

MAKE YOUR DCC POWER SUPPLY **SAFE** p.58



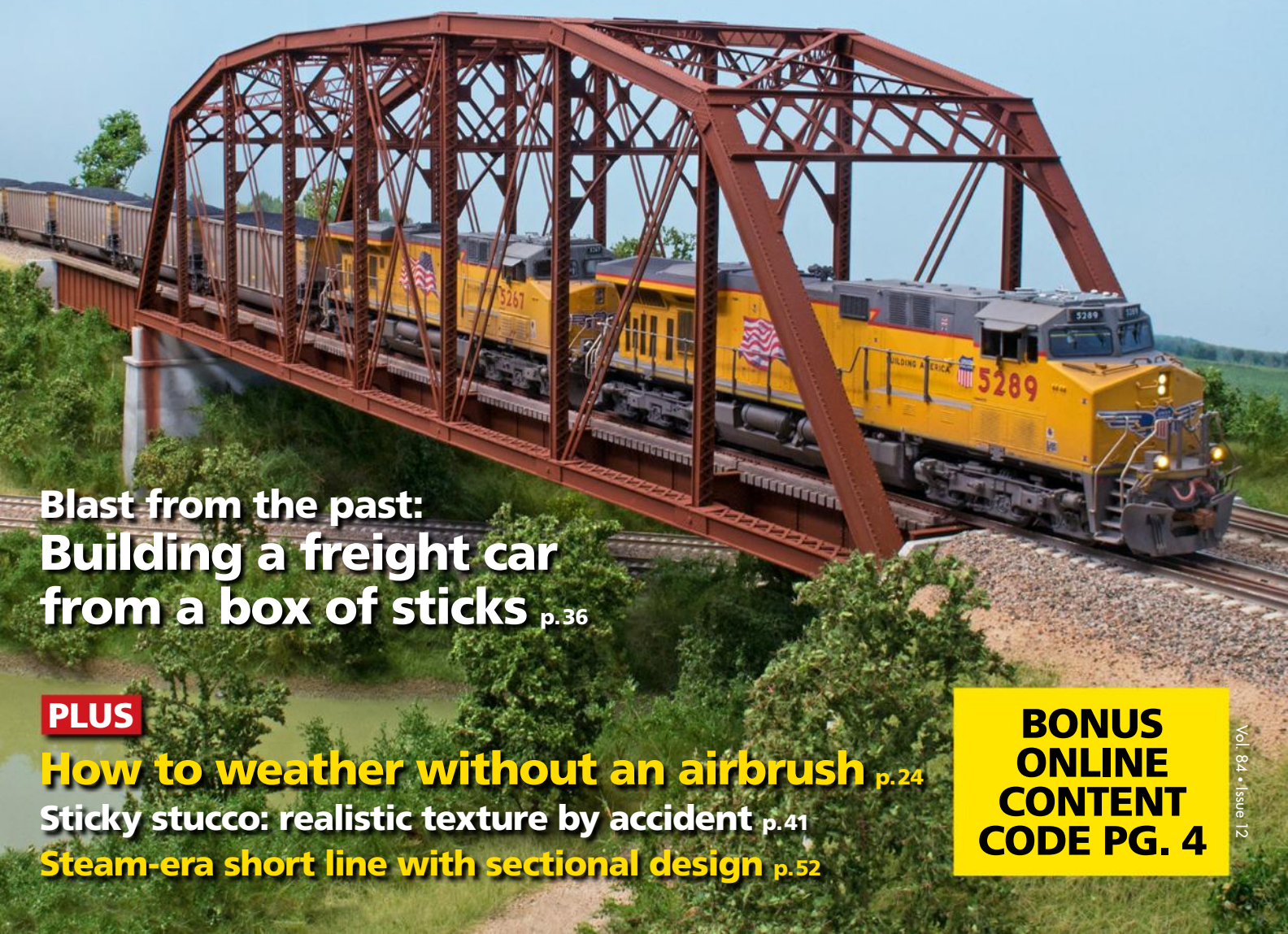
Model Railroader®

WaltherMainline
SD60 review p.62

December 2017
www.ModelRailroader.com

Best scenic secrets

How to install a bridge, pour a river,
build a highway, and much more! p.44



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Building a freight car
from a box of sticks p.36

PLUS

How to weather without an airbrush p.24

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Steam-era short line with sectional design p.52

**BONUS
ONLINE
CONTENT
CODE PG. 4**

NO ORDINARY N-SCALE... 2-6-0 MOGUL & 4-4-0 AMERICAN

5-Pole Mashima Motor • Metal Boiler • Metal Chassis • Metal Cylinders • Golden White LED • FlyWheel Drive • DCC Compatible or DCC & Sound • Traction Tire Factory Installed

NEW UPGRADES — Front / Rear Knuckle Coupler Equipped
• Improved Driver Wiper Pick-ups • Axle Pin Tender Truck Pick-ups • LED wiring to Tender • 4-4-0 Pony Truck Pick-up • Extra Weight in Tender

87602 / 876021
2-6-0 Mogul: B&O

N
SCALE



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Operates in DC & DCC • 16 Bit Sound
- Volume Control • Back EMF Load Control

• Pilot Light Operation • Auto Brake sounds Feature w/Brake Activation • Choose from 17 Whistles w/Individual Volume • Choose from 8 Bells w/Individual Volume • Prototypical

Non-Articulated Sound • **Individual Sound Controls For:** Brake Squeal • Air Release • Blower Hiss • Water Injector • Coupling • Water Filling • Rail Clack • and more...

2-6-0 Mogul w/Coal Square Tender

Item #	Road Name	Road No.
87600 / 876001	Undecorated	NONE
87601 / 876011	Boston & Maine	1455
87602 / 876021	B&O	2441
87603 / 876031	CB&Q	1258
87604 / 876041	GN (Oil Bunker) Green	475
87605 / 876051	M&StL	334
87606 / 876061	NP	582
87607 / 876071	NYC	1916
87608 / 876081	PRR	1905
87610 / 876101	SOU	7082
87611 / 876111	SF	597
87613 / 876131	CN	81
87615 / 876151	US ARMY	155
87616 / 876161	UP	39
87617 / 876171	New Haven (Oil Bunker)	313
87618 / 876181	Illinois Central	3719
87650 / 876501	Norfolk Southern	116
87651 / 876511	Wabash	573

4-4-0 American w/Coal Square Tender

Item #	Road Name	Road No.
87620 / 876201	Undecorated	NONE
87621 / 876211	ACL	5
87622 / 876221	B&M	950
87623 / 876231	B&O	717
87624 / 876241	CB&Q	391
87625 / 876251	C&NW	275
87627 / 876271	L&N	7
87628 / 876281	M&StL	156
87629 / 876291	NP	275
87630 / 876301	NYC	1015
87631 / 876311	PRR	1227
87632 / 876321	SP (Oil Bunker)	220
87633 / 876331	SOU	3788
87634 / 876341	SF	212
87637 / 876371	LIRR	210
87638 / 876381	MKT	312
87639 / 876391	Milwaukee Road	98

ROAD NAME SPECIFIC DETAILS

Separately Applied Handrails and Other Metal Parts • Two Different Headlight Positions (Top/Center)
• Two Different Prototypical Pilots (Foot Board/Boiler Tube) • Two Different Valve and Cylinder types (Slide Cylinder / Valve Cylinder)
• Two Different Cab Window Styles (Rectangular/Arched)
• Two Different Tender Truck Styles (Andrews/Arch Bar) • Undecorated offered with all components

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HO SCALE

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SECOND SERIES - DECEMBER 2017 DELIVERY

- New second series roadnames
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- Based on Phase II units in service from 1965 to present
- Road-specific details - see more at walthers.com

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- Correct frame, inertial filter hatch & other Phase II details

Santa Fe®

- **NEW** - Long hood with no class lights or numberboards
- **NEW** - Operating LED beacon
- **NEW** - Etched-metal ground planes w/Sinclair antennas
- Brass Leslie S3L air horn on stand



920-42163 #2896 Tsunami Sound & DCC
920-42164 #2907 Tsunami Sound & DCC
920-49163 #2904 Standard DC
920-49164 #2911 Standard DC

Conrail

- Brass Leslie SU-3L-R air horn
- Sinclair radio antenna
- Mesh intake grilles
- Front pilot with MU cable holder, no footboards



920-42167 #3677 Tsunami Sound & DCC
920-42168 #3686 Tsunami Sound & DCC
920-49167 #3682 Standard DC
920-49168 #3690 Standard DC

Rock Island

- **NEW** - Rear pilot with footboards
- Front plow
- No dynamic brakes
- Side-mount bell on long hood



920-42171 #320 Tsunami Sound & DCC
920-42172 #332 Tsunami Sound & DCC
920-49171 #322 Standard DC
920-49172 #326 Standard DC

Chessie System**

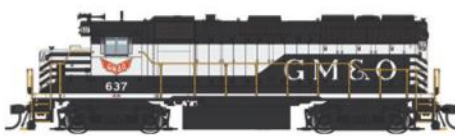
- Brass Leslie S3L air horn
- Whip-style antenna
- Mesh intake grilles
- Front pilot with MU cable holder, no footboards



920-42165 #3537 Tsunami Sound & DCC
920-42166 #3584 Tsunami Sound & DCC
920-49165 #3574 Standard DC
920-49166 #3582 Standard DC

Gulf, Mobile & Ohio

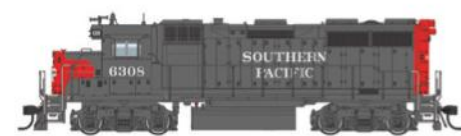
- Multi-stripe black & white scheme
- AAR Type B trucks
- Brass Leslie S5T-R air horn
- Firecracker radio antenna



920-42169 #637 Tsunami Sound & DCC \$329.98
920-42170 #640 Tsunami Sound & DCC \$329.98
920-49169 #638 Standard DC \$219.98
920-49170 #647 Standard DC \$219.98

Southern Pacific® GRIP Rebuild

- **NEW** - Working light package, blanked-out class lights, no rear number board
- **NEW** - Extended left handrail, equipment & walkway boxes
- Brass Nathan P3 air horn
- Whip-style radio antenna



920-42173 #6308 Tsunami Sound & DCC
920-42174 #6342 Tsunami Sound & DCC
920-49173 #6341 Standard DC
920-49174 #6359 Standard DC

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MR EXTRA

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On the cover: A unit coal train crosses the Green River bridge on Pelle Søbørg's HO scale Union Pacific Daneburg Sub. Pelle Søbørg photo



Next issue

In January, Meet *Model Railroader's* next project layout, the Winston-Salem Southbound Tar Branch, check out a modern rural short line, and more!

MR EXTRA

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subscriber extra

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www.MRVideoPlus.com

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Hail to the Geep!



Erie Lackawanna

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Connecting with the early days of the hobby

There are moments in life that offer perspective. This month, it's Eric White's story about building a vintage freight car kit on page 36.

There's nothing like opening a 1950s freight car model kit in 2017 to make you appreciate how far this hobby has come in less than 100 years. You really had to have some imagination when you took the lid off of the Ambroid helium car kit box around the time it was produced. All that's inside are some fairly rough blocks and sticks of wood, a piece of wire, and maybe a few pot-metal castings.

I know, there are still rolling stock and structure kits like this produced. Today, they're known as "craftsman" models. If you want to challenge yourself and your modeling skills sometime, see if you can find one in a hobby store. Or, hunt for an old kit

at a swap meet or on eBay. Then employ two of your most important tools: time and patience.

Also have plenty of sandpaper handy.

You'll end up with a model you love because you put a lot of work into it, not necessarily because of how it looks. You'll also get an appreciation of what people were once willing to do to be model railroaders. Many of you can attest to this because you've lived it.

I'm really reminded of when you had to *truly* want to be a model railroader every time I give a tour of our offices. We have a glass case that houses some artifacts from the hobby's early history, including a few O scale locomotives and cars made in the 1930s by *Model Railroader* founder Al Kalmbach. Yes, they're crude by today's standards, being

made out of sheet metal, riveted together, and lettered by hand in printers' ink. But they look like trains.

Whenever I see them, I consider the amount of time and effort that went into their construction. The bodies of the locomotives and cars had to be cut out with metal shears and shaped on some sort of form, or with a bending brake. The wheels might have been turned on a lathe in somebody's basement, or salvaged from a toy train.

Then I look at the track the cars sit on. It's made of steel strap inserted into blocks of wood which made effective, if oversized, ties.

My connection with the past includes several O scale All-Nation boxcar kits.

Admittedly, these are practically ready-to-run compared to Eric's Ambroid kit, and certainly to Al's trains. The



A-N offerings came with nicely painted sides and metal stampings for the roof and ends, and metal pins to hold the details on.

Putting them together, I could imagine some guy doing the same decades prior. I'm pretty sure he found them some of his favorite cars on his layout, too.

Model Railroader. Model railroading is fun!

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HO scale



Electro-Motive Division SD60M diesel locomotive.

Walthers has added this six-axle road unit to its Mainline series. The SD60M is decorated for Burlington Northern, BNSF Ry. (Heritage II), Conrail ("Quality" scheme), CSX (dark blue and yellow with boxcar herald), Norfolk Southern (horsehead silhouette), and Union Pacific in four road numbers per scheme (two each in DC and Digital Command Control). An

undecorated model is also available. The SD60M has a late-style cab with a two-piece windshield, open grating on the steps, and molded drill starter points for grab irons. Direct-current models retail for **\$129.98**. Versions with a SoundTraxx dual-mode sound decoder sell for **\$199.98**. WalthersMainline. Wm. K. Walthers Inc., 414-527-0770, www.walthers.com

HO scale locomotives

- **Electro-Motive Division SD38-2 diesel locomotive.** CIT Rail Leasing; Duluth, Missabe & Iron Range; Detroit, Toledo & Ironton; McCloud River RR; and Rail Logix (two road numbers). Direct-current model, \$134.98; with SoundTraxx Econami sound decoder, \$194.98. Three numbers per scheme unless noted. Prototype-specific details, wire grab irons, and see-through dynamic brake and radiator fans. July 2018. Ready-to-Roll. Athearn Trains, 800-338-4639, www.athearn.com



- **General Motors Diesel Division SW1200RS diesel locomotive.** Canadian National ("wet noodle" herald with black cab or red/orange cab, and North America scheme with small "wet noodle" herald) and Canadian Pacific

(block and script lettering, Action Red with 5" stripes and Multimark on cab, Action Red with 8" stripes and Multimark on cab, Multimark on hood, and no Multimark). Three to six road numbers per scheme; also available undecorated (CN and CP versions). Die-cast metal frame, chassis, and gear boxes; illuminated number boxes and classification lights; and detailed cab interior. Direct-current model, \$225; with dual-mode ESU LokSound sound decoder, \$325. Early 2018. Rapido Trains Inc., 905-474-3314, www.rapidotrains.com



- **United States Army Transportation Corps class S160 2-8-0 "Rattlesnake" steam locomotive.** Sound-equipped model with PluX16 digital decoder, separately applied detail parts, NEM couplers, and five-pole motor with flywheel. \$481.95 (price may vary based on exchange rate). Roco, www.roco.cc

HO scale light rail

- **Southeastern Pennsylvania Transportation Authority Kawasaki single-end light rail vehicle.** 1981 delivery scheme, 1987-1997 phase 2 scheme, and 2000-present phase 3 scheme. Two numbers per scheme. Injection-molded plastic model, die-cast metal frame, dummy four-spring pole, and Bowser traction drive. \$99.95. Imperial Hobby Productions, 610-352-0982, ihphobby.tripod.com

HO scale freight cars

- **Assorted freight car kits.** Rock Island 40-foot steel boxcar in green and Boxcar Red (single car, \$17.98; two-pack, \$34.98). 36-foot double-sheathed boxcar with straight underframe and steel or wood ends (Boxcar Red with 1940s-style data, Mineral Red with early style data, and Oxide Red with early style data), \$17.98 each. Denver & Rio Grande Western 36-foot double-sheathed boxcar (single car, \$17.98; three-pack, \$52.98). Lehigh & New England 40-foot steel boxcar, \$17.98. New York Central Pullman-Standard 4,750-cubic-foot-capacity



three-bay covered hopper, \$19.98. Wilson Car Lines 40-foot steel refrigerator car, \$18.98. Plastic kits with plastic wheelsets and Accumate couplers. Accurail, 630-365-6400, www.accurail.com

- **General American Transportation Corp. TankTrain.** GATX (black with Barber-Scheffel trucks, black patchout, and white). One A-B set and three intermediate sets available per scheme; unnumbered intermediate car in late scheme also available. Wire grab irons, etched-metal crossover platforms, and trucks with rotating bearing caps. Two-pack (white cars), \$104.98; three-pack (black cars), \$149.98; and single unnumbered car, \$53.98. June 2018. Genesis series. Athearn Trains, 800-338-4639, www.athearn.com

- **Thrall 53-foot articulated well car.** New paint schemes: BNSF Ry. (SFLC reporting marks), Providence & Worcester (WRWK marks), and TTX (Pacer Stacktrain patchout). New road numbers: TTX (six numbers). Two numbers per scheme unless noted; also available undecorated. Etched-metal details, floor pin holes for Atlas and other brands of containers, and prototype-specific running boards. \$119.95 (undecorated, \$99.95). First quarter 2018. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

- **70-ton 14-panel hopper car.** Atchison, Topeka & Santa Fe; Burlington Northern; Chessie System (Chesapeake & Ohio reporting marks); CSXT (Chessie System patchout, four numbers); Clinchfield; Delaware & Hudson; Detroit, Toledo & Ironton (four numbers); Erie Lackawanna; and Pittsburgh & Lake Erie (Penn Central herald, four numbers). Six numbers per scheme unless noted. Metal wheels. \$24.95. March 2018. Bowser Manufacturing Co. Inc., 800-327-5126, www.bowser-trains.com



- **Texas Aggregates 100-ton three-bay Ortner hopper.** Custom-painted and decaled Walthers HO scale model with Kadee couplers, metal wheels, removable aggregate load, and light weathering. Three road numbers. \$24.99 plus shipping. Discount Model Trains

TrainLife.com purchases Pelle's layout

TrainLife.com, an online model train store with headquarters in Provo, Utah, recently purchased *Model Railroader* contributing editor Pelle Søbørg's HO scale Union Pacific Daneburg Subdivision layout. A relocation forced Pelle to dismantle the 11 x 22-foot model railroad, featured in the May 2017 *Model Railroader* and the subject of his book *Building a Sectional Layout* (Kalmbach Books, 2017).

Pelle chronicled the dismantling, packing, and loading of the layout into an intermodal container on the TrainLife.com website.

"We are going to work fast and furiously to have it up and running as quickly as possible, but expect it to take several months to be completely up and running the way it should be," said Dan Larson of TrainLife.com.

Once reassembled, the layout will be on display at the TrainLife.com showroom, at 525 East 1860 South in Provo. Current showroom hours are 2 to 5 p.m. Monday through Friday.



Contributing editor Pelle Søbørg's son poses after the last pieces of his dad's layout were loaded into a shipping container. TrainLife.com purchased the 11 x 22-foot model railroad and will have it on display in its showroom. Pelle Søbørg photo

Inc., 4641 Ratliff Lane, Addison, TX 75001; 972-931-8135



- **Assorted freight cars.** Burlington Northern Pullman-Standard 50-foot PS-1 boxcar (\$37.95) and Alton Association of American Railroads 50-ton "standard" two-bay hopper (two road numbers, \$41.95 each). Models feature two-piece self-centering trucks and Kadee scale couplers. Kadee Quality Products Co., 541-826-3883, www.kadee.com

- **Southern Pacific and Union Pacific class S-40-2 36'-6" stockcar with pressed steel underframe.** Cast-urethane kit in multiple versions. Side castings with tow staple/jacking pads, one-piece roof casting, decals, and Yarmouth etched bronze Carmer uncoupling levers and side sill steps. Can be modeled with side doors open or closed. Southern Pacific kit includes subsidiaries Galveston, Houston & San Antonio; Iberia & Vermillion; Morgan's Louisiana & Texas;

Central Pacific; and Texas & New Orleans. Union Pacific kit covers subsidiaries Oregon Ry. & Navigation, Oregon & Western, Oregon Short Line, and Oregon-Washington Ry. & Navigation. Without trucks, wheels, and couplers: Single-deck car, \$40; double-deck car, \$41. With Tahoe Model Works no. 103 American Car & Foundry archbar trucks and InterMountain code 110 wheels, \$46. With Tahoe Model Works no. 203 AC&F archbar trucks and InterMountain code 88 wheels, \$47. Westerfield Models LLC, 303-658-9343, www.westerfield.com

HO scale structures



- **Watkins City Block.** Factory-assembled structure. Features J.R.

Watkins Co. and Red Owl grocery store, more than 13 light-emitting-diode (LED) lights, nine figures, bench, garbage can, mailbox, and Jack the German shepherd. Lighting requires 4.5V AC to DC power adapter (sold separately). \$69.99 plus shipping (free shipping to your local Menards store). Menards, www.menards.com

N scale locomotives



• **Pennsylvania RR class M1a and M1b 4-8-2 steam locomotives.** Each class offered in three road numbers plus unnumbered. Die-cast metal and plastic construction, Paragon3 dual-mode sound decoder, and five-pole can motor with flywheels. \$369.99. Broadway Limited Imports, 386-673-8900, www.broadway-limited.com



• **General Electric Tier 4 diesel locomotive.** Navajo Transitional Energy Co. (two road numbers), BNSF Ry. (ET44C4), Canadian National (EF-644t), CSX (ET44AH), Norfolk Southern, and Union Pacific (C45AH). Six numbers per scheme unless noted. Direct-current model, \$159.95; with ESU LokPilot motor-only Digital Command Control decoder, \$199.95; with ESU LokSound DCC sound decoder, \$259.95. Spring 2018. InterMountain Railway Co., 800-472-2530, www.intermountain-railway.com

N scale freight cars

• **50-foot ice refrigerator car.** Atchison, Topeka & Santa Fe (maintenance of way); Burlington Northern (Western Fruit Express reporting marks); Milwaukee Road; North Western Refrigerator Line Co.; Railway Express Agency; Santa Fe Refrigerator

Despatch (five road numbers). Three numbers per scheme unless noted. Separate brake rigging, screw-mounted trucks, Santa Fe-style reversed ice hatches, and body-mounted McHenry couplers. \$26.98. July 2018. AthearnN. Athearn Trains, 800-338-4639, www.athearn.com



• **Pullman-Standard 2,750- and 2,960-cubic-foot-capacity three-bay hoppers.** New paint schemes. 2750: Burlington Northern, Boston & Maine (small herald), and Rock Island. 2960: Utah Ry. Four road numbers per scheme; both body styles also available undecorated. Fifteen body panels, 16 exterior posts, die-cast metal hopper and center sill construction, optional heap shields, and solid- or roller-bearing trucks as appropriate. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

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N scale passenger cars



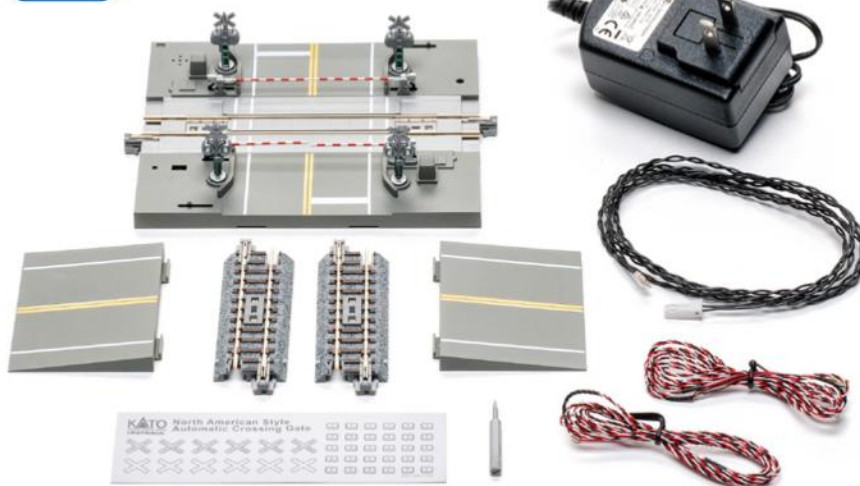
- **Pullman-Standard 10-section, 1-drawing room, 2-compartment steel sleeper.** Denver & Rio Grande Western (*Harrison Lake*). Detailed interior and body-mounted Magne-Matic couplers. \$34.90. Micro-Trains Line Co., 541-535-1755, www.micro-trains.com

N scale structures



- **Gas station and convenience store.** Factory-assembled plastic model with clear window glazing, light-emitting-diode interior light, and signs. \$41.98. Model Power line. Model Rectifier Corp., 732-225-2100, www.modelrectifier.com

N scale



North American-style automatic crossing gate. Protect the grade crossings on your N scale layout with this new release from Kato USA. The North American-style automatic crossing gate (\$220) includes two sloped ramp pieces with painted double yellow lines; two 2 x 7/16" sensor tracks with sensor cables; complete crossing gate assembly with lights, gates, speakers, and track; optional sticker sheet; and 5V, 1.2A power supply plug with power supply cable. Kato USA Inc., 847-781-9574, www.katousa.com



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Scene and photography
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Showcase



1 Pepsi bottling plant. The latest HO scale structure from Menards features an electronic sign, more than 24 light-emitting-diode lights, and three animated roof turbines. The building measures 5½" x 8" x 7⅞". The Pepsi bottling plant sells for \$69.99 plus shipping (free shipping to your local Menards store). Menards, www.menards.com

2 Pacific Car & Foundry 50-foot insulated boxcar.

Great Northern is among the seven road names on this HO scale Walther's Mainline model. The boxcar (\$27.98) features Hydra-Cushion cylinder detail, 33" metal wheels, and Proto-Max couplers. Wm. K. Walther's Inc., www.walthers.com

3 American Car & Foundry 50'-6" boxcar. Atlas is offering this Trainman series boxcar in new road numbers decorated for Railbox and five other railroads. The

N scale model (\$17.95) has a diagonal-panel roof, 10-foot Youngstown doors, and truck-mounted couplers. Atlas Model Railroad Co., www.atlasrr.com

4 Oil tanks. This factory-assembled Model Power structure has separately applied ladders and pipes, a brick spill-containment wall, oil barrels, a platform with stairs, and self-adhesive signs. The HO scale oil tanks retail for \$49.98.

