

48 TIPS FOR SCENIC REALISM

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Walthers' new
SD70ACe p.62

June 2018
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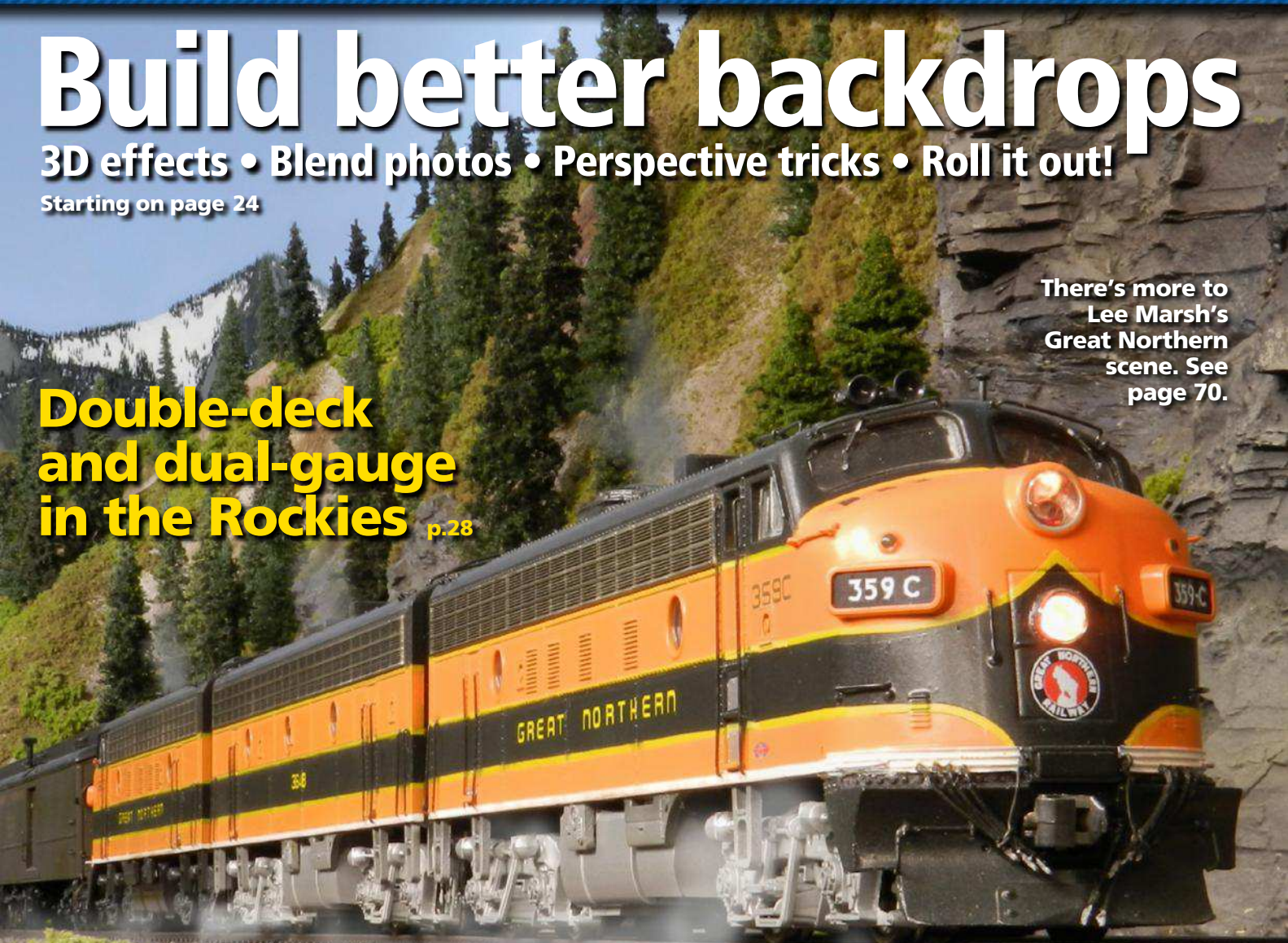
Build better backdrops

3D effects • Blend photos • Perspective tricks • Roll it out!

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**Double-deck
and dual-gauge
in the Rockies** p.28

There's more to
Lee Marsh's
Great Northern
scene. See
page 70.



PLUS

Visit a compact, super scenic mountain layout p.50

Replacing a factory-installed DCC decoder p.60

Planning helps maximize scenic possibilities p.56

**BONUS
ONLINE
CONTENT
CODE PG. 4**

HO

SCALE



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BACKDROPSPECIAL

Features



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by Lou Sassi

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42 5 tips for blending backgrounds

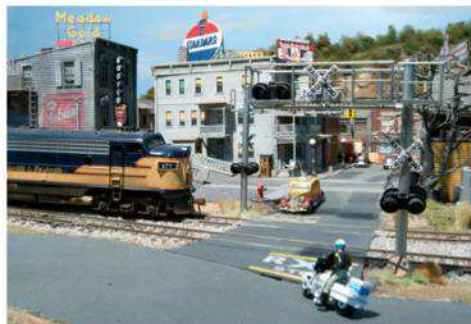
Restricting viewing angles may be the key

by Paul J. Dolkos

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by Lance Mindheim



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Freight traffic through the Appalachians supports this layout

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by Andrew Dodge

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On the cover: The Great Northern *Fast Mail* is on Lee Marsh's HO layout, the cover, and this month's Trackside Photos. Lee Marsh photo



Next issue

In July, Cody Grivno builds a grain-hauling stockcar, contributor Mont Switzer models a 1950s semi-tractor, we visit an expanded layout, and more!

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When this month's special backdrop construction features conclude in print, the story continues on Model Railroader Video Plus! Visit MRVideoPlus.com to find more than 30 insightful videos covering all aspects of backdrop assembly, painting, and detailing. Not an MRVP subscriber yet? Watch the **free video** to see the helpful how-to instruction you've been missing!

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Discover how Lance Mindheim makes use of so many different forward-thinking concepts. MRVideoPlus.com/PLVCSX



Explore the subtle intricacies of Paul Dolkos' backdrops and background scenes. MRVideoPlus.com/PLVBHD

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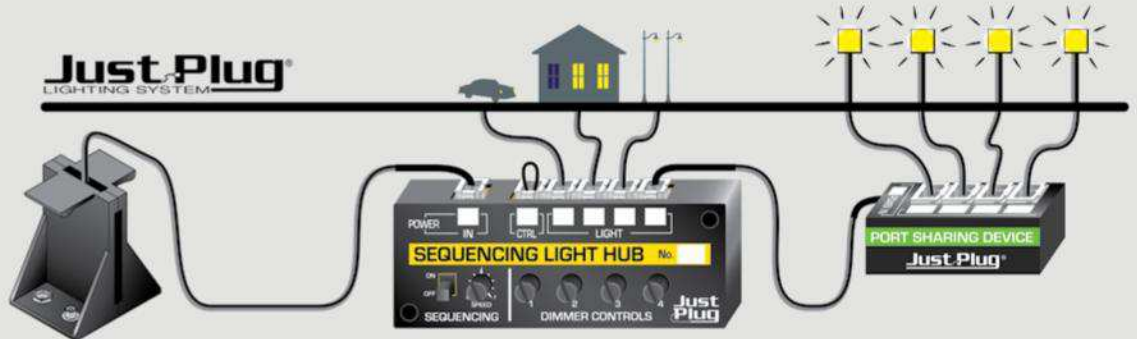
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In fact, you'll find that content presented on MRVP is often leading the exploration of new products, tools, and techniques. And there's no better example of that than Gerry Leone's *Off The Rails* series! So whether you want to improve your skills or learn some new ones, MR Video Plus has something for everyone!

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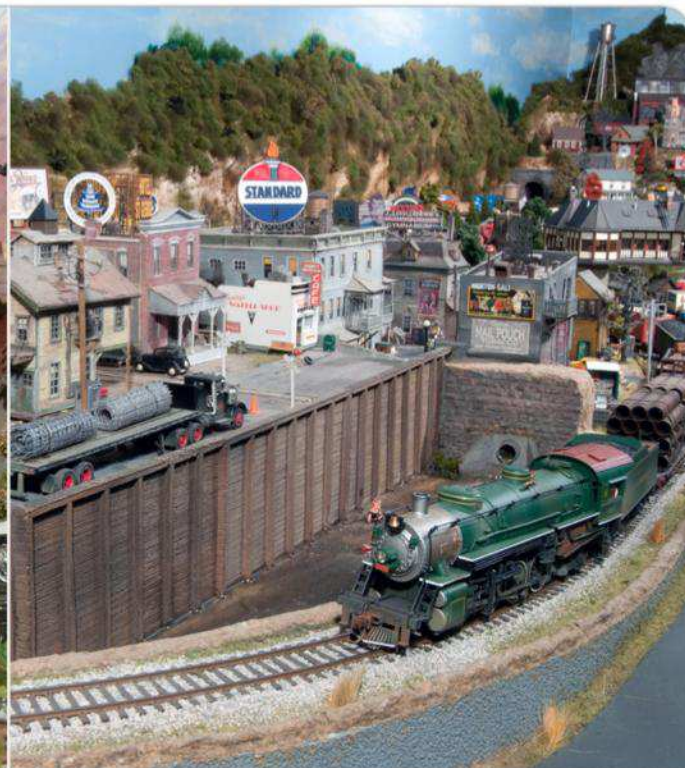
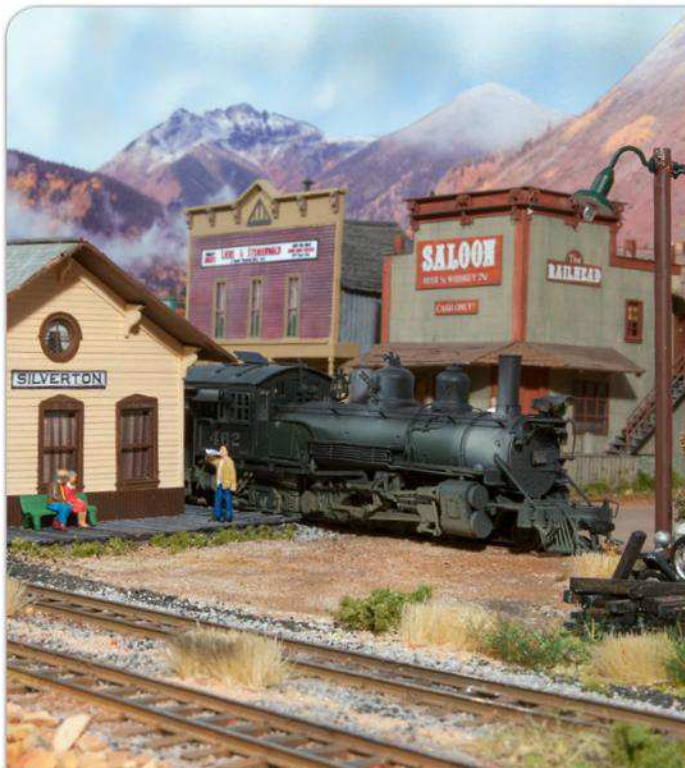
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Want to see more of the featured layouts in this issue? Magazine subscribers can visit www.ModelRailroader.com for two exclusive online videos, featuring the Leadville & Red Cliff and the St. George model railroads. See more than 100 other layouts featured in *Model Railroader* by clicking on Layout Visits under the Videos tab on the MR home page.

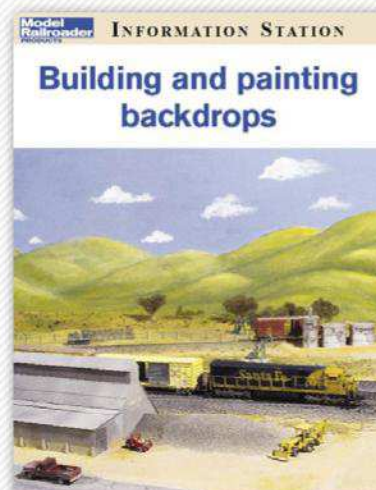


Computer desktop wallpaper

Lee Marsh's spectacular photo is featured on the cover and in this month's Trackside Photos column. It's also this month's featured computer desktop wallpaper. Click on the link under Online Extras and download the image sized for use as a background on your computer screen.

Featured Digital Download

Looking for more backdrop tips? This set of five previously published articles explores several methods for building and painting model railroad backdrops. You'll also learn about forced perspective to add the illusion of distance. Learn more about this Digital Download by clicking on the link under Online Extras. Find more than 60 other digital article collections that cover all aspects of model railroading at the Kalmbach Hobby Store. Click on Shop at www.ModelRailroader.com.



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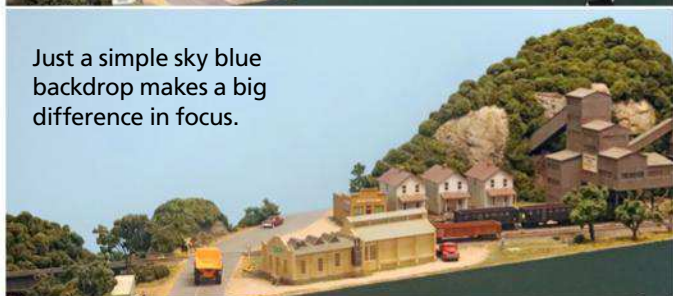
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Realism isn't just pie in the sky



Just a simple sky blue backdrop makes a big difference in focus.



Model railroading is about creating your own world. Your piece of it might be made up, or it could be the railroad you grew up with and its environs.

When we start building layouts, we're generally pretty

happy to get just the basics to go right – sturdy benchwork; track that doesn't cause derailments; and a building or two so our imagination doesn't have to do everything.

Then, for many, come ground cover and roads.

There now, what a splendid place you've created. Trains are running through urban centers and farmland.

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If you've ever built a backdrop, and many of you have, you realize it might be the piece of the layout that does the most to transport you to *that* place you want to be when running trains. The backdrop removes the distractions of your room, quells the tussle between the eyes and the mind, and allows you to focus on everything else that's been created.

The great thing is, you don't have to be an artist to



make a backdrop. A surface painted a simple sky blue behind model trains does wonders for one's sense of realism and place.

It can make the difference between just being in your house, and being "there" when you're running trains.

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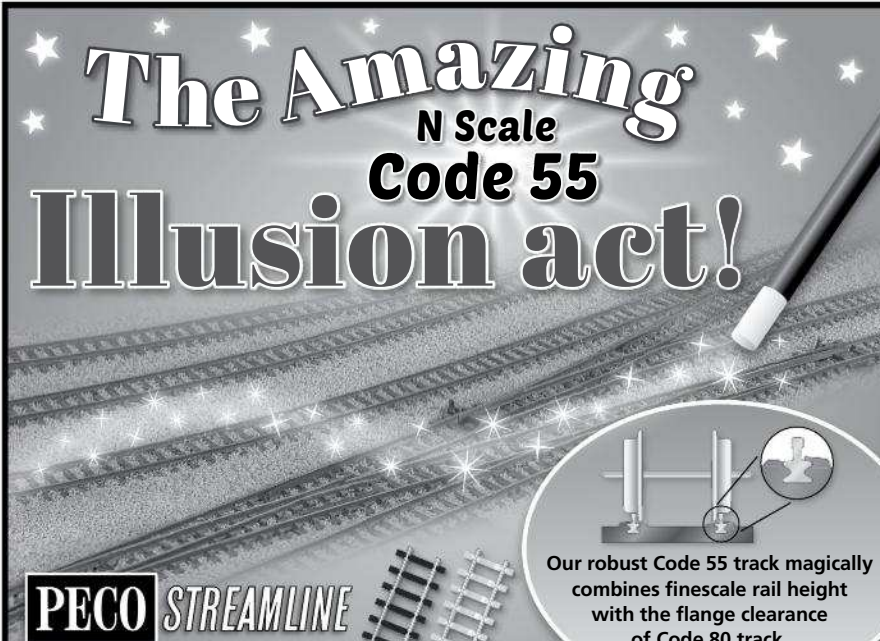
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HO scale



Electro-Motive Division GP39-2 diesel locomotive. New paint schemes on this Atlas Trainman model include Wisconsin & Southern (35th anniversary lettering, one road number), CSX (dark blue and yellow), Delaware & Hudson (blue, gray, and yellow), Reading Co. (green and yellow), and Union Pacific (red sill stripe) in two numbers per scheme unless

noted. The HO scale model has drill-starter points for grab irons and Accumate couplers. Direct-current models with an eight-pin plug and a 21-pin connector for a Digital Command Control decoder are **\$149.95**. Versions with a dual-mode Digital Command Control and sound sell for **\$239.95**. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

Industry news

• International Toy Train Expo.

Kalmbach Media, publisher of *Model Railroader*, *Trains*, *Garden Railways*, *Classic Toy Trains*, and *Classic Trains*, is proud to be the official media sponsor of the International Toy Train Expo, July 7-8 at the Chippewa Valley Expo Center in Chippewa Falls, Wis.

The two-day show will feature vintage toy trains, operating layouts, vendors, and railroad clubs. Admission is \$5, children 17 and under are free. Discount tickets (\$2.50) can be purchased at Menards stores or www.menards.com.

For more information, visit www.internationaltoytrainexpo.org.

• **Grandt Line closes.** Grandt Line, a manufacturer of architectural details, structure kits, and freight cars in several popular modeling scales, closed in June after more than 60 years in business.

The company was founded by the late Cliff Grandt in the San Francisco bay area. His children Dave, Liz, and Phyllis operated the business after Cliff's passing in 2002. Cliff's other son, Robert, who passed in 2014, ran R/Robb Ltd. with Russ Simpson. Their company

manufactured HO scale craftsman kits and published photographic reference books.

HO scale locomotives

• Electro-Motive Division SD40 diesel locomotive.

CSX (Norfolk Southern patchout), Pennsylvania RR (four road numbers), Southern Pacific (no. 7342 in orange and Daylight red and orange), and Southern Ry. (as-delivered scheme and Norfolk Southern heritage unit no. 3170). Three numbers per scheme unless noted. Prototype-specific details, factory-installed and painted wire grab irons, and light-emitting-diode headlights. Direct-current model, \$139.98; with SoundTraxx Econami sound decoder, \$199.98. January 2019. Ready-to-Roll. Athearn Trains, 800-338-4639, www.athearn.com

• Electro-Motive Division GP7 diesel locomotive.

New paint schemes: Algoma Central (maroon, gray, and yellow), Amtrak (silver and black), Central California Traction (red), Great Northern (*Empire Builder* scheme), and Missouri-Kansas-Texas (green and yellow). New road numbers: Bangor &

Aroostook (gray, red, and black), Belt Ry. of Chicago (gray, black, and yellow, two numbers), and Toronto, Hamilton & Buffalo (maroon and cream, two numbers). Three numbers per scheme unless noted; also available undecorated (with and without dynamic brakes). Direct-current model, \$169.95; with dual-mode ESU LokSound Select sound decoder, \$279.95. Atlas Classic line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com



• Atchison, Topeka & Santa Fe 4-8-4 Northern steam locomotive.

Five road numbers; also available painted black but unlettered. Plastic and die-cast metal construction, factory-installed engineer and fireman figures, synchronized smoke unit, and Paragon 3 sound decoder featuring Rolling Thunder. \$399.99. Broadway Limited Imports, 386-673-8900, www.broadway-limited.com



H0 scale freight cars

- **Assorted freight cars.** Milwaukee Road 70-ton offset-side three-bay hopper, \$17.98. New York, New Haven & Hartford 41-foot steel gondola (single car, \$17.98; three-pack, \$52.98). New York, Susquehanna & Western 36-foot Fowler boxcar, \$17.98. Norfolk & Western 36-foot double-sheathed boxcar with wood ends and straight underframe, \$17.98. Penn Central American Car & Foundry Center Flow covered hopper, \$18.98. Injection-molded plastic kits with plastic wheels and Accumate couplers. Accurail, 630-365-6400, www accurail.com



- **Midland Valley double-sheathed caboose.** Laser-cut wood kit with tab-and-slot and peel-and-stick construction; laser-cut underframe, end platforms, end railings, and brake wheels; cast-resin platform steps and brake gear; white-metal smoke jack; and multi-name herald signs. Trucks, couplers, and road number decals not included. \$52.95. American Model Builders Inc., 314-646-8588, www.laserkit.com

- **50-foot smooth-side mechanical refrigerator car.** American Refrigerator Transit Co. (Missouri Pacific and Wabash heralds), Burlington Refrigerator Express (Cascade Green with Burlington Northern herald), Chicago & North Western (yellow and green), Fruit Growers Express (FGCX reporting marks), Great Northern (post-1967 Rocky herald), and Santa Fe Refrigerated Despatch (SFRP marks). Three road numbers per scheme. Injection-molded plastic with RP-25 contour 33" metal wheels and body-mounted McHenry scale couplers. \$27.98. January 2019. Roundhouse line. Athearn Trains, 800-338-4639, www.athearn.com

- **3,560-cubic-foot-capacity three-bay covered hopper.** New paint schemes: Canpotex (CGLX reporting marks), Agrum (SHQX marks), David J. Joseph (Oxide Red), and Potash Corp. New road numbers: Corn Products (yellow). Two

N scale



24-foot high-side ore car. Bachmann offers this newly tooled model decorated for Union Pacific; Pennsylvania RR (Tuscan Red and black); CP Rail; and Duluth, Missabe & Iron Range. The N scale model (\$33) has body-mounted E-Z Mate couplers and metal wheelsets. Bachmann Trains, 215-533-1600, www.bachmanntrains.com

road numbers per scheme; also available undecorated (\$24.95). Metal wheels and Accumate couplers. \$31.95. Trainman line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com



- **Bay-window caboose.** Nickel Plate Road, Baltimore & Ohio, Erie, New York Central, and Union Pacific. Model features new and existing tooling, prototype-specific bay window, see-through running board, ladder, metal wheels, and E-Z Mate Mark II couplers. \$59. Bachmann Trains, 215-533-1600, www.bachmanntrains.com



- **Assorted freight cars.** Class GLa two-bay hopper: Chicago, Indiana & Southern (New York Central); Jamison

In Memoriam

Richard J. (Dick) Cecil, 1934-2018

Milwaukee-area model rail-roader Dick Cecil died on Feb. 16. He was 84 years old.

Dick was no stranger to Kalmbach Media. He appeared with Wayne Wesolowski in the Kalmbach Video production *Building Model Railroad Wood Structures*. He also built the HO scale Madison Central layout in the World's Greatest Hobby video *Building Your First Model Railroad*.

In addition, Dick served as superintendent, assistant superintendent, and director of the National Model Railroad Association's Wisconsin South-eastern Division; president, vice president, director, and contest judge for the NMRA's Midwest Region; and co-chairman of Trainfest, the world's largest operating model railroad show, held in the Milwaukee suburb of West Allis, Wis.

N scale



Johnstown America BethGon protein gondola. Kato offers eight-packs (\$155) of these cars decorated for Burlington Northern and First Union Rail. The N scale model has metal wheels and a removable injection-molded plastic cover. There are two eight-packs per scheme. Kato USA Inc., 847-781-9574, www.katousa.com

Coal & Coke Co.; Keystone Coal & Coke; Pennsylvania Lines; Reading Co. (Anthracite Blue Coal); and Western Maryland. Class H21 four-bay hopper: Pennsylvania RR (circle keystone). Three road numbers per scheme. Injection-molded plastic kits with one-piece body, separate brake appliances, and metal wheels. \$17.95 each. Bowser Manufacturing Co. Inc., 800-327-5126, www.bowser-trains.com



• **Canadian National well car no. 67002.** Cast-resin kit with cutting head for Lovat tunneling machines, mount kit, and assembly hardware. Grab irons and railings not included. \$39.99. Concept Models, www.con-sys.com



• **Assorted freight cars.** Gulf, Mobile & Ohio Association of American Railroads two-bay 50-ton offset-side

hopper with coal load (as-delivered scheme), \$42.95. Union Pacific Pullman-Standard 40-foot PS-1 boxcar (built 1957, repainted 3-73), \$39.95. Two-piece self-centering trucks and scale couplers. Kadee Quality Products Co., 541-826-3883, www.kadee.com

HO scale passenger cars

• **Heavyweight single-window coach.** New paint schemes: Canadian Pacific, Great Northern, Pere Marquette, Rutland, and Virginian Ry. New paint schemes: Delaware & Hudson and Spokane, Portland & Seattle. Three numbers per scheme; also available undecorated (\$59.95). Detailed interior, separately applied underbody detail, and Accumate couplers. \$69.95. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

HO scale structures



• **Atchison, Topeka & Santa Fe Boron, Calif., station.** Laser-cut wood kit with

board-and-batten architecture; tab-and-slot construction; peel-and-stick windows, door, trim, and shake-style shingles; metal smoke jacks; cast-resin air conditioner; and color signs. Depot measures 4" x 2½" x 2". Baggage room measures 2⅝" x 2" x 1¾". \$52.95. American Model Builders Inc., 314-646-8588, www.laserkit.com



• **Fort Davis, Ala., post office.** Laser-cut kit with tab-and-slot construction; peel-and-stick windows; cast pewter mailboxes, window air conditioner, and power meter; and high-resolution graphics. Measures 7" x 2¾". \$39.95. Showcase Miniatures, 334-750-3276, www.showcaseminatures.net

HO scale details and accessories

• **Laser-cut acrylic windows.** For Atlas Master Line HO scale General Electric Dash 8-40C and Dash 8-40CW diesel locomotives. Flush-fitting windows are factory-masked. \$5.95 each. American Model Builders Inc., 314-646-8588, www.laserkit.com

• **28-foot drop-sill parcel trailer.** United Parcel Service (with and without shield). Six trailer numbers per scheme. Injection-molded plastic with rolling vinyl tires. \$29.98. January 2019. Athearn Trains, 800-338-4639, www.athearn.com



• **Garage detail set.** Set features 45 pieces, including four bumpers, 12 auto tires, small portable air compressor, and a tire changing machine. \$21.98. SceneMaster line. Wm. K. Walther's Inc., 414-527-0770, www.walther's.com

N scale locomotives

• **Electro-Motive Division SD50 and SD60 diesel locomotives.** New paint schemes. SD50: Lehigh Gorge (one number). SD60: CSX (dark blue and yellow). New road numbers. SD50: Chessie

Showcase



1



3



4

2



5



1 Greenbrier 5188 covered hopper. ScaleTrains.com Inc. offers this HO scale Operator line model (\$25.99) decorated for Kansas City Southern and four other railroads. ScaleTrains.com Inc., www.scalettrains.com

2 Letters, Parcels & Post. The latest HO scale Built &

Ready Landmark Structure from Woodland Scenics (\$84.99) has interior and exterior lighting and a mail box. Woodland Scenics, www.woodlandscenics.com

3 Southern Pacific 50-foot double-door boxcar. See-through plastic running boards, positionable doors,

and an etched-metal brakewheel platform are some of the features on this N scale model (\$24.25). Micro-Trains Line Co., www.micro-trains.com

4 UPS International 4900-series vehicles. Walther's offers this HO scale dual-axle semi-tractor

(\$11.98) with the modern UPS shield logo. Wm. K. Walther's Inc., www.walther's.com

5 Despatch Shops X65 boxcar. Pittsburgh & Lake Erie is one of the schemes available on this new N scale car (\$42.95). Eastern Seaboard Models Corp., www.esmc.com

