to get started with trains, and am looking for some help. I have no idea what scale I want. Some of your videos go into quite a bit of detail; however, I'm just starting out and undecided about HO or N scale. Can you help me decide?

Reb Orrell, Glen Burnie, Md.

A First of all, welcome to the world's greatest hobby! You can find a lot of useful information on our Get Started page, mrr.trains.com/beginners. There are articles and videos about building basic

benchwork, making scenery, choosing a train set, and more. You can also sign up for our Basic TRAINing e-mails, introducing you to the hobby.

As for your specific question – what scale to choose – that will depend on your answers to a few other questions. First, how big is your space? If you're building in a smaller space, N scale will let you fit more trains into it. What kind of trains do you want to run? Unless you plan a large layout, short local jobs better suit HO scale, while N makes it easier to run long unit trains.

Do you want more urban or rural scenery? The mass and detail of HO scale structures can make for some truly impressive cityscapes, while N scale has the space for more realistic prairies, mountains, and valleys. How are your eyesight and dexterity? The larger HO scale trains will be better suited if you foresee any issues in those areas.

Then, there are practical considerations. N scale locomotives, cars, and structures are generally cheaper than HO, but you'll need more of them to fill the same space. It will also take longer to build, paint, and detail the larger number of models you'll need in N scale. HO could get you up and running sooner. Finally, HO has a larger variety of products available. If you model a less popular prototype, that could be a factor.

My best advice is to go to a hobby store, check out locomotives in both scales, and see what feels right to you.

Q I have several N scale locomotives that no longer run. The shells are OK. How can I change them to dummy engines for use on my layout? Thanks.

Bill Semanko, Junction City, Kan.

A That should be fairly simple, Bill. Remove the shells, take off the trucks, and remove the gear towers that connect the drive axles to the motors. You'll also want to remove the wheel wipers that pick up current and carry it to the motor, in order to minimize drag. Though it's not necessary, you might remove the motor and replace it with weights. Then put the trucks and shell back together.

But considering how much you probably spent on those locomotives, it might be worth your while to take them to a hobby shop (or a knowledgeable fellow modeler) and try to figure out why they're not running. If it's a simple matter of replacing a motor or soldering a loose electrical lead, you could easily get those engines running again.

Q What was the issue that showed how to modify a plastic turnout to curve it slightly?

Thomas Gilles, Antioch, Calif.

A That was part of John Pryke's informative article "Get your railroad up and running with flextrack," in our March 2010 issue. If that issue isn't part of your collection, sign up for the MR Archive at www.modelrailroader.com/archive.

Q I need to know the distances between tracks in a yard and between parallel mainline tracks in N scale. I'm building a new layout, and the tracks in the yard look too far apart.

Randy Wisner, Great Valley, N.Y.

A The National Model Railroad Association has a Recommended Practice covering track spacing in all scales, RP- 7. You can download this and other NMRA standards and recommendations from its website, www.nmra.org/index-nmra-standards-and-recommended-practices.

According to the dean of track planning, John Armstrong, the tracks on our model railroads should be spaced farther apart (in scale terms) than those on the prototype. This is to account for car overhang caused by our models' tighter curves, as well as to allow room for fingers to reach in and rerail, uncouple, or remove cars as needed.

Armstrong's book *Track Planning for Realistic Operation* (Kalmbach Books) suggests a center-to-center track spacing in N scale of 1¼" on parallel straightaways (whether in a yard or on the main line) and 1½" on tight curves. For our HO scale readers, that spacing ranges from 2" on straightaways to 2⅜" on curves. You may find, though, that you'll want a bit more space in a yard, both for that 0-5-0 switcher (your hand) and for reading the numbers on car sides. For more on developing reliable standards for your model railroad, get Armstrong's book from the Kalmbach Hobby Store, www.kalmbachhobbystore.com.

Q I own two WalthersMainline SW1s in HO. They're good runners, but one unit tends to be a little louder when operating at a very slow speed. What causes this, and is there a way to reduce noise besides lubrication?

Bob Devine, city not given

A Noise isn't usually caused by lack of lubrication (though it doesn't help). There are things you can do both to cut noise and improve how your engine runs. First, remove the shell and check that the screws or other attachments that secure parts like the cab interior, motor, and decoder or lighting board are tight, to minimize vibrations.

Next, make sure that the gears are clean, free of burrs and debris, and positioned so they mesh properly. Check that the gears are not cracked, are fixed

securely on their shafts, and don't rub on wires or other obstructions when the shell is in place. Lube the gears with a plastic-compatible grease and test-run the engine before replacing the shell.

Q I've recently been appointed to oversee the revitalization of our train club's layout. The scenery is old, quite dirty (we've already dusted and vacuumed), and beginning to fade due to the overhead fluorescent lights. Do you have any suggestions to help us make this scenery look newer? There's 600-plus square feet of scenery to deal with, so replacing it isn't an option.

Bob Wallace, Coaldale, Alta.

A The best option is to replace your ground cover, but if that's not possible, you might consider dyeing it. Go to the craft store and buy a few packages of fabric dye in various shades of green and brown. Mix up diluted solutions of each color, adding a little rubbing alcohol to help it penetrate the scenery. Then put each in spray bottles and spray them on the scenery to brighten up the color. Do a small, unobtrusive area first, to test the strength of your solution and make sure the result isn't too intense. Be sure to shield adjacent scenery and structures from overspray, and spritz small, overlapping patches in different colors to avoid the monochromatic effect of dyeing everything the same shade.

Q Please explain the advantages of mid-train helper engines. Why not just use the helper to split the train into two sections? That would reduce the number of switching moves to reinsert the helper, and would eliminate the alternating push/pull forces on the couplers of the forward cars.

Dean Clark, Fresno, Calif.

A A mid-train helper engine (or a helper engine anywhere in the train, from the head to the end) would be m.u.'ed to the lead engine and operated remotely. If the train were split, the other engine would need its own crew, an increase in operating costs. What's more, a train in two sections would have to be kept track of separately by the railroad's traffic control system, making movements more complex. Also, distributed power is becoming more common even on trains that aren't that long, in order to minimize slack action and coupler strain. So

READER TIP



Use your noodle

Foam pool noodles, when cut into 1½"-2" sections, serve as great holders for paints, pins, and brushes. The one I use has a 3" outer diameter and a 1" center hole, and its open-cell foam is solid, durable, and can easily be carved to accommodate any sized bottle. A 4-foot noodle costs a few bucks and, when cut into short lengths, can easily yield dozens of useful holders. No longer will your paint bottles spill or your paintbrushes and pins get lost on your workbench. — *Nicolas Florio, Farmingdale, N.Y.*

that engine you see in the middle of a train isn't necessarily there as a helper, and splitting the train is solving a problem that doesn't exist.

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

Making sure to see what's really there

Does this ever happen to you? You're driving down a street you've gone down a hundred times before and you notice a particular house for the first time. "Where the heck did that come from?" you're wondering. My point is we can look right at things and not really see them. The photo on this page is an "after" shot. I wish I had a "before" to better make my point.

The photo shows my N scale version of the Monolith Cement Co., which in 1985 stood 4 miles south of Tehachapi, Calif., along the Southern Pacific. There's a cement plant there today, but it replaced the one I modeled and is far different.

There's been a cement plant at this site since 1908, and it produced much of the material used in the Los Angeles freeway and aqueduct systems. The plant receives limestone from a quarry about a mile away, crushes it, and bakes it to about 1,500 degrees Fahrenheit in a rotary kiln. The result is baked-out chunks of rock, called clinker, that are then ground to the powder that we know as cement, the essential ingredient in concrete.

My structure is based on photos I took, general information on the internet, and photos posted online of a model of the plant built by Dan Kamakubo of the Belmont Shore N scale club in San Pedro, Calif.

Starting over. Combining photos, guesswork, and the limitations of the space I had, I built the structures, positioned the rotary kiln along the main line, then laid three parallel tracks spaced 1 1/4" apart to serve the other structures. I felt good about it for a



Jim spread the tracks farther apart at his cement plant to give the structures room to breathe and look more prototypical. More work remains, but the scene is progressing. Roen Kelly photo

while, but then started to come that nagging, vague dissatisfaction that means I'm probably going to be making some changes.

To start with, the kiln was right beside the track and that just didn't look right, for safety reasons if nothing else. Secondly, the track spacing put all the structures too close together and laid out in a too linear fashion. Prototype photos showed a sprawling complex.

I decided to re-lay the tracks and give the buildings some breathing room. To do so I had to move the face of the hill back about 3". Thankfully, because my layout is N scale, I had the space to make these changes. Big complexes like this can take advantage of N scale's small size.

Creatures of habit. Somewhere along the model railroading trail I lost my way and got into the habit of always laying parallel tracks

1 1/4" apart. Certainly this is a good rule of thumb for yard tracks and passing sidings, but it has little application to laying industrial spurs.

It's easy to fall into the traps of following basic design parameters, even when they don't apply. Yes, you need to set a minimum-radius standard for mainline curves, but spur tracks can have tighter curves. And where you have room, sweeping mainline curves are great to look at.

The venerable layout planner, John Armstrong, called these cosmetic curves. (John's book, *Track Planning for Realistic Operation*, [Kalmbach Books, 1998] available at your local hobby shop or www.KalmbachHobbyStore.com, is

essential reading for aspiring model railroaders.)

John and many others have advised that 30" is a good maximum depth for layout scenes, as that's about as far as most of us can reach, but I'd say you can go considerably deeper if the scene is just main line and scenery.

On my layout, the back of Tehachapi Loop is out of reach. I clean the track there with a Bright Boy taped to a stick, and use an extension on the vacuum for general cleaning.

I wish I were better at identifying these design traps on paper and making fewer changes on the layout itself. I suspect I have lots of company, though, and I hope a little article like this can help some of us see a little more clearly. **MR**



IT'S EASY TO FALL INTO THE TRAPS OF FOLLOWING BASIC DESIGN PARAMETERS EVEN WHEN THEY DON'T APPLY. - JIM

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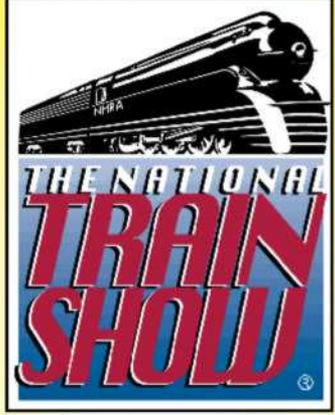
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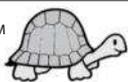
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A modeler might want to kitbash a structure to model a specific prototype, change the structure's purpose, or simply to fit a spot on the layout. Pelle Søbørg modified this Laser-Art kit to swap the side door to the left side and modernize the windows.

Kitbash a laser-cut wood house kit

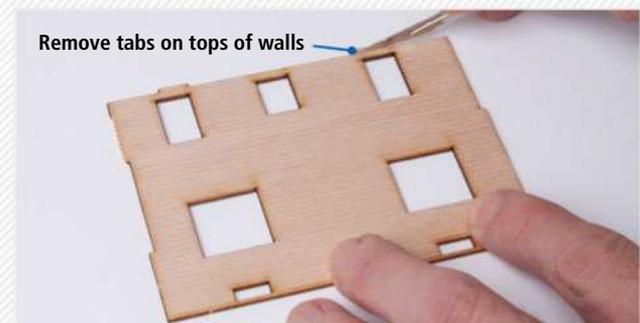
For a typical residential area, you need typical homes. Fortunately, Laser-Art Structures from Branchline Trains offers a nice selection of such homes. They're easy to build, and you can build them just as they are or modify them to fit your specific needs, as I did with the Albion House (item no. 621).

I had a garage I wanted to use with the Albion House. The house had an entrance door on the side that the residents could use going to and from the garage. Unfortunately, the door was on the right side of the house, and the house would have hidden the garage if I placed it to the right.

The solution was to swap two of the walls on the house. Laser-Art kits are designed to be foolproof, with tabs and slots in the walls so they'll only fit together one way. To overrule this required some trimming of the tabs, but nothing too complicated.

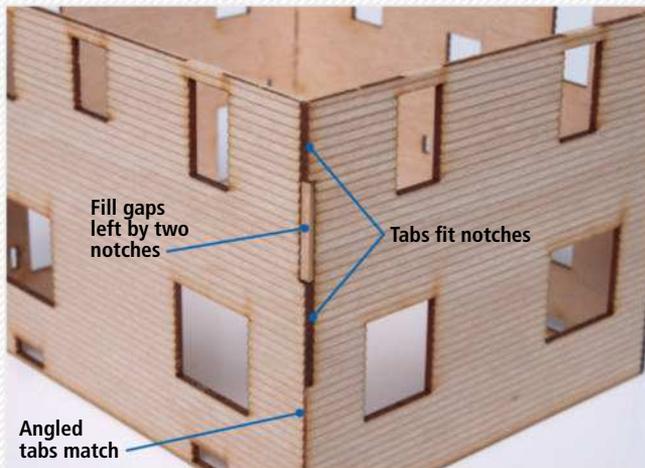
Swapping walls wasn't the only modification I made to the house. This type of house is from the early 20th century, and I imagined that the windows might have been replaced some time along the way. So I modernized the windows by removing the mullions on the upper sashes. Read on to see how I modified and finished this kit.

STEP 1 NOTCHES, TABS, AND SLOTS



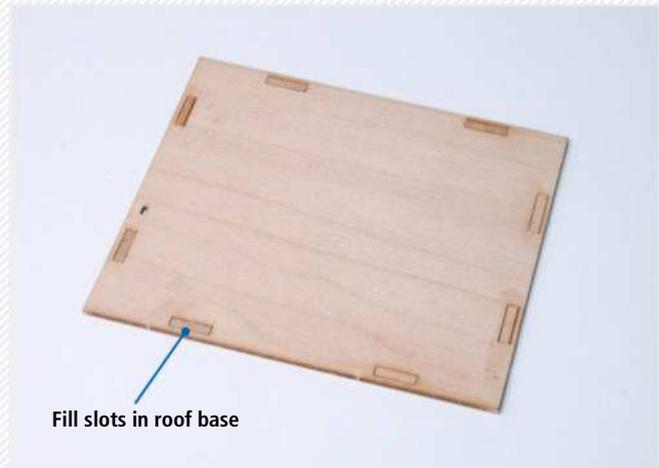
Each wall has tabs and notches that match only on their intended adjacent walls, making it impossible to swap the sides accidentally. I could have cut the tabs off completely, but to maximize the gluing surfaces on each corner, I instead trimmed the tabs that conflicted at a

STEP 1 NOTCHES, TABS, AND SLOTS (CONT'D)



45-degree angle with a sharp knife. This way, the conflicting tabs could instead fit with each other, strengthening the corner joint.

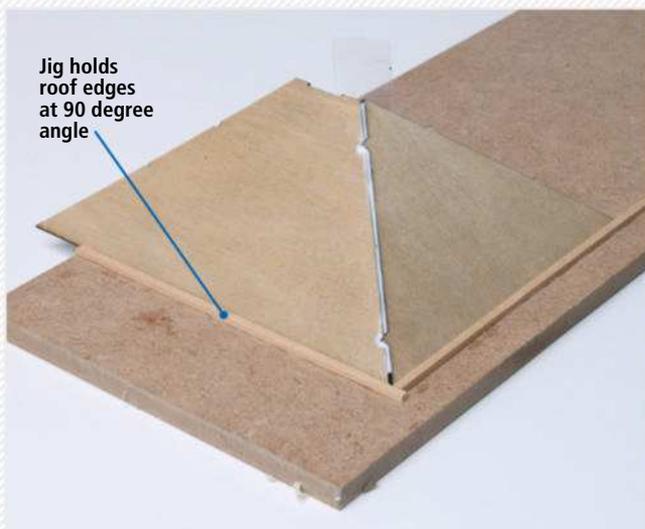
Each wall section likewise has tabs that will fit into corresponding slots in the roof base if the walls are assembled in the correct order. As I wanted to assemble the wall sections in a different order, I had to remove these tabs.



While the angled tabs fit nicely with each other, and other tabs fit notches in adjacent walls, in some spots, notches lined up with other notches, leaving gaps in the corners. I filled these notches with stripwood.

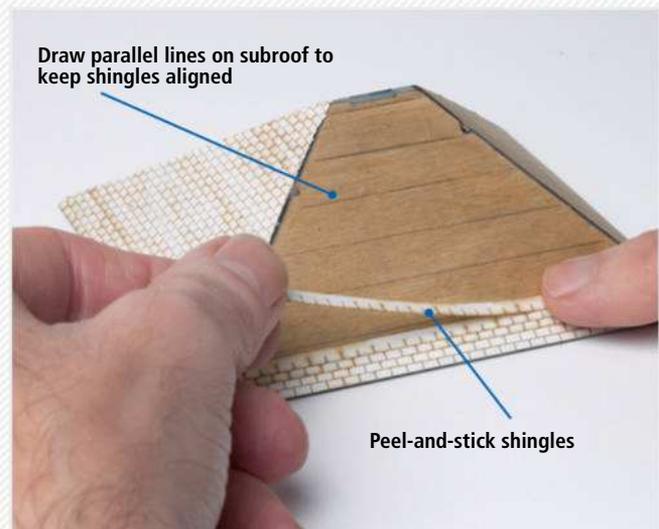
Since I'd removed the tabs on the top of the wall sections, I likewise filled the slots in the base of the roof with stripwood.

STEP 2 THE ROOF



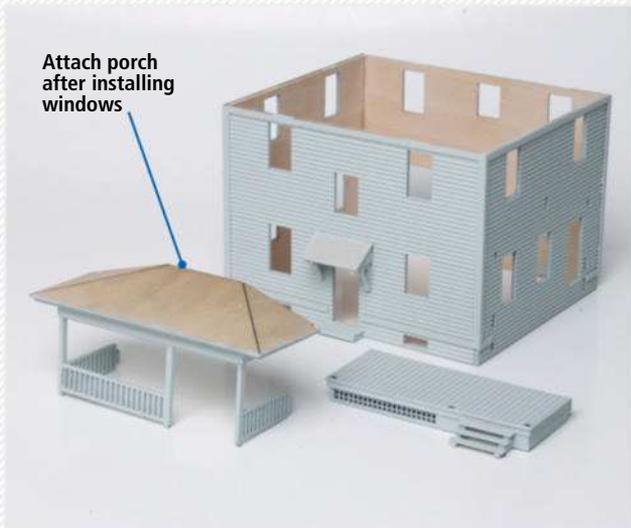
I had to shorten the two long roof sections slightly, or the roof wouldn't have overlapped evenly on all four edges on the roof base.

The roof was assembled in two steps. I first glued two roof sections together and placed them in a homemade jig that held their bottom edges at an exact 90-degree angle. When the glue on these first two sections was completely dry, I removed them from the jig and glued the rest of the roof sections to them. I didn't need to use the jig for these sides, as the angle was already set by the first two.



A sheet of paper shingles is included with the kit, but I didn't use them. Instead, I used a set of peel-and-stick three-tab shingles from American Model Builders (no. 285). They are quicker to apply because you don't have to apply glue to each strip before placing them on the roof. I applied the shingle strips one side at a time, trimming the overhang with a scalpel. Use a fresh sharp blade for this, so you don't shred the edges of the paper.

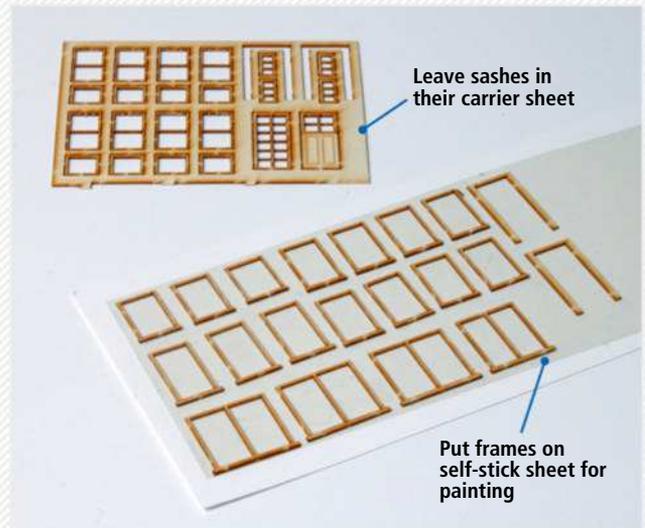
STEP 3 PAINTING



I applied the trim to the house before painting the walls. I airbrushed the walls Light Gray (Humbrol 147). For wood, I always use enamel paint to avoid warping. To eliminate fuzz, I sanded the walls lightly between coats.

I painted the house before attaching the porch. This not only made it easier get paint into all the porch railing's nooks and crannies, but also made it easier to install the windows later.

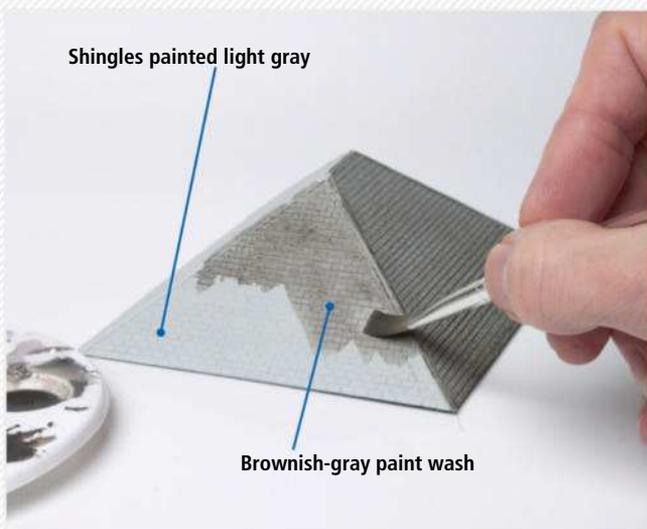
STEP 4 WINDOWS



The small panes in the upper window frames looked too old-fashioned. I modernized the windows by trimming off all the mullions on the upper sash. Before painting the window parts, I applied the frames to a piece of self-adhesive paper. I left all the sashes on their carrier sheets.

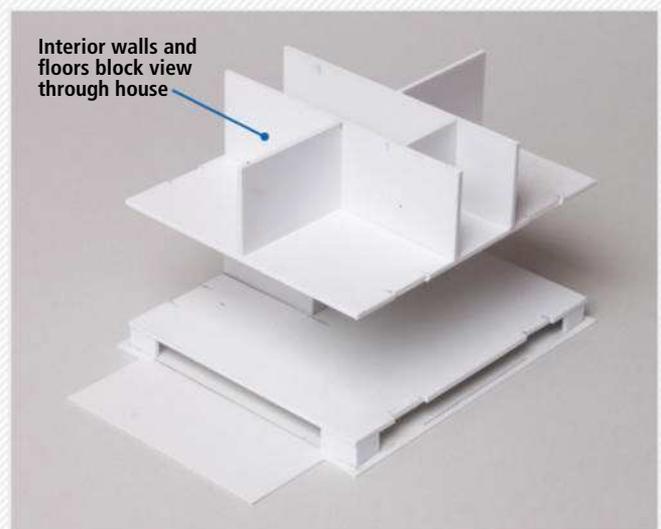
I airbrushed all the window and door parts white. I added the glazing to the windows and assembled the parts following the instruction sheet.

STEP 5 FINAL TOUCHES



I painted the roof, including the roof on the porch, Light Gray. Then I gave the roofs a brownish-gray wash. You have to work fast when you spread the wash to apply it evenly and prevent runs.

I made interior walls and floors for the house. I had no intention of detailing the interior, though you could do so. I just wanted to block the view through the house.



A few things remained to be done to finish the structure. The porch was attached, along with the stone foundation. I painted the chimney Light Gray and drybrushed the bricks in a red-brown color. I glued it on the roof and placed the roof on the house.

I also applied small pieces of paper in the windows to simulate pull-down blinds. 