Model Rectifier Corp., www.modelrectifier.com

5 2016 Operation North Pole Christmas train. This N scale set (\$195) from Kato includes a Metra Electro-Motive Division F40PH diesel, two gallery bi-level coaches, and a gallery bi-level cab car. A portion of the sales from each set will be donated to Operation North Pole to subsidize the wrapping of future trains. Kato USA Inc., www.katousa.com

O scale freight cars

• **55-ton fish-belly two-bay hopper.** New paint schemes: Akron, Canton & Youngstown (peaked ends); Chessie System (Western Maryland reporting marks); Delaware & Hudson (late repaint); and Norfolk & Western (late repaint, peaked ends). New road numbers: Reading Co. (Roman lettering with anthracite herald). Four road numbers per scheme. Cars feature flat ends unless noted. Die-cast metal construction; removable coal load; and separately applied grab irons, ladders, and brake line details. \$87.95. First quarter 2018. Steam Era Classics. Atlas O, 908-687-9590, www.atlaso.com

S scale freight cars

• **General American Transportation Corp. 60,000-gallon tank car.** General American Transportation Corp.,

LePetomane, and Union Tank Car Co. Cast-resin kit with assembly hardware and decals but no detail parts, trucks or couplers. \$59.99. Concept Models, www.con-sys.com

Z scale locomotives

• **Budd Rail Diesel Car.** Reading Co. Two road numbers. Directional light-emitting-diode headlights and AutoLatch couplers. American Z Line, 614-764-1703, www.americanzline.com



• **General Electric ES44AC diesel locomotive.** Norfolk Southern (Monongahela heritage scheme, one road number) and Canadian Pacific (three

numbers). Prototype-specific details, 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

Electronics/controls



• **Tsunami2 TSU-4400 digital sound decoders.** Steam locomotives; Alco, Baldwin and others, Electro-Motive Division, and General Electric diesel locomotives; and electric locomotives. Measures 69 x 30.5 x 14mm. Four amp maximum motor stall current, six function outputs, and 100mA maximum

function current (each output). Three watt, 8-ohm load audio amplifier. Digital Command Control track voltage range 7.5V to 26V. \$179.95 each. SoundTraxx, 970-259-0690, www.soundtraxx.com

Paint



• **Chooch acrylic paint series.** Rainbow First Coats: Cadmium Yellow, Titanium White, Graphite, Primary Red, and True Blue. Weathering First Coats: Saffron Yellow, Heritage Brick, Charcoal Gray, Cadmium Red, and Burlap. Weathering Earthtones: Raw Umber, Raw Sienna, Burnt Umber, Burnt Sienna, and Antique White. Americana acrylic craft paints in two fluid ounce bottles. Thin with water and use as weathering washes on locomotives, freight cars, and structures. Not intended for airbrushing. Five-pack, \$19.99. Chooch Enterprises, 425-273-4794, www.choochenterprises.com



• **Weathering collection acrylic paint set.** Includes 1 oz. bottles of the following colors: Dirt, Dust, Grimy Black, Mud, Rail Brown, and Rust. Can be diluted with water or isopropyl alcohol. Clean with ammonia-based window cleaner. For use on styrene and other surfaces. Six-pack, \$23.70. Single bottles also available, \$3.95 each. Modelers Decals and Paint, www.modelersdp.com

Decals

• **Union Pacific fallen flag freight cars.** Includes Union Pacific herald and "Building America" slogan in various sizes. N scale, \$6.75; HO scale, \$8.25; O scale, \$8.50. Microscale Industries, 714-593-1422, www.microscale.com 

Club offerings



• **Chicago & North Western Pullman-Standard PS-2 2,003-cubic-foot-capacity two-bay covered hopper.** Kadee HO scale model custom-decorated for the Chicago & North Western Historical Society. Three road numbers. Single car, \$47.95; three-car set, \$121.95. Postage included to U.S. addresses. Illinois residents add 9.5 percent sales tax. C&NWS - MR, P.O. Box 1068, North Riverside, IL 60546



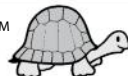
• **Ohio Northeastern 50-foot three-bay offset-side hopper car.** Bowser HO scale kit custom-decorated for the Youngstown Model Railroad Association's 60th anniversary. Three road numbers. \$22 each (shipping included). Send check or money order to Dean DeMain, HO vice president, 747 Orlo Ln., Youngstown, OH 44512. PayPal orders accepted online at www.ymra.org.



• **Old Colony Division 36-foot panel-side hopper.** Accurail HO scale kit custom-decorated for the Old Colony Model Railroad Club. Two road numbers. Plastic wheelsets and Accumate couplers. \$21 each plus \$7.15 shipping per car. Old Colony Model Railroad Club, P.O. Box 45, Raynham, MA 02767



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The walls of the prototype building, which is constructed of fieldstone cobble, are a hefty 24 inches thick. Photo courtesy Richard Palmer

Alloway blacksmith shop: a closer look

In the October issue, Raymond Howard details how he scratchbuilt an octagonal blacksmith shop to hide a switch motor on his HO scale Seneca Lake, Ontario & Western RR layout. A reader told us more about the prototype structure, which dates from 1832 and still stands in Lyons, N.Y. Read his account at www.ModelRailroader.com.

Switch crews might have to sign and bring in shipping orders, but the only time they would handle bills of lading would be if they were making a transfer run to another yard to be handed over to the receiving railroad.

Bob Carlson, Mount Angel, Ore.

Colorado narrow gauge

I really enjoyed Bob Hamm's article "Re-enacting Rio Grande narrow gauge" in the September issue. I recently traveled to Colorado and visited Montrose, Ridgway, Ouray, Silverton, and Durango. We spent a lot of time tracing the old roadbed of the RGS, and visiting sites and museums that preserve the history of narrow gauge railroading in Colorado. We even took the round trip on the Durango & Silverton Narrow Gauge RR.

The September MR was waiting for me when I returned. It was fun to see Bob's layout depicting the places we had just seen. Thanks for sharing it with us.

Ron G. Marsh, El Dorado Springs, Mo.

B&O operations

As a certified "tower nut," I was interested in Don Ball's "Build dispatcher and operator desks" in the October issue. I was fortunate enough to visit several offices on the B&O (CSX) before they were all closed. Items such as the scissor phone and plug box lasted a lot later than one might think, remaining in some offices until the 1990s, if only as back-ups to Safetran equipment.

I did notice one point that may need clarification. While there may have been instances where the foot pedal was used to change lines, its main use was as a push-to-talk function. Some operators called them stomp pedals. The plug box or some other switch box was used to select various DS or message wires, and the operator depressed the pedal to speak into the phone or microphone. That would, in turn, cut out the desk speaker so the speaker would not feed back into the mic. I don't believe that earphones were cut out.

It's good to see so much interest in this aspect of railroad operations. Kudos to Don for keeping the tradition alive.

Gary Deavers, Fairmont, W.Va.

Street running

Congratulations to Paul Dolkos for the great "Tracks in the street" article in the October issue. It's exceptional to see such a well-detailed street scene, and it's generous of him to share his construction knowledge with others.

I'm familiar with the Baltimore dock area and remember how narrow some of the streets are. The Baltimore & Ohio RR used 0-4-0T Dockside switchers to do the work. Varney made an HO Dockside in the 1940s that was popular.

In the 1880s, there were many tracks in the streets of my town, Hagerstown, Md. The Western Maryland Ry. had tracks down the middle of Foundry Street to the passenger station. Two blocks away, the Cumberland Valley RR tracks were in the middle of Walnut Street.

Bill Knode, Hagerstown, Md.

While I'm sure Dick Orr makes a wonderful girder rail, you can make

your own by soldering Code 100 rail (upright) to Code 70 or Code 55 rail (sideways, railhead to rail web). I have a short section of rail laid this way. The flangeways using Code 70 may be too shallow, but they seem to work fine for me on my straight section. Hope this is helpful.

John Allyn, Nashville

I agree wholeheartedly with giving crews switch lists to work with. During my tenure with the railroad industry, conductors would get bills of lading along with the list of their train. If they had setouts to make at intermediate points, they would leave a copy of the switch list along with any bills of lading for cars in the setout. The balance of the paperwork would be taken to the terminating station.

Conductors of local and way freights would, on occasion, sign copies of shipping orders and bring the railroad copies to their final destination.

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

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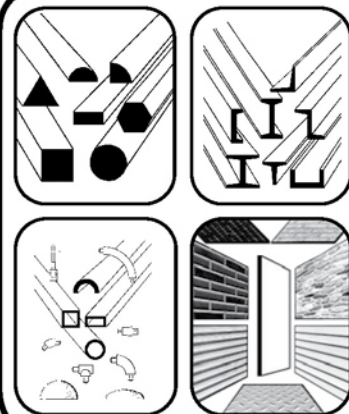
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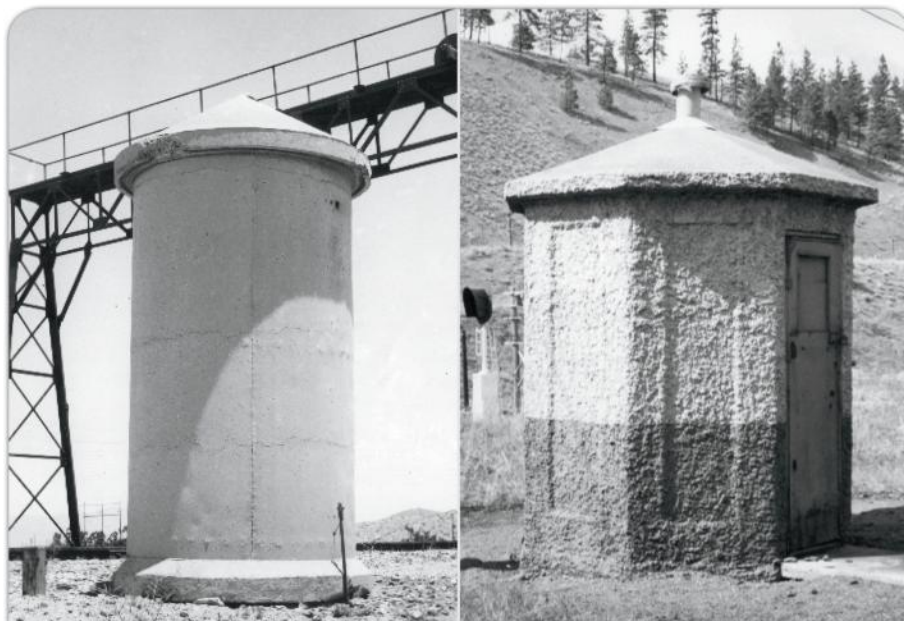


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Trackside telephone boxes were used by train crews needing to contact the dispatcher. At left, a typical Southern Pacific cylindrical concrete booth; at right, an octagonal Northern Pacific booth at Marshall, Wash. Donald Sims photos

Where were concrete phone boxes used?

Q I have concrete railroad telephone booths for my layout. Can you tell me when they were used and what they were used for?

Mark Kroll, Hollidaysburg, Pa.

A Before the advent of in-cab radio (or train-phone, for you Pennsy fans), trackside phone booths like the models you have were the train crew's way to stay in touch with dispatchers from remote parts of the railroad, where stations were far between. Originally equipped with telegraphs, and later with telephones, the booths were situated near interlockings, interchanges, and sidings, where a train could stop safely.

They were used extensively by railroads crossing the deserts of the southwestern United States, but quite a few were installed by the Baltimore & Ohio and other railroads climbing their way through the rural Appalachians. Some were made of wood, but the most well known ones were made from cast concrete. (The photos above, both of concrete booths, were published in an article in our October 1968 issue.) Though they were made obsolete when locomotives were equipped with radios, many of the rugged concrete structures stand to this day.

Q I'm modeling the Oil Belt Traction Co., a small railroad that operated in my county back in the early 1900s. This tiny railroad had one passenger car, which on their roster is called a "partition car." I'm not familiar with that term, and wondered if you had any idea what a partition car is.

Ken Pryor, Flat Rock, Ill.

A A partition car is a creation of segregation laws in the pre-civil-rights-era American South. Railroads segregated African-American passengers from

whites either by making them ride in separate coaches, or by use of partition cars. A partition car was like a regular passenger coach, except an interior partition separated it into different rooms for use of white and African-American passengers. These sections were often not just separate but also unequal, with the African-American compartments being more cramped, lacking luggage racks, having smaller and less well equipped bathrooms, etc.

The use of partition cars wasn't a decision of the railroads, but were man-

dated by Jim Crow laws passed by southern states after the Civil War. African-American passengers traveling cross-country by train would be forced to disembark and board segregated cars when the train crossed into Jim Crow territory. A challenge to partition car laws resulted in the 1896 Supreme Court case *Plessy v. Ferguson*, which ruled that "separate but equal" segregation was constitutional. Use of partition cars persisted until "separate but equal" was overturned by the Supreme Court in the 1954 *Brown v. Board of Education* case.

Q Is there a tool for replacing the small springs on Kadee couplers?

John Achs, Gilbert, Ariz.

A Kadee makes one that doubles as an uncoupling pick (part no. 241). However, many modelers simply use the point of a hobby knife or a small flat jeweler's screwdriver. Another useful tip when replacing coupler knuckle springs is to put a length of thread through the spring before trying to install it. If the spring flies away, the thread makes it much easier to find and pick up. Then, when the spring is in place, simply pull out the thread. I demonstrated this in one of my "MR Quick Tips" videos. Browse to mrr.trains.com/videos/expert-tips to watch them all.

Q I recently obtained a well car and ordered a few containers as a load. Is there any way to attach the containers to each other on a temporary basis? Glue seems permanent and eliminates the option of changing them out.

Jack Cecil, Wellington, Fla.

A Some manufacturers glue small magnets inside the bottom of their containers and a bit of sheet steel under the tops. If you can carefully pry the floor or roof out of your containers without damage, you can make this modification yourself. This has the bonus benefit of adding weight to the well cars, which are often underweight according to National Model Railroad Association Recommended Practice 20.1.

Q What's the best way to join N scale code 80 flextrack to code 55 turnouts?

William Murphy, Naples, Fla.

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

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A Ask your favorite model railroad store about transition joiners. These metal rail joiners are designed to join rail of different heights. But if you can't find transition joiners to fit your rail, try this trick. Put a rail joiner halfway on a scrap of Code 80 rail. Then use a pair of smooth-jaw pliers to flatten the remaining half. You can then solder the code 55 rail on top of the flat half of the joiner, which should bring it close to the right height to match the railhead of the Code 80. Just be careful to keep the rails in alignment side-to-side before soldering in place. Any remaining difference in rail height will be minor and can be compensated for with a jeweler's file.

Q I'm trying to find the alignment pins that David Popp installed on the Thin Branch. I found the manufacturer but couldn't locate the items.

Roy Sherwood, St. Charles, Mo.

A The pins David used on the Thin Branch project are sold by a company in the U.K. called Carr's Finescale. Persis-



Steven Otte applied laser-cut paper shingles to the roof of his scratchbuilt water tank (see Step By Step, August 2013). A row of shingles turned sideways made a passable ridge cap. Steven Otte photo

tent rumors to the contrary, they do ship to buyers in the United States. Go to www.finescale.org.uk and search for product number C1191.

Q For my club I'm constructing a small commercial building in O scale. I'm starting on shingling the roof. Basically,

I know how to do that: cut thin cardboard strips, cut a slit halfway through every 1/8", and then glue the strips to the roof. But I can't find any details about how to shingle the peak of the roof, where the surfaces meet.

Maurice van Wagtenonk, Eindhoven, Netherlands

A The piece of roofing that covers where two different roof surfaces meet is called the ridge cap. What it looks like depends on what your roof is covered with. Older buildings with cedar or slate shingles might have a ridge cap of wood planks, perhaps with a sawtoothed, scalloped, rounded, or otherwise ornamental ridge down the middle. This ornamentation was more common on older buildings. Lead, copper, or tin flashing material might be used to protect the wood.

Tar paper roofs might have a separate tar-paper strip along the ridge, or the roofing from one side of the roof might simply overlap the ridge onto the other side. Asbestos or modern fiber shingles may be overlapped in a straight row to

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form a ridge cap. Today, continuous ridge caps of engineered plastic, some with built-in attic venting, are common. I used paper shake shingles to roof my scratchbuilt water tank in the Step By Step article in August 2013, and the photo above shows how I made ridge caps using this material.

Q I'm building an HO scale 4 x 8 layout. I'm limited to 18" radius curves. I want to run a current-day passenger car line, like Amtrak. It seems that everything I'm able to find is too long for my layout. Any ideas which manufacturer's trains will work for my layout?

David Hinrichs, Frederick, Colo.

A The problem isn't the manufacturer of the cars; it's their length. And any model of a modern-day passenger car is going to have trouble with curves that sharp. Even if you did find passenger cars that would go around 18" curves, you'd never be happy with how they'd look doing so. As I see it, you have four options: 1) change to N scale, which would allow

you to have broad curves in 4 x 8 feet; 2) alter the shape of your layout from an island surrounded by operator space to a donut with the operator space in the middle, allowing broader curves;

3) change your time period to the steam era, when passenger cars were short enough to handle your curves; or 4) stick to freight operation, focusing on shorter cars and locomotives.

READER TIP

Light up those detectors

I'm using photoresistors to trigger some of the signals on my layout. The problem is when I switch to blue lighting to simulate nighttime operations, the photoresistors are triggered. To overcome this problem, I've positioned a scale light-emitting-diode (LED) street light next to the track, with the light centered on the photoresistor. I adjust the photoresistor's sensitivity for the LED streetlight, and I'm good to go for day or night running. If having a streetlight placed in the middle of nowhere isn't



A trackside lamp provides enough illumination to trigger occupancy-detection photoresistors during "night" operations on Jeff Walsh's N scale layout. Jeff Walsh photo

realistic enough for your layout, place a track worker's tool shack or similar lineside structure next to the light.

— Jeff Walsh, Sturgis, Miss.

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S scale has a split personality

Many assume S gauge was an American invention, but the British modeled it starting in 1919 as H-1, or Half 1 Gauge. American Ed Packard, the owner of Cleveland Model & Supply Co., a manufacturer of wooden model plane kits, thought 3/16"-to-the-foot scale was better for model trains than the larger and more costly O scale and the smaller HO.

To remedy this, Packard introduced his products in 1937 as C-D Gage, an inexpensive paper-on-wood line with freight cars and several static balsa locomotive models. The company also offered operating pine models with motors, metal frames, drivers, rods, and trucks. The models were far less costly than O scale, and on par with, or below, the price of HO.

In another development, A.C. Gilbert bought American Flyer in 1938 and, influenced by Packard, decided 3/16"-to-the-foot scale O gauge prototype tinplate locomotives would be better than Lionel's generic steamers. The National Model Railroad Association standardized 3/16"-to-the-foot scale as S Gauge in 1943. Postwar, Gilbert changed from three-rail O gauge to

two-rail S tinplate, and there lay the dilemma: which would better succeed, S scale or tinplate?

A 1950 Model Railroad Equipment Corp. catalog showed Stinson, Midgage, and S. Pikes (formerly C-D Gage) steam locomotives; and Miller, Super Scale, and Dayton diesels. Five companies produced freight cars: Midgage, Northeastern, S. Pikes, Strafford, and Super Scale. Passenger cars were offered by Midgage, S. Pikes, Strafford, and Super Scale. A *Model Railroader* survey in 1950 showed standard gauge S with 1.5 percent, narrow gauge 0.1 percent, and tinplate Hi-Rail 1.8 percent, a combined 3.4 percent compared to HO scale's 69.3 percent and O scale's 22.2 percent.

A 1954 Nimco catalog revealed the importance of American Flyer to scale modelers. The catalog was seeking sales to both markets in flux, and opened with advertisements for American Flyer sets directly reproduced from Gilbert's consumer catalog.

What stands out is "Discontinued" overprinted on lines or parts of many listings: Sylvania Models streamlined passenger cars; Kansas City Kits' entire line; Parnell turntable kits; and Perma-Bilt Models' trucks, couplers, and adapters.

There were scale-tinplate Enhorning Electro-Motive Division F-7As and Bs and a Miller Laboratories Alco S-2 identified as a "diesel

switcher." Nimco offered conversion kits for Flyer's Alco PA and EMD GP7, with rectifiers, brass wheels, and weights. That was it: four diesels for either scale or tinplate modelers, rather than 1950's four scale models, plus more tinplate.

Steamers were Rex Engineering's Baltimore & Ohio C-16 Dockside and free-lance scale-tinplate 2-4-4T Suburban, two offerings when there had been five scale models in 1950. Nimco conversion kits for Flyer's six steam locomotives augmented Rex Engineering's two.

The final pages discussed scale vs. tinplate, clarifying differences between high-cost, low-production scale models with those mass produced; different flange depths and track profiles between scale and tinplate; trouble at switches between deeper and shallower flanges; the limited length of cars on tinplate curves; and other issues.

S scale modelers relied on converted American Flyer locomotives and cars, as well as Marx lithographed cars, given the paucity

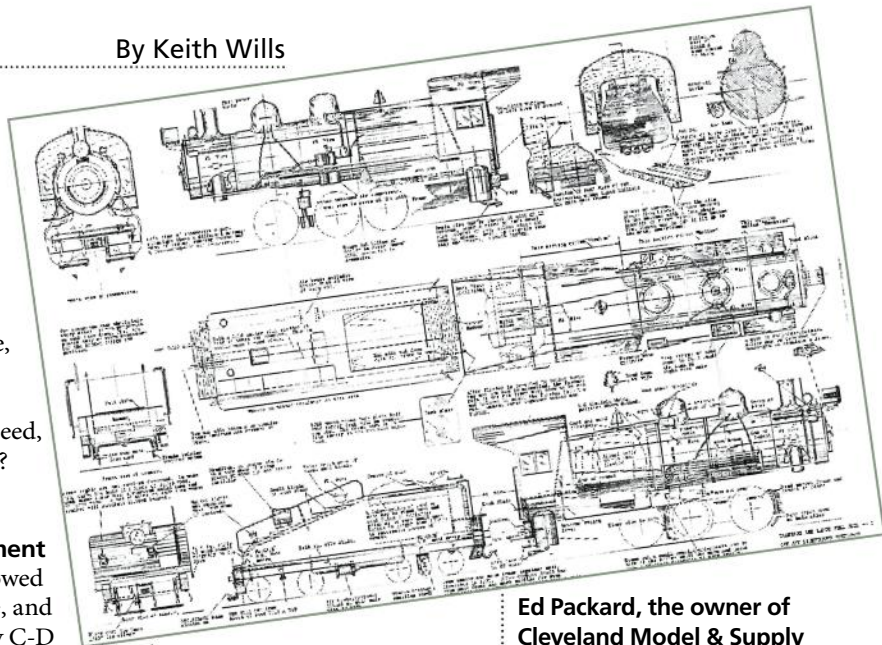
Ed Packard, the owner of Cleveland Model & Supply Co., was an early proponent of 3/16"-to-the-foot scale trains, branding his pine and metal models C-D Gage.

of manufacturers in that part of the hobby.

American Flyer closed in 1967. It was bought by Lionel, effectively ending tinplate manufacture from further interdependence with scale modelers for a time. Hobbyists never gave up, though, with operator-collectors keeping S gauge alive.

A rebirth began in 1979 with Lionel reissuing favored Flyer pieces. A 1998 Wm. K. Walther's Inc. *Big Trains Catalog* revealed 21 pages of S gauge equipment.

Soon others joined in to bring the scale to where it stands today: Lionel with standard American Flyer models, and importing scale-tinplate; and other manufacturers with a wide range of 3/16" scale locomotives and rolling stock unimaginable in the insecure 1950s. Both aspects of S are alive, thriving in their niches, with much crossover. MR



A Miller Laboratories Alco S-4 was listed in the 1950 Model Railroad Equipment Corp. catalog. In a few years, S scale offerings would become rather limited.



S SCALE MODELERS RELIED ON CONVERTED AMERICAN FLYER LOCOMOTIVES AND CARS, AS WELL AS MARX LITHOGRAPHED CARS. - KEITH



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How to weather without an airbrush



No airbrush, no problem! Cody Grivno shares how he used paints, washes, and weathering powders to make a clean Kato N scale General Electric ES44AC (inset) look like a diesel locomotive that's earning its keep on today's UP. Bill Zuback photos

You don't need an airbrush to weather models. Yes, you read that correctly. With paints, washes, weathering powders, and assorted brushes, you can make your favorite locomotives and freight cars look like the prototype.

For this project, I used a Kato N scale Union Pacific General Electric ES44AC (C45ACCTE in UP terminology) diesel locomotive. Before I did any work on the

model, I looked for prototype photos. There are plenty of images of UP ES44ACs on the internet. These units are relatively new and don't require heavy weathering.

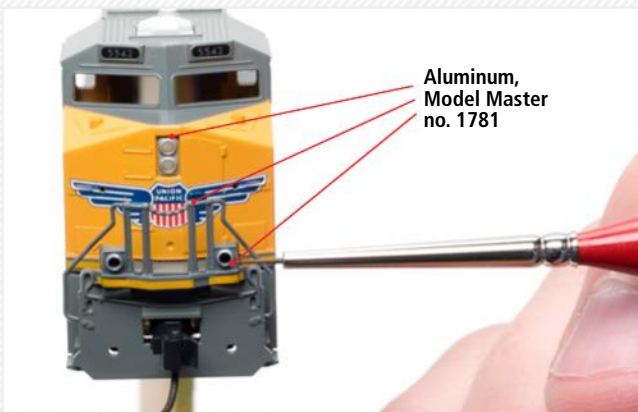
Knowing how a prototype locomotive looks is one thing. Re-creating that look is another. I find the best results are achieved with multiple products. I started with paint to add color to the

headlight housings, pilot details, and wheels. Then I used washes on the screens, truck sideframes, and couplers. I finished the model with tried-and-true weathering powders.

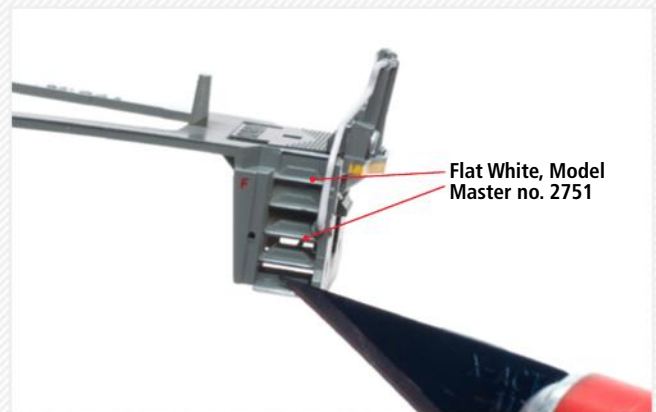
Don't let the lack of an airbrush stop you from weathering your locomotives and freight cars. Get some paints, washes, and weathering powders, grab a few paint brushes, and get started.



STEP 1 PAINTS



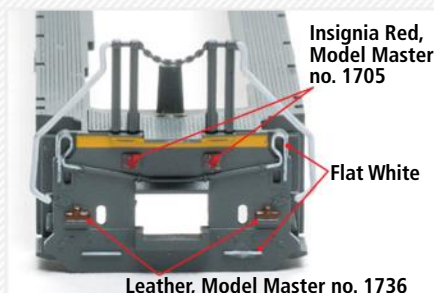
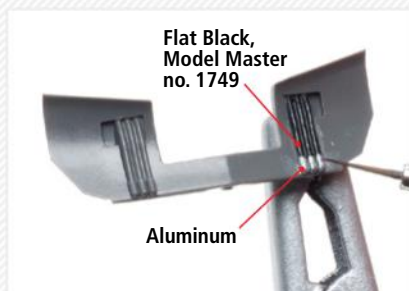
The Kato N scale ES44AC is accurately painted in Union Pacific's Armour Yellow and Harbor Mist Gray "Building America" paint scheme. However, some of the smaller details aren't painted accurately. First, I used Model Master Aluminum (no. 1781) to paint the front and rear headlight housings and the ditch light housings.