Model Railroader MAGAZINE

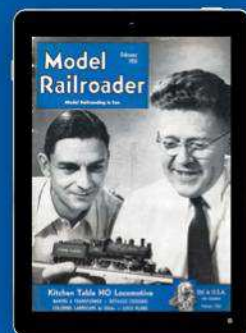


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HO scale



Red Barn. Add a farm in a flash with this factory-assembled and painted structure from Menards. The HO scale barn features five light-emitting-diode (LED) yard lights, a red LED on silo, a motor-driven revolving rooster weather vane, a farmer figure, four cows, two trees, two round hay bales, details, and Jack the German shepherd. The lighting requires 4.5V adapter (sold separately). The Red Barn sells for **\$59.99** plus shipping (free shipping to your local Menards store). Menards, www.menards.com

System (Baltimore & Ohio and Chesapeake & Ohio reporting marks, two numbers each), Conrail ("Quality" scheme), and Reading & Northern. SD60: Canadian Pacific, Oakway, and Union Pacific. Three numbers per scheme unless noted; both body styles available undecorated. Directional golden white light-emitting-diode headlights, blackened metal wheels, and Accumate couplers. Direct-current model with speaker only, \$139.95; with ESU Digital Command Control sound decoder, \$249.95. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

- **General Electric Evolution Series diesel locomotives.** ES44AC: Chessie System (fictional heritage scheme, one road number), Citirail, CSX (Safety Train, one number), General Electric Evolution Hybrid demonstrator (one number), and Iowa Interstate (red-and-yellow Rock Island heritage scheme, one number). ES44C4: BNSF Ry. (Heritage III with Positive Train Control antenna) and Florida East Coast (red and yellow). Three

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numbers per scheme unless noted. Prototype-specific trucks and optional metal grab irons. Accepts Digitrax DZ125IN and Train Control Systems TCS EUN651 Digital Command Control decoders (sold separately). Direct-current model, \$135. Fox Valley Models, www.foxvalleymodels.com

N scale freight cars

- **FMC 50-foot double-door boxcar.** Amador Central RR; British Columbia Ry.; Burlington Northern; Chicago & North Western; Chessie System (Chesapeake & Ohio reporting marks); East St. Louis Junction Ry. Co.; Galveston Wharves; Longview, Portland & Northern; Northern Alberta Ry.; Southern Pacific; Western Pacific; and Wisconsin Central. Three road numbers per scheme. Screw-mounted roller bearing trucks, metal wheelsets, and body-mounted McHenry couplers. \$22.98. January 2019. AthearnN. Athearn Trains, 800-338-4639, www.athearn.com

- **Pullman-Standard 40-foot PS-1 boxcar.** New paint schemes: Central RR Co. of New Jersey (red with Statue of Liberty herald), Chesapeake & Ohio ("C&O for Progress" herald), Norfolk & Western (black), Seaboard Air Line ("The Route of Courteous Service" slogan), and Soo Line (billboard lettering). New road numbers: Rutland (yellow and green), St. Louis Southwestern (Cotton Belt, "Blue Streak Fast Freight Service" lettering), and Union Pacific ("Be Specific - Ship Union Pacific" slogan). Two road numbers per scheme; also available undecorated (\$24.95). Prototype-specific details, Barber S-2A 50-ton trucks with metal wheelsets, etched-metal running boards, and body-mounted Accumate couplers. \$32.95. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com
- **Flexi-Van Mark III and Mark IV flatcars.** Mark III: Milwaukee Road, North American/Milwaukee Road, and Southern Ry. Mark IV: Chicago, Burlington & Quincy; Illinois Central;

and New York Central. Three road numbers per scheme. Die-cast metal underframe and body-mounted couplers. \$30.95. Fourth quarter 2018. Trainworx, 970-874-9747, www.train-worx.com

N scale structures

- **Silo in Luçon.** Laser-cut cardboard kit. Footprint is 4.33" x 2.75". \$83.14 (price may vary based on exchange rate). Minifer, www.minifer.fr/en

N scale details and accessories

- **1997 Ford F-150 pickup truck.** Atlas Model Railroad Co., black, black and silver, dark red, green and tan, Greenlawn Landscape Experts, Maintenance of Way Yellow, Moonlight Blue, Pacific Green, police, red and tan, tan, white, and white and tan. Also available undecorated (\$15.95). Plastic head and brake lamp lenses and bumpers painted silver. Two-pack, \$22.95 (two-tone schemes, \$28.95). Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

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N scale



New York Central 19000-series wood caboose. Carry the markers on your freight train with this wood kit from American Model Builders. The N scale caboose (\$37.95) has laser-scribed birch plywood sides, end walls, and cupola; tab-and-slot and peel-and-stick construction; cast-resin platform steps and brake gear; a plastic smokejack; Tichy Train Group decals; and two running board styles. The kit does not include trucks or couplers. American Model Builders Inc., 314-646-8588, www.laserkit.com

O scale details and accessories



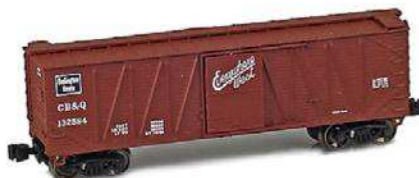
• **Assorted vehicles.** Blue Coupe, City Classic, Comfy Cruise, Cool Convertible, Downtown Drive, Fancy Fins, Green Pickup, Heavy Hauler, Midnight Ride, Police Car, Station Wagon, and Work Truck. Each vehicle includes driver and light-emitting-diode headlights and taillights. Police car features flashing light on roof. \$49.99 each. Woodland Scenics, 573-346-5555, www.woodlandscenics.com

Z scale locomotives



• **General Electric ES44AC diesel locomotive.** New paint scheme: Norfolk Southern (Norfolk & Western heritage unit, one road number). Prototype-specific details, painted safety rails, directional light-emitting-diode headlights, working ditch lights, traction tires, and can motor with dual flywheels. American Z Line, 614-764-1703, www.americanzline.com

Z scale freight cars



• **40-foot single-sheathed boxcar.** New paint scheme: Chicago, Burlington & Quincy ("Everywhere West" slogan on door). Eleven road numbers (single car, two-pack, and two four-packs). Injection-molded plastic model with etched-metal running boards, positionable wood doors, blackened metal wheels, and AutoLatch couplers. American Z Line, 614-764-1703, www.americanzline.com

Electronics/controls

• **ProtoThrottle.** Wireless handheld throttle that works in tandem with Digital Command Control system and simulates a diesel locomotive control stand. Features anodized aluminum faceplate that includes spring-loaded horn button; fully detented 8-position (plus idle) throttle; fully detented reverser; latched bell button; smooth, resistive brake; independent light switches; and more. Requires the purchase of a DCC-specific receiver (only one receiver needed for multiple throttles), \$99. Advance registration production run, \$449. List price,

\$482. Iowa Scaled Engineering, www.protothrottle.com

Decals

• **Fruit Growers Express 50-foot insulated (RBL) boxcars.** Set 1 (completes three cars, 1963-65+): Atlantic Coast Line; Baltimore & Ohio; Chicago & Eastern Illinois; Fruit Growers Express (RBNX); Richmond, Fredericksburg & Potomac; and Seaboard Air Line. Set 2 (completes three cars, 1963-65+): Baltimore & Ohio, Central of Georgia, Louisville & Nashville, Norfolk & Western, Penn Central, and Southern Ry. Set 3 (completes six cars, 1970s): Chicago & North Western, Clinchfield, Milwaukee Road, Norfolk Southern, Southern Ry., Seaboard Coast Line, and Western Pacific. HO scale. \$14 each. Illinois Central Gulf Decals, paducah.home.mindspring.com

Tools



• **Carailer.** For placing HO scale freight cars on track. Injection-molded plastic. \$6.99. The Aurora Branch, 630-768-5062, westsubrr@comcast.net

• **Model 494 four-in-one crimping plier.** Three built-in folding stations for 1, 2, and 3mm crimp tubes. Includes a chain nose plier, Xuro-Rubber handles, and built-in return spring. \$21.99. Xuron Corp., 207-283-1401, www.xuron.com

Books

• **Murder to Scale.** By Debra B. Schiff (Bachmann Trains) with consulting editor Mike Blumensadt. Fiction murder mystery. Model train enthusiast Tom McCloud tries to discover who murdered fellow model railroader Bill Murphy and stole his scratch-built engine during the setup of a model railroad display in a church basement. 190 pages. Paperback or Kindle versions. \$7.99. Available at www.amazon.com





In the April issue, "Auric Goldfinger" of Fort Knox, Ky., described a novel way to keep his rails clean and improve electrical contact. Most readers got the joke!

That tip from Mr. Goldfinger

I read with interest the April Reader Tip by Auric Goldfinger, who used his wife's inherited gold jewelry to plate his model railroad rails. I might be tempted to try this, except for two things: One, I think my wife would object, even after nearly 51 years together. She is understanding of my hobby, but not *that* understanding! Second, I'd have to rip up all the track on my layout, right down to the rails.

To be honest, when I first glanced at this "tip," I thought it was legitimate – until I realized this was the April issue!

*Jim Barnard,
Highlands Ranch, Colo.*

While visiting Gettysburg, Pa., I stopped by a local hobby shop. This was shortly after the April issue of *Model Railroader* came out. I overheard three regular customers discussing an article in MR about gold-plating track, and I started laughing out loud (fortunately, I was around the corner from them at the time). All three were taking it completely seriously!

I had to move to the back of the store to compose myself, and then explain to my wife that MR does an April Fool's joke every year and that these guys had fallen for it hook, line, and sinker! Thanks for a hilarious few minutes. You definitely got those guys good!

*Richard Wentzel
Millville, N.J.*

Auric Goldfinger better have a *very* understanding and supportive wife. If not, we might shortly be reading about a certain modeler meeting an untimely end. An inner voice told me to check the date of the issue – and then I chuckled as I thought, "Ya got me!"

*William Nida
Maxton, N.C.*

I enjoyed reading the April Reader Tip. After a good laugh, I shared the letter with my wife. Later I noticed that she hid her gold jewelry.

*Edward Pizzigati
Greenville, N.Y.*

60 years and counting

My subscription to MR started with the silver-covered 25th anniversary issue in January 1958. I was a 12-year-old sixth-grader, and decided that I would be a serious scale model railroader. From that moment to this, I've been a continuous subscriber to the magazine and have eagerly read every issue – for 60 years now! My subscription has never lapsed – not for cars, not for girls, nor for college or family or career.

It's an astounding tribute to the editorial policy of a magazine that it could appeal to a reader with the same sense of excitement every month from grade school through a compelling professional career and into retirement. Keep 'em coming! They're like a letter from home.

*Gregg Condon
Menomonie, Wis.*

Thanks to Tony

I enjoy Tony Koester's column most every month and often start reading the magazine from the back.

His April piece, "Look to the prototype to enhance operations," really hit a chord. As a member of a large model railroad club in San Diego, I run steam Southern Pacific helper trains frequently. Both standard gauge Mikado, MT-4s and MT-2s, and narrow gauge 4-6-0 and 2-8-0 power. And I do *not* consist through our DCC system! The operations are much more realistic, and Tony is right: Cutting in the caboose behind the "pusher" engine makes an even more realistic consist.

Thanks to Tony for his column.

*Steve Bradley
Oceanside, Calif.*

Clarification

Regarding the Atlas HO scale General Electric U33B diesel (Product Reviews, April): The New York Central owned two GE U30Bs that were modified by GE for testing; they looked like U33Bs but were part of a U30B order, and wore builder's plates for U30Bs. All Penn Central U33Bs were delivered after the New York Central-Pennsylvania RR merger.



Helium cars, like this HO scale Ambroid model built by *Model Railroader* associate editor Eric White, were made of an array of horizontal high-pressure tanks, each of which was loaded and unloaded separately. Bill Zuback photo

How were helium cars unloaded?

Q I loved the recent article in *Model Railroader* that showed the building of an old Ambroid wooden kit for a U.S. Navy helium car [December 2017]. Tremendous patience and skill resulted in a lovely model. The article inspired me to scratchbuild a helium car, using the easier material of Evergreen styrene. Now that I have a helium car, what facilities do I need to build to receive it? What type of building was used to unload and store the helium gas, or did the authorities simply use the car as a storage unit to top up the Navy blimps as necessary?

Peter Tobutt, Horsham, U.K.

A Helium cars are made up of an array of narrow parallel tanks; they're loaded and unloaded from valves at the end. These valves are behind double doors at both ends of the car. The loading and unloading facility for such cars is an end platform allowing a worker to reach these doors, and an array of high-pressure hoses that attach to the valves, like those used to load and unload propane tank cars. The gas is then stored in cylindrical high-pressure tanks, again, like those used for propane. There's a photo of a helium car being unloaded on Tony Thompson's "Modeling the SP" blog, as well as more about the cars, at <http://modelingthesp.blogspot.com/2012/04/helium-cars-part-1.html>.

Q I've been following Jerry Dziedzic's "On Operation" columns on Timetable-and-Train-Order operation. My interpretation of his article in the October 2017 issue is that an order creating an extra train wouldn't necessarily contain meet instructions with opposing trains; the extra is simply told to be out of the way before opposing trains show up. But what if an extra with no prescribed meeting point with an opposing train gets delayed between sidings and can't clear in time? You left in what should have been plenty of time, but Murphy intervened. What happens? How do you protect against the opposing move you were supposed to clear for?

Greg Drewiske, Wisconsin Rapids, Wis.

A The short answer to "what happens" is "you get fired." But seriously, ladies and gents, in a case where something unavoidable happens (like a breakdown, derailment, obstruction on the tracks, or the like), it's the responsibility of the train's crew to prevent disaster. Rule 99 reads: "When a train stops under circumstances in which it may be overtaken by another train ... a member of the crew must go out immediately a sufficient distance to ensure full protection. The front of the train must be protected in the same way when necessary." These flagmen would be sent out ahead of and behind the train with flags, fusees, and/or torpedoes to a distance sufficient for an oncoming train to stop with room to spare. The crew should also report the

situation ASAP to the dispatcher, who can warn the crews of other trains, reroute other trains if the situation won't be cleared up quickly, and dispatch the wreck train if necessary.

Q What issue of *Model Railroader* has the information for weighting HO railroad cars? What's the right formula?
Jerome Vrtiska, Lincoln, Neb.

A Car weight is governed by a National Model Railroad Association recommended practice (RP) – specifically, RP-20.1. For HO scale, the formula is 1 ounce + ½ ounce per inch of body length. You can look up RP-20.1, as well as other NMRA Standards and RPs, at www.nmra.org/index-nmra-standards-and-recommended-practices.

Q I am about to install Woodland Scenics 4 percent Grade Incline sets. Once the risers are glued down, I'm not sure how to install the track. My concern is how to install the track where the incline begins, where it starts to decline, and where it ends. Do I bend the track up and down? Do I position the track joints at the point of change in grade? Please advise.

Sam Brosius, Pasadena, Md.

A Even if your trains can handle climbing a 4 percent grade, a sharp transition from level to incline (or vice-versa) can still cause problems, especially on locomotives and cars with long wheelbases and low-hanging underbody equipment (such as modern passenger cars). They may bottom out, derail, uncouple, or catch a coupler's glad hand on a tie at the top or bottom of the grade.

If your track plan allows, I would suggest preceding and following your 4 percent inclines with sections of 2 percent grade, at least 1½ times as long as your longest car. Use a sanding block to round off the convex corners at the top of the grade, and shim under the concave curve at the bottom of the grade to make both curves more gradual. Use a foam-safe adhesive caulk to apply cork roadbed on top of the subroadbed and inclines to provide a smoother surface on which to glue your track. Avoid placing rail joints, turnouts, crossings, or other junctions at these inflection points

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

to avoid forming troublesome vertical kinks. Let the flextrack's natural resistance to bending keep your vertical transitions smooth.

For more, look up Van Fehr's article "Understanding vertical curves" in *Model Railroad Planning 2016*.

Q I'm 86 years old and short on time, so please humor me, sir. I'm building a 16 x 60-foot HO scale layout in my attic. I'm using Digital Command Control and want to use Peco turnouts. Should I order Peco Insulfrog or Electrofrog?

James F. Ervin, Conover, N.C.

A Since you're 86 and short on time, I'll give you the short answer: Either. The choice depends on how you prefer to wire your turnouts. But for everyone else who keeps writing me every few months asking the difference between Insulfrog and Electrofrog turnouts, read on.

You can spot the difference between the two types of Peco turnouts by looking at the closure rails that converge on the frog. On an Insulfrog, the closure

rails are solid, and there's a short section of insulating plastic rail where they meet the frog. The tip of the frog itself is likewise non-conductive plastic. Locomotives run on Insulfrog turnouts should have long electrical-pickup wheelbases; engines that pick up power on only a few wheels, like some older steam locomotive models, can stall on these turnouts. But if you run locomotives that pick up power from all wheels, or ones equipped with capacitor systems like Current Keeper or Keep-Alive, you have little to worry about from an Insulfrog.

An Electrofrog has small gaps in the closure rails, an inch or two before the frog. Underneath, small jumper wires bridge that gap. That means that out of the box, it seems like Electrofrogs work like Insulfrogs: the closure rails get power from the points, which get it from contacting the stock rails when they are lined in either direction. But on an Electrofrog, the entire frog is made of metal, and the frog, closure rail, and point assembly is one electrical unit. This means that unlike an Insulfrog, whose

READER TIP

Replacing coupler springs

Kadee coupler springs are held in place by two cone-shaped spikes, one on the stationary part of the coupler, the other on the knuckle. To easily replace a missing spring, pick up the spring by inserting the blade of a flat jeweler's screwdriver into the coils near one end of the spring. Then use a toothpick to apply a very small amount of Walther's Goo adhesive to the free end of the spring. Use the screwdriver to place the end of the spring with the Goo onto the spike on the stationary part of the coupler. The adhesive will hold the spring in place while you use the screwdriver to work the other end of the spring onto the cone on the knuckle. Finally, withdraw the screwdriver.

— Jean C. Piquette, Portsmouth, R.I.



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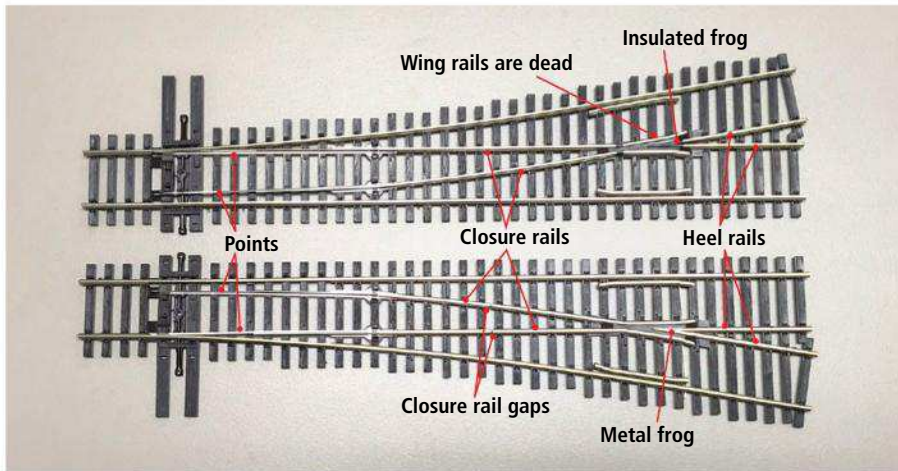


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A Peco Insulfrog turnout, top, has a plastic frog; the points and closure rails are electrically contiguous with the heel rails on the other side of the frog. On an Electrofrog, bottom, the points, closure rails, frog, and heels are one connected electrical unit. Steven Otte photo

points are always the same polarity as the adjacent stock rail, on an Electrofrog, both closure rails, both points, and the heel rails are always the same polarity as each other. This is fine if your wheels are all perfectly in gauge. But if any metal

wheel sets are a little tight back-to-back, it's possible a wheel can touch both a stock rail and an open point rail simultaneously, causing a short. This can't happen on an Insulfrog, which is why some people see them as more "DCC-friendly."

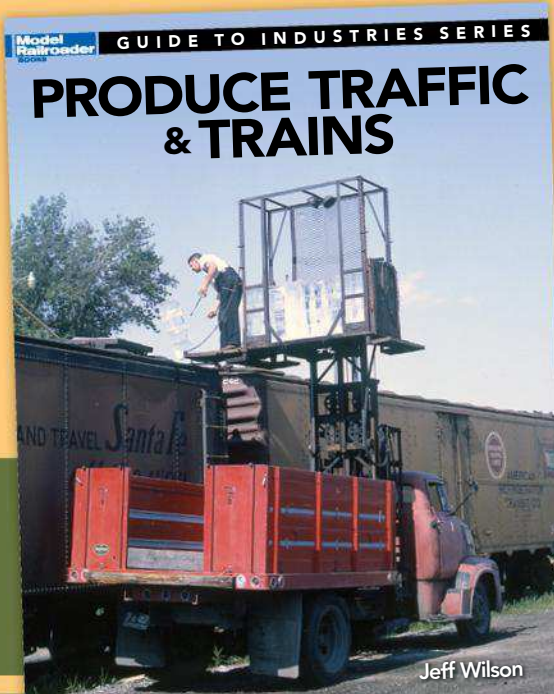
But there's a reason for those little gaps on the Electrofrog's closure rails. If you cut the jumper wires, the closure rails and frog become separate electrical units. Solder some jumper wires joining each closure rail to its adjacent stock rail, and you not only give the points a much more reliable power connection, but also, you guarantee that each point and closure rail will always be the same polarity as their adjacent stock rail — eliminating the possibility of shorts at the points.

But then the frog is dead, right? Not for long. Electrofrogs come with a short leader wire coiled under the bottom of the frog. Unfold it and attach it to the switched contacts of a turnout motor like a Tortoise by Circuitron, to a DCC-aware polarity switching circuit like the Tam Valley Frog Juicer, or to a Peco PL-10 manual switch machine equipped with a PL-13 accessory switch, and your frog will automatically switch to the right polarity for whichever way the route is lined. It's a little more wiring work, but you need never worry about turnout shorts again. **MR**

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Modeling with printed cardboard architecture

In this day of craftsman building kits; factory-built, lighted, detailed, and landscaped plastic structures; and highly crafted scratchbuilt models, we forget an earlier era – right before and after World War II – when wood-braced, printed-cardboard buildings were found on layouts across all scales. I'll look at three companies from which early HO/OO hobbyists could choose: Skyline, Ideal, and Megow.

Skyline advertised its models as suitable for HO and OO gauges, both considered close enough in days when people talked of "gauge" rather than "scale." And who would measure them, anyway? One could create complete towns and farms. Examining layout photos in period issues of *Model Rail-roader* and *Railroad Model Craftsman* reveals their wide use.

In 1947 Skyline sold a \$1.50 "Main Street" kit that included a Town Hall, Stucco House, Stone House with Garage, Church, and Block of Six Stores as an "All Gauge Set," though it was better suited for HO/OO. Ideal and Megow offered farm kits with houses, barns, and outbuildings. Ideal promoted "The Village" with Block of Stores, Diner, New England

Mansion, and California Bungalow, individually 39 cents to 75 cents.

A 1940s Polk's Model Craft Hobbies catalog described Ideal's kits as having "... strong, die-cut boards printed in realistic colors. Cellophane windows, chimney brick paper, full size plans with easy to follow instructions make the construction of these a pleasure. No tools are required to assemble them and they give that finished touch to your layout." Only a tube of glue was necessary to complete the kits.

Cheaper, but right-size, the kits relied on tab-and-slot construction with all details – doors, windows and the like – printed on. Not taken as seriously, they found less use on postwar "scale" layouts when realism was of utmost importance.

Today one realizes just how bright some of the colors were on these cardboard kits, but they were inexpensive, and fast and easy to assemble. The hobby

was still in its infancy. Much scratchbuilding lacked refinement, and our skills and tools were not yet fully realized.

There were other companies: Le Roy, Ayres, Suydam, Star-Line, Westchester, Modelton, and Train-Craft provided a variety of wood-braced, printed-cardboard models. Finished, they looked thin, lacking in substance.

Megow was gone by the late 1940s, its printed building kits, cars, and trucks no longer made; Skyline's HO/OO and O scale kits were gone in the mid-'50s. Ideal continued with a wide range of kits, and why



This 1953 American Railroad Equipment Corp. catalog image shows several cardboard building kits from Ideal.



Die-cut cardboard building kits were the standard right before and after World War II. Skyline's "Main Street" set, advertised in the December 1946 *Model Builder* magazine, included 11 buildings, all for \$1.65 postpaid, or \$1.50 at your dealer.

not? The hobby was growing rapidly. A 1953 Model Railroad Equipment Corp. catalog carried five pages of structure kits, including Bachmann's Plasticville snap-together kits, the only plastic structures listed.

The kits could be kitbashed and weathered with paints, which would have destroyed printed cardboard surfaces.

It was a new world. Printed buildings became as dated as paper-side freight cars.

Cardboard model companies were closing. It was too expensive to develop

molded plastic kits in place of printed cardboard. Plastic kits changed the hobby, and were simple to construct, too. But printed buildings weren't done. Photorealistic textures, combined with judiciously applied plastic details, have led to a renaissance. Everything old is new again? **MR**

Printed cardboard structure

kit manufacturing died a rapid death with the entry of Revell's molded plastic kits in the 1960s. For the first time, HO buildings had genuine substance. There were tactile surfaces, and other details that were formerly flat now had dimension.

They required something new, styrene cement, a recent product.



1 This 1944 Megow kit replicates a suburban house common in the war years.

2 The Wayside Diner from Ideal modeled a typical 1940s-era fast-food joint.

Gerry Leone added 3-D rooflines to some low-relief buildings on his HO scale Bona Vista layout. His easy-to-follow technique makes the shallow buildings look larger.



How to create a 3-D roofline in two dimensions

Model railroading is all about illusion. We turn a blind eye to the layout's edge and imagine our world continues in that chasm known as the aisle. And we ignore that vertical, blue backdrop and "see" the miles to the distant horizon.

It all works until you place a structure against the backdrop. Then the edge of our universe becomes all too apparent all too fast.

So if model railroading is about illusion, why not create one more piece of "tricking the eye" – or *trompe l'oeil* in this case? Why not give that low-relief background structure the depth it's missing?

I pondered that question as I prepared the background structures behind my engine servicing terminal. The

turntable, tracks, and attendant buildings eat up a good deal of space, leaving me only the inches behind the main line to create the city in which the terminal is supposedly located. By necessity, the background buildings are thin, triangular pie slices, or inch-deep rectangles.