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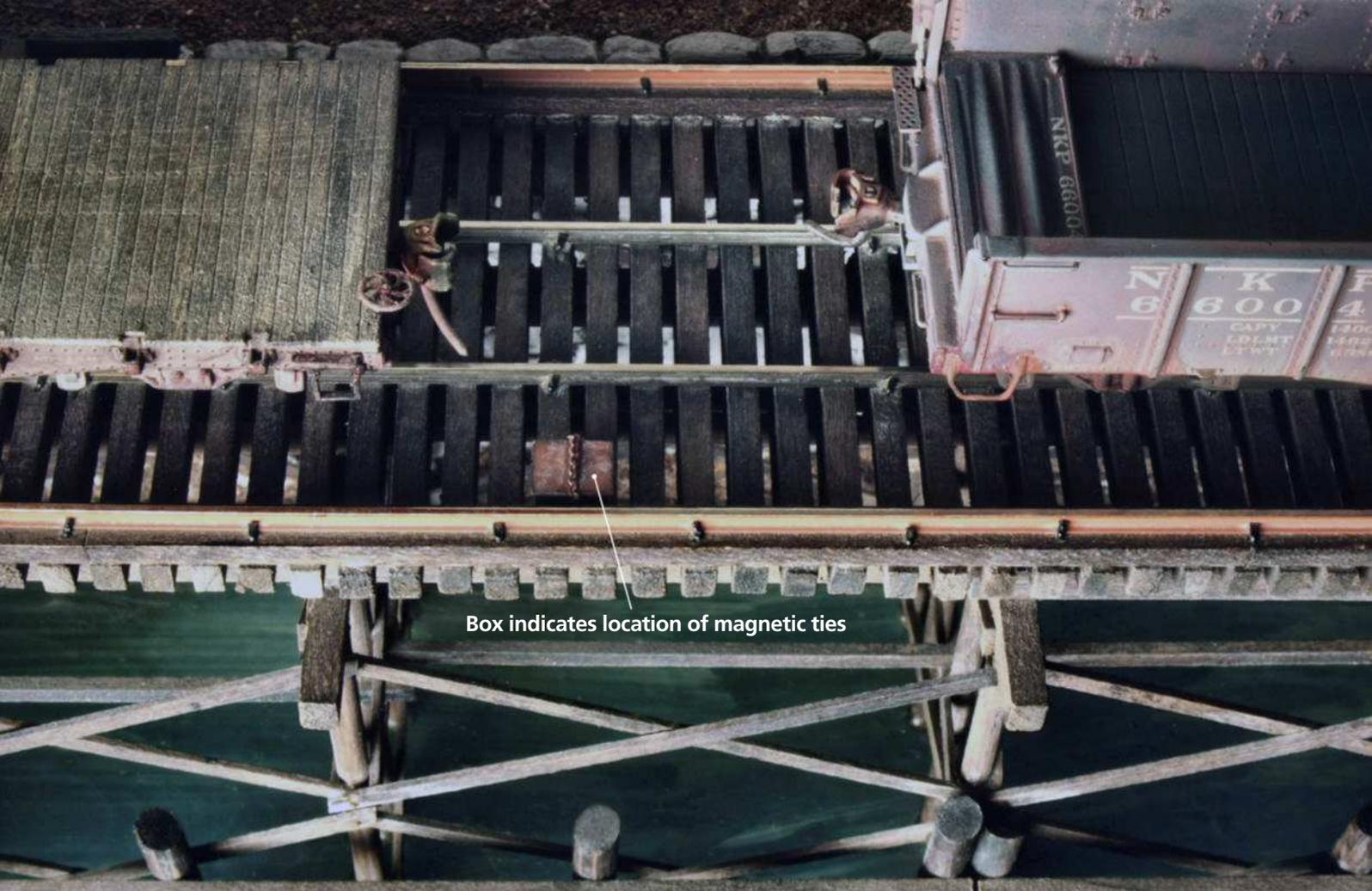
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Box indicates location of magnetic ties

Lee Kirchhoff needed a way to uncouple cars on an open-deck trestle. His solution was to make magnetic ties using a commercial uncoupling magnet and basswood. The box indicates the center of the magnetic ties.

Build a hidden uncoupling magnet

Cleverly concealed as ties, this modified magnet keeps the deck open on an HO scale trestle

By Lee Kirchhoff • Photos by the author

Model railroading when your hands shake requires concessions. Among them for me was to quit using a pick to uncouple cars. On the majority of my HO scale Three Rivers Terminal switching layout I use electromagnets to uncouple cars, so the lack of a pick wasn't a problem. However, I struggled finding a way to uncouple cars on an open-deck trestle.

Because of its size, an electromagnet wouldn't work. Even Kadee's no. 308 magnet would be visible under the ties. After some thinking, it dawned on me. Why not make the ties magnetic?

Getting started

I had most of the materials for this project in my supply box ❶. I purchased

a $\frac{3}{4}$ " thick basswood "short" from my local hardwood dealer (not a lumberyard) for about \$8. I also bought a Kadee no. 308 delayed action uncoupling magnet with steel intensifier plate.

I cut a $\frac{3}{64}$ " x 2" x 3" veneer from the basswood short. Since the trestle also carries a rail crane, the bridge ties are longer than the no. 308 magnet is wide. This required a $\frac{5}{32}$ " x 2 $\frac{1}{2}$ " x $\frac{3}{4}$ " basswood

extension on the long edges of the magnet. I ran the grain in the $\frac{3}{4}$ " dimension so the ties would have end grain detail. The thickness of the veneer and the extensions matches the height of the adjacent, non-magnetic ties.

Next, I used cyanoacrylate adhesive (CA) to attach the steel intensifier plate to the Kadee magnet. Then I used Walther's Goo to secure the extensions to the magnet. I pushed the magnet and extensions against a stop so they'd be square on one end **2**. I then applied a weight and let the glue dry overnight before cutting the extensions flush.

Gluing and cutting

I secured the veneer to the extensions with white glue and the magnet with CA. I placed shims under the extensions and used wood and a steel block to hold the veneer down while the glue dried **3**. Once the glue had dried, I trimmed the excess veneer.

Next, I nailed strips of scrap wood to my work surface to hold the assembly tight and used a hacksaw to make a square cut for the saw. I cut the veneer and extensions to match the length of the bridge ties, centering the magnet **4**.

I nailed a wood stop to the cutting jig. Then, applying gentle pressure to a hacksaw, I cut the ties to the appropriate width **5**. I was able to make 11 ties. Some of the steel intensifier plates came off as I sawed, but I glued them back on with CA.

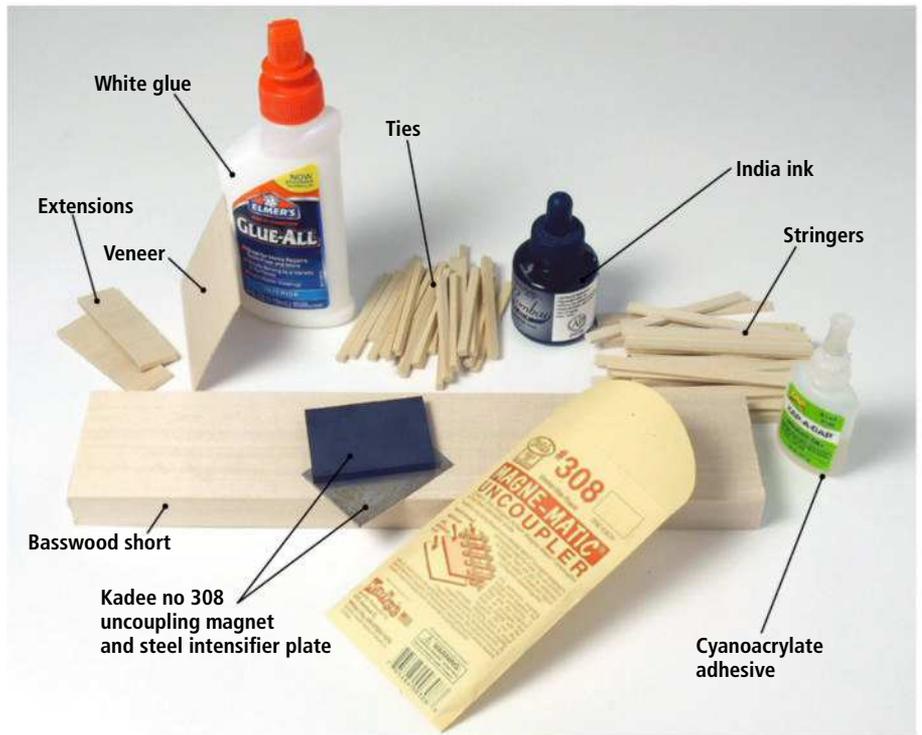
Staining and installing

After staining the ties and stringers with an India ink wash, I laid the ties on top of the stringers, spacing them about $\frac{1}{16}$ " apart. Maintaining the original sequence isn't necessary, but adjacent ties should repel each other to preserve the magnetic field.

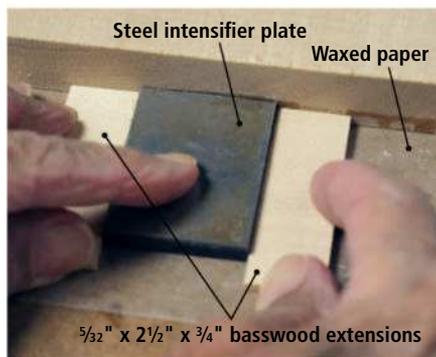
The only problem I've encountered over the years is the magnet can be too strong. It pulls some free-working couplers beyond the delay-action position.

Friends have tried to locate the magnet on my open-deck trestle. No one has ever found it. That and consistent performance have made for a satisfying project. **MR**

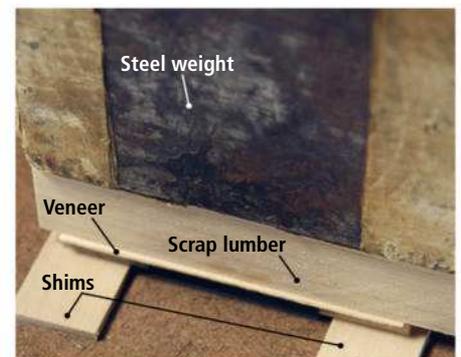
Lee Kirchoff traces his interest in trains to the second grade, when his childhood home was located near the Rock Island tracks in Labadie, Mo. He is a retired architectural wood worker and lives in Blue Springs, Mo.



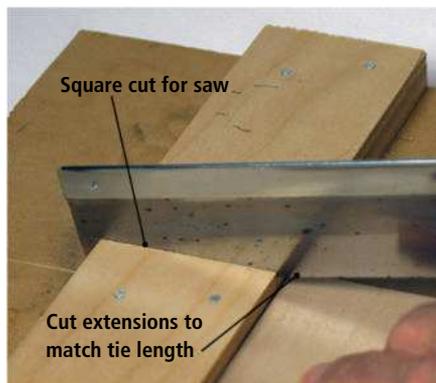
1 Needed supplies. Most of the supplies used to model the magnetic ties can be found at a well-stocked hobby shop. Lee purchased the $\frac{3}{4}$ "-thick basswood short from a local hardwood dealer.



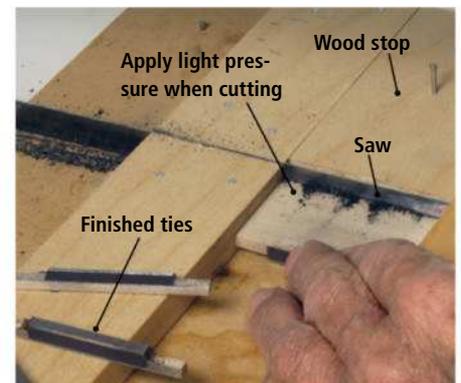
2 Adding extensions. Lee added basswood extensions to the Kadee magnet with Walther's Goo. The waxed paper prevents the assembly from sticking to the work surface.



3 Weighing in. Lee used a steel weight and scrap lumber to hold the veneer in place while the glue dried. He put shims under the basswood extensions so they wouldn't sag.



4 Cutting to length. Lee next cut the assembly to the correct length, keeping the magnet centered. He cut from the top down to prevent tearout.

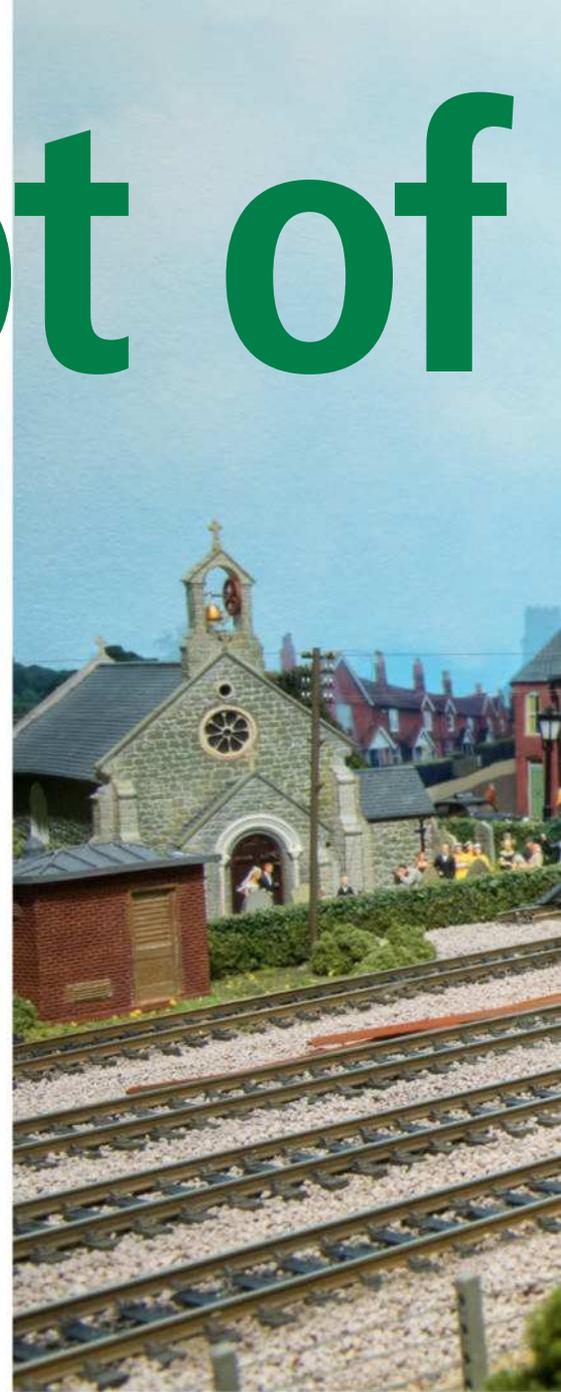


5 Cutting ties. Lee cut the ties to width with a hacksaw. He removed the magnet residue from the cutting process with masking tape.

A spot of

An OO scale British Railways layout lets a husband and wife re-create the area where they grew up

By Chris White • Photos by Lou Sassi



Model railroaders from the United States can recall vividly their first Lionel train set. The English equivalent was a Hornby Dublo train set, but the house where I grew up in southern England, about 20 miles west of London, was small. With three boys, there was no room for a model railroad of any size.

Instead, I spent many hours “train-spotting” up a high embankment less than a mile from our house. It was close to the four-track main line from Waterloo Station in London to all parts of southwest England. I remember keeping track of the numbers of the many trains going up and down from London.

① Merchant Navy class 4-6-2 Pacific no. 35019 *French Line* pulls six Pullman cars into Woking Station from Waterloo Station in London on Chris White’s OO scale British Railways layout. On the other side of the platform, an Electric Multiple Unit (EMU) commuter train stops for passengers.

I became a mining engineer, working in Africa and the United States, and had little time for a hobby, so model railroading was the last thing on my mind. However, I was always fascinated by model railroads and was drawn to them whenever I encountered one.

I took early retirement in 2000 and quickly realized I didn’t want to play golf every day and needed another hobby. Model railroading immediately came to

mind, and I subscribed to *Model Railroader* and joined the National Model Railroad Association (NMRA).

I then saw an advertisement for a Model Railroad Skills Institute (MRSI) seminar in Knoxville, Tenn. After I attended this program I was completely hooked and now describe myself as an avid modeler.

What and where to model

I had decided to become a model railroader, but what to model and where to build it? I was torn between the Louisville & Nashville in southern Tennessee or British Railways in southern England, where my wife and I grew up.

England in Georgia



After input from members of the Skills Institute seminar and realizing I could purchase British rolling stock from England online and all my other railroading needs locally, I decided on British Railways.

There was a reasonably sized unfinished room in the basement next to my workshop and workbench. I finished this room with drywall, a drop ceiling, and carpet, and I had a model railroad room.

I spent about six months designing the layout and researching British Railways' Southern Region. My major objective was to get as much railroad as possible in the 15'-0" x 19'-6" space.

I chose 24" radius curves to maximize the amount of railroad I could fit. A four-track main line traverses about half

of the layout, and then a two-track main line covers the remainder.

I wanted to include one long straight stretch of four-line track on the layout to simulate the prototype, especially near West Byfleet. I can recall standing on a bridge above the railroad looking at a perfectly straight four-track main line for as far as I could see in both directions. I installed a mirror at the end of this stretch to make it appear even longer.

Nonstop high-speed passenger trains would operate on the two central tracks – up to London and down to towns on the coast in southwest England. I also wanted to incorporate the stations closest to where my wife and I lived – West Byfleet and Brookwood – and the large town and major train station at Woking,

2 A passenger train pulled by Merchant Navy class Pacific no. 35027 *Port Line* heads toward Waterloo Station in staging. In the background, newlyweds emerge from the West Byfleet church. Chris's wife, Gill, enjoys creating vignettes with figures on the layout.

where we both attended high school. The locations on the layout southwest of Brookwood are fictitious towns and villages in novelist Thomas Hardy's county of Wessex, with names such as Casterbridge and Egdon Heath.

Building the benchwork

I was familiar with 2 x 4 construction, so I used that to build a group of



3 This view of Chris's British Railways layout greets visitors as they enter the room.

roughly 3 x 8 foot sections, 44" high. The sections were then bolted together, making up the layout. I laid 1 x 4s flat on 12" centers along the top of the 2 x 4 framework, and then ripped 1 x 4s to a precise height and width to form the risers for the subroadbed. I screwed them from the bottom through the flat 1 x 4s, forming inverted T-sections.

Subroadbed is high-quality 3/4" plywood, cut wide enough to allow room for minor structures and other details along the track. The benchwork is extremely sturdy, and I can stand on the majority of it.

I built a backdrop support structure of 2 x 2s on 16" centers attached to the rear of the benchwork. I screwed Upson board, which was once popular with illustrators, to the 2 x 2s. [Upsonite is available from Niagara Fiberboard, www.niagarafiberboard.com. – Ed.] I then painted the Upson board backdrop with a sky blue color. Later I painted clouds using commercially available cloud stencils.

Trackwork

After examining flextrack from a number of manufacturers, I chose Peco code 100 track because I found it easier to work with overall, and it follows British prototypes.

I also tried both cork and Homasote roadbed for the roadbed, and was impressed with all features of Homasote. After nailing the roadbed in place, I filled small gaps with drywall mud and then sanded the surface. I painted the roadbed to protect it from humidity or temperature changes.

I waited to start any scenery work, especially ballasting, for about six months after finishing the trackwork to ensure I had no problems.

Electrical system

I found planning the electrical system the most difficult challenge initially. Multiple power districts and reversing loops and the location of these systems was quite difficult to comprehend. I changed the system three or four times before I was fully satisfied. But with the assistance of members of my operating group, I installed a workable system using NCE Digital Command Control.

The layout at a glance

Name: British Railways
Scale: OO (1:76 on HO gauge track)
Size: 15'-0" x 19'-6", plus 6'-0" x 13'-0" staging in adjacent room
Prototype: British Railways - Southern Region
Locale: southern England
Era: 1960
Style: walkaround
Mainline run: 120 feet
Minimum radius: 24"
Minimum turnout: Peco large radius (main), small and medium radius (yards and industries)
Maximum grade: 2 percent
Benchwork: 2 x 4 open grid
Height: 45" to 50"
Roadbed: Homasote
Track: Peco code 100 flextrack
Scenery: plywood supports with aluminum mesh covered with plaster cloth
Backdrop: Upson board with painted sky and clouds
Control: NCE DCC with radio throttles

I used 14AWG solid wire for the bus and 22AWG solid wire for all track power drops to the bus wire. The drops were placed on approximately 3-foot centers, or one to every piece of flextrack.

I ran two separate bus lines with separate power supplies for scenery lighting. Viessmann makes lights appropriate for English street and station illumination; I have about 90 on the layout.

Structures

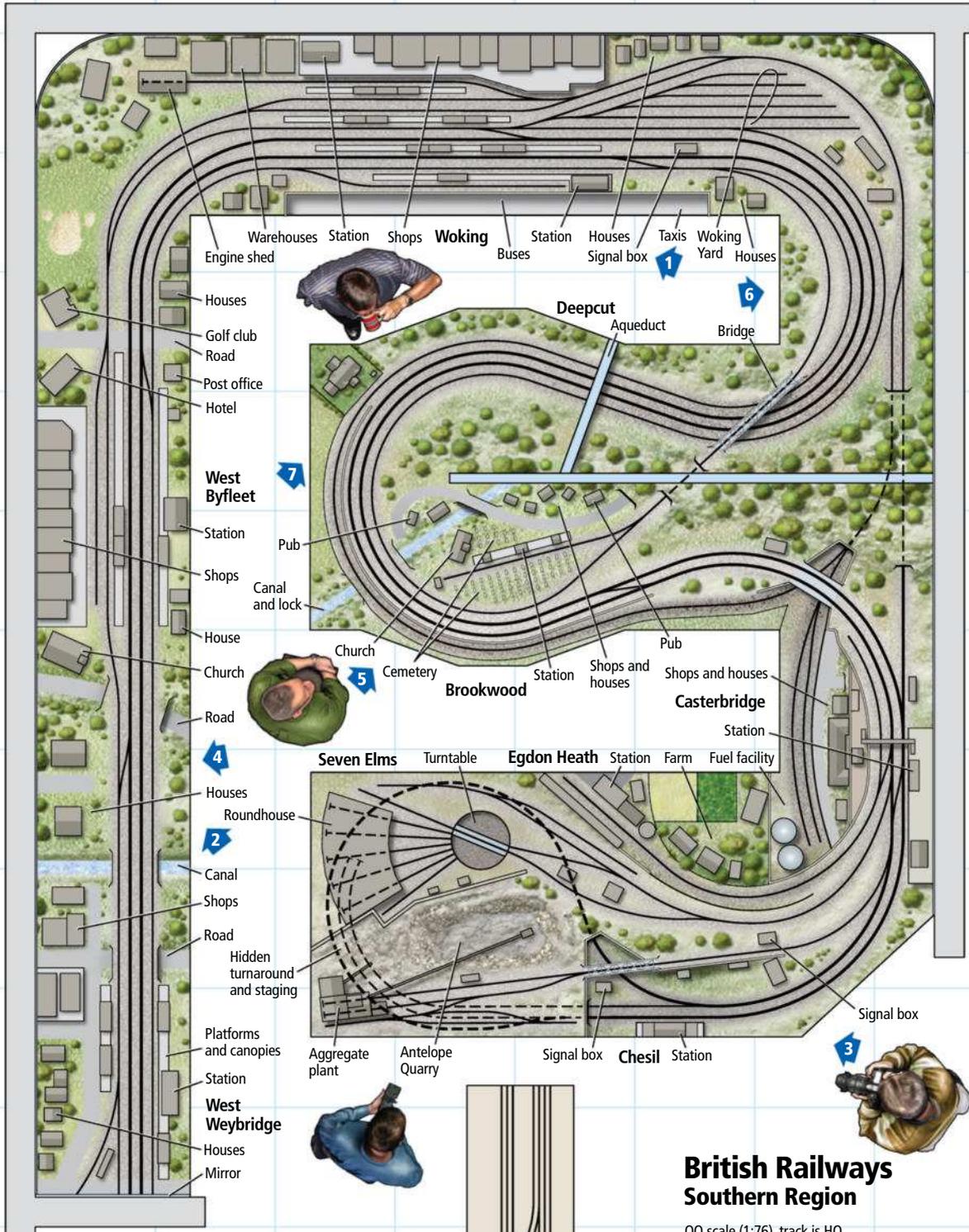
My major objectives with my model railroad were to make it as attractive as possible and to capture the English countryside of the late 1950s. I wanted to introduce as much as possible of the England I recall – lush green landscape, quaint quiet villages, beautiful trees, canals, churches, pubs, carefully tended gardens, and rural railroad stations. Hornby's Skaledale Collection of hand-painted molded polyresin replicas in OO scale helped fulfill this goal.

The layout required a number of bridges. The majority of bridges in southern England are brick structures for both roads and canals over and under the railroad. I scratchbuilt most of my bridges with 3/4" plywood covered with OO scale styrene brick-type material from Wills, a U.K. line sold by Peco.