Next, I painted the front of each step tread Model Master Flat White (no. 2751). This is done on full-size engines to make the steps easier to see.

Even with steady hands, it's tricky to keep paint off the top and bottom of the treads. After the paint dried, I gently scraped these surfaces with a no. 11 blade.

STEP 1 PAINTS (CONT'D)



The snow plow has molded m.u. hoses. To make these details stand out, I brush-painted the hoses Model Master Flat Black (no. 1749) and the tips Aluminum.

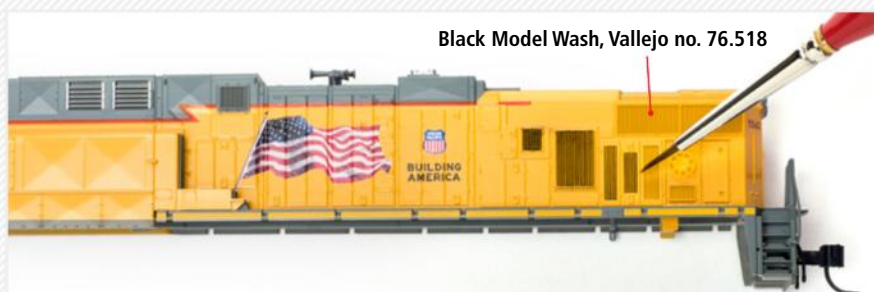
The front and rear pilots contain molded details that look much better painted. I brush-painted the outer edges of the uncoupling levers Flat White, the m.u. receptacle covers Insignia Red (no. 1705) over an Aluminum base coat, and the spare knuckles on the rear pilot Leather (no. 1736).

I painted the vertical handrails Duratrax R/C Car Paint Bright White (no. PC51). This solvent-based paint is

designed for polycarbonate remote-control car bodies and sticks well to the acetal handrails used on many of today's locomotive models.

The metal wheels are chemically blackened, but I prefer painting them. First, I used 70 percent isopropyl alcohol and cotton swabs to remove any impurities that would affect paint adhesion. Then I used a superfine Microbrush to apply Model Master Italian Dark Brown (no. 211138) to the face and back of each wheel, keeping paint off the tips of the axles.

STEP 2 WASHES

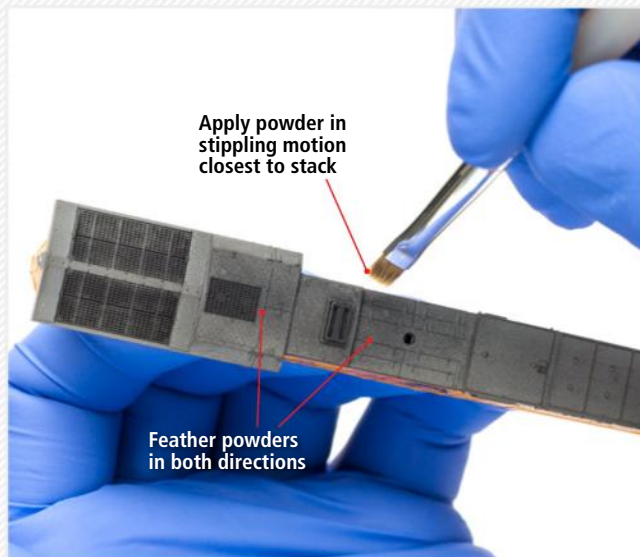
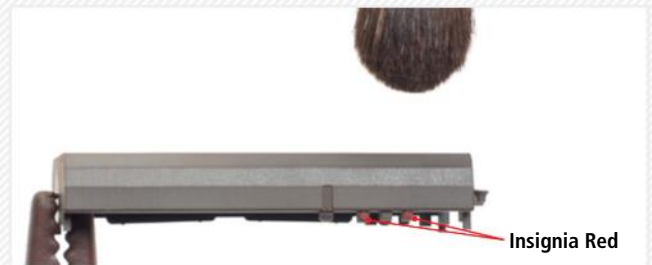
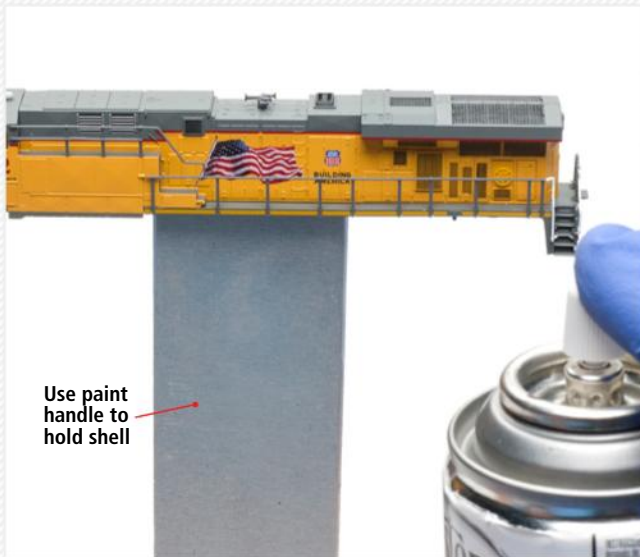


The ES44AC is rich with screens and grills. Since they're painted yellow and gray like the rest of the locomotive, the screens and grills lack depth. To remedy that, I applied Vallejo Black Model Wash (no. 76.518) with a brush. The wash settles into the recesses, letting the body colors show through on the raised areas.

The truck sideframes are acetal, a slippery engineering plastic. After washing the sideframes in warm water with a few drops of dish soap to remove grease and oil from the gears, I sprayed the sideframes with Testor's Dullcote (use Dullcote and all paints in a well-ventilated area). Then I applied Vallejo Oiled Earth Model Wash (no. 76.521) to each sideframe. I applied Gray Model Wash (no. 76.516) to the bearings and springs for added depth.

The Kato knuckle couplers are molded in black acetal plastic. After spraying the couplers with Dullcote, I used a Microbrush to apply AIM Products (now Monroe Models) Rusty Brown weathering wash. After the alcohol-based wash dried, I brush-painted the trip pin flat black and touched the tip with a silver paint marker to simulate a gladhand.

STEP 3 WEATHERING POWDERS



Before applying the weathering powders, I carefully wiped the body shell and fuel tank with cotton swabs dipped in Windex to remove any skin oils (these show up as fingerprints when the powders are applied).

Then, holding the can about 7 inches away, I applied two light layers of Testor's Dullcote to the shell and fuel tank, as seen in the upper left photo. This gives the parts some "tooth" for the weathering powders to stick to. From this point forward I only handled the model while wearing nitrile gloves.

In several prototype images of UP ES44AC locomotives, I noticed a "bow wave" of grime above the front truck. To capture that look, I applied AIM Products Medium Earth weathering powder in a gentle, scrubbing motion, as shown in the upper right photo. I used a fan brush to apply the same color to the long hood and top of the cab.

The fuel tank on the full size 5542 had a general coat of grime. I captured that look by applying the Medium Earth

weathering powder with a soft-bristled makeup brush. As noted in the middle right image, I painted some of the fuel tank details Insignia Red to match prototype images.

I painted the inside of the exhaust stack Flat Black. After the paint dried, I used a stiff-bristled brush to apply AIM Products Grimy Black weathering powder, as seen at lower left. I applied the powder in a stippling motion close to the stack. Then I used a soft-bristled brush to feather the powders out in both directions, following the centerline of the hood.

I sealed the weathering powders with two more light layers of Testor's Dullcote, holding the can 7 to 9 inches from the model. I let the Dullcote dry overnight before reassembling the model, as shown at lower right.

With that, Union Pacific no. 5542 is ready to enter service. Paints, washes, and weathering powders are great items for weathering. I hope you give these airbrush-free techniques a try. **MR**

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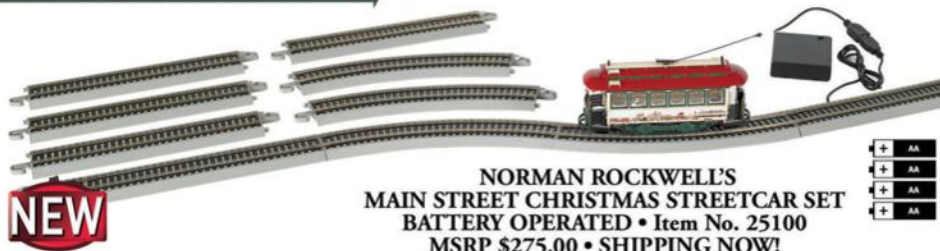


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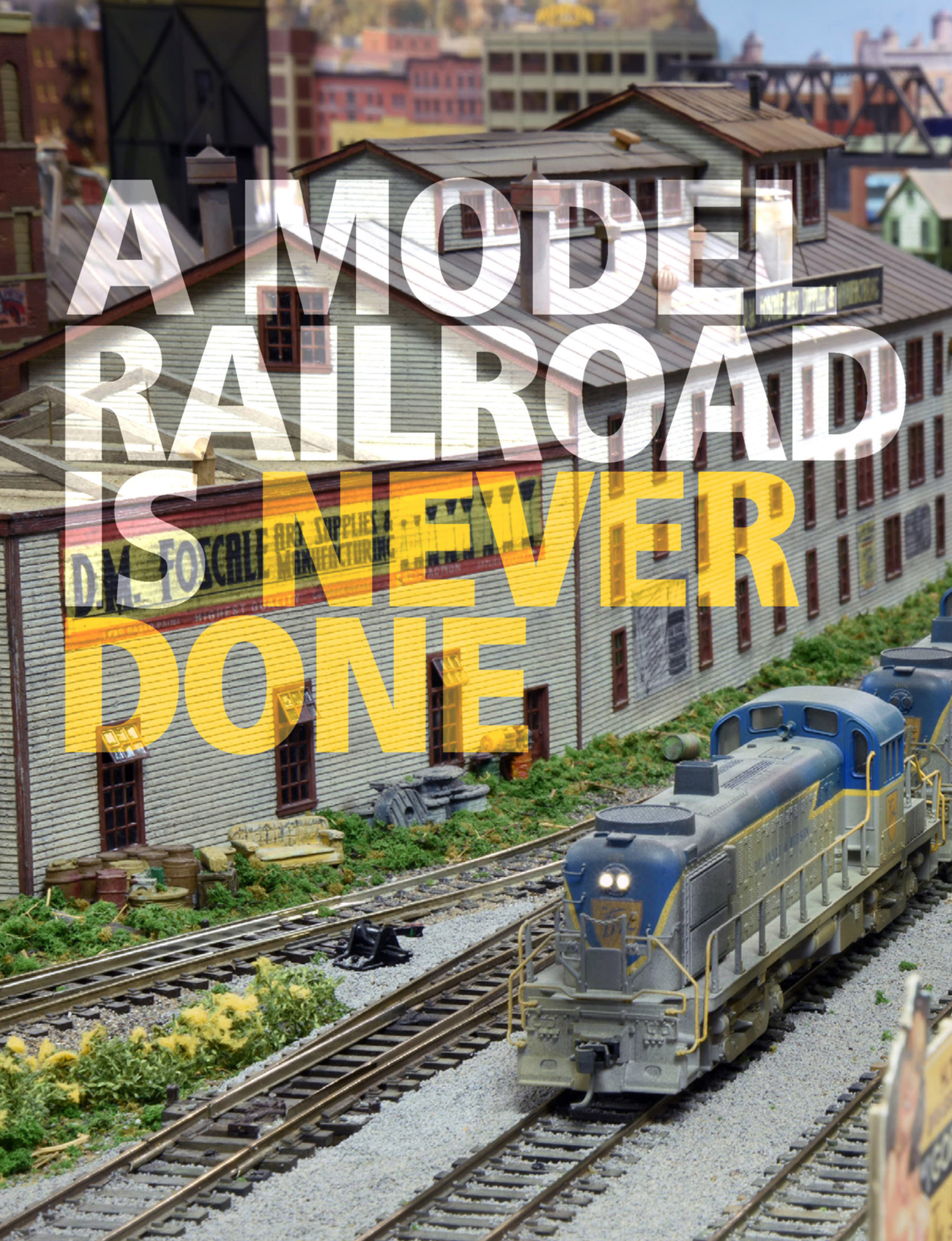


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A MODEL RAILROAD IS NEVER DONE



① A pair of Alcos pulls the local freight through the industrial area of Robert's Landing on Bob Seckler's HO scale Dutchess & Hudson Valley RR. The scratchbuilt factory at left is named for Bob's friend Doug Foscale, owner of FOS Scale Models.





The story of this HO scale railroad is constant expansion and improvement

By Robert Seckler • Photos by Lou Sassi

One day, I knew, I'd expand my current version of the Dutchess & Hudson Valley RR. I wholeheartedly feel that a model railroad is never truly complete.

I've been bitten by the train bug. There's always another structure kit I'd love to add, or a change in elevation so I could add a bridge, or a different splash of detail.

As my wife, Christine, says, "It's all in the details." She loves to add people, cars, and birds to my layout. Recently

she fell in love with some floral features made by Scenic Express. We just got back from the Amherst Railway Society Railroad Hobby Show, where she "got lost" in a scenery booth.

Since I first began my Dutchess & Hudson Valley in 2000, I've made huge strides. I feel that each year I've improved my modeling skills. One way that I've done this is by taking my time with my projects. I don't rush into completing a structure or scene. Modeling is an art

form that takes time and patience. But the end result is priceless.

Another way that I've improved is by joining a round-robin modeling club. Once a week, a half-dozen of my friends and I come together to work on each other's layouts and share a meal. (I'm sure some of my pals come just for my wife's cooking.) This is a great way to socialize and share ideas. This helps finish areas on my layout and gives me insight from others.



② Led by Alco RS-11 no. 5001, the daily eastbound through freight passes Baxter's Building Supply in Brothers Town, an area recently expanded. Baxter's Building Supply is a Fine Scale Miniatures kit.

Any major changes to a layout must be discussed with the U.B., or Ultimate Boss. Whoever hosts the night has full authority over any changes that might occur to his layout. Our group finds that this benefits everyone.

From Thomas to new towns

The first expansion of the D&HV that I made after *Model Railroader* visited in February 2011 was the large peninsula



③ Patched-out GP39-2 no. 7402, a former Reading locomotive, works the wharf at Robert's Landing. The wharf and its structures are scratchbuilt, and the boats are from Sea Port Model Works.



④ A Delaware & Hudson General Electric U23B crosses over the main to Christopher's Summit while freight and passengers wait on the platform at Fort Edwards station below. The station, a reproduction of one on the prototype D&H, was scratchbuilt by Bob's friend Frank Baker.

across the aisle from Brothers Town. This peninsula, which used to be much smaller, originally hosted a large roundhouse and turntable. I never felt completely happy with this area. Then one day my youngest son, Christopher, who was 8 years old at the time, said, "Daddy, you can have this space if you want for your trains. I don't need it anymore." The space was home to a tabletop Thomas the Tank Engine layout that our two sons had outgrown.

The next evening, I removed the Thomas layout and started construction in this new area. I used the same tabletop construction techniques as on all other areas of the D&HV, gluing and screwing down 1/2" plywood on a frame of 2 x 4 lumber. I supported the new tabletop on built-in bookcases.

It didn't take long for my vision to emerge. After careful research and mocking-up designs, I developed two new towns and a waterfront scene. This



5 This view shows Dutchess Way on the original layout at right, Chris's Crossing on the new section at left, and the expanded downtown of Brothers Town at rear.

created an additional 77 square feet of layout space.

One of my favorite additions in this area was a small waterfront area named Robert's Landing, after my oldest son. This small harbor scene showcases many fine scale structures and ships, including some from Fine Scale Miniatures, FOS Scale Models, and Sea Port Model Works.

This scene incorporates many nautical features, including a large kitbashed car float that's one of my favorites. I've always loved water features on a layout, so I was thrilled to be able to create a new part of the layout to showcase this kind of modeling.

Robert's Landing also incorporates a scratchbuilt fishing wharf with a rail spur. This really makes the wharf come alive. There are a lot of figures of dockworkers and pedestrians, and even a police standoff.

Most of my structures on my layout are hand-built craftsman kits by numerous manufacturers. Occasionally I've purchased some pre-built structures, and friends have given me some buildings to incorporate into my layout. One of the structures on the waterfront is Fine Scale Miniatures' Stuffy Brewery, which has a

rooftop wooden water tank that adds a lot of character.

Another addition

The next new area that I added to my layout is a bustling town, named Chris's Crossing after my wife. There are a lot of detailed buildings and many natural-looking landforms.

One of these focal points is an amazing waterfall created by the talented Doug Foscale of FOS Scale Models. Naturally, I named it Foscale Falls in his honor. Doug constructed this area using an extruded-foam insulation board base and hand-carved plaster of paris rocks. Doug showed me how to paint the rocks and create the realistic water feature. While Doug was working on this scene, I employed his techniques on other areas of the D&HV.

One of my favorite buildings in this area is called Robinson's Electric, manufactured by South River Modelworks. I love the angles and rooflines on this kit. It looks great overlooking the waterfall scene.

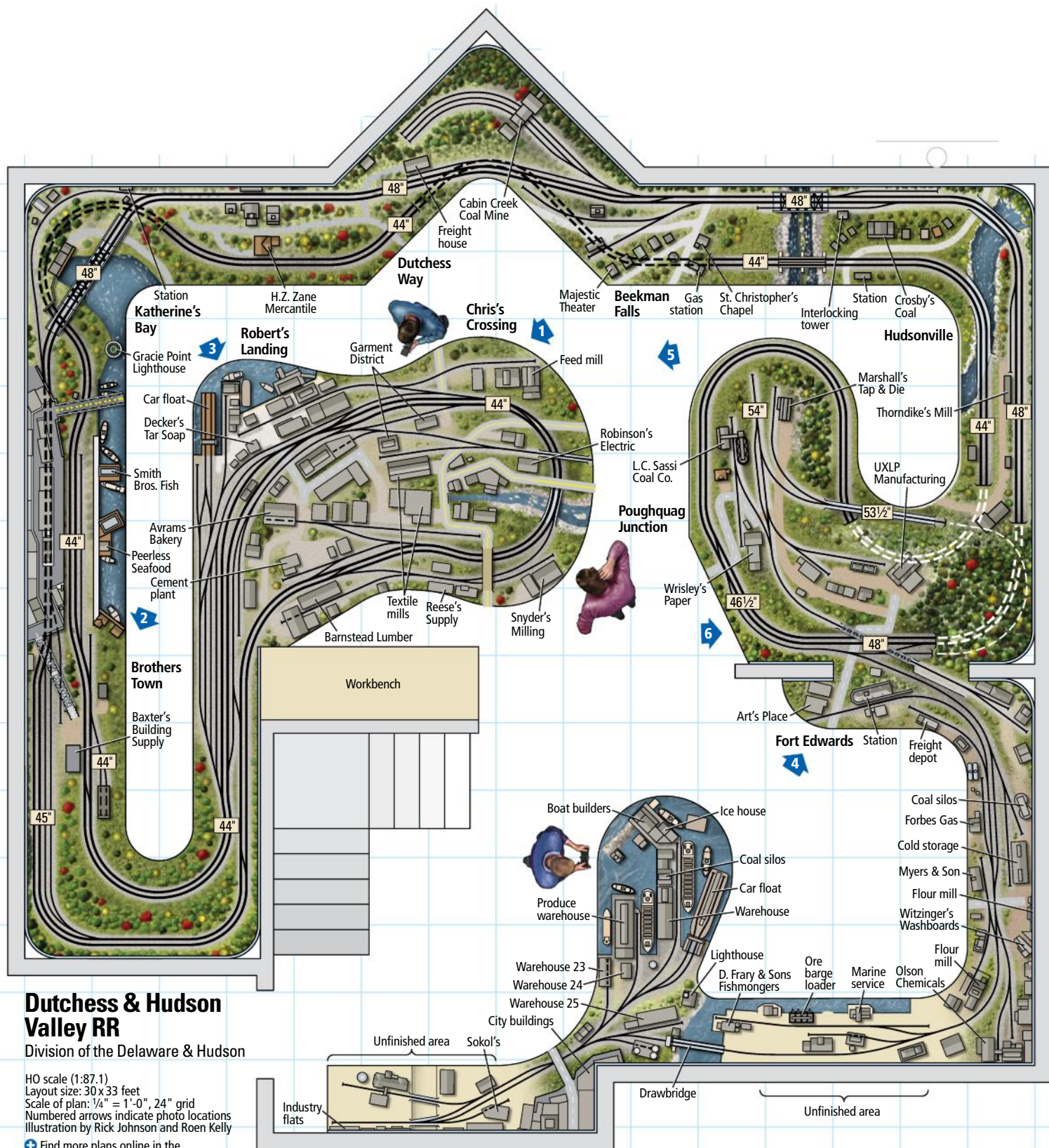
Another small but eye-catching detail is a unique A&P 1950s delivery truck.

The layout at a glance

Name: Dutchess & Hudson Valley RR
Scale: HO (1:87.1)
Size: 30 x 33 feet
Prototype: Delaware & Hudson
Locale: New England
Era: 1950-1977
Style: walk-in
Mainline run: 268 feet
Minimum radius: 22"
Minimum turnout: no. 4
Maximum grade: 2 percent
Benchwork: open grid
Height: 44" to 54"
Roadbed: cork on 1/2" plywood
Track: Atlas code 100 flextrack with Atlas and Peco turnouts
Scenery: plaster cloth, extruded-foam insulation board, Sculptamold
Backdrop: commercial backdrops and painted clouds on wallboard
Control: NCE Digital Command Control

This was custom-built and painted by George Barret of Sheepscot Products.

I'd also like to thank my good friend George Marshall for creating a pumpkin patch for my wife. This small area makes a fun feature. I've come to realize when working on a layout, many features come



into play. From buildings and waterfalls to pedestrians, every detail makes the scene come to life.

The other town I added to the new peninsula is called Poughquag Junction. Located behind Chris's Crossing, it's named after the town where I live.

A two-lane wooden automobile bridge built by Hal Reynolds of Atlantic Scale Models adds a lot of flair to this scene.

Another of my favorite buildings is the scratchbuilt Dabblers Milling Co. This kit has a lot of detail and fits nicely into the scene. It was given to

me by my good friend Jimmy Diegnan of Railroad Kits.

From harbor to city

Other areas of D&HV that underwent a renovation recently was one of



Robert uses customized, two-position waybills to route the cars on his layout. Color-coded destination blocks and card boxes make the task easier.

Simpler waybills

When I first began seriously operating my layout, I wanted operation to be easy as well as an enjoyable experience for all. So I considered two methods of operation: car cards with waybills and switch lists.

My friend Mark Panzera and I customized the traditional four-position waybills on a Microsoft Excel spreadsheet to include only two positions. To make them more user-friendly, we color coded the "To" and "From" locations.

The waybills work in conjunction with car card boxes installed at each town. We added large town labels to these boxes, and next to the town names we added color-coded tabs to correspond to the colors on the waybills. This allows for an easy visual reference to identify what cars need to be dropped at each town. This system makes operating my layout fun and easy to organize. –

Robert Seckler

the first scenes I created on the railroad. This area consisted of a small farm scene on a hill behind a kitbashed Walther's swing bridge. When Micro-Scale Models released its new 147-foot two-track steel truss bridge, my creative juices began to flow. I purchased two of these bridges to replace the previous bridge, which spanned a small waterfront scene called Katherine's Bay.

I removed all previous waterfront structures and replaced them with structures from FOS Scale. I used structures from two different limited run kits, Salt Neck Harbor and Red Hook no. 1. After I added this to Katherine's Bay, the area took on a whole new dimension.

I kept the original farmhouse and red barn in the scene, since they were sentimental to me. These two

buildings were among the first to be installed onto the layout. It's nice to look at them and to know how far I've grown in my modeling.

Surrounding the farmhouse and barn, I added South River Model Works' Lamson and Goodnow Manufacturing. It fits well with the rural theme. Three-Fingered Freddie's by FOS Scale is a fun addition, as is Reagan Feed Mill by Railroad Kits. These changes have really made this scene better.

Once I finished improving Katherine's Bay, this led me to enhance the city scene next door. The first obstacle was a lack of space to expand the original small city scene. I overcame this with a 2 x 4-foot piece of 1/2" Gatorfoam. This allowed me to cantilever the city expansion above an existing main line below.



Meet Robert Seckler

Robert has been interested in modeling most of his life, starting out building military models. He lives in Poughquag, N.Y., with his wife, Christine, and their three children, Katherine, Robert, and Christopher. In addition to model railroading, he enjoys antiques, swimming, and traveling.

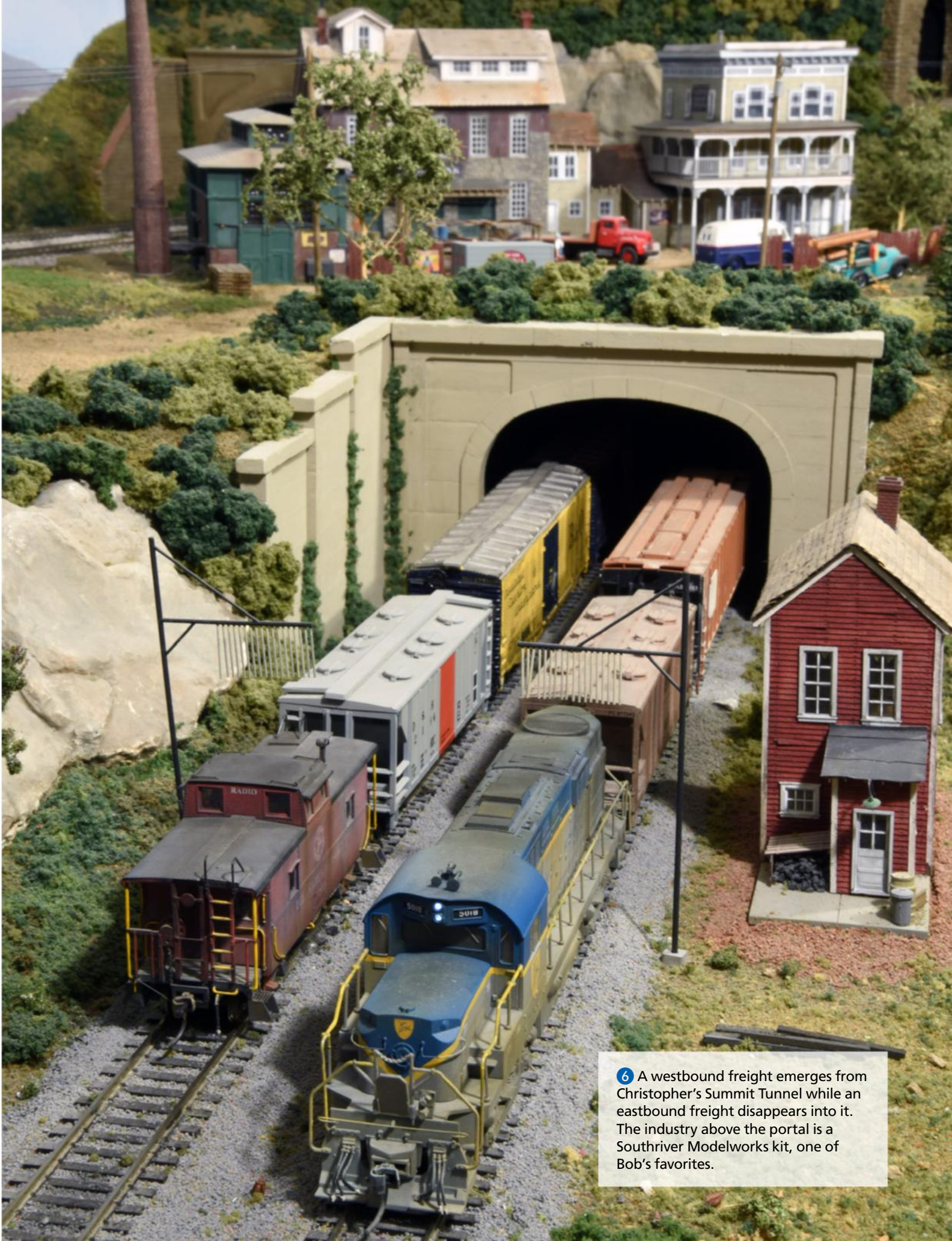
This small change made a huge difference to the perception of the city. I began adding numerous buildings with different depths. I was able to include another street between two rows of buildings. This created an illusion of greater depth.