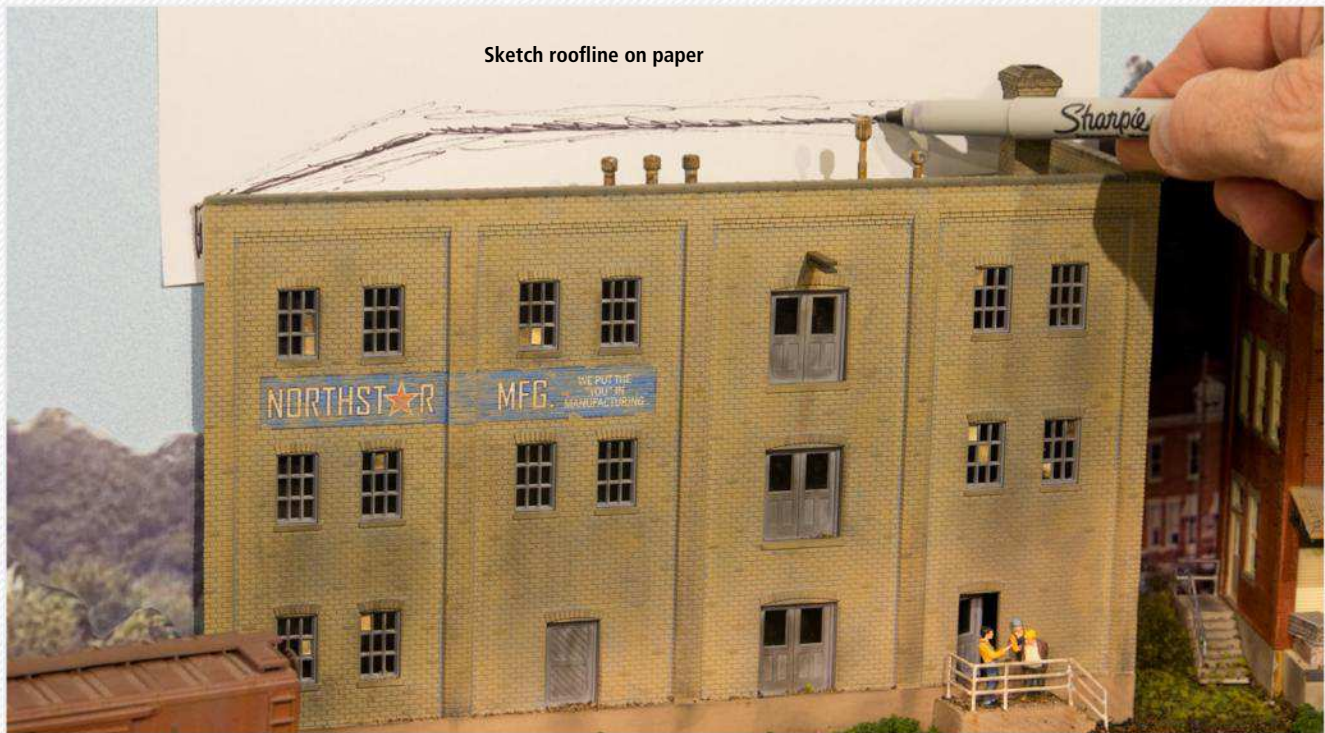
The illusion of depth I was hoping for was completely shattered.

At that moment I suddenly remembered an art class I'd taken many years ago that illustrated the period during the Renaissance when artists discovered the principle known as "the vanishing point." Thanks to those pioneering artists, art took on a whole new dimension (pun intended) and became realistic. Why couldn't I use that same principle now, on my layout?



Gerry Leone shares more great modeling tips in "Off the Rails." Check out his monthly show at MRVideoPlus.com

STEP 1 SKETCHING IT IN

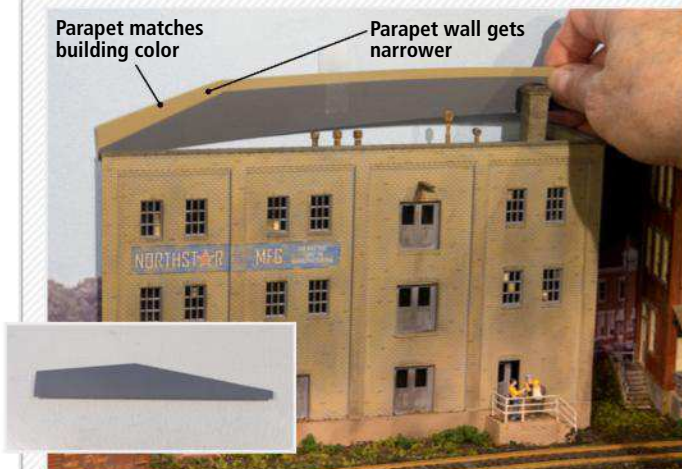


Sketch roofline on paper

To see if my vanishing point hypothesis would work, I slipped a piece of paper behind Northstar Manufacturing, a wedge-shaped low-relief building. Using a marker,

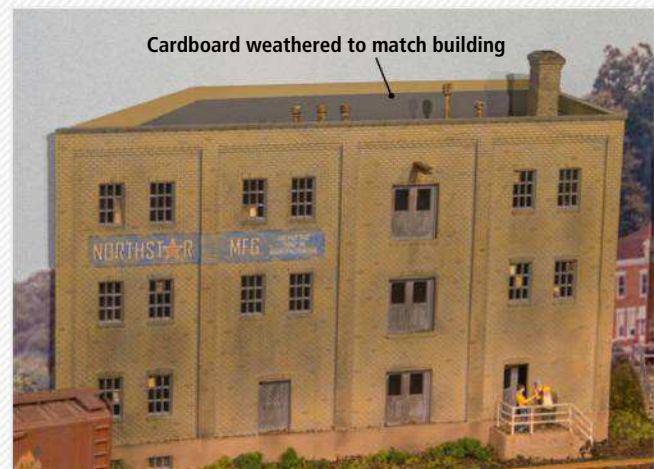
I made a rough sketch of what the building would look like if it were three-dimensional. As you can see, it took a few attempts to get the lines in the right location.

STEP 2 PAINTING AND CUTTING



Next, I sprayed a piece of thin cardboard with Rust-Oleum Painter's Touch 2X Flat Gray Primer. After the primer had dried, I transferred my sketch from the previous step to the cardboard. The gray primer was a near-perfect match for the Polly Scale Grimy Black I'd used on the building's roof.

Once the primer had dried, I masked the cardboard and airbrushed the edges the same color as the building's brick



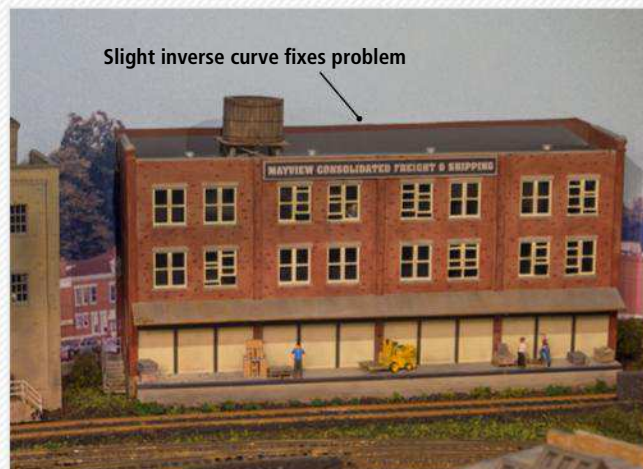
to create a false parapet. Note that the parapet walls get narrower at the point, which makes them look farther away to the viewer, creating the illusion of depth.

After the paint had dried, I weathered the cardboard to match the building. Then I slid the cardboard into position. The result is a building that gives the illusion of having more depth than it does.

STEP 3 IT WORKS FOR CURVED BACKDROPS, TOO



Creating a 3-D roof in 2-D proved a bit more difficult with the freight house. The rectangular structure, less than 2" deep, rests against a curve in the backdrop. A true straight line across the false cardboard roof looks bowed (left).



To remedy the apparent bow in the roof, I cut a slight inverse curve in the cardboard and painted it to match the colors of the roof and walls. The roofline now looks straight, as shown in the photo at right.

STEP 4 PASSING THE TEST



While the buildings look great face-on, would the illusion still work when the buildings were viewed from farther down the aisle? The answer: yes. I discovered that the farther I got from the buildings, the harder it was to detect any flaws in the roofs' angles.



So the experiment was a resounding success, as shown in the before-and-after photos. The only down-side is now I have to create that same illusion for every other building that's against the backdrop. But it's a small price to pay for breaking the boundary of the backdrop. **MR**

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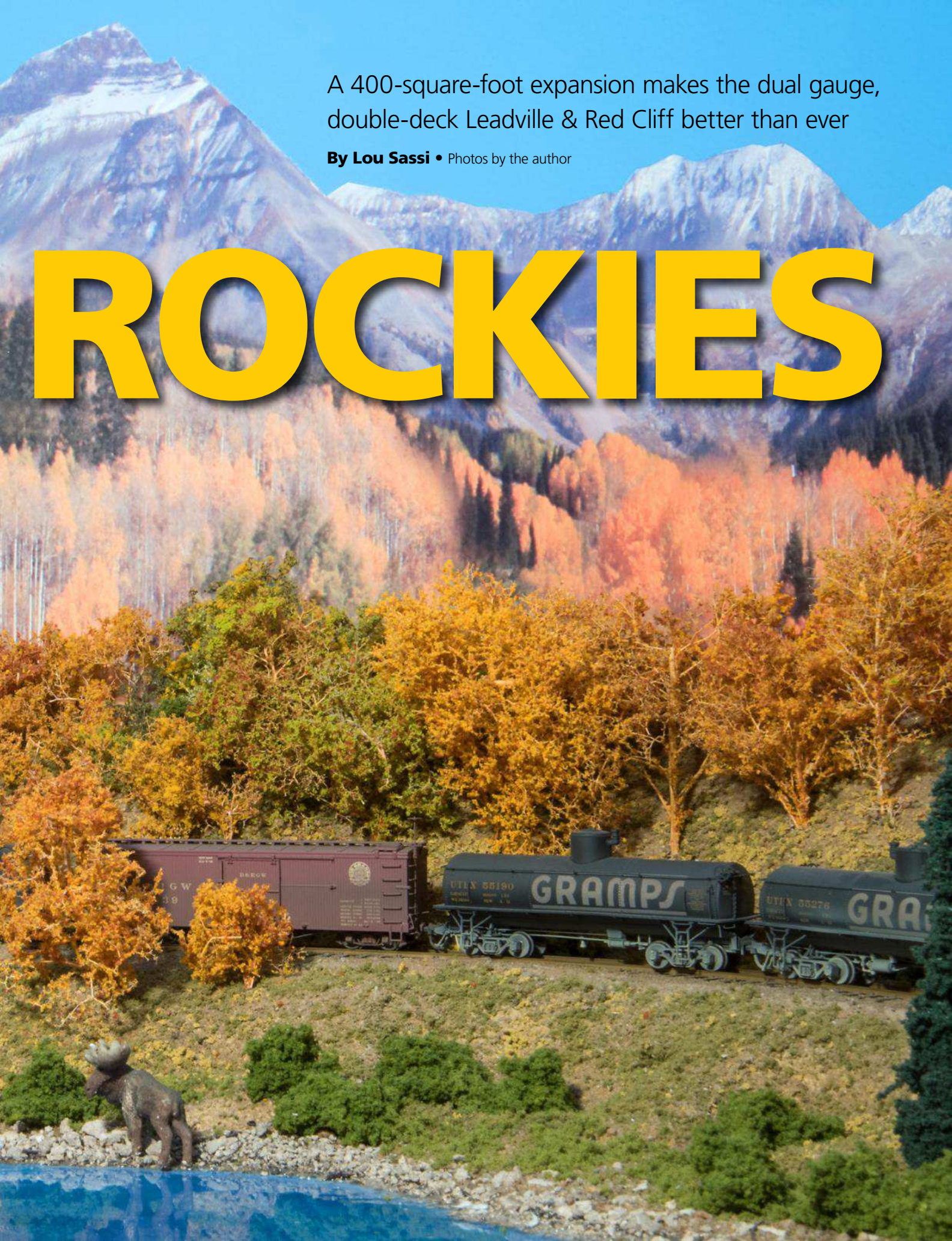


1 The calm water reflects the blue Colorado sky as a double-headed Denver, Rio Grande & Western freight makes a water stop at Trout Lake. Bill Brown expanded his layout with more scenes of Rocky Mountain railroading.

A 400-square-foot expansion makes the dual gauge, double-deck Leadville & Red Cliff better than ever

By Lou Sassi • Photos by the author

ROCKIES

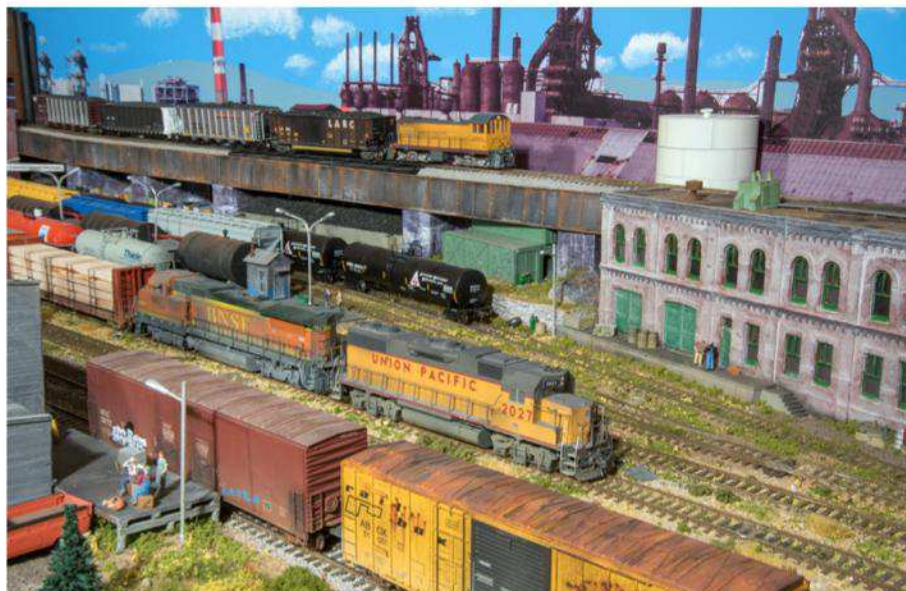




② Ophir Loop models a signature scene along the Rio Grande Southern. Here, a lumber train creeps across bridge 45A on its way down to Ridgway.

Bill Brown's 25 x 40-foot HO scale Leadville & Red Cliff (LARC) celebrates railroads past and present through central Colorado. The lower level is a modern-era standard gauge line featuring big General Electric and Electro-Motive Diesel locomotives. The upper level is a scale 3-foot-gauge line set in the late 1940s, featuring iconic Denver & Rio Grande Western and Rio Grande Southern slim gauge power, including "Mudhen" 2-8-2 steam locomotives and "Galloping goose" motor cars. Signature scenes of Rocky Mountain railroading highlight both decks.

Model Railroader readers got their first look at the Leadville & Red Cliff in the November 2014 issue. In the article "Rising from the ashes," Bill's son, Steve Brown, described how the family's original layout (the eastern-railroad-themed HO scale Lehigh Alliance of Rail Carriers, featured in the August 2006 MR) was destroyed in a house fire in 2008. Bill and Steve then designed



③ Pueblo Yard adds more gritty industry to the standard gauge LARC. As a local with leased power from Union Pacific and BNSF Ry. passes through, a switcher spots coal hoppers over the dump grates at the Black Hills Power Plant.

and began building their new Colorado-themed layout.

By 2010 the father and son began constructing the HO scale standard gauge layout, inspired by the modern-day Union Pacific RR's Tennessee Pass line through Colorado. After taking several family trips to the Cumbres & Toltec and Durango & Silverton tourist railroads, Bill and Steve gained an

appreciation for narrow gauge and steam locomotives. They decided to add dual gauge tracks at Salida that led to a narrow gauge helix "time machine" to the upper deck, set in 1949.

Back in 2014, the upper deck was an 18-foot-long narrow gauge line that depicted Lizard Head Pass, Ridgway, Southern Junction, and Ophir Loop. Since then the layout has expanded on

both levels, with an additional 400 square feet of modern and vintage scenes. There's even one small section around Iron-ton on the narrow gauge line that Bill has backdated to 1910.

"Steve was very instrumental in the layout's design and early construction," Bill said, "A few years ago he moved away to begin his career, and I'm now on my own with the layout, and it's been a major adjustment."

The new addition

On this latest version of the LARC, a double-deck, L-shaped peninsula replaces the standard gauge staging yard shown on the 2014 track plan. This new arrangement provides ample space for modeling both modern- and steam-era scenes.

The narrow gauge line on the upper level has more than doubled in length. It travels from Southern Junction and the helix through Mears Junction and the engine terminal at Durango, then continues over the high line through the towns of Silver-ton, Iron-ton, and Red Mountain.

The standard gauge line now travels from Salida through the large freight yard at Pueblo and continues through the towns of Palmer Lake and Larkspur before terminating at the 13-track, double-ended staging yard.

At Larkspur there's also another standard gauge line that branches off to Denver. Located on the upper level behind Silver-ton, Denver features more rail-served industries for the modern-era train crews to switch.

As on the rest of the layout, the benchwork on the new peninsula is L girders. With a near constant height of 40", the track on the lower level has no grades, except for the line at Larkspur, and features wide curves. In contrast, the track height on the upper level varies between 60" and 69". The narrow gauge line also has grades up to 4 percent and tight-radius curves.

Almost all the track on the layout is commercial flextrack, with code 83 on the standard gauge line and a mix of codes 40, 55, and 70 on the narrow gauge line. Bill and Steve scratchbuilt a few dual gauge turnouts for the interchange yard at Salida.

Scenery and photo backdrops

Bill made basic landforms out of extruded-foam insulation board or a web of cardboard strips that he then covered

Realistic day-to-night structure lighting

In the early planning stages for the Leadville & Red Cliff, my dad wanted to be able to control each structure's lights independently. He also wanted the lighting to be based on the fast clock, but he wanted to avoid the unrealistic look of all the lights going on and off simultaneously. To avoid this, the system we designed allowed for 64 distinct light sequences.

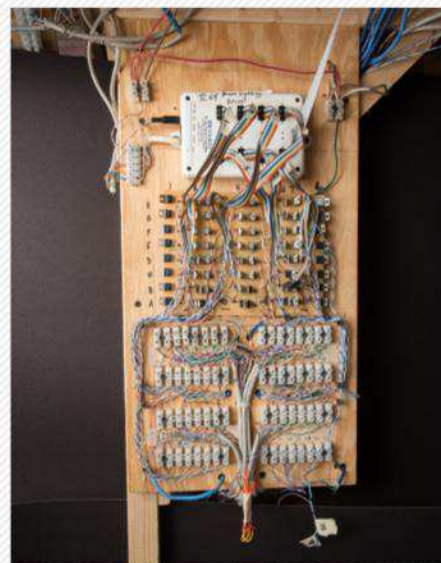
We installed a 64-wire bus that runs under the layout to break-out circuit boards at each town. Each of the thousands of individual lights on the layout is controlled by one of these 64 circuits.

The bus terminates at a master node that includes a RR-CirKits TC-64 Tower Controller (www.rr-cirkits.com). The Tower Controller receives commands over the Digitrax LocoNet bus from a computer running Java Model Railroad Interface (JMRI) software. The Tower Controller then sends out the commands to the 64 lighting circuits.

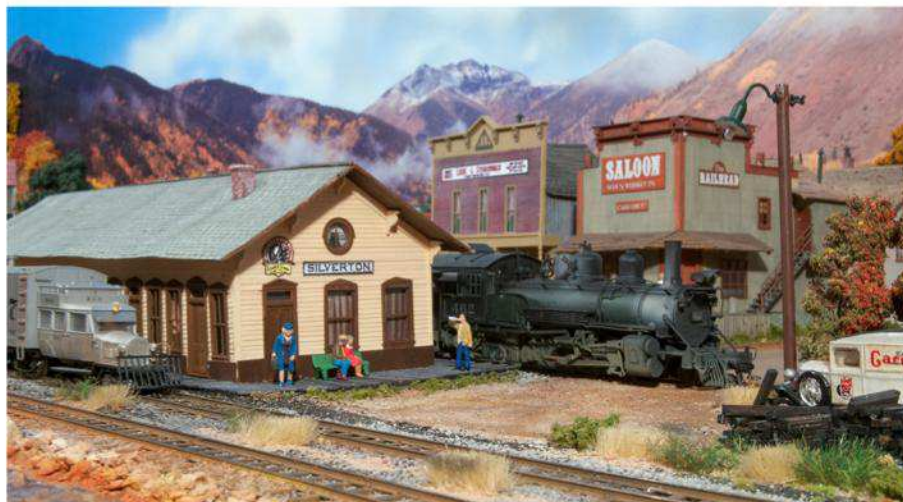
We found that the Tower Controller didn't have enough power to directly drive the thousands of individual lights. To increase power output, I made a custom interface board that included transistors.

Using this interface and the Tower Controller, the computer running JMRI synchronizes the lighting circuits with the 10:1 fast clock. We divided the 64 lighting sequences into a few different categories, including day-time businesses, all-night lighting, and residential. Within each category, we staggered the activation times. The end result is a seemingly random sequence of structure lights turning on and off.

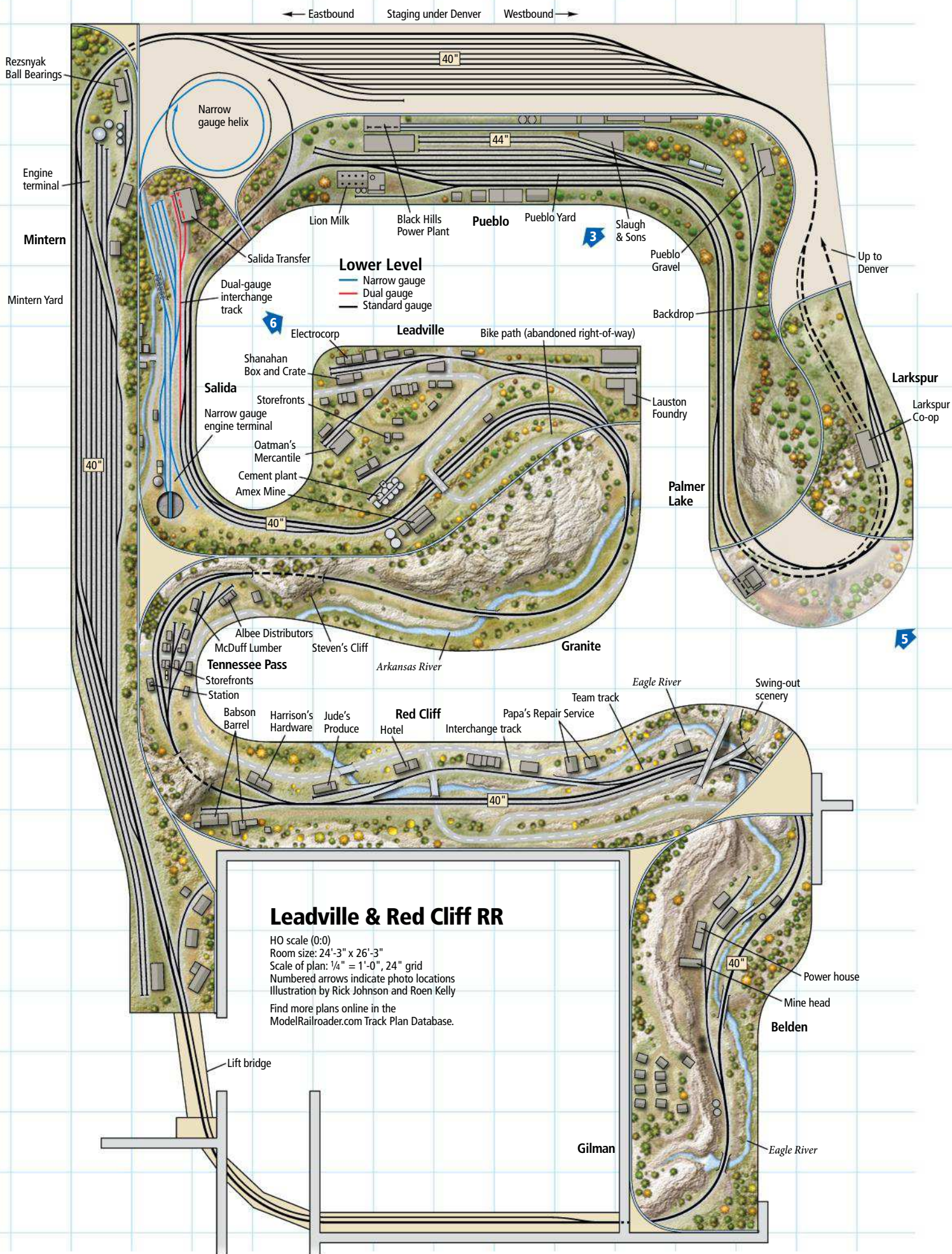
With backdrop view blocks between towns, the viewer doesn't see all the buildings turning on all at once. The overall effect treats visitors to model railroad scenes with a realistic progression from day to night. – Steve Brown

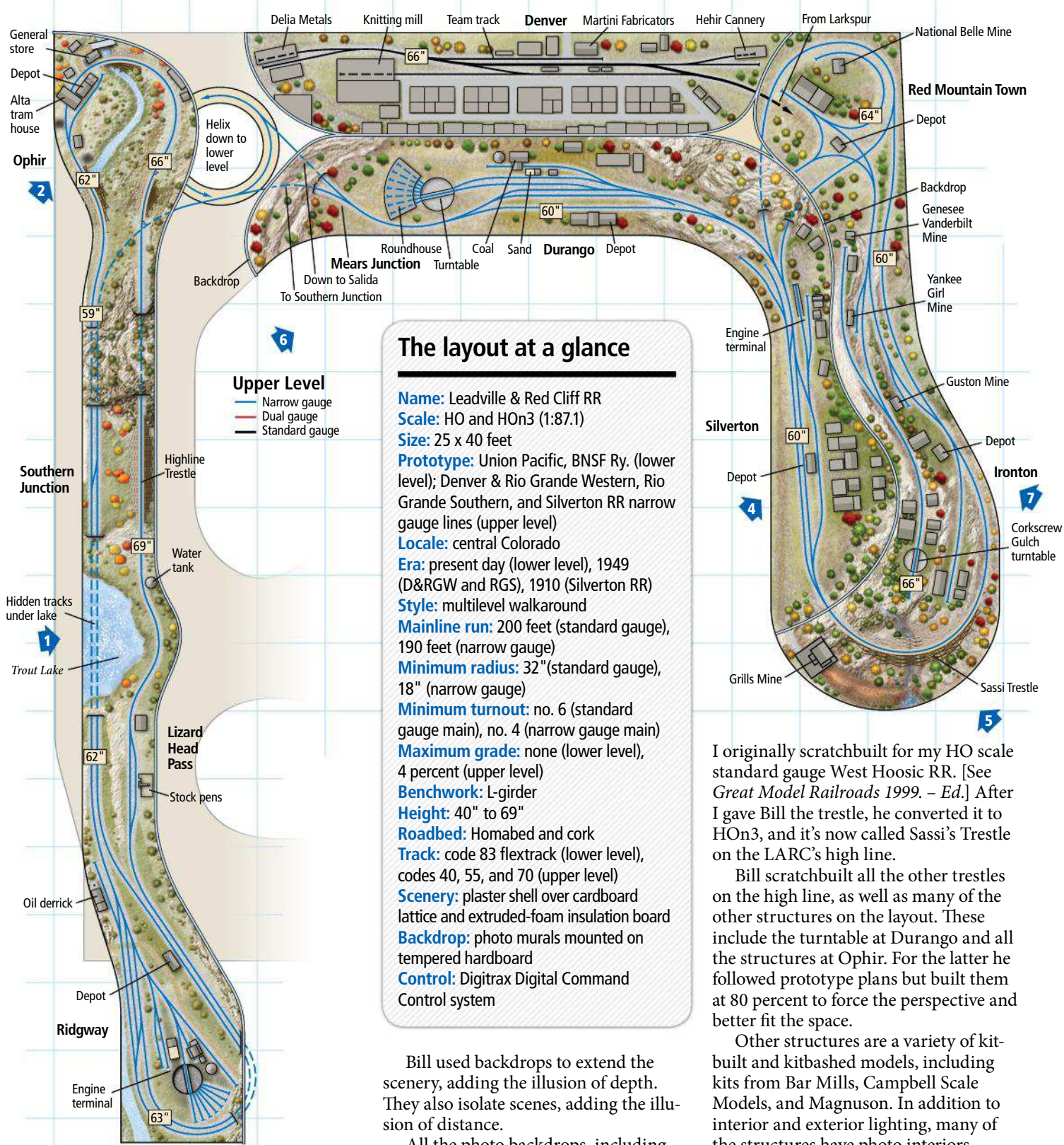


This photo shows the structure lighting system's main node, designed by Steve Brown. The RR-CirKits Tower Controller (top) is wired through the 64 transistors (center) and main interface board (bottom).