While planning the layout, I studied a large-scale Ordnance Survey map of the

U.S.-U.K. terminology

U.S. term	U.K. term
Bad Order	Cripple
Barn	Shed
Caboose	Brake van or guards van
Conductor	Guard
Consist	Rake
Engineer	Driver
Freight car	Goods wagon
Grade crossing	Level crossing
Hostler	Shunter
Meet	Pass
Siding	Lay-by
Stack	Chimney
Superelevation	Cant
Switch or Turnout	Points
Switcher	Shunter
Tie	Sleeper
Tower	Signal box
Truck	Bogie
Wye	Triangle

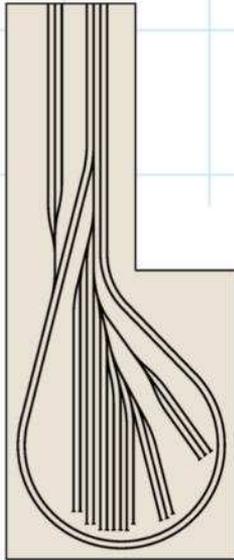


British Railways Southern Region

OO scale (1:76), track is HO
 Room size: 15'-0" x 19'-6"
 Scale of plan: 3/8" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Rick Johnson
 + Find more plans online in the
 ModelRailroader.com Track Plan Database.

Waterloo staging area

Scale: 3/16" = 1'-0"



modeled area. [British Ordnance Survey maps are comparable to United States Geological Survey maps. – Ed.] I noted that a canal was shown going over the main railroad, which I thought was an error on the map.

Soon after seeing this, my wife and I were in England and found this location. We walked along the canal path and came to the point where it traversed the four-track main line. We could hardly see the railroad from the canal, and train passengers could never guess the bridge above held a canal, not a road. I took a number of pictures in order to make the most accurate model, shown in photo 7.

West Weybridge station was another scratchbuilding project. I made plans and sections of the station from old pictures and from photographs taken on a visit. I built a styrene core, then covered it with brick-pattern paper.

Another interesting feature of the layout is the London Necropolis in Brookwood. By 1850, most cemeteries in London were full and additional burials were prohibited. A company purchased land near Brookwood, west of Woking, for a large cemetery, laid a spur to the site, and built a station and church. Special trains operated out of Waterloo Station in London to bring the deceased and family members to Brookwood. Although this system was abandoned during the 1940s, I included it on my layout.

As I was in the quarry business during the latter part of my career, I included a quarry in the layout as well as a crushed stone plant. The aggregate

plant is a Walthers kit that's been weathered by the color of the prevailing rock dust. Quarry products are shipped by truck and rail ballast by rail.

Scenery

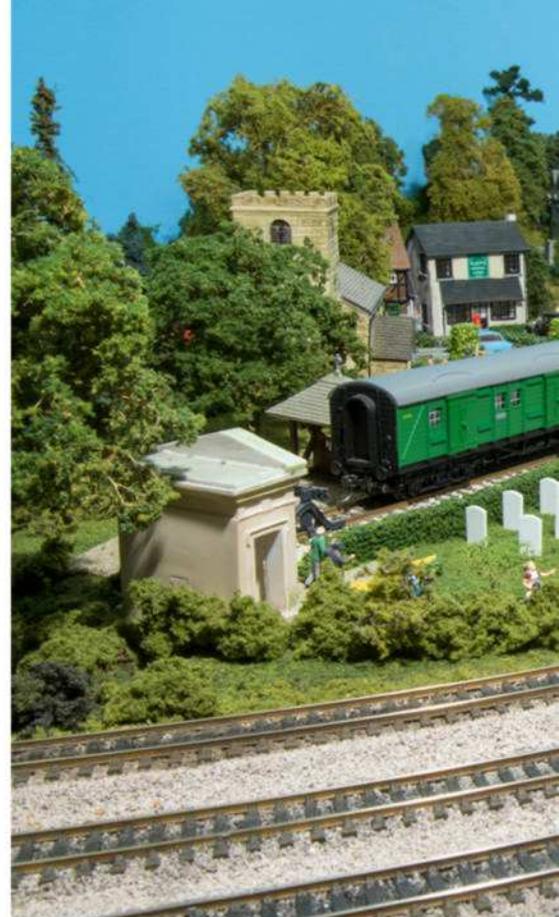
I ballasted the track before starting any scenery. I used the conventional methods described in all how-to publications, with a couple of exceptions.

I brushed the sides of the roadbed with full-strength white glue and then sprinkled the ballast on the glue. I initially used conventional sprayers to cover the glued track with the soap/water mixture, but I found that the ballast was often disturbed by the spraying action. I found an aerosol spraying system in The Home Depot called Preval that made a fine spray of soap/water mixture that didn't disturb the ballast.

I then painted the center of the track to simulate oil and other material on the track. I weathered the freight and commuter tracks more than the high-speed passenger tracks because I recall those tracks were generally in better condition.

Scenery profiles were cut with a jigsaw from pieces of 3/4" plywood and spaced about 4" apart. The forms were covered with aluminum screen wire. My wife, Gill, placed plaster cloth on the screen, then covered it with Hydrocal.

She colored the plaster with Woodland Scenics paints. When the paint was dry, she covered the area with a 50/50 mixture of white glue, then sprinkled the glue with various textures



5 A funeral train arrives at the small Brookwood Necropolis station and chapel. The locomotive is West Country class light Pacific no. 34041 *Wilton*. A Q-class 0-6-0, no. 33006, pulls a general freight train on the main line.

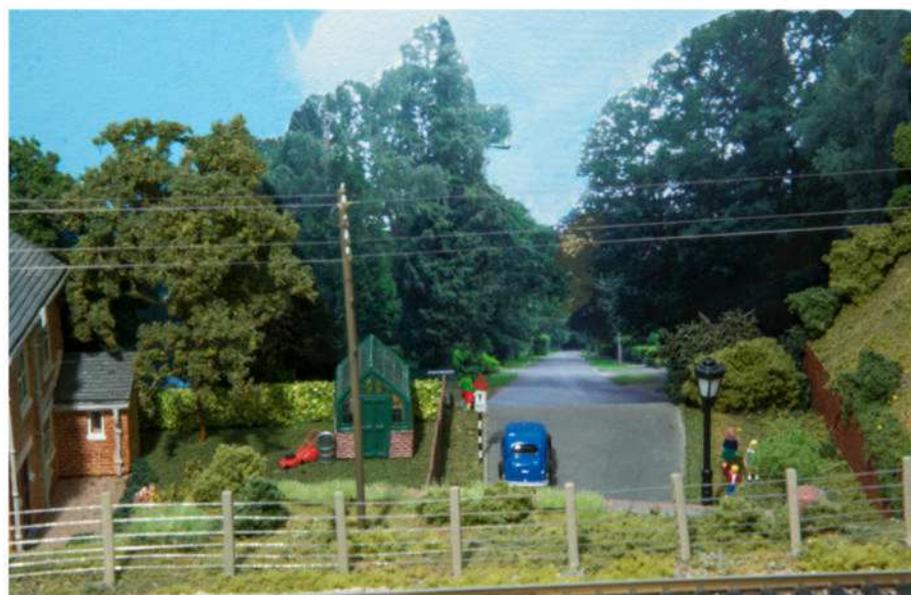
and colors of Woodland Scenics and Scenic Express materials.

Gill took meticulous care for detail – with individual highly detailed flower gardens, a vegetable allotment, and a par-3 golf hole. She made the majority of the trees on the layout using soft metal armatures, building the trees branch-by-branch with individual pieces of Scenic Express SuperTrees.

I made rock castings from commercially available molds and glued the castings onto the plywood profiles with Liquid Nails. Gill then painted the castings. I used Woodlands Scenics Realistic Water for the canals on the layout, then Gill planted reeds and other long grasses along the sides of the canals.

Rolling stock

The United Kingdom's Southern Ry., which became British Railways Southern Region, designed and manufactured its own locomotives until 1948, when Britain nationalized its railroads. My favorite locomotive is the Merchant Navy class 4-6-2 Pacific, designed by Southern Ry. chief mechanical engineer



4 Chris and Gill took photographs on a trip to England of roads and canals for use on the layout. The photos were cut and glued to the appropriate place on the backdrop. Streets and curbs were painted and tree or foliage material was glued to the backdrop on and around the photo to provide this transition.



What is OO scale?

O scale was the predominant scale for model railroaders in the first part of the 20th century, both in the United States and Europe.

There were considerable efforts in the early 1920s both in England and Germany to develop a smaller scale – commonly termed “The Table Railway.” Initial efforts were directed at a scale that would be half of O – or HO scale (1:87, or 3.5mm to the foot).

However, because U.K. locomotives were generally smaller than prototypes in the United States and Europe, suitable size electric motors were unavailable. Increasing the scale slightly would accommodate the smallest efficient motors in production at that time.

This scale was 4mm to the foot, or 1:76 scale. The track gauge remained 16.5 mm – the same as HO. Therefore, OO scale describes models with a scale of 4mm to the foot running on HO scale track, which corresponds to a track gauge of 4'-17/8".

Lionel introduced a range of OO scale models to the United States in 1938, but discontinued the line in 1942. Also in 1938, the Meccano Co. launched a new line of OO models under the trade name of Hornby Dublo – a name in the United Kingdom synonymous with model trains, similar to Lionel in the United States. – *Chris White*

gave me specific drawings and directions on how to convert the couplers.

Finishing touches

Gill and I wanted the layout to be highly detailed with as many “finishing touches” as possible. Besides multiple British automobiles, we also included a major bus terminal at Woking Station, where local bus services brought passengers to the station. These buses also brought Gill and me to and from school.

Figures on the layout are tending their beloved gardens, and others are at play or at rest. Gill has made many little scenes, a wedding at West Byfleet church being the most noticeable.

We chose wood bead board for the fascia and painted it Southern Region

6 Chris took a series of photos of the English countryside from a high point in Surrey. He gave the pictures to a sign maker, who turned them into a custom backdrop 8" high and 6 feet long, which Chris glued to the previously painted Upsun board backdrop on the wall adjacent to Woking Station.

Oliver Bullied. They are the predominant steam locomotive on my layout.

Beginning in 1956, British Railways rebuilt the Merchant Navy class as part of a standardization process for locomotives for all regions in the U.K. Steam locomotives operated on the Southern Region until 1966. Electric multiple units (EMUs) were very common, especially closer to London, where they provided for most of the commuter passengers.

OO scale model steam locomotives, diesel switchers (or “shunters”), passenger coaches, EMUs, and freight cars (“goods wagons”) are available from two major manufacturers in the U.K. – Hornby and

Bachmann. I have a variety of steam locomotives for passenger service and freight as well as three EMUs.

All my rolling stock is ready-to-run and imported from the U.K. One major disadvantage of this equipment is the coupling system, which isn't conducive to operations. I removed these couplers and replaced them with Kadee parts. For recently made stock, Kadee NEM series couplers make this relatively easy.

For older stock, the cars have to be modified in some way to mount the Kadees at the correct height. The Hornby Pullman passenger coaches were the most challenging. A specialist at Kadee



7 A coal train behind 9F class locomotive no. 92116 rounds the curve after passing under the Deepcut canal aqueduct. Woking Station, with its line of buses, is in the background.

green. I had station name signs made in the Southern Region format and glued these on the fascia. I also ordered small station signs that I placed at all stations.

Gill cut and sewed a green cloth curtain that goes from the fascia to the floor. It's attached to the fascia with hook-and-loop fasteners.

Operations

When I first planned my layout I'd heard of operations and operating groups, but thought that was for larger, multilevel layouts. My aisles were quite narrow and I had minimal provision for freight car storage.

When my layout was almost complete, a good friend, John Travis, suggested that with minor changes I could have workable operating sessions.

Freight trains on the prototype were infrequent and mostly traveled at night. There are more freight trains on my layout than would have been prototypical to add diversity to rolling stock and create more interesting operations.

Because of the aisle size I'm limited to four operators and a dispatcher. We have 10 members in our operating group, so I operate in two 90-minute shifts to let everyone participate.

Acknowledgments

I wish to thank the members of the Model Railroad Skills Institute seminar, who did an outstanding job of introducing me to the hobby.

I also wish to acknowledge the late Bob McIntyre. I met Bob very soon after I took up the hobby, and he encouraged and assisted me during the beginning of the process. He also invited me into the operating group of which he was the founder, The Chattahoochee Express.

Lastly, and certainly not least, I must thank the members of The Chattahoochee Express, who have been great friends and the best teachers and coaches in my development as a modeler: George Bloodworth, Charlie Crawford, Mike Deaton, Brian Glock, Gary Jarabek, Ovidiu Trifanescu, Bill Parks, Joe Sullivan, and Bob Young.

The future

My British Railways layout is essentially complete, but I'm

continuously adding and improving minor aspects.

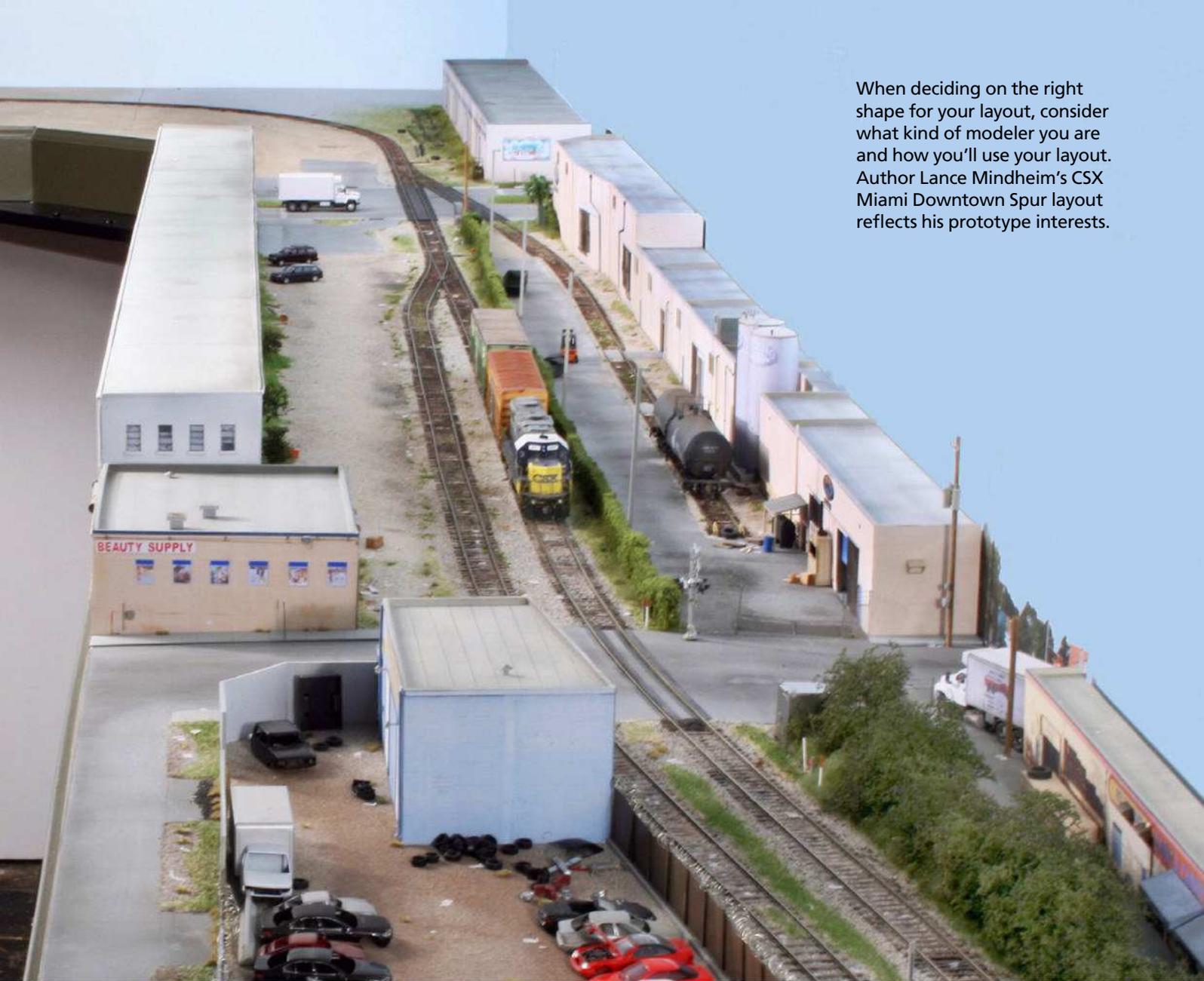
My new project is a two-level Union Pacific layout set in western Wyoming, "Yellowstone North." This layout has been specifically designed with challenging and interesting operations as the major objective. It will be different from the British Railways layout, but whenever I get nostalgic I'll be able to run my Merchant Navy through the green English countryside on my BR layout. **MR**



Meet Chris White

Chris was born in London and grew up in a small village in southern England. His career as a mining engineer eventually brought him to the Atlanta area, where he retired. Chris and his wife, Gill, have three children, nine grandchildren, and four great-grandchildren.





When deciding on the right shape for your layout, consider what kind of modeler you are and how you'll use your layout. Author Lance Mindheim's CSX Miami Downtown Spur layout reflects his prototype interests.

PICK THE RIGHT LAYOUT SHAPE

Room shape, doors and windows, and operational goals influence this decision

By Lance Mindheim
Photos by the author

So, you've finally scored your layout room and are champing at the bit to get started. Out comes the graph paper and a rule, and you start the track plan sketches. It's understandable to want to jump right in, but if you don't take time to look at the big-picture issues first, you risk building an unsatisfying layout.

Why? A successful model railroad – that is, successful at meeting the owner's desired level of fun – is the result of two

steps that must be performed in the right order. Those two steps are planning and design, and no, they don't mean the same thing.

First must come the planning. This step, which deals with addressing our true interests and the realities of our lifestyle, is often the more difficult because of its subjective nature and need for self-awareness. If you skip or give short shrift to this step, you run the risk of correctly



Rooms with numerous obstructions along the walls, as in this layout under construction, favor the island form of benchwork. Separating the layout down the middle with a backdrop can maximize the mainline run.

designing the wrong layout – one that may be technically perfect, but doesn't take into account your lifestyle, skill level, and true interests.

Selecting the best-fitting benchwork footprint and track configuration for your model railroad is one of the most important decisions you'll ever make. You have to work with the space you have, so the design process generally involves deciding on the benchwork footprint first, and only then finding the best way to thread your main line through it.

Every option has its pros and cons. The key is to decide which factors are most important to you so you can make the best choices for your situation.

Let's compare the three most common basic benchwork shapes – island, around-the-walls with return loops in the corners, and around-the-walls with a center, serpentine peninsula.

First, some questions

The first step in choosing the best design for your situation is knowing which questions to ask yourself.

One of the most important is what kind of operator you are. Are you a prototype modeler; a casual, just-for-fun operator; or a railfan who just likes to watch the trains go around? There's no

“right” answer; you just need to be honest with yourself.

This answer will influence your decision on the layout's total run length. How important is it to you to pack the longest main line possible in your space? If you're a die-hard timetable-and-train-order operator, the length of your main line will likely be very important to you, and you might be willing to live with a lot of compromises to maximize it. At the other extreme, if you have school-aged kids at home, have limited time and money for the hobby, and just like to see trains running through interesting scenery, a smaller layout with a shorter main line might be more practical.

How important is realism to you? Do you want to model scenes that match a particular area very closely? Or would you prefer to design your own reality, with numerous trestles, bridges, and tracks crossing over one another at different elevations?

How comfortable are you with lift-out bridges or duckunders? These expedients will often allow you to create the most efficient use of your space, but if you're at a point where you don't want to be doing much stooping and bending, you may want to forgo them. Liftouts offer similar benefits, but keeping the tracks aligned and the power reliably connected can be complicated. Can you live with that?

Depending on your scale and minimum radius requirements, turnback loops in corners can produce untenable reach-in distances. Are there major access problems in the corners of your train room?

How many times does the track pass through each scene? Passing through a scene only once is the most realistic, but is that something you truly care about?

How many linear stretches of mainline run does the design offer? Prototype railroads are linear, and modeling them requires lots of straight runs. If your layout footprint requires numerous curves, that could make re-creating a prototype scene more difficult.

Do you need staging yards, particularly punch-throughs to adjacent rooms?

Does the plan have a lot of hidden track? Though this option may be easy to rationalize on paper, you'll almost certainly regret it later.

Does your room have numerous obstructions along the walls, such as doors, windows, and, in basements, utilities like water heaters and furnaces? If so, this could rule out benchwork plans that follow the walls and force you to the island format.

Is having a continuous run important to you, or would you be happier with a point-to-point design?

Can the layout be bolted to the wall, or is your living situation such that it must be freestanding?

Three configurations

Let's take a look at three common track and benchwork configurations and compare their respective pros and cons. As an example to illustrate our points, we'll assume an HO scale layout in an 18 x 20-foot room with access via a door (as opposed to stairs descending into the middle of the room).

The minimum curve radius is 30", allowing the use of passenger equipment. Minimum aisle widths are 30", with the exception of a few pinch points. I'm assuming a continuous run is required.

As you look at the options, pay particular attention to the amount of straight, linear runs. Actual railroads tend to run long and straight, and model railroad designs that incorporate similar straight sections make it easier to accommodate yards and industrial areas.

It's not so much the total length of straight, linear track, but the quality of those runs. By that, I mean, are the straight runs fairly long? A plan with 20 feet of linear runs made up of four



Prototype modelers are often willing to live with the inconvenience of liftout bridges or duckunders in order to obtain the long linear runs they need to re-create specific prototype scenes.

5-foot-long sections isn't going to be as useful as one with two 10-foot-long sections. Another consideration is that straight sections located near the front of the layout are more useful than ones located tight against the backdrop.

The island

The island style deserves a hard look for the casual train runner because of its great ergonomics. You have easy reach-ins all around, can follow your train without being cut off, and have no duckunders or liftouts to deal with. Splitting the layout with a backdrop down the middle prevents you from seeing the entire railroad from one location, creating the illusion of a larger layout.

Specifications:

- Run length: 72 feet
- Total linear run: 40 feet
- Longest linear run: 10 feet

Pros:

- The main line passes through each scene only once. This is important to prototype modelers.
 - No duckunders or liftouts.
 - Operators can easily see and reach trains at all times.
 - Layout isn't bolted to room walls.
 - The design doesn't have to work around wall obstructions, such as windows and doors.

Cons:

- Shortest mainline run length of all three options.
- Limited options for staging.

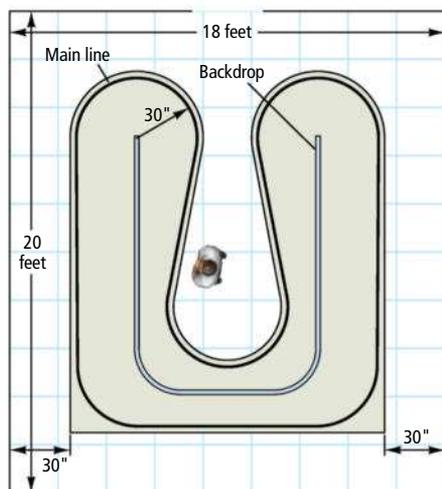
- Not as many long, straight runs as other designs, resulting in shorter yards.

In our example, I'm using the dimensions of half a typical basement. If you're lucky enough to have a much longer room, say 30 to 40 feet long, the length of straight runs in this configuration increases dramatically, improving its viability. In this case, the island style can become a nice option for prototype modelers to whom it's important that track pass through a scene only once.

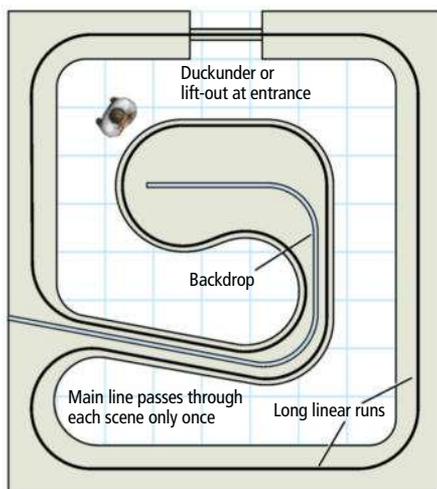
Once around, with peninsula

The around-the-walls layout with one center peninsula is the option of choice for many prototype modelers and prototype operators. It's the most space-

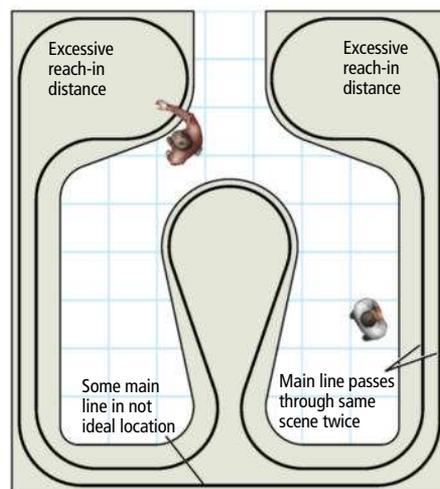
The island



Around the walls with peninsula



Twice-around with return loops





Prototype modelers feel it's important that a main line pass through a scene only once, as seen here. To have a continuous run may require a duckunder.

efficient design in terms of mainline run per square foot if you want your track to pass through a scene only one time. In most cases, this is my preferred option when designing a layout for a customer.