One of my favorite additions was the steel viaduct, whose look is reminiscent of George Sellios' famous Franklin & South Manchester layout. I've always been inspired by his artistic work.

I'm working on another new addition now, extending the main line into the other half of the basement. In addition to a lot more industry, there's a peninsula with a large seaport, even bigger than Robert's Landing, with plenty of room for ships and another car float. Unless I expand the basement, this will be my last layout addition, but you never know.

Thanks for the inspiration

I'd like to take a moment to thank the numerous people in my life who have helped me create my layout. First comes my wife for her support, and my children, Katherine, Robert, and Christopher, for their encouragement. Finally, my gratitude goes to my friends George Marshall, Mark Panzera, John McGloin, Ron Poidomani, Robert Robbins, Scott Russell, and Roger Cytron, who have used their talents to enhance the creative aspect of the D&HV. I've also been inspired by countless strangers I've met while attending various model railroad shows. The friendships I've made through model railroading are priceless. **MR**



6 A westbound freight emerges from Christopher's Summit Tunnel while an eastbound freight disappears into it. The industry above the portal is a Southriver Modelworks kit, one of Bob's favorites.

Building a vintage wooden freight car kit

By Eric White

Photos by Bill Zuback

Sirs:
I've been reading your magazine since the 1940s, and it seems things have become too easy. Everyone just wants to open a box and plop a building or freight car on their layouts without the slightest bit of effort.

In my day, we sanded wood, soldered metal, drilled and tapped holes, and wound our own motor armatures, and we liked it. I'll bet if you had to build something the old-fashioned way, you'd crumple in a heap and cry for your mommy. You think we were stuck with generic freight cars that looked nothing like the prototype.

You're wrong. We had highly detailed models too, we just had to build 'em ourselves. I challenge you to find a "vintage" (that's the word you kids use these days, right?) kit, and build it to a high standard. I'll be watching the workshop webcam (yes, I have the internet) looking for your sobbing shell, huddled in a corner.

Yours in model railroading,
W. Howard Snodgrass
Cleveland, Ohio

Santa Fe Alco S-2 no. 2324 spots a helium tank car for unloading at a Navy warehouse. The U.S. Navy used the cars to transport helium from Texas to bases along the coasts that supported dirigible operations. Ambroid marketed wood kits in the 1950s and '60s. This month, we take a look at what goes into building one.

Hi, Howard!

Thanks for your note. There's nothing more uplifting than a cheery letter from a reader.

You know, we've heard things similar to what you said before, from threads on our forum about how nobody builds kits anymore, to folks lamenting the fact we no longer run articles about building freight cars for a dollar.

Recently, we came across a gold-foil-covered box with an Ambroid label that said "One of five thousand" HO collector's item. It was a kit for a U.S. Navy helium tank car. Inside the box was a big, yellowing sheet of paper with plans and isometric drawings of the car, along with a manila envelope full of bent-wire

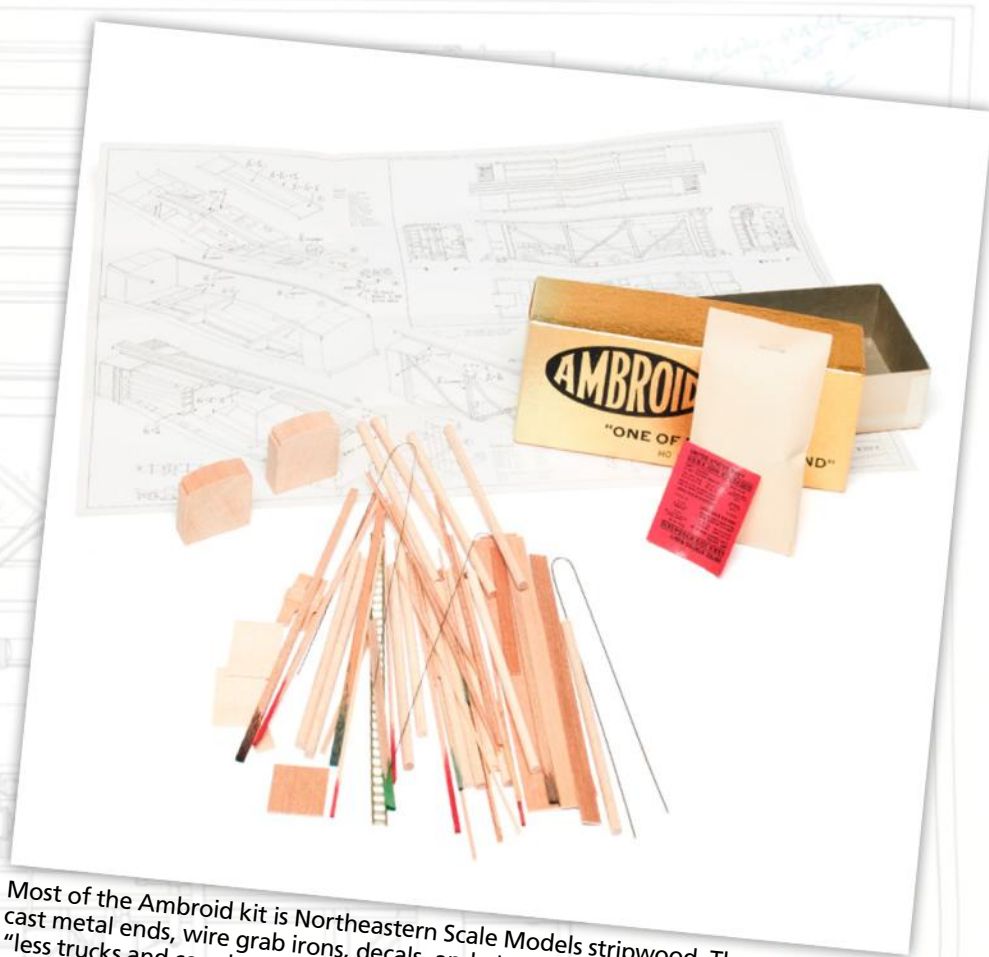
grab irons and plastic brake system parts, and a pile of sticks and dowels.

With your letter in mind, my editor decided someone should build the kit and report on the experience. Since I was out that day, I got the assignment.

The kit came out in 1962. For those who weren't around at the time, Ambroid was well known for its line of glues. In order to promote the use of its main product, it also sold a line of wooden freight car kits. All of the wooden parts came from Northeastern Scale Models, which still sells milled stripwood for modelers today. The helium car kit also included cast-metal ends and sills.

Before I started, I did a little research on building wooden freight cars. This kit uses wood to simulate steel parts, so the first thing I had to do was to seal and sand all of the stripwood. About half the time I spent building the kit was sealing, sanding, sealing again, sanding again, and repeating until there was no discernible wood grain.

Over all, it was a fun project, and I kept the sobbing to a minimum. It was interesting to see what went into a detailed model half a century ago. Follow along and see if you'd be willing to do what it takes to build one of these vintage kits.



Most of the Ambroid kit is Northeastern Scale Models stripwood. There are also cast metal ends, wire grab irons, decals, and plastic brake parts. These kits were sold

STEP 1 SEAL IT UP



Part of the fun people had with wood kits was the preparation. To make wood look like steel, it has to be sealed and sanded, sealed and sanded, sealed and sanded, and sealed and sanded ...

STEP 2 A SOLID UNDERFRAME



After you sand all of the wooden pieces, you get to drill holes in the center sill for all of the brake lines.

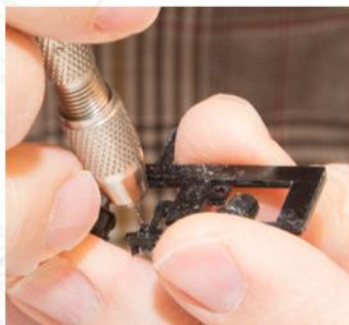


Make sure you have plenty of drill bits.



After you cut out all of the parts, you can finally start assembling them into the underframe. Make sure you keep everything square.

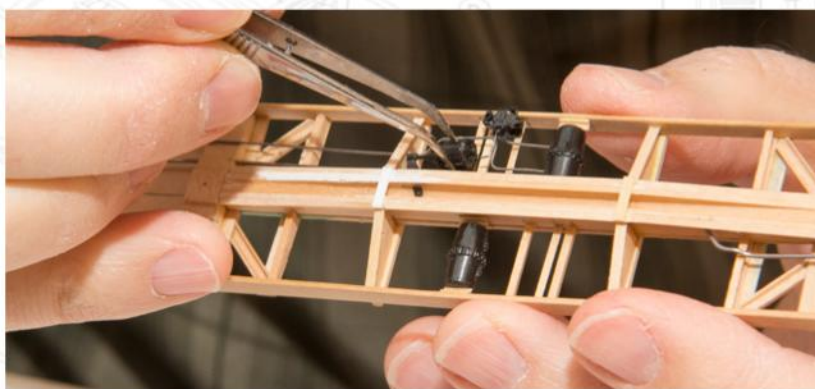
STEP 3 PUT ON THE BRAKES



Even the plastic parts require you to drill holes in them for the brake lines.



The kit includes the brake parts and the wire. There are also some vague drawings of how the parts are arranged.

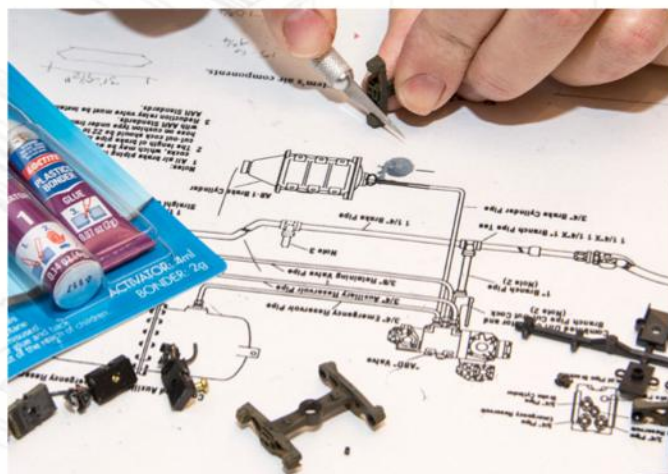


After adding a few more wood parts (and waiting for the glue to dry), it was time to thread the brake lines through all of those holes I drilled. I guess guys in the '50s and '60s just knew how to plumb a brake system. Lucky we now have the internet! Bonus – this heavy car had a double brake system.

STEP 4 TRUCKIN'



Ambroid's instructions informed me the correct trucks for this car are Andrews type. A little online research revealed more detail, and led me to an old Model Die Casting ore gondola for a closer match. It pays to keep old, broken models!

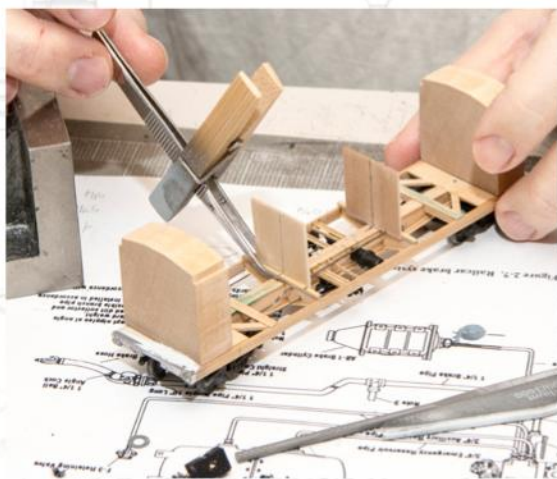


While the ore car trucks had the right shape, I needed solid bearings instead of the roller bearings on the trucks. I harvested bearing covers from some more old parts, then used a high-tech, two-part adhesive to glue the slippery plastic. Take that, 1962!

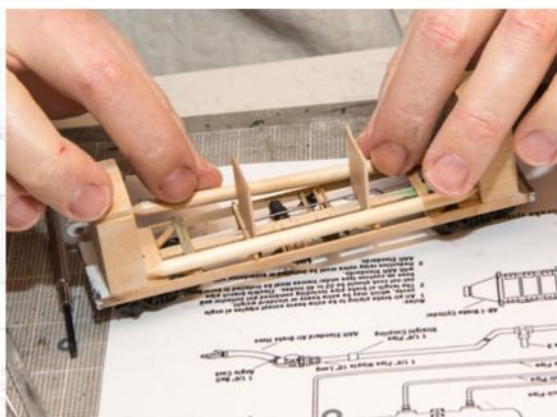


I think the trucks have a cool, beefy look to them with the solid bearing details. The couplers were easy – I opened a pack of Kadee No. 5 couplers, and assembled them into their boxes.

STEP 5 ENDS AND TUBES



The end bulkheads were milled pieces included in the kit. Instead of including material for all 30 helium tanks, the Ambroid kit had interior bulkheads to support and space the parts. I had to get creative to clamp things while they dried.



The helium tanks are pieces of $\frac{3}{16}$ " dowel. I used a handheld pencil sharpener to taper the ends, as per the instructions. Lucky for me, there were only 14 dowels instead of all 30.

STEP 6 TIME FOR BRACES



The sides of the car are criss-crossed with braces. Each brace has a mounting plate. Each mounting plate has to be cut from thin basswood. I took the measurements directly from the drawing.

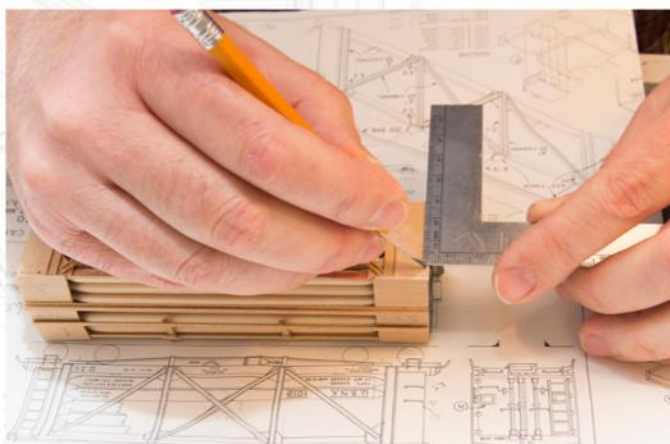


After I cut the plates out, I glued them all on. I had to be careful to get them in the correct orientation and to make sure they lined up correctly. There aren't any alignment pins on wood kits!

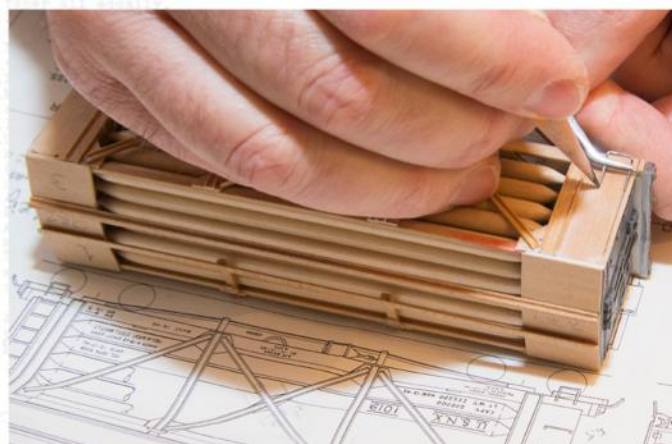


Here's one side done. There are three different sizes of channel on each side. The wood parts are color-coded with dye to make it easier to use the correct material. Just don't start cutting from the dyed end.

STEP 7 GRAB ON

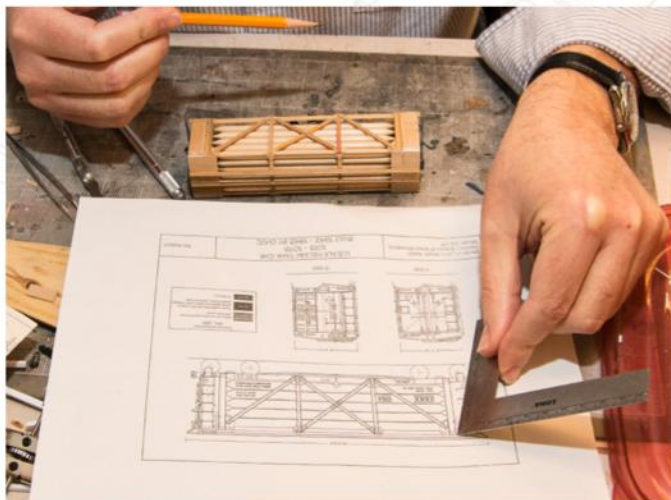


After covering the end blocks with .025"-thick basswood sheets, I could lay out the locations for the grab irons. More measuring! Yay!



I used a grab iron to get the spacing correct. I started this project in late October. This photo is from early January. Glad I don't need more than one of these.

STEP 8 RIVETING



One thing wooden kits don't have is rivet detail. In the 1950s and '60s, modelers just did without. I decided to add a 21st century twist with Micro-Mark rivet decals. That meant more measuring.



And cutting.

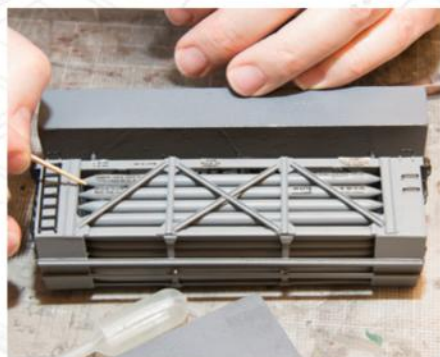


And repetitive tasks.

STEP 9 PAINT AND DECALS



I coated the markings with Microscale Liquid Decal Film to protect the half-century-old lettering. Modern technology comes through again.



A toothpick helps get the decals into the correct position. Microscale Micro-Set and Micro-Sol helped get the thick decals to conform to the helium tanks.



I dusted the model with Model Master Railroad Tie Brown for weathering after I painted it with Model Master Neutral Gray. The underframe, brake parts, and door hardware are painted Model Master Engine Black; the running boards are Roof Brown.

STEP 10 FINIS



The model is complete! For proof, here's both sides. And it only took three months! When I was finished, I showed the model to Cody Grivno. He said, "Oh, yeah! We



had an article about upgrading the plastic AHM model in the August 2014 *Model Railroader*." You mean all I had to do was open a box? **MR**



If it looks like stucco it must be ... spray adhesive? A potentially disastrous accident creates a new technique for simulating this difficult-to-model wall material. This is Gerry's second "on purpose" model using 3M Super 77 spray adhesive.

Sticky stucco

Our author discovers another use for spray adhesive

By **Gerry Leone** • Photos by the author

History is filled with all sorts of inventions that happened by accident. Post-it notes, penicillin, even Silly Putty came about when their inventors weren't paying attention or thought they were making something else.

And so it happened with me. One recent day I was busily using some "rattle can" spray paint to put a primer coat on a model made of plain styrene. I gave it a good coat and stood back to let it dry.

Without taking my eyes off the model, I grabbed a can from the shelf and gave the model another good spraying. What was strange, however, was that this second coat didn't seem to have any effect on the color of the model – it never got any darker.

That's when I realized I'd accidentally picked up a can of 3M Super 77 spray adhesive instead of the gray primer that was sitting next to it. I'd completely

doused my model with that gummy, sticky, mucilaginous nectar of the devil. And nothing I could do was going to remove it without completely ruining the model.

But wait! On closer inspection I noticed that the adhesive had landed on the model's surface in ultra-small, three-dimensional droplets. And when I got those walls under the light just right, the surface looked convincingly like ... stucco!



❶ The partially clogged nozzle in a can of used spray adhesive creates larger droplets which, when painted the correct color, can nicely simulate an adobe wall.



❷ Several quick passes of spray adhesive over the styrene walls and voilà – a textured finish that's easy to see and looks like the real thing. The copier paper box lid helps catch the sticky overspray.



❸ The pencil in this enlarged photo of a wall section demonstrates how fine the spray adhesive texture really is.

And hence, Sticky Stucco was born, and the building was saved. Now granted, Sticky Stucco doesn't rank very high up there in the Pantheon of Accidental Inventions the way Silly Putty does. But it is a way to finally reproduce this exterior wall material in a close-to-scale way.

What you'll need is a structure or wall made from plain styrene or Strathmore board, a brand-new can of 3M Super 77 Spray Adhesive, a well-ventilated area, and some patience.

I emphasize a new can of the adhesive because I've found, after years and years of working with the stuff, that the nozzle tends to gum up over time, and the spray emerges as larger globs, rather than tiny droplets. (Which isn't all bad, as you can see in the photo of the simulated adobe wall ❶.)

You can find Super 77 in most hardware, art, or office supply stores. Other brands and varieties may work just as well; I just haven't tested them.

The technique is straightforward: mount the object to be sprayed in a spray booth or box (I use the lid from an old copier paper box) to catch the overspray ❷. Make sure you do your spraying in a well-ventilated area because the fumes aren't good for your lungs, and the overspray tends to drift everywhere. Doing it outside on a calm day or in the garage is probably best, and even then wear a respirator. Additionally, make sure you're spraying under a good light so you can see the coverage you're getting.

Hold the can about 12 inches from the model and, just as if you were painting with an airbrush, start spraying before you reach the model. Continue across the model at a relatively quick, even speed, and let go of the nozzle only after you've cleared the other end of the model.

Several fast passes are much better than one slow pass, because you can build up the texture gradually. If you spray too slowly, you risk gumming up the surface of the model, at which time the fat lady has sung and it's all over. There's just no way to remove the adhesive without damaging the plastic.

My advice? Practice on a piece of styrene several times to get your technique down before you try it on your model, because you only have one shot at it.

If you look closely at the model's surface, you'll see the small droplets of adhesive form a discernible texture on the wall ❸. If the droplets are the size you're after, you're finished. However, you can add additional coats of adhesive to the model to build up the texture and make the effect somewhat more noticeable. The model in this article got four quick passes with the adhesive.

Now comes the patience. You have to let the adhesive get reasonably dry – and it's a slow process. If you paint it too soon, the adhesive will stay tacky under

MORE ON THE WEB

Model Railroader Video Plus subscribers can see more of Gerry's techniques on "Off the Rails" at MRVideoPlus.com



④ The wall texture created with spray adhesive is easy to see in the photo at left. Weathering, done here with pastel chalks, helps enhance the texture even further in the right photo.

the paint and, should you squeeze the model when you hold it, you're likely to squeeze out the adhesive and have a real (and most likely, an unrecoverable) mess on your hands. Literally.

In addition, make sure the model dries in a dust-free environment. You don't want giant cat hair or dust bunnies sticking to it, because they're virtually impossible to completely remove, even with tweezers. Give it time and your patience will be rewarded.

I let my model dry for three days before proceeding. Even after the adhesive is dry, parts of it will feel slightly tacky, so handle the model gingerly to avoid flattening the droplets. You can then paint the model by brush or airbrush.

In my case, I airbrushed it with Vallejo Light Gray acrylic paint ④ thinned with water instead of isopropyl alcohol, since I didn't know how the alcohol would react with the adhesive. I also didn't use a hair dryer to speed the paint

drying, since, again, I didn't know how the adhesive and heat would get along.

And there it is – Sticky Stucco. It's a subtle detail that will make models stand apart from the brick or clapboard structures that are omnipresent on most layouts. And it just may be my ticket into the Pantheon of Accidental Inventions.

OK, maybe not. **MR**

Gerry is a frequent contributor to Model Railroader and its special issues.

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COMPOSING A **REALISTIC BRIDGE SCENE**

Learn the expert tricks used to bring Green River to life on the Daneburg Sub

By **Pelle Søbørg**
Photos by the author



The bridge over Green River on Pelle Søeborg's HO scale Daneburg Sub shows how solving a problem can lead to a signature model railroad scene. The bridge provides a way for the main to cross over itself, while the landscape conceals where the lower line enters hidden staging.

Whether on a prototype or model railroad, there's something intriguing about watching a train cross a bridge. I made a railroad bridge the focal point of the Green River section of my HO scale Union Pacific Daneburg Subdivision sectional layout [See the May 2017 *Model Railroader*. – Ed.].

The bridge also serves a practical purpose, as it allows the main line to cross under itself and run behind the backdrop into a hidden staging yard. The surrounding terrain and scenery provided an effective view block to the opening in the backdrop.

The railroad bridge, made from Central Valley Works and Micro Engineering kits, is the star of the scene. To add to the drama, I installed a Rix highway overpass next to the

railroad bridge. I built both bridges at my workbench.

The abutments for both bridges are scratchbuilt from styrene. It was easier to install the abutments and finish the scenery around them prior to installing the bridges on the layout.

I originally envisioned a scene where the lower tracks ran next to a river. However, I also needed to model a small forest between the track elevations to conceal the backdrop opening. The relatively shallow depth of the scene didn't allow for both of these scenic elements, so I had to end the river before the main reached the backdrop. This also forced me to make the water's surface smooth, more like a lake than a river. However, these are the



This photo shows Green River prior to scenicking. The double track main snakes under a temporary bridge and through a hole in the backdrop to a hidden staging yard.

compromises that we model railroaders have to make.

Even though I didn't add any ripples of current, crystal clear water where one could see all the way to the river bottom wouldn't work for this scene. Most of the water I've seen on my trips to the Midwest is murky green, and that's what I modeled.

Although I'm an HO modeler, most of the techniques that I describe would work in larger or smaller scales as well, including pouring resin water and applying static grass. Careful planning and a variety of commercially available materials made Green River a signature scene on my model railroad.



The layout scenery base is made of extruded-foam insulation board. I glued layers of foam board together with Unibond No More Nails adhesive **A**. [Always make sure the adhesive is foam-safe. – Ed.] To cut the foam into its rough shape I used a few tools, including a Woodland Scenics Foam Knife as well as a serrated bread knife.

Once I was happy with the rough shape of the terrain, I smoothed all glue joints and cut marks with coarse-grit sandpaper **B**. This step created quite a mess, so I kept my shop vacuum handy to clean up the dust.

Next I filled any gaps between the foam with lightweight spackling compound **C**. This was especially important

on the riverbank, where the foam terrain meets the plywood river bottom. I would eventually pour resin epoxy to model the river's water, and resin will creep through even the slightest crack.

I let the spackling cure completely, then painted the entire scenery base with an earth-tone latex paint **D**.