4 A Rio Grande Southern "Galloping Goose" motor car and a D&RGW class K-27 2-8-2 "Mudhen" wait at the Silver-ton depot. Bill scratchbuilt the structure, and his company, LARC Products, produced the photo backdrop.





The layout at a glance

Name: Leadville & Red Cliff RR

Scale: HO and HO_{N3} (1:87.1)

Size: 25 x 40 feet

Prototype: Union Pacific, BNSF Ry. (lower level); Denver & Rio Grande Western, Rio Grande Southern, and Silverton RR narrow gauge lines (upper level)

Locale: central Colorado

Era: present day (lower level), 1949 (D&RGW and RGS), 1910 (Silverton RR)

Style: multilevel walkaround

Mainline run: 200 feet (standard gauge), 190 feet (narrow gauge)

Minimum radius: 32" (standard gauge), 18" (narrow gauge)

Minimum turnout: no. 6 (standard gauge main), no. 4 (narrow gauge main)

Maximum grade: none (lower level), 4 percent (upper level)

Benchwork: L-girder

Height: 40" to 69"

Roadbed: Homabed and cork

Track: code 83 flextrack (lower level), codes 40, 55, and 70 (upper level)

Scenery: plaster shell over cardboard lattice and extruded-foam insulation board

Backdrop: photo murals mounted on tempered hardboard

Control: Digitrax Digital Command Control system

with plaster. Rocks are Hydrocal castings painted to match prototype photos.

For much of the scenery, Bill used Woodland Scenics and Scenic Express products, as well as natural materials. His good friends Mike Kendrick and Mike Shanahan also scratchbuilt many trees, taking care to match the colors to the backdrop photos.

Bill used backdrops to extend the scenery, adding the illusion of depth. They also isolate scenes, adding the illusion of distance.

All the photo backdrops, including some as large as 3 feet high and 20 feet long, are from Bill's company, LARC Products (www.larcproducts.com). Many of the photos used are from the prototype locations modeled on the layout.

Modeling projects

At the end of the new peninsula is a 51" long, 18" high wood trestle that

I originally scratchbuilt for my HO scale standard gauge West Hoosic RR. [See *Great Model Railroads 1999*. – Ed.] After I gave Bill the trestle, he converted it to HO_{N3}, and it's now called Sassi's Trestle on the LARC's high line.

Bill scratchbuilt all the other trestles on the high line, as well as many of the other structures on the layout. These include the turntable at Durango and all the structures at Ophir. For the latter he followed prototype plans but built them at 80 percent to force the perspective and better fit the space.

Other structures are a variety of kit-built and kitbashed models, including kits from Bar Mills, Campbell Scale Models, and Magnuson. In addition to interior and exterior lighting, many of the structures have photo interiors printed from LARC Products Railroad Graphics CDs.

Bill weathered his structures on both the standard and narrow gauge lines. "I favor the George Sellios 'fire trap' severe weathering look," Bill said, "I use India ink and alcohol washes, weathering chalks, and drybrushing techniques."

All the rolling stock is also weathered to some degree. For the modern-era line,



5 Sassi Trestle towers over Grills Mine on the new peninsula (right). The Granite section of the layout is in the center of the photo and Tennessee Pass is visible on the far left.

the rolling stock is weathered according to the built date. “The weathering ranges from “rust buckets” acquired from predecessor roads to lightly weathered, new cars and locomotives,” Bill said. He also models some LARC “patch out” cars acquired from other railroads.

Bill has about 100 locomotives, most of which are equipped with Digital Command Control (DCC) sound decoders. These include Blackstone Models HOn3 steam locomotives with SoundTraxx Tsunami decoders that run on the narrow gauge line.

Running the railroad

Thanks to Steve’s influence, the LARC was built with operations in mind from the beginning. That focus has continued with the new industries and towns on the layout expansion. “Steve was a high school senior when we conceived this layout,” Bill adds, “and he was instrumental in developing the operating plan and electronics.”

While Bill concentrated on layout construction, Steve, along with friends

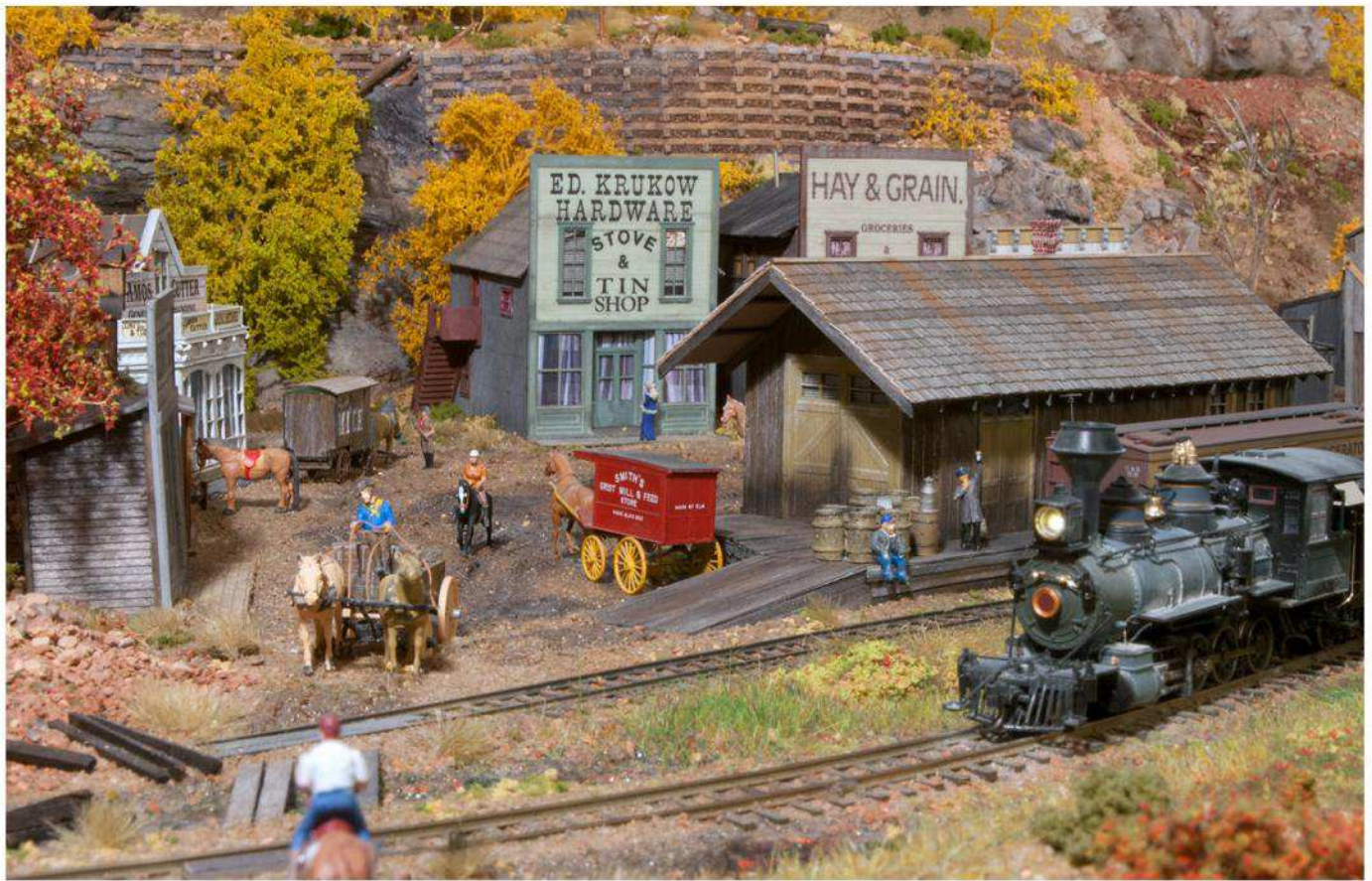


6 Across the aisle from Leadville (right), the layout expansion includes Pueblo Yard on the lower level and Silverton above it. The lower level models a modern, standard gauge line, while the upper level models a steam-era, narrow gauge line.

Dave Martini and Ken Cameron, designed the electronics and computer interface. During operating sessions, there’s a dispatcher stationed at a master computer. Signals, block detectors, and turnouts are controlled by the computer via Java Model Railroad Interface (JMRI) software. All trackside

signals are scratchbuilt using micro three-color light-emitting diodes (LEDs) for the aspects.

For casual running without a dispatcher, the signals are controlled automatically according to block detectors and the turnout positions. Train crews align their own turnouts using



7 At Ironton, a horse-drawn carriage and a rider wait on opposite sides of a grade crossing as Silverton RR no. 100 heads out of town. Part of the new expansions, this section of the layout is set in late 1910.

fascia-mounted push buttons. During operating sessions, Bill switches the computer to OPS mode, and the dispatcher remotely controls all signals and turnouts.

The layout is wired for DCC using a Digitrax system. Train crews communicate with the dispatcher via two-way radios attached to the fascia with hook-and-loop tape at various station stops along the railroad.

During a typical operating session, 13 to 18 operators move 37 trains across the railroad. The trains run according to a sequence. The LARC sees all types of traffic, including local freight, passenger, and unit trains.

A 3-hour operating session simulates 30 hours of day and night operations. A dedicated computer with a 10:1 fast clock sends signals to X10 Home Automation modules that automatically dim or brighten the room lights. A RR-CirKits TC-64 Tower Controller and other electronics automatically control the thousands of other lights on the layout. [See “Realistic day-to-night structure lighting” on page 31. – Ed.]

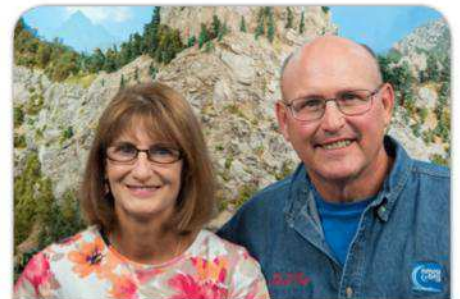
Most of the modern-era, standard gauge line uses switch lists to route cars. The joint line between Pueblo and Denver uses track warrants. Bill plans to introduce Timetable-and-Train-Order operation to the steam era, narrow gauge line in the near future.

It's all about friendship

Bill is the first to acknowledge the LARC as a group effort. Along with the folks already mentioned, Bill's friends Charlie Albee, Dick Hehir, Andy Slaugh, Phyllis Delia, Ken Brick, Andy Rezsnyak, “Scooter” Youst, and Russ Grills make up the construction team. Although Steve is now gainfully employed half a continent away, he still helps his dad out whenever he can.

There remains plenty of work to do, as the group of friends continues to develop scenes along the expanded standard and narrow gauge lines. The LARC has met Bill's main goal of providing a welcoming environment for his friends and guests to enjoy building scenes and running model trains.

“This Leadville & Red Cliff is the culmination of a lifetime of model railroading,” Bill said, “I've learned numerous skills over the years, but nothing is more important to me than the friendships I've developed through the hobby.” **MR**



Meet Bil Brown

A retired school administrator, Bill Brown lives with his wife, Judy, near Syracuse, N.Y. Their son, Steve, is a mechanical engineer who lives in Indianapolis.

Bill works part time in academic services for the Syracuse University football team. He also owns LARC Products, a distributor of model railroad graphics and backdrops.

MORE ON THE WEB

Subscribers can watch a video of trains running on the Leadville & Red Cliff. Click on the link at ModelRailroader.com



Kitbashing PHOTO BACKDROPS

How to combine commercial images with your own photos

By Tony Koester • Photos by the author except where noted

Photo-editing software, digital cameras, and color printers seem to have been invented specifically for the benefit of model railroaders. For less than the price of a sound decoder, we can purchase Adobe's Photoshop Elements (PSE) or similar photo-editing software and gain the

ability to almost magically modify and combine digital images into backdated backdrop scenes, signs, building flats, even 3-D buildings.

Moreover, commercially produced photo backdrops are available from a wide variety of sources (enter "model railroad photographic backdrops" in

your favorite search engine). Also look for landscape photo sources; one is www.cgtextures.com.

As with any other product, however, using backdrop images right out of the box fails to realize their full potential. I find that combining sections of commercial backdrops with images I shot at



Contributing editor Tony Koester used Photoshop Elements to restore the abandoned Peoria & Eastern main line and sidings in a scene photographed in the 1990s, then “repainted” the depot and elevator and replaced the platform. By combining digital photos and commercial backdrops, you can create realistic background scenes like this one.

actual locations I’m modeling is easier than I expected.

Combining photos

One of my success stories is also a good example of the old adage, “You can’t win ‘em all!” I model the Nickel Plate Road’s St. Louis Division through Veedersburg, Ind., shown on pages 36-38. If you visit this small Hoosier community today, you’ll find that the NKP and the Peoria & Eastern are gone, but both depots are still there. A few years ago, a towering grain elevator stood not far from the P&E depot, but it too is history, as is the New York Central-style interlocking tower that guarded their crossing and one with the Chicago, Attica & Southern.

I’d taken a photograph looking west along the abandoned P&E right-of-way

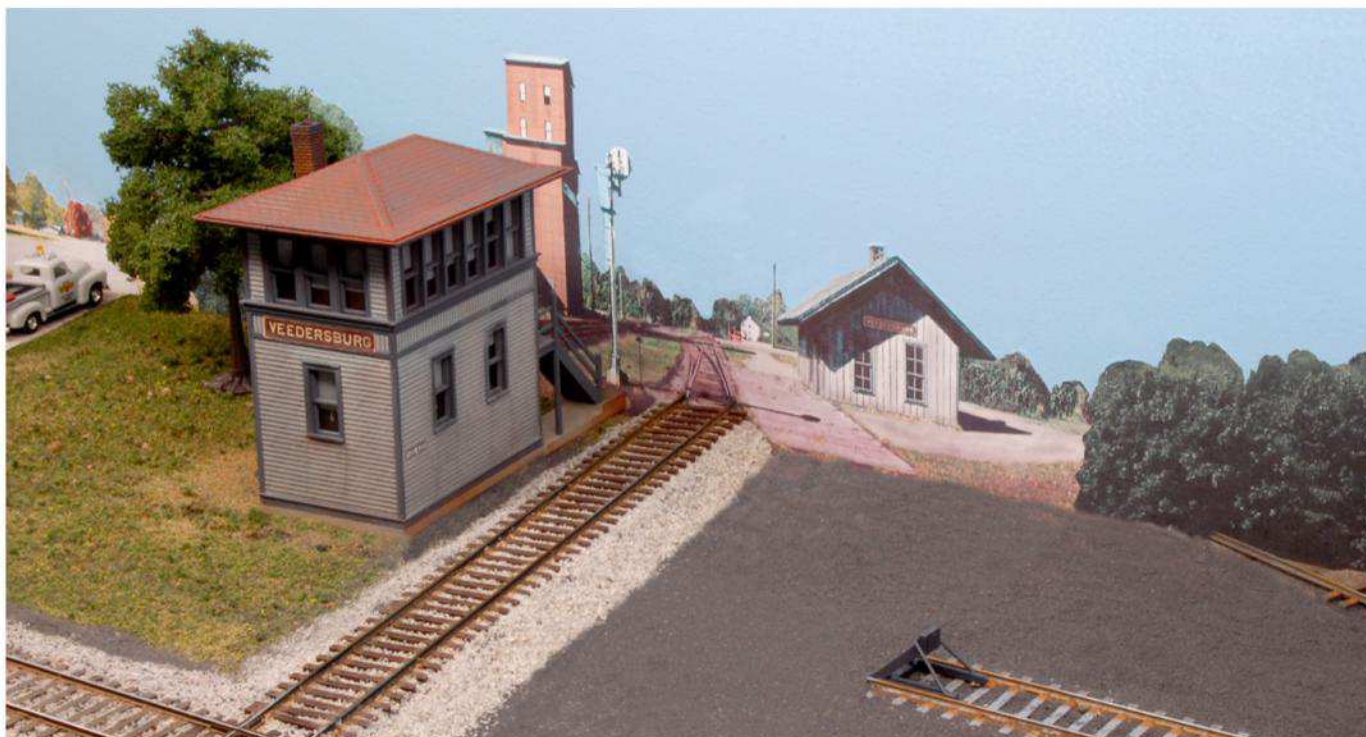


① Merging photos. Tony combined a photo looking west along the abandoned P&E with two other images taken elsewhere: a main line with a passing track (center) and two parallel tracks for the elevator siding (bottom). He erased the background and skewed both track photos to match the perspective of the base image. Then Tony retouched the images to add more ballast and remove weeds.

back when the elevator was still standing, but by then it was in bad shape, as was the P&E depot ①. Thanks to Photoshop, I could repaint the elevator to its original orange and restore the paint and windows on the depot.

To restore the P&E main line, I used a photo taken in Metcalf, Ill., ①, that showed a siding springing off to the left of a poorly maintained main line. Using

my fledgling Photoshop skills, I added more ballast and renewed some ties using the clone (rubber stamp) tool, and then erased the background beyond the ballast edges. I copied and pasted that image on top of the P&E photo. The perspective wasn’t quite right, so I used the skew tool to reduce the height of the photo. The same technique was used to copy and rework the elevator sidings,



2 It's all about perspective. What works well for roads (3) doesn't translate to railroad tracks; only one specific spot yields a reasonably realistic view. Viewing from either side introduces a kink, but it's still better than a blank backdrop or wall of trees.

also shown in 1. I then flattened all three images into one new image.

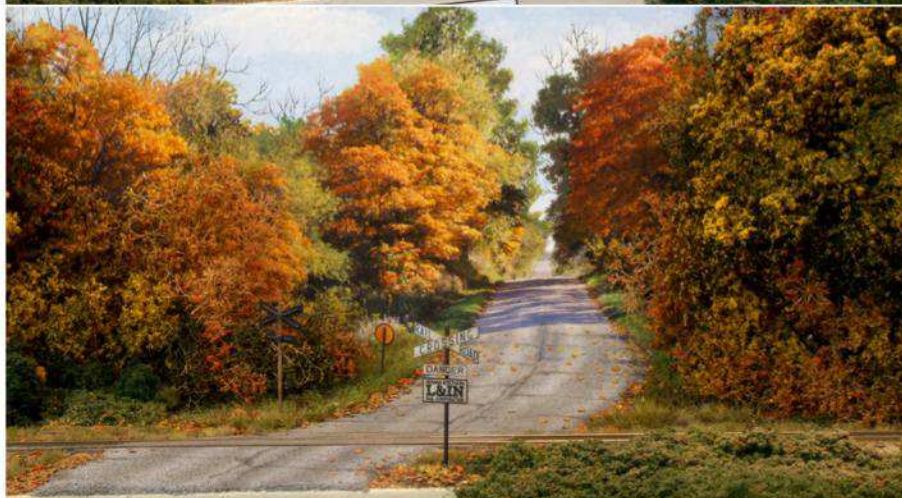
I used the paintbrush tool to draw in a concrete passenger platform and add expansion joints and cracks. I also added a cinder road and some grass plus a shadow from the P&E's still-extant east-bound home signal.

When I was happy with the way things looked, I used the paintbrush tool set on 10 percent opacity in a wide "spray" pattern to apply a light sooty (charcoal) haze over everything. The result is shown on page 36.

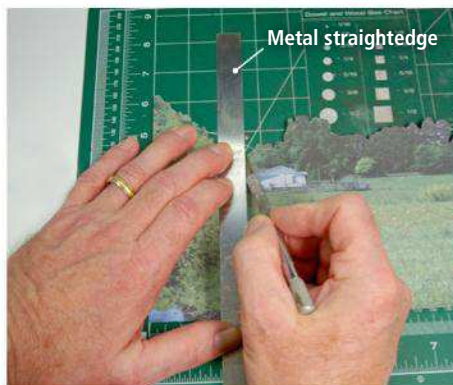
The problem is shown in 2.

When a road intersects the backdrop, you can build a small fillet between the flat, modeled terrain and the 2-D photo backdrop, and the joint almost disappears. Take a tip from model railroad scenery guru Tom Johnson: Paint the modeled scenery to match the photo, not the other way around 3.

But when a railroad line comes up against the backdrop, it will look reasonably good only from one vantage point; viewing it from anywhere else will reveal a nasty kink. No matter what you try, such as narrowing the rail gauge as the track approaches the backdrop, it won't look right from most angles.



3 Color matching. Modeler Tom Johnson paints the modeled road to match the photo rather than the other way around. Viewing this shallow scene from either side merely makes the road seem to curve; no kink is evident. A small fillet at the joint can smooth the transition. Can you find it? Tom Johnson photos



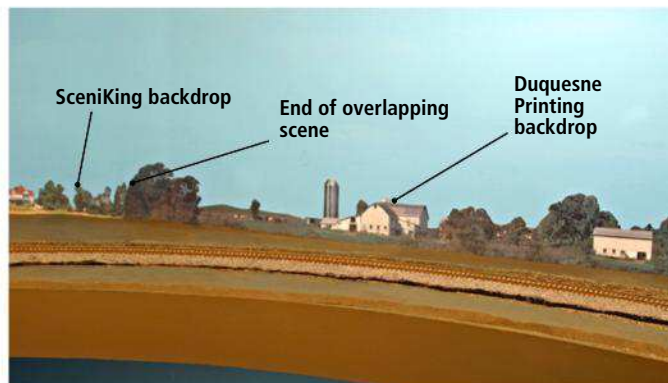
4 Cut it out. By removing a few inches from a commercial backdrop, here one from SceniKing, a distinctive structure can be removed, thus allowing that same backdrop image to be reused elsewhere.



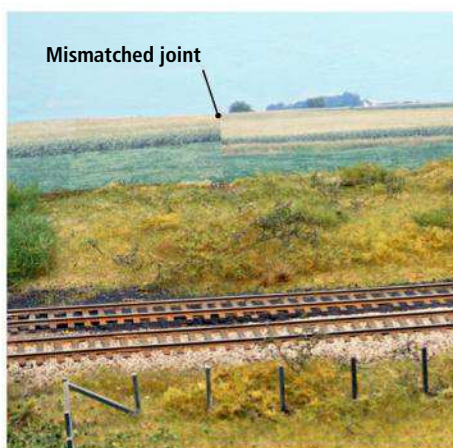
5 Fields for all occasions. SceniKing made bean, corn, and wheat field kits that could be extended indefinitely.



6 Splitting things up. A country road was included in SceniKing crop kits to allow one type of field to end and another to begin.



7 Combining backdrops. Where unrelated scenes abut, the seam can be hidden by shaping the end of the overlapping scene to create a smooth transition.



8 A simple fix. If two sections of backdrop don't align properly, as shown in the left-hand image, that's OK. A 2-D or 3-D tree or structure in front of the mismatched joint (right) will disguise the seam.



9 Pastels to the rescue. Clouds can be blended across backdrop sections using PanPastel's white pastel medium.

So be it. It still beats having the rails encounter a blue sky or green forest. And maybe you'll be lucky and have a highway overpass or tunnel portal where you can cast this imperfect intersection in shadow.

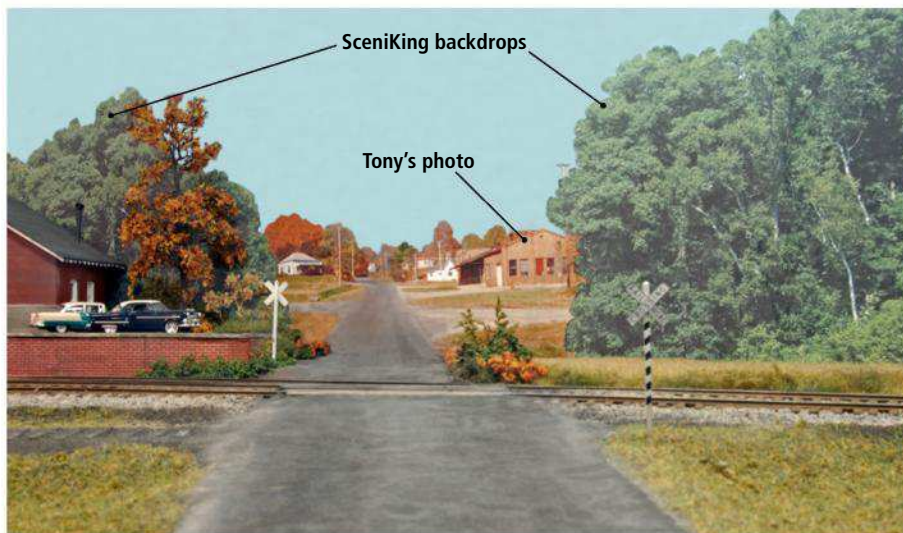
Cutting and pasting backdrops

When someone looks at my model railroad, I want them to be mentally

transported back to a specific time and place. If they see a familiar commercial model of, say, a depot or factory, they're likely to focus on the model rather than the prototype it represents. So kitbashing achieves a dual objective: It produces a structure different from the one(s) that came in the kit(s), often to more closely resemble a specific prototype; and it disguises the heritage of that kit or even a ready-built model.

This applies to commercial photo backdrops as much as to structure kits. And backdrops are even easier to kitbash than structures. For example, a distinctive structure or clump of trees can be made to disappear simply by cutting out a short section of backdrop **4**. The lack of such eye-catching details allows the same scene to be used repeatedly.

The Nickel Plate's St. Louis line traversed the agricultural heartland of the



10 Framing the scene. Tony bracketed a photo of an offline industry in Veedersburg, Ind., with generic tree kits from SceniKing on either side. Strips of trees in fall foliage are also available.



11 Big backdrops. There is no Photoshopped backdrop here – this is how Dale Kreutzer's Sn3 layout actually looks, thanks to a 13'-6"-long backdrop photo of Colorado's La Plata mountains printed at 88 pixels per inch. The sky is painted; the clouds are part of the printed image. Dale Kreutzer photo

United States. Seemingly endless fields of corn, wheat, soybeans, and other crops dominated trackside scenes. SceniKing produced kits for corn, wheat, and beans that could be extended indefinitely, as seen in **5** on the previous page. The kits, out of production but still available from some SceniKing dealers, included short panels with roads that allowed one crop to end and another to begin **6**.

Unfortunately, the trees behind those fields are just distinctive enough for someone to notice that they recur every four feet or so. The solution is to reshape the trees as I trim off the sky.