Note that this is the most efficient design if there's only one serpentine peninsula. Multiple peninsulas drastically reduce the length of much-needed straight runs.

Specifications:

- Run length: 115 feet
- Total linear run: 67 feet
- Longest linear run: 13 feet

Pros:

- Trains pass through each scene only once, better for realism.
- Can easily see, follow, and reach trains at all times.
- Provides the maximum run length per square foot.
- Lends itself to punching through a wall and putting staging in an adjacent room (if this is acceptable to other inhabitants of the house).
- Long/straight runs for longer yards and towns.

Cons:

- Requires a liftout or duckunder to cross the doorway. Although these are easy to build and use, they're a deal-breaker for some people.
- Though such layouts can be free-standing, they're more stable if the benchwork is bolted to the walls.
- Numerous windows and doors can be difficult to deal with.

Twice around via return loops

The around-the-walls configuration combined with return loops at each end offers a long run without duckunders. At

first glance, it appears to be a good way to go. If you dig in, however, you begin to notice its shortcomings, both visually and in terms of access. For these reasons, it's not my preferred design.

The specs can be misleading, because although the mainline run is long, much of it is in less than ideal locations. At the minimum curve requirements I've specified, the reach-in distances behind the curves are very long. This can make access difficult during both construction and operation. It's less of an issue in N scale, though.

The extra mainline length isn't that useful if you want to hide the fact that trains pass through the same scene more than once. As I've drawn it, the main line runs through each scene twice. For the casual train runner, having the main line pass through a scene multiple times isn't just acceptable, it may actually be desirable. But it's a deal-breaker for prototype modelers.

Though the design does have a long stretch of linear track (the return track connecting the loops), its location tucked in the back isn't very useful.

Specifications:

- Run length: 147 feet
- Total linear run: 81 feet
- Longest linear run: 12 feet

Pros:

- Long run length.
- Doesn't require a liftout or duckunder for a continuous run.
- Opportunity for trains to cross over one another at different elevations, if you like bridges, trestles, and tunnels.

Cons:

- Long reach in distances at corners with return loops. Though this is often overlooked or rationalized away during

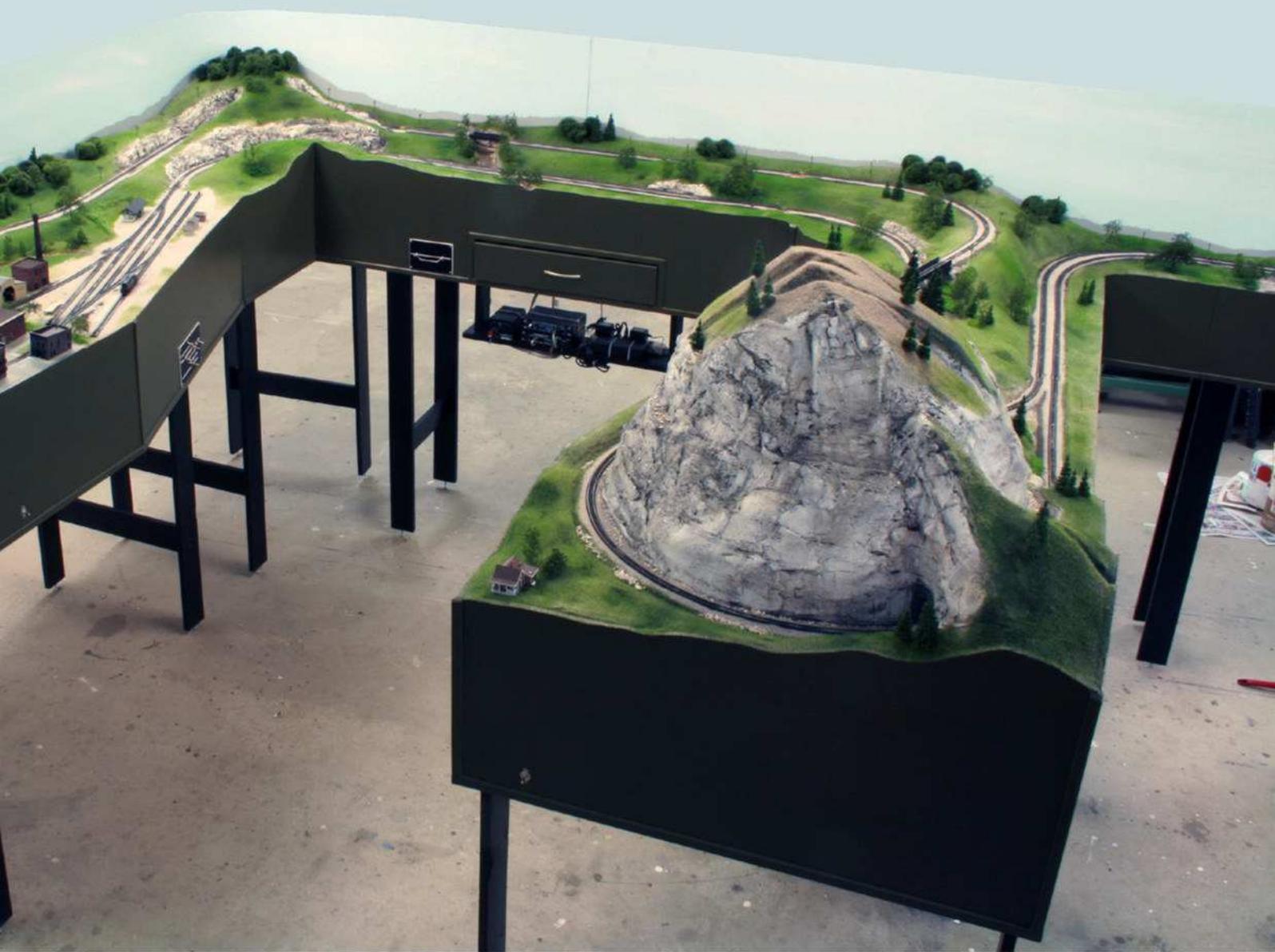


For the casual train runner who enjoys seeing trains pass through a scene multiple times and doesn't want a duckunder, the around-the-walls configuration (shown here before installation in the room) makes sense.

the design process, this is a major negative. (It's less of a problem in N scale.)

- Much of the straight track is in less than ideal locations.
- Not as many long, linear runs as other designs, resulting in shorter yards and towns.
- Trains pass through a scene more than once, a deal-breaker for modelers who value prototypical realism.
- Necessity for trains to cross over one another at different elevations, if you hate bridges, trestles, and tunnels.

If you want to disguise the fact that a train passes through a scene twice, you



can do so by hiding the track in tunnels or behind view blocks, but this offsets the advantage of the longer mainline run. Also, there's no good way to address the problem of long reach-in distances in corners with return loops, at least not in HO scale or larger. You can hide the return loops, which will make the scene look better, but you'll still have the access and maintenance problems associated with hidden track.

Which is best for you?

For the just-for-fun operator who may have limited time to build and limited resources, a less ambitious layout may be the way to go. An island layout offers this modeler a continuous run, has no gate or duckunder, and no access issues. It works in a room with many wall

obstructions or where the benchwork can't be bolted to the wall.

The just-for-fun operator who wants to run long trains needs a layout that maximizes the length of the main line. If visual realism isn't that important, and he's willing to live with limited access in the corners, the best option is around-the-walls with turnback loops. This is a good choice for modelers who like the look of track passing over itself at different grades. As in the island layout, there's no duckunder or gate, making entry convenient. But much of the main line will be in less useful locations, especially if you want to disguise the fact that trains run through a scene more than once using tunnels or view blocks.

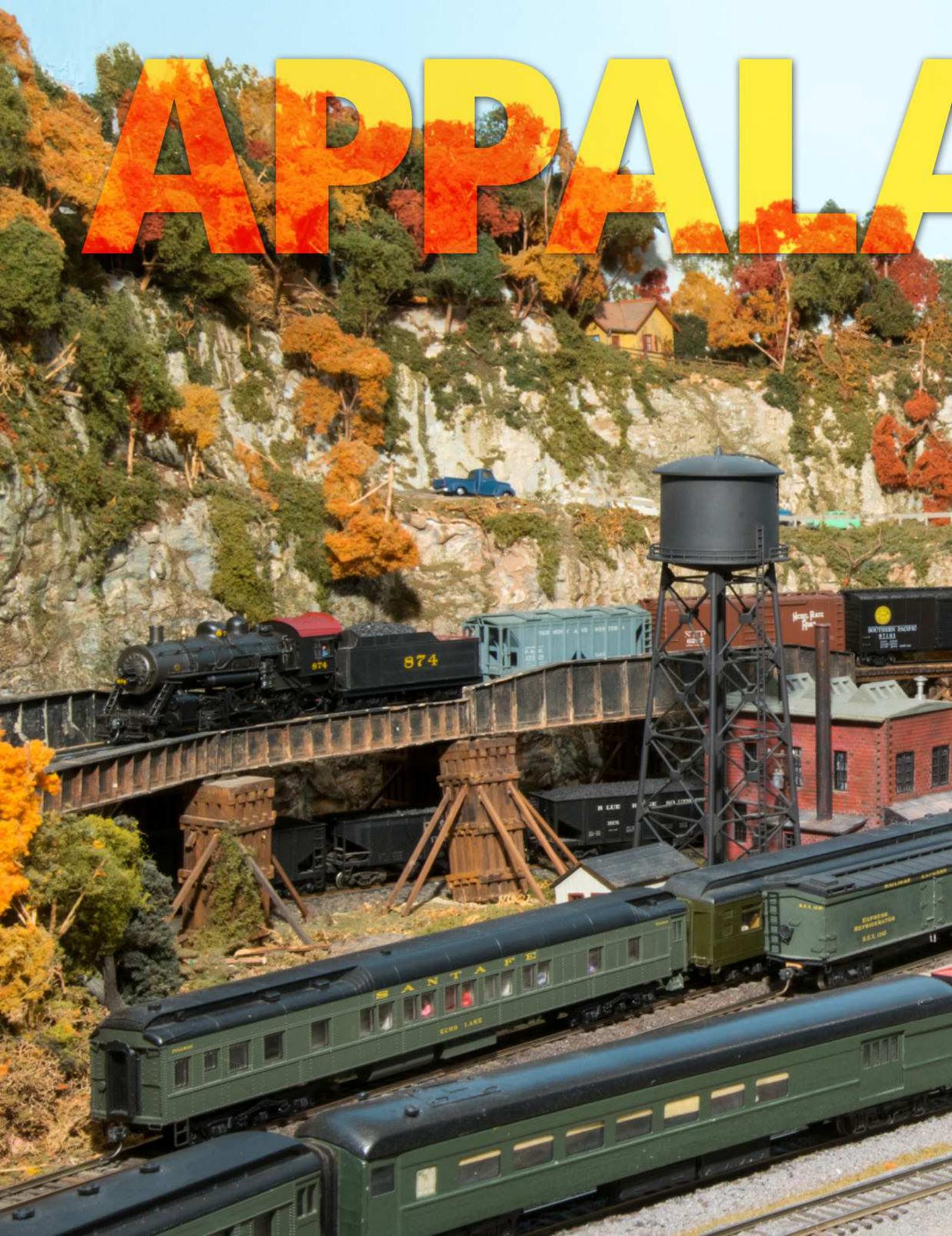
The most important issue for the prototype modeler is that trains don't unrealistically pass through the same scene

twice. This modeler also needs lots of linear runs, options for staging, and the longest visible run possible. His best option is around-the-walls with a single serpentine peninsula. A continuous run requires a liftout or duckunder, but this kind of modeler considers that an acceptable trade-off.

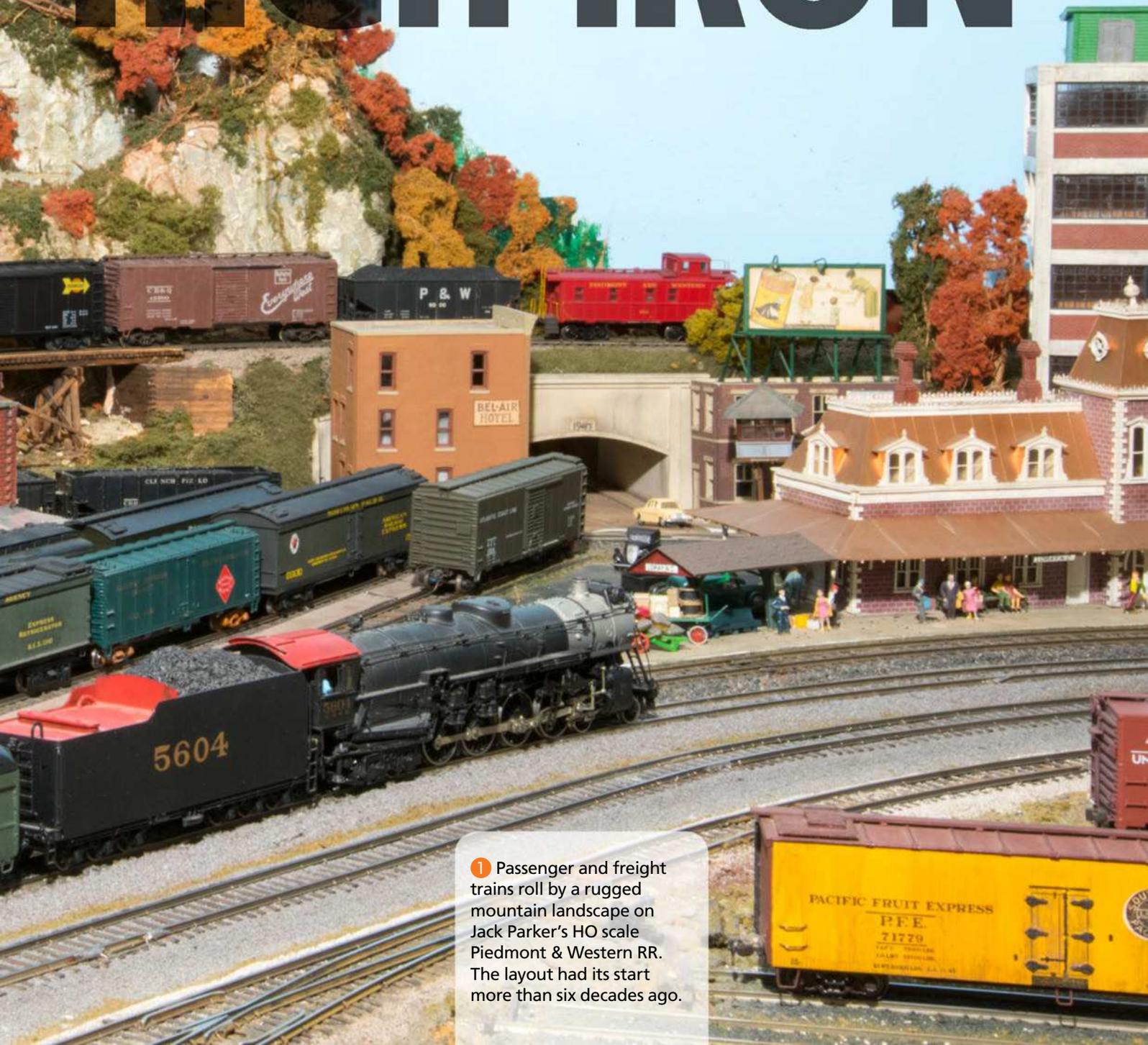
What aspects of modeling and operating are most important to you will determine which layout shape you should build. **MR**

Lance Mindheim is a frequent contributor to Model Railroader and its special issues. He's also the owner of The Shelf Layouts Company, Inc. (www.shelflayouts.com). Lance lives in Silver Spring, Md., and has one grown son, Zachary, who often accompanies him to model railroading events.

APPALALA



AACHIAN HIGH IRON



1 Passenger and freight trains roll by a rugged mountain landscape on Jack Parker's HO scale Piedmont & Western RR. The layout had its start more than six decades ago.

The HO scale Piedmont & Western fills two buildings with mountain scenery and operations-oriented model railroading

By Lou Sassi • Photos by the author

Jack Parker's love of trains began in the 1930s. Back then, he and his dad would drive the family car to a spot between Charlotte and Pineville, N.C., to wait for the daily passenger train from Augusta, Ga., to pass. Then they would chase the fast train to Charlotte Station, where it would soon depart for Washington, D.C.

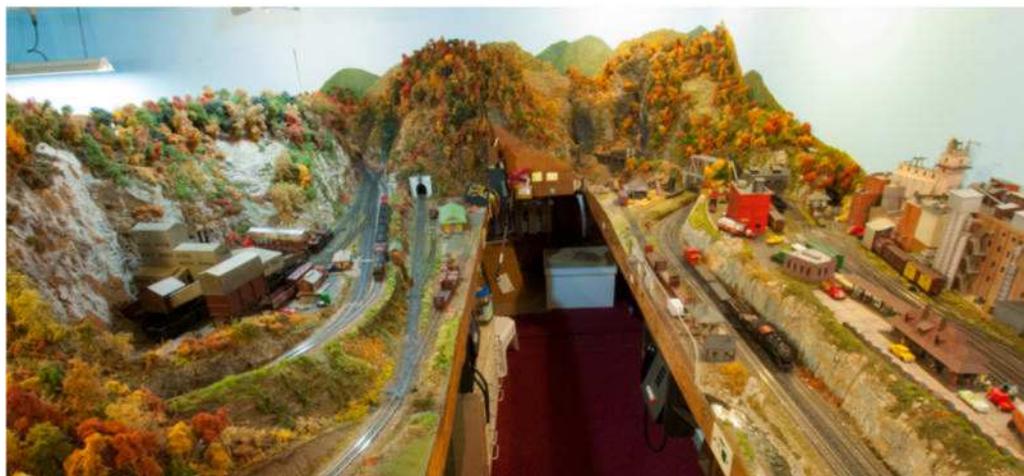
"My Dad loved to watch those beautiful steam engines at work and smell the smoke," Jack said. "He was sure that I should learn to love them, too."

At Christmas in 1940, Jack got his first taste of model railroading when he and his brother received Lionel O gauge trains. The boys lost interest by their teenage years, but Jack returned to the hobby as an adult after a request from his mother. "My mom asked me to build a 4 x 8 Lionel layout as a Christmas gift for her grandchildren," Jack said. That experience reignited his interest in model trains.

By 1954, Jack's focus had moved to scale model railroading. He traded in his Lionel trains for HO scale models and began building the first section of his Piedmont & Western RR. Sixty-four years later the layout spans two structures and features realistic operation and Digital Command Control.

Layout design

The Piedmont & Western is a freelanced design that's inspired by the



2 This photo shows Blue Ridge on the left and Linnville on the right in the original layout building. Construction on this part of the layout dates back to the 1950s.

Clinchfield RR. Jack's goal wasn't to model specific prototype scenes. "I wanted to capture the spirit of the Clinchfield as a north-south bridge route," Jack said, "I've always had a keen interest and admiration for that railroad."

The P&W main line runs north from Charlotte through the foothills and mountains of North Carolina, Tennessee, and Virginia to Huntington, W.Va. The time period is set in the early- to mid-1950s.

Switching operations were always a design priority, so there are more than 100 online customers. In addition to coal mining and processing, there is a variety of rail-served industries that includes lumber companies and farm

equipment dealers. There are several team tracks to handle less-than-carload (LCL) shipments.

Scenery also dictated the layout design. Jack wanted to model the tree-covered, mountainous landscape with exposed rock faces and dramatic cliffs that are a hallmark of the Clinchfield.

Building and expanding

The original portion of the layout is built in a 20 x 20-foot utility building on

The layout at a glance

Name: Piedmont & Western RR

Scale: HO (1:87.1)

Size: 20 x 20 feet plus 12 x 40 feet

Prototype: freelanced, inspired by the Clinchfield RR

Locale: North Carolina, Tennessee, Virginia, and West Virginia

Era: early to mid-1950s

Style: multilevel, walk-in

Mainline run: 600 feet

Minimum radius: 30"

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

Maximum grade: 2½ percent

Benchwork: open grid and L girder

Height: 40" to 52"

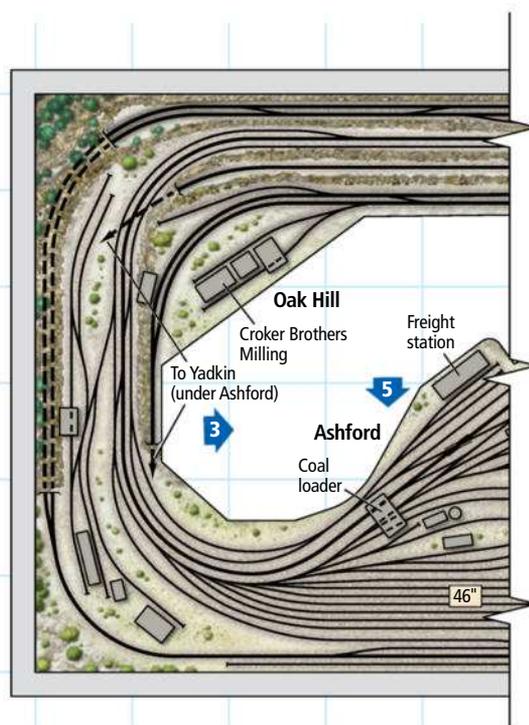
Roadbed: extruded-foam insulation board, Homasote, or cork over ¾" plywood

Track: code 83 and 100 flextrack and code 100 handlaid

Scenery: powdered texture paint or Hydrocal over screen wire or web of cardboard strips