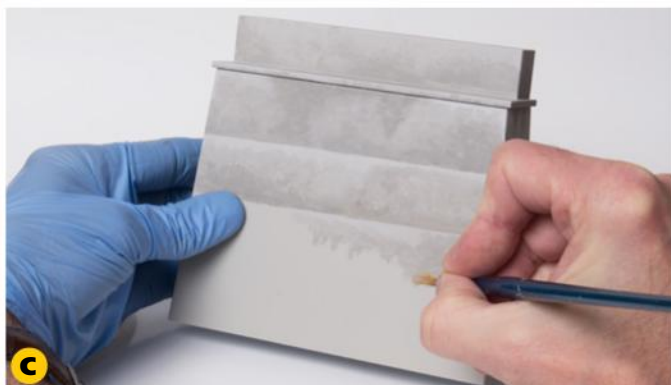
Concurrent with forming the scene's terrain, I built the railroad bridge at my workbench. The bridge's main span is a Central Valley Model Works HO scale 200-foot double-track truss bridge kit **A**. The only modification I made to the plastic kit was the addition of a walkway between the tracks that I made from a length of Plano Model Products .008" slotted stainless steel sheets.

I airbrushed the truss bridge with Model Master Burnt Sienna. It took a lot of paint to cover all the nooks and crannies of the various beams and other components. I appreciated that Central Valley molded the parts in black plastic, which made it easier to get good paint coverage.

I built two plastic Micro Engineering deck-girder bridge sections **B** to make

up the rest of the span. These sections also received a few coats of Model Master Burnt Sienna.

All the bridge ties are from Central Valley. I painted the ties light gray followed by a brown-gray wash. I also painted the bridge rails brown. To finish off the bridge I weathered the rails and the tie plates with rust-colored powder pastels.



The bridge abutments **A** and pier **B** are scratchbuilt from .040" styrene. The scenery contours had to be completed first, so I could accurately cut the parts.

The raised area on the pier compensates for the height difference between the truss and deck girder sections.

I gave the parts a base coat of Tamiya AS-16 USAF Light Gray applied

from a spray can. I then used a brush to randomly dab the sides and bottom of each part with Model Master no. 1732 Light Gray and a darker shade made by mixing no. 1732 with no. 2026 Dark Drab **C**. After allowing the paint to dry, I used rust-colored powder pastels applied with a damp brush to simulate rust streaks.

I attached the abutments to the scenery base with Unibond No More Nails adhesive. I used cardboard shims to hold the abutments in place until the adhesive set **D**. Although I double-checked its position and fit to the other bridge components, I didn't glue down the bridge pier until after I painted the river bottom.



The highway bridge is a Rix Products HO scale Modern 150-foot Highway Overpass plastic kit **A**. I test-fit the model during scenery construction, but, like the railroad bridge, wouldn't install the span until after the scenery was finished. As with the railroad

bridge, I did install the highway bridge piers after painting the river bottom, so that I could pour the resin water around them.

Using .040" styrene sheet, I scratch-built the abutments for the overpass and then attached them to the foam

scenery using No More Nails adhesive. I also used some leftover bridge pier components from the Rix kit to make the support for the ends of the bridge deck (**B** and **C**). I would later paint all the parts gray using the same colors as the railroad bridge abutments.



Before applying any ground cover, I extended the paved highway to each abutment using Woodland Scenics Smooth-It plaster. I used a piece of styrene to evenly spread the material **A**. Once it was dry, I painted and weathered the road surface to match the rest of the highway. For more on my road-building technique, see the August 2015 *Model Railroader*.

I ballasted the track by first spreading Monster Model Works Diorama Dirt along the roadbed shoulders.

Then I used a ballast blend **B** of equal amounts of Arizona Rock & Mineral no. 130-2 Northern Pacific Gray Granite, and no. 138-2 CSX/Southern Pacific/Wabash and ASOA no. 1411 Diabasschotter and no. 1710 Gneisschotter.

To affix the ballast, I used a pipette to apply wet water (water mixed with a few drops of isopropyl alcohol). Then I applied diluted white glue **C** (1 part glue to 2 parts water) over the area.

It's important to soak the ballast completely with glue, and don't forget

to add a drop between each tie. If wet water isn't used first, the glue won't penetrate the entire ballast layer. The result is a crumbling shell at the surface with loose ballast beneath it.

With the highway and track ballast done, I turned to Green River. I wanted the river bottom to match the murky river water I'd seen on my Midwestern railfanning trips. I airbrushed the river bottom **D** with a 2:1 mix of Vallejo Model Air no. 71010 Interior Green and no. 71028 Sand Yellow.



Working in an area no larger than 10 x 10 inches, I began by brushing the painted layout surface with diluted white glue. Next I sprinkled the area with dirt **A** until it was completely covered. I used sifted dirt from my backyard that I first baked in the oven to sterilize it.

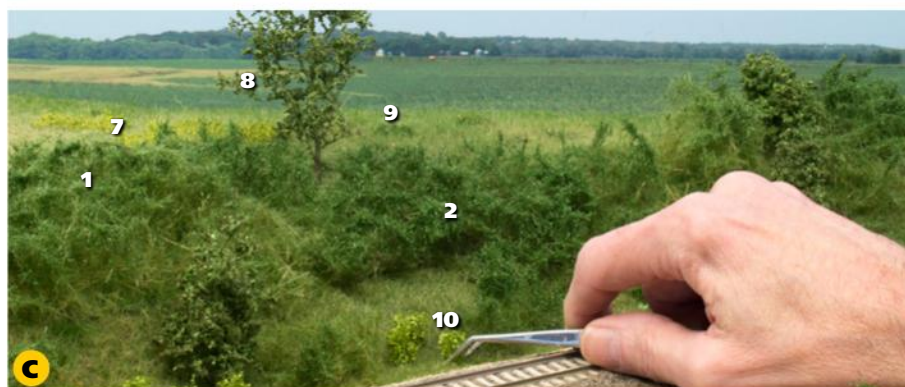
After the area was covered with dirt, I used a pipette to drizzle wet water (water mixed with a few drops of isopropyl alcohol) over the freshly applied

dirt. When using the pipette, be sure to hold it close to the layout surface to avoid washing the ground cover away. Next, I filled another pipette with diluted white glue and drizzled that over the same area **B**. The wet water ensures that the glue penetrates the entire dirt layer.

While the glue is still wet, I applied a final thin layer of dirt **C**. Since it was supposed to model the dirt road, I used a lighter shade than the base color. My

homemade dirt applicator consists of a jar and a lid with a lot of small holes drilled into it. I have several lids, each with different size holes so that I easily adjust the amount of ground cover applied. After the area was covered I let it dry for a couple days.

To create the tire marks in the dirt road, I used a stiff brush **D**. I connected the road around the abutment to the access road on the other side of the main line.



1. Polak Models Wild Bushes 5903 Autumn **2.** 5902 Summer **3.** Silflor MiniNatur grass flock 006-31 Spring **4.** -33 Early Fall **5.** -37 Beige **6.** -35 Golden Beige **7.** Polak 5979 Yellow Flowers **8.** Noch 23100 Nature Tree with 07144 medium green leaf foliage **9.** Silflor MiniNatur (725-21 and -22) Weed Tufts **10.** Silflor MiniNatur 920-21 Beech Foliage (Spring)

For my bridge scene, I used materials from several different European scenery manufacturers. These included 8 x 11 inch scenery mats from Polak Models **A** that I combined and trimmed to fit. I also used a variety of static grass flocking material in various lengths from Silflor MiniNatur **B**.

When choosing scenery materials, it's important to keep everything within the same color palette, so that the grass, trees, bushes, and other vegetation blend together realistically. I was also careful to make sure the colors of the scenery materials matched those of my photographic backdrop **C**.



For the forest ground cover on the embankment between the upper and lower levels, I cut scenery sheets **A** to fit. I used Model Scene F603 Forest Base – Late Summer sheets. [GLX Scale Models (www.glxscalemodels.com) distributes Model Scene products in the United States – Ed.] After moistening the sheets to make them more flexible, I attached them to the scenery base with white glue. Foam Nails from Woodland Scenics held the sheets in place until the glue dried.

Using white glue, I attached pieces of 5902 Summer and 5903 Autumn Wild Bushes from Polak Models (www.polakmodel.com) to the area around the bridge abutments. Then I brushed diluted white glue over the ground cover between the dirt road and the bushes.

While the glue was still wet, I added grass flock using a static grass applicator that I made from an electric fly swatter **B**. [Static grass applicators are



commercially available from GrassTech USA, Noch, and Peco, among other manufacturers. – Ed.] The applicator has a grounding needle connected to it that must be stuck into the wet layout surface in order to function properly. Then I filled the device's sieve with flock, turned it on, and shook it over the wet glue. The statically charged flock then stood on end, providing a realistic texture. I used a variety of flock in different lengths and shades of green. See "Choosing Colors" on the previous page for a list of the materials that I used.

I continued working my way down the riverbanks, applying more flock and Wild Bushes **B**. For all the vegetation, I used more lush-looking shades of green closest to the water's edge.

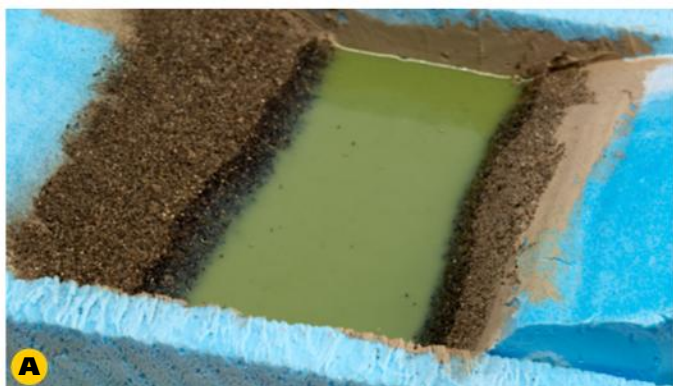
After allowing the glue to dry overnight, I vacuumed the area clean. I attached a piece of screen over the vacuum nozzle so that I could capture and reuse the loose flock.



I used white glue to install larger bushes and small trees along the riverbanks. For the trees I started with Noch Nature Tree armatures that I'd painted gray. These armatures are natural products similar to Scenic Express SuperTrees. Once the armatures dried, I dipped them in diluted white glue, then sprinkled on Noch medium green leaf foliage material.

To form the larger trees that would form my forest view block **C** along the embankment, I glued pieces of Noch Nature Trees armatures to larger Woodland Scenics plastic tree armatures. After dipping the armatures in diluted white glue, I sprinkled on the Noch leaf foliage in medium green and dark green shades.

As shown in photo **C**, the access road continues between the main line and the trees along the embankment. I also added a NO TRESPASSING sign, which I'm sure my HO scale railfans won't be happy about.



To realistically model water I used Permakote, a two-part epoxy resin made by Wessex Resins & Adhesives (www.wessex-resins.com). This material hardens to a clear, glass-like finish. The techniques I describe would be appropriate for any two-part epoxy resin.

When working with resin, it's important to follow the proper procedures,

such as wearing chemical-resistant gloves. Following the manufacturer's directions, I poured the proper proportions of resin and hardener in a mixing cup. Then I folded the two substances together (don't just stir!), making sure to scrape the sides and bottom of the container. I worked the material for 3 to 5 minutes.



The two parts must be completely mixed together. If there are small pockets of resin that haven't been combined thoroughly with the hardener, then there will be sticky spots on the finished surface of the modeled water.

The resin can also be tinted using enamel paint. Simply add a few drops of paint to the mixing cup when



combining the resin and hardener. For Green River I used a few drops each of Humbrol 120 Light Green Matte and 94 Brown Yellow Matte to tint the resin.

After mixing, I placed the cup on top of a warm radiator for 5 minutes. This let the air bubbles rise to the surface. Placing the mixing cup on top of a jar of hot water would also work.

I made a small test area **A** from scraps of extruded-foam insulation board covered with the same paint and dirt-ground cover I'd used along the

layout's river banks. The test proved beneficial. In addition to checking the color, I could see that the resin crept up the test riverbanks by a 1/4" as it cured.

To avoid this unwanted effect from happening on my layout, I brushed a coat of Vallejo Clear Matte Varnish along the riverbanks **B**. The varnish dried clear and sealed the ground cover so that the resin water would be contained within the riverbanks.

Next I mixed up another batch of tinted resin and poured it over the



printed river bottom. The material has the consistency of thick syrup, so I used a stick to help distribute it evenly **C**.

I prefer to apply resin in a thin layer. That way, if I don't like how it looks, I can always add another layer.

I popped any air bubbles I found in the resin's surface by blowing on them through a drinking straw **D**. I changed the straw often as saliva, like water, will cause the uncured resin to haze. Once the resin was smooth, I let it completely cure for a few days.

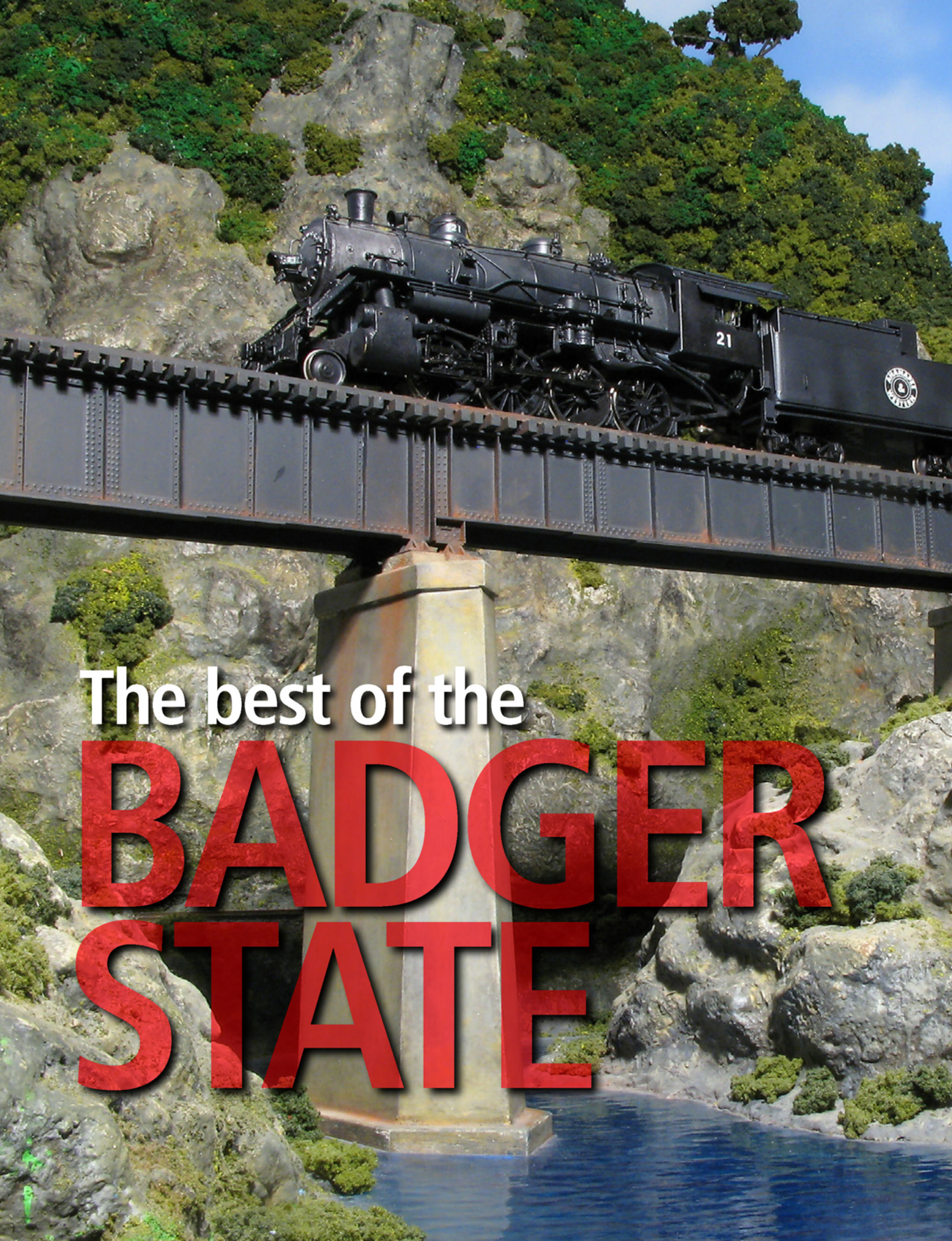


After installing the railroad bridge, I soldered feeder wires to the bridge tracks **A**. Except for the two bridge shoes on the truss bridge that rest on the pier, the bridge isn't glued down.

Once I set the highway bridge span in place on its piers, the scene was

complete. I took the photo **B** with the adjoining layout section removed to better show the backdrop opening to hidden staging. From normal viewing angles, the main line looks like it continues around the bend instead of into a hole in the backdrop. **MR**





The best of the

BADGER STATE



Scenes from Wisconsin served as inspiration for this 22 x 24-foot S scale layout

By Dave Rickaby

Photos by the author

When Larry Blank started work on his freelanced 22 x 24-foot S scale railroad in the early 2000s, he knew he wanted to re-create Wisconsin scenery. A lifelong resident of the Badger State, Larry had the opportunity to explore Wisconsin's rolling farmlands, hardwood forests, and glacial hills while biking, hiking, and driving. With a locale picked out, Larry needed a name for his layout.

Luck intervened when Larry purchased a 2-8-0 locomotive lettered for the "Ahanapee & Western" at a swap meet. The full-size Ahanapee & Western was a 34.5 mile line that extended from a connection with the Kewaunee, Green Bay & Western at Casco Junction to Sturgeon Bay and Algoma, Wis.

The railroad ceased to be a common carrier in 1972, and today the right-of-way is a recreation trail. As a bicyclist, Larry was familiar with the line and decided to model a freelance version of the A&W set in 1937.

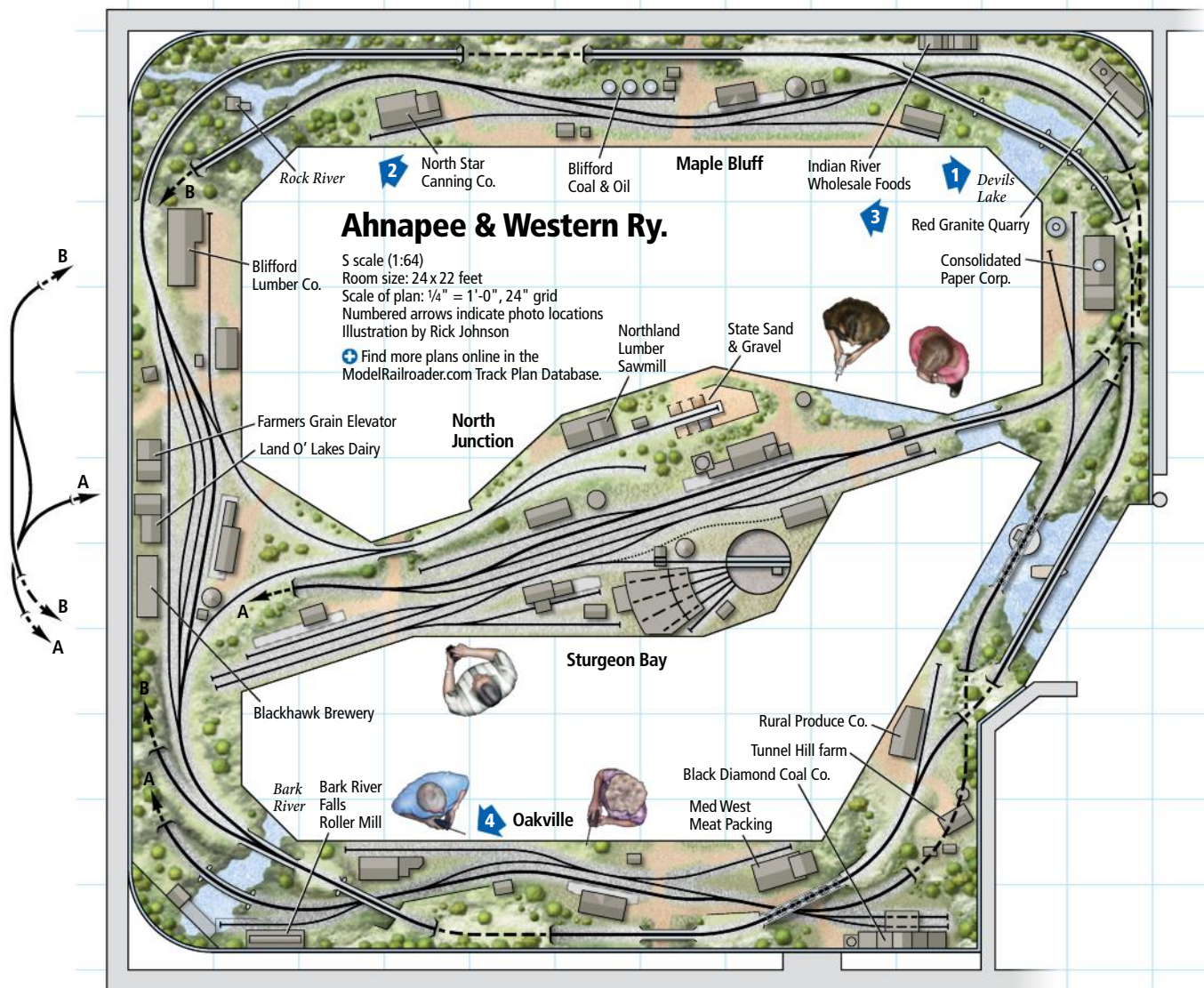
From Flyer to scale

Larry's father gave him an American Flyer train set in the 1950s. His father felt Flyer was more prototypical than the more popular Lionel because the tracks had two rails instead of three.

As Larry grew older, he wanted to add prototype details to his locomotives, freight cars, and structures to match those he was seeing on models featured in the hobby press. He began to shift his focus to scale modeling.

Larry quickly found there weren't many 1:64-proportion models available. Frustrated, he became an armchair model railroader and used his downtime

1 2-8-0 no. 21 crosses Devils Lake on Larry Blank's S scale Ahanapee & Western layout. The 22 x 24-foot model railroad features scenes from Wisconsin.



to plan his dream layout. Larry and his wife, Deanna, built their house in 1974. Layout construction didn't begin until the early 2000s.

Not quite the plan

Larry designed the A&W to be an around-the-walls, point-to-point layout with a peninsula. Early on, he decided that he wanted to make the model railroad portable. This decision was influenced by his wife's request to have the layout room double as a gathering space for parties and family functions.

Larry assured Deanna that he could build the layout in sections and store it in the adjoining laundry room. He built the open-grid sections 30" wide and 6- to 7-feet long so they could easily be carried through a doorway.

The back of each section rests on a framework secured to the concrete wall [See "The sectional design and scenery base" on page 56. – Ed.] The front of the

The layout at a glance

Name: Ahnapee & Western RR

Scale: S (1:64)

Size: 22 x 24 feet

Prototype: freelanced

Locale: glacial hills of Wisconsin along the shore of Lake Michigan

Era: 1937

Style: around the walls with peninsula

Mainline run: 200 feet

Minimum radius: 48"

Turnout minimum: no. 6

Maximum grade: 3 percent

Benchwork: open grid

Height: 42½" to 49½"

Roadbed: foam

Track: code 100 flextrack

Scenery: plastic resin reinforced with plaster and shaped extruded-foam insulation board

Backdrop: 1/8" tempered hardboard

Control: direct current

layout is supported by panel framework made from pine tongue-and-groove car siding attached upright to the floor. The sections rest on top of these supports. This arrangement allows Larry to slide the sections out, leaving the supports in place.

Since the layout is portable, Larry takes the Maple Bluff section of it to Trainfest, a model railroad show held the second weekend of November at

State Fair Park in West Allis, Wis., a Milwaukee suburb.

Once the railroad was built, it took over the room and parties were never hosted.

Track and rolling stock

The track plan is basically two loops around the room – one low, one high.

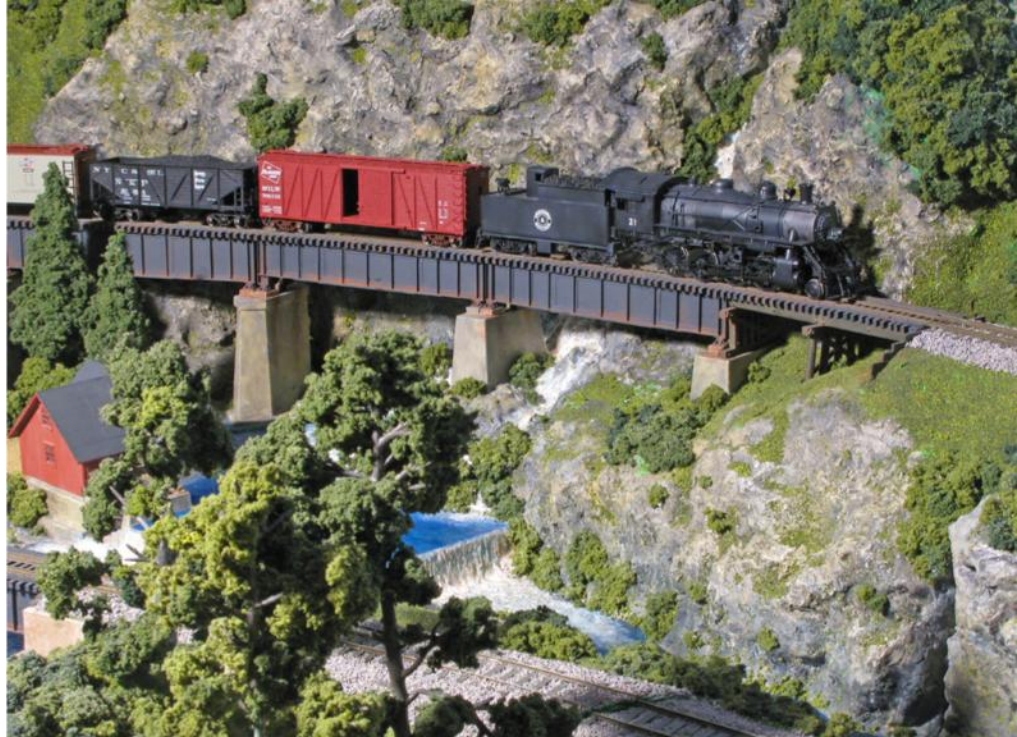
From the main terminal in Sturgeon Bay, trains traverse the lower loop, which Larry calls the Southern Division, set at 42½". Trains travel over the division before they reach a route that enables them to climb to the upper level, or Northern Division, at 49½". North Junction is the northern terminal and is where trains are turned on a wye for the return trip to Sturgeon Bay.

Larry uses Shinohara code 100 flex-track and the same company's number 6 turnouts. The roadbed is Woodland Scenics foam Track-Bed. Track nails every 2 feet help to keep the track and turnouts in alignment.

Once the track was installed, Larry painted it with a 50/50 mix of Floquil Rail Brown and Railroad Tie Brown [Testor Corp. discontinued the Floquil line. Acrylicos Vallejo no. 70.795 Green Gold is a close match for Rail Brown. Railroad Tie Brown is available as item number 4885 in the Model Master line. – Ed.]