I use a high-quality spray glue (think 3M Super 77) to attach each scene panel to the blue backdrop. I spray only the back of the paper panels, not both

surfaces, which allows me to adjust a panel slightly for a good fit with the adjacent panel before the glue sets up.

Occasionally, the photographic prints start to peel from the backdrop, so I tack them back in place with white glue.

Joining sections

Whether you use your own digital photos, commercial kits, or a combination of both, you'll need to find a way to butt unrelated scenes together. When joining your own photos, you can do this to some extent using the photo-editing software's panoramic feature, but it's not hard to do by carefully trimming the overlapping scene with a hobby knife. This is most easily done by cutting

around a tree near one end of an image **7**. Trees and structures will also hide a mismatched joint **8**.

In areas where the backdrop is relatively low because of an overlying deck, I occasionally retain the sky portion of each panel. But care must be taken to ensure that the sky comes close to matching across the seams of unrelated kits. I use PanPastel's white and gray pastels, applied with a soft sponge, to blend clouds across the seams **9**. I also use PanPastels for almost all weathering – locomotives, structures, and roads.

Specific scenes

My original, and somewhat naïve, goal was to drive along the NKP's St. Louis Division and shoot photos of the actual locations I planned to model. When I realized that I needed to do this in similar weather at a similar time of day in one season, the holes in my plan became apparent. Moreover, I soon found that so much had changed in the past 50 years that almost nothing looked as it did back in the 1950s, the era I'm modeling. Worse, I had about 500 linear feet of backdrop to do, and producing suitable images for the entire backdrop would have been very time-consuming.

I compromised by using actual photos scanned from vintage slides or backdated from recent images only for key scenes. Most in-town scenes are therefore true-to-the-prototype locations, but even here I joined on-location photos looking down a street with trees from a SceniKing kit **10**.

Dale Kreutzer had better luck and was able to use panoramic images he shot at, for example, a location that "closely resembled the area behind the Hesperus, Colo., depot" for his Sn3 Denver & Rio Grande Western layout **11**. He adds, "It's difficult to photograph exact locations, as areas have become overgrown or built-up."

Learn to use a new tool

Learning a few basic skills using Photoshop Elements isn't that difficult, and help is as near as an online chat group. Like me, you will soon be able to erase modern vehicles and signs, "restore" decrepit buildings, add more foliage, remove perspective from signs and buildings, and so on.

Meanwhile, make good use of commercial backdrops and that old standby, the hobby knife, to add 2-D variety and depth to your 3-D scenery. 

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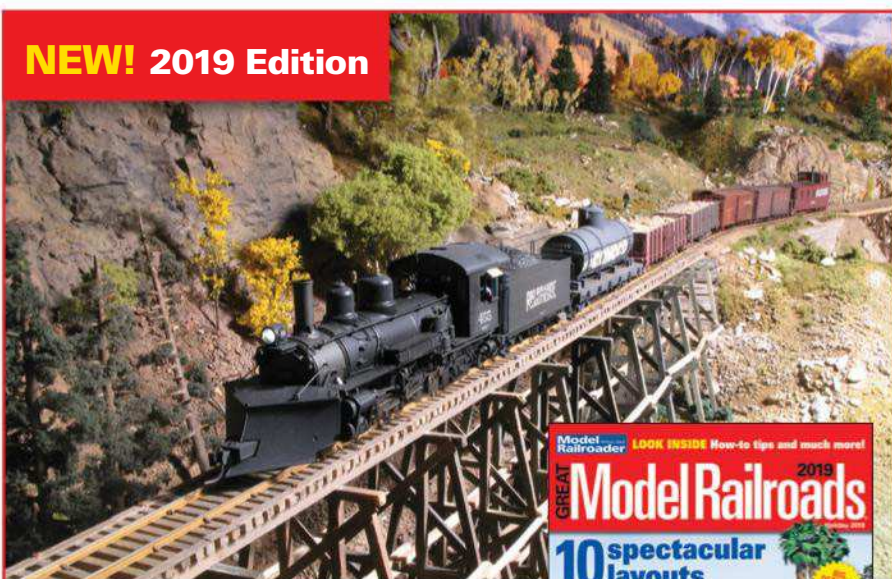
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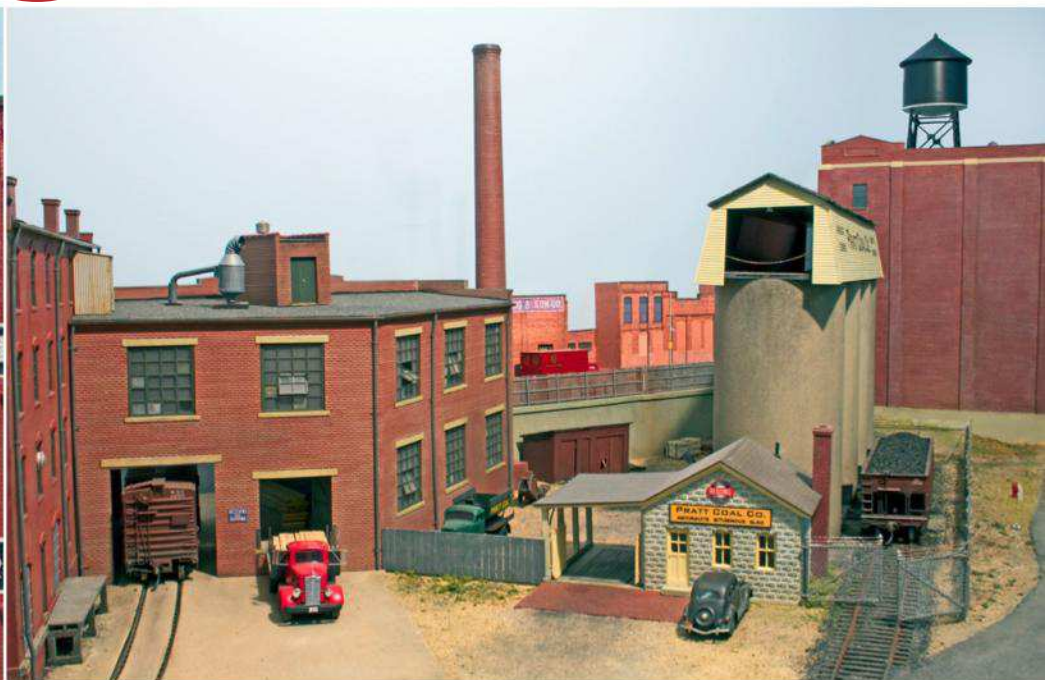
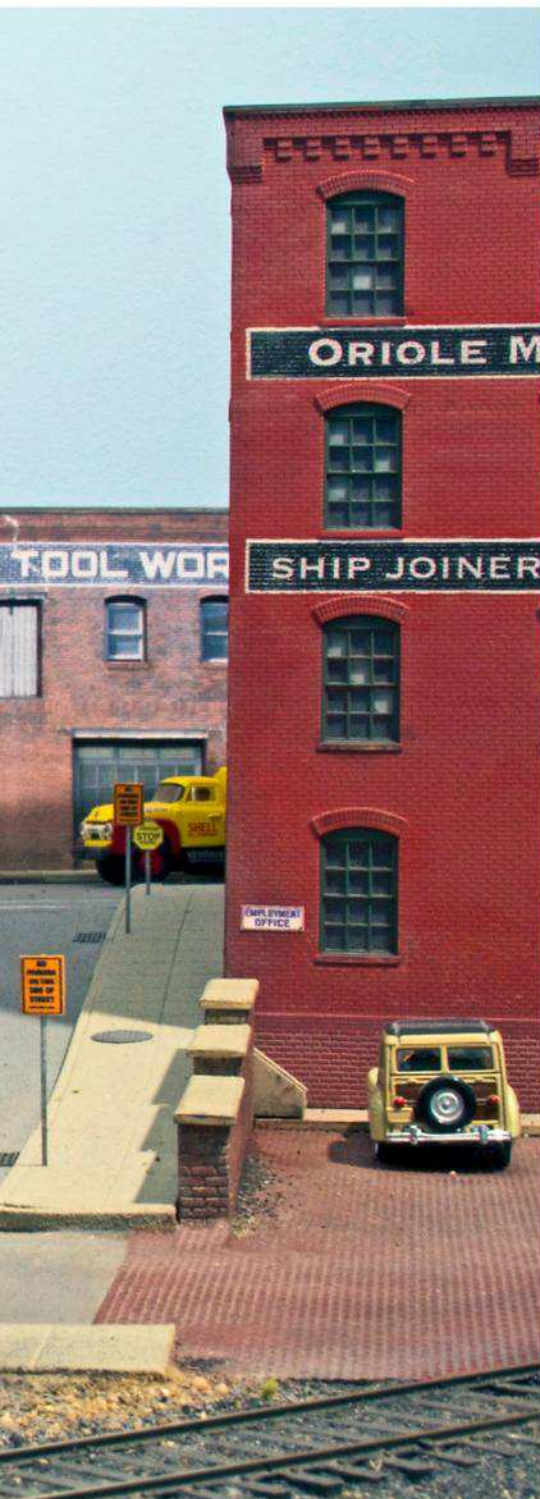
5 tips for **blending**



Restricting viewing angles may be the key

By Paul J. Dolkos • Photos by the author

backgrounds



1 Consider the whole scene. Paul's original plan was to place a couple of open team tracks where the coal dealer is located. But that created an open space between the industrial structures on either side, leaving the backdrop completely open and potentially not all that interesting. The coal silos create interesting viewing corridors to the backdrop.

While scenery at the outside edge of a layout may pose some difficulties (see my story "Scenery on the edge" in *Model Railroad Planning* 2017), the back of the layout also has its challenges. The abrupt change in the model scene from horizontal to vertical at the backdrop demands we do something to make the transition.

We often install a tree line, build a mountain, or paint or paste on a

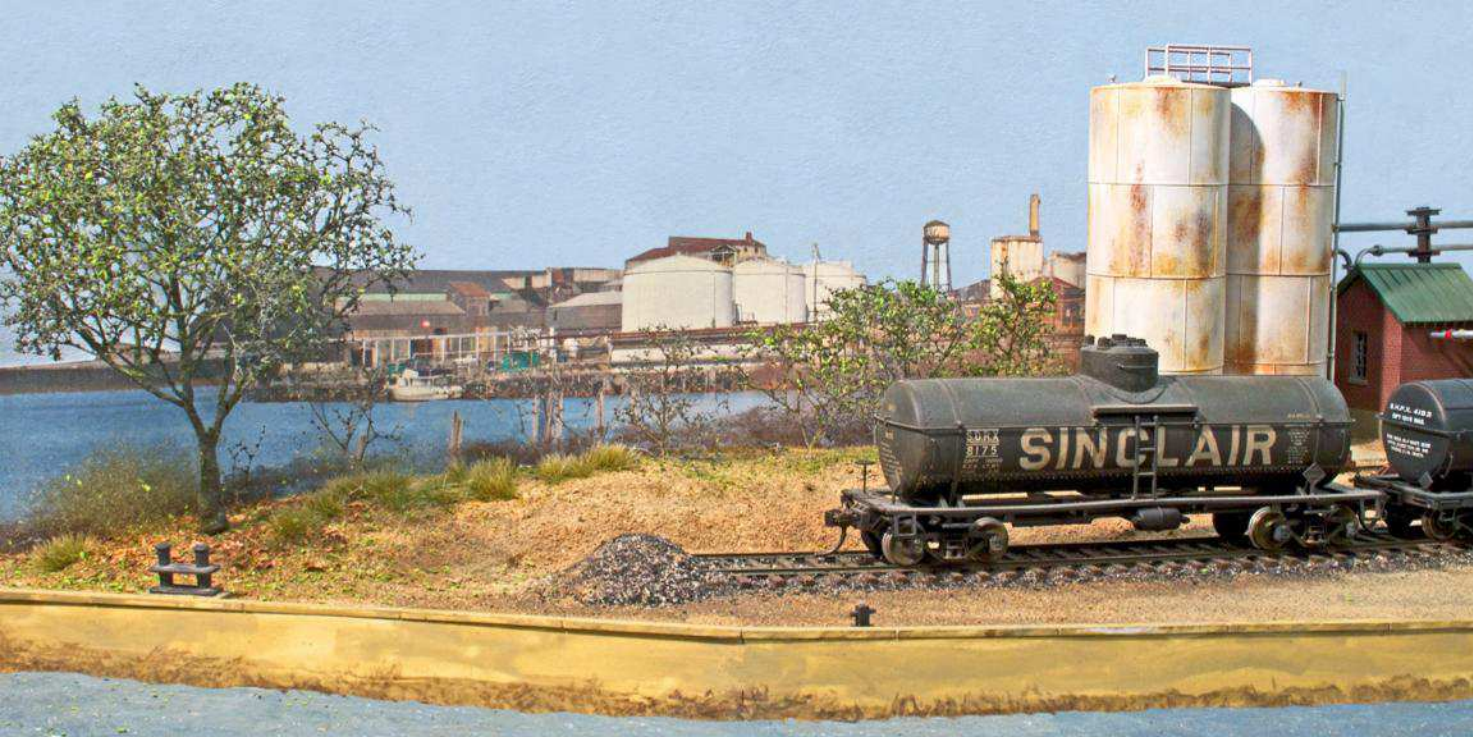
◀ Creating a scene looking down a street is easier if it ends in a T intersection. Continuing the perspective onto the backdrop causes alignment problems depending on the viewing angle. The trees make it easier to blend the scene effectively.

backdrop scene. These are scenic staples and may be all that's needed to create a suitable setting for the railroad.

A well-done painted backdrop can be very appealing. For those without artistic ability or an artist friend, many commercial photo backdrops are available. You also can have custom scenes of unlimited length printed – at a price.

I could use one or more such backdrops on my layout, but it's not a project I've pursued. However, my buildings and scenery elements are easily removable, so a long backdrop could be installed without undue deconstruction. Being able to clear the layout is a factor to consider if you think a sizable backdrop installation is in your future.

Why not install the backdrop before doing the foreground scenery? If it's a rural or mountain scene, that's probably OK. But in an urban scene, the



2 Use visual foils. A shoreline photo on the backdrop adds depth behind the 3-D model of a fertilizer plant on Paul's Baltimore Harbor District layout. The tree and low vegetation along the backdrop help blend the transition between the models and photo.

coating if I'm doing nearby scenery work later. But I'm careful with later spritzes of rubbing alcohol as a wetting agent, as drops of alcohol will leave hazy spots on a surface sprayed with Dullcote (or on a freight car or structure, for that matter). Don't panic: Another spray of Dullcote will fully restore the surface. Commercial backdrop and laser-printed images are a little more resistant to moisture.



3 Align background and foreground scenes. Beyond where a chemical company's tank car loading/unloading rack ends at the wall is a photo print of an industry structure to help extend the scene. Piping runs in front of it, interrupting the view to help blend the flat image into the scene.

alignment of foreground buildings and backdrop structure images is often more critical (1 on the previous page). If you're not sure about the positioning of the foreground elements, you might want to wait for a finished backdrop. Also, scenery construction can be a bit messy and could damage an expensive backdrop.

Using small prints

My approach so far has been much simpler. I use relatively small photo prints of an appropriate length and not more than about 4" high pasted on open backdrop spaces between 3-D structures or behind trees. I use the structures and trees as visual foils to help blend the

photo prints into the scene (2). I also keep the horizon line low.

Without the foils and low horizon line, the images may look like photos pasted on the wall and won't blend into scenes. I install the backdrop photos after the scenery elements are set so everything lines up (3).

I print the photos on my home ink-jet printer on either ordinary bond or matte photo-quality paper. The bond paper prints are less crisp and not as brilliant as those on photo paper, which seems appropriate for backdrop images. I cut off the sky and conceal the white edge using a colored pencil or crayon.

The prints can be sprayed with Testor's Dullcote to provide a protective

Applying the images

I paste the images on the backdrop with glue sticks, white glue, or sometimes rubber cement. I haven't settled on what's best and have recently refastened portions of images pulling away from the wall with thin double-sided tape.

Whatever you use, you want to be able to make positioning adjustments as you apply the image. I avoid standard dry-mounting techniques, as they seldom allow much if any adjustment once the image and backdrop make contact.

Structure flats

As with photos, I take care installing structure flats against a backdrop. I don't want them to look like flats. By obscuring the view, I can make the shallow depth less obvious. A flat placed at eye level or higher will blend in easily.

Truncated structures are less jarring against a backdrop than on an aisle edge.

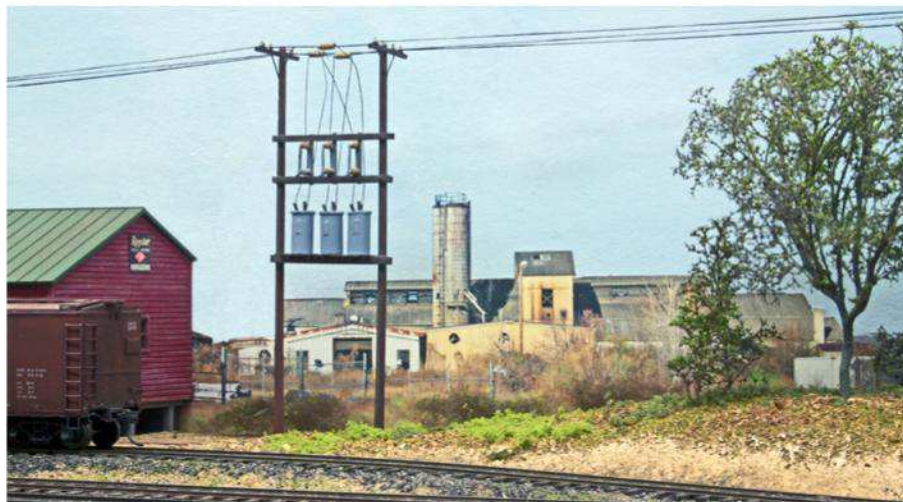
If the junction where the roof meets the backdrop isn't visible, the shallowness is obscured. A parapet on top of a brick building helps accomplish this. On peaked roof buildings, I cut the roof off after the peak, so the peak hides the short, truncated back slope **4**.

The higher the structure is above normal eye level, the less depth is required for a shallow background building to be accepted as a full-size model.

Scenery along the backdrop

When building scenery along a backdrop, there may be opportunities to create viewing alleys between structures, trees, or hillsides. The eye is drawn to such arrangements – for instance, looking down a street framed by buildings or trees. There's a void, sometimes called negative space, that fools the eye to see more than is obvious. It becomes a center of interest on the layout.

I created a 3" deep depression on my railroad to accommodate a coal delivery trestle. It's bounded by a boiler house on one side and an industrial structure on the other. This created a viewing corridor that leads to a photo of a warehouse



4 Manage structure flats. A photo of a foundry on the backdrop depicts a neighboring industry. The structure at left has been cut back to fit between the siding and backdrop, but its peaked roof makes the foreshortening more acceptable. A model of a transformer bank, a tree, and low vegetation ease the transition between the horizontal layout surface and vertical backdrop.

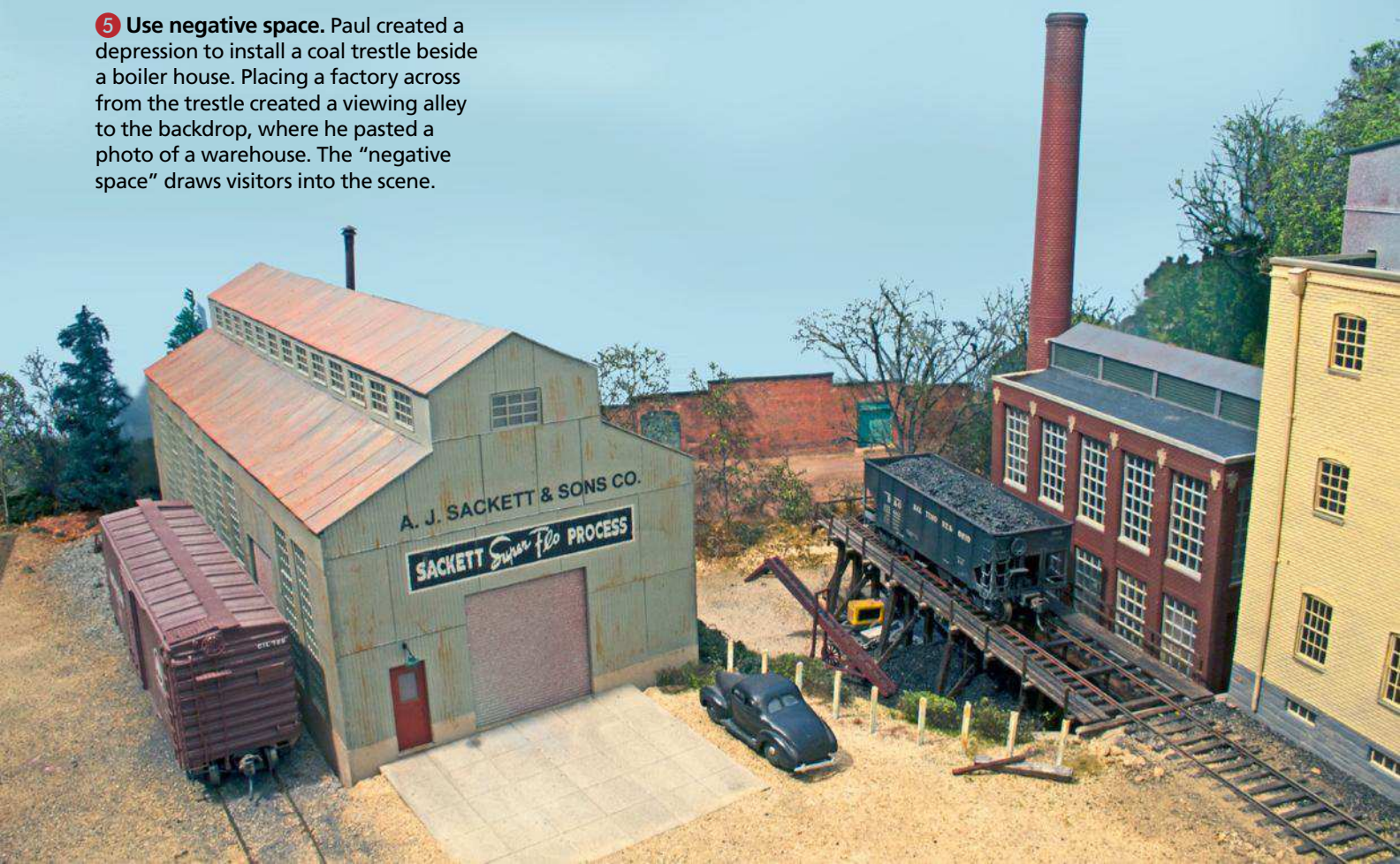
pasted on the wall **5**. I often see visitors pausing and stretching a bit to get a better look into the scene.

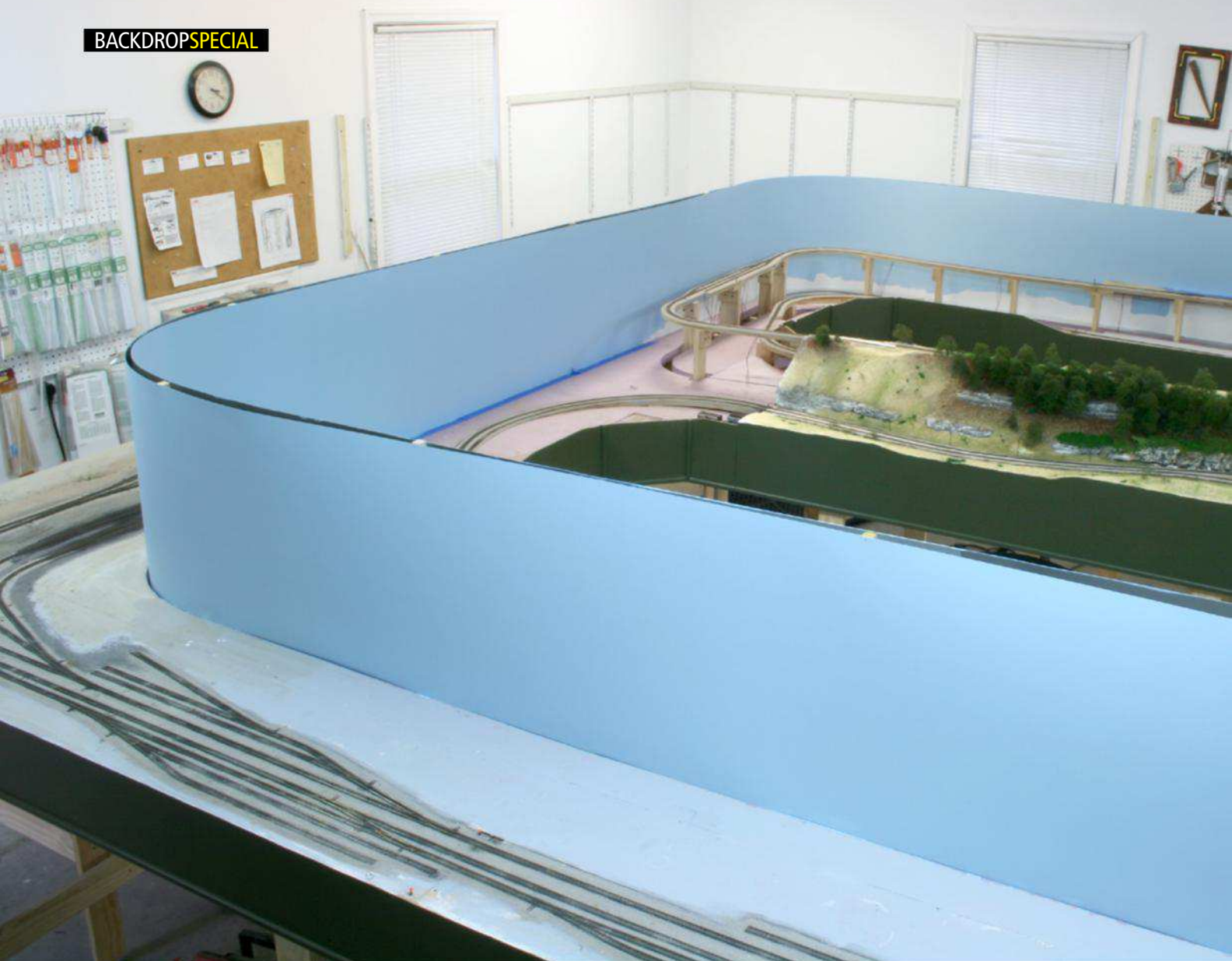
We can make more interesting backdrops. Create spots where people try to look beyond the foreground elements to investigate more distant details on the background. Using techniques like this, along with controlling viewing angles

and using scenic elements to blend the background into the foreground scene, can expand the experience of our layouts past the walls of our train rooms. **MR**

Paul Dolkos, who models the Baltimore Harbor District in HO, is a regular contributor to Model Railroader and its special issues.

5 Use negative space. Paul created a depression to install a coal trestle beside a boiler house. Placing a factory across from the trestle created a viewing alley to the backdrop, where he pasted a photo of a warehouse. The "negative space" draws visitors into the scene.





Aluminum trim coil is a light and easy-to-bend, -cut, and -paint material that's perfect for model railroad backdrops. It's self-supporting and comes in 50-foot rolls, minimizing the number of joints that must be disguised.