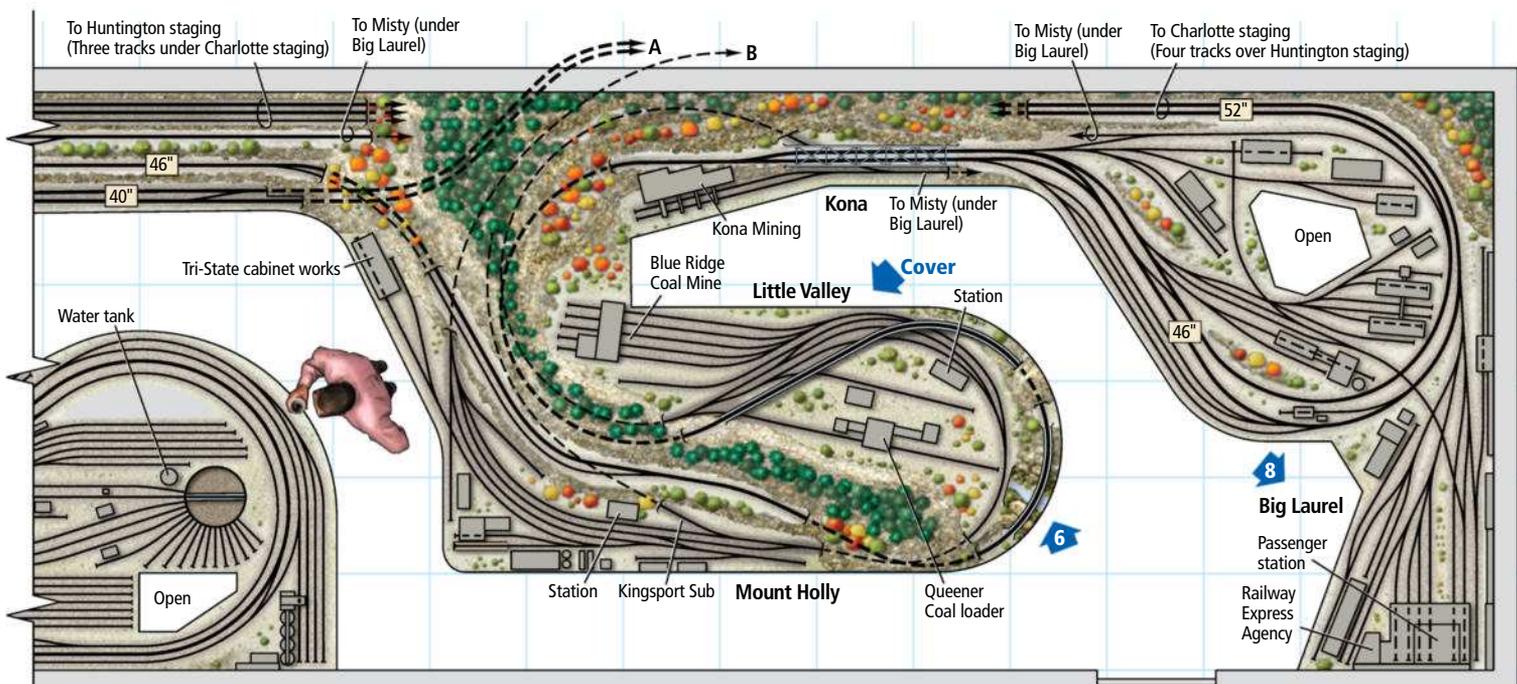
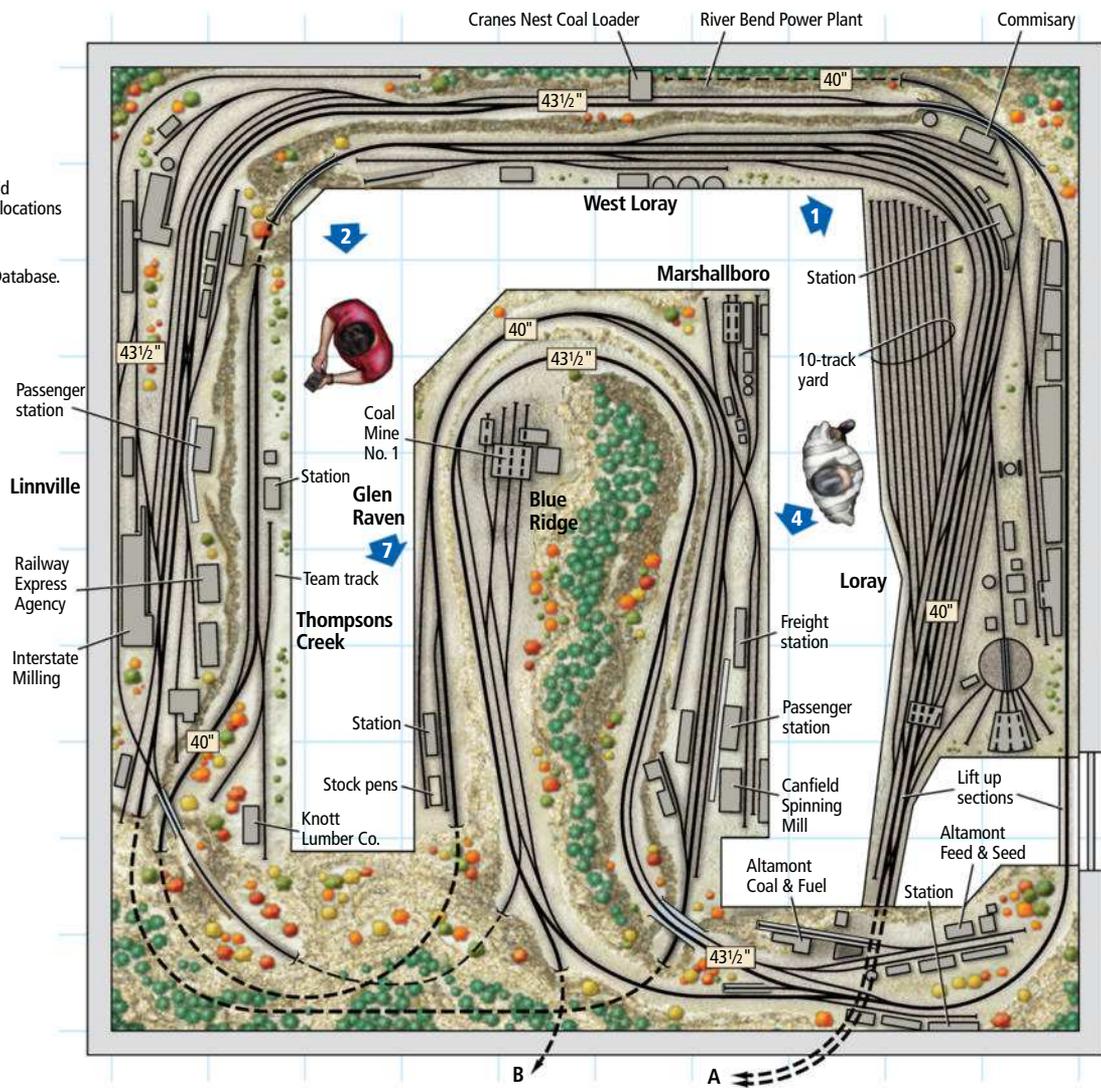
Backdrop: painted on walls

Control: Digitrax Digital Command Control



Piedmont & Western RR

HO scale (1:87.1)
 Size: 20 x 20 feet and 12 x 40 feet
 Scale of plan: 1/4" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Rick Johnson
 Find more plans online in the
 ModelRailroader.com Track Plan Database.





3 This photo shows the Ashford end of the layout that's housed in the trailer. The freight train on the lower left has exited the tunnel that runs to the other building.



4 At Marshallboro, no. 7158 holds the main with a fast freight in tow while no. 3805 takes the siding. The towns include kit-built and kitbashed structures.

the Parker family's property. This out-building was unfinished, so Jack installed ceiling tiles and fluorescent light fixtures. He also paneled the walls with Upson board, which he painted sky blue for the backdrop.

This two-level layout had a point-to-loop on the lower level for operation and a continuous-run loop on the upper level for running trains during open houses. Both levels had reversing sections.

In 1989 Jack learned of a local model railroader who was selling a 12 x 40-foot construction-site-office trailer that he'd converted into a train room. Although the layout was unfinished, Jack could see that the workmanship was good. He purchased the trailer and had it towed to his property.

By this time Jack also had a dedicated group of friends who helped him build and operate his railroad. Instead of butting the trailer against the original layout building, Jack and his crew placed the structures 5 feet apart. They then built tunnels between the two structures. [See "The Connector" on page 49. – Ed.]

After installing more light fixtures and adding an additional layer of 1/2" plywood to the flooring, Jack was ready to start working on the layout. In a relatively short time, he had more than doubled the size of his model railroad.

Benchwork and track

Jack's original layout was built on L-girder and open-grid benchwork. At



the time of its acquisition, the trailer also included L-girder benchwork, but had only a powered main line and a few turnouts.

Some additional benchwork was needed in the trailer to accommodate the new track plan. This included the area at Big Laurel to support the passenger terminal and the Charlotte staging yard on the upper level.

"There have been many changes to the track and benchwork over the years to accommodate design modifications and new additions," Jack said.

When he started laying track in the 1950s, Jack used code 100 brass flextrack on fiber ties. After laying and ballasting about 180 feet of track, he noticed that the rails had started kinking out of gauge. He thinks he may have applied too much white glue, causing the fiber ties to warp. He ripped out and replaced most of this track with handlaid code 100 nickel-silver rail spiked to wood ties and had no further problems.

Jack also handlaid additional track in the trailer. He found the process much easier this time since the contents of the trailer included a Kadee Spiker. No longer manufactured, this tool resembles a



staple gun and spikes both sides of the rail simultaneously.

The track is laid on strips of cork roadbed that Jack carefully cut from large sheets made for use as bulletin boards. He finds this material to be denser and better at holding track spikes than commercially available cork roadbed.

There are more than 200 turnouts on the railroad. Twin-coil switch machines, some of which have been in service for more than 60 years, control most mainline turnouts via fascia-mounted control panels.

All industrial and yard turnouts are manually controlled. Jack finds that during operating sessions, ground throws save a lot of time and are more efficient in locations that require a lot of switching. With ground throws, an operator doesn't have to go back and forth between the track and a control panel.

There are track occupancy signals for the hidden track in the connector. However, the rest of the P&W operates as a dark (unsignaled) railroad.

Appalachian scenery

About 75 percent of the layout scenery base is screen wire formed over wood framing. Initially Jack covered the screen with a batter mixed from powdered texture paint, as described by model railroading pioneer and author Frank Ellison in various articles. Jack later switched to Hydrocal lightweight plaster. For other parts of the original layout's scenery base, Jack used Hydrocal and rock castings over a web of cardboard strips.

As purchased, the trailer layout had most of the plaster scenery base installed by its previous owner, but there were no scenic details. Most of this topography was nearly vertical, which led Jack to cover the landscape with hundreds of Hydrocal rock castings.

Jack stained most of the landforms with earth-colored pigments. However, he used gray shades for the exposed rock faces. To model water, Jack used Enviro-Tex Lite two-part resin for lakes and gloss varnish for streams.

5 Ashford Yard is a busy place on the P&W. The yard's engine terminal includes a water tank and a large coaling dock.

For one of his favorite tree-modeling methods, Jack spreads Woodland Scenics poly fiber over an armature made from dried boxwood. Jack suggests pulling the poly fiber apart to make it appear more airy. He then covers the poly fiber with a blend of fine to medium ground foam. He also used Scenic Express SuperTrees and Woodland Scenics evergreen kits.

For open spaces, Jack applied a mix of colors and textures of ground foam. After finishing an area and letting it dry, Jack saved any excess scenery material. After mixing these sweepings with a pinch of Life-Like Earth, he applied this ground cover to forested areas before planting trees. He found that this "trash" mixture worked well for modeling dried leaves and other forest floor clutter.

Over the years, Jack's three children and several friends helped out with scenery. During that time, Jack recalled, one of the more mischievous members of the crew hid a few dinosaurs in the woods and challenged Jack to find them. Jack





6 A 2-8-2 leads a northbound freight over one of Little Valley's tall bridges. The freelanced layout's setting is inspired by the Clinchfield RR in the early 1950s.



7 A local freight passes by workers loading pulpwood flatcars on the team track in Glen Raven. The P&W features nearly 100 rail-served industries.

believes he found them all, but there could still be a tyrannosaurus or triceratops wandering around!

Rail-served industries

The structures on the layout were built using a variety of materials and techniques. Jack's favorite building material is styrene, with wood a close second. A little less than half the structures are kit-built, while others are kit-bashed. There are also more than a dozen scratchbuilt structures on the layout. One notable scratchbuilt industry is Interstate Milling in Linville. Although compressed to fit the layout space, the model consists of six structures. Its prototype is still in operation as an Archer Daniels Midland facility in Charlotte.

For the majority of his models, Jack adds what he calls pertinent detail. He's more interested in enhancing the overall finished scene. "I follow what's commonly called 'the 6-foot rule,'" Jack said. "If the results look good from 6 feet away, then I'm satisfied."

Since so much of the layout is mountainous, there are a variety of bridges along the P&W. The 6-foot stretch of track on the high line over Little Valley includes six bridges of three types: two truss deck, three plate-girder deck, and one through truss. Other parts of the



The connector

As shown in this photo above, the Piedmont & Western RR occupies two structures. The original layout was built in the storage building on the right. The more recent addition is in the trailer, shown on the left.

Referred to as "The Connector," enclosed tunnels span the 5 feet between the structures. Originally there was only one connection: A double-track main line ran from Loray through the connector into Ashford.

After 5 years, the P&W crew found that another connection was necessary. They added a new single-track main between Blue Ridge and Mount Holly. This new line greatly enhanced operation. – *Lou Sassi*

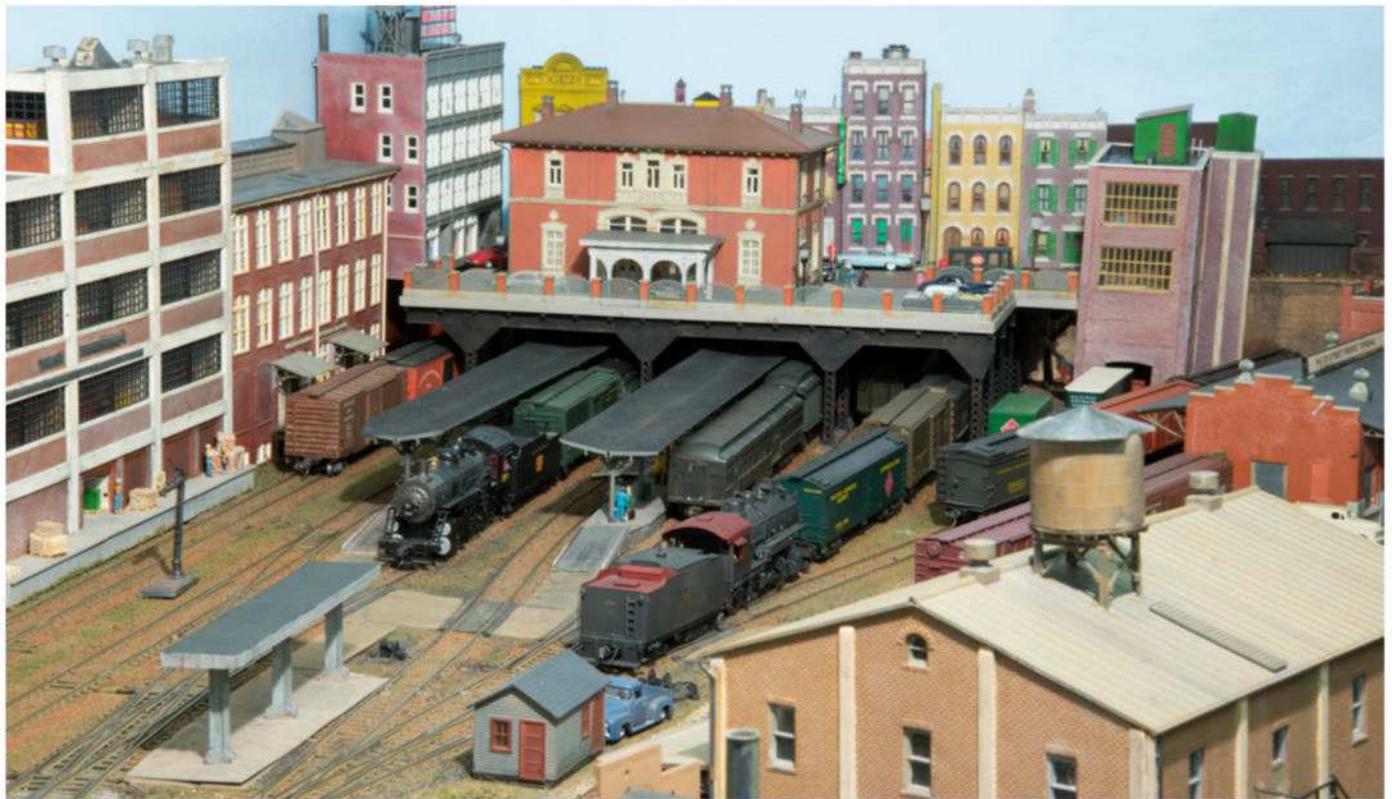
layout feature scratchbuilt wood trestles, including one that's 4 feet long.

The P&W roster

The motive power on the P&W represents the steam-to-diesel transition era. The models are from a variety of

manufacturers, including several brass imports from the 1960s. Jack painted the steam locomotive cab roofs and tender decks oxide red. Most steam and diesel locomotives and cabooses are lettered for the P&W.

All the locomotives on the layout have been converted to Digital



8 Switcher no. 261 handles express cars, as no. 361 waits to depart with a local. Jack scratchbuilt the supporting structure under the passenger station.

Command Control (DCC), including several with sound decoders.

Jack's freight car fleet numbers more than 500. About 200 of the cars are lettered for the P&W. The rest are lettered for railroads appropriate for the layout's 1950s time period.

Jack weathered all locomotives and rolling stock with powdered pigments. Some cars get a simple dusting, while on others he used a wet brush to apply heavier weathering.

Operations

Originally the layout used a direct-current control system. Using rotary block control, crews could run three mainline trains, and the four yards could handle five switchers within yard limits.

In 1991, with a lot of help from his operating crew, Jack converted the layout to DCC using a Digitrax system. Now as many as 10 to 15 throttles can be active, including a minimum of four to five yard jobs, two through freights, and two to three locals. "That many active crews can put a strain on the dispatcher," Jack said, "But he usually survives with a bit of hair left!"

The dispatcher controls traffic via a track diagram displayed horizontally

across three computer monitors. He communicates with crews via a U.S. Navy surplus telephone system. Each station and yard has a telephone handset.

A typical day of operation includes north- and southbound through freights, unit coal trains, mine runs, and local way freights. There are also north- and southbound first-class passenger trains. Local passenger trains run between Ashford and Big Laurel. Passenger runs adhere to a timetable governed by a 4:1 fast clock, while freight trains are classified as extras.

A car-card-and-waybill system determines freight movement. Each car has its own 3 x 5 card with shipping information printed on the front and maintenance history on the back. Each card also has about a dozen destinations printed on the front, with the next one indicated by a paper clip placed over the name. There are setout, hold, and pickup car card boxes on the fascia at each town.

Operating sessions usually take place on the first Friday and Saturday nights of the month. Each session lasts 3 hours, representing 12 hours on the 4:1 fast clock. If the group doesn't have enough operators for all the jobs, they'll ignore the fast clock and simply run trains.

Lessons learned

After six decades of building and operating the P&W, Jack has a few things

he would've done differently. He would've had more separation between the layout levels for easier access. He'd also increase passing siding length and the distance between station stops. A better labeling system for the layout wiring would have made the conversion to DCC easier.

Overall, the Piedmont & Western represents the fulfillment of Jack Parker's model railroading goals and dreams. He and his crew still enjoy re-creating a hard-working bridge line through a rugged landscape. For Jack, the best part of model railroading is sharing the hobby with others. "Without this fellowship of enjoying the railroad together," Jack asked, "why bother?" **MR**

Meet Jack Parker

Although born in Tampa, Fla., Jack Parker was raised in Charlotte, N.C., where he lives today.

Before his retirement, Jack worked for 30 years as a shop foreman and draftsman for a concrete reinforcing and steel fabricator. He and his wife were married for nearly 60 years and raised three children before she passed away.



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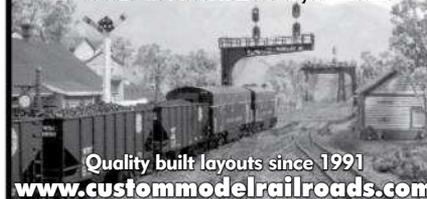
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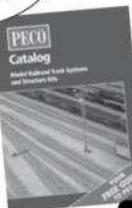
#7 Curved Turnout

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SL-8377 Right Hand (Insulfrog)
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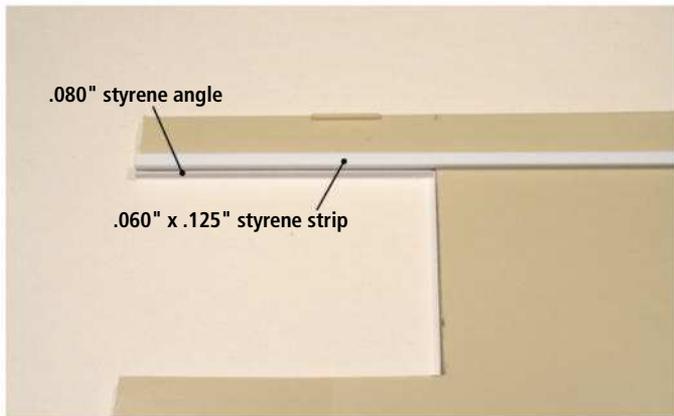


A Georgia Northeastern crew waits while the overhead door is raised at Georgia Metal Coaters on Thomas Klimoski's HO scale model railroad. He controls the door with a manually operated gear mechanism fashioned from Lego parts.

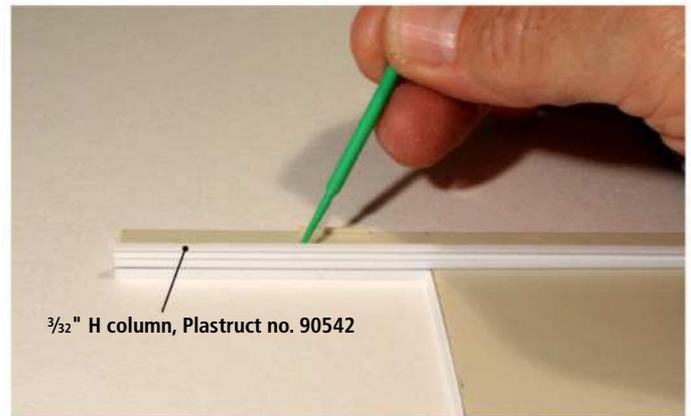
Build a WORKING OVERHEAD DOOR

This manually controlled gear mechanism uses Lego parts

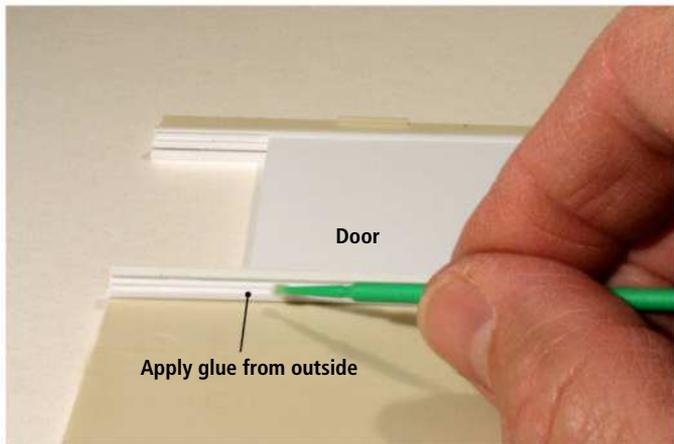
By Thomas Klimoski
Photos by the author



1 Cutting and framing. After Tom cut the door opening, he used .080" angle to trim the exterior. He added .060" x .125" styrene strip to the interior to prevent the wall from bowing.



2 Keeping on track. Tom glued $\frac{3}{32}$ " H column to the .060" x .125" styrene strip. The H column serves as the track for the door.



3 Second track. Tom placed the overhead door in position and then added a second H column. He used a Microbrush to apply the glue from the outside.



4 Getting Technic-al. The Lego Technic gear reducer used to operate the door allows for flexibility in installation. The 1:24 gear ratio raises and lowers the door in a smooth motion.

Adding animation to my HO scale Georgia Northeastern is one of the facets of model railroading I most enjoy. As I was searching for a simple, manual solution to control an overhead door at a rail-served industry, I discovered a gear drive mechanism that's easily adaptable to a variety of situations. Lego's Technic line includes a gear reducer that has a worm gear on a drive shaft that operates a round gear that can be used to control many other devices. The gear reducer provided the drive mechanism that I needed. All I had to do was figure out a way to install it in the structure and connect it to the door.

Designing the structure

I kitbashed Georgia Metal Coaters from the Walther's Superior Paper Kraft Mill kit. The prototype structure I'm modeling is a large industrial complex that receives coil cars inside the facility through an overhead door. To determine

the height of the overhead door, I measured the tallest piece of rolling stock I owned and added a few scale feet for extra clearance. This measurement was rounded off to $2\frac{1}{2}$ ".

I needed the structure to be tall enough that the door could slide up completely. In addition, I needed extra height above the door for the gear to engage the track on the back of the door. To accomplish this, the model structure had to be at least $2\frac{1}{2}$ times the height of the door.

Cutting and framing the doorway

I located the center of the door opening on the structure to align with the center of the siding that serves the industry. I cut the opening $2\frac{1}{16}$ " wide by $2\frac{1}{2}$ " high. Next, I trimmed the exterior of the opening with .080" angle. The finished doorway opening is a scale 14 feet wide by 18 feet tall.

Then I attached .060" x .125" strip styrene to the inside of the opening. This

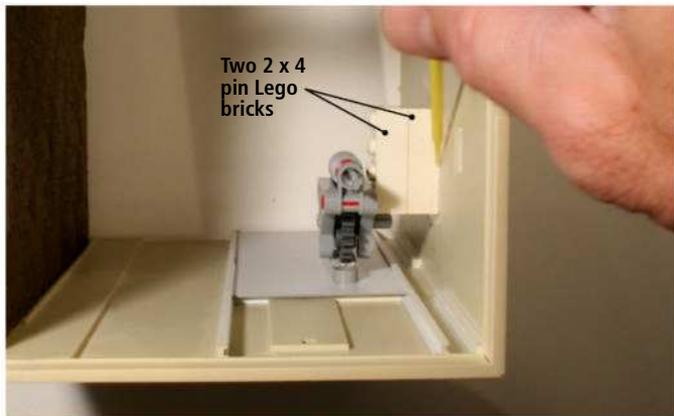
adds some structural rigidity and thickness to the wall opening, which is visible when the door is open **1**.

Making the door tracks

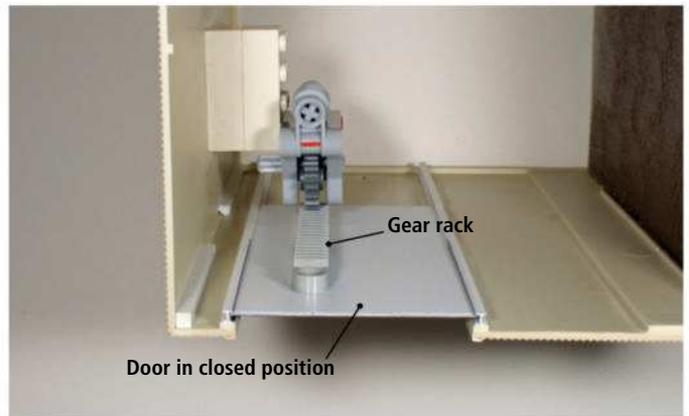
I used Plastruct $\frac{3}{32}$ " H column to make the track that the overhead door would slide in. The web in the H column perfectly accommodates the thickness of the door and allows it to slide up and down without binding. I glued one side of the H column to the opening and allowed it to dry **2**.