A part of the model railroad yet to be built is the roll-out section spanning the entrance to the layout room. Originally conceived as a duckunder, this section will feature a scene reminiscent of the former Chicago & North Western bridge across the Wisconsin River in Merrimac, Wis. Once completed, the roll-out section will allow for continuous running.

Larry plans to add push-pull rods to line visible turnouts. He'll use switch motors for turnouts that are hidden or in hard-to-reach locations.



② This Northern Division freight has just left North Junction and is crossing the Rock River. The trees, ground cover, and shrubs are assorted Woodland Scenics products.

Rocks and ground cover

Larry models the hills and mountains on the Northern Division using carved and shaped extruded-foam insulation board. He then covers the foam with plaster.

In rocky locations, Larry paints the plaster gray. He then casts rocks using Woodland Scenics rubber molds. On the Maple Bluff side of the layout, he made castings with Smooth-Cast 300 liquid plastic casting resin. He now uses plaster.

Larry uses only three Woodland Scenics molds to cast rocks. He rotates and carves the castings so the repeating patterns are hard to detect.

For ground cover, Larry uses Woodland Scenics turf, foliage, Foliage Clusters, bushes, and underbrush in various shades of green. He also uses the same company's trees. Larry wants his layout to look like a "sunny day in May."

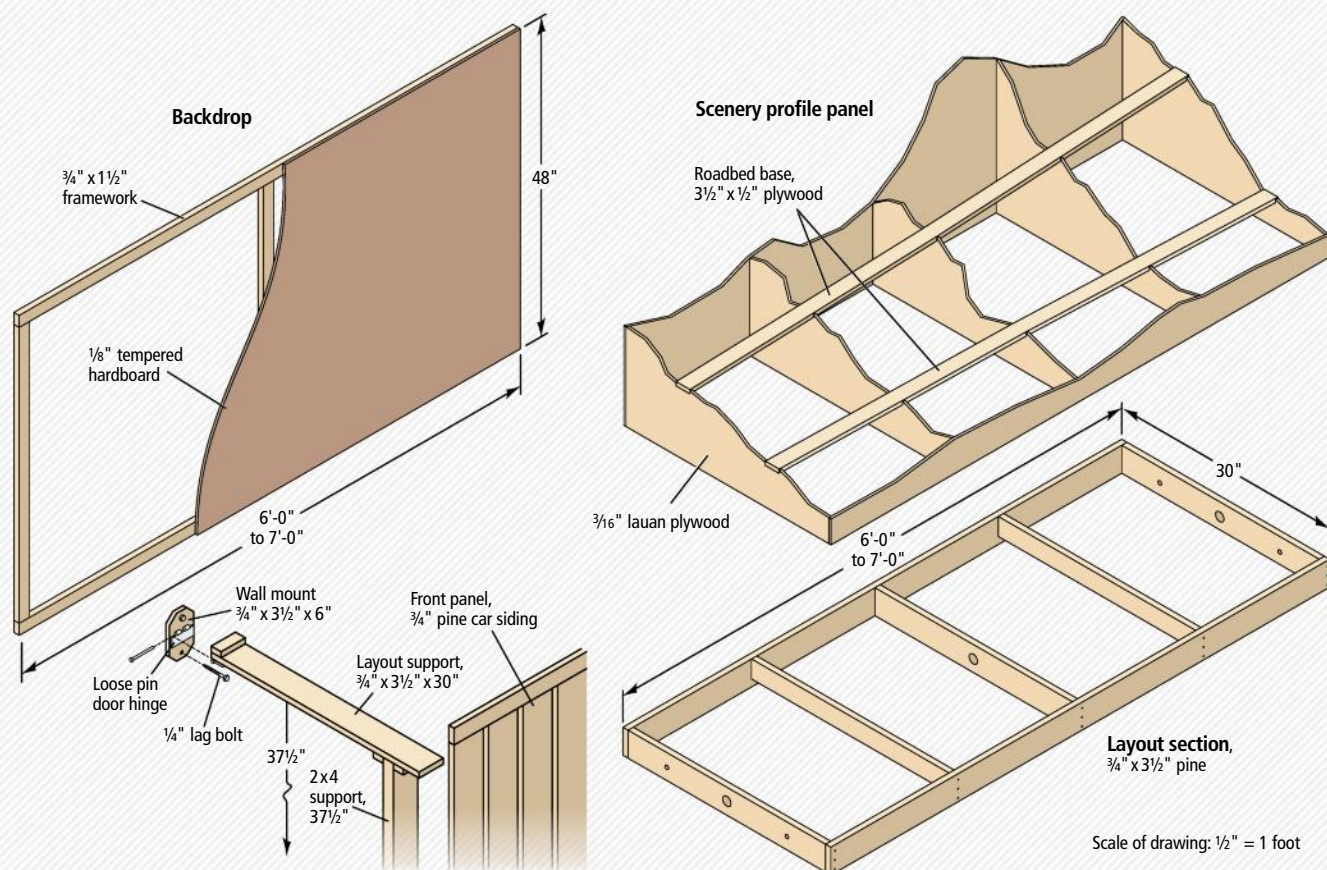
The backdrop is ½" tempered hardboard attached to a frame made from 1 x 2s. After painting the hardboard sky blue, he uses a New London Industries stencil and white paint to add clouds.

Water from Plexiglas

Two-part epoxy and factory-mixed water material are often used for modeling lakes and rivers. Many people are surprised to find that the water scenes on Larry's layout are ⅛" translucent



③ This view shows part of Larry's neatly finished model railroad and layout room. From left to right are North Star Canning Co., Blifford Coal & Oil, and the Maple Bluff depot and water tank.



The sectional design and scenery base

These isometric views show the pieces that make up a section of Larry's layout. One thing that sets Larry's layout apart from most sectional model railroads are the scenery profile panels.

Larry made profiled contours from $\frac{3}{16}$ " sheets of lauan plywood. He cut the ends to match the succeeding and preceding sections, with the intermediate panels attached every 2 feet to the open-grid benchwork.

Next, Larry crumpled several pieces of newspaper to build up the overall form for mountains and valleys. He then attached $\frac{1}{2}$ " pieces of plywood subroadbed across the profile panels.

On the Maple Bluff side of the layout, which Larry now takes to train shows, he applied two layers of industrial paper towel soaked in liquid Fiberglas resin over the

crumpled newspaper. Once the Fiberglas hardened, the scenery became self-supporting. Larry did all of this work outside and while wearing personal protective equipment.

Larry developed a similar scenery method that didn't involve Fiberglas for later sections. He used PlasterWrap from Scenic Express. Larry wet the plaster-impregnated gauze strips and draped them over the newspaper. When the gauze dried, he applied a layer of plaster over the top.

The combination of plaster-impregnated gauze strips and plaster didn't prove as strong as the Fiberglas-reinforced scenery. To remedy this, Larry turned the sections upside down, removed the newspaper, and coated the gauze with Smooth-Cast. The two-part resin quickly soaked into the gauze. Larry found that two coats of Smooth-Cast was just as hard as Fiberglas. — Dave Rickaby

textured Plexiglas, the same material used in shower doors.

Larry looks for Plexiglas that has a rippled texture, which approximates the look of moving water. He then makes a paper template of the shoreline and transfers that to the Plexiglas. Next, Larry uses a cutout tool with a tungsten bit to cut the material.

Larry lightly coats the underside of the Plexiglas with Testor's Translucent Blue paint. He also paints the riverbed gray before installing the Plexiglas.

Bridges and buildings

There weren't a lot of bridges and structures available in S scale when Larry started work on the A&W, so it was a forgone conclusion that he would have to scratchbuild many of these items. Larry drew detailed scale drawings of every structure and bridge that he needed to build.

Some of the structures are based on prototypes. The Rock River power house mirrors its full-size counterpart that

once stood on the shores of Lake Superior near Au Train, Mich. The depots are based on a standard Milwaukee Road design, with some modifications.

Larry uses Evergreen Scale Models sheet styrene for his structures. He builds the core from .060" styrene sheet. Then he attaches the appropriate siding to the core and adds doors, windows, and other details. There are two structures on the layout that are kit-built, both from GCLaser.



4 A freight train led by 2-8-0 no. 21 passes the Oakville freight house as a pair of Pullman heavyweights mark the end of the *Ahnapee Flyer* above. Larry purchased the custom-painted and lettered Omnicon Scale Models brass locomotive at a swap meet.

The curved stone-arch bridge, which allows access to a road and river, was scratchbuilt from styrene. Larry made rubber molds for all of the abutments and piers, casting them with Smooth-Cast 300.

To paint the bridge abutments to look like aged concrete, Larry blotted on several coats of flat gray, followed by ivory, white, and black. Using a piece of plywood as a palette, he mixed a few drops of each. Larry kept applying the paint with a paper towel until he got the effect he was after. He uses this blotting technique on his rock outcroppings, too.

Going old school

Larry operates his layout with a basic direct-current system. He shies away

from Digital Command Control because he sees model railroading as an escape from modern technology. He would rather use a power pack for his 1930s-era layout.

Eventually Larry wants to develop an operating scheme in the vein of his mentor Frank Ellison. [Frank built the famous Delta Lines layout and advocated that model railroads should be operated in a prototypical style. – Ed.] Larry plans to develop a timetable and incorporate car cards and waybills.

Nearing his 70s, Larry wishes for another 20 years and several thousand dollars so he can finish the Ahnapee & Western. To this end, his future projects include building and finishing the Sturgeon Bay segment and adding operations. **MR**

Dave Rickaby of Marinette, Wis., is a frequent contributor to Model Railroader magazine and its annual special issue Great Model Railroads. He is a heavy equipment operator for the City of Marinette.



Meet Larry Blank

Larry and his wife, Deanna, live in Muskego, Wis. He retired from the American Bowling Congress, where he worked as a printer. Besides model railroading, Larry enjoys drawing, painting, bike riding and hiking throughout Wisconsin, aviation, and anything mechanical. He's a member of the Badgerland S Gaugers club and the National Association of S Gaugers.

Safer, more efficient power supplies for DCC

Providing proper power for your Digital Command Control (DCC) command stations and boosters has changed dramatically over the past 25 years, and we've experienced three distinct generations of power supplies.

In the first generation, during the early days of DCC back around 1995, modelers were pretty much on their own to come up with a power supply that could provide the approximately 15 volts and 5 amps that most DCC systems required. With a couple exceptions, DC power packs just weren't that powerful, and transformers that large were few and far between – I got by with an 18 VAC 4 amp RadioShack unit.

Then a few companies like Loy's Toys and Springhaven Shops stepped in and began to offer kits with transformers powerful enough to meet the full demand of the DCC systems.

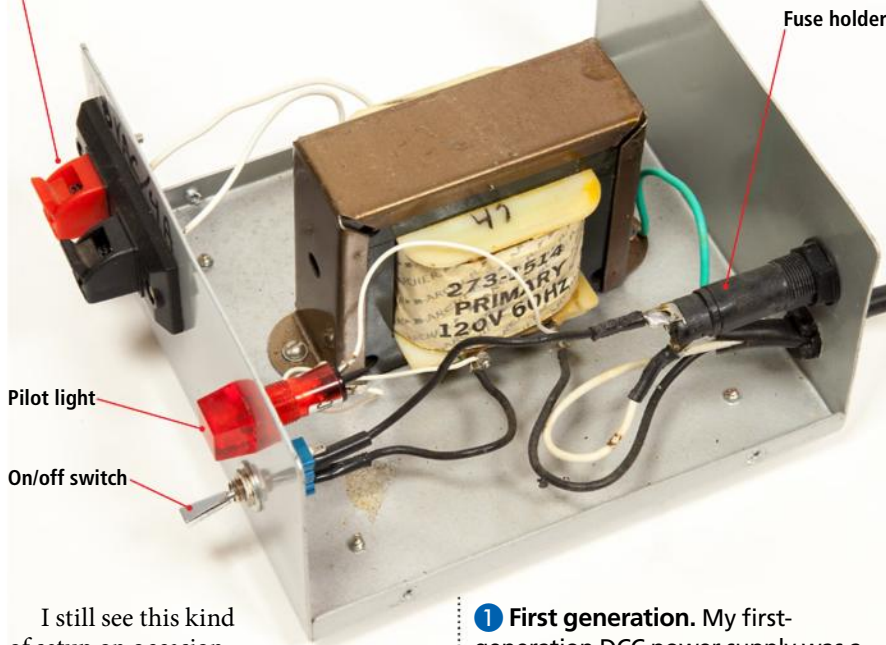
Typically, these do-it-yourself (DIY) kits came with a transformer, cord, switch, and fuse holder ① and supplied unregulated AC or DC power. The big missing component was a proper enclosure.

As a result it was common to see all these components mounted on a piece of plywood sitting on a shelf under the layout, with exposed 120 VAC connections right at the same level as curious children. I have seen such arrangements at train shows, clubs, and home layouts.



② **Second generation.** Model Rectifier Corp. included this second-generation power supply with its original Prodigy Advance DCC system.

Spring-loaded quick connectors



I still see this kind of setup on occasion today, and it's a major hazard and legal liability. So my first recommendation is if you have such a setup, either buy a safe enclosure, build one as soon as possible, or replace the whole thing with one of the power supplies I discuss below.

Due perhaps to issues of competition and legal liability, DIY kits disappeared from the marketplace when a second generation of power supplies was introduced by DCC manufacturers such as Bachmann, Digitrax, Model Rectifier Corp., and NCE. These typically had either a fuse or circuit breaker and an enclosure ②, and were tailored for the manufacturer's systems. Safety was now an issue, so these were Underwriters Laboratories (UL) listed units.

We've begun to see the introduction of the third generation of power supplies. These typically are switching power supplies that produce clean, well-filtered DC power, with a self-resetting fuse or circuit breaker, all in a sealed plastic enclosure. Some can even be set for different voltages ③. Digitrax recently overhauled its entire line of boosters and command stations, which now require a clean DC power supply.

① **First generation.** My first-generation DCC power supply was a do-it-yourself unit cobbled together with an 18 VAC, 4A transformer from RadioShack. I installed spring-loaded quick connectors, an on/off switch, pilot light, and fuse holder, all in a RadioShack enclosure.

So what brought on this third generation? The important thing about switching power supplies compared to the old ones is they're much more efficient. Switching power supplies use transistors to rapidly turn



Barrel plugs

Voltage settings

③ **Third generation.** Digitrax offers this third-generation switching power supply with seven voltage settings and a selection of eight barrel plugs.

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CONVRTR-25 Rated @ 2.5 AMPS

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- ✓ Stuck Horn Protection
- ✓ 10V to 18V Battery Range
- ✓ 2.0 inches long x 0.9 inches wide

CONVRTR-60 Rated @ 6.0 AMPS

- ✓ Suitable for high current O or G-scale
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- ✓ Stuck Horn Protection
- ✓ 10V to 24V Battery Range
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power on and off to alter voltage and current.

Many countries now have energy efficiency standards, and to meet them, manufacturers have been turning to switching power supplies. The power supplies also simplify command stations and boosters because these components no longer need to convert AC to DC at the proper current and voltage.

Most switching power supplies have a separate cord that allows them to be used in countries with different plug configurations, plus they usually have a switch or internal circuitry allowing them to be used with 110 to 240 VAC line power.

I've recently seen some modelers use switching power supplies from sources other than DCC manufacturers. Most of these power supplies are made in China and come in a perforated steel enclosure **4**. The downside is they usually don't come with a cord. However, they generally are protected against short circuits, overloads, and over-voltage conditions.

Companies like Digi-Key, Jameco, and Mouser all offer switching power supplies in a variety of voltage and amperage ratings. One thing to be aware of is the different ratings covering them. Some may carry both UL and European Union certification (Conformité Européenne, or CE), some may only have CE certification, and some may have no certification at all. This information is usually provided even on eBay listings.

Let's take a look at a typical setup. Notice from **5** that all the connections are made using screw terminals along one end of the enclosure. The first three terminals on the left are for the line power and ground wires in the power cord. For these I have a large collection of computer cords left over from my old office – dumpster diving may yet prove profitable!

On my power supply, the black wire is connected to the “L” terminal, the white wire to the “N”, and the green wire is for the ground. Next there are two “COM”

terminals for the negative DC wire and two “+V” terminals for the positive DC wire. Some units only have one set of DC terminals. Finally, the small yellow potentiometer is for adjusting the DC voltage.

This particular unit came with an amber plastic cover that fits over the screw terminals. However, since it doesn't completely cover the AC line connections, I keep the power supply in an enclosure with the command station/booster and a cooling fan.

Since I'm a bit of a worry wart, and in spite of the fact that the unit has internal overload protections, I still place a 3 amp fuse on the black AC input lead and an 8 amp fuse on the negative DC lead. They may not be necessary, but as Ben Franklin liked to say, “an ounce of prevention is worth a pound of cure.”

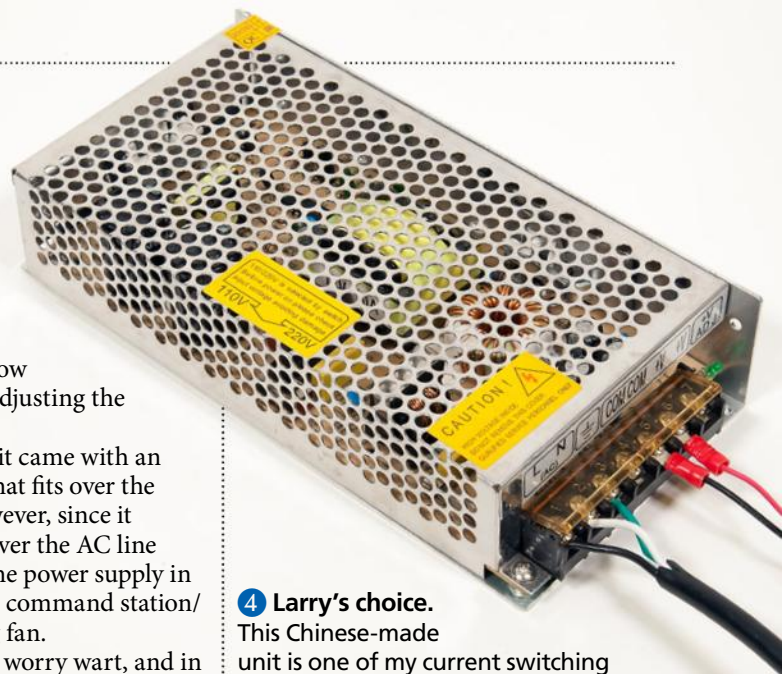
While we're talking about providing power, let's touch on a facet that's seldom mentioned. Our layouts are usually in basements or spare rooms that are likely served by only one electrical circuit, and they may even share that one circuit with other rooms in the house.

Also, in some houses, the ceiling lights may be on the same circuit as the wall outlets. In the United States, most general-use circuits have a breaker with

a 15 amp rating, and the general rule is that no circuit breaker should be loaded to more than 80 percent of the maximum for more than three hours. That means the continuous rating for most circuits should only be about 12 amps.

When you start adding power supplies for all the boosters, lights, and other accessories on your layout, take a little time to add up the amperage load you're installing. However, be aware that an 8 amp power supply doesn't pull that much current from the main.

For example, my 8 amp switching power supply only pulls 2.5 amps, and that's only when it's maxed out.



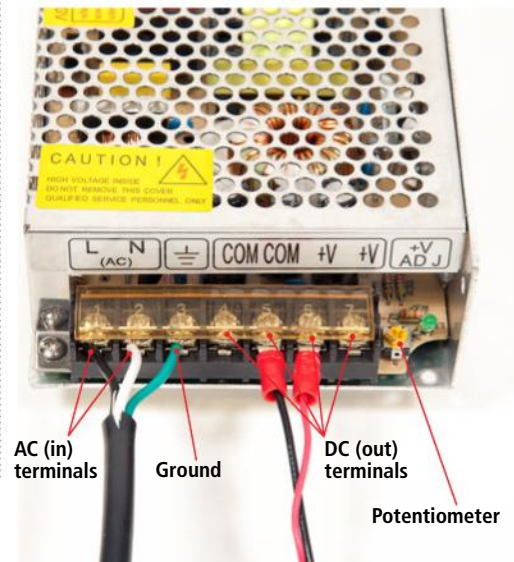
4 Larry's choice.

This Chinese-made unit is one of my current switching power supplies. It can be powered with either 110 or 220 VAC and comes in a perforated steel enclosure, providing good ventilation.

The same goes for your other power supplies. Most now have both the 120 VAC input rating and the DC output rating stamped on the enclosure. So take a few minutes to check your equipment and stay under the safe load rating of your house circuits.

And don't forget the mini fridge stocked with soft drinks, the coffee pot, the soldering iron, maybe a window air conditioner and a dehumidifier, and so on. You'll be amazed how fast all these things add up. **MR**

5 Making connections. The screw terminals placed along one end of the enclosure make connecting the AC and DC wires easy, and the small yellow potentiometer allows you to fine-tune the DC voltage. Note the amber plastic cover over the screw terminals.

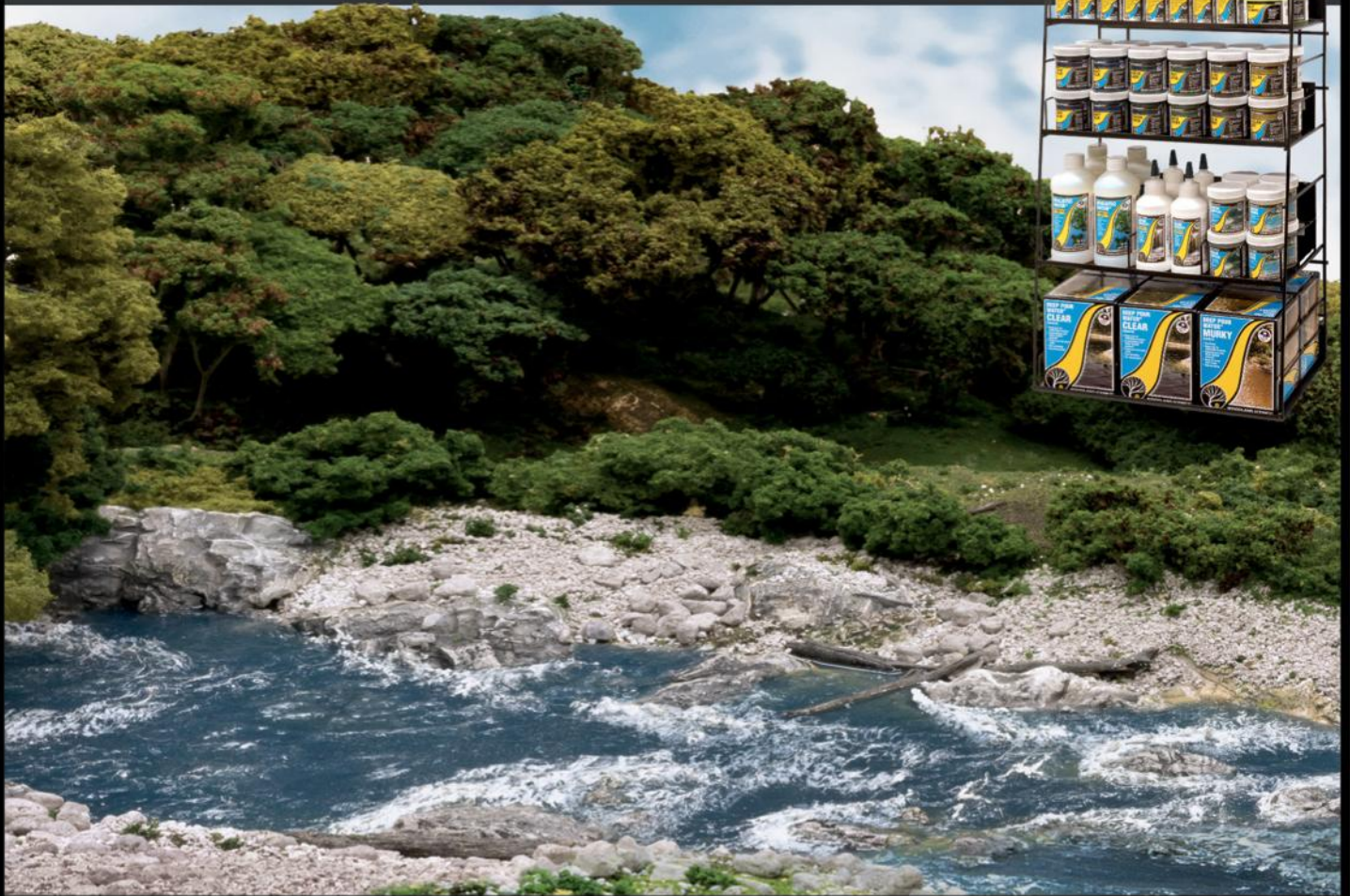


WHEN YOU START ADDING POWER SUPPLIES FOR ALL THE BOOSTERS, LIGHTS, AND OTHER ACCESSORIES ON YOUR LAYOUT, TAKE A LITTLE TIME TO ADD UP THE AMPERAGE LOAD YOU'RE INSTALLING.
— LARRY

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Walther'sMainline HO scale EMD SD60 diesel

An accurately proportioned body and exceptional pulling power highlight the Walther'sMainline SD60. The model features many tooling and other updates since its previous release as a Proto 2000 model, including new truck sideframes.

Walther'sMainline locomotives don't have all the factory-installed detail parts of a top-of-the-line Walther'sProto locomotive, but they do share the same powerful mechanism. Our test sample also came factory-equipped with a dual-mode SoundTraxx decoder that helped the SD60 rumble to life on our layout.

The prototype. With more than 1,000 units produced between 1984 and 1995, the SD60 ushered in a new generation of diesel-electric locomotives for General Motors' Electro-Motive Division. The locomotive used an all-new diesel engine, the 16-cylinder 710G, to produce 3,800 hp. The SD60 also featured a microprocessor control system.

Almost as popular as the standard, or "spartan," cab version, a wide-nose "North American cab" version was introduced in 1989. These units were designated SD60M. Isolated cab (also called WhisperCab) SD60I versions were introduced in 1993. (Walther's is also producing an HO scale SD60M; see the photo in News & Products on page 10.)

Many SD60s and its variants remain in Class 1 service today.

The model. From 1987 to 1989 EMD delivered 63 SD60s, including five SD60Ms, to the Soo Line. Our review sample models Soo Line no. 6036, part of a 21-unit order of standard-cab SD60s delivered in March 1989. This order received the Soo's red and white "hockey stick" paint scheme.

The model's dimensions match those of a prototype drawing in EMD's *SD60 Series* (Diesel Era, 1996). This includes having the correct scale 40" diameter

wheels. Placement of engine access doors, air intake grills, and most of the other molded detail on the plastic body shell also match these drawings.

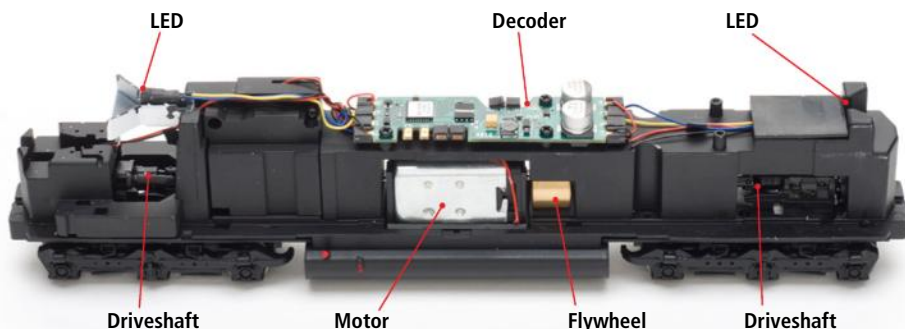
Specific to the Soo prototype, the vent on the fireman's side of the cab was moved forward to allow more room for the road number. On the model this vent is in the stock rearward position.