Aluminum trim coil backdrops

As a backdrop material, this inexpensive, easy-to-use metal sheet stands alone

By Lance Mindheim • Photos by the author

Backdrops are the canvas of the world beyond our layout. Because of their large surface area, and the fact that they are positioned perpendicular to our eye, they're extremely prominent features on our model railroads. As such, finding a simple and effective way of mounting our "canvas" justifies some well-thought-out planning.

Commonly used materials such as tempered hardboard, linoleum flooring, or plastic sheet have disadvantages such as being dimensionally uneven, hard to curve, heavy, and worst of all, requiring a joint every 8 feet or so. Enter aluminum trim coil.

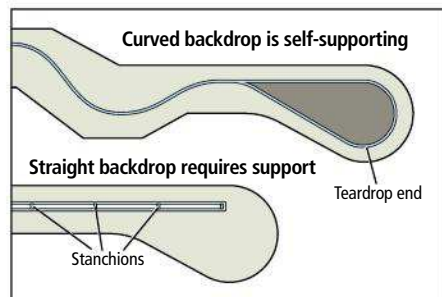
Trim coil is a thin aluminum sheet, typically sold in rolls 2 feet tall by 50 feet long (1). Used in aluminum siding work, it can be found in the siding section of big-box hardware stores. Trim coil is light, easy to cut, takes paint well, bends easily, and greatly reduces the number of joints you have to deal with.

Trim coil makes life much easier when it comes time to put that backdrop on your model railroad. I find it light enough to install by myself, though an extra set of hands is helpful when unspooling it.

Mounting the trim coil

In situations where a layout is positioned against the walls, I simply paint the drywall and let that serve as the backdrop. There's no sense in adding another flat surface on top of an already flat surface. Trim coil is most useful when a backdrop is to be freestanding, in the middle of the benchwork.

How you mount the trim coil backdrop to your layout will depend on whether the backdrop will have a number of long straight runs or multiple curves. Surprisingly, if the backdrop has no straight runs, it requires very little if



(2) If a backdrop run features broad curves, as shown at top, it will be self-supporting. Straight backdrop runs, bottom, will wobble and fall unless supported with stanchions.



(1) Aluminum trim coil comes in 2 feet wide by 50 feet long rolls and can be found in the siding department of hardware stores. The trim coil in this photo is made of aluminum; PVC refers to the coating, which gives it its color.

any support (2). The vertical bends lend it rigidity, and it stands in place by itself.

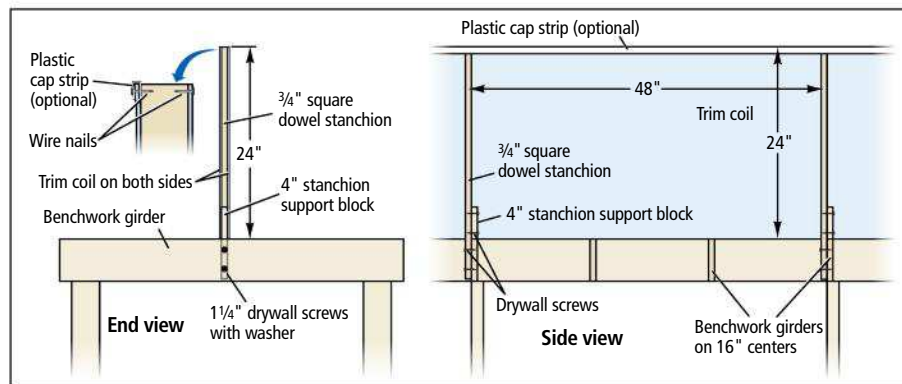
The challenge of mounting any backdrop comes into play when you have a number of long, straight, freestanding runs. In order to secure the backdrop so it doesn't flop from side to side, it needs vertical support. Because trim coil is so light, these supports can be much lighter and spaced farther apart than when heavier, traditional materials are used.

One of the most common situations is where a backdrop runs down the middle

of the benchwork. In these cases, I begin by making support stanchions and fixing them in place with drywall screws (3).

I make my support stanchions from 3/4" square dowels picked up at the hardware store. I then screw the stanchions to the benchwork girders every 4 feet or so, using 1 1/4" drywall screws. Because the dowels are made of soft wood, I use shoulder washers to keep the screws from splitting them.

It's important to make sure the stanchions are perfectly vertical. I found it



(3) Since aluminum trim coil is so light, support stanchions don't have to be heavy. Lance uses 3/4" square wood dowels.



4 This view shows the back of the backdrop midway through the installation process. The trim coil spool is being unrolled to the right. Note the clamps temporarily holding it to the stanchions.



5 One way to terminate a backdrop at the end of a peninsula is to wrap it back onto itself in a teardrop shape. If the diameter is close to 18" or more, as above, it will be stable enough to support itself without stanchions.

easiest to initially install only the top stanchion screw, mount the backdrop, fine-tune its alignment, and only then go back and install the bottom screw.

To attach the trim coil to the stanchions, I put the spool at one end of the benchwork and clamp the end of the roll to a stanchion. I then pull the roll down the benchwork, unspooling it as I go 4. Although you can do this with one person, it's easier if you have a helper; the springy coil might unspool itself too quickly. If things get too wobbly, I'll add a clamp here and there to hold things in place as I work.

When you have everything in place, trim coil is easily cut to length using the same score-and-snap method you would with styrene.

If I need a longer run, I overlap the sheets 8" or so, secure the overlapping pieces with contact cement, then feather the edges in with joint compound. Small dents aren't that noticeable, but can be smoothed with joint compound.

Once I'm satisfied with the backdrop alignment, I drill a 1/16" hole through the



6 If a backdrop terminates in a stub, it should end at a support stanchion to keep the trim coil from falling over.

sheet at each stanchion. Be careful not to drill into the stanchion itself. After drilling the hole, tap a $\frac{5}{8}$ " wire nail in place to secure the backdrop to the stanchion.

If you want a more finished look, you can snap a plastic cap strip along the top. Cap strip is generally found in the lumber molding section of a hardware store.

Stub or teardrop?

At the end of your backdrop run, you have two choices as to how to terminate it: stub or teardrop. By far a teardrop-shaped bulb is the easiest and most stable. If the bulb is 18" or more wide, the end will stand up without support stanchions 5. But if your situation requires a stub end to the backdrop, you'll need to support it with a stanchion 6.

The final step is to paint the backdrop your desired shade of sky blue. I prefer Behr's "Carefree Sky." Applying the paint



7 The final step is to paint the trim coil a sky blue color. A single wire nail at each stanchion is sufficient to support it. If you desire a more finished look, you can top the trim coil with plastic cap strip, available at hardware stores.

with a roller goes much faster and gives a smoother finish than using a brush 7. Be sure to protect your layout with a drop cloth, though, as rollers can splatter paint if you roll too quickly.

The advent of aluminum trim coil makes a major aspect of layout construction, the backdrop, far easier and cleaner than when using material and methods of old. [MR](#)



Compact model railroad
Packed with detail



① Louisville & Nashville Electro-Motive Division F7 no. 671 passes Main Street in St. George on its way to pick up freight on John Ottman's HO scale St. George layout. Structure modeling is John's favorite aspect of model railroading, and this scene includes kits from South River Works, Fine Scale Miniatures, Walthers, and Bar Mills.

Freight traffic through the
Appalachians supports this layout

By Lou Sassi

Photos by the author



2 This overall view of the layout shows just how much railroad John has packed into a 12 x 16-foot space.

John Ottman has been building model railroads since 1960. During those early days, he built a number of layouts that he eventually tore down or gave to his friends. After getting married, he stepped away from the hobby until the 1980s, when the railroad bug bit again. That led to two HO railroads, the second of which you see here.

It was a visit to an HO layout near his home in Kentucky that inspired John to build the railroad. John's layout models a freelanced bridge line, loosely based on scenes he remembers from childhood of the Norfolk & Western Ry. and Southern Ry. through the Appalachian Mountains in the 1950s.

A place to build

Before John could start building his layout, he needed a place to put it. He carved out a 12 x 16-foot space in his home, and installed a finished ceiling, fluorescent lighting, and wall-to-wall carpeting. John then painted the wall-board behind the railroad sky blue

and added hand-painted clouds. He installed a dimmer on the room lighting for night running.

With a home for his layout, John designed the track plan, then built L-girder benchwork to support the railroad. With the help of his friends, John laid Atlas code 83 flextrack and ballasted it. Turnouts are also Atlas, controlled by either Tortoise by Circuitron switch motors or Caboose Industries ground throws.

The layout is wired for Digital Command Control (DCC) using a Digitrax system, again installed with a hand from his friends. John has four plug panels to allow to allow multiple operators at one time. The powered turnouts can be controlled by DCC throttle or by push buttons on the layout.

Bring on the mountains

Basic landforms were created using extruded-foam insulation board that John covered with Hydrocal-soaked paper towels. These were painted in earth-tone latex paints and covered with

various textures and colors of Woodland Scenics ground foam.

Brush and trees were also made from Woodland Scenics ground foam and tree kits. Water features on the layout were replicated using more Woodland Scenics products. Rockwork was made from Hydrocal, either cast in rubber molds or hand-carved in place.

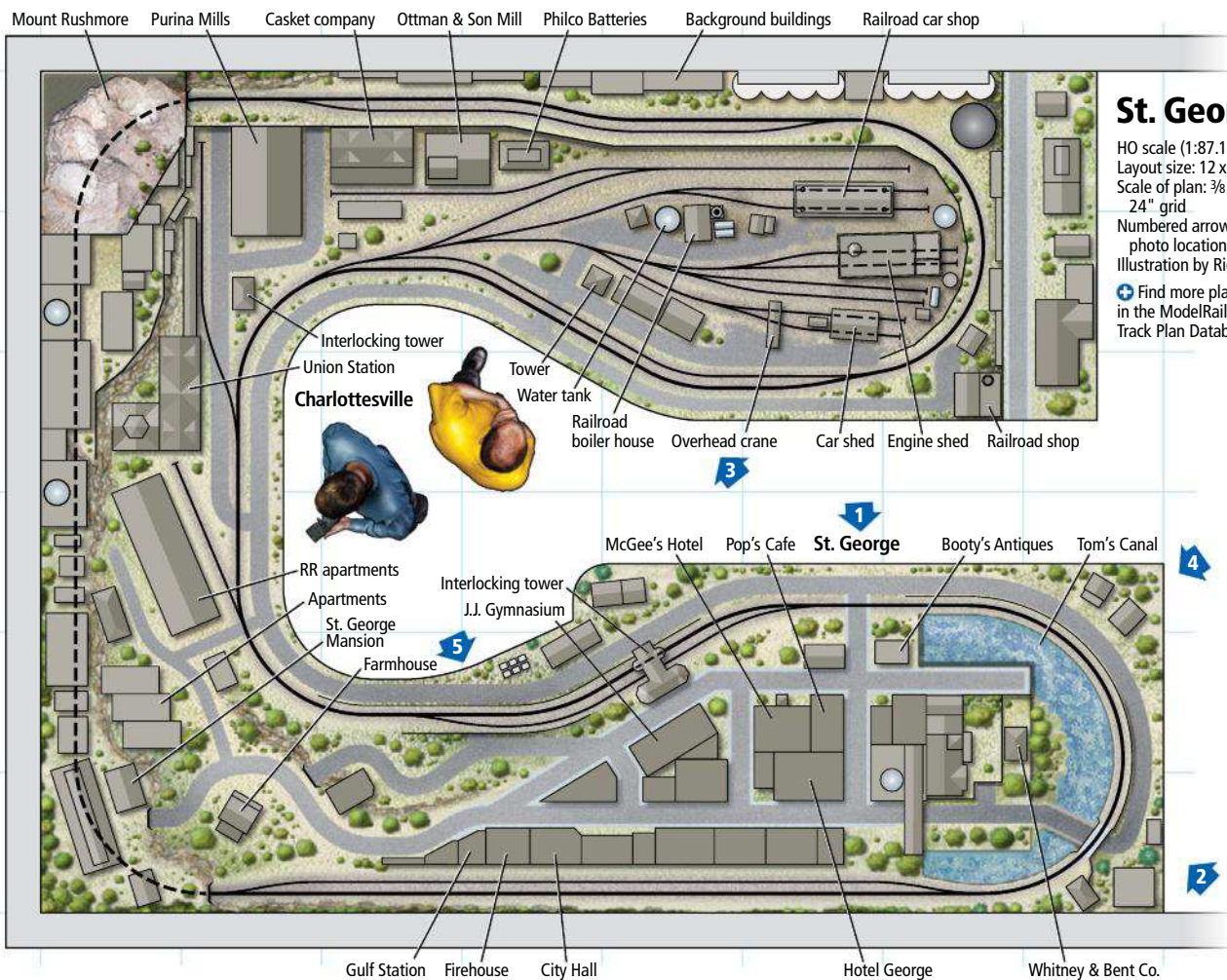
Towns along the line

The majority of the structures on the railroad are kitbashed. Three of John's favorites are the interlocking tower at St. George, his re-creation of Mount Rushmore, and the railroad shops in Mount Rushmore. Many of the bridges are scratchbuilt.

John considers structure building to be his strength. He's used wood and craftsman kits from Fine Scale Miniatures, Bar

MORE ON THE WEB

Subscribers can watch trains run on John Ottman's HO scale St. George layout. See the link at ModelRailroader.com.



The layout at a glance

Name: St. George

Scale: HO (1:87.1)

Size: 12 x 16 feet

Prototype: freelanced, inspired by Louisville & Nashville, Norfolk & Western, Southern Ry., Wheeling & Lake Erie

Locale: Appalachian Mountains

Era: steam-to-diesel transition

Style: walk-in

Mainline run: 70 feet

Minimum radius: 22"

Minimum turnout: no. 5

Maximum grade: 3 percent

Benchwork: L-girder

Height: 57"

Roadbed: cork

Track: Atlas code 83 flextrack

Scenery: Hydrocal over extruded-foam insulation board

Backdrop: painted drywall

Control: Digitrax Digital Command Control



3 Motorcycle riders in the foreground are in the perfect spot to catch the action as Southern 2-8-2 Mikado no. 4501 climbs a grade pulling a freight past the layout's shop and yards scene. The switch tower above the B&O hopper is a Revell kit.

A couple of tips

Like many model railroaders, John has found a few tricks to make his modeling more realistic, or more enjoyable. Here are two things John wanted to share. – Lou Sassi

Cable tie end



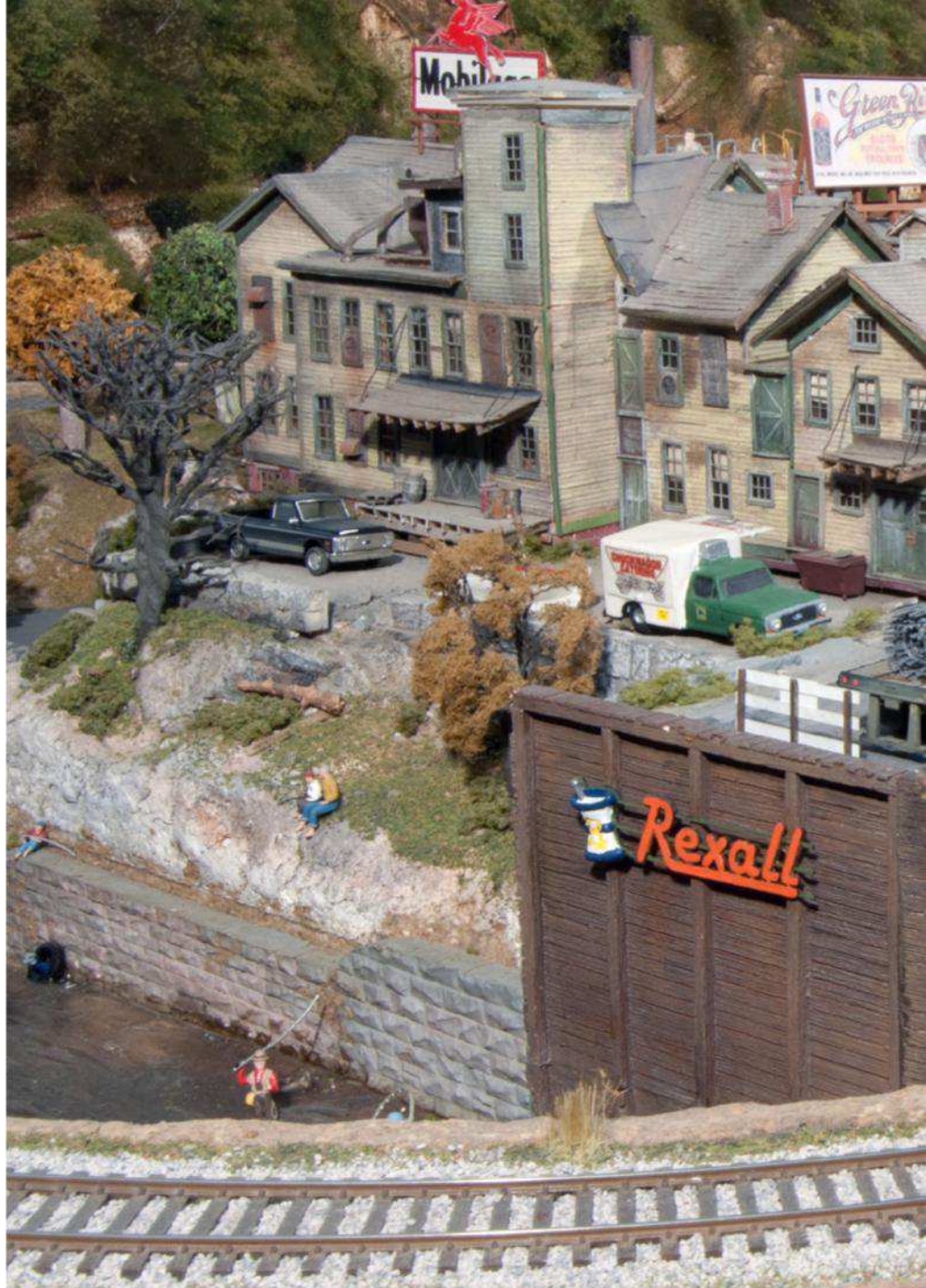
Quick bridge shoes. My favorite thing to use on the bottom of a bridge for the feet is the end of plastic cable ties, or zip ties. They come in many sizes from small to large. I cut off the long tie section and use the square ends. They fit my bridges great. I just paint them, and they're done.



I set the trusses on the overpass to show what they look like. The shoes keep the truss from resting right on the bridge abutment.



Closet workshop. My work space is in a closet. I installed a workbench with a vise, and shelves for tools and various supplies. A magnifying glass, a comfortable chair, and all the other extras provide a nice space in which to work.



4 Our mixed freight has reached St. George. Tom's Canal is between the main line and the furniture factory complex, a kit by South River Works. The water in the canal was made using Woodland Scenics products.



5 A Walthers highway overpass supports Wheeling & Lake Erie 2-8-2 Mikado no. 6011 as it passes St. George. The buildings are from Walthers and Magnuson.



Mills, Downtown Deco, and Campbell Scale Models, as well as plastic kits from Walthers, Atlas, and Bachmann.

Locomotives and rolling stock

The rolling stock on the railroad represents Appalachian-area prototypes. John's trains depict a wide range of years in the steam-to-diesel transition era.

All of the rolling stock is weathered. John uses chalks, liquid latex colors, and an airbrush to bring his models to life.

The railroad's locomotives, both steam and diesel, are sound equipped. John favors Digitrax products for his decoders as well.

Running trains

A typical operating session on the railroad keeps two crews busy for about three hours. The goal of the layout is to move traffic between the East and West through the Appalachian Mountains.

John has several long sidings to accommodate meets, but if he were to start again, he would build a double-track main line.

John's ultimate goal when he started construction of his railroad was to create a highly detailed miniature representation of the prototypes he saw as a child. With this layout, he feels he's accomplished that goal. 



Meet John Ottman

John is 80 years old and has been a model railroader since he was 11. A widower, John retired from a 40-plus-year career with American Synthetics, where he helped develop the fuel used in the space shuttle.



STRATEGIC STRUCTURE SIZING

The sheer mass of structures can be an issue in O scale, but careful choices can mitigate them

By **Andrew Dodge** • Model photos by the author



Arkansas Junction consisted of a simple depot for passengers transferring from stub trains to and from Leadville with connections to east- and westbound Pullman and through coach service. Modeling this simple location rather than the more extensive facilities at Leadville solved a space issue for Andrew Dodge's O scale Colorado Midland layout.

One of the primary draws, and obstacles, to modeling in O scale is its size. I would like to offer a fresh look at this scale, including ways the modeler can mitigate the problem of the mass of 1:48 structures.

O scale is approximately twice the scale of HO scale, which means buildings occupy four times the footprint and eight times the volume of the same structure in HO. Planning is key to selecting the type of buildings that best suit the layout as well as fit into the available model railroad space.

It makes little difference in layout planning whether one models a



The impressive two-story station at Leadville could make a great modeling project, but its size and location make it an impractical one unless the layout focuses exclusively on the Leadville area. Mel McFarland collection

21st-century line or the Second Division of the Colorado Midland in 1897, as I do. Structures are structures, and as modelers, we must solve the same problems. In illustrating the point of this article, I will focus on some of the Colorado Midland's more famous structures and my solution to the size issue, which was accomplished without any compression.

Modeling stations

The Colorado Midland Ry. operated between Colorado Springs and Grand Junction. One of the principal towns between the two cities was Leadville. The Midland selected it as its division point in accordance with its importance to the railroad and the state's mining industry.

In true Victorian fashion, the Midland built a grand Queen Anne-style station that included a dining area and freight facilities. It was quite impressive looking at the waiting room end, but seen from the freight end, it was just another clapboard building.

The depot measured 30 x 197 feet, which would make it about 4 feet wide in 1:48. Some compression could be possible, but not without making unacceptable changes to the appearance of such an iconic building. Add to that the need to accommodate a train, plus approach and departure tracks, and the space needed to adequately model this station grows to the range of 20 feet long. Turnouts would make this space even longer if more than one track were desired in front of the depot.

Leadville and its precincts would make an absolutely superb subject for a

switching layout, with all its mines, mills, and nearby interchanges with the Colorado & Southern narrow gauge and the Denver & Rio Grande. However, I wanted to use my space to model the aspects of the railroad's operations over the Continental Divide.

Fortunately, the railroad provided the answer to the building size problem at Leadville. The Midland built a modest facility at what was known as Arkansas Junction, a site at a lower elevation and on the more direct route from the Arkansas River Valley to the high pass. This served as the line's division point during the time I model, even though all the engine facilities were in Leadville. The Midland didn't even have water service at the junction.

The station at Arkansas Junction, which was moved and rebuilt over the years, stayed in the range of 20 x 50 feet during its lifetime. This would make the model in O scale a little over 5 x 12 inches – very manageable.

On the prototype, the station was in the middle of a wye that I was able to reproduce to Proto:48 standards in a space only 4 feet across, with two leads serving the main line and the third going to staging representing Leadville. Although the steam engines I operate are rather modest in size compared to those of the 1930s and 1940s, a four-axle diesel could operate just as well through the wye as my Ten-Wheelers and Consolidations. No matter your era, you can create an effective prototype scene in O scale in a very modest space with the proper planning, selection of buildings, and locations.



Basalt Station, with its overhanging roof, braces, and fancy windows, was impressive. It was also perfectly sized for Andrew's layout, not too big and not too small. The Harvey House Hotel is out of view to the left.

Including locomotive servicing

I designed my layout to depict train operations over the Continental Divide with an emphasis on the locomotives and how the railroad supported them in the performance of their work. Since I deemed the Leadville area, with its engine terminal, unworkable for my purposes, I selected the Midland's complex on the west side of the divide to display a helper and semi-division point. That location was Basalt, and for my purposes it was ideal.

Basalt was a railroad setting perfectly suited for a layout in any scale, and even in O scale fit beautifully in its designated space. The station, which today serves as a bank, covered a modest 20 x 60 foot area, and was one of the railroad's hand-somest depots.

When a modeler selects a structure like this with a wide overhanging roof, it requires an area that includes its effective "footprint," which in this case was 8½" x 17½". Even at that size, the model depot fit comfortably between the main line and the turntable lead.

During much of the 19th century, the Midland was under the control of the Atchison, Topeka & Santa Fe, which built a nice size Harvey House hotel and restaurant across the tracks from the station that I was able to include without much compression, except for the L on the back of the building.

The real star of Basalt was its locomotive support facilities. There was a two-stall enginehouse, oil house, and turntable, all of which I could include in their proper locations and at full size. However, the most interesting structure was

the coal dock. Counting a ramp more than 200 feet long, the level area of the coal pockets, and then the locomotive sanding house, the entire model came to a total of 7 feet, or 336 feet in O scale. Although this sounds huge, because the structure fit nicely between the mainline tracks and the engine house lead, it presented no major hurdles. Planning and proper selection of locations like the one at Basalt makes modeling in O scale a viable option.

The immensity of nature

When modeling mountain areas, one needs to consider distances and elevation issues. In my earlier life as a modeler of the Denver, South Park & Pacific, I purposely avoided modeling the famous Palisades near Alpine Tunnel. To properly display the scenic attraction, I'd have to build the track much lower than I'd like and need at least a 10-foot ceiling.

Modeling the eastern approaches to the Hagerman Pass area on the Colorado Midland presented a similar scenario. However, in this case, the prototype provided a solution.

The Midland initially ascended the east side of the pass via four tiers of track with turnback curves at three ends. One of these ends included the iconic Mountain Trestle, which is sometimes referred to as Hagerman Trestle. That bridge consisted of many four-tier wood bents and an overall length of 1,084 feet. This translates into more than 22 feet in O scale. Even in HO scale, the bridge would be more than 12 feet long – too big for most model railroads. And selective compression wouldn't do it justice.



The engine facilities at Basalt were dominated by the coal dock. Although its length is impressive, it fit easily between the main line and enginehouse lead. One of the most interesting aspects of this location was the sand house at the end of the dock that was sometimes resupplied by stock cars carrying sand.



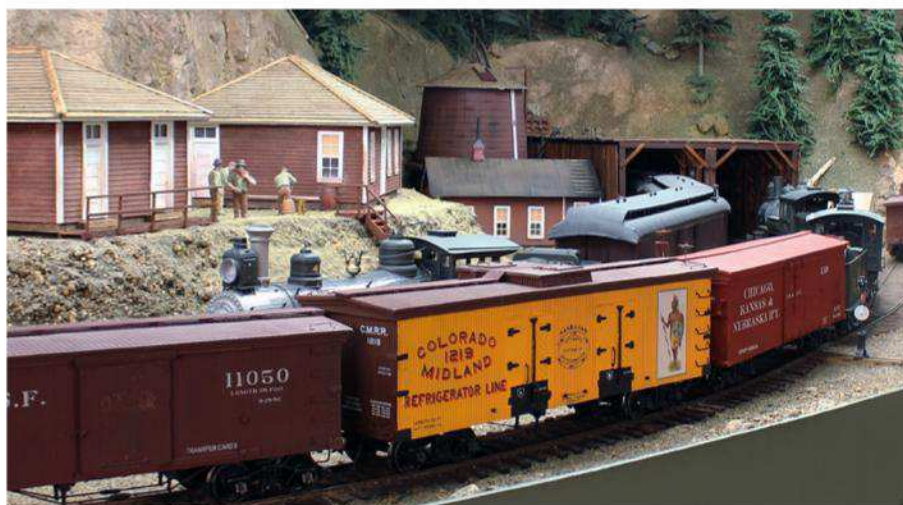
This 19th-century illustration dramatically shows the Colorado Midland's climb to Hagerman Tunnel, just below the crest of the pass. Note the 1,084-foot trestle at left center. At bottom center is the tunnel boring operation at Busk. John A. Lowell illustration

Later, though, the prototype bypassed the pass via the Busk-Ivanhoe Tunnel, giving me the chance to do the same. Compared to the high line with its lengthy trestle, modeling Busk was easy. My version consisted of the approach shed with its attached water tank and depot, plus several section and bunk houses. All of this, modeled in full scale, needed an area only 6 feet long and less than 3 feet deep. A slight shift in my railroad's time period saved me at least 16 feet of modeling space.