Next, I cut an overhead door using Evergreen metal siding (no. 4526). This siding captures the feel of modern overhead doors. I cut the door $2\frac{1}{16}$ " wide by $4\frac{5}{16}$ " high, with the corrugations oriented horizontally. The extra height of the door provides room to attach the gear rack and mount the operating mechanism above the top of the door opening.

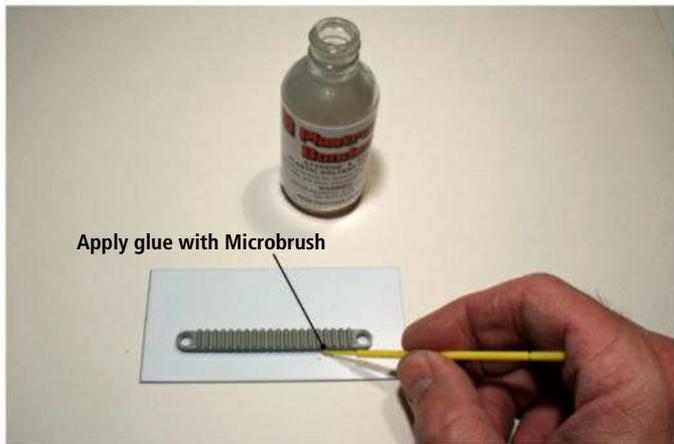
I used the door as a guide to properly place the second H column. Holding the



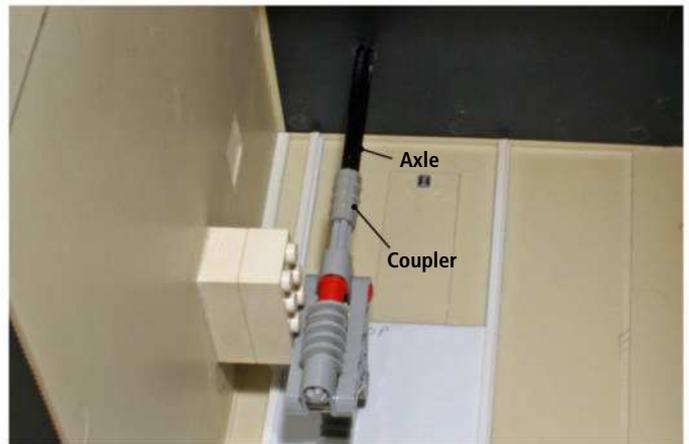
5 More Legos. Tom glued the gear assembly to the side wall of the structure. He used two Lego bricks to space the assembly just off center of the door opening.



6 Final alignment. With the gear reducer in place, Tom positioned the gear rack on the back of the door. He marked the location with a pencil.



7 Gluing the rack. Tom removed the door so it would be easier to attach the gear rack. He made sure the rack was vertical before gluing it to the back of the styrene door.



8 Through the roof. Tom used a Lego axle and coupler to extend the operating shaft through the roof. The extension is necessary to hand-operate the door.

door in place, I used a Microbrush to apply liquid plastic cement from outside the H column, **3** on the previous page. I was careful to not get any glue on the inside of the track or the back of the door. I slid the door up as I glued the upper portion of the H column.

Once the H column was tacked in place, I removed the door by sliding it out the bottom and applied glue to the inside edge of the H column. While the glue dried, I lightly sanded the edges of the door. Then I confirmed the door would slide easily in the track.

Installing the door opener

The key components to make the door operate are the gear reducer mechanism and gear rack. I found a Lego gear reducer set on eBay, the online auction site [Search “Lego Technic Mindstorms Gear Speed Reducers x 2 1:24” – Ed.] The gear reducer, **4** on the previous page, came in a two-pack for less than \$6, plus shipping.

The second component, the Lego gear rack, comes in various lengths. The gear rack must be at least the height of the door opening so the door will rise

completely. The one I used is 2½" long and has 20 teeth.

Additional components to attach the gear reducer to the structure and extend the drive axle can be found online at the Lego website and at various retailers. Fortunately, I have a large supply of Lego pieces from our now-grown children and was able to find all the other components I needed to complete the project, including a couple of standard Lego bricks, an axle, and an axle coupler.

I used two Lego bricks with a 2 x 4 pin arrangement, glued together, to mount the gear reducer to the structure. I press-fit the gear reducer to the bricks using the holes in the side frame. This assembly located the gear reducer just off center of the door opening.

Holding the gear assembly in position, I determined the proper height for the bottom of the gear reducer was just above the opening of the doorway and marked that location.

Next, I placed the door in the opening and temporarily held the gear rack to

Materials list

Evergreen styrene

142 .040" x .040" strip
156 .060" x .125" strip
292 .080" angle
4526 .040" metal siding

Lego

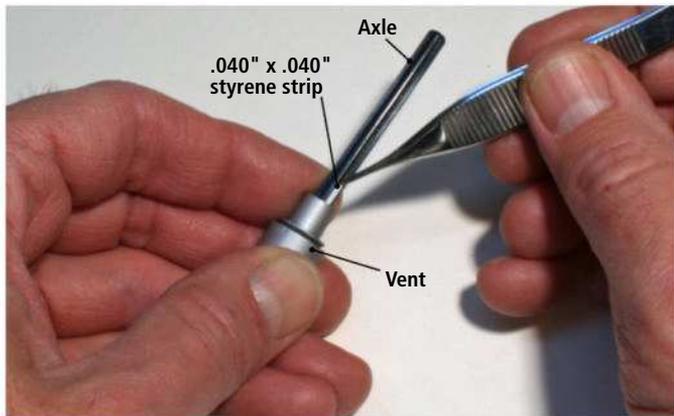
Lego Technic Mindstorm gear speed reducers, 1:24 gear ratio
gear rack, 2½ inches (20 teeth)
axle and coupling

Plastruct

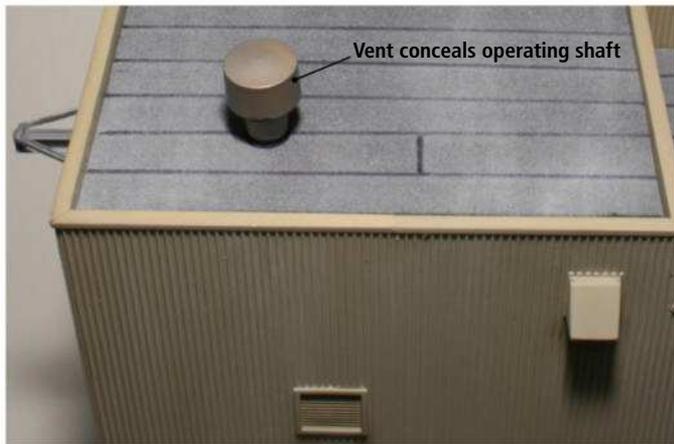
90542 ¾" H column

Walthers

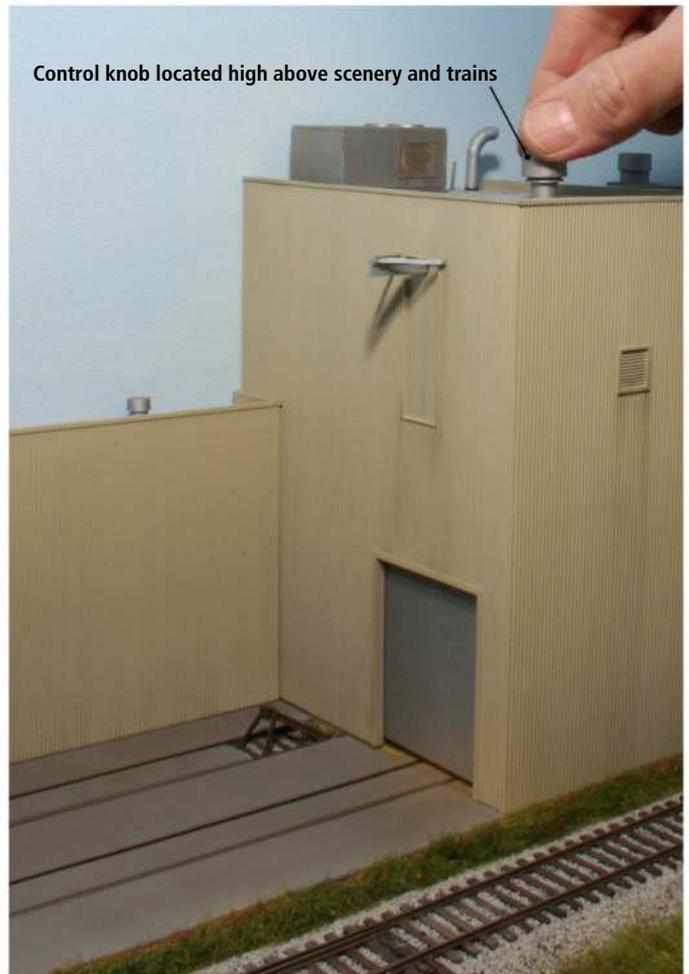
Roof vent



9 Filling it in. The fit between the cross-shaped axle and the base of the vent was a bit loose. Tom fixed that by inserting pieces of .040" square styrene strip into the gaps.



10 A clever disguise. The vents, pipe, and air conditioner make the top of the industry look well detailed. The vent in the foreground doubles as the operating knob for the door.



11 An easy reach. Since the control knob is on top of the structure, operators can control the door without damaging foreground scenery or derailling equipment.

the back of the door to determine the correct distance to mount the gear assembly where it would engage the gear rack. I marked the location and then glued the assembly to the side wall of the structure, **5** on the previous page.

Then I had to determine the exact location of the gear rack on the back of the door. I positioned the rack so the first tooth would engage the center of the round gear of the gear reducer **6**. I marked the location of the gear rack, removed the door from the track, and glued it into position **7**.

With the gear rack and reducer in place, I extended the operating shaft through the roof using a Lego coupler and axle **8**. I used a Walthers monitor vent left over from another structure to act as a knob on the top of the axle.

The hole in the bottom of the ventilator was slightly larger than the diameter of the shaft. I used .040" x .040"

styrene strip to fill in the gap between the shaft and the ventilator **9**. I used CA to attach the shaft to the ventilator. Once the glue was dry, I determined the correct length and cut the axle so the vent would sit flush on the roof when the other end was attached to the coupler.

Final touches

Once I was satisfied that everything was working correctly, I painted the structure and the door. The door was painted with Rust-Oleum Painter's Touch 2X Metallic Aluminum and weathered with pastels. [Do all spray painting in a well-ventilated area and wear a respirator, nitrile gloves, and other manufacturer-recommended personal protective equipment. – Ed.]

I used masking tape, painted and weathered, to simulate rolled roofing.

Additional rooftop details were added, and the entire structure was weathered **10** and **11**.

When the local crew arrives at the industry, the door is closed. To open the door, the operator turns the rooftop ventilator counter-clockwise until the door reaches the fully open position **11**. This action takes approximately 30 seconds.

The crew then switches the cars and closes the door by rotating the ventilator clockwise. This animated feature adds one more realistic step that the crew must perform when switching my layout. It simulates the extra steps prototype crews would encounter when they switched this industry. [MIR](#)

Thomas Klimoski and his wife, Diane, live in the Northeast Georgia mountains. Tom's HO scale Georgia Northeastern model railroad was featured in Model Railroad Planning 2016. User videos of his layout can be found on our website, www.ModelRailroader.com. Search for "Thomas Klimoski".



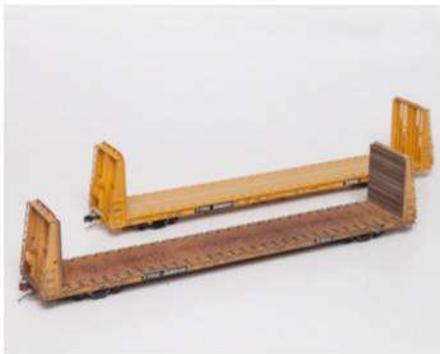


The first ExactRail Trenton Works 67'-11" bulkhead flatcar has been placed into service on Pelle Søbørg's old HO scale Union Pacific Daneville Sub layout. A few simple weathering techniques made the model look like it worked for a living.

How to weather a **MODERN BULKHEAD FLATCAR**

Weathering powders, paint washes bring out the details

By **Pelle K. Søbørg** • Photos by the author



① Although the ExactRail cars are well detailed, the weathered car in front looks much more realistic than the unweathered model.



② To add some depth to the steel plank deck, I used a paintbrush to apply a dark brown wash made from Model Master 2002 Skin Tone Dark Tint and plenty of thinner.



③ I wrapped a piece of cloth around my finger, dipped it in a little thinner, and wiped the top of the planks clean. Don't make the cloth too wet, or it will remove the color left in the grooves.

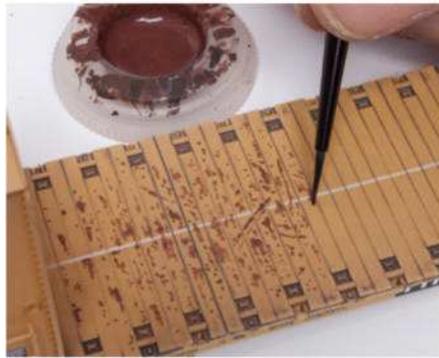
EAGER to place my ExactRail Trenton Works 67'-11" bulkhead flatcars in service, I started weathering them immediately after I received them. The cars come with laser-cut wood bulkhead surfaces, which is great because nothing looks as much like wood as wood does, so it made it easier to give the bulkheads a realistic, weathered look. The deck on the prototype is made of steel planks, referred to as a nailable steel floor. These floors are often found in boxcars as well.

My basic weathering techniques are simple and straightforward, and consist of three steps. The first step is fading the model's original paint so it looks old, dusty, and sun-bleached. The second step is applying spots of rust and streaks of grime to the car. The third step is applying grime to the lower areas.

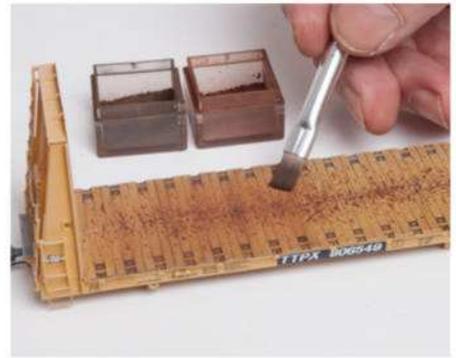
Steps one and three are done using an airbrush, and step two is done with powdered chalks. However, on this particular model, I added an extra step by applying washes with a brush to the wood bulkheads and the deck.



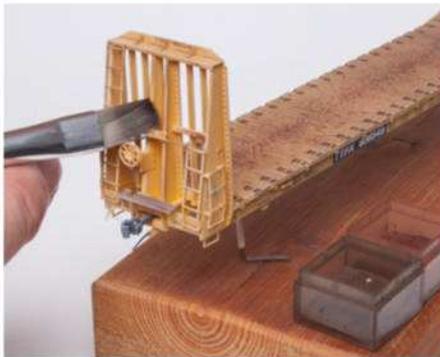
4 After the wash dried, I airbrushed the car with a couple coats of Model Master 1732 Light Gray thinned to a wash (1 part paint to 4 parts thinner). This makes the paint appear faded.



5 Armed with a fine brush and “rust paste,” a mixture of rust-colored weathering powder and a little bit of flat clear varnish, I started covering the deck with rust spots.



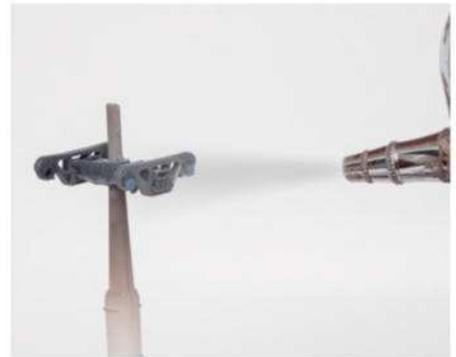
6 After applying the rust spots, I used a soft brush to apply some brown- and rust-colored weathering powder for a generally dirty appearance. Most of the wear occurs in the center of the car.



7 The ends also received some brown and rust weathering powder. I used a very soft brush for this, being as gentle as possible to avoid breaking the many delicate details on the bulkheads.



8 The lower areas and underside received a couple light coats of Model Master 2002 Skin Tone Dark Tint thinned to a dark brown wash. This was sealed with Vallejo 520 Matte Varnish.



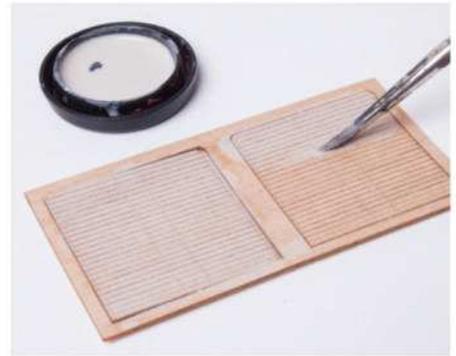
9 I airbrushed the trucks with the same light gray wash I used for the deck, then with the dark brown wash I used for the lower parts of the car. Finally, I sealed the weathering with a coat of clear flat.



10 I gave the wheels a full-strength coat of Model Master 2002 Skin Tone Dark Tint while holding them in a wheel mask. I cleaned the paint from the axle points immediately after painting.



11 By using washes of color instead of full-strength paint, I was able to preserve the factory reporting marks and road number, as well as the blue-painted roller bearing caps.



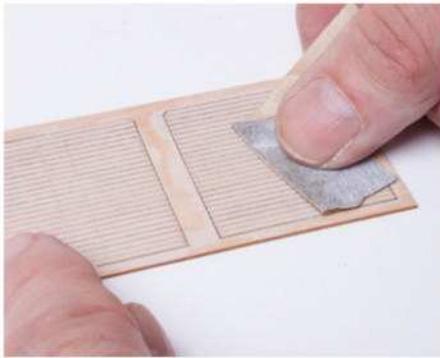
12 I used the same two washes for weathering the wood bulkheads as I used for the rest of the car, but this time I used a paintbrush. I painted the back because it will be visible, too.

You don't need a lot of materials to weather a car like this, just dark brown and light gray paint, dark brown and dark rust weathering powders, and clear flat overcoat. With these few materials you'll be able to create a very convincing weathered look on most types of model freight cars.

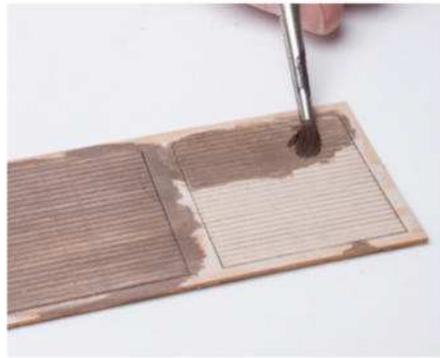
I use Model Master paint, but you can use any other brand. I prefer solvent-based paints for weathering because they produce a more even, dusty look when they're thinned to washes and applied with an airbrush than acrylic paint does. Acrylics have a tendency to leave a coarser pattern when thinned to a

wash. You can minimize that by diluting acrylics with clear flat instead of an acrylic thinner. [Check to be sure the clear flat is compatible with the brand of colored paint you're using. – Ed.]

To seal and protect the weathering, I give my models a clear flat top coat. My preferred clear flat is Vallejo no. 520 Matte Varnish. This acrylic clear dries in less than 15 minutes, and it won't turn yellow over time like solvent-based clear coats do. Vallejo Matte Varnish can usually be applied without being thinned, but if it doesn't flow smoothly enough, a few drops of distilled water will do the trick.



13 When the first wash had dried, I sanded the surface lightly with fine grit sandpaper. This removes any raised grain in the wood from the painting process.



14 After the light gray, I applied the brown wash again. I used solvent-based brown. Water-based paint can cause the wood to warp. Painting both sides of the parts also reduces warping.



15 When the second wash had dried, I sanded the surface again so it was smooth. Waiting for the paint to dry so I could sand the parts took more time than painting them in the first place.



The car is ready for service. If you run your flat car empty, it pays to put in a little extra effort while weathering the deck.



I model the present day, so my bulkhead flatcars have the Federal Railroad Administration-mandated yellow safety stripes. Dirt doesn't seem to stick much to reflector stripes, and to model this, I covered the stripes with masking tape before I weathered the car.

Although weathering this type of car included an extra step compared to a boxcar or a covered hopper, it's a reason-

able weekend project. Painting the rust spots on the deck was the most time-consuming and tedious part of the process, but the result was worth it. A well-weathered deck gives a car like this character, especially if you run it empty. Weathering the wood bulkhead surfaces took time only because I had to wait for the washes to dry before I could sand them between the layers. The painting only took a few minutes to complete.

A side benefit of adding these bulkhead flatcars to my rolling stock fleet is that it gives me the opportunity to model interesting loads for them, but that's another story. **MR**

Tips for programming LokSound decoders



1 LokProgrammer hardware. The LokProgrammer interface comes with a USB cable, power supply, and options for connecting it to a programming track.

Electronic Solutions Ulm (ESU) LokSound decoders have rapidly grown in popularity over the last few years as several manufacturers have begun offering them as factory-installed options. One big advantage of LokSound decoders is their sound packages can be replaced as new ones are released on the ESU website. However, to do this requires the proprietary ESU LokProgrammer software and interface **1** and a Windows-based computer.

If you'll be doing a lot of LokSound decoder updates, the LokProgrammer software and computer interface hardware really is your only option unless you plan on shipping the decoder back to a dealer each time.

The interface **1** has solder pads as well as screw terminals for connecting feeder wires to a programming track. Once you install the LokProgrammer software on your Windows-based

computer, plug the interface hardware into a USB port on your computer and install the device drivers. The software can be downloaded free from the ESU website (www.esu.eu/en/start/). You may need to restart your computer after installing the drivers, then start the LokProgrammer software.

Next, download the desired sound project from the LokSound website (www.projects.esu.eu). Using the FILES menu option on the LokProgrammer software, open the project you downloaded and let it load into the program.

There are different types of sound projects – Version 4.0 projects can be edited and the sounds modified. With LokSound Select projects you can only change the CV settings. Once the project loads into LokProgrammer, you can edit the various CVs to change the address, momentum settings, and so on **2**.

After making all your edits in the decoder software, it's a simple matter to WRITE THE DECODER DATA and WRITE THE SOUND DATA to the decoder. This can take a while, since a lot of information has to be transferred. After the procedure finishes, you can open the virtual throttle in the LokProgrammer software and test your changes with the locomotive on the programming track.

One of the things that can confuse new LokSound software users is the concept of sound slots. Slots are LokSound's way of organizing sounds. For example, slot 1 usually is the diesel engine sound in a diesel sound project **3**.

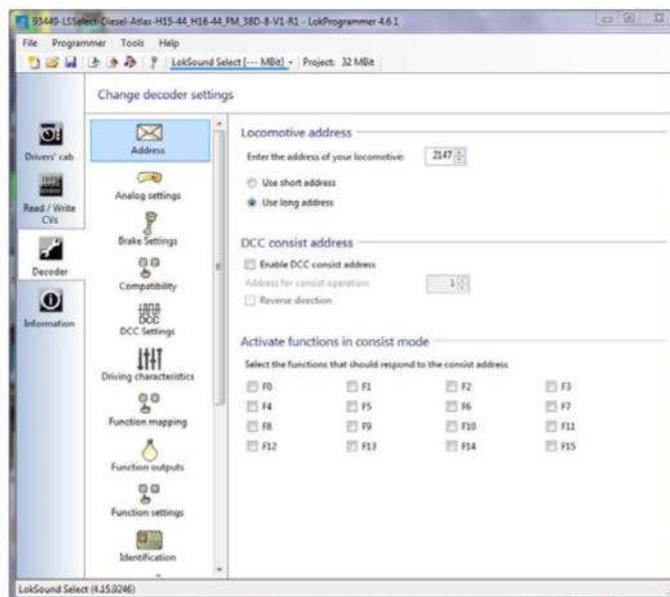
As long as you know which sound is assigned to which slot in the sound project, there's no problem. However, they may be different in different projects. These slot assignments are available on the ESU website along with each sound project. Just save or print a copy and keep it for your records.

Also, there's an option in the LokProgrammer software TOOLS menu to print out a bulletin giving the slot assignments.