All the cab windows feature clear glazing, and the windshields have molded windshield wipers. The water level sight glass on the long hood also features clear glazing.

Separate detail parts include the plastic three-chime air horn and see-through radiator grills on top of the long hood, as well as properly positioned brake cylinders on the sides of the newly tooled HT-C truck sideframes. The handrails and stanchions are formed from flexible plastic to resist breaking.

As part of the Walther'sMainline series, the SD60 doesn't have factory installed grab irons, m.u. hoses, or other prototype-specific details such as a roof-top beacon or antennas. However, Walther's thoughtfully added drill starter points for the grab irons, which makes adding these details a much easier task. Various manufacturers sell HO grab irons and other diesel detailing parts at www.walthers.com.

The lettering and paint scheme mostly match prototype photos and a color drawing in the Spring 2004 issue of *The Soo* (The Soo Line Historical & Technical Society). The top of the model's short hood is black, which doesn't



The combination of a die-cast metal frame, all-wheel drive, and helical gearboxes make the Walther'sMainline SD60 an exceptionally smooth and power puller.

match the prototype information I found. Soo SD60s in this livery usually had strips of black anti-skid material placed along the leading edge and one side of the toilet access hatch.

The model doesn't have ditch lights, so it represents the prototype early in its career. According to photos, no. 6036 received ditch lights by 1991.

Mechanism. After removing the draft gear boxes and two screws behind the locomotive fuel tank, I carefully lifted off the body shell. Cutouts in the die-cast metal chassis reveal the can motor and brass flywheel, as well as the drive shafts that transfer power from the motor to truck-mounted gearboxes.

One of the biggest improvements over the old Proto 2000 release, the Walther's mechanism uses helical gears, where the gear teeth are angled rather than straight across. This virtually eliminates any gear noise that could distract from the locomotive sound system and provides exceptionally smooth performance.

The SoundTraxx decoder is screwed to the top of the chassis. Wires from each end connect the board to light-emitting diodes at each end of the chassis that illuminate the front and rear headlights and number boxes. A well-enclosed round speaker is mounted vertically just behind the cab.

Performance. The HO scale SD60 weighs nearly 1½ pounds. That weight, coupled with all-wheel drive, translates into pulling power. The model's drawbar pull is equivalent to 74 free-rolling HO scale freight cars on straight and level track.



Separate plastic details include fan grills and handrails.

PERFORMANCE TESTS	
DRAWBAR PULL	5.3 ounces 74 HO scale freight cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
6.25 (start)	4
7	18
9	56
12	80
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	4
7	28
14	50
28	70

On our Milwaukee, Racine & Troy layout, the SD60 hauled 16 cars up a steady 3 percent grade without slipping.

During DC and DCC speed tests, the model started moving at 4 scale mph without any hesitation. The top speed of the prototype is 70 mph, which the model matched during its DCC speed tests. The model was a bit faster under DC control, attaining 80 scale mph with 12V applied to the track.

The model easily hauled scale 50-foot cars through 18" radius curves and no. 5 turnouts. All-wheel electrical pickup kept the lights and sounds steady.

DCC operation. The SoundTraxx decoder includes many of the effects found in a fully featured Tsunami version. User-triggered effects include the bell, long and short horn, and headlight control. Unlike the Tsunami, the decoder doesn't feature a dynamic brake fan, coupler, or independent brake.

I could easily adjust most aspects of the decoder's performance with configuration variables (CVs). I programmed the decoder's long address to match the locomotive number, and added acceleration and deceleration momentum. The decoder also supports both preset and custom speed table selection as well as function mapping.

For example, out of the box the headlights operate according to the direction of travel. For more prototypical operation I remapped the front and rear headlights for independent ON/OFF control.

I also appreciated that the individual effect volume levels are adjustable. I left the engine sound at the factory default, but set the air horn at its maximum level. To my ear all the sound reproductions, including the Leslie air horn and the EMD 710 diesel engine, sounded like their prototypes.

Facts & features

Price: \$199.98 (DCC sound), \$129.98 (DC, no sound)

Manufacturer

Wm. K. Walther's Inc.

P.O. Box 3039

Milwaukee, WI 53201

www.walthers.com

Era: 1984 to present day (1989 to 1991 as detailed and decorated for Soo no. 6036)

Road names (multiple road numbers)

SD60 (spartan cab): Soo Line, Canadian National, Chicago & North Western, CSX, Norfolk Southern, and Union Pacific

SD60M (wide cab): Burlington Northern, Burlington Northern Santa Fe, Conrail, CSX, Norfolk Southern, and Union Pacific. Undecorated version also available.

Features

- All-wheel drive and electrical pickup
- Die-cast metal chassis
- Five-pole skew-wound motor with brass flywheel
- Nine-pin DCC socket (DC version)
- Proto-Max metal knuckle couplers at correct height
- RP-25 contour metal wheels in gauge
- SoundTraxx dual-mode decoder (DCC version only)
- Weight: 1 pound, 7.4 ounces

I set up a multi-unit consist featuring two Walther's Mainline SD60s and an Athearn SD40-2. The decoder supports CVs 21 and 22, which allowed me to set up function control under the advance consist address.

A full list of the supported CVs and the factory default values is available at www.soundtraxx.com.

DC sound. When operated with a DC power pack, sound effects are more limited. The prime mover ramped up or down with the throttle. Under about 20 scale mph, the bell sounded. The appropriate whistle signal sounded for each direction change and when the locomotive stopped. Sounds were momentarily interrupted whenever the direction switch was flipped.

With its accurate proportions and smooth performance, the Walther's HO scale SD60 is a six-axle workhorse that would look right at home on layouts set in the 1980s to present day. — Dana Kawala, senior editor



MTH Electric Trains S scale F3

A popular Electro-Motive Division

F unit is again available in S scale. MTH is releasing its version of the S-Helper Service F3, complete with Proto-Sound 3.0 and full Digital Command System (DCS), Digital Command Control (DCC), alternating-current (AC), and direct-current (DC) capabilities.

The prototype. General Motors built 1,807 F3s, both A and B units, from July 1945 until February 1949. The F3 replaced the FT and F2 in EMD's catalog. The F2 was an interim model, sharing its electrical components with the earlier FT and an upgraded 16-567B diesel engine and longer frame with the newer F3.

The F3 featured a new generator/alternator that offered better reliability as well as more power, 1,500 hp per unit rather than the 1,350 hp of the earlier models. The new D12 generator also allowed EMD to switch to electrically driven auxiliaries, such as traction motor blowers and radiator fans, in lieu of the belt-driven auxiliaries of the FT.

The model.

MTH's F3 is based on the S-Helper

Service F3 from 2006. Upgrades include the MTH Proto-Sound 3.0 control system, allowing operation on MTH's proprietary Digital Command System.

Switches behind the locomotive's rear door allow the selection of DCS or DCC, lighting and direction control in DC and AC, and a volume knob to control sound levels. The door and its frame are cleverly held in place with a magnet.

The body shell is a one-piece plastic molding with separately applied details including grab irons, lift rings, windshield wipers, and m.u. hoses. The model comes with American Flyer-compatible couplers and wheelsets, but scale parts are included. Instructions in the owner's manual detail the switch in a few steps each. [The conversion was also demonstrated in the September 2017 episode of "Cody's Office," which subscribers can watch at www.ModelRailroader.com. —Ed.] The front scale coupler was within tolerance for S scale height, but the rear coupler was .032" too low.

All major dimensions match drawings published in *F-units: The Diesels That Did It* by Jeff Wilson (Kalmbach Publishing, 2000) and *Specifications: General Motors 1500 H.P. "Lead" Unit Diesel-Electric Locomotive* (General Motors, 1945).

Our sample unit was decorated for Seaboard Air Lines. The SAL Pullman Green paint and the wide SAL Yellow

Facts & features

Price: \$379.95, powered A unit with DCS Proto-Sound 3.0; \$199.95, non-powered A unit; \$359.95, powered B unit with DCS Proto-Sound 3.0; \$189.95, non-powered B unit

Manufacturer

M.T.H. Electric Trains
7020 Columbia Gateway Drive
Columbia, MD 21046-1532
www.mthsgaugetrains.com

Era: 1948 to 1966, as decorated for Seaboard Air Line

Roadnames: Seaboard Air Line (A unit only); Atchison, Topeka & Santa Fe; New York Central; Jersey Central Lines; Pennsylvania; Union Pacific (A and B units)

Features

- All-wheel-drive and electrical pickup
- Die-cast metal chassis
- Flywheel-equipped motor
- Minimum radius: 20"
- Optional S scale couplers and scale wheelsets, in gauge
- Digital Command System with Proto-Sound 3.0 sound
- Weight: 2 pounds, 1.5 ounces

stripes were smoothly applied and opaque. The orange stripes bordering the wide yellow stripe were translucent and fuzzy around the nose contour.

The model is equipped with dynamic brakes, an option SAL didn't specify when it ordered 11 F3As for delivery in

Continued page 66

MORE ON THE WEB

Check out a video demo of the sound-equipped MTH S scale F3 in action. Visit ModelRailroader.com

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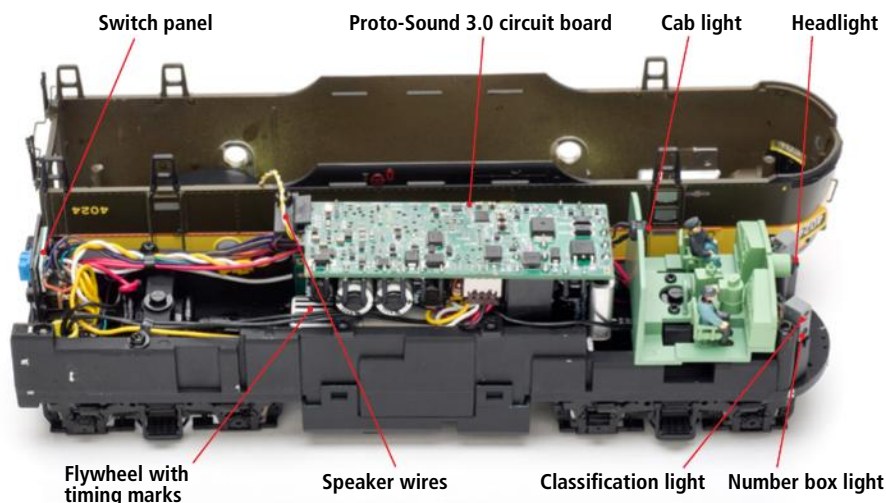
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The MTH F3A rides on a die-cast metal frame and is powered by a flywheel-equipped can motor. The cab includes painted engineer and fireman figures.

Continued from page 64

1948. MTH also sells a version of the F3A with a steam generator and no dynamic brakes, as well as similarly equipped B units.

MTH's body shell is the late Phase II style built between December 1947 and July 1948, sporting two porthole windows on each side with wire screens between them and shrouded radiator fans on the roof.

Under the hood. Four screws hold the frame to the body shell. There are also locking tabs at the center of the shell above the fuel tank. Just to be safe, I also removed the couplers and pilot.

Once inside, I found a can motor with flywheels mounted in the center of the die-cast metal frame. All eight wheels are powered and wired to pick up current from the track. The rear flywheel is marked for MTH's timing system, designed to keep the locomotive operating at the selected speed.

PERFORMANCE TESTS	
DRAWBAR PULL	Drawbar pull: 4.8 ounces 25 S scale freight cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
7 (start)	1.6
8	6.5
9	10
10	13
11	18
12	58
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	4.5
7	31
14	62
21	68
28	68

The DCS Proto-Sound 3.0 circuit board is mounted above the motor. Light-emitting diodes (LEDs) illuminate the headlight, classification lights, and number boxes. There's a separate cab light that comes on with the number boxes when the locomotive is stopped.

The speaker is mounted to the inside of the body shell facing up under the rear radiator fan. A small plug connects the speaker to the wiring harness in the locomotive frame.

On the test track. I started testing the MTH Trains F3A with an NCE PowerCab using DCC. In speed step 1, the locomotive started moving at 4.5 scale mph. It reached a top speed of 68 scale mph in speed step 28.

In addition to the lights, horn, and bell, MTH also includes a "Rev Up" and "Rev Down" feature using F19 and F20. These allow the operator to control the diesel engine sound independently of the locomotive's speed.

I programmed the locomotive to change its address to the cab number. I also remapped the Rev Up and Rev Down features to different function keys, F7 and F8 respectively, to make them more accessible on the PowerCab.

Function 5 toggles the cab, classification, and number box lights on and off. I was able to control the classification lights separately by creating a function key for them (F4) using MTH's remapping instructions.

Both tasks were easy to do using programming on the main. MTH discourages using a programming track because the capacitor package on the DCS circuit

board interferes with the low-voltage protocol of the programming track. Just make sure you've removed any other locomotives with the factory address of 3 before programming on the main.

On direct-current, the start-up sequence played at 6V and the locomotive began moving at just under 2 scale mph at 7V. Top speed at 12V was 58 scale mph, but MTH designs its locomotives to operate on up to 22V. Sound is limited to the diesel engine rpm rising and falling as speed increases and decreases.

I also tested the locomotive using MTH's DCS system. The locomotive performed well, and it was easier to access the Rev Up and Rev Down functions and to acquire the locomotive. Just remember to set the DCS/DCC switch to the proper mode. I didn't test the locomotive on alternating current. *Classic Toy Trains* reviewed the MTH F3A in the September 2017 issue and tested AC operation.

Using an S-Helper Service train set, I created a temporary test track. The locomotive had no trouble negotiating the 20" radius curves, even when they were assembled into back-to-back S curves. It also negotiated an S-Helper Service no. 3 turnout without incident. With a drawbar pull of 4.8 ounces, the MTH F3 should pull 25 S scale freight cars on straight and level track.

Overall, this is a sharp model. With its modern electronics package, this F3 would make a welcome addition to any transition-era S scale layout. – Eric White, associate editor



Switches inside the rear door allow selection of DCS or DCC control, as well as lighting and direction in AC or DC.

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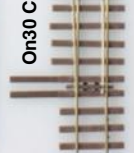
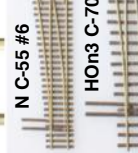
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Micro-Trains Line N scale 50-foot PS boxcars

With more than 50,000 built over the course of nearly two decades, Pullman-Standard's 50-foot steel boxcar has been a common sight on North American rails for half a century. Micro-Trains Line Co. is offering late-production models of the ubiquitous freight car, with single plug doors, 10-foot sliding doors, or double 8-foot sliding doors.

After World War II, railroads found themselves in need of more, and larger, freight cars to handle increased demand from shippers. Pullman-Standard started building 50-foot boxcars in 1949, and production ramped up over the next few years. In 1961, P-S made some minor changes to the design, including fish-belly side sills, short corner ladders, low brake wheels, and no running boards. Micro-Trains' models represent these late-production cars, built after 1961.

The models. We reviewed three samples: an Oxide Red Atchison, Topeka & Santa Fe plug-door car; a green Gulf, Mobile & Ohio single-door version; and a Denver & Rio Grande Western model in Freight Car Red with orange double doors. The single-piece car bodies have accurate roofs and ends, finely molded panel weld lines, molded short ladders and grab irons, separately applied low brake wheels, and etched-metal crossover platforms.

The paint was smoothly and evenly applied, and the white printing was without flaws or gaps. Even the COTS (clean, oil, test, and stencil) panels were legible under magnification.

The bodies are snapped onto die-cast metal floors that give the cars most of

their 1.1-ounce weight. (This matches the National Model Railroad Association's recommended weight under Recommended Practice 20.1.) Below the floor is a molded plastic casting combining the underframe and brake gear. Though the prototype description on two of the cars' jewel boxes mentions cushioned draft gear, the underframes are standard types that don't model this feature.

All three cars have truck-mounted draft gear, typical of Micro-Trains cars. In fact, the Gulf, Mobile & Ohio car, which should have a longer length over the couplers' striking faces due to its Hydroframe-40 cushioned draft gear, actually has shorter draft gear boxes than the other two.

Prototypical variety. I was impressed that the car bodies varied to follow their prototypes in more than just the door styles. Prototype photos showed a variety of side sills on the car; early models had notched sills, while later-production cars had either a shallow fish-belly profile or a more abrupt diagonal. Micro-Trains' cars model both of the latter types. The GM&O car also bears riveted gussets surrounding the bottom corners of the door openings, as depicted in drawings of a GM&O car published in *Mainline Modeler*. The dimensions I measured on all three cars matched those drawings, except the length over the couplers.

The cars ran flawlessly over the 13" curves and no. 6 turnouts of our N scale Red Oak project layout, and coupled easily to each other. Though the couplers were mounted at the correct height, their

Facts & features

Price: \$23.70 (plug door), \$25.90 (10-foot door), \$29.60 (double doors)

Manufacturer

Micro-Trains Line Co.
351 Rogue River Parkway
Talent, OR 97540
www.micro-trains.com

Era: mid-1960s to late 1980s/early 1990s, depending on road name

Road names: Atchison, Topeka & Santa Fe (with plug doors); Denver & Rio Grande Western (with double 8-foot Pullman-Standard doors); Gulf, Mobile & Ohio (with 10-foot Pullman-Standard doors)

Features

- Die-cast metal floor with one-piece molded plastic underframe/brake gear
- Etched-metal crossover platforms
- Magne-Matic couplers, at correct height (trip pins about .02" high)
- One-piece molded plastic body
- Roller-bearing trucks with molded plastic wheelsets, in gauge
- Weight: 1.1 ounces (matches National Model Railroad Association RP-20.1)

trip pins were about 0.2" too high, which was easily corrected with a pair of trip pin pliers.

Model railroads set in the 1960s to 1990s need a lot of 50-foot boxcars. With its variety of door arrangements and prototypical details, Micro-Trains' offerings let you build a realistic roster of cars that don't look like they all emerged from the same cookie-cutter car shop.

— Steven Otte, associate editor

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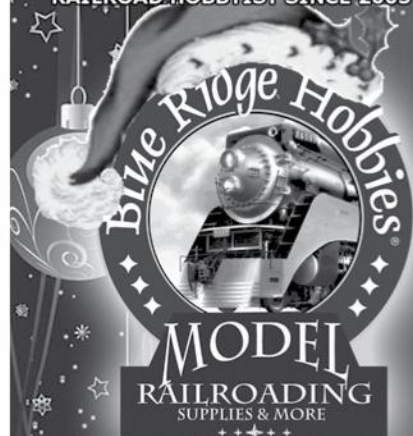
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QUICKLOOK

Accurail HO combination-door boxcar kit

Price: Single car, \$17.98; two-pack (one Metallic Brown, one pre-Burlington Northern merger green), \$34.98

Manufacturer

Accurail

P.O. Box 278

Elburn, IL 60119

www.accurail.com

Era: 1959 to early 1980s (as decorated)

Comments: Accurail has released an HO scale 40-foot combination-door boxcar kit decorated for Northern Pacific (NP). The model features a one-piece injection-molded plastic body and a plastic underframe with modeler-installed brake appliances.

Northern Pacific used its 40-foot combination-door boxcars to serve the lumber and grain industries. In lumber service, the 14-foot door opening made the cars easy to load and unload. For grain shipping, the plug

door would be closed and the 6-foot opening coopered with a grain door.

Our sample is decorated as NP no. 8759, part of the railroad's 8450 through 8849 series. More than 1,100 full-size cars were built by the NP at its shops in Brainerd, Minn., between 1958 and 1960.

The lettering placement mostly matches prototype photos found in Todd Sullivan's *NP Color Guide to Freight and Passenger Equipment* (Morning Sun Books Inc., 1995). The reporting mark, road number, and related data should be moved to the left about 1/16".

I compared the car to a prototype drawing from the Northern Pacific Railway Historical Association website (www.nprha.org). The Accurail model is a decent match for the NP prototype. Most of the dimensions were correct or within a few scale inches of the proto-



type. The biggest differences were the distance over the strikers (a scale 6" too short) and the wheel centers on the trucks (a scale 5'-9" instead of 5'-6").

The door stops for the plug door were left off. The model has a riveted diagonal-panel roof, but it should be an overhanging diagonal-panel roof.

The 33" plastic wheels are correctly gauged. The body-mounted Accumate couplers are at the correct height. At 3.6 ounces, the boxcar is .2 ounce too heavy per National Model Railroad Association Recommended Practice 20.1.

The Accurail boxcar isn't a spot-on match for the NP prototype, but it does capture the flavor of the full-size car. The kit would also be a good starting point for adding railroad-specific details. – Cody Grivno, associate editor



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QUICKLOOK

Atlas Z scale flextrack

Price: \$5.95 per 24" length

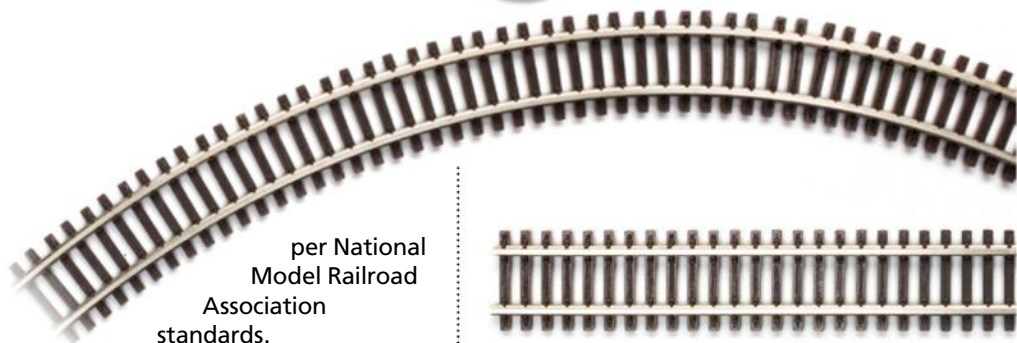
Manufacturer

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

Comments: A long-time manufacturer of N and HO scale track (as well as O scale track under its Atlas O brand), Atlas Model Railroad Co. is now making Z scale flextrack.

At 24" long, Atlas Z scale Super-Flex Track is the longest Z scale track section on the market. Each track section features code 55 nickel-silver rail on an injection molded plastic tie bed. One side of the tie bed has spaces between every other tie. This allowed me to easily curve the track to a 4" radius without kinking the rails.

I used digital calipers to measure the track. The track gauge is correct



per National
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standards.

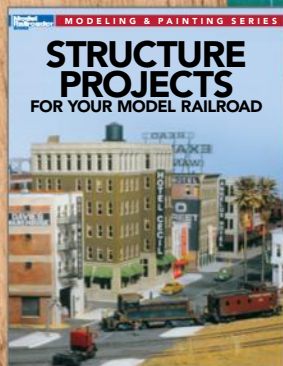
I easily connected several flextrack sections together using Atlas N scale code 55 rail joiners. Then I ran a Z scale freight train led by a Micro-Trains SD40-2 along the track bent to a 6" curve. The locomotives and freight cars rolled smoothly over the rails and joiners.

The Z scale track uses the same code 55 rail as Atlas N scale track. Code 55 rail measures 1 foot high in Z scale. This is a few inches higher than the heavy rail used on prototype railroad track. For example, prototype 155 pound rail measures about 8" high.



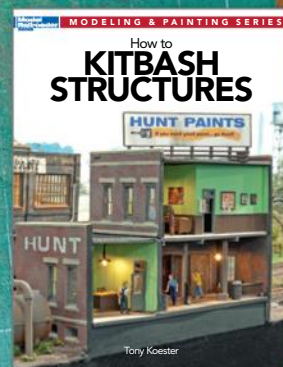
The plastic ties measure a scale 10" wide, with a scale 21" spacing between ties (centerline to centerline), which is within the range of North American prototype railroads. The plastic ties also have molded spike, tie plate, and simplified wood grain details.

According to an Atlas representative, the firm is planning on making Z scale turnouts as well. Modelers should check the www.atlasrr.com for updates. This new flextrack is a helpful option for Z scale layout design. – Dana Kawala

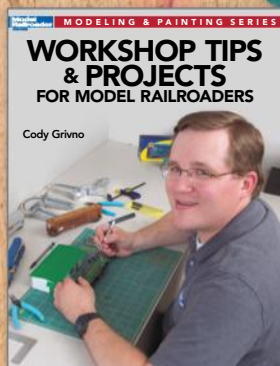


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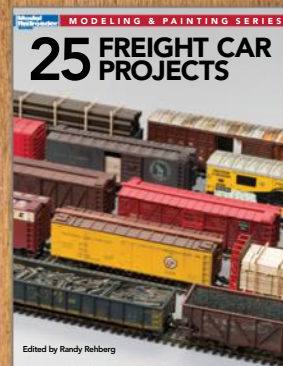


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It's a snowy winter day in Gold Mine Gap, but the Devil's Gulch & Helengon silver ore train must go through so the precious metal can be smelted into Christmas gifts. Ron Foreman of Glendale, Calif., sifted baking soda onto his HOn3 layout to make the temporary winter scene. He also shot the photo. The ore cars are downscaled Grandt Line O scale kits.





Send us your photos

Trackside Photos is a showcase for the work of *Model Railroader* readers. Send your photos (digital images 5 megapixels or larger) to: *Model Railroader*, Trackside Photos, P.O. Box 1612, Waukesha, WI 53187-1612; or upload them to <http://fileupload.kalmbach.com/Submission/contribute>. For our photo submission guidelines, contact associate editor Steven Otte at sotte@mrmag.com.

West Side Lumber Co. Heisler no. 2 switches the Port Carrie Sawmill. Barry Dupler of Woodinville, Wash., photographed the scene on Bill Scheef's Sn3 Wind River RR in Redmond, Wash. The locomotive is a P-B-L model. The sawmill and sheds are part of the McCabe Sawmill series of laser-cut wood kits from B.T.S.