A final thought

One might come to the conclusion that I didn't solve these structure size problems so much as avoid them. That's true, to a point, but as modelers, we're always solving problems and making choices of places and time periods to model. I selected areas and structures that would effectively portray a world in 1:48 scale. With proper planning and a realistic view of what can be presented, one can successfully model in 19th-, 20th-, or 21st-century O scale. 

Andrew Dodge's layout was featured in Great Model Railroads 2018.



Although the "High Line" would be impractical to model, Busk is eminently suitable for modeling. Its compact structures make it practical to model the Midland's Hagerman Pass area in O scale. Here, westbound No. 31, the *Portland Fast Freight*, waits to enter the Busk-Ivanhoe Tunnel as soon as train No. 6, the *Kansas City and Chicago Limited*, exits and returns the tunnel control rod to the station agent.

Tour Andrew Dodge's layout

Andrew Dodge's Proto:48 Colorado Midland Ry. layout will be open for tours during the 50th O Scale Convention in Rockville, Md., on Aug. 22-26, 2018. Learn more at www.2018oscalenational.com.



Replacing a factory-installed diesel decoder

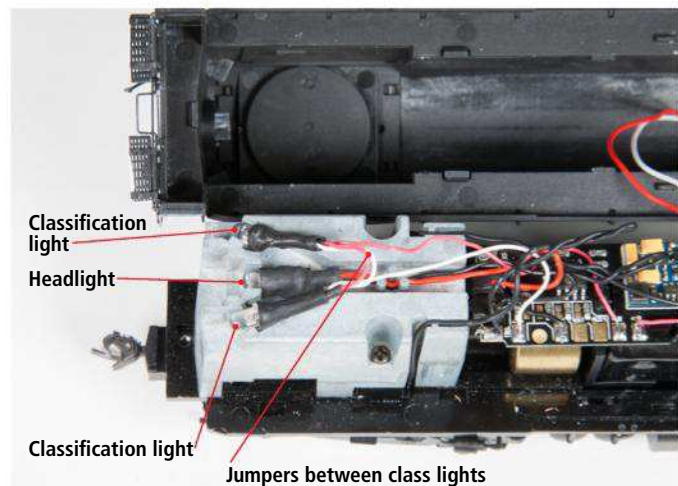


Southern no. 2147, a Fairbanks-Morse H16-44, has its white class lights on as it couples to a string of cars in preparation for a shift as the Charlottesville local, an "extra," on Larry Puckett's HO scale Piedmont Southern layout.

In the January 2018 DCC Corner column I showed how to replace a factory-installed steam decoder. This month I want to tackle a diesel replacement. Over the last couple years, I've had several e-mails from readers about installing a sound decoder in first-generation Atlas Fairbanks-Morse H15-44 and H16-44 models. These were originally released around

2003 and were available with Lenz mobile decoders.

The interesting feature of these Lenz decoders was the ability to turn the classification lights on and off. When turned on using Function 6, they displayed a green light on the forward end with a red light on the rear. These colors reversed automatically when the locomotive changed direction of travel.



1 Headlights and class lights. First Larry installed the light-emitting diode (LED) headlight. To simplify the class light wiring, he added jumpers between the LEDs at each end, and ran a single positive and negative wire from the pair of LEDs to the function connections on the board.

As since-retired MR senior editor Jim Hediger pointed out in his August 2003 product review, this choice of class light colors isn't all that common in prototype operation. Locomotives typically ran with the class lights off if leading a scheduled train, white class lights and/or flags if leading an extra, and green lights and/or flags to indicate another section followed.

Red was used as an end-of-train marker, with a red light, flag, or reflector disc displayed at the rear end of a train. The only prototype use of the Atlas class light colors would be a single locomotive running light as the first part of a multi-section train.

On recent releases of this model, Atlas used an Electronic Solutions Ulm (ESU) LokSound 21-pin sound decoder and retained the red-green class lights. To more closely follow prototype practices and keep this project simple, I installed independently controlled white or green class lights and a LokSound decoder in my older locomotive.

Because I used the same sound project as those in the new factory-installed decoders, my locomotive should be compatible with the current release. I used white light-emitting diodes (LEDs) since I only operate regularly scheduled trains and extras, but if you plan to operate some trains in multiple sections, you'll want green LEDs.

In this installation I used a no. 73700 LokSound Select Direct decoder, which is a different configuration than the 21-pin decoder Atlas uses. However, the sound project I used is the same.

Most dealers sell these universal LokSound decoders

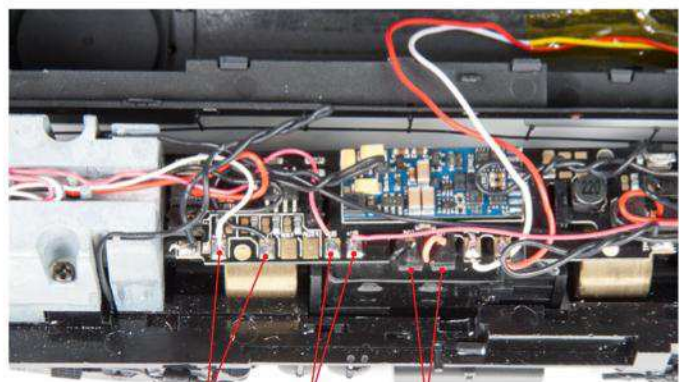
with generic diesel sounds. So unless you plan to install the sound package yourself, when you order the decoder make sure the dealer installs the correct sound project for you. Most dealers will do this, but you must ask. In this case I chose the 93449 Atlas H15-44/H16-44 sound package from the LOKSOUND NORTH AMERICAN & AUSTRALIAN FACTORY EQUIPPED SOUND files on the ESU website.

I slipped the shell off the chassis and surveyed the situation. I left the class light LEDs attached to the board, since they were soldered on. I did, however, disconnect the wires to the motor, the forward and rear light bulbs, and the power pickups. With all the wires disconnected, I lifted out the decoder by using a small screwdriver to disengage the plastic clips that secure the decoder.

I checked the orientation of the new decoder board so the front end faced the front end of the locomotive. It's important to do this, since some railroads designated the long-hood end of the locomotive as forward.

I connected the motor leads to the terminals on the board and slid it into place on the plastic mounts. Using the plastic caps on the wire leads makes it easier to reverse the wires if you later find the locomotive doesn't go in the correct direction. I also attached the pickup wires from the trucks at this point.

Now let's talk about LED options. I installed white 3mm LEDs for the class lights and headlights. The LEDs are available in white or green, but to keep things simple, I ordered sunny white versions from Richmond Controls (www.richmondcontrols.com). I chose the



Aux(1) and Aux(2) Aux commons Plastic clips on motor contacts

2 Making connections. Larry connected the class lights to the function contacts labeled Aux(1) and Aux(2). They're controlled by Function 6 on the throttle.

sunny white, which have no blue cast at all. Resistors are unnecessary, since the LokSound decoder board comes with 2.2KΩ resistors on the function outputs.

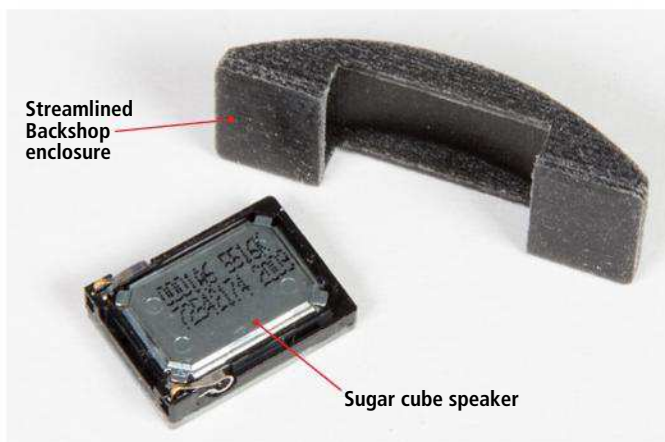
Installing the 3mm LED replacement headlights is simple, since the chassis has a slot designed for them. I soldered red and black wires to the positive and negative legs of the LEDs. The longer leg is positive, plus there's usually a flat spot cast into the negative side of the plastic lens.

I placed heat-shrink tubing over the solder joint and all exposed metal, as the LEDs will be in direct contact with the chassis. Finally, I added a longer piece of 1/8" heat-shrink tubing over the base of the LED and down over the wires.

I installed the LEDs into the slots in the chassis in the same orientation as the ones I removed **1**. Next I connected the wires to the decoder terminals at each end of the board, observing proper polarity.

The classification lights required a bit more work. For each end of the model I soldered a jumper wire between the positive LED legs and added one long wire creating a single common, then placed heat-shrink tubing over the solder joint all the way up to the base of the LED **1**. I did the same for the negative leads, giving me only two wires for each LED pair. I added larger diameter tubing over the LED and wires just like with the headlights.

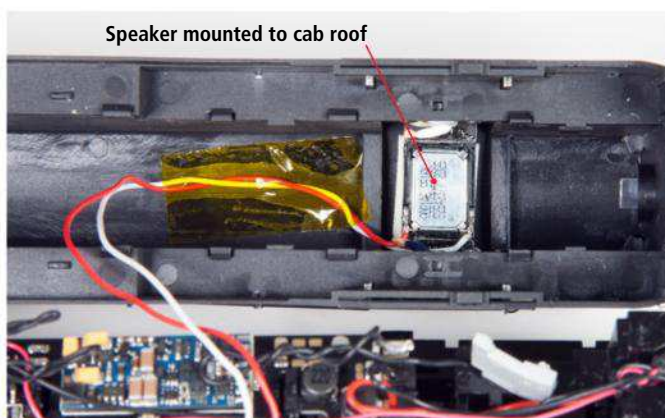
The LokSound decoder has four auxiliary function contacts on one side of the board **2**. These are designated Aux(1), Aux(2), Aux(3), and Aux(4) for programming the decoders. I used Aux(1) and Aux(2) for the white class LEDs on the front and rear ends, respectively. I connected the negative wires from each LED pair to the appropriate Aux function pad. I then connected the positive wires to the function common pad – there are two of these next to the Aux



Streamlined Backshop enclosure

Sugar cube speaker

3 Compact sound. Streamlined Backshop's sugar cube speaker with curved enclosure fits the inside of a locomotive cab roof, making it almost invisible from the outside.



Speaker mounted to cab roof

4 Speaker location. Larry installed the speaker in the cab using a small rectangle of double-sided foam tape and soldered the connections to the board.

function pads, and it doesn't matter which you use.

With all the other connections completed, I turned to installing a speaker. As I showed in the May 2018 issue, Streamlined Backshop offers sugar cube speakers with enclosures curved to fit the inside of a locomotive cab roof **3**. After gluing the speaker into the enclosure using cyanoacrylate adhesive (CA), I soldered wires to the contact prongs. Using a small rectangle of double-sided foam tape I attached the enclosure to the inside of the cab roof. With the speaker installed, it was a simple matter to attach the speaker wires to the contacts on the decoder board **4**.

With everything installed

I was ready for the programming track. I changed the address and other common CV settings as I have shown in the past (April and October 2017, May 2018). The programming for the class lights is already in the decoder.

Because the program for the Atlas models uses Aux(1) and Aux(2) to turn on the class lights on opposite ends of the locomotive, I was able to use that without making any programming changes.

With the LEDs wired as above, the class lights come on when F6 is pressed, and automatically reverse when the locomotive changes direction. I told you this would be simple. **MR**



BECAUSE DIFFERENT MANUFACTURERS PRODUCE DIFFERENT STEAM AND DIESEL SOUND PACKAGES, YOU'LL NEED TO DO SOME RESEARCH TO FIND A MATCH FOR YOUR NEEDS. – LARRY



Bachmann HO scale Sound Value GP30

Bachmann Trains' GP30 is now part of the Sound Value line of dual-mode Digital Command Control (DCC)-equipped locomotives. This model was first reviewed by now-retired senior editor Jim Hediger in the December 1988 *Model Railroader*. While the body shell is largely unchanged, the mechanism has been revised, most recently to accommodate a SoundTraxx Sound Value dual-mode decoder and to create space for a speaker inside the fuel tank area.

Distinctive diesel. Electro-Motive Division's GP30 made a break from earlier Geeps with its unique roof-top cowl-ing. Designers from General Motors' Automotive Styling Center came up with the look to integrate the taller electrical cabinet behind the cab.

The fairing continued back over the air filter cabinet, which housed a

centralized air distribution system to cool the traction motors, a filtration system for engine intake air, and slightly pressurized the carbody to reduce dust buildup on the internal equipment. The fairing ended in a taper over the dynamic brake housing, even on units that weren't equipped with that brake option.

Many of these changes were the result of a new competitor in the heavy diesel locomotive market, the General Electric U25B. To compete with the 2,500-hp newcomer, EMD turbocharged its 16 cylinder 567 diesel engine, boosting output to 2,250 hp.

These upgrades over previous GP models worked to the tune of more than 900 units sold to 27 different railroads. While most roads retired their GP30s in the 1980s, Burlington Northern, Chessie System (later CSX), and Santa Fe embarked on various rebuilding

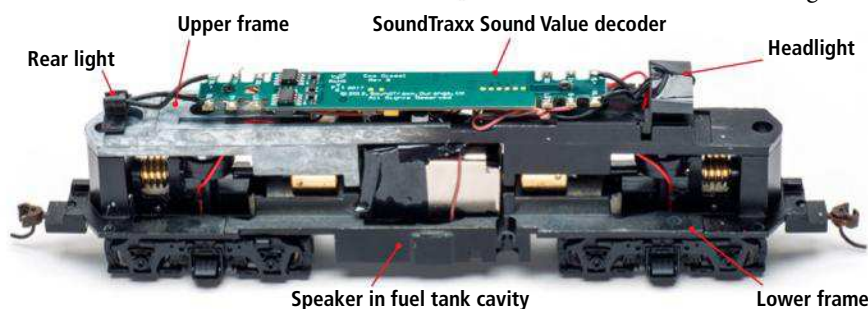
programs, extending the life of some of these locomotives to the present day.

The model. Bachmann's GP30 has a plastic body shell and die-cast metal frame. Separately applied metal grab irons and plastic windshield wipers are among the factory-installed parts. The handrails are molded to scale from flexible engineering plastic.

Windshield wipers on the center, angled windshields are painted on. Bachmann's model is a Phase II GP30 with the longer cab on the fireman's (left) side. The longer cab option was first offered in July 1962 and became standard in November 1962.

The overall dimensions of the model are within inches of the prototype, with the exception of the rear truck, which is about 1 foot closer to the center of the locomotive than shown on drawings in the *Model Railroader Cyclopedica: Vol. 2, Diesel Locomotives* (out of print).

The pilot is open below the coupler pockets, which simplifies removing the chassis from the body shell. Filling this area would require modifying the coupler mounting. The dynamic brake fan and the first radiator fan are molded with open grills. The other body openings are solid. The headlights above the cab are spaced a few scale inches farther apart than seen in prototype photos and drawings.



A can motor is sandwiched between upper and lower frame pieces on Bachmann's Sound Value decoder-equipped GP30. The trucks are mounted to the upper frame.

Our sample was decorated as Santa Fe 1218, a Phase I GP30. Santa Fe 1235 was the first Phase II GP30 Santa Fe had delivered. Santa Fe bought 85 GP30s in two orders. The first, built from April through June 1962, was numbered 1200 to 1234; the second, from January through June 1963, was numbered 1235 to 1284. The railroad also acquired one unit from Toledo, Peoria & Western, built in November 1963, for a total of 86. In the 1980s, Santa Fe's Cleburn (Texas) Shops rebuilt all of the company's GP30s, upgrading them to 2,500 hp and reclassifying them GP30u.

Bachmann's model is painted in the as-delivered "pinstripe" scheme of over-all blue with yellow ends and large yellow billboard lettering on the long hood. The yellow paint on the nose and rear end should continue straight across the top of the nose and the rear end.

Detail painting includes EMD builder's plates on the sill under the cab, red highlights on the fuel filler details, and silver and red paint on the front and rear marker light lenses.

The painting is all opaque, with sharp separation between colors. There are a few voids around the door latches and hinges on the long hood lettering, but that could be easily filled with dabs of paint on a Microbrush or toothpick.

Under the hood. A flywheel-equipped can motor sits in the center of a die-cast metal chassis. It drives all eight wheels through a pair of driveshafts, and all wheels pick up electricity for the SoundTraxx Sound Value decoder.

The decoder is mounted to a full-length weight that spans the model's trucks, providing their mounting points. Light-emitting diodes illuminate the headlights, rear lights, and number boxes. The fuel tank is a separate plastic part, and it doubles as a retainer for the downward-facing speaker, which sits in a cavity cast into the bottom of the frame.

Removing the body from the frame is simple. First, remove the two screws on the bottom of the fuel tank casting, then remove the casting. Next, remove the two screws in the bottom of the frame casting that screw into the body shell. With the screws removed, the body shell will lift right off.

On the test track. I started testing in direct-current (DC) using our Model

Rectifier Corp. Tech 4 power pack. After sounds started at 6V, the model took off at about 25 scale mph. I was able to throttle down to about 5 scale mph, but it was touchy. The top speed at 12V was 112 scale mph, much higher than any EMD gear ratio option could muster. Our pull test indicated the locomotive should pull 40 HO scale freight cars on straight and level track.

To help with DC performance, I set up our MRC Tech 6 sound controller. Raising the configuration variable (CV) for analog motor start voltage (CV63) to a value of 60 gave the locomotive a smoother start. The starting speed and top speed was also reduced to 5 scale mph and 91 scale mph, respectively.

This CV setting also allowed the DC sound effects to work correctly, so the horn sounded two blasts before the locomotive moved forward or three for reverse, and the bell rang while the locomotive was moving under about 10 scale mph. A quick boost of the throttle caused a grade crossing signal to sound.

Digital Command Control operation offered more control. In addition to the horn and bell, dynamic brake sounds can be triggered. Scale speeds, as shown in the chart, were much closer to prototype performance.

Out of the box, there was minimal momentum programmed to the decoder. After changing the locomotive's address to match the cab number, I increased the value in CV3, acceleration rate, from 6 to 150 (255 is the maximum). I raised CV4, deceleration rate, from 4 to 100. This helped make the model operate more like the 242,000-pound machine it replicates.

I also wanted to change the lighting programming to give me manual control. I set the headlight to turn on and off with F0, and the rear light to turn on and off with F1. I then remapped the bell to F5.

For the lights, I set CV33 and 34 to 1. This made sure the headlight would turn on and off with a push of F0. Then I set CV35 to a value of 2, which made F1 the function button for the rear light. Setting CV49 and 50 to 145 allowed the dimmer on F7 to work. Then I set CV39 to 1, moving the bell to F5.

With the programming complete, I took the locomotive to the Milwaukee, Racine & Troy staff layout. The GP30 pulled a 15-car train up the 1.5 percent grade leading to the summit of the

Facts & features

Price: \$245

Manufacturer

Bachmann Industries Inc.

1400 E. Erie Ave.

Philadelphia, PA 19124

www.bachmanntrains.com

Era: 1962 to 1980s, as decorated

Road names: Santa Fe, B&O (sunburst herald), Pennsylvania RR, Southern Pacific (bloody nose), Union Pacific

Features

- All-wheel drive and electrical pickup
- E-Z Mate Mark II couplers, at correct height
- Flywheel-equipped can motor
- SoundTraxx Sound Value decoder
- Turned metal wheels, in gauge
- Weight: 13.1 ounces

PERFORMANCE TESTS

DRAWBAR PULL

2.88 ounces

40 HO scale freight cars

SCALE SPEED (DC)

VOLTS	SCALE MPH
6 (start)	25
7	41
8	60
9	79
10	88
11	101
12	112

SCALE SPEED (DCC)

SPEED STEP	SCALE MPH
1	5
7	34
14	69
21	86
28	86

layout at Winter Hill. Coming down the 3 percent grade on the other side with that train, I noticed a bit of gear noise, but the locomotive was running smoothly. There was no noise taking the same train down the 1.5 percent grade.

Switching the train in Bay Junction went smoothly, with the sound of the EMD 567D3 diesel engine rising and falling as I coupled smoothly to the cars and delivered them to their spots. The GP30 navigated the no. 6 turnouts of the yard at Bay Junction with no difficulties.

Once I made a few tweaks to the decoder in the Bachmann GP30, I had a smooth-running and fun-to-use locomotive. If you're in the market for some early second-generation power, be sure to give this Geep a look. — *Eric White, associate editor*



WaltherMainline SD70ACe with ESU Sound

A modern-era mainstay, the SD70ACe diesel-electric locomotive is back on HO scale rails from Wm. K. Walther Inc. in a selection of new prototypical road names. First reviewed in the June 2016 *Model Railroader*, the HO scale locomotive is part of the value-priced WaltherMainline series. New for 2018, the Digital Command Control (DCC) version of the SD70ACe features an ESU Sound & DCC dual-mode decoder.

The model. General Motors Electro-Motive Division (Electro-Motive Diesel after 2005) built nearly 1,900 SD70ACes for railroads in North America and Mexico. Developed in 2004, the SD70ACe complied with the Environmental Protection Agency's strict Tier II emissions standards.

As with the 2016 release, this WaltherMainline SD70ACe matches prototype drawings from the November 2004 *Model Railroader*. The model's headlight is high- or low-mounted depending upon the prototype.

The plastic body shell features well-defined molded detail. Like other WaltherMainline diesels, the modest amount of separate parts includes cab sunshades, a five-chime air horn, and flexible plastic handrails.

For those who wish to further detail the model, the body shell features drill starter points for the grab irons. A detail kit is available for \$11.98.

The model features smooth paint coverage with sharp color separation. The available paint schemes all match prototype photos, including properly placed heralds and lettering.

Under the hood, the model uses the same WaltherProto mechanism as the 2016 release. On our ESU Sound & DCC-equipped review sample, the decoder is plugged into a 21-pin socket on a motherboard.

Performance. The locomotive's 5-ounce drawbar pull is equivalent to 70 free-rolling HO scale freight cars on straight and level track. On our hill climb test,

the model pulled a 14-car freight train up a 3 percent grade.

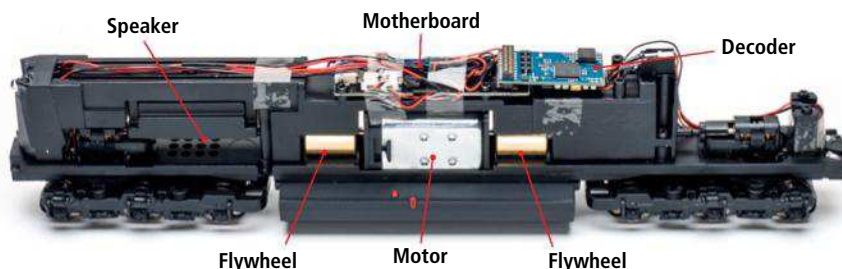
The results of the locomotive's speed tests are shown on the next page. The top speed of the prototype is 75 mph, but the model's 50 scale mph top speed in DC and 60 scale mph top speed in DCC are more than fast enough for the compressed distances of model main lines.

ESU Sound & DCC. Although the new ESU Sound & DCC decoder isn't a full-featured LokSound Select decoder, it provides the same excellent sound quality. The ESU Sound & DCC decoder accurately reproduces the sounds of the prototype, including the 710-series engine. There are also three air horns and two bells to choose from. The default Nathan K5HL air horn and Graham-White E-bell sounded correct to me.

Other user-triggered features include the headlights, ditch lights, coupler crash, compressor, and engine start-up. When the SD70ACe led our test train downgrade, I pressed function 4 to trigger a realistic dynamic brake sequence.

The DRIVE/HOLD function, my favorite feature of the ESU Full Throttle diesel effects package, is included in this ESU Sound & DCC decoder. I could set a constant locomotive speed while using the throttle knob to manually notch the engine rpm level.

I changed the locomotive address to the cab number and added acceleration and deceleration momentum following the included quick start guide.



A die-cast metal frame adds to the HO scale SD70ACe's impressive pulling power. The ESU Sound & DCC decoder is plugged into a 21-pin socket on the motherboard.

A more extensive programming guide, including the decoder's supported configuration variables (CVs), will be available at www.walthers.com. These include CVs to set up speed tables, adjust individual sound effect volume levels, and remap functions. For example, I used these CVs to change the automatic, directional headlight control to independent manual control.

This ESU Sound & DCC decoder isn't supported by the ESU LokProgrammer interface or software. However, as of this writing, a template is in the works for the free Java Model Railroad Interface (JMRI) DecoderPro programming software. To learn more, visit www.jmri.org.

DC operation. On our DC test track, the locomotive's sounds and lights came on at 6.5V. The decoder's sound effects on a DC layout are limited to the engine rpm levels increasing or decreasing with the throttle. Just like the real thing, the engine rpm sounds increase before the locomotive begins to move at about 8V.

PERFORMANCE TESTS	
DRAWBAR PULL	5 ounces 70 HO scale freight cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
8	3
10	25
11	40
12	50
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	1.5
7	14
14	36
28	60

In DC, the headlights and ditch lights operated automatically according to the direction of travel. The headlight realistically went from dim to bright as the locomotive started moving.

The new ESU Sound & DCC decoder offers some fun operating features for the latest release of the WalthersMainline SD70ACe, especially on DCC layouts. For a special extended review and video demo, visit www.ModelRailroader.com.
— Dana Kawala, senior editor

Facts & features

Price: \$199.98 (DCC), \$129.98 (DC)

Manufacturer

Wm. K. Walthers Inc.

5601 W. Florist Ave.

Milwaukee, WI 53218

www.walthers.com

Era: 2004 to present

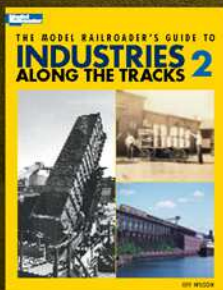
Road names: Norfolk Southern, Canadian National (EMD demonstrator patch-out), CSX, Ferromex, and Providence & Worcester

Features

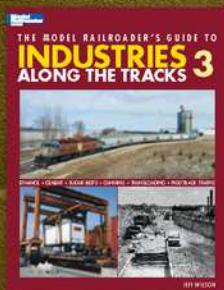
- All-wheel drive and electrical pickup
- RP-25 contour wheels in gauge
- Five-pole, skew-wound motor with dual brass flywheels
- Light-emitting diode (LED) headlights and ditch lights
- Min. radius: 18" (22" recommended)
- Proto-Max metal knuckle couplers at correct height
- Weight: 1 pound, 5.5 ounces

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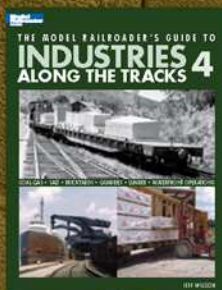
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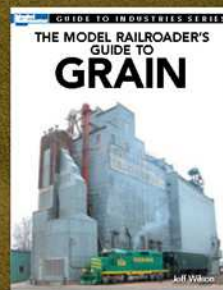
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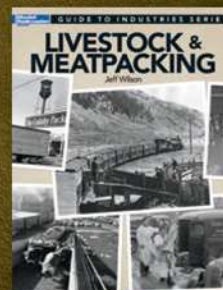
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Tangent HO General American tank car

A tank car you won't find anywhere else is available in HO scale. Tangent Scale Models' 10,000-gallon radial course tank car is based on measurements and photographs of a General American Tank Car prototype designed in 1917.