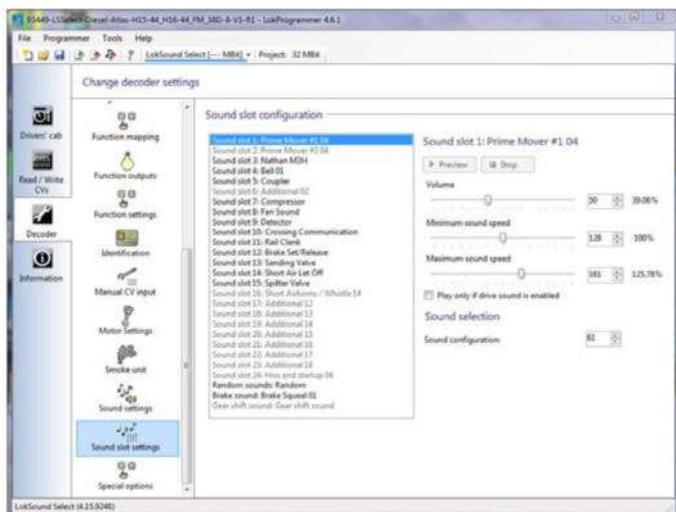
The function output controls **4** allow you to modify how the lights and any other wired functions operate. For example you can set the headlight for Rule 17, and in the locomotive shown set up the red and green classification lights.

If you don't have a lot of ESU LokSound decoders, or you don't want to buy the LokProgrammer computer interface, you can use DecoderPro software to make changes to LokSound decoders. DecoderPro is part of the Java Model Railroad Interface (JMRI), available as a free download at www.jmri.org.

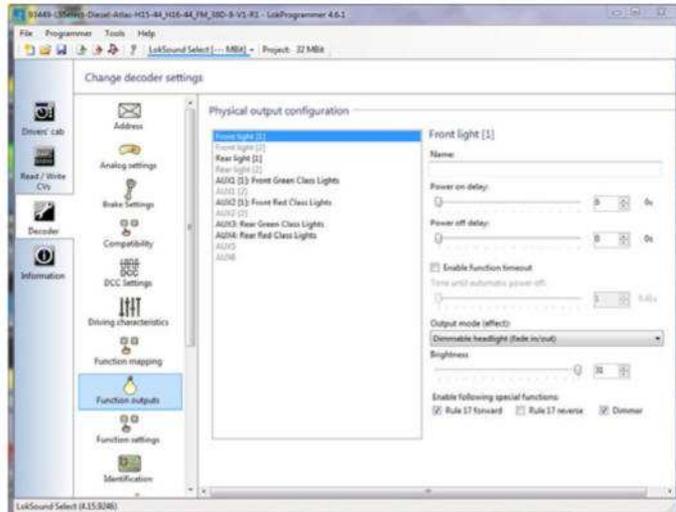
Let's look at how DecoderPro handles LokSound projects. Because there are few DecoderPro definition files for most current LokSound sound projects, you need to get the CV settings into DecoderPro another way.



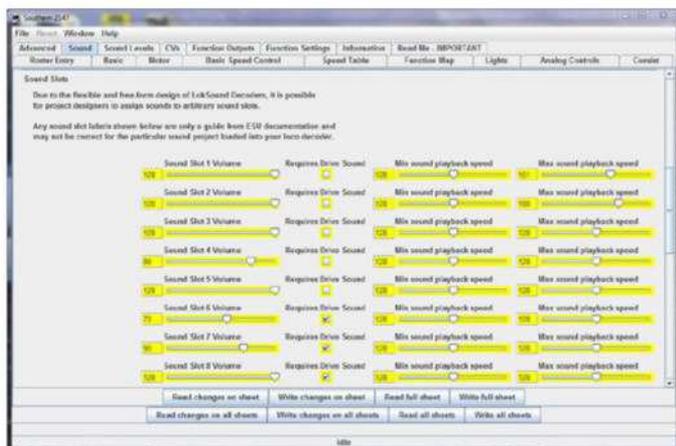
2 LokProgrammer software. The LokProgrammer DECODER screen allows you to edit CV settings such as the ADDRESS.



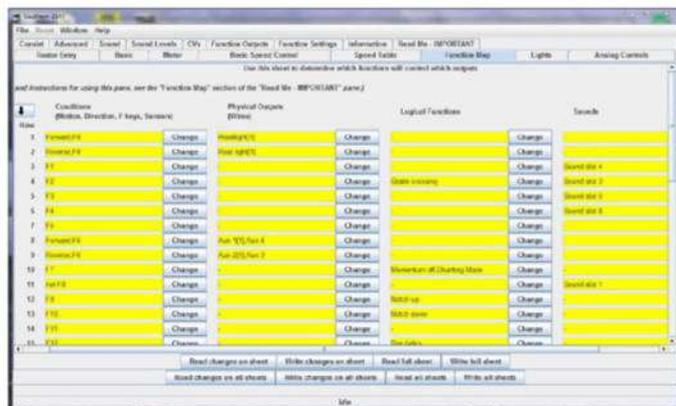
3 Sound choices. On the LokProgrammer SOUND SLOT SETTINGS screen you can change things like volume, minimum and maximum playback speed, and whether the sound plays when the locomotive is moving or stopped.



4 Make it work. The LokProgrammer FUNCTION OUTPUT screen is where you control wired outputs like the lights. For each output you can control the type of light effect, whether it's dimmable, and whether Rule 17 applies.



5 DecoderPro sounds. In DecoderPro the sound slots are edited in the lower portion of the SOUND pane. It has controls similar to the LokProgrammer sound slot screen.



6 DecoderPro functions. The DecoderPro FUNCTION MAP pane allows you to assign functions to specific buttons, designate the characteristics of each, and assign sound slots.

One option is to place the locomotive with the installed decoder on the programming track and attempt to read the CVs with DecoderPro. This approach can take a long time, and you will likely end up with a lot of read errors.

The alternate option is to install the LokProgrammer software and use it without the interface hardware. You don't need the hardware interface to examine and edit sound projects.

As I described above, open the LokProgrammer software and read in the file you downloaded from the ESU website. Now, using the

TOOLS option, export a CV list file.

Open DecoderPro, create a new locomotive entry selecting the LokSound Select decoder you have, and open the comprehensive programmer. Using the FILE > IMPORT > LOKPROGRAMMER CV LIST FILE option, read in the CVs from the LokProgrammer CV list file. You will now have all the CV settings for your LokSound decoder loaded into DecoderPro.

Once you get all your CV settings into DecoderPro, it's equally easy to edit them as I've described for other decoders in past DCC Corner

columns (*Model Railroader* November 2016, for example) and in a series of videos on my website (www.dccguy.com).

The sound slots are edited in the lower half of the SOUND pane 5, giving you control over volume, Min and Max playback speed, and a checkbox to set whether the sound plays with or without the locomotive moving. More advanced controls in the FUNCTION MAPPING pane 6 allow you to assign sound slots to specific function buttons, as well as physical and logical output controls.

If you don't have DecoderPro, you can still

make all the edits using the LokProgrammer software. Then, using the TOOLS > SHOW CHANGED CVs tab, save these changes to the computer's clipboard, and enter them in the decoder manually using your DCC system's programming throttle.

I hope that will be enough to get you started with your new decoder. Next month, I'll wrap up this series on sound decoders by installing a LokSound decoder in an HO scale Atlas H16-44 model. For more on this topic, visit my website (www.dccguy.com). 



WalthersMainline HO scale GE ES44 diesel

General Electric Evolution Series (GEVO) diesel-electrics lead today's freight trains throughout the North American rail network. Available in a variety of prototypical road names, an HO scale GE ES44 joins the value-priced WalthersMainline series. Along with an accurately dimensioned body shell and some roadname-specific details, the model features the same powerful mechanism found in top-of-the-line WalthersProto locomotives.

I reviewed a GEVO from the first-production run, which is equipped with a SoundTraxx dual-mode decoder that operates on Digital Command Control (DCC) or direct-current (DC) layouts. As of this writing a second run has been announced, the road names for which are noted on the next page. The second-run units will have 21-pin DCC plugs,

and dual-mode versions of those GEVOs will have ESU Sound decoders.

The prototype. General Electric's Evolution Series was designed to meet the United States Environmental Protection Agency's Tier 2 emissions standards of 2005. With preproduction units delivered as early as 2003, the ES44AC (Evolution Series, 4400 hp, alternating current) locomotive is now on the roster of every Class 1 carrier in North America. Iowa Interstate, Ferromex, and lessors such as Citirail/CREX also use ES44ACs.

The ES44AC is available in a few variants to meet specific customers' needs. These include versions with direct-current traction motors (ES44DC), a "heavy version" designed for higher low-speed tractive effort (ES44AH), and a

version with two traction motors per truck instead of three (ES44C4). BNSF Ry. is the original customer of this last variant and currently rosters more than 1,000 ES44C4 locomotives.

The November 2004 *Model Railroader* features prototype drawings of a preproduction ES44AC. Most of the dimensions of a preproduction and later production ES44AC are the same. The biggest differences are the extreme height and width. On a preproduction unit, the extreme width is 9'-11" and the extreme height is 15'-5¾". On a later production unit, these dimensions are 10'-3" and 16'-0", respectively.

The model. The Walthers model has the correct dimensions for a later production ES44. Our review sample's prototype is BNSF Ry. ES44C4 no. 7972, built in 2015.



Standard high adhesion

Steerable

A1A

Just like a prototype GEVO, there are three different truck sideframes available on the WalthersMainline models. The dynamic brake vent arrangement is also roadname specific.

The vent and grill arrangement, the engine-access doors, and other molded-in details on the plastic body shell match prototype photos. These details also include the correct dynamic brake vent and electrical cabinet arrangement for BNSF no. 7972. For other road names, Walthers uses a different configuration to match those prototypes.

Like other locomotives in the WalthersMainline series, the ES44AC has a modest amount of separately applied detail parts, including a plastic air horn, brake wheel, and cab sunshades. The handrails and stanchions are made of flexible acetal plastic. For those who wish to further detail the model, drill starter points for grab irons are molded into the body shell and a detail kit is available for purchase.

The truck sideframes are roadname-specific. Our BNSF Ry. ES44C4 features A1A sideframes with the correct brake cylinder and linkage arrangement. (Note that although the prototype had center idler axles, all axles on the Walthers model are powered.) Depending on the road name, Walthers offers other GEVOs with either steerable or standard high-adhesion truck sideframes.

The paint is smoothly applied with sharp color separation and correctly placed lettering.

Mechanism. After removing the coupler draft-gear boxes, I removed four screws from the underframe: one in front of and another behind the fuel tank and two under the pilot. I could then easily lift off the body shell.

The mechanism is similar to other recently reviewed WalthersMainline diesels. The motor and flywheels are mounted in the center of a die-cast metal frame, and driveshafts transfer power to truck-mounted gearboxes. Helical gears provide quiet operation with no gear noise to distract from the sound system.

The SoundTraxx decoder is screwed to a weight above the mechanism. Attached to the decoder board with plastic clips, leads run to a downward-facing speaker above the rear truck and to light-emitting diodes (LEDs) that illuminate the headlights and ditch lights.

DCC performance. I tested the GEVO on our workshop test track using an NCE DCC system as well as on our Milwaukee, Racine & Troy layout using

an NCE/CVP Products system. As noted in the charts below, the model accelerated to a top speed of 65 scale mph, which is less than the prototype's 75 mph top speed but more than fast enough for most model railroads.

Many of the programming tips provided in the free Tsunami user manual at www.soundtraxx.com are still applicable to this decoder.

Setting the decoder to 128 speed steps provides finer speed control. I also programmed our sample with some acceleration and deceleration momentum for more realistic stops and starts.

In addition to the 3.4 ounce drawbar pull noted in the charts below, which is equal to 48 free-rolling HO cars on straight-and-level track, the GEVO easily hauled a 16-car freight train up a winding 3 percent grade. All-wheel electrical pickup kept the sounds and lights on without any interruption.

I advance consisted three GEVOs and they performed flawlessly together without any additional speed matching required. The decoder supports CVs 21 and 22, which allowed me to set up function control under the consist address.

The default user-triggered functions are the bell, long and short horn blasts, headlights, ditch lights, and mute. Unlike a Tsunami, the decoder doesn't include dynamic brake fans, working train brake, or coupler crash functions.

However, the decoder does support manual notching. After programming this feature, I could use function keys to control the engine RPM sound independently of the throttle setting. In addition to the overall sound volume, I could set the volume level for the bell, horn, and prime mover.

Out of the box, the headlights are set up for on/off directional control. I appreciated that I could easily set up the headlights for more realistic independent control. I also programmed function 7 to work as a dimmer.

DC sound. On DC layouts, the model's sounds and directional headlights are automatic, unless an analog controller/programmer such as an MRC Tech 6 is used. With a regular DC power pack, I heard the sound of the engine ramp up and down as I advanced or decreased the throttle. At speeds under 25 scale mph, the bell sounded. A few other automatic DC effects can be added, but to do so

Facts & features

Price: \$129.98 (DC no sound), \$199.98 (DCC sound), \$19.98 (optional detail kit)

Manufacturer

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

Era: 2005 to present (2015 to present, as detailed for BNSF Ry.)

Road names (multiple road numbers)

First run: BNSF Ry., Canadian National, Canadian Pacific (as delivered), Citirail, CSX, Kansas City Southern, Norfolk Southern, and Union Pacific
Second run: BNSF Ry., CP (ex-Vancouver Olympics patchout), Citirail, Iowa Interstate, KCS, and UP

Features

- All-wheel drive and electrical pickup
- DCC version features dual-mode sound decoder (SoundTraxx in first run, ESU in second run)
- Five-pole skew-wound motor with dual brass flywheels
- Light-emitting diode (LED) headlights and ditch lights
- Minimum radius: 18" (22" or wider recommended)
- Nine-pin DCC socket (21-pin socket in second run)
- Proto-Max metal knuckle couplers at correct height
- RP-25 contour metal wheels in gauge
- Weight: 1 pound, 7.9 ounces

PERFORMANCE TESTS

DRAWBAR PULL 3.4 ounces
48 HO scale freight cars

SCALE SPEED (DC)

VOLTS	SCALE MPH
6 (start)	5
8	30
10	47
12	66

SCALE SPEED (DCC)

SPEED STEP	SCALE MPH
1	5
7	31
14	55
28	65

requires a DCC system or an analog controller/programmer.

With its long list of features, the WalthersMainline GE ES44 is a worthy option for modelers looking to build a modern-era fleet. — Dana Kawala, senior editor



Athearn Genesis HO scale EMD GP40P-2

No longer solely the province of kit-bashers, Electro-Motive Division's GP40P-2 is available in HO scale from Athearn Trains. Part of the Genesis line of superdetailed locomotive models, this HO scale Geep is especially good news for those modeling Southern Pacific's "commute" trains of the 1970s and '80s. Our review sample came equipped with a SoundTraxx Tsunami2 dual-mode sound decoder.

A rare version of a common engine. General Motors' Electro-Motive Division produced more than 1,100 GP40-2 diesel-electric locomotives. The 3,000 hp locomotives were primarily freight haulers. Then in 1974, SP ordered a version with a steam generator to lead trains on its San Francisco-area commute service.

The first (and last) three GP40P-2s were delivered in November 1974, numbered 3197 to 3199 and painted in the SP's scarlet-and-gray "bloody nose" scheme. In 1976, SP repainted unit 3197 red, white, and blue with gold trucks and underframe to commemorate the nation's Bicentennial. It wore those colors until 1983, when it was painted scarlet and gray again. A few years later, all three units were renumbered 7600 to 7602, having been demoted to freight duty by the arrival of Caltrain's F40PHs. The locomotives' steam generators were removed or disconnected, and their hood openings plated over.

The trio continued to serve SP until 1996, when the railroad merged with Union Pacific. The engines were renumbered once again, 1373 to 1375. But while

the first and last of those two serve UP today, no. 1374 – the former Bicentennial unit – was sold to Indiana Harbor Belt, which renumbered it 4010.

Athearn offers its GP40P-2 in SP's Bicentennial and scarlet-and-gray schemes, as well as in the UP's Armour Yellow and Harbor Mist Gray. The UP and renumbered SP models have plated-over steam generators and larger fuel tanks than the SP passenger versions.

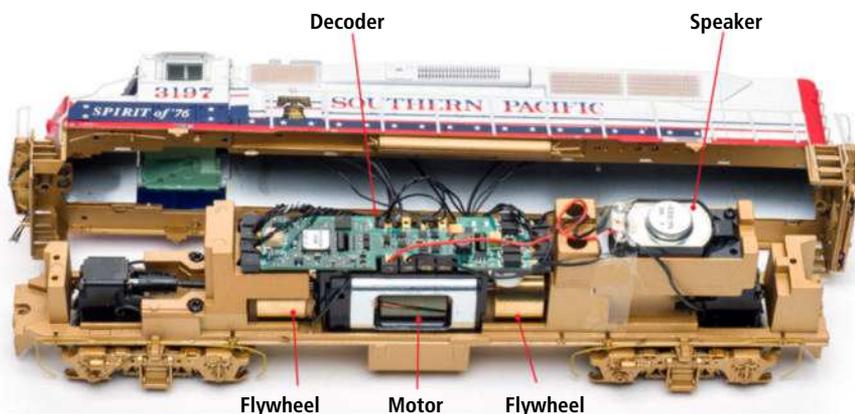
Outside and in. Wire grab irons and conduits, etched-metal fan grills and windshield wipers, and flexible plastic m.u. lines and handrails are among the model's separately applied details.

All the measurements I checked matched prototype drawings published in the December 1986 *Railroad Model Craftsman*. The model's details and graphics matched prototype photos.

The model's paint scheme features sharp color separation. The tiny white stars where the red and blue halves of the large letters meet and other small printing were perfectly reproduced.

The five-pole, skew-wound motor and dual brass flywheels are nestled into a notch in the bottom of the die-cast metal frame; driveshafts transfer power to gear towers on both trucks. The Tsunami2 DCC decoder is mounted above the motor. A speaker points downward from its enclosure above the rear gear tower.

On the test track. I first tested the locomotive under direct current. Sounds



The SoundTraxx Tsunami2 decoder is attached to the model's die-cast metal frame. All the model's axles are powered and all wheels pickup track power.

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PERFORMANCE TESTS

DRAWBAR PULL 2.6 ounces
18 HO scale passenger cars

SCALE SPEED (DC)

VOLTS	SCALE MPH
8.5 (start)	3
10	8
11	18
12	27

SCALE SPEED (DCC)

SPEED STEP	SCALE MPH
1	4
7	30
14	56
28	73

responded with a realistic startup sequence when track voltage reached 7V. The model didn't start to move, though, until I applied 8.5V to the rails, rolling at 3.2 scale mph. The engine reached 27 scale mph at 12V and topped out at 37 scale mph at my power pack's maximum voltage of 13.5V. This speed is lower than the prototype's top speed of 83 mph when geared for passenger use.

The only sound effects in DC were automatic ones. In addition to the diesel motor, which ramped up and down with the throttle, there was also a barely audible rail clickety-clack. I liked that when I lowered the voltage between 6V and 7V, the decoder played a shutdown sequence, rather than just stopping.

Under Digital Command Control, the engine's speed curve was much more prototypical. It started at 4 scale mph, and topped out at 73 scale mph.

One lighting effect I hadn't noticed on another locomotive before this one: Pushing the DCC throttle's "Emergency Stop" key not only stops the locomotive, it also triggers the nose-mounted red emergency beacon.

DCC tricks. I wanted to try out all the fancy braking modes senior editor Dana Kawala is always raving about, so after programming momentum values of 50 into Configuration Variable (CV) 2 (acceleration) and CV3 (deceleration), I programmed 150 into CV116 (independent brake), CV117 (dynamic brake), and CV118 (train brake). I then tried in vain to trigger the braking effects, until Dana pointed out that I hadn't enabled that feature by programming indexed CV1.403 to 0. Once I did so, function key F12 triggered the train brakes as advertised, gradually bringing the train to a squealing stop. Releasing the brakes brought it back up to speed.

Facts & features

Price: \$189.98 (DC, no sound), \$279.98 (DCC sound)

Manufacturer

Athearn
1600 Forbes Way, Suite 120
Long Beach, CA 90810
www.athearn.com

Era: 1976 to 1983 as decorated for Southern Pacific no. 3197

Road names: Southern Pacific (Bicentennial scheme, one number; "bloody nose" scheme, four numbers), Union Pacific (two numbers)

Features

- Blackened metal RP-25-contour wheels, in gauge
- Cab interior with movable cab windows
- Directional light-emitting-diode lighting
- Five-pole, skew-wound motor with dual brass flywheels
- Minimum radius: 18"
- Plastic McHenry knuckle couplers, at correct height
- SoundTraxx Tsunami2 DCC decoder or DCC-ready with 21-pin QuickPlug
- User-installed train number decals
- Weight: 13.8 ounces

The decoder had the steam generator sound effect programmed for function key F20. Since F6 wasn't used by our model, I remapped the steam generator sound to that key, making it easy to toggle with one press.

I also programmed the long address to the cab number. For more programming tips, a free Tsunami2 manual is available for download at www.soundtraxx.com.

In our real-world hill-climb test, the engine pulled five passenger cars up a 3 percent grade without slipping. On the way back down, it was fun to push F4, hear the dynamic brakes kick in, and watch the locomotive actually slow by the amount I'd programmed.

As good as it gets. Each new generation of decoders brings the operational capabilities of our models that much closer to those of the prototype. With SoundTraxx's new Tsunami2 decoder and Athearn's smooth-running Genesis drivetrain wrapped in an accurately modeled exterior, who could ask for more? – *Steven Otte, associate editor*



ScaleTrains.com HO scale Thrall carbon black covered hopper

A Thrall 4,727-cubic-foot capacity carbon black covered hopper is the latest addition to the ScaleTrains.com Rivet Counter line of superdetailed models. The injection-molded plastic model features roadnumber-specific details, photo-etched stainless steel running boards and crossover platforms, and Barber S-2 70-ton trucks with rotating bearing caps.

Carbon black is a byproduct of the petroleum industry and is most commonly used as a reinforcing filler for rubber vehicle tires. Thrall was a long-time manufacturer of covered hoppers specifically designed to haul this material. The Chicago Heights, Ill.-based freight car builder dabbled in carbon black cars in the mid-1950s. By decade's end, the company began manufacturing carbon black cars on a larger scale.

Thrall's first 4,727-cubic-foot-capacity carbon black covered hopper was built in 1964. The ScaleTrains.com model is based on a 4727 design that Thrall debuted in 1992. Some of the features on the high-side covered hopper include nine exterior posts, 22 or 28 roof hatches, and open end cages. Examples of these cars can still be found in service today. Trinity Industries purchased Thrall in 2001.

The ScaleTrains.com carbon black covered hopper features a one-piece body with a separate roof, end cages, body

bolster assemblies, center sills, and stubsills. The hatch covers, ladders, brake appliances, and sampling spigots, among other details, are also separately applied. A steel weight is secured inside the body with two ring-head screws.

Our sample is decorated as Orion Engineered Carbons no. 47046, built by Thrall Car under job number 928 in June 1996. The car is part of Orion's 47001 through 47050 series of carbon black covered hoppers.

The black paint is smooth and evenly applied. The placement of the yellow simulated reflective stripes matches prototype photos. The printing is all legible, including the "Job 928" stencil under the blue THRALL CAR label. Nice attention to detail!

I compared the model to data published in the January 2016 *Official Railway Equipment Register* (R.E.R. Publishing Co.). The dimensions are accurate or within scale inches of the prototype.

The body-mounted die-cast metal Type E semi-scale couplers are painted a rust color and mounted at the correct height. If you use uncoupling magnets on your layout, be aware that the couplers don't have trip pins. The 33" machined metal wheels are correctly gauged. At 4.8 ounces, the covered hopper is .3 ounce too heavy based on National Model Railroad Association Recommended Practice 20.1.

Facts & features

Price: \$39.99

Manufacturer

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

Era: June 1996 to present (as decorated)

Road names: Orion Engineered Carbons, Columbian Chemicals, DeGussa, and Sid Richardson. Four road numbers per scheme.

Features

- 33" machined metal wheels, in gauge
- Painted metal couplers, at correct height
- Prototype-specific details
- Weight: 4.8 ounces

I tested the covered hopper on our Wisconsin & Southern and Eagle Mountain project layouts, where the model performed without incident. The carbon black car will negotiate 18" radius curves, though the manufacturer recommends running the car on 22" radius curves.

ScaleTrains.com has done an excellent job on the HO scale Thrall Car 4,727-cubic-foot-capacity carbon black covered hopper. The Rivet Counter line car would look right at home on a model railroad set between 1996 and today. – *Cody Grivno, associate editor*

QUICKLOOK

Bachmann On30 derrick car

Price: \$99

Manufacturer

Bachmann Trains
1400 E. Erie Ave.
Philadelphia, PA 19124
www.bachmanntrains.com

Era: 1900 to 1950s (or later on a tourist railroad)

Comments: Fans of O scale narrow gauge can keep the right-of-way clear with this derrick car from Bachmann Trains. The On30 (O scale, 30" gauge) car is a freelanced model that isn't based on a specific prototype. However, its overall look resembles some of the smaller derrick cars used on narrow gauge lines.