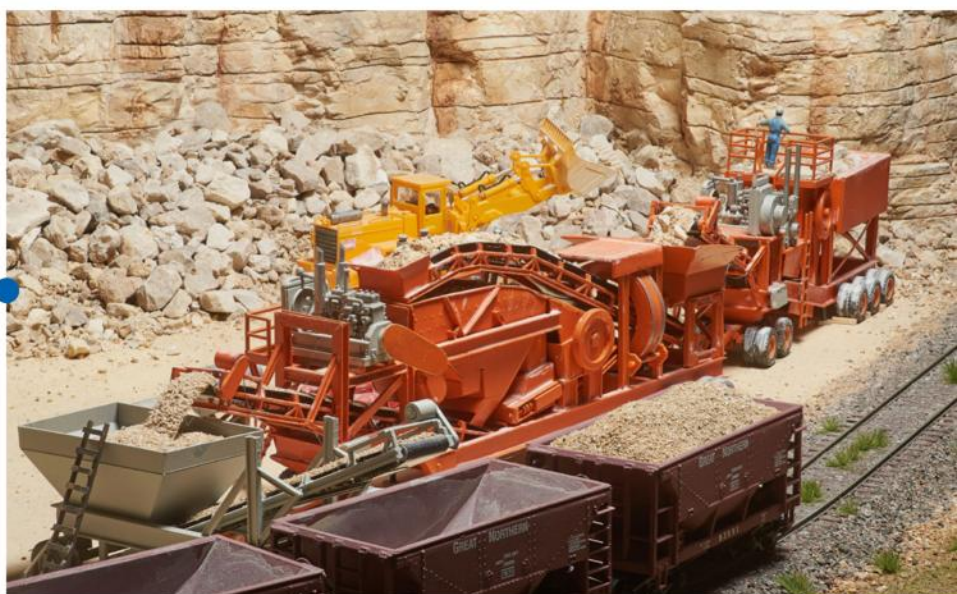
Baltimore & Ohio F7 no. 4580 rumbles through the grade crossing in Heckton with coal cars in tow on a hot summer day. The F unit is an InterMountain model weathered with acrylic paints by Dale Ridgeway of Bishopville, Md. Dale photographed the scene on his HO scale B&O Ridgley Division layout.

MORE ON THE WEB

☛ Ron Foreman's photo on page 74 is this month's computer wallpaper. Download it free from ModelRailroader.com



A string of ore cars is loaded with crushed stone at a limestone quarry in southeastern Minnesota. Greg Roverud of Spicer, Minn., scratchbuilt the primary breaker and the rock crushing unit to model prototypes from the 1960s, in which his HO scale layout is set. Aury Glenz of Sunburg, Minn., shot the photo and combined images with computer software for greater depth of field.



Bombers, Decks, and Cement Heads

Railroad lore makes a rich tapestry, a work in progress ever weaving exquisite new threads in itself. Its fabric has contributed much to our language, expressions from “milk run” to “roundhouse right.” It delivers its best in the nicknames railroaders coin and the stories they tell.

“Who put the bombers on the Jazzer?” an exasperated Lehigh Valley trainmaster once thundered. It’s hard to top such a colorful expression. The Jazzer was JSA-1, a Jersey City-to-Sayre, Pa., symbol freight. Valley called its F-units “bombers” because their laboring Electro-Motive Division 567 engines reminded crews of the drone of an air raid. SW8s sounded the same, so they became “pups” as if a litter produced by bombers.

Railroaders often used different names than railfans and modelers. It’s long been common for enginemen to use number series to describe their power, as “I have three 8100s tonight,” not three ES44ACs. Santa Fe crews called their famous red-and-silver EMD passenger engines “Red Noses,” not “Warbonnets.”

Alco PAs were Alco Red Noses.

Southern Pacific roundhouse foremen serviced “Malleys,” not Cab-Forwards. The term originated with the road’s first articulateds, Mallet compounds, but Malley came into general use for any articulated engine on the SP. (“Compound” refers to a

double-expansion engine design in which high-pressure steam used in one set of cylinders exhausted into a second and low-pressure set.)

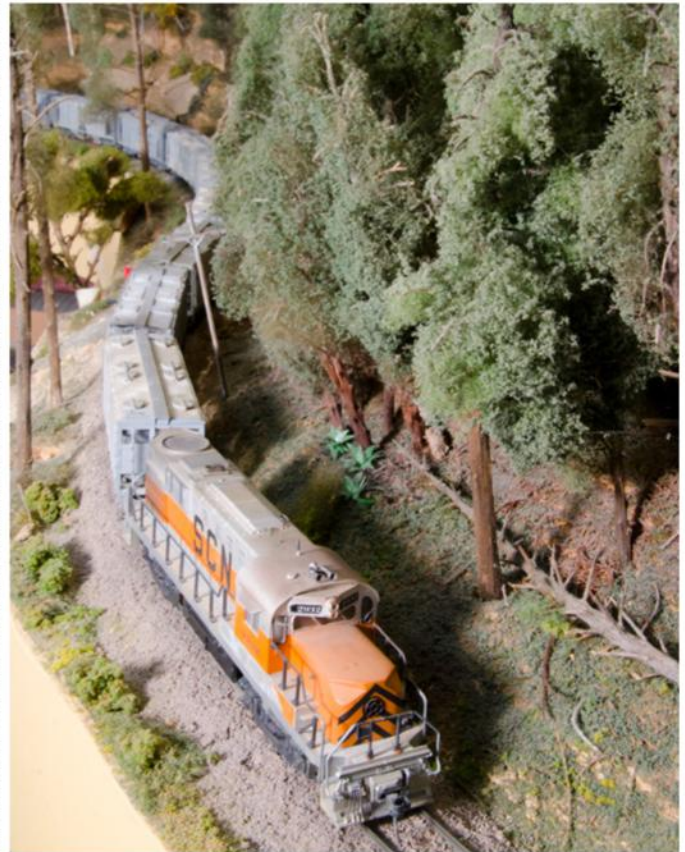
Company pride prevented SP from using “Santa Fe” for its 2-10-2s. They became “Decks,” perhaps derived from Decapods, which also had 10 driving wheels. The uneven exhaust cadence of three-cylinder 4-10-2s made them “Stuttering Decks.”

“Donkeys” were lashups of three or four SW1s required by bridge restrictions on Milwaukee’s branch from La Crosse, Wis., to Austin, Minn. The term’s origin isn’t clear, but it conjures up the image of a pack train.

Baldwin’s official DR-12-8-1500/2 engine designation belongs on the all-time mouthful list. Twelve axles stretching from coupler to coupler under a carbody more than 90 feet long made “Centipede” stick.

Such colorful nicknames greatly increase a layout’s authenticity. Jim Providenza’s Santa Cruz Northern has a good example in a train that trails a long string of gray covered hoppers on its way to and from a local cement mill. To the operating department, it’s Cement Loads West or Cement Empties East. To the crews, however, it’s slow, segmented, and somewhat troublesome, so it was dubbed the “Cementipede.”

Jack Ozanich’s Atlantic Great Eastern runs the “Night Crawler,” aptly named. It’s called for a 1:30



A sunny fall morning finds Santa Cruz Northern no. 2932 at work on the “Cementipede,” shoving empties up the Damsite Branch. Jim Providenza photo

a.m. run from Berlington to South Dover Yard that is, indeed, a crawl. It works many industries along the route, and, as an extra train, worms slowly from one passing siding to the next to meet scheduled opposing trains.

John Allen’s Gorre & Daphetid rostered a railcar known as the Ruptured Duck. Who couldn’t appreciate his twist on a Rio Grande Southern Galloping Goose?

Nicknames are usually awarded, not claimed. Ray Hyson, a railroader who was also a talented cartoonist, had one of his characters quip, “Actually I like him for his mind. He never knows what’s going on.”

Rare is the road that didn’t endure a “Cement Head.”

I have yet to meet a railroader who didn’t laugh when I asked if he knew one. One such unfortunate fellow bristled at the name, so the men relented and rechristened him “3-2-1.” He simmered down, blissfully ignorant of its origins in the rule of thumb for the mixture of gravel, sand, and cement that makes good concrete.

I have good-naturedly scolded members of my crew for failing to pick up a loaded milk car, leaving it for the following day. We’ve not yet bestowed “Cheesehead” on such an offender. Nor does the guilty party suffer “Cornfield” when his misjudgment puts two trains nose-to-nose.

They would never get away with it on the prototype. **MR**



RARE IS THE ROAD THAT DIDN'T ENDURE A "CEMENT HEAD." I HAVE YET TO MEET A RAILROADER WHO DIDN'T LAUGH WHEN I ASKED IF HE KNEW ONE.
—JERRY

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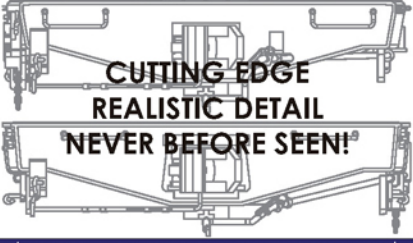
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CLOSING DATES: Jan 2018 closes Oct. 20, Feb. closes Nov. 13, March closes Dec. 19, April closes Jan. 22, May closes Feb. 19, June closes Mar. 19, July closes Apr. 23, Aug. closes May 18, Sept. closes June 22, Oct. closes July 23, Nov. closes Aug. 17,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

Schedule of Events

AZ, TUCSON: Gasden Pacific Toy Train Swap Meet. Tucson Expo Center, 3750 East Irvington Rd. at Palo Verde I-10 Exit 264. January 5-6, 2018, Friday 1:00pm-6:00pm and Saturday 9:00-2:00 Admission \$6.00, under 13 free. Information: <http://www.gpdToyTrainMuseum.com>

AZ, TUCSON: Gasden Pacific Toy Train Swap Meet. Tucson Expo Center, 3750 East Irvington Road at Palo Verde I-10 Exit 264. November 10-11, 2017, Friday 1:00pm-6:00pm and Saturday 9:00am-2:00pm. Admission \$6.00, under 13 free. Information: <http://www.gpdToyTrainMuseum.com> or call Jeff: 520-310-1392

CA, TURLOCK: San Joaquin Valley Toy Train Operators. Inc. 40th Annual Model Train Show. Stanislaus County Fairgrounds, 900 North Broadway. December 2-3, 2017, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm; Adults \$7.00 children free. Free parking and food/court. Operating layouts and dealer/vendor tables. www.sjvtoytrainoperatorsinc.com Contact: Ed Cathcart 209-479-4432

CO, LONGMONT: 2017 TRAIN EXPOSITION. Dec 8-10. Vendors, displays, operating model trains. Raffle: win a complete train layout w/Flatiron Mineral Club's Gem Show. Gate for all:\$5.00 adults, kids 12 & under free. Boulder County Fairgrounds, Hover & Nelson Roads. FREE parking. Details: www.bouldermodelelraodclub.org

CT, BRANFORD: First show 2018, United Methodist Church, 811 East Main St. (RT#1) Branford, Saturday January 6th (Snow Date: January 13th) 9:00am-3:00pm. Vendors, Layouts, Kids Stuff, Admission: \$6.00 Families, \$4.00 Seniors, Children under 12 FREE. Larry Appleton 203-457-1571 or UMC 203-488-0549 for table rates, information.

FL, LARGO: Suncoast Model Railroad Club Train Show/Open House, December 9, 2017. SHOW- Minnreg Hall, 6340 126th Ave. N., Largo. Saturday 9:00am-3:00pm. Admission: \$7.00. Children \$2.00 and under 11-free. Free parking. Food/snacks. OPEN HOUSE- Clubhouse, 12355 62nd Street N, Unit A. Visit www.suncoastmrrc.com Contact: irvatten@yahoo.com

FL, OCALA: Meadowbrook Church Model Railroaders presents "Trains for Christmas" on Saturday and Sunday, November 25, 26, from 8:00am-3:00pm. Free admission, multiple layouts. Located in gymnasium behind Meadowbrook Church at 4741 SW 20th Street in Ocala. Information: contact Bill Quast 352-873-3767 ext 333 or bquast@mbccocala.org

FL, PALM BEACH GARDENS: 9th Annual Toy and Train Show. Saint Marks School Gymnasium. 3395 Burns Road, December 9-10, 2017, Saturday, 9:00am-3:00pm and Sunday 11:00-3:00. Adults \$7.00, Family \$12.00, under 12 free. Operating layouts, demonstrations, food, door prizes. Information www.derrickwagnerfoundation.com or Will Wagner, 561-373-9603, wwainc@comcast.net

FL, PINELLAS PARK: Regal Railways Presents a Toy Train, Collectible and Hobby Show/Sale. Lopez Hall, 7177 58th St. North, Saturday, December 2, 2017. 9:00am-2:00pm. Adults \$5.00. Vendors, videos & operating layout. Serving lunch items. Contact Joe: 727-244-1341 or visit www.regalrailways.com for more information.

FL, TAMPA: 18TH TAMPA MODEL TRAIN SHOW. Florida State Fairgrounds (Special Events Center). Saturday, December 16, 2017. 9:00am-5:00pm and Sunday, December 17, 2017. 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

GA, SAVANNAH: Coastal Rail Buffs 29th Annual Model RR Train Show. National Guard Armory, 1248 Eisenhower Drive, Zip: 31406. January 27-28, 2018. Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults 2 day \$7.00; Students/Seniors \$5.00. Active Duty Military/under 12 FREE. Dealer tables, operating layouts in O. HO. N. See www.coastalrailbuffs.org

IL, JOLIET: Will County Model Railroad Club Swap Meet & Open House. Stone City VFW. 124 Stone City Drive. Saturday, December 2, 2017. 9:00am-2:00pm. Admission \$4.00 per person, children under 12 free. Dealers Welcome. Contact: Mike at 708-308-9036 or visit: www.wcmrra.org

IN, DANVILLE: Central Indiana Division-NMRA annual Train Show at Hendricks County 4H Fair Grounds, Saturday November 18, 2017. 10:00am-3:00pm. Admission \$3.00 adults, \$5.00 family. Operating Layouts, Vendors, Clinics, Food. Dealer Tables 8' at \$16.00. Info: gtwfan@bluemarble.net or 812-876-6799. CID website <http://cidmra.org>

IN, GARRETT: Garrett Model Railroad Club Annual Open House, December 10, 2017. Sunday 1:00pm-5:00pm Est. Operating Layout in basement of Museum, 302 N. Randolph St., Garrett, IN 46738. John Mohre 260-908-0754 Lehighman2003@yahoo.com

IN, INDIANAPOLIS: The Indianapolis Model Railroad Show and Open House. Manual High School Gymnasium, Saturday, December 9, 2017, 10:00am-3:00pm. Admission \$5.00, children 12 & under free. Boy Scouts in uniform free. Free parking. Naptown & White River Model Railroad Club. Contact: Steve Handly, 317-786-8627. E-mail: naptownmrr@gmail.com

IN, WARSAW: Warsaw Model Train & Toy Show, Kosciuszko County Fairgrounds, 1400 E. Smith St. December 9, 2017, 11:00am-3:00pm. Admission \$3.00, 12 and under free. All gauges. Tables \$15.00, free parking, lunch available. Contact: Gabe Fitzsimmons, 574-527-8554 or fitzgj01@gmail.com

MA, MARLBOROUGH: Hub Division NER/NMRA. Royal Plaza Trade Center, 181 Boston Post Road West (Rte. 20). Saturday December 2, 2017, 10:00am-5:00pm and Sunday December 3, 2017 10:00am-4:00pm. Admission \$10.00; Children under 12 and Scouts in Uniform FREE. Admission good both days. Information: Mark 508-528-8587; E-mail TE.info@hubdiv.org; Website: www.hubdiv.org

MA, MARLBOROUGH: NEW ENGLAND TRAIN COLLECTORS ASSOCIATION TOY TRAIN SHOW. Holiday Inn, 265 Lakeside Ave. December 9, 2017, 9:00am-1:00pm. Members \$5.00, Non-Members \$7.00. Contact: Dennis Ingalls, 508-285-3963 email dingalls@comcast.net

MI, ANN ARBOR: Rails On Wheels' Southeast Michigan Model Railroad Show & Sale, Washtenaw Farm Council Grounds, 5055 Ann Arbor Saline Rd., Zip: 48103. Sunday, November 26, 2017, 10:00am-3:00pm. Admission: \$4.00/person; under 12 free w/adult. Early bird-\$10.00/person (8:00am-10:00am). See railsonwheels.com Contact: Walt Trancygier 734-552-4581 Email: trancywj@gmail.com

MI, EAST LANSING: Lansing Model Railroad Club Show and Sale. Michigan State University Pavilion. Sunday, November 5, 2017, 10:00am-4:00pm. Admission \$6.00, under 12 free. Michigan's largest train show: layouts, demonstrations and 500+ tables. Free parking. Flyer, table forms and map, www.lmrc.org or call Nathan Carver 517-449-0370

MO, JOPLIN: Museum Complex Train Show and Swap Meet. In Schifferdecker Park, 7th Street & Schifferdecker between the golf course and pool. Saturday, November 25, 2017, 9:00am-3:00pm. \$3.00 adult, under 12 free. Rick Gardner, 11486 County Lane 214, Oronogo, MO 64855; 417-673-4888 or e-mail rickgardner4449@gmail.com

NY, ALBANY: "Great Train Extravaganza" TM. Empire State Convention Center. December 3, 2017, 10:00am-4:00pm. \$7.00 adults, 12 and under free. Operating layouts. Most Scales including LEGO's for kids and grand-kids, 200+ tables, train sets, parts, accessories, scenery items, books/prints, video/ DVD's, memorabilia, displays-clinics www.gtealbany.com 518-668-9892, trains@gtealbany.com

NY, ELBRIDGE: CNY Model RR Club & Historical Society Open House, 4986 Jordan Rd. off NY 5 west of Syracuse. November 18-19, 2017. Saturday 11:00am-4:00pm; Sunday 12:00pm-4:00pm. New HO layout and updated museum presentation. Free admission. Donations appreciated. New members welcome. www.cnymrrc.com

OH, COLUMBUS: 62nd BUCKEYE MODEL TRAINS & RAILROAD ARTIFACTS SHOW. Ohio Expo Center (Lausche Bldg.) 717 E. 17th Ave. Saturday, December 9, 2017. 9:00am-4:00pm. Adults \$7.00 (under 12 free). Operating layouts. 300+ tables. Miller: 3106 N. Rochester St. Arlington, VA 22213. 703-536-2954. www.rsshows@aol.com

OH, KIRTLAND: Christmas Train and Toy Show. Lakeland Community College (AFC) Main Gym, 7700 Clocktower Dr. 1-90 and Rt. 306. December 10, 2017, 10:00am-3:30pm. Adults \$6.00 each. Children (6-12) \$3.00, Family \$15.00. 440-256-8141, www.christmastrainshow.com

OH, MASSILLON: CJ Trains Winter Massillon Train and Toy Show. Knights of Columbus Hall, 988 Cherry Road NW, 44647. Sunday, December 10, 2017, 10:00am-3:00pm. \$5.00 admission, 12 and under free. \$25.00/dealer table, 152' - 8' dealer tables. Jon Ulbright, PO Box 446, Wooster, OH 44691, 330-262-7488, cathijon@ssnnet.com www.cjtrains.com

PA, EPHRATA: Short Line Model Railroad Club's Annual Holiday Open House. Every Saturday and Sunday beginning in late November through mid January. Visit www.SLMRC.com for specific dates and times. 11 South State Street in Ephrata, Pennsylvania. Admission: free will donation.

PA, HORSHAM: 12th Annual Main Street Hatboro Train Show. Keith Valley Middle School, 227 Meetinghouse Rd. Saturday, December 2, 2017, 9:00am-3:00pm. \$5.00 adults, under 12 free. 145+ vendor tables in cafeteria and gym. Contact Al Zollers, azollers06@verizon.net or Joe Lutz J040440@verizon.net or www.hatborotrainshow.org

PA, KITTANNING: Train Show, Kittanning Township Volunteer Firehall, Rt. 422 East of Kittanning. Sunday, November 26, 2017, 10:00am-4:00pm. Adults \$4.00, children 12 & under FREE. David Campbell, 734 Freeport Rd., Butler, PA 16002, (724) 352-1113

PA, MONACA: Beaver County Model RR Fall Train Show & Sale. Monaca Turners, 1700 Old Broadhead Road. Sunday, November 19, 2017, 10:00am-3:00pm. Adults \$5.00, under 12 free. Sponsored by Beaver County Model RR & Historical Society. Contact: Walt Steiner 724-843-3783 or www.bcmrr.railfan.net or beavercitymrr@gmail.com

PA, STOCKERTOWN: Nazareth Area Society of Model Engineers Open House. 212 Main Street. November 24, 7:00pm-9:00pm. November 25, 26, 1:00pm-5:00pm. December 1, 7:00pm-9:00pm. December 2, 3, 9, 10, 27, 28, 29, 1:00pm-5:00pm. December 29, 7:00pm-9:00pm. \$5.00/Adults, \$1.00/Kids 3-15. Roger: 610-252-8082, nasme@yahoo.com, <http://nasme.tripod.com> Facebook: "@NASME1980"

SC, CHARLESTON: Charleston Area Model Railroad Club Annual Train Show, Danny Jones Armory Park, 5000 Lackawanna Blvd., North Charleston, SC. November 18-19, 2017. Saturday 9:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$5.00, Children 12 & under free. Active military families are free. For additional information or table rentals, contact the Club at trainshow@chamrc.com or www.chamrc.com

SC, GREENVILLE: Greenville Shrine Club, 119 Beverly Road. Saturday, December 9, 2017, 9:00am-3:00pm. Admission: \$5.00, under 10 FREE. Over 200 vendor tables, Thomas the Train & Friends, Railroad collectibles. Contact Todd at 843-307-8674. southcarolinatradeshow@gmail.com or www.SouthCarolinaTradeShows.com

SC, LAKE CITY: Ragsdale Building, 245 S. Church Street. Saturday, January 13, 2018, 9:00am-3:00pm. Admission \$5.00, under 10 FREE. Over 200 vendor tables, Thomas the Train & Friends, Railroad collectibles. Contact Todd at 843-307-8674. southcarolinatradeshow@gmail.com or www.SouthCarolinaTradeShows.com

WA, KENT: Boeing Employees Model Railroad Club Annual Swap Meet, 525 4th Avenue North, Kent Commons. November 11, 2017, 9:30am-4:00pm. \$8.00 admission, under 16 free. Ed Sherry, 550 SW Colewood Lane, Normandy Park, WA 98166; 206-244-3884; swapmeet@bemrrc.com

WI, LA CROSSE: The 27th Annual Great Tri-State Rail Sale. La Crosse Center, 2nd & Pearl Streets. January 27, 2018. 9:00am-3:00pm. Admission \$5.00, under 12 free. 300 Tables; All Scales; Model, Toy & Antique Trains & Memorabilia. Information: 4000 Foundation, PO Box 3411, La Crosse, WI 54602, 608-781-9383.

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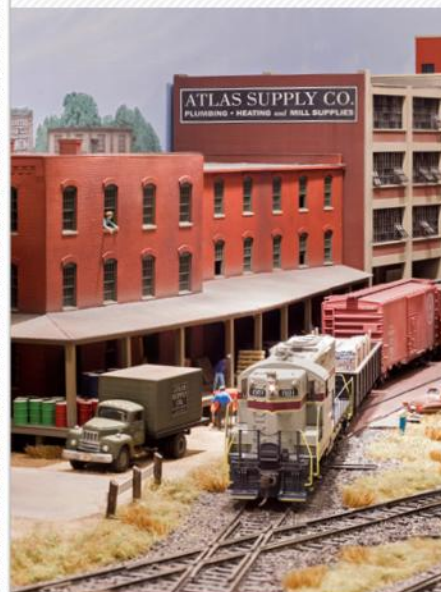


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Balancing progress and enjoyment



Some temporary feeders allowed Neil Schofield to test-run train No. 937 northbound up Newport Hill on track along both sides of the new peninsula on his 1980s edition of CP Rail's Vermont lines. Neil Schofield photo

The accompanying photo shows a rather common occurrence: a test run over a new section of track. It may occur when a railroad is built or, as in this case, when it's extended. It's a proud and wondrous moment, to be sure!

This occasion was celebrated on Neil Schofield's highly regarded HO edition of CP Rail's Lyndonville and Newport subdivisions in Vermont. As he explains in *Model Railroad Planning 2018* [available in January – Ed.], these lines between Montreal and Springfield, Mass., were a haven in 1980 for Alco and Montreal Locomotive Works locomotives as well as blue-and-white Boston & Maine Electro-Motive Division Geeps.

There's nothing like an immovable deadline to foster progress on a model railroad. In this case, Neil promised not only to have the railroad open for the Northeastern Region (NER) National Model Railroad Association convention in November, but also to host an operating session. His initial ambitions to expand the operational possibilities

were reasonably modest, focusing on Newport Yard.

But as work progressed, it became clear that everything would work better if he pushed to get the central peninsula operational, including the climb up Newport Hill to Richford as well as staging yards under Richford. "It's an ambitious undertaking," Neil told me in August, "but I've still got just under three months."

We've all had such ambitious plans blow up in our faces, but the photo – taken in mid-September – shows that he was well on his way to pulling it off.

That he could do so is a testament to Neil's experience building two previous layouts. He knew exactly what was required to get the peninsula built with the ¾" plywood subroadbed and ¼" roadbed in place, and to lay the track. It's clear he was confident of his construction techniques and materials; those aren't old locomotives and cars hauled out of storage for the test run!

During our discussion, Neil made an interesting

point: "I also believe in 'acceptance.' There are some material-saving techniques that work for others, such as spline roadbed. However, what works for me – and allows me to make the most progress – is accepting simpler but somewhat wasteful techniques, such as cookie-cutter roadbeds. Ultimately, my goal isn't just meeting a deadline for an operating session, but getting trains running for my own enjoyment. Time is my most precious commodity when it comes to layout building."

So he goes with what's worked in previous layouts rather than keeping up with the latest innovations. I fully agree with this line of thinking. As I recall, it's General Electric (GE) that boasts of progress being their most important product. Sometimes, progress requires innovation; sometimes, it requires depending on the

tried-and-true. I'm sure GE does some of both.

There are several lessons to be learned from Neil's example. Deadlines add pressure to what is supposed to be a relaxing, leisure-time pursuit, but they also push us toward progress that feels oh-so-good when we enjoy the benefits of that progress. Relying on what has worked before, especially when time is tight, may result in some inefficiency but almost certainly leads to success.

There are many more lessons that Neil can share with

us, and I've encouraged him to document the extension in more detail in a future issue of MRP. This fall, however, his sights were set on offering visiting crews at the NER convention an enhanced operating experience. Meeting one deadline at a time is the most reasonable approach. **MR**



SOMETIMES, PROGRESS REQUIRES INNOVATION; SOMETIMES, IT REQUIRES DEPENDING ON THE TRIED-AND-TRUE. - TONY

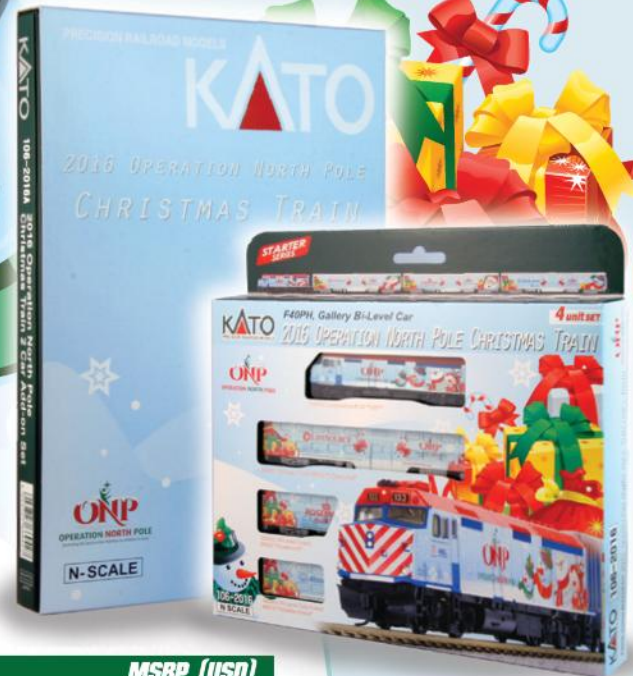


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