Tanks for the memories. To deal with increased demand for oil during World War I, thousands of tank cars were built for oil companies, railroads, and car leasing companies. After the oil boom faded, many of these cars went back to their builders and were repainted for new owners. Tangent's three offerings are all such repaint schemes.

Our sample, bearing Union Tank Car Leasing (UTLX) reporting marks, is painted for the Hercules Powder Co., a paint scheme the 1923-built prototype acquired in 1949. In addition to gunpowder, dynamite, napalm, and solid rocket fuel, Hercules also made other chemicals, including turpentine, adhesives, rosin (used in papermaking), and acetone, any of which might be carried in a tank car like this one.

The other paint schemes available in Tangent's offering are both oil companies. Microscale and Tichy Train Group offer appropriate hazardous materials placards in HO scale.

The courses, of course. The term "radial course" refers to the steel sheets that make up the tank. On a car like this, the sheets are bent in a U shape and riveted side-by-side to form the cylinder. On radial course tanks like this one, there is a visible "step" where each

course overlaps the next. Tangent has reproduced this detail well. Also impressive are the fine rivet detail and the straps that hold the tank to the frame.

The Association of American Railroads (AAR) established classes of tank cars in an effort to minimize disasters from train wrecks or derailment by ensuring that hazardous cargos were carried in cars designed to handle them. Lettering on the side of our car designates it as an AAR Class III tank, which refers to a double-riveted boiler-plate steel tank that could withstand up to 300 psi of pressure.

The model's black paint was smoothly and evenly applied, and the yellow lettering was opaque, straight, and legible. The lettering, as well as the placement of details, matched prototype photos.

We were unable to locate a builder's diagram or other source of dimensional data for this car. Even the 1953 *Official Rail Equipment Register* lists only the car's capacity. David Lehlbach of Tangent informed us that the car was designed using measurements taken from a prototype car in the 1980s.

I tested the car on a couple of our project layouts and found it rolled easily through 18" curves and no. 5 turnouts. The metal Kadee scale-sized couplers were mounted at the correct height, and the chemically blackened metal wheelsets were in gauge.

Though the paint schemes Tangent is offering are all repaints from 1935 or later, the car is also available both undecorated and painted black but unlettered, ready to be decaled for any owner from 1917 to the cars' demise in the 1970s.

Facts & features

Price: \$44.95

Manufacturer

Tangent Scale Models

P.O. Box 6514

Asheville, NC 28816

www.tangentscalemodels.com

Era: 1917 (1949 as decorated) to 1970s

Road names: Hercules Powder Co.

(1949+, four road numbers, UTLX

reporting marks), Humble Petroleum

Products (1935+, four numbers), and

Sinclair Oil (1947+, six numbers). Also available painted black but undecorated, and unpainted.

Features

- Blackened metal wheels in gauge
- Era-appropriate brake equipment
- Kadee metal scale knuckle couplers at correct height
- Injection-molded plastic body
- Prototype-specific details
- Weight: 3.8 ounces (.3 ounce overweight according to National Model Railroad Association Recommended Practice 20.1)
- Wire grab irons, lift rings, and uncoupling levers

Radial-course tank cars like the prototypes for these models roamed the rails of every line from coast to coast for more than 50 years, usually in blocks of multiple cars. Tangent's new model would therefore be an appropriate addition to any HO scale railroad from the steam to early diesel eras. – *Steven Otte, associate editor*

QUICKLOOK

Fox Valley Models N scale FMC 4,700-cubic-foot capacity covered hopper

Price: \$26.95

Manufacturer

Fox Valley Models

P.O. Box 1970

Des Plaines, IL 60017

www.foxvalleymodels.com

Road names: Chicago & North Western, BNSF Ry. (circle-cross and post-2005 heralds), Denver & Rio Grande Western, and Western Pacific. Three numbers each.

Era: 1980 to present (as decorated)

Comments: Fox Valley Models has added an FMC 4,700-cubic-foot-capacity three-bay covered hopper to its lineup. The model, originally produced by Red Caboose/Precision Masters, has a one-piece injection-molded plastic body with a separate roof, outlet gates, and brake wheel. Fox Valley upgraded the tooling with body-mounted couplers, a new roof and hatch covers, and etched-metal running boards.

Our sample is painted as Chicago & North Western no. 178604, part of the railroad's 178600 through 179099 series. The 500 cars in this series were built by FMC in 1980 and originally painted dark green. Some cars were later repainted yellow.

Examples of cars from this series can still be found on C&NW's successor, Union

Pacific. Other cars are in lease service with Northwestern Oklahoma RR Co. (NOKL), First Union Rail (NDYX and FURX), and Webb Asset Management (WAMX) reporting marks. The full-size car no. 178604 is on the Wheeling & Lake Erie. Except for new "WE" reporting marks, the car is still in its original 1980 paint.

I compared the model to data in the *Chicago & North Western Final Freight Car Roster* (Chicago & North Western Historical Society, 1999). The lettering placement matches prototype photos. The truck centers are a scale 5" too short, the distance over the strikers is a scale 1'-5" long, and the length over the running board is a scale 1'-6" long.

The new casting for the body-mounted couplers includes diagonal braces. The notch in the end cage

above the draft-gear box dates back to when the car used truck-mounted couplers. A plastic crossover platform masks that.

The car weighs 1.2 ounces, correct per National Model Railroad Association Recommended Practice 20.1. The body-mounted couplers are at the correct height. The 36" metal wheelsets are in gauge.

I ran the car on our Red Oak layout. The model navigated the no. 6 turnouts and 13" radius curves without incident. The car will negotiate an 11" radius, but it looks better on broader curves.

Kudos to Fox Valley Models for bringing this car back to N scale. The firm struck a good balance upgrading existing tooling, making changes where they were most visible and necessary.

— Cody Grivno, associate editor



More Fun to Run!

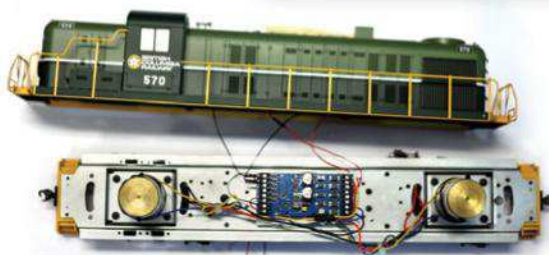
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QUICKLOOK

Walthers HO scale The UPS Store

Price: \$39.98

Manufacturer

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

Era: 2003 to present

Comments: An injection-molded plastic modern-era storefront is one of several new UPS-branded items available from Wm. K. Walthers Inc. The HO scale UPS Store is part of the Cornerstone Series structure line and is molded in three colors and clear plastic. The kit also includes two UPS drop boxes with modeler-applied decals and a factory-printed THE UPS STORE sign with the shipping company's current logo.

The UPS Store brand was introduced in 2003, two years after UPS acquired Mail Boxes Etc. In 2017, there were 5,000 locations in North America. The

UPS Store provides an assortment of postal, shipping, packing, business, and printing services.

The Walthers kit features four wall panels, a roof, scuppers and downspouts, a canopy roof, a three-piece entry (front, door/window frame, and glazing), three trim pieces, rooftop vents, and a base with molded sidewalk. The parts were free of flash and the corner joints were tight. The brick detail was well defined, and the bricks aligned properly at the corners.

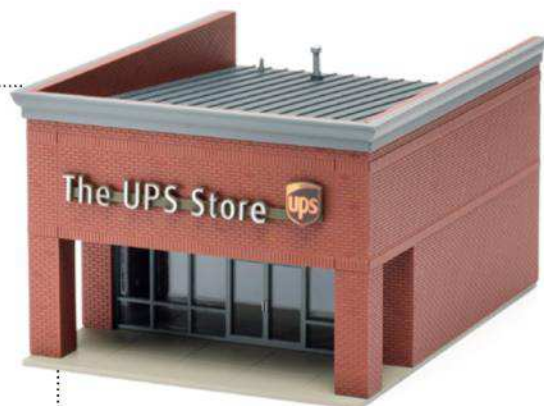
The kit is designed to be modeled as a stand-alone structure or added to the Walthers Modern Shopping Center kit (no. 933-4115, sold separately).

Information on how to modify the structure for the latter is included on the two-sided instruction sheet. No matter how you build the model, there will be leftover door/window frames, window glazing, rooftop vents,

scuppers, and downspouts. Save those for future kitbashing projects.

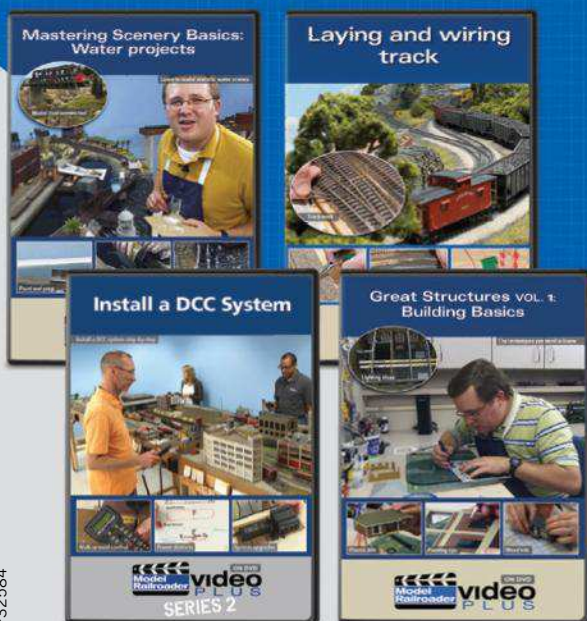
I airbrushed the structure with Model Master acrylic Oxide Red, Reefer Gray, Grimy Black, and Concrete. Then I used Prismacolor colored pencils to highlight individual bricks. An application of Testor's Dullcote slightly muted the pencil work, but I liked the effect. I added the window glazing after the Dullcote had been applied.

The building measures $3\frac{5}{8}" \times 4\frac{15}{16}"$, making it ideal for layouts of all sizes. To complete the scene, Walthers also offers a UPS figure set (no. 949-6043) and SceneMaster vehicles lettered for UPS. — *Cody Grivno*



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Lessons from sessions

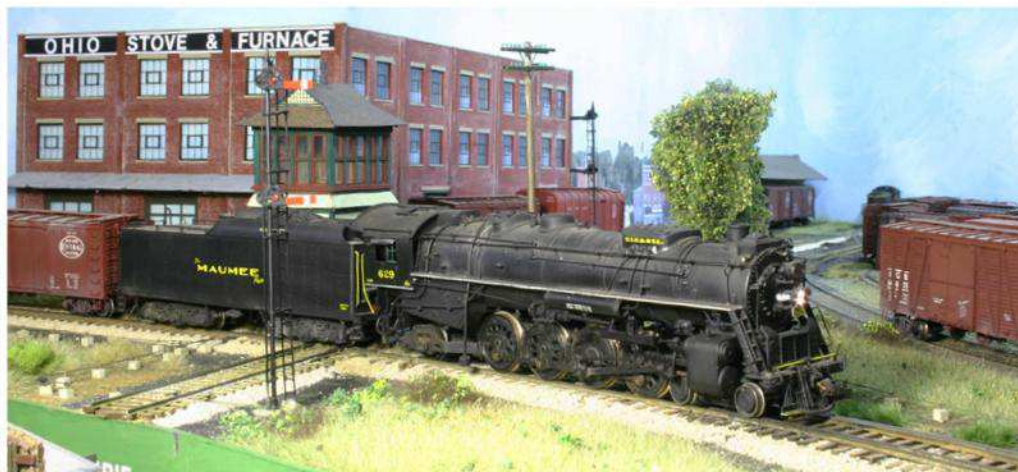
A railroad is animated by the people who run it. Routines fall into place just as human habits develop. Things get interesting when events disrupt routine, no matter if the railroad is the real thing or a scale miniature. Some recent operating sessions taught me good lessons, one of which caused me considerable embarrassment!

Railroaders, like all of us, can fall victim to shortcuts. When you're weighing a shortcut you think you can get away with, remember that you'll probably get caught. And the likelihood of getting caught rises considerably the more grievous the deed.

An operating session on Bill Darnaby's Maumee layout had me slowing Second 50 to stop at Beech City. I chose that place to meet No. 51, an opposing superior train that was a hotshot. Routinely, well-reinforced by rule, I would head in on the passing siding to leave the main track clear for 51.

However, Second 50 had work there, a set out and a pickup. The track arrangement makes it much easier to make these moves off the main, not the siding. The conductor on the Beech City switcher insisted that the schedule allowed plenty of time to do the work without delaying 51, so I relented and pulled up the main. We'd protect by sending a flagman ahead to route 51 into the siding in case we hit a snag.

First lesson: Stick to your guns when someone



Second 50 crosses the Erie diamond and pulls up the main at Beech City. The Missouri Pacific (I-GN) boxcar sits on the interchange track where Jerry's train got stuck when the model railroad's power was shut down for the day. Bill Darnaby photo

else proposes a shortcut that can put you on the carpet. Still tied up on the main and now on 51's time, there was nothing else to do but flag him down to slow and slip by on the siding. I could easily imagine the superintendent beckoning me to explain why I delayed the hotshot.

With Second 50's train put back together but still on the main, the other conductor started squawking again. "I need to go across the main to switch some cars, but you're in the way." Trouble is, Second 50 couldn't depart

because another opposing train had now become due. Another one-sided discussion produced an idea sure to backfire: "Just shove back into the Erie interchange."

"We're too long."

"Oh, you're only a couple cars too long. We'll have you off their track in a jiffy."

Second lesson: Same as the first. Before I could

sneak back from the Erie, the session wrapped up and track power went down. There I was, with my train stuck where it shouldn't be. I confessed; it's better that the superintendent thinks I knew the rules and weighed the consequences, rather than thinking I acted in ignorance.

Shortcuts are tempting

because sometimes they pay off. A happier lesson came when a crew departed from the routine during one of my own operating sessions. Their way freight serves a mine and mill reached by a complicated move over a connecting track. I coach crews working this job to take the mill cars to the next station, Sussex, and work the mine on the way back, when the moves are simpler.

It's worth observing crews working situations like this. It puzzled me to see them make an easy move that left the cars on the connector, so I asked. "It gets crowded at Sussex, so we'll just leave the cars here and switch them on the way back." I marveled at the idea! It addressed the immediate need and creates other interesting possibilities that I'm looking forward to testing.

There's another lesson in all this. Railroading is complicated. It requires broad knowledge, ranging from intricate track arrangements and other physical characteristics of miles of territory to in-depth knowledge of operating rules. Repetitions build these skills because railroaders work their jobs every day, developing reliable routines.

But model railroad operators move between railroads, working on a Timetable-and-Train-Order system one day and a Centralized Traffic Control environment the next. Weeks and months can separate sessions on a given layout. Crews don't necessarily work the same jobs from one session to the next, making it even more challenging to learn the ropes.

Bill was very gracious when I confessed my interchange stunt on the Maumee. He knows we all make mistakes. By the way, the stunt made good cover for the delay to No. 51. Perhaps that should be a lesson, too: When you screw up, divert attention by finding a way to screw up worse. Just make sure it's not so much worse that you'll face a more severe penalty. **MR**



WHEN YOU'RE WEIGHING A SHORTCUT YOU THINK YOU CAN GET AWAY WITH, REMEMBER THAT YOU'LL PROBABLY GET CAUGHT.
— JERRY

It's early June in Washington, and the Great Northern's *Fast Mail* is running late. Train No. 27 usually crosses the Cascade Mountains in the wee hours of the morning. Lee Marsh of Issaquah, Wash., built the HO scale layout and photographed the scene.





MORE ON THE WEB

Lee Marsh's photo on this page is this month's free downloadable computer wallpaper. Get it at ModelRailroader.com



Passengers wait on the pier as the excursion steamship *Melody* maneuvers to the dock at Willoughby. Meanwhile, a gas-electric motor car pulls up to the station with some late arrivals. Ken Kirkwood of Yucaipa, Calif., built and photographed the scene on his HO scale Ma & Pa K Ry., a freelanced tourist line set in northern California.

Want to see your work in Trackside Photos?

Trackside Photos is a showcase for the work of *Model Railroader* readers. We encourage contributions. Send your photos (digital images 5 megapixels or better) to: *Model Railroader*, Trackside Photos, P.O. Box 1612, Waukesha, WI 53187-1612; or upload them to <http://fileupload.kalmbach.com/Submission/contribute/>. Include caption information, such as what's going on in the picture; the layout's scale, era, and locale; and information about the rolling stock or structures shown. For a copy of our photo submission guidelines, contact associate editor Steven Otte at 262-796-8776, ext. 370, or sotte@mrmag.com.



High in the Sierras, an Electro-Motive Division NW2 is spotting ore cars at the Jackie Boy Mine. Dan Cole of Franklin, Tenn., built and photographed the scene, which is part of the Middle Tennessee Model Railroaders' HO scale club layout at Nolensville, Tenn. The time-worn locomotive is a Broadway Limited Imports model, and the ore cars are by Walthers.



The engineer of Boston & Maine T-1 no. 4010, on point of a Boston-bound freight, waits for clearance outside Hoosac Tunnel in October 1944. John VanDenburgh of Rotterdam, N.Y., photographed the scene on his HO scale B&M Fitchburg Division layout. The locomotive is a Westside Brass model with a TCS sound decoder.





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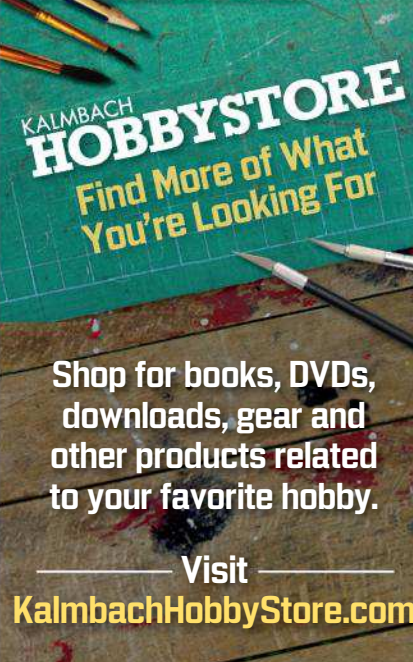
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CLOSING DATES: Jan 2018 closes Oct. 20, Feb. closes Nov. 13, March closes Dec. 19, April closes Jan. 22, May closes Feb. 19, June closes Mar. 19, July closes Apr. 23, Aug. closes May 18, Sept. closes June 22, Oct. closes July 23, Nov. closes Aug. 17, Dec. closes Sept. 24.

Schedule of Events

AZ, GLENDALE: WVRHRS 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 WVRHRS, PO Box 5643, Glendale, AZ 85312-5643. Contact: Craig Faris 623-340-3529.

CA, FREAMONT: NDHF & TCSME Model RR Club invites you to Open House, June 9-10, 2018, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm. Two layouts in operation & Niles Depot Museum open. 37592 Niles Blvd. in the Niles Plaza. <http://www.nilesdepot.org>

FL, OCALA: Lions Semi-Annual Train Show. First Christian Church, 1908 SE Fort King St. Saturday, June 2, 2018, 9:00am-3:00pm. Adults \$5.00, children 12 and under free w/ adult. Bring two canned goods and receive \$1.00 off admission. Information: Bob 352-694-6381 or cell 352-208-5284

FL, TAMPA: 19th TAMPA MODEL TRAIN SHOW. Florida State Fairgrounds (Special Events Center). Saturday June 2nd 9:00am-5:00pm and Sunday, June 3rd, 10:00am-4:00pm. Adults: \$9.00 good for both days (under 12 free). Large award-winning operating layouts. Miller, 3106 N. Rochester St., Arlington, VA 22213. 703-536-2954. www.rsshows@aol.com

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@litchfieldil.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.

IL, ST. CHARLES: 42nd Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, 525 South Randall Rd. Sunday, June 10, 2018, 10:00am-3:00pm. Admission: \$6.00 w/tax. Tables \$60.00. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

KS, HUTCHINSON: Center of the Nation Model Railroad Expo, Kansas State Fairgrounds, Sunflower North Building. Saturday, June 2nd, 9am-4pm; Sunday, June 3rd, 10am-3pm. Adults \$6, under 12 free w/adult. 18,000 sq. ft. Don Phillips, 620-662-5906 or don2013p@gmail.com. www.kansascentralmodelrailroaders.org

MN, TWIN CITIES: 38th-National Narrow Gauge Convention, DoubleTree by Hilton Hotel, Bloomington, Minneapolis South. September 5-8, 2018. Register before June 1st for \$99.00, after \$125.00. Incredible value: 100 clinics, model and photography contest, 55 layouts on display, huge vendor show, live auction. Information: www.nngc-2018.

MO, BRANSON: The Roark Valley Model Railroad Sixth Annual Open House Event. June 1-2, 2018, 10:00am-5:00pm. Admission is FREE for children and adults. Visit and operate Southwest Missouri's Largest HO Modular Layout. 3609 W 76 Country Blvd., 65616. Information at www.rvrrtrains.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.

NE, OMAHA: NE-IA Railroaders 47th Annual Train and Toy Show. Ralston Arena 7300 "Q" Street, Zip: 68127. June 9-10, 2018. Saturday 9:00am-4:00pm, Sunday 9:00am-4:00pm. Admission: \$7.00, 12 and under free. Information: Bob Schaffer 402-253-8885 rgsmcman@gmail.com; Mark Nelson 402-731-1349. VENDORS WANTED! www.ne-ia-railroaders.com

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 ohionscalersweekend@yahoo.com

OH, MONTPELIER: Montpelier Tracksider 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

SC, GREENVILLE: Greenville Shrine Club, 119 Beverly Rd. Saturday, May 19, 2018, 9:00am-3:00pm. Admission \$5.00, under 12 FREE. Over 150 vendor tables. Large variety of G, O, HO, S/AF, N gauge. Contact Todd at 843-307-8674. scradeshow.com

TN, JOHNSON CITY: George Carter Railroad Museum Train Show. East Tennessee State University MINIDOME, 1081 John Robert Bell Drive. June 1-2, 2018, Friday Noon-6:00pm and Saturday 10:00am-4:00pm. Admission \$6.00, under 12 free. Free garage parking. Vendors, working layouts, live steam. Contact Roger Tienart 423-791-4937.

WI, WAUPACA: WAMR 28th Strawberry Fest Model Railroad Show & Model Contest. Waupaca Recreation Center, School/State/Badger Sts. June 16-17, 2018, Saturday 10:00am-5:00pm and Sunday 10:00am-3:00pm. FREE. Many layouts/vendors/swap tables. Roger Hildebrandt, 7693 Evergreen Dr. East, Waupaca, WI 54981, 715-258-8218 or check club website: www.wamrtd.com

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Waving the model railroading flag

One of the best ways to ensure the general public is aware of scale model railroading is to exhibit it regularly in a compelling way. One such highly successful effort can be found at the Colorado Model Railroad Museum (CMRM) in Greeley, Colo., whose mission is to “provide a model railroading experience that educates, inspires, and brings joy to all ages.”

That it does this very well indeed was apparent in September 2017 when my wife, Judy, and I attended the National Narrow Gauge Convention in Denver.

I confess that my main reason for being in Colorado was to visit with friends David Stewart and Bob Sobol. In David’s basement resides the second edition of his spectacular O scale Appalachian & Ohio. (Details of the in-progress A&O 2.0 appeared in *Model Railroad Planning* 2009, and a cover story featuring the original A&O appeared in the May 2006 *Model Railroader*.)

Bob, a professional photographer, is in charge of the motive power roster. He quickly assigned me to run a train powered by a single Alco RS-36 so I could experience the stunning sound emanating from beneath its brass superstructure, thanks to an ESU LokSound 251-series diesel engine decoder and a speaker that we need to chat about one day soon.

Thanks to David and Bob, we were soon on our way to the CMRM, a testimonial to the vision of David Trussell. MR covered the



This recent overview of the Colorado Railroad Museum’s large HO railroad hints at the impact this layout must have on the general public and visiting modelers alike. Bob Sobol photo

museum in the December 2008 issue (it was then called the Greeley Freight Station Museum), but one has to see it in person to appreciate the magnitude of the museum’s accomplishments.

Our host for this visit was Michelle Kempema, the effervescent executive director. I can’t imagine a more amiable, well-informed, and upbeat spokesperson for any museum. The CMRM is fortunate to have her aboard.

A museum can quickly lose focus by trying to be all things to all people. The CMRM HO railroad isn’t a re-creation of a tightly defined segment of a particular main line, like La Mesa Club’s HO railroad in San Diego. But it didn’t try to blend totally unrelated scenes together, either. What resulted is a credible model of what one expects to see on a big-time main line west of the Mississippi.

Realism, however important to us scale model railroaders,

is only a small part of why the CMRM is an important link between the general public and our hobby. Presentation is the key. I apologize for picking on some railroad museums’ displays of full-size railroad equipment, but far too many of them utterly fail where presentation is concerned. The public doesn’t want to see what resembles a scrap yard, no matter how historic its denizens may be.

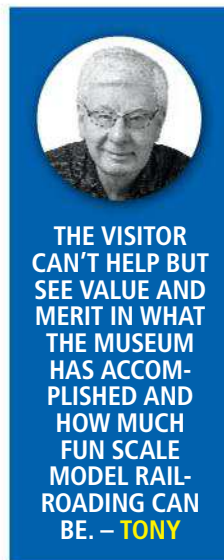
The CMRM has the presentation part down pat. The building inside and out is well maintained, and the entrance foyer is welcoming and open. Just ahead are multiple levels of a busy model railroad, as Bob Sobol’s accompanying photo clearly shows. Nicely blended together are mountain vistas, cities, and ports. The visitor can’t help but see value and merit in what the museum has accomplished

and – more importantly – how much fun scale model railroading can be.

The only downside I can think of is that some may wonder how they would personally ever hope to accomplish something that beautiful and complex. That’s where the local hobby shop should come in. But today, a check of MR’s Leading Model Retailers section lists only one hobby shop in the entire state: Caboose, the successor to world-famous Caboose Hobbies, in the Denver suburb of Lakewood.

I stopped there during the Narrow Gauge National and was impressed with its scope and friendly employees.

The Rocky Mountain Region of the National Model Railroad Association is helping to fill the gap. But doing our bit to keep the hobby vibrant is something we all need to keep in mind. MR



THE VISITOR CAN’T HELP BUT SEE VALUE AND MERIT IN WHAT THE MUSEUM HAS ACCOMPLISHED AND HOW MUCH FUN SCALE MODEL RAILROADING CAN BE. – TONY

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