The plastic model features crisp molded detail, including ladders, roof grab irons, and planking. Separate parts include a plastic brake wheel and a wire brake staff and end handrails.

The underframe features sill and bolster details. The brake cylinder and truss rods are separate parts.

The plastic boom swivels but is otherwise non-functioning with string rigging to simulate cable.

The paint scheme on our generic maintenance-of-way sample has clearly printed lettering. The weathered gray applied to the deck looks realistic. The car is also available in gray and yellow M.O.W. schemes as well as decorated for Durango & Silverton and White Pass & Yukon.

The model rides on archbar trucks with a 3'-7" wheelbase, a common prototype truck for narrow gauge equipment. The plastic truck sideframes have molded spring and journal details.

The factory-installed E-Z Mate Mark II knuckle couplers are at the correct height per National Model Railroad Association standards (S-2). Mounted



on insulated metal axles, the chemically blackened metal wheels are in gauge.

The NMRA doesn't have a specific Recommended Practice (RP) for On30 rolling stock, but RP-20.1 does offer a recommended weight for On3 (O scale, 3-foot gauge) equipment. According to that recommendation, the Bachmann car's 3.2 ounce weight is about 3 ounces too light. However, when I placed the car in a train and ran it around curves and turnouts, it performed flawlessly.

Narrow gauge equipment often served for decades, and some continues in service today on tourist roads. The Bachmann derrick car would make an interesting addition to an On30 fleet.
– Dana Kawala, senior editor

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QUICKLOOK

NCE Light-It and Illuminator lighting decoders

Price: Light-It 3 pack, \$19.95; 6 pack, \$39.95; 15 pack, \$99.95; Illuminator, \$16.95; 5 pack, \$79.95

Manufacturer

NCE Corp.
82 E. Main St.
Webster, NY 14580
www.ncedcc.com

Comments: Lighting is one of the more basic forms of animation we can add to our model railroads, and NCE has released a simple way to add programmable lighting effects to rolling stock, scenery, and signals using either direct current (DC) or Digital Command Control (DCC).

The Light-It and Illuminator decoders have three outputs for light-emitting diodes (LEDs), and two inputs for power, one pair on each end. There's a warm-white surface-mounted LED on the decoder. The Light-It is a little

larger than a dime. The Illuminator is about the size of a matchbox.

The Light-It requires soldered connections for wiring. The Illuminator uses screw terminals for power and plugs that are compatible with Woodland Scenics' Just Plug LED lighting system.

There are 15 lighting effects on the board for mobile or stationary use. In addition, as a signal decoder, the Light-It can produce 18 different lighting effects appropriate for railroad signals. An NCE Mini Panel can provide the logic to drive the signals.

I tried the decoder with several LEDs we had in the shop, including two types of Christmas light LEDs. All worked fine on any of the outputs. The board has built-in resistors for LEDs, but won't work with incandescent lights such as grain-of-wheat bulbs.



I attached a Light-It to the DCC bus of an NCE PowerCab and was able to choose effects and change the address.

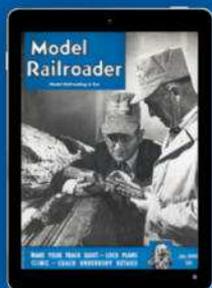
For DC, I used an AC-to-DC wall transformer. I used the 13.8V power supply from the PowerCab, and also an old 6V power supply. However, a DC power pack from a train set didn't work. An NCE rep said the pulsed DC current was likely the issue.

A button on the circuit board allowed me to toggle between the lighting effects. All three outputs display the same effect in DC, except for the alternating flasher effect for a grade-crossing signal.

This compact board would be handy for many uses on a layout. — Eric White, associate editor

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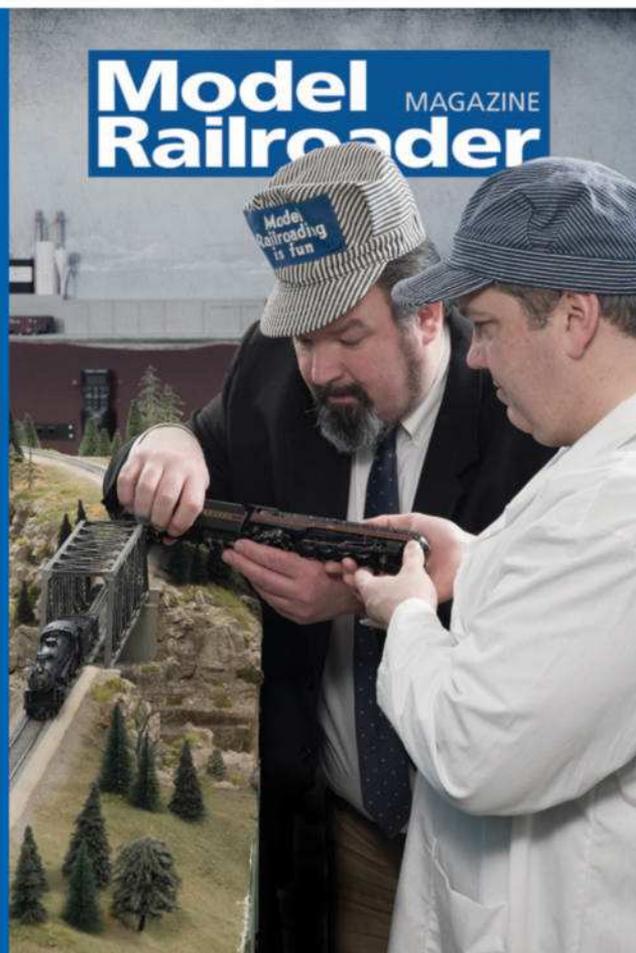


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An operating session hits the road

The forgoing looks we sometimes exchange about “book learning” acknowledge how different it is from the school of hard knocks. When I describe how operating rules govern common timetable-and-train-order situations, I may leave readers wishing for a chance to get their hands dirty. The Operations Road Show, featured at the National Model Railroad Association’s convention this August in Kansas City, is just the ticket.

You can operate on this 22 x 51-foot layout, which fills a hotel conference room. It boasts a 480-foot main line based on the single-track Peru-to-Lafayette, Ind. part of the Wabash RR’s Montpelier Division, modeled in the fall of 1964. Each day sees 16 scheduled trains, including four first-class passenger trains, plus various extras and switch jobs. The layout features full scenery and working signals at junctions and train order offices.

The Road Show’s founders conceived the idea after joining a timetable-and-train-order (TTTO) operating session on Jack Ozanich’s Atlantic Great Eastern. They grasped their good fortune and decided to build a modular layout to take on the road, bringing operating sessions like Jack’s to model railroaders everywhere. Twenty years, more than 3,000 miles, and seven national conventions later, the Road Show has hosted roughly 1,000 guests, many of them new to realistic operation.



The “Highball to Indy” National Model Railroad Association convention in 2016 finds Operations Road Show guests hard at work. Fritz Milhaupt photo

The Road Show’s core group includes Cindy and John Young, Fritz and Bob Milhaupt, Jeff Fryman, and Al Robertson. John remarked to me that “TTTO is the ultimate game of playing trains.” I’m sold on it, too. I compare TTTO operation to a good game of bridge, challenging players with thoughtful decision-making in a very pleasant social setting.

Here’s what to expect of a three-hour Road Show session. You’ll join a group of 10 to 12 registrants. You’ll hear a 15-minute orientation, study a map of the area modeled, and learn how to use the timetable to look up important information. You’ll also see how to use car cards and way-bills. A Road Show organizer will assemble two-person crews

and assign each crew a Road Show docent. Finally, when all is ready, the clock starts and trains roll. Crewmembers confer with one another, working through the situations they face and learning as they go.

The docents are coaches. They’re skilled at sizing up the crews they’re guiding, stepping in gently if someone’s struggling. You won’t find one wrestling away your throttle and taking over to show you how it’s done. Instead, you can expect your docent to help you learn how to understand and act on train orders, how to use the times in your own schedule and other trains’ schedules, how operation of extra trains differs from that of regular trains, and how to apply Rule 99 flag protection.

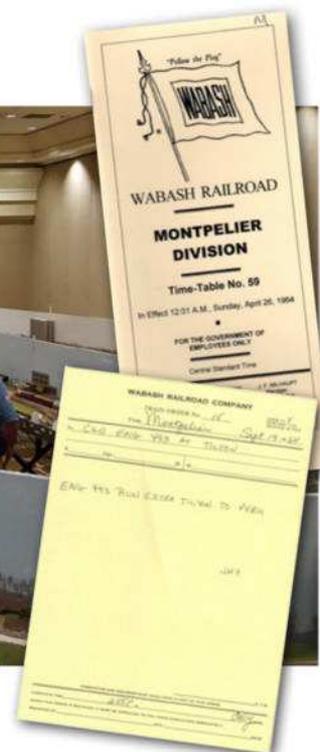
The photo above illustrates a typical Road Show session. Three crews – each with a docent – are seen around the layout working through operating situations. A fourth crew seems to be in deep discussion. Docents often

challenge crews with “what if” situations that deepen their understanding of TTTO, sometimes prompted by a participant’s question about an operating scenario on a home layout.

It’s hard to pick out Cindy Young, but she’s in the photo, too. When Cindy became a regular Road Show member, she attracted women and teens and changed the crew demographics dramatically. This is another reason the event has become so popular.

Taking the show on the road, unloading and setting up, breaking down the layout, and loading and hauling trailers requires a crew of 10, long days, and considerable expense. For these reasons, the Road Show visits a national convention every other year at most. You’ll rarely find it more than two days’ drive away from home near Ann Arbor, Mich.

Kansas City has scheduled a dozen Road Show sessions, so there are plenty of slots available. Sign up early, because they fill quickly. Maybe I’ll see you there! 



JOHN YOUNG REMARKED TO ME THAT “TIMETABLE & TRAIN ORDER OPERATION IS THE ULTIMATE GAME OF PLAYING TRAINS.” I’M SOLD ON IT, TOO. - JERRY



MORE ON THE WEB

◆ Lee Gasparik's photo on this page is this month's free desktop wallpaper. Download it at ModelRailroader.com



On a late fall afternoon, a New York Central Niagara departs Ellison with an express, while a Pennsylvania RR E6 Atlantic picks up a cut of express cars. Paul Kahne shot the photo on Lee Gasparik's O scale Pennsylvania & New York Central layout. The NYC Niagara is a Precision Scale Crown model; the Pennsy E6 is a Max Gray import.

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REFRIGERATOR



Having just dropped a gondola at the scrapyards, no. 2418 moves in to switch Hart's Trading Co. The action takes place on an HO scale diorama built by Ranny Robertson of Glen Allen, Va. The structures are Bar Mills kits. Duane Berger shot the photo.

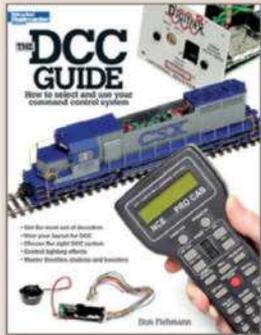
A Pennsylvania RR class M1a Mountain pulls a string of coal hoppers picked up from the Western Maryland interchange across the trestle at Connellsville, Pa. Mike Schindel of Hagerstown, Md., took the photo on his N scale Woodland RR. The 4-8-2 steam locomotive is a Broadway Limited model. Mike scratchbuilt the wood trestle.

Send us your photos

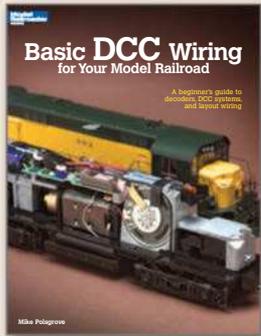
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A Milwaukee Road General Electric 44-tonner pulls a short freight on the outskirts of Milwaukee on a warm spring afternoon. David Broockey of Madras, Ore., staged the HO scale scene on a diorama that he photographed outdoors. The locomotive is a Bachmann model and the boxcar is from ExactRail. The flatcar and caboose are by Athearn.





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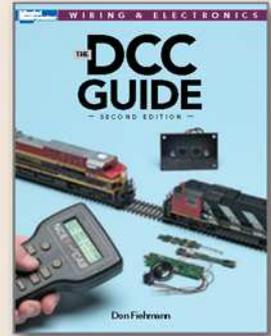
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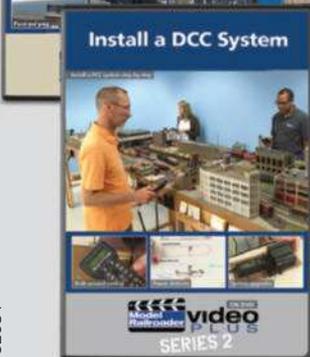
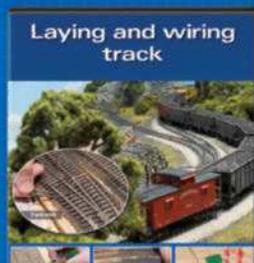
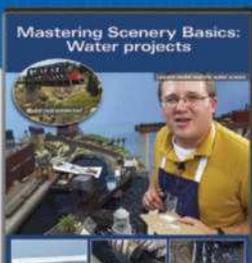


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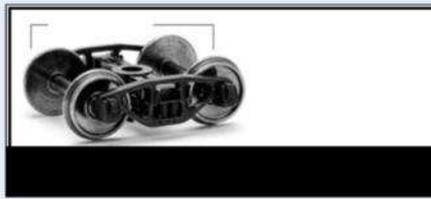
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Schedule of Events

AZ, GLENDALE: WVRHS Model Train Swap Meet. Glendale Christian Church, 9661 North 59th Ave. Saturday, May 12, 2018, 9:00am-1:00pm. Admission \$5.00. Tables \$25.00 to sign up send stamped envelope, check or money order to WVRHS, PO Box 5643, Glendale, AZ 85312-5643. Contact: Craig Faris 623-340-3529.

DE, ROXANA: Spring Fling Train & Toy Show. Roxana Fire House, Route 20, between Millsboro & Fenwick Island. Saturday, May 5, 2018, 9:00am-3:00pm. Admission: \$5.00 adults, children 10 and under free. Operating layouts, refreshments, door prize. For information contact Bill Ziegler, 302-537-0964 or www.delawareseasiderrailroadclub.com

FL, BROOKSVILLE: Regal Railways presents Toy Trains & Hobby Show. Hernando Fairgrounds, 6436 Broad St. Saturday, May 19, 2018, 9:00am-2:00pm. Adults \$5.00. Vendors and operating layouts. Serving lunch items. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

FL, LARGO: Suncoast Model Railroad Club Train Show/Open House, April 7, 2018. SHOW- Minnreg Hall, 6340 126th Ave. N., Largo. Saturday 9:00am-3:00pm. Admission: \$7.00. Children \$2.00 and under 11-free. Free parking. Food/snacks. OPEN HOUSE- Clubhouse, 12355 62nd Street N, Unit A. Visit www.suncoastmrrc.com Contact: irvbatten@yahoo.com

IA, DAVENPORT: 7th Annual Davenport Model Railroad & Memorabilia Swap Meet. Mississippi Valley Fairgrounds, 2815 W. Locust St. Saturday, May 5, 2018, 9:30am-4:00pm. Admission: \$5.00. Tables \$20.00. All scales, operating layouts, food available, free parking. This is Iowa's Largest Train Show. Info: 563-391-6431, 8:00pm-10:00pm

IL, COLLINSVILLE: 12th St. Louis Railroad Prototype Modelers meet. Gateway Convention Center. July 20-21, 2018. Friday 9:00am-9:00pm and Saturday 9:00am-5:00pm. Admission: \$25.00 for both days; \$20.00 for Saturday only. For information, Google: STL RPM or Contact: John Golden at golden1014@yahoo.com or Lonnie Bathurst at Bathurst@itchfieldil.com or 217-556-0314

IL, GREENVILLE: American Heritage Railroad Train Show @ American Farm Heritage Museum 1-70 @ IL Rt. 127 (Exit #45). Saturday, June 9, 2018, 10:00am-4:00pm. Admission: \$4.00, under 12 FREE. Train ride with paid admission. Operating layouts. Dealers welcome \$15.00 per table. Contact Jim @ 217-825-6230.

IN, FRANKLIN: Central Indiana Division-NMRA Train Show. NEW Location-Johnson County National Guard Armory, Saturday April 21, 2018, 10:00am-3:00pm. Admission, \$3.00 adult, \$5.00 family. Operating Layouts, Vendors, Clinics, Contests, Food. Dealer Tables 6 foot \$12.00. Info gtwan@bluemarble.net or 812-876-6799. CID website http://cidnmra.org.

MA, BRIDGEWATER: HUB Division NER/NMRA SPRING TRAINING CLINICS/TRAIN SHOW: Saturday April 14, 2018; 10:00am-4:00pm; Bridgewater, St. Thomas Aquinas Parish Center: 103 Center Street. Admission \$5.00. Children under 12-FREE. Featured clinician Cody Grivno, Associate Editor Model Railroader Magazine. More Information and Clinic Details visit website, www.hubdiv.org

MO, JOPLIN: Museum Complex Train Show and Swap Meet. In Schifferdecker Park, 7th Street & Schifferdecker between the golf course and pool. Saturday, April 28, 2018, 9:00am-3:00pm. \$3.00 adult, under 12 free. Rick Gardner, 11486 County Lane 214, Oronogo, MO 64855; 417-673-4888 or e-mail rickgardner4449@gmail.com

NC, SPENCER: Model Train and Railroadiana Show at the North Carolina Transportation Museum. May 12, 2018 Saturday 9:00am 5:00pm. Dealers, layouts, clinics, train rides and more for the whole family! Details: nctrans.org or 704-636-2889 ext. 251.

NY, BALDWIN: The Sunrise Trail Division NER/NMRA Spring Meet. First Church Baldwin Methodist, 881 Merrick, Road, Zip: 11510. April 14, 2018, 10:00am-4:00pm. Admission: \$8.00, under 12 and Scouts in uniform free w/ adult. Operating layouts, clinics, White Elephant table. Lunch available. Contact: Steve Perry, seperry@optonline.net, 631-744-6462, www.sunrisetraildiv.org

OH, COLUMBUS: The 10th Ohio N Scale Weekend, "For N-Scalers by N-Scalers" Franklin County Fairgrounds, Hilliard, Ohio. Presented by Central Ohio N-Trak. May 19-20, 2018, Saturday, 10:00am-5:00pm and Sunday 9:00am-3:00pm. Set-up Friday May 18th, 1:00pm-8:00pm. Event registration \$10.00. Event info www.centralohiontrak.org or e-mail ohionscaleweekend@yahoo.com

OH, MONTPELIER: Montpelier Trackside Modelers RR Club Train Show/Swap Meet. Quality Inn Convention Center, 13508 State Rt. 15, Exit 13 Ohio Turnpike. Sunday, May 20, 2018, 10:00am-3:00pm. Adults \$5.00, under 12 free. Layouts, Test Track, Tables available. Jim McPike, jimcpike@gmail.com 419-298-2441

PA, MONACA: Beaver County Model RR Spring Train Show & Sale. Monaca Turners, 1700 Old Brodhead Road. Sunday, April 15, 2018, 10:00am-3:00pm. Adults \$5.00, under 12 free. Sponsored by Beaver County Model RR & Historical Society. Contact: Walt Steiner 724-843-3783 or www.bcmrr.raifan.net or beavercitymrr@gmail.com

SC, CHARLESTON: Charleston Area Model Railroad Club Annual Train Show, Danny Jones Armory Park, 5000 Lackawanna Blvd. North Charleston. April 28-29, 2018. Saturday 9:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$5.00, Active military and family's are Free. Children under 12, Free. Table rentals information, contact trainshow@chamrc.com or www.chamrc.com

TX, NEW BRAUNFELS: Annual Model Railroad Jamboree. New Braunfels Civic Center, 390 S. Seguin Ave. April 14-15, 2018. Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults (over 14) \$8.00, children (5-13) \$2.00. 300 vendor tables, layouts including Legos, silent auction, refreshments, museum open house. Info: www.nbrmm.org Jim Edmondson 830-629-2071

VA, FISHERSVILLE: 32nd Annual Shenandoah Valley Model Train and Railroad Show. Augusta Expoland, 277 Expo Road. Sunday, May 6, 2018, 10:00am-4:00pm. Adults \$5.00, children under 12 free. Vendor tables \$20.00. Contact: Bill Kauffman at 540-209-2698, kauffmanb@gmail.com or visit www.acmrc.org/annual-model-train-show

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Keeping the torch burning

Many of you will recall the fine articles by Jim Richards concerning his Athabaska RR in *Model Railroader* and *Model Railroad Planning*. Jim and I go back quite a way, sharing keen interests not only in model railroading but also in flying sailplanes (high-performance gliders). Jim documented many of his lifetime adventures, some of them hair-raising and one that should have been fatal, in his book, *The Road to Narromine* (CreateSpace Publishing).

That Jim was clearly so adept at seeking out adventure while avoiding catastrophe made the news he relayed to me in early 2016 all the more devastating: What he assumed was a minor ailment turned into a diagnosis of a terminal disease, and in a few months he was gone.

For most model railroads, the story ends with the passing of the creator. Not so with the Athabaska. Thanks to his wife, Jean, and some good friends in the Four Corners region of the southwestern U.S., the railroad continues to edge toward completion.

As Van Chanay put it, “A handful of folks get together a few times a year to work on the railroad, do any needed cleanup tasks, and set up for operating sessions that host up to 30 folks a couple times a year. So far, we’ve held four sessions since Jim passed in the spring of 2016.

“New modelers have joined us for every session, and the latest in December 2017 welcomed three new folks for orientation. We hope to develop a core local group in the Durango [Colo.] area that can get together on a more regular basis. A lot of scenery, all structures, and a bit more track need to be installed.



Model railroaders take part in a Dec. 3, 2017, operating session on the late Jim Richards’ spectacular Athabasca RR in Durango, Colo. This illustrates how relationships that develop over the years as a railroad takes shape need not come to an end with the demise of the layout’s owner. Van Chanay photo

“We are extremely grateful to his wife, Jean,” Van concluded, “who allows us continued access to the layout to enjoy what Jim created.”

This situation underscores several things we should consider as we look ahead. Have we given any thought to what we’d like to have happen to our model railroads when we’re gone? Have we come to an agreement with our significant others? I know of several situations like Jim and Jean’s where the builder’s demise was virtually without warning, yet the spouse allowed modeling friends access to the railroad for quite some time.

As the hobby continues to age, conversations invariably turn to what-if scenarios. We’ve discussed putting a “best if used by” date on layouts so our spouses won’t be stuck with the huge task of dismantling them and returning the railroad space to more typical functions.

I realize that when we think about having a good time, our first thought isn’t: “Let’s drive out to the cemetery and see if we can pick up a couple of plots at a good price.” But maybe we can learn from Jim and Jean and their friends – and explore our options now rather than later.

Let’s end this column on a high note. I recently received a batch of snapshots showing operations at the highly regarded La Mesa Model Railroad Club in San Diego (www.facebook.com/LMMRRC/). It took me a moment to figure out what was different about these images. Then it dawned on me: There was nary a gray hair

or bald head in the bunch. Modelers who couldn’t have been much more than college age were dispatching the railroad, running the trains, and working the big yard at Bakersfield, Calif.

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And the young folks are showing us that the club is not depending on the Old Heads to keep the torch burning. **MR**



I KNOW OF SEVERAL SITUATIONS LIKE JIM AND JEAN’S WHERE THE BUILDER’S SPOUSE ALLOWED MODELING FRIENDS ACCESS TO THE RAILROAD FOR QUITE SOME TIME. - TONY



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Item #106-3517	N Amtrak Superliner Phase III 4-Car Set A	\$110 MSRP
Item #106-3518	N Amtrak Superliner Phase III 4-Car Set B	\$110 MSRP
Item #106-5507	N Aluminum Autorack Amtrak Autotrain Phase III Set #1	\$95 MSRP
Item #106-5508	N Aluminum Autorack Amtrak Autotrain Phase III Set #2	\$95 MSRP
Item #106-6291	N Amtrak Amfleet II Phase III 2-Car Set A	\$55 MSRP
Item #106-6292	N Amtrak Amfleet II Phase III 2-Car Set B	\$55 MSRP
Item #106-7122	N Step-Down Coach and Baggage Car Amtrak Phase III 2-Car Set	\$55 MSRP

Kato's N Scale passenger equipment is fully compatible with optional Interior Lighting kits 11-211/11-212.